

# Human Capital and Economic Opportunity Global Working Group

**Progress Report**  
**Grant ID INO1100038**

**July 6, 2012**

**Human Capital and Economic  
Opportunity  
Global Working Group**

**Table of Contents**

<b>PROGRESS REPORT</b>	<b>2</b>
<b>HUMCAP OVERVIEW</b>	<b>6</b>
<b>MEMBERS</b>	<b>17</b>
<b>WORKING GROUPS</b>	<b>28</b>
<b>WORKING PAPERS</b>	<b>37</b>
<b>EVENTS</b>	<b>57</b>
<b>CONFERENCE SUMMARIES</b>	<b>109</b>
<b>WEBCONFERENCES</b>	<b>149</b>
<b>DISSEMINATION</b>	<b>164</b>
<b>CONTACT INFORMATION</b>	<b>182</b>

# Human Capital and Economic Opportunity Global Working Group Progress Report

## Interim Progress Report of the Human Capital and Economic Opportunity Global Working Group

July 2012

### *(1) Is the Project on track to be completed within the time frame of the Grant?*

Yes; we have made much progress over the last 6-months. This report outlines our recent and upcoming activities.

### *(2) If not, what are obstacles or challenges impacting the time line?*

While we have made much progress, our primary obstacle is scheduling events given the busy schedules of working group leaders and members. However, conference call and webinar technology has helped resolve this challenge.

As previously noted, due to cost-sharing with the Becker Friedman Institute for Research in Economics, as well as co-sponsorship of events, our spending has been slower than anticipated. For this reason, we expect to request a no-cost extension closer to the end of the award (12/2013).

### *(3) Is the work developing as anticipated?*

Yes; the work is developing better than expected given our ambitious, long-term goals. Our accomplishments include 18 conferences, workshops, and webinars that have brought together disparate thinkers to address fundamental inequality issues. (Further detail on these activities can be found in the report.) Further, we have 54 working papers that have been viewed 1,724 times, and downloaded 1,127 times.

While the project took 6-10 months to fully coalesce by identifying leadership and members for each working group, the time and effort was well worth it, as we now have a solid foundation for the project. Our established research networks include the world's leading scholars across a range of fields working together to restore and strengthen human capital development research. Our membership continues to grow, and our working paper downloads and website visit statistics are increasing.

### *(4) If not, what aspects of the research have changed or resulted in unexpected possibilities?*

While the work *is* developing as anticipated, a positive change is that the Measurement and Interpretation of Inequality (MIE) and Youth and Human Capital (YHC) networks will merge to form a new Inequality: Measurement, Interpretation, and Policy network (MIP). The leaders and members of the new network will be the union of those in the original networks. With this merger,

## Progress Report, continued

we hope to enhance the development of the theory and application of policy evaluation for those policies designed to reduce inequality and boost individual flourishing. This new collaboration will enrich theoretical and empirical research by identifying dimensions of analysis that are particularly policy-relevant.

Additionally, co-directors Steven Durlauf and James Heckman have organized a Summer School on Socioeconomic Inequality to be held this month in Chicago. We are finalizing plans to hold another school at the University of Chicago in summer 2013, as well as to expand the summer school to Beijing. These summer schools feature faculty and students from a variety of disciplines, which will promote cross-discipline conversations and interdisciplinary knowledge about socioeconomic inequality.

As previously mentioned, the membership of each research network continues to grow. Of note, Titus Galama, an economist at the RAND Corporation and a professor at the Pardee RAND Graduate School, has been added as a co-leader of the Health Inequality network. Additionally, Professor Burton Singer, Courtesy Professor in the Emerging Pathogens Institute and the Department of Mathematics at University of Florida, has joined the leadership of the Early Childhood Interventions network. Further plans include identifying graduate students to form a 'junior' membership of each research network.

Lastly, the University of Chicago Press has offered a contract for our project to produce a series of comprehensive volumes on inequality, which will highlight the work and output of each working group. The Oxford University Press has expressed similar interest. We will determine which press makes the most sense and possibly investigate other presses. We are especially concerned with exploiting electronic publishing capacities of the presses.

### *(5) Is any portion of the Project at a sufficient stage to be presented for discussion at a non-public INET workshop?*

Yes; each of our networks has research which can be presented for discussion at non-public INET workshops. Further, each working group has regular events which feature the work of its members and promote discussion across disciplines within and across the networks.

For example, within the Early Childhood Interventions (ECI) network, members at the University of North Carolina and the University of Chicago are collaborating to analyze the Carolina Abecedarian Project, a famous first-generation early childhood intervention program. Additionally, within the Inequality: Measuring, Interpreting, and Policy (MIP) network, co-leaders Scott Kominers and Steven Durlauf could present research on neighborhood effects, matching, design of admissions policies for schools, and/or intergenerational mobility. Within the near future, the Markets network could present an overview of cutting edge research on credit/insurance markets and human capital. Lastly, several members of the Health Inequality (HINet) network are drafting a position paper integrating biology and economics in the context of evaluating the cost/effectiveness of a broad range of interventions over the life course. The position paper will provide a focus for a 2013 conference in Southampton, UK, targeted at establishing several research groups that would carry out cost/effectiveness analyses of interventions as assessed in different surveys in the UK and US.

### *(6) Is any portion of the Project at a stage to be released on the INET website or presented at a public INET event?*

Yes; each of our working groups has research which can be released on the INET website or presented at a public INET event. An example of work that INET could feature is joint work within

## Progress Report, continued

the Early Childhood Interventions network; group members at the University of Chicago and the University College Dublin (Ireland) have collaborated on a newly launched early childhood intervention experiment.

Each working group has regular events which feature the work of its members and promote discussion across disciplines within and across the working groups. The presentations, videos,

and/or summaries of these events are already featured on our project's website (<http://www.hceconomics.org>). Further, our working paper series contains work that can be featured.

### *(7) What aspects of your research may appeal to non-academic media?*

Many aspects of our project may appeal to non-academic media. Work within the Early Childhood Intervention network appeals to non-academic media. The network aims to achieve two major social goals: reducing social inequality and improving economic efficiency in the long run. These aims are quite policy-oriented, and recently many governments across the world are paying attention to these topics. Additionally, several aspects of work within the Family Inequality network are potentially appealing to non-academic media: gender inequality, women's rights and development, parent-child interaction, taxation and labor supply, intra-family inequality and resource allocation. Within the Identity and Psychology network, work on self-control and grit (perseverance and passion for long-term goals), may be of interest. Within the Markets network, there would likely be substantial non-academic media interest in the research related to investments in human capital of young children, the extent of credit and insurance frictions in human capital markets, student loan repayment/default, and the optimal design of human capital lending contracts (both from the government and private markets).

### *(8) Is INET's contribution recognized in all publications or presentations of research funded by INET?*

Yes; all INET-sponsored activities and INET-sponsored research acknowledge INET support. Further, each Working Paper in the series contains a cover sheet that includes the INET logo, and the published volumes will acknowledge the support of INET. Please note, systematic INET acknowledgment on members' new papers will take time, because papers started after the project was funded may not yet be complete. However, we are satisfied that our project's members are beginning to think of themselves as part of the larger INET community.

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**INTERIM FINANCIAL REPORT**

<b>Funding Organization:</b>	INET/Tides Foundation
<b>Award Number:</b>	N/A
<b>Date of Award:</b>	January 01, 2011
<b>Principal Investigator:</b>	James Heckman
<b>University Account Number:</b>	6-34734
<b>Period Covered by Grant:</b>	January 1, 2011 through December 31, 2013
<b>Period Covered by Report:</b>	January 1, 2012 through May 31, 2012
<b>Report Date</b>	July 03, 2012
 <b>Amount of Award:</b>	 \$1,500,000.00

		<i>Expenses</i>			
<i>Expense Category</i>	<i>Total Budget</i>	<i>Previously Reported 01/01/2011-12/31/2011</i>	<i>Expenses for the Period 01/01/2012-5/31/2012</i>	<i>Total Spent</i>	
Personnel	\$ 674,678.00	\$ 34,698.82	\$ 68,733.23	\$	103,432.05
Technology	\$ 201,000.00	\$ 5,993.64	\$ 26,466.74	\$	32,460.38
Events	\$ 190,470.00	\$ 5,086.00	\$ 823.00	\$	5,909.00
Supplies	\$ 109,988.00	\$ 4,062.26	\$ 2,563.17	\$	6,625.43
Travel	\$ 187,500.00	\$ 18,834.71	\$ 56,904.48	\$	75,739.19
Indirect Costs	\$ 136,364.00	\$ 6,867.54	\$ 15,548.78	\$	22,416.32
<b>TOTAL</b>	<b>\$ 1,500,000.00</b>	<b>\$ 75,542.97</b>	<b>\$ 171,039.40</b>	<b>\$</b>	<b>246,582.37</b>

<b>Total Expenditures</b>	\$ 246,582.37
<b>Unobligated Balance</b>	\$ 1,253,417.63

*Cash Condition as of 5/31/2012*

<b>Award Amount:</b>	\$ 1,500,000.00
<b>Payments Received:</b>	\$ 500,000.00
<b>Unpaid Balance:</b>	\$ 1,000,000.00

<b>Approved By:</b>	 <hr style="width: 100%;"/> Emily Greusel Sponsored Award Accountant	7/3/12 <hr style="width: 100%;"/> Date
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# Human Capital and Economic Opportunity Global Working Group Group Overview and Vision

## Human Capital and Economic Opportunity Global Working Group: An Overview

James Heckman, Steven Durlauf, and Robert Dugger

The Institute for New Economic Thinking was established to nurture a global community of next-generation economic leaders, to provoke new economic thinking, and to inspire the economics profession to engage the challenges of the 21st century. Early on, INET recognized inequality as a crucial aspect of these challenges and funded a working group specifically to study inequality--its origins and consequences for individuals, and its relationships to economic stability and growth worldwide. The Human Capital and Economic Opportunity Global Working Group brings together an international community of world class scholars and practitioners to study and report on the determinants of inequality and its consequences, with particular emphasis on how economic, social, educational and health policies affect life outcomes and economic development. The Global Working Group is uniquely comprehensive in its scope and its inclusion of diverse points of view. Our research goes beyond the traditional focus on redistribution through taxes and transfers as the primary means of reducing inequality. We consider **predistribution**—understanding policies that promote the capabilities that allow persons and societies to flourish.

Our concept of flourishing is inclusive and draws on notions and findings from philosophy, epidemiology, economics, psychology, genetics, and anthropology, including, but not confined to, traditional policies of redistribution. We are creating an international research community that explores ideas and conducts research that ranges over a wide field of knowledge. The title of the network reflects this comprehensive vision. Our focus on human capital refers to our concern about the capabilities of individuals, be it their cognitive skills and education, personality traits, or basic biology. Economic opportunity is a basic focus and we examine how outcomes are determined by the social, political and economic contexts in which individuals function.

The Global Working Group represents an endeavor that fundamentally differs from conventional research networks in the academic world: it aims to develop a *comprehensive* understanding of human flourishing. While there are substantial bodies of research on individual determinants of human flourishing, the Global Working Group's objective of providing a unification of these components places its research goals outside the domain of conventional social science, which has too often either reduced the domain of research to small questions with easy answers or has proposed facile, monocausal explanations of complex phenomena. The Global Working Group accepts the inherent complexity of understanding human flourishing. By integrating individuals across disciplines and promoting inter- and trans-disciplinary collaborations, the Global Working Group assumes a very different form compared to conventional research environments. Our objective in this regard is to create a scientific infrastructure for international research

## Group Overview and Vision, continued

collaboration that unites alternative perspectives, methodologies and fields, in order to allow for an integrated understanding of socioeconomic failure and success.

We have organized the Working Group into 6 distinct research networks: early childhood intervention; family inequality; health inequality; identity and personality; inequality: measurement, interpretation, and policy; and markets. These networks have been established in order to facilitate exchange of ideas on more focused topics relevant to the general group. Our integrative vision requires understanding specific aspects of human flourishing. The networks are permeable in the sense that a member of one network is in principle welcome to participate in the activities of any other. We are developing ways to facilitate inter-network activities. The networks have already held on-site and web-based workshops on specific topics of importance to the overall initiative.

The current group of network members reflects choices made by the network leaders as well as suggestions made by the Working Group leaders. Network leaders are actively seeking new members and have been asked to suggest individuals to cross networks. We have endeavored to make sure that a rich set of alternative methods and perspectives are included in each network. One objective of the Working Group leaders is to make sure that the overall project involves the world's leading researchers regardless of research style and/or focus. We believe that interactions among contrasting research approaches is fruitful. This belief has been justified in our conferences over the past year. We strongly oppose prejudging any research on criteria other than quality. The network membership reflects a desire to integrate biological, sociological, and psychological perspectives into traditionally economic questions such as labor market success or failure. Each of these perspectives is essential to the development of a broad understanding of human flourishing. At the same time, we wish to demonstrate how policy models developed in economics can enrich research in other social science disciplines. The membership of the networks mixes younger and more mature scholars with the intent of fostering the next generation of scholars in an interdisciplinary style of research.

There is one sense in which the Global Working Group takes a particular methodological stance. This is the priority we place on treating social science research as an empirical endeavor. This does not mean that theoretical research is unwelcome. We defend the value of formal theory in facilitating the understanding of socioeconomic phenomena. Rather, our view is that social science advances when theories are subjected to rigorous testing to allow corroboration or falsification. It also advances when a rigorous data base on the economy and society is available. We treat theory, statistical methodology, and empirical analysis as equal partners in our research enterprise. For this reason our membership includes researchers that range from economic and econometric theorists to empirical researchers whose work focuses on data construction and description. A corollary of our methodological stance is that we regard the assumptions as well as the implications of any theory as subject to empirical evaluation and potential rejection.

Our desire to influence the direction of scholarship in the future is reflected in the Working Group's initiation of an annual Summer School on Socioeconomic Inequality for graduate students. The school will bring together 36 top graduate students from around the world to hear lectures by world class scholars on state-of-the-art research on aspects of economic and social inequality and to expose them to the broad perspectives that define the initiative. The first summer school will be held at the University of Chicago in the second week of July. In addition, we are exploring the possibility of establishing a summer school on inequality in China, which would be overseen by the

## Group Overview and Vision, continued

Global Working Group. This would create an extraordinary opportunity to help China build up its social science research structure, as well as to create research opportunities for Working Group members.

We see the output of the Global Working Group as emerging at three levels. First, we expect the Working Group, via the individual research programs of network members, to push the scientific frontiers on the understanding of human flourishing. We expect this new research will often be trans-disciplinary and at a minimum, the members of the Working Groups will be broader and more creative scholars for having participated. This output is of course intangible, but its importance should not be underestimated. Second, through the establishment of summer schools and the development of collaborative activities with existing organizations such as the various nationally funded poverty and demography research institutes in the United States, Europe, and elsewhere, we intend to create an invisible college of researchers on human flourishing. Third, the Global Working Group will produce a monograph series on human flourishing in the 21<sup>st</sup> century. We are currently negotiating with the University of Chicago Press to establish such a series. These books would not represent summaries of particular research programs, but rather syntheses of different aspects of human flourishing, written at a level that is scientifically rigorous.

# Human Capital and Economic Opportunity Global Working Group Summary of Activities

## Winter 2010/2011

**November 10** – Becker Friedman Institute for Research in Economics (University of Chicago) agrees to partner with Human Capital and Economic Opportunity Global Working Group (HumCap)

**January 1** – HumCap launches and hceconomics.org goes live



## Spring/Summer 2011

**March 15** – First HumCap web conference

**March 24** – **Family Inequality** conference in Barcelona

**May 9** – **Youth Human Capital and Economic Development** inaugural web conference: *Investing in Kids*, led by Tim Bartik

**June 14** – **Measuring and Interpreting Inequality** meeting

**June 30** – **Markets** inaugural web conference

**August 2** – **Identity and Personality** inaugural web conference



## Fall 2011

**September 15-16** – **Health Inequality** meeting in Chicago, and *Gene x Environment* Conference (co-sponsored by National Opinion Research Center and National Institutes on Aging)

**September 30** – **Family Inequality** inaugural web conference

**October 3** – **Markets** call for papers

**October 7** – **Health Inequality** conference call

**October 20** – HumCap working papers series indexed in RePEc



## Winter 2011/2012

**November 14** – **Measuring and Interpreting Inequality** inaugural web conference and call for papers

**December** – Professor Steven Durlauf appointed as Co-director of HumCap initiative

**December 9** – **Early Childhood Interventions** inaugural web conference and call for papers

**January** – Sessions at the 2012 Allied Social Science Association meetings, based on the HumCap initiative. (A coordinated effort is planned for 2013.)

**January 5** – **Markets** conference: *Financing Human Capital Investment*, Chicago

**January 6** – HumCap leadership meeting in Chicago

**February** – Proposal sent to University of Chicago Press on publication series of themed volumes. (They have since accepted. Oxford University Press has also expressed interest.)

**February 18** – **Measuring and Interpreting Inequality** meeting in Chicago

## Summary of Activities, continued

### Spring 2012

#### **April 20-21 - Early Childhood Interventions**

co-sponsored *Investing in Early Childhood: A Global Perspective on the Interplay between Family and Interventions* Conference, led by the Chicago Initiative for Economic Development and Early Childhood (CEDEC)

#### **April 21 - Early Childhood Interventions**

inaugural conference, Chicago

#### **April 26 - Youth Human Capital and Economic Development**

conference call: *Early Learning Social Impact Finance* led by Robert Dugger

#### **May 12-13 - Measuring and Interpreting Inequality**

conference on *Intergenerational Mobility*, Chicago

### Summer 2012

**June 4-6 - Markets** workshop on *Financing Human Capital, Credit Constraints, and Market Frictions*, Federal Reserve Bank of Chicago

**June 26 - Family Inequality** workshop on *Family Economics and Human Capital in the Family*, Rome

#### **June 25-26 - Early Childhood Interventions**

Co-sponsored *Early Childhood Development and Human Capital Accumulation in Developing Countries: Interpretative Models and Policy Interventions* Conference, led by Orazio Attanasio in London

**June 25-28 - Markets** co-sponsored Institute for Research on Poverty (University of Wisconsin-Madison) Summer Workshop on *Early Childhood Investments and Inequality*

**July 1 - Youth Human Capital and Economic Development** and **Measuring and Interpreting Inequality** networks merged.

**July 9-15 - Summer School on Socioeconomic Inequality**, University of Chicago

### Ongoing 2012

**Early Childhood Interventions** workshop series at University of Chicago

### Fall 2012

**October 18 - The Science of Success**, lecture by Paul Tough, co-sponsored with Center for Human Potential and Public Policy, at the Harris School at the University of Chicago

**November - Joint Family Inequality and Early Childhood Interventions** conference on family investments in children's development

### 2013

**January - HumCap** sessions presented at the Allied Social Sciences Association meetings

**Spring - Health Inequality** meeting in Southampton, UK, *Cost Benefit Analyses of Age-Graded Interventions to Promote Health across the Life Course*

#### **Summer**

- ❖ **Markets** co-sponsored *Topics in Human Capital Investment* Conference, led by the Innocenzo Gasparini Institute for Economic Research (IGIER-CEPR) in Capri, Italy
- ❖ *Summer School on Socioeconomic Inequality* in Beijing, China (co-sponsored with the China Center on Economic Research) and the University of Chicago
- ❖ *Summer School on Socioeconomic Inequality* in Chicago, at the University of Chicago
- ❖ **Family Inequality** conference in Barcelona, Spain

# Human Capital and Economic Opportunity Global Working Group Working Group Summaries

## Early Childhood Interventions (ECI)

**Group Leaders:** James Heckman, Burton Singer and Richard Tremblay

**Co-leaders:** Seong Moon and Rodrigo Pinto

**Group Description:** The Early Childhood Interventions network will investigate the early origins of inequality and their lifetime consequences.

**First web conference:** December 9, 2011

**First conference:** April 21, 2012, Chicago

### Recent events:

- ❖ April 20-21, 2012 - Co-sponsored conference on early childhood development in developing countries: *Investing in Early Childhood: A Global Perspective on the Interplay Between Family and Interventions*, Chicago
- ❖ June 25-26, 2012 - Co-sponsored conference *Early Childhood Development and Human Capital Accumulation in Developing Countries: Interpretative Models and Policy Interventions*, led by Orazio Attanasio in London
- ❖ June 25-28, 2012 - Co-sponsored Institute for Research on Poverty (University of Wisconsin-Madison) Summer Workshop on *Early Childhood Investments and Inequality*
- ❖ Weekly workshop of the Child Interventions Methodology Working Group at the University of Chicago during AY11-12 (Friday afternoons)

### Upcoming activities:

- ❖ Fall 2012 - Conference on family investments in children's development (joint with Family Inequality network)

### Family Inequality (FINet)

**Group Leaders:** Pierre-André Chiappori

**Co-leaders:** Marco Cosconati and Flavio Cunha

**Group Description:** Although an individual's skills are the results of many influences, the family appears to be of paramount importance in affecting the likelihood of individual success. The Family Inequality network focuses on the interactions among family members to better understand how the well-being of children and their parents is affected by a variety of public policies. The group's analysis studies the impact of laws which make divorce less costly, how tax systems affect spouses' labor supply, whether subsidies to improve parental monitoring are effective, and how the design of pension systems can help partners to coordinate their retirement choices.

**First conference:** March 24, 2011, Barcelona

**First web conference:** September 30, 2011

#### **Recent events:**

- ❖ June 26, 2012 - Workshop on *Family Economics and Human Capital in the Family*, hosted by the Bank of Italy in Rome

#### **Upcoming activities:**

- ❖ Fall 2012 - Conference on family investments in children's development (joint with Early Childhood Interventions network)
- ❖ Conferences on
  - Marriage and Divorce
  - Family Economics
  - Empirical Applications of Dynamic Collective Models

### Health Inequality (HINet)

**Group Leaders:** Burt Singer (rotating position)

**Co-Leaders:** Gabriella Conti and Titus Galama

**Group Description:** The Health Inequality Network (HINet) is a multidisciplinary research network comprising a group of world-class scholars on health research from diverse fields. HINet synthesizes and extends insights from several disciplines into a unified approach and comprehensive framework for understanding the emergence and evolution of health disparities over the lifecycle and across generations. This effort incorporates the study of socioeconomic determinants, genetic inheritance, epigenetic mechanisms, and biological and neuronal pathways, as well as behavioral responses and policy interventions.

**First meeting:** September 15, 2011, Chicago

#### Recent events:

- ❖ September 16, 2011 - Co-sponsored conference on *The Role of Genetic and Environmental Factors Across the Life Course: Improving the Rigor of Causal Inference*, Chicago
- ❖ October 7, 2011 - Network conference call

#### Upcoming activities:

- ❖ Spring 2013 - HINet network meeting in Southampton, UK, *Cost Benefit Analyses of Age-Graded Interventions to Promote Health across the Life Course*

*Several members of the HINet group are drafting a position paper integrating biology and economics in the context of evaluating the cost/effectiveness of a broad range of interventions over the life course. The position paper will provide a focus for establishing several research groups to carry out cost/effectiveness analyses of interventions as assessed in different surveys in the UK and US. The biggest analytical challenge that we face is the provision of an effective biology - economics interface and doing so at an appropriate level of detail in both directions. The position paper will provide an initial focus from which we anticipate considerable refinements and amendments will follow to be provided by HINet members as the new projects that will follow the Southampton meeting develop.*

### Identity and Personality (IP)

**Group Leaders:** Angela Duckworth, Armin Falk and Brent Roberts

**Group Description:** The Identity and Personality network seeks to understand the role of personality in all of its varied forms on shaping and perpetuating inequality and to understand the evolution of personality over the lifecycle.

**First web conference:** August 2, 2011

#### Upcoming activities:

- ❖ September 2012 - *tentative*, workshop before/after the European Association of Labour Economists meetings in Bonn, Germany
- ❖ Academic Year 2012-2013, monthly faculty seminar on self-control and time preference at University of Pennsylvania. Faculty to include neuroeconomists, psychologists and economists.
- ❖ Winter 2012 - new members, Drs. Antonio and Hanna Damasio, will hold a workshop at the University of Southern California, in conjunction with the *Brain and Creativity Institute*, to examine topics of personality, as well as early childhood development, from the neuroscience perspective.
- ❖ Spring, 2013 - conference on character, to include educators focused on intervention and measurement, attended by psychologists and economists.
- ❖ Two workshops in Europe: Behavioral Economics, Early Childhood Development
- ❖ Build the website to serve as a resource for data across disciplines
- ❖ Share members' new work to communicate across multiple disciplines
- ❖ Workshops in Chicago, and workshops led by members at their home institutions
- ❖ Divide into topical subgroups to focus on specific issues

### **Inequality: Measurement, Interpretation, and Policy (MIP)**

**Group Leaders:** Harry Brighouse, Robert Dugger, Steven Durlauf, and Scott Duke Kominers.

**Group Description:** The Inequality: Measurement, Interpretation, and Policy network consists of the recently merged Measuring and Interpreting Inequality (MIE) network and the Youth, Human Capital, and Economic Development (YHC) group. The Inequality: Measurement, Interpretation, and Policy network seeks to enhance the development of the theory and application of policy evaluation for those policies designed to reduce inequality and boost individual flourishing. Further, this new collaboration will enrich theoretical and empirical research by identifying dimensions of analysis that are particularly policy-relevant.

**First web conference:** November 14, 2011 (MIE) and May 9, 2011, *Investing in Kids*, led by Tim Bartik (YHC)

**First meeting:** February 18, 2012, Chicago (MIE)

#### **Recent events:**

- ❖ April 26, 2012 - YHC Conference call: *Early Childhood "Pay for Success" Social Impact Finance*, led by Robert Dugger
- ❖ May 12-13, 2012 - MIE Conference on *Intergenerational Mobility*, University of Chicago
- ❖ July 1, 2012 - The Youth, Human Capital, and Economic Development network merged with the Measuring and Interpreting Inequality network
- ❖ July 9-15, 2012 - While an effort of the entire HumCap project, the MIP network faculty are well represented at the Summer School on Socioeconomic Inequality.

#### **Upcoming Activities:**

- ❖ Conference on the interface between philosophy and economics in the study of inequality
- ❖ Workshop on segregation
- ❖ Workshop on neighborhood effects

### Markets (M)

**Group Leaders:** Lance Lochner and Mariacristina De Nardi

**Group Description:** The Markets network investigates three broad areas of human capital financing over the lifecycle. The network will: (i) develop and implement empirical analyses determining which individuals have trouble financing human capital investments, whether this has changed, and why; (ii) develop theoretical frameworks for analyzing when/why financial markets do not always extend 'enough' credit to some individuals, and the optimal role of government policy in these situations; and (iii) consider and study creative new ways to finance investments in large groups of individuals that appear to be poorly served by government and more traditional financial institutions (e.g. social impact bonds and impact investments).

**First web conference:** June 30, 2011

**First conference:** January 5, 2012 - *Financing Human Capital Investment*, Chicago

**Recent events:**

- ❖ June 4-6, 2012 - workshop on *Financing Human Capital, Credit Constraints, and Market Frictions*, hosted by the Federal Reserve Bank of Chicago

**Upcoming activities:**

- ❖ Summer 2013 - conference on *Topics in Human Capital Investment* in Capri, Italy

# Human Capital and Economic Opportunity Global Working Group Member Locations



# Human Capital and Economic Opportunity Global Working Group Members: Early Childhood Interventions (ECI)



## Group Leaders:

James Heckman, Burton Singer, and Richard Tremblay

**Co-leaders:** Seong Moon and Rodrigo Pinto

**Harold Alderman**

*World Bank*

**Silke Anger**

*German Institute for Economic Research*

**Angus Armstrong**

*National Institute of Economic and Social Research*

**Orazio Attanasio**

*University College London*

**Steven Barnett**

*National Institute for Early Education Research*

**Timothy Bartik**

*W.E. Upjohn Institute*

**Alison Baulos**

*University of Chicago*

**Nazli Baydar**

*Koc University*

**Gary Becker**

*University of Chicago*

**Jere Behrman**

*University of Pennsylvania*

**Clive Belfield**

*Queens College, City University of New York*

**Daniel Benjamin**

*Cornell University*

**Samuel Berlinski**

*University College London*

**Raquel Bernal**

*Universidad de los Andes*

**Pietro Biroli**

*University of Chicago*

**Clancy Blair**

*New York University*

**Hoyt Bleakley**

*University of Chicago*

**Kimberly Boller**

*Mathematica Policy Research*

**Pia Rebello Britto**

*Yale University*

**Jeanne Brooks-Gunn**

*Columbia University*

**Shawn Bushway**

*Suny Albany School of Criminal Justice*

**Frances Campbell**

*University of North Carolina*

**Frances Champagne**

*Columbia University*

**Young Eun Chang**

*Chung-Ang University*

**Amy Claessens**

*University of Chicago*

**Steve Cole**

*University of California, Los Angeles School of Medicine*

**Flavio Cunha**

*University of Pennsylvania*

**Janet Currie**

*Columbia University*

**Antonio Damasio**

*University of Southern California*

**Hanna Damasio**

*University of Southern California*

**Simona de Falco**

*University of Trento*

**Daniela Del Boca**

*University of Turin and Collegio Carlo Alberto*

**Adele Diamond**

*University of British Columbia*

**Thomas Dohmen**

*Maastricht University*

**Fabienne Doucet**

*New York University*

**Orla Doyle**

*University College Dublin*

**Angela Duckworth**

*University of Pennsylvania*

**Robert Dugger**

*Hanover Investment Group*

**Greg Duncan**

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**Steven Durlauf**

*University of Wisconsin, Madison*

## Members: Early Childhood Interventions (ECI), continued

**Zvi Eckstein**

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**Phillip Eisenhauer**

*University of Mannheim*

**Armin Falk**

*University of Bonn*

**Martha Farah**

*University of Pennsylvania*

**Paul Gertler**

*University of California, Berkeley*

**Rita Ginja**

*Uppsala University*

**Sally Grantham McGregor**

*University College London*

**Elizabeth Groginsky**

*United Way Worldwide*

**Scott Groginsky**

*Office of Congressman Jared Polis*

**Antoine Guedeney**

*Hôpital Bichat Claude Bernard, AP/HP Paris*

**Megan Gunnar**

*University of Minnesota*

**James Heckman**

*University of Chicago*

**Lynne Heckman**

*National Bureau of Economic Research*

**Heather Hill**

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**Tom Hoffer**

*National Opinion and Research Center*

**Magaret Holland**

*University of Rochester*

**Guanglei Hong**

*University of Chicago*

**Mark Innocenti**

*Utah State University*

**Magdalena Janus**

*Offord Centre for Child Studies, McMaster University*

**Betina Jean-Louis**

*Harlem Children's Zone*

**Tanja Jungmann**

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**Kai Klitzing**

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**Marta Korintus**

*National Institute for Family and Social Policy*

**Jeong Rim Lee**

*Korea Institute of Child Care and Education*

**Jung-Sook Lee**

*University of New South Wales*

**Kangyi Lee**

*Seoul National University*

**Soojin Lee**

*Project Injini /Ncsoft*

**Carl Lejuez**

*University of Maryland*

**Caitriona Logue**

*University College Dublin*

**Peter Lutz**

*Leibniz Universität Hannover*

**Rodolfo Manuelli**

*Washington University in St. Louis*

**Bruce McEwen**

*Rockefeller University*

**Kelly McNamara**

*University College Dublin*

**Costas Meghir**

*Yale University*

**Edward Melhuish**

*Birkbeck College*

**Seong Hyeok Moon**

*University of Chicago*

**Susan Murphy**

*University of Michigan*

**Sophie Naudeau**

*World Bank*

**Helen Neville**

*University of Oregon*

**Milagros Nores**

*National Institute for Early Education Research*

**Ricardo Paes de Barros**

*National Institute for Applied Economic Research*

**Amelie Petitclerc**

*Columbia University*

**Stavros Petrou**

*Warwick College*

**Friedhelm Pfeiffer**

*University of Mannheim*

**Pia Pinger**

*University of Mannheim*

**Rodrigo Pinto**

*University of Chicago*

**Robert Pollak**

*Olin School of Business, Washington University in St. Louis*

**Elizabeth Pungello**

*University of North Carolina*

**Javaeria Qureshi**

*University of Chicago*

**Sharon Ramey**

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## Members: Early Childhood Interventions (ECI), continued

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**Stephen Raudenbush**

*University of Chicago*

**Brent Roberts**

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**Dylan Robertson**

*Chapin Hall at the University of Chicago*

**Andrea Rolla**

*Ministry of Education, Chile*

**Arthur Rolnick**

*The Federal Reserve Bank of Minneapolis*

**Aldo Rustichini**

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**Thomas Saias**

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**Nobert Schady**

*Inter-American Development Bank*

**Herbert Scheithauer**

*Freie Universität Berlin*

**Alessandra Schneider**

*Conselho Nacional De Secretarios De Saude*

**Larry Schweinhart**

*HighScope Foundation*

**Daniel Schwekendiek**

*Sungkyunkwan University*

**Robert Serpell**

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**Burton Singer**

*University of Florida*

**Marla Sokolowski**

*University of Toronto*

**Frederick Sparling**

*University of Melbourne*

**Katharina Spieß**

*Freie Universität Berlin*

**Stephen Suomi**

*National Institute of Child Health & Human  
Development*

**Petra Todd**

*University of Pennsylvania*

**Emma Tominey**

*University of York*

**Mark Tomlinson**

*Stellenbosch University*

**Paul Tough**

*formerly of the New York Times*

**Richard Tremblay**

*University of Montreal*

**Junjian Yi**

*University of Chicago*

**Mary Young**

*Center on the Developing Child, Harvard  
University*

**Arianna Zanolini**

*University of Chicago*

**Wladimir Zanoni**

*University of Chicago*

# Human Capital and Economic Opportunity Global Working Group Members: Family Inequality (FINet)



**Group Leader:** Pierre-André Chiappori

**Co-leaders:** Marco Coscanati and Flavio Cunha

**Stefania Albanesi**

*Columbia University*

**Gary Becker**

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**Richard Blundell**

*University College London*

**Meta Brown**

*Federal Reserve Bank of New York*

**Martin Browning**

*Nuffield College, Oxford*

**Maria Casanova**

*University of California, Los Angeles*

**Pierre-André Chiappori**

*Columbia University*

**Marco Coscanati**

*Bank of Italy*

**Flavio Cunha**

*University of Pennsylvania*

**Daniela Del Boca**

*University of Turin and Collegio Carlo Alberto*

**Olivier Donni**

*Université de Cergy-Pontoise*

**Raquel Fernandez**

*New York University*

**Christopher Flinn**

*New York University*

**Ahu Gemici**

*New York University*

**Pamela Giustinelli**

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**Antonio Merlo**

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**Sonia Oreffice**

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**Juan Pantano**

*Washington University in St. Louis*

**Nicola Pavoni**

*Università Bocconi*

**Krishna Pendakur**

*Simon Fraser University*

**Robert Pollak**

*Washington University in St. Louis*

**Climent Quintana-Domeque**

*Universitat d'Alacant*

**Jean-Marc Robin**

*Sciences-Po, Paris and UCL*

**Bernard Salanié**

*Columbia University*

**Elie Tamer**

*Northwestern University*

**Melissa Tartari**

*Yale University*

**Michelle Tertilt**

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**Alessandra Voena**

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## Human Capital and Economic Opportunity Global Working Group Members: Health Inequality (HINet)



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**Frances Champagne**

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**Gabriella Conti**

*University of Chicago*

**Janet Currie**

*Princeton University*

**George Davey Smith**

*University of Bristol*

**Angus Deaton**

*Princeton University*

**Steven Durlauf**

*University of Wisconsin, Madison*

**Titus Galama**

*RAND Corporation*

**Donna Gilleskie**

*University of North Carolina at Chapel Hill*

**Melissa Gilliam**

*University of Chicago*

**Sir Peter Gluckman**

*University of Auckland*

**Keith Godfrey**

*University of Southampton*

**Mark Hanson**

*University of Southampton*

**James Heckman**

*University of Chicago*

**Christopher Kuzawa**

*Northwestern University*

**L. H. Lumey**

*Columbia University*

**Thomas McDade**

*Northwestern University*

**David Meltzer**

*University of Chicago*

**Rebecca Myerson**

*University of Chicago*

**Group Leader:** Burton Singer (rotating position)

**Co-leaders:** Gabriella Conti and Titus Galama

**Helen Neville**

*University of Oregon*

**Olufunmilayo Olopade**

*University of Chicago*

**Kate Pickett**

*University of York*

**Caroline Relton**

*Institute of Genetic Medicine, Newcastle University*

**Burton Singer**

*University of Florida*

**James Smith**

*RAND Corporation*

**Moshe Szyf**

*McGill University*

**Arianna Zanolini**

*University of Chicago*

# Human Capital and Economic Opportunity Global Working Group

## Members: Identity and Personality (IP)



### Group Leaders:

Angela Duckworth, Armin Falk and Brent Roberts

**Dolores Albarracín**

*University of Illinois, Urbana-Champaign*

**Daniel Benjamin**

*Cornell University*

**Dan Black**

*University of Chicago*

**Turhan Canli**

*Stony Brook University*

**Stephanie Carlson**

*University of California, Berkeley*

**Charles Carver**

*University of Miami*

**Avshalom Caspi**

*Duke University*

**Soo Hong Chew**

*National University of Singapore*

**Rand Conger**

*University of California, Davis*

**Philip Corr**

*University of East Anglia*

**Antonio Damasio**

*University of Southern California*

**Hanna Damasio**

*University of Southern California*

**Ian Deary**

*The University of Edinburgh*

**Brent Donnellan**

*Michigan State University*

**Fritz Drasgow**

*University of Illinois, Urbana-Champaign*

**Angela Duckworth**

*University of Pennsylvania*

**Steven Durlauf**

*University of Wisconsin, Madison*

**Richard Ebstein**

*National University of Singapore*

**Armin Falk**

*University of Bonn*

**Ernst Fehr**

*University of Zurich*

**Eamonn Ferguson**

*The University of Nottingham*

**William Fleeson**

*Wake Forest University*

**Bart Golsteyn**

*Maastricht University and SOFI*

**Jeffrey Grogger**

*University of Chicago*

**James Heckman**

*University of Chicago*

**Michael Hurd**

*RAND Corporation*

**Ariel Knafo**

*The Hebrew University of Jerusalem*

**Rachel Kranton**

*Duke University*

**Robert Krueger**

*University of Minnesota*

**Carl Lejuez**

*University of Maryland*

**Shelly Lundberg**

*University of California, Santa Barbara*

**Dan McAdams**

*Northwestern University*

**Terrie Moffitt**

*Duke University and King's College London*

**Daniel Mroczek**

*Purdue University*

**Lis Nielsen**

*National Institute on Aging*

**Robert Pollak**

*Washington University in St. Louis*

**Stephen Read**

*University of Southern California*

**William Revelle**

*Northwestern University*

**Brent Roberts**

*University of Illinois, Urbana-Champaign*

**Aldo Rustichini**

*University of Minnesota*

**Peter Savelyev**

*Vanderbilt University*

**Rebecca Shiner**

*Colgate University*

**Burton Singer**

*University of Florida*

**Ulrich Trautwein**

*University of Tuebingen*

**David Weir**

*University of Michigan*

# Human Capital and Economic Opportunity Global Working Group Members: Inequality: Measurement, Interpretation, and Policy (MIP)



**Group Leaders:** Harry Brighthouse, Robert Dugger, Steve Durlauf, and Scott Duke Kominers

**Jaime Ahlberg**

*University of Florida*

**George Akerlof**

*University of California, Berkeley*

**David Autor**

*Massachusetts Institute of Technology*

**Daniel Benjamin**

*Cornell University*

**Alberto Bisin**

*New York University*

**Anders Bjorklund**

*Swedish Institute for Social Research (SOFI),  
Stockholm University*

**Dan Black**

*University of Chicago*

**Sandra Black**

*University of Texas-Austin*

**Larry Blume**

*Cornell University*

**Harry Brighthouse**

*University of Wisconsin, Madison*

**Shawn Bushway**

*SUNY Albany, School of Criminal Justice*

**Caterina Calsamiglia**

*Universitat Autònoma de Barcelona*

**Kerwin Charles**

*University of Chicago*

**Dean Corbae**

*University of Wisconsin, Madison*

**Valerie Dao**

*Measurement Matters*

**Thomas Dohmen**

*Maastricht University*

**Lindsay Dolce**

*David and Laura Merage Foundation*

**M. Brent Donnellan**

*Michigan State University*

**Janis Dubno**

*Voices for Utah Children*

**Robert Dugger**

*Hanover Investment Group*

**Steven Durlauf**

*University of Wisconsin, Madison*

**Zvi Eckstein**

*Interdisciplinary Center (IDC) Herzliya*

**Dennis Epple**

*Carnegie Mellon University*

**Armin Falk**

*University of Bonn*

**Raquel Fernandez**

*New York University*

**Marc Fleurbaey**

*Princeton University*

**James Foster**

*George Washington University*

**Paul Goldsmith-Pinkham**

*Harvard University*

**Sanjeev Goyal**

*University of Cambridge*

**Bryan Graham**

*University of California, Berkeley*

**Carol Graham**

*The Brookings Institution*

**Elizabeth Groginsky**

*United Way Worldwide*

**John Hatfield**

*Stanford University*

**James Heckman**

*University of Chicago*

**Randi Hjalmarsson**

*Queen Mary, University of London*

**Mark Innocenti**

*Utah State University*

**Yannis Ioannides**

*Tufts University*

**Sonia Jaffe**

*Harvard University*

**Rucker Johnson**

*University of California, Berkeley*

**AJ Julius**

*University of California, Los Angeles*

**Scott Kominers**

*University of Chicago*

## Members: Inequality: Measurement, Interpretation, and Policy (MIP)

**Rachel Kranton**

*Duke University*

**Tony Laden**

*University of Illinois, Urbana-Champaign*

**Rasmus Lentz**

*University of Wisconsin*

**Glenn Loury**

*Brown University*

**Stephen Machin**

*University College London*

**Bhashkar Mazumder**

*Federal Reserve Bank of Chicago*

**Bruce Meyer**

*University of Chicago*

**Branko Milanovic**

*World Bank*

**Robert Moffitt**

*Johns Hopkins*

**Stephen Morgan**

*Cornell University*

**Stefano Mosso**

*University of Chicago*

**Susan Murphy**

*University of Michigan*

**Daniel Nagin**

*Carnegie Mellon University*

**Yusuke Narita**

*Massachusetts Institute of Technology*

**Andrew Newman**

*Boston University*

**Martha Nussbaum**

*University of Chicago*

**Ricardo Paes de Barros**

*National Institute for Applied Economic Research*

**Miguel Palacios**

*Vanderbilt University*

**Sarah Paterson**

*Early Learning Ventures*

**Parag Pathak**

*Massachusetts Institute of Technology*

**Nicola Pavoni**

*Bocconi University*

**Kate Pickett**

*University of York*

**Lee Price**

*FDIC*

**Stephen Raudenbush**

*University of Chicago*

**Diana Rauner**

*Ounce of Prevention*

**Debraj Ray**

*New York University*

**Jonathan Riley**

*Tulane University*

**Ingrid Robeyns**

*Erasmus University Rotterdam*

**John Roemer**

*Yale University*

**Richard Romano**

*University of Florida*

**Stephen Ross**

*University of Connecticut*

**Robert J. Sampson**

*Harvard University*

**Ananth Seshadri**

*University of Wisconsin, Madison*

**Timothy Smeeding**

*LaFollette Public Policy School, Wisconsin-Madison*

**Lones Smith**

*University of Wisconsin, Madison*

**Gary Solon**

*Michigan State University*

**Martin Weidner**

*University College London*

**Lawrence Wu**

*New York University (USA)*

**Peyton Young**

*University of Oxford*

**Zhong Zhao**

*Renmin University of China*

# Human Capital and Economic Opportunity Global Working Group Members: Markets (M)



## Group Leaders:

Lance Lochner and Mariacristina De Nardi

### Angus Armstrong

*National Institute of Economic and Social Research*

### Orazio Attanasio

*University College London*

### Luca Benzoni

*Federal Reserve Bank of Chicago*

### Meta Brown

*Federal Reserve Bank of New York*

### Francisco Buera

*University of California, Los Angeles*

### Pedro Carneiro

*University College London*

### Elizabeth Caucutt

*University of Western Ontario*

### Daniele Coen Pirani

*University of Pittsburgh*

### Dean Corbae

*University of Wisconsin, Madison*

### Flavio Cunha

*University of Pennsylvania*

### Mariacristina De Nardi

*Federal Reserve Bank of Chicago*

### Matthias Doepke

*Northwestern University*

### Janis Dubno

*Voices for Utah Children*

### Robert Dugger

*Hanover Investment Group*

### Steven Durlauf

*University of Wisconsin, Madison*

### Zvi Eckstein

*Interdisciplinary Center (IDC) Herzliya*

### Esther Eiling

*University of Toronto*

### Daniel Epstein

*Learning Care Group*

### Chao Fu

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### Giovanni Gallipoli

*University of British Columbia*

### Martin Gervais

*University of Iowa*

### Rita Ginja

*Uppsala University*

### Andrew Glover

*University of Texas at Austin*

### Limor Golan

*Carnegie Mellon University*

### Lars Hansen

*University of Chicago*

### Eric Hanushek

*Hoover Institution, Stanford University*

### Colm Harmon

*University College Dublin*

### James Heckman

*University of Chicago*

### Florian Hoffman

*University of British Columbia*

### Mark Huggett

*Georgetown University*

### Felicia Ionescu

*Colgate University*

### Matthew Johnson

*Mathematica*

### Marek Kapicka

*University of California, Santa Barbara*

### Katja Kaufmann

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### Mike Keane

*University of New South Wales*

### Tom Krebs

*Universität Mannheim*

### Donghoon Lee

*Federal Reserve Bank of New York*

### Lance Lochner

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### Michael Lovenheim

*Cornell University*

### Rodolfo Manuelli

*Washington University in St. Louis*

### Costas Meghir

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### Marti Mestieri

*Toulouse School of Economics*

### Alexander Monge-Naranjo

*Federal Reserve Bank of St. Louis*

## Members: Markets (M), continued

**Salvador Navarro**

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**Miguel Palacios**

*Vanderbilt University*

**Theodore Papageorgiou**

*Pennsylvania State University*

**Stephen Parente**

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**Svetlana Pashchenko**

*Uppsala*

**Nicola Pavoni**

*Università Bocconi*

**Raghuram Rajan**

*University of Chicago*

**B. Ravikumar**

*Federal Reserve Bank of St. Louis*

**Marla Ripoll**

*University of Pittsburgh*

**Peter Rupert**

*University of California, Santa Barbara*

**Thomas Sargent**

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**John Karl Scholz**

*University of Wisconsin, Madison*

**Ananth Seshadri**

*University of Wisconsin, Madison*

**Yongseok Shin**

*Washington University in St. Louis*

**Todd Stinebrickner**

*University of Western Ontario*

**Christopher Taber**

*University of Wisconsin, Madison*

**Michele Tertilt**

*University of Mannheim*

**Petra Todd**

*University of Pennsylvania*

**Robert Townsend**

*Massachusetts Institute of Technology*

**Sarah Turner**

*University of Virginia*

**Wilbert van der Klauw**

*Federal Reserve Bank of New York*

**Gustavo Ventura**

*Arizona State University*

**Gianluca Violante**

*New York University*

**Matthew Wiswall**

*New York University*

**Mark Wright**

*University of California, Los Angeles*

**Fang Yang**

*SUNY-Albany*

**Motohiro Yogo**

*Federal Reserve Bank of Minneapolis*

**Yuzhe Zhang**

*Texas A&M University*

# Human Capital and Economic Opportunity Global Working Group Group Activities

## Human Capital and Economic Opportunity Global Working Group (HumCap)

- ❖ Launched: January 1, 2011
- ❖ Kick-off Web Conference: March 15, 2011
- ❖ Website: <http://www.hceconomics.org>
- ❖ Number of members: 318
- ❖ Number of Conferences & Workshops: 12
- ❖ Number of Webconferences: 6
- ❖ Number of Working Papers: 54

### Other Activities:

- ❖ Summer School on Socioeconomic Inequality
  - July 9-15 , 2012, University of Chicago
  - Summer 2013, University of Chicago
  - Summer 2013, Beijing, China (co-sponsored with the China Center on Economic Research) & University of Chicago—under negotiation
- ❖ Sessions submitted to 2012 Allied Social Science Association meetings, based on the HumCap initiative. (e.g. "Whither Affirmative Action," "Nature Versus Nurture Revisited," and "Health Inequality: Explaining the SES-Health Gradient") HumCap leaders had a very visible presence at the American Economic Association meeting- the largest gathering of economists. The submission of INET-based sessions will be systematized for future years.
- ❖ Regular leadership meetings to cross-fertilize the working groups
- ❖ Continued facilitation of working group activities (conference calls, webconferences, workshops, conferences)
- ❖ Press releases and other media to create awareness about the initiative
- ❖ Publication of a series of themed volumes through the University of Chicago Press
- ❖ Development of a regular newsletter to drive interest to and communication within the initiative
- ❖ Identify 'junior members' for each working group, to boost transfer of knowledge to emerging scholars

## Group Activities, continued

### Early Childhood Interventions (ECI)

**Group Leaders:** James Heckman, Burton Singer and Richard Tremblay

**Co-leaders:** Seong Moon and Rodrigo Pinto

**Group Description:** The Early Childhood Interventions group will investigate the early origins of inequality and their lifetime consequences.

- ❖ Website: <http://bfi.uchicago.edu/humcap/groups/eci/>
- ❖ Number of members: 120
- ❖ Launched: June 15, 2011
- ❖ First web conference: December 9, 2011

#### Recent events:

- ❖ April 20-21, 2012 - Co-sponsored conference on early childhood development in developing countries: *Investing in Early Childhood: A Global Perspective on the Interplay Between Family and Interventions*



- ❖ June 25-26, 2012 - Co-sponsored conference *Early Childhood Development and Human Capital Accumulation in Developing Countries: Interpretative Models and Policy Interventions*, led by Orazio Attanasio in London
- ❖ June 25-28, 2012 - Co-sponsored Institute for Research on Poverty (University of Wisconsin-Madison) Summer Workshop on *Early Childhood Investments and Inequality*. The Institute for Research on Poverty is one of the three National Poverty Centers funded by the Department of Health and Human Services.
- ❖ Weekly workshop of the Child Interventions Methodology Working Group at the University of Chicago during AY11-12 (Friday afternoons)

#### Upcoming activities:

- ❖ Fall 2012 - Conference on family investments in children's development (joint with Family Inequality network)

## Group Activities, continued

### Family Inequality (FINet)

**Group Leaders:** Pierre-André Chiappori

**Co-leaders:** Marco Cosconati and Flavio Cunha

**Group Description:** Although an individual's skills are the results of many influences, the family appears to be of paramount importance in affecting the likelihood of individual success. The Family Inequality working group will focus on the interactions among family members to better understand how the well-being of children and their parents is affected by a variety of public policies. The group's analysis will study the impact of laws which make divorce less costly, how tax systems affect spouses' labor supply, whether subsidies to improve parental monitoring are effective, and how the design of pension systems can help partners to coordinate their retirement choices.

- ❖ Website: <http://bfi.uchicago.edu/humcap/groups/fi/>
- ❖ Number of members: 40
- ❖ Launched: May 10, 2011
- ❖ First web conference: September 30, 2011

**First conference:** March 24, 2011, Barcelona

*Several Family Inequality Working Group members were among the organizers of the first ICREA-MOVE (Markets, Organizations and Votes in Economics) Conference on Family Economics held in Barcelona March 24-26.*



#### Recent events:

- ❖ June 26, 2012 - Workshop on *Family Economics and Human Capital in the Family*, Bank of Italy, Rome



#### Upcoming activities:

- ❖ Fall 2012 Family Investments in Children's Development (joint with the Early Childhood Interventions network)
- ❖ Conferences on
  - Marriage and Divorce
  - Family Economics
  - Empirical Applications of Dynamic Collective Models

## Group Activities, continued

### Health Inequality (HINet)

**Group Leaders:** Burt Singer (rotating position)

**Co-Leaders:** Gabriella Conti and Titus Galama

**Group Description:** The Health Inequality Network (HINet) is a multidisciplinary research network comprising a group of world-class scholars on health research from diverse fields. HINET's aim is to synthesize and extend insights from several disciplines into a unified approach and comprehensive framework for understanding the emergence and evolution of health disparities over the lifecycle and across generations. This effort will incorporate the study of socioeconomic determinants, genetic inheritance, epigenetic mechanisms, and biological and neuronal pathways, as well as behavioral responses and policy interventions.

- ❖ Website: <http://bfi.uchicago.edu/humcap/groups/hi/>
- ❖ Number of members: 30
- ❖ Number of Junior Members: 4
- ❖ Launched: November 23, 2010
- ❖ First web conference: March 15, 2011

#### First meeting:

September 15, 2011, Chicago

#### First conference:

September 16, 2011, Chicago

Participants: 37

Presentations: 9

*The [Gene x Environment](#) conference brought together researchers at the frontier of their fields to begin addressing and integrating interdisciplinary approaches, to advance knowledge on the developmental origins of health and aging, and to set priorities for future research agendas.*

*The workshop explored potential synergies with and insights from the biological and the medical sciences, together with recent advances in genetic analysis and rigorous statistical modeling, to advance our understanding of important issues in the field. Key areas for research include:*

- ❖ *the mechanisms through which genetic endowments and early life conditions affect the evolution of health across the life course;*
- ❖ *the importance of selection effects in estimating the causal role of social and biological factors relevant to health and ageing;*
- ❖ *the nature of the selection effects, their evolution across the life course, and the mechanisms through which they operate.*



## Group Activities, continued

### Upcoming activities:

- ❖ Spring 2013 - conference in Southampton, UK, *Cost Benefit Analyses of Age-Graded Interventions to Promote Health across the Life Course*

*Several members of the HINet network are drafting a position paper integrating biology and economics in the context of evaluating the cost/effectiveness of a broad range of interventions over the life course. The position paper will provide a focus for the conference targeted at establishing several research groups that would carry out cost/effectiveness analyses of interventions as assessed in different surveys in the UK and US. The biggest analytical challenge that we face is the provision of an effective biology - economics interface and doing so at an appropriate level of detail in both directions. The initial position paper will provide an initial focus from which we anticipate considerable refinements and amendments will follow to be provided by HINet members as the new projects that will follow the Southampton meeting develop.*

## Group Activities, continued

### Identity and Personality (IP)

**Group Leaders:** Angela Duckworth, Armin Falk and Brent Roberts

**Group Description:** The Identity and Personality group seeks to understand the role of personality in all of its varied forms on shaping and perpetuating inequality and to understand the evolution of personality over the lifecycle.

- ❖ Website: <http://bfi.uchicago.edu/humcap/groups/ip/>
- ❖ Number of members: 46
- ❖ Launched: April 1, 2011
- ❖ First conference call: August 2, 2011

#### Upcoming activities:

- ❖ September 2012 – *tentative*, workshop before/after the European Association of Labour Economists meetings in Bonn, Germany; to depend on the schedules of HumCap members,
- ❖ Academic Year 2012-2013, monthly faculty seminar on self-control and time preference at University of Pennsylvania. Faculty to include neuroeconomists, psychologists and economists.
- ❖ Winter 2012 - new members, Drs. Antonio and Hanna Damasio, will hold a workshop at the University of Southern California, in conjunction with the *Brain and Creativity Institute*, to examine topics of personality, as well as early childhood development, from the neuroscience perspective.
- ❖ Spring, 2013 - conference on character, to include educators focused on intervention and measurement, attended by psychologists and economists.
- ❖ Two workshops in Europe: Behavioral Economics, Early Childhood Development
- ❖ Build the IP website to serve as a resource for data across disciplines
- ❖ Share members' new work to communicate across multiple disciplines
- ❖ Divide into topical subgroups to focus on specific issues

## Group Activities, continued

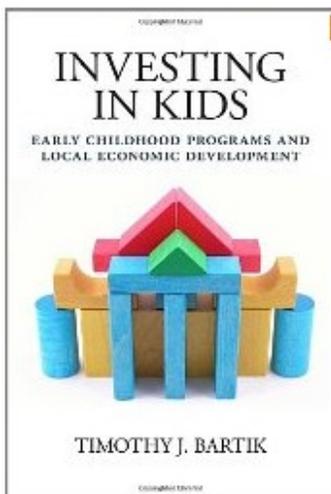
### Inequality: Measurement, Interpretation, and Policy (MIP)

**Group Leaders:** Harry Brighthouse, Robert Dugger, Steven Durlauf, and Scott Duke Kominers.

**Group Description:** The Inequality: Measurement, Interpretation, and Policy network consists of the recently merged Measuring and Interpreting Inequality (MIE) network and the Youth, Human Capital, and Economic Development (YHC) group. The Inequality: Measurement, Interpretation, and Policy network seeks to enhance the development of the theory and application of policy evaluation for those policies designed to reduce inequality and boost individual flourishing. Further, this new collaboration will enrich theoretical and empirical research by identifying dimensions of analysis that are particularly policy-relevant.

. Website: <http://bfi.uchicago.edu/humcap/groups/mip/>

- ❖ Number of members: 82
- ❖ Launched:
  - March 17, 2011 (Former MIE)
  - May 5, 2011 (Former YHC)
- ❖ Web conferences:
  - November 14, 2011 (Former MIE)
  - May 9, 2011 (Former YHC)



*This inaugural call featured author, Timothy Bartik, and his new book: Investing in Kids- Early Childhood Programs and Local Economic Development. The book's main point is that if a U.S. state government invests in high-quality early childhood programs, this can provide a payoff in providing benefits for state economic development that is the same or better per dollar invested than more traditional state economic development programs, which focus on business tax incentives.*

*The payoff from investing in high-quality early childhood programs is higher per capita income for state residents. The mechanism for achieving that payoff is primarily that these programs lead to higher quality labor-supply of former child participants. Over three-fifths of these former child participants in these early childhood programs will remain in the same state as adults. Therefore, these programs, if run well, will increase the quality of a state's labor supply. This higher quality labor supply will encourage the creation of more and better jobs in the state economy.*

**First working group meeting:** February 18, 2012 (Chicago)

Participants: 40

Presentations: 9

Conference Website:

[http://bfi.uchicago.edu/humcap/groups/mie/mie\\_inaugural\\_conference.shtml](http://bfi.uchicago.edu/humcap/groups/mie/mie_inaugural_conference.shtml)

## Group Activities, continued



### Recent events:

- ❖ May 12-13, 2012 - [\*Conference on Intergenerational Mobility\*](#), University of Chicago (Former MIE network)
- ❖ April 26, 2012 Conference call: *Early Childhood "Pay for Success" Social Impact Finance*, led by Robert Dugger (Former YHC network)
- ❖ July 1, 2012 - The Youth, Human Capital, and Economic Development network merged with the Measuring and Interpreting Inequality network
- ❖ While an effort of the entire HumCap project, the MIP network faculty are well represented at the Summer School on Socioeconomic Inequality.

### Upcoming Activities:

- ❖ Conference on the interface between philosophy and economics in the study of inequality
- ❖ Workshop on segregation
- ❖ Workshop on neighborhood effects

## Group Activities, continued

### Markets (M)

**Group Leaders:** Lance Lochner and Mariacristina De Nardi

**Group Description:** The Markets working group will investigate three broad areas of human capital financing over the lifecycle. It will: (i) develop and implement empirical analyses determining which individuals have trouble financing human capital investments, whether this has changed, and why; (ii) develop theoretical frameworks for analyzing when/why financial markets do not always extend 'enough' credit to some individuals, and the optimal role of government policy in these situations; and (iii) consider and study creative new ways to finance investments in large groups of individuals that appear to be poorly served by government and more traditional financial institutions (e.g. social impact bonds and impact investments).

- ❖ Website: <http://bfi.uchicago.edu/humcap/groups/m/>
- ❖ Number of members: 72
- ❖ Launched: April 16, 2011
- ❖ First web conference: June 30, 2011

**First conference:** January 5, 2012 (Chicago) *Financing Human Capital Investment*

Participants: 43

Presentations: 5

Conference website: [http://mfi.uchicago.edu/humcap/groups/m/m\\_events.shtml](http://mfi.uchicago.edu/humcap/groups/m/m_events.shtml)



#### Recent events:

- ❖ June 4-6, 2012 - *Financing Human Capital, Credit Constraints, and Market Frictions Workshop*, Federal Reserve Bank of Chicago



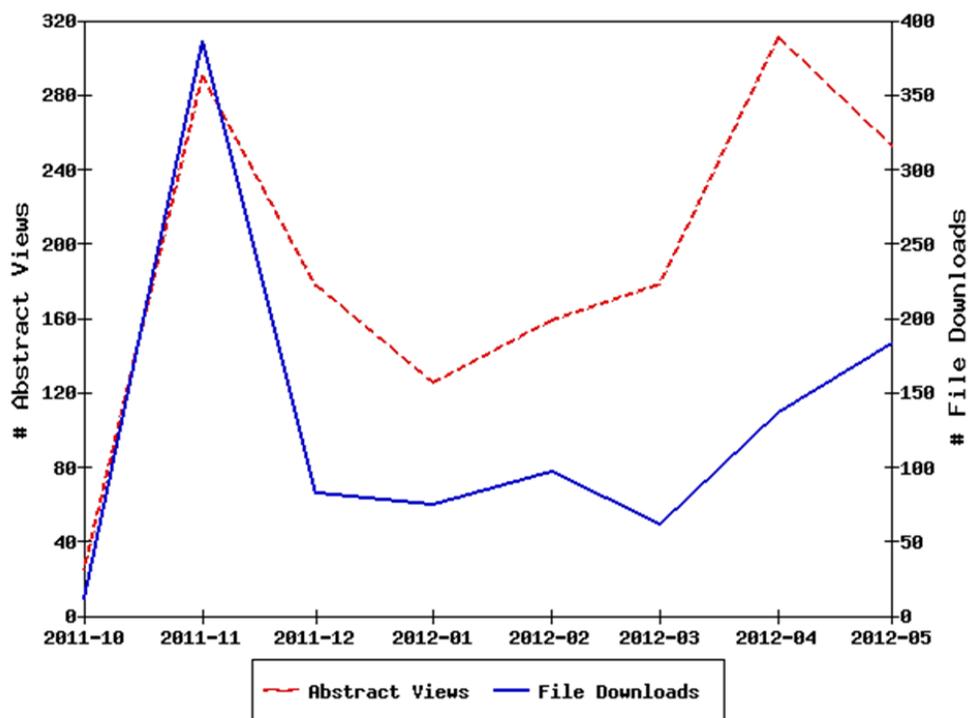
#### Upcoming activities:

- ❖ Summer 2013 - conference in Capri, Italy to examine Human Capital Investment, co-sponsored by the Innocenzo Gasparini Institute for Economic Research (IGIER-CEPR)

# Human Capital and Economic Opportunity Global Working Group

## Working Papers: Access Statistics

Series	File Downloads				Abstract Views			
	2012-06	3 months	12 months	Total	2012-06	3 months	12 months	Total
Human Capital and Economic Opportunity Working Group	95	414	1127	1127	207	770	1724	1724



### Access Statistics

Month	Downloads	Abstract Views
2011-10	12	25
2011-11	386	290
2011-12	82	177
2012-01	75	125
2012-02	97	159
2012-03	61	178
2012-04	136	311
2012-05	183	252
2012-06	95	207

## **Working Papers**

**[\(http://econpapers.repec.org/paper/hkawpaper/\)](http://econpapers.repec.org/paper/hkawpaper/)**

### **2011-001: Early Endowments, Education, and Health**

Gabriella Conti, James J. Heckman and Sergio Urzua

**Abstract:** This paper examines the early origins of observed health disparities by education. We determine the role played by cognitive, noncognitive and early health endowments, and we identify the causal effect of education on health and health-related behaviors. We show that family background characteristics, cognitive, noncognitive and health endowments developed as early as age 10 are important determinants of health disparities at age 30. We also show that not properly accounting for personality traits overestimates the importance of cognitive ability in determining later health. We show that selection explains more than half of the observed difference in poor health, depression and obesity, while education has an important causal effect in explaining differences in smoking rates. We also uncover significant gender differences. We then go beyond the current literature which usually estimates mean effects to compute distributions of treatment effects. We show how the health returns to education can vary also among individuals who are similar in their observed characteristics, and how a mean effect can hide gains and losses for different individuals. This analysis highlights the crucial role played by the early years in promoting health and the importance of prevention in the reduction of health disparities, and refocuses the role of education policy as health policy.

### **2011-002: The Effects of Educational Choices on Labor Market, Health, and Social Outcomes**

James J. Heckman, John Eric Humphries, Sergio Urzua and Gregory Veramendi

**Abstract:** Using a sequential model of educational choices, we investigate the effect of educational choices on labor market, health, and social outcomes. Unobserved endowments drive the correlations in unobservables across choice and outcome equations. We proxy these endowments with numerous measurements and account for measurement error in the proxies. For each schooling level, we estimate outcomes for labor market, health, and social outcome. This allows us to generate counter-factual outcomes for dynamic choices and a variety of policy and treatment effects. In our framework, responses to treatment vary among observationally identical persons and agents may select into the treatment on the basis of their responses. We find important effects of early cognitive and socio-emotional abilities on schooling choices, labor market outcomes, adult health, and social outcomes. Education at most levels causally produces gains on labor market, health, and social outcomes. We estimate the distribution of responses to education and find substantial heterogeneity on which agents act.

## Working Papers, continued

### 2011-003: A New Test of Borrowing Constraints for Education

Meta Brown, John Karl Scholz and Ananth Seshadri

**Abstract:** We discuss a simple model in which parents and children make investments in the children's education, investments for other purposes, and parents can transfer cash to their children. We show that for an identifiable set of parent-child pairs, parents will rationally under-invest in their child's education. For these parent-child pairs, additional financial aid will increase educational attainment. The model highlights an important feature of higher education finance, the "expected family contribution" (EFC) that is based on income, assets, and other factors. The EFC is neither legally guaranteed nor universally offered: Our model identifies the set of families that are disproportionately likely to not provide their full EFC. Using a common proxy for financial aid, we show, in data from the Health and Retirement Study, that financial aid increases the educational attainment of children whose families are disproportionately likely to under-invest in education. Financial aid has no effect on the educational attainment of children in other families. The theory and empirical evidence identifies a set of children who face quantitatively important borrowing constraints for higher education.

### 2011-004: A Sustainable Financing Model: High Quality Preschool for At-Risk Children

Janis Dubno

**Abstract:** There is growing state and national attention on addressing the achievement gap and increasing reading proficiency by 3rd grade. As state governments continue to face challenging fiscal conditions, there is a need to identify strategies that will lead to improved school readiness for at-risk children within state education budget constraints. The sustainable financing model for high quality preschool presented in this report is one strategy that could potentially increase the resources available to school districts to invest in high quality preschool programs for at-risk children.

### 2011-005: Belief in a Just World and Children's Test Scores

Angus Armstrong

**Abstract:** Parental beliefs, recognised by child psychologists as a causal influence on early development, are incorporated into a two-period model of human capital accumulation. In the first period parents transfer their beliefs, distinct from genes, to their child by signalling their "belief in a just world" or the perceived return to effort. The child responds by choosing effort, irrespective of the real world returns, which combines early with their genes to create their ability. This ability determines the rate of return to second period investment and final attainment. This is an ontological model, in the sense that children's beliefs influence the attainment they achieve. The identifying assumption is that parent beliefs are slow-moving and they are not conditioned on the child. If parents are credit constrained, then both beliefs and income determine attainment. Empirical analysis using the NCDS shows that beliefs are a strong predictor of early attainment and reduces the importance of parental income or wealth. This justifies effective mentoring programmes for children with problem parents.

## Working Papers, continued

### 2011-006: Borrowing Constraints, College Enrollment, and Delayed Entry

Matthew T. Johnson

**Abstract:** In this paper I propose and estimate a dynamic model of education, borrowing, and work decisions of high school graduates. I examine the effect of relaxing borrowing constraints on educational attainment by simulating increases in the amount students are permitted to borrow from government sponsored loan programs. My results indicate that borrowing constraints have a small impact on college completion: the removal of education related borrowing constraints increases degree completion by 1.1 percentage points. Tuition subsidies have much larger impacts. I find that increased subsidies for middle income households are the most cost effective method to raise degree completion.

### 2011-007: Cash Transfers, Behavioral Changes, and Cognitive Development in Early Childhood: Evidence from a Randomized Experiment

Karen Macours, Norbert Schady and Renos Vakis

**Abstract:** Cash transfer programs have become extremely popular in the developing world. There is a large literature on the effects of these programs on schooling, health and nutrition, but relatively little is known about possible impacts on child development. This paper analyzes the impact of a cash transfer program on cognitive development in early childhood in rural Nicaragua. Identification is based on random assignment. We show that children in households assigned to receive benefits had significantly higher levels of development nine months after the program began. There is no fadeout of program effects two years after the program had ended and transfers were discontinued. We show that the changes in child development we observe are unlikely to be a result of the cash component of the program alone.

### 2011-008: Disease and Development: The Role of Human Capital

Rodolfo Manuelli

**Abstract:** This paper presents a model of human capital accumulation that allows for feedback effects between the consequences and the likelihood of suffering from particular diseases and the decisions to invest in knowledge, both in the form of schooling and on-the-job training. I use a calibrated version of the model to estimate the long run impact of eradicating HIV/AIDS and malaria for a number of Sub-Saharan African countries. I find that the effect on output per worker can be substantial.

### 2011-009: Divorce Laws and Divorce Rate in the U.S.

Stefania Marcassa

**Abstract:** At the end of the 1960s, the U.S. divorce laws underwent major changes and the divorce rate more than doubled in all of the states. The new laws introduced unilateral divorce in most of the states and changes in divorce settlements in every state, such as property division, alimony transfers, and child custody assignments. The empirical literature so far has focused on the switch from consensual to unilateral divorce and found that this change cannot fully account for the increase in the divorce rate. Also, the divorce rate increased even in states where the decision remained consensual. In this paper, I consider the effects of other aspects of the legal change. I show that changes in divorce settlements provide economic incentives for both spouses

## Working Papers, continued

to agree to divorce. Moreover, I describe a mechanism that can explain the different change in divorce rate by age of couples. I solve and calibrate a model where agents differ by gender, and make decisions on their marital status, investment and labor supply. Under the new financial settlements, divorced men gain from a favorable division of property, while women gain from an increase in alimony and child support transfers. Since both of them are better off in the new divorce setting, the existing requirement of consent for divorce (consensual or unilateral) is no longer relevant. Results show that changes in divorce settlements account for a substantial amount of the increase in the aggregate divorce rate. I also find that the increase in divorce rate of young couples with children contributes the most to the overall increase, which is consistent with the data.

### **2011-010: East Asia vs. Latin America: TFP and Human Capital Policies**

Rodolfo E. Manuelli and Ananth Seshadri

**Abstract:** (None)

### **2011-011: Estimating the Effects of Friendship Networks on Health Behaviors of Adolescents**

Jason M. Fletcher and Stephen L. Ross

**Abstract:** Researchers typically examine peer effects by defining the peer group broadly (all classmates, schoolmates, neighbors) because of the lack of friendship information in many data sources as well as to enable the use of plausibly exogenous variation in peer group composition across cohorts in the same school. This paper estimates the effects of friend's health behaviors on own health behaviors for adolescents. A causal effect of friend's health behaviors is identified by comparing similar individuals who have the same friendship opportunities because they attend the same school and make the same friendship choices, under the assumption that the friendship choice reveals information about an individual's unobservables. We combine this identification strategy with a cross-cohort, within school design so that the model is identified based on across grade differences in the clustering of health behaviors within specific friendship options. This strategy allows us to separate the effect of friends behavior on own behavior from the effect of friends observables attributes on behavior, a key aspect of the reflection problem. We use a partial equilibrium model of friendship formation in order to derive the conditions under which our identification strategy will provide consistent estimates, and the key assumption required for our strategy to be feasible is supported by the empirical patterns of across cohort variation that we observe in our data. Our results suggest that friendship network effects are important in determining adolescent tobacco and alcohol use, but are over-estimated in specifications that do not fully take into account the endogeneity of friendship selection by 15-25%.

### **2011-012: Fatter Attraction: Anthropometric and Socioeconomic Matching on the Marriage Market**

Pierre-André Chiappori, Sonia Oreffice and Climent Quintana-Domeque

**Abstract:** We construct a matching model on the marriage market along more than one characteristic, where individuals have preferences over physical attractiveness and socioeconomic characteristics that can be summarized by a one-dimensional index combining these various

## Working Papers, continued

attributes. We show that under a (testable) separability assumption, the indices are ordinally identified. We estimate the model using data from the PSID. Our separability tests do not reject. We find that among men, a 10% increase in BMI can be compensated by a higher wage of around 3%. Similarly, for women, an additional year of education may compensate up to three BMI units.

### **2011-013: Gender Differences in Executive Compensation and Job Mobility**

George-Levi Gayle, Limor Golan and Robert Miller

**Abstract:** Fewer women than men become executive managers. They earn less over their careers, hold more junior positions, and exit the occupation at a faster rate. We compiled a large panel data set on executives and formed a career hierarchy to analyze mobility and compensation rates. We find that, controlling for executive rank and background, women earn higher compensation than men, experience more income uncertainty, and are promoted more quickly. Amongst survivors, being female increases the chance of becoming CEO. Hence, the unconditional gender pay gap and job-rank differences are primarily attributable to female executives exiting at higher rates than men in an occupation where survival is rewarded with promotion and higher compensation.

### **2011-014: Health Effects on Children's Willingness to Compete**

Björn Bartling, Ernst Fehr and Daniel Schunk

**Abstract:** The formation of human capital is important for a society's welfare and economic success. Recent literature shows that child health can provide an important explanation for disparities in children's human capital development across different socio-economic groups. While this literature focuses on cognitive skills as determinants of human capital, it neglects non-cognitive skills. We analyze data from economic experiments with preschoolers and their mothers to investigate whether child health can explain developmental gaps in children's non-cognitive skills. Our measure for children's noncognitive skills is their willingness to compete with others. Our findings suggest that health problems are negatively related to children's willingness to compete and that the effect of health on competitiveness differs with socio-economic background. Health has a strongly negative effect in our sub-sample with low socioeconomic background, whereas there is no effect in our sub-sample with high socio-economic background.

### **2011-015: How the Timing of Grade Retention Affects Outcomes: Identification and Estimation of Time-Varying Treatment Effects**

Jane Cooley Fruehwirth, Salvador Navarro and Yuya Takahashi

**Abstract:** Increasingly, grade retention is viewed as an important alternative to social promotion, yet evidence to date is unable to disentangle how the effect of grade retention varies by abilities and over time. The key challenge is differential selection of students into retention across grades and by abilities. Because existing quasi-experimental methods cannot address this question, we develop a new strategy that is a hybrid between a control function and a generalization of the fixed effects approach. Applying our method to nationally-representative, longitudinal data, we find evidence of dynamic selection into retention and that the treatment effect of retention varies considerably across grades and unobservable abilities of students. Our strategy can be applied more broadly to many time-varying or multiple treatment settings.

## Working Papers, continued

### 2011-016: Human Capital as an Asset Class: Implications from a General Equilibrium Model

Miguel Palacios

**Abstract:** This paper derives the value and the risk of aggregate human capital in a dynamic equilibrium production model with Duffie-Epstein preferences. In this setting the expected return of a risky asset is a function of the asset's covariance with consumption growth and a weighted average of the asset's covariance with aggregate wage growth and aggregate financial returns. A calibration of the model matching the historical ratio of wages to consumption in the United States (85% between 1950 and 2007) suggests that the weight of human capital in aggregate wealth is 87%. The results of the calibration follow from the relative size of wages and dividends in the economy and the dynamics of the ratio of wages to consumption, which are counter-cyclical. As a result, human capital is less risky than equity, implying that the risk premium of human capital is lower than that of equity.

### 2011-017: Matching with a Handicap: The Case of Smoking in the Marriage Market

Pierre-André Chiappori, Sonia Oreffice and Climent Quintana-Domeque

**Abstract:** We develop a matching model on the marriage market, where individuals have preferences over the smoking status of potential mates, and over their socioeconomic quality. Spousal smoking is bad for non-smokers, but it is neutral for smokers, while individuals always prefer high socioeconomic quality. Furthermore, there is a gender difference in smoking prevalence, there being more smoking men than smoking women for all education levels, so that smoking women and non-smoking men are in short supply. The model generates clear cut conditions regarding matching patterns. Using CPS data and its Tobacco Use Supplements for the years 1996 to 2007, and proxying socioeconomic status by educational attainment, we find that these conditions are satisfied. There are fewer "mixed" couples where the wife smokes than vice-versa, and matching is assortative on education within smoking types of couples. Among non-smoking wives those with smoking husbands have on average 0.14 fewer years of completed education than those with non-smoking husbands. Finally, and somewhat counterintuitively, we find that, as theory predicts, among smoking husbands, those who marry smoking wives have on average 0.16 more years of completed education than those with non-smoking wives.

### 2011-018: Promoting School Competition through School Choice: A Market Design Approach

John William Hatfield, Fuhito Kojima and Yusuke Narita

**Abstract:** We study the effect of different school choice mechanisms on schools' incentives for quality improvement. To do so, we introduce the following criterion: A mechanism respects improvements of school quality if each school becomes weakly better off whenever that school becomes more preferred by students. We first show that no stable mechanism, or mechanism that is Pareto efficient, for students (such as the Boston and top trading cycles mechanisms), respects improvements of school quality. Nevertheless, for large school districts, we demonstrate that any stable mechanism approximately respects improvements of school quality; by contrast, the Boston and top trading cycles mechanisms fail to do so. Thus a stable mechanism may provide

## Working Papers, continued

better incentives for schools to improve themselves than the Boston and top trading cycles mechanisms.

### **2011-019: Salivary Cortisol Mediates Effects of Poverty and Parenting on Executive Functions in Early Childhood**

Clancy Blair, Douglas A. Granger, Michael Willoughby, Roger Mills-Koonce, Martha Cox, Mark T. Greenberg, Katie T. Kivlighan, Christine K. Fortunato and FLP Investigators

**Abstract:** In a predominantly low-income population-based longitudinal sample of 1,292 children followed from birth, higher level of salivary cortisol assessed at ages 7, 15, and 24 months was uniquely associated with lower executive function ability and to a lesser extent IQ at age 3 years. Measures of positive and negative aspects of parenting and household risk were also uniquely related to both executive functions and IQ. The effect of positive parenting on executive functions was partially mediated through cortisol. Typical or resting level of cortisol was increased in African American relative to White participants. In combination with positive and negative parenting and household risk, cortisol mediated effects of African American ethnicity, income-to-need, and maternal education on child cognitive ability.

### **2011-020: Sources of Lifetime Inequality**

Mark Huggett, Gustavo Ventura and Amir Yaron

**Abstract:** Is lifetime inequality mainly due to differences across people established early in life or to differences in luck experienced over the working lifetime? We answer this question within a model that features idiosyncratic shocks to human capital, estimated directly from data, as well as heterogeneity in ability to learn, initial human capital, and initial wealth. We find that, as of age 23, differences in initial conditions account for more of the variation in lifetime earnings, lifetime wealth and lifetime utility than do differences in shocks received over the working lifetime.

### **2011-021: Taxation and Labor Force Participation: The Case of Italy**

Fabrizio Colonna and Stefania Marcassa

**Abstract:** Italy has the lowest labor force participation of women among OECD countries. Moreover, the participation rate of married women is positively correlated to their husbands' income. We show that a high tax schedule together with tax credits and transfers raise the burden of two-earner households, generating disincentives to work. We estimate a structural labor supply model for women, and use the estimated parameters to simulate the effects of alternative revenue-neutral tax systems. We find that joint taxation implies a drop in the participation rate. Conversely, working tax credit and gender-based taxation boost it, with the effects of the former concentrated on low educated women.

### **2011-022: The Impact of Family Income on Child Achievement: Evidence from the Earned Income Tax Credit**

Gordon B. Dahl and Lance Lochner

**Abstract:** Past estimates of the effect of family income on child development have often been plagued by endogeneity and measurement error. In this paper, we use an instrumental variables strategy to estimate the causal effect of income on children's math and reading achievement. Our

## Working Papers, continued

identification derives from the large, non-linear changes in the Earned Income Tax Credit (EITC) over the last two decades. The largest of these changes increased family income by as much as 20%, or approximately \$2,100, between 1993 and 1997. Using a panel of roughly 4,500 children matched to their mothers from National Longitudinal Survey of Youth datasets allows us to address problems associated with unobserved heterogeneity, endogenous transitory income shocks, and measurement error in income. Our baseline estimates imply that a \$1,000 increase in income raises combined math and reading test scores by 6% of a standard deviation in the short-run. Test gains are larger for children from disadvantaged families and are robust to a variety of alternative specifications.

### **2011-023: The Intergenerational Transmission of Cognitive and Non-Cognitive Skills during Adolescence and Young Adulthood**

Silke Anger

**Abstract:** This study examines cognitive and non-cognitive skills and their transmission from parents to children as one potential candidate to explain the intergenerational link of socio-economic status. Using representative data from the German Socio-Economic Panel Study, we contrast the impact of parental cognitive abilities (fluid intelligence, crystallized intelligence) and personality traits (Big Five, locus of control) on their adolescent and young adult children's traits with the effects of parental background and childhood environment. While for both age groups intelligence and personal traits were found to be transmitted from parents to their children, there are large discrepancies with respect to the age group and the type of skill. The intergenerational transmission effect was found to be relatively small for adolescent children, with correlations between 0.12 and 0.24, whereas the parent-child correlation in the sample of adult children was between 0.19 and 0.27 for non-cognitive skills, and up to 0.56 for cognitive skills. Thus, the skill gradient increases with the age of the child. Furthermore, the skill transmission effects are virtually unchanged by controlling for childhood environment or parental education, suggesting that the socio-economic status of the family does not play a mediating role in the intergenerational transmission of intelligence and personality traits. The finding that non-cognitive skills are not as strongly transmitted as cognitive skills, suggests that there is more room for external (non-parental) influences in the formation of personal traits. Hence, it is more promising for policy makers to focus on shaping children's noncognitive skills to promote intergenerational mobility. Intergenerational correlations of cognitive skills in Germany are roughly the same or slightly stronger than those found by previous studies for other countries with different institutional settings. Intergenerational correlations of non-cognitive skills revealed for Germany seem to be considerably higher than the ones found for the U.S. Hence, skill transmission does not seem to be able to explain cross-country differences in socio-economic mobility.

### **2011-024: The Nature of Credit Constraints and Human Capital**

Lance Lochner and Alexander Monge-Naranjo

**Abstract:** We develop a human capital model with borrowing constraints explicitly derived from government student loan (GSL) programs and private lending under limited commitment. The model helps explain the persistent strong positive correlation between ability and schooling in the U.S., as well as the rising importance of family income for college attendance. It also explains the

## Working Papers, continued

increasing share of undergraduates borrowing the GSL maximum and the rise in student borrowing from private lenders. Our framework offers new insights regarding the interaction of government and private lending as well as the responsiveness of private credit to economic and policy changes.

### **2011-025: The Structure of Temperament and Personality Traits: A Developmental Perspective**

Rebecca L. Shiner and Colin G. DeYoung

**Abstract:** In this chapter, we articulate a developmental perspective on personality traits from early childhood through adulthood. In the first section, we address two topics that are fundamental in defining the most important traits at each point in the life span: the relationship between temperament and personality and the methods used to ascertain the structure of traits in the temperament and personality research traditions. We argue in this section that temperament and personality are different ways of describing the same basic traits, with temperament research primarily focused on early-emerging individual differences and personality research focused on individual differences that appear later in childhood and continue into adulthood. In the second section, we describe the current status of the most prominent models of temperament, as well as the most widely-accepted personality trait model, the Big Five. In the third section, we articulate a structural model that integrates contemporary findings on temperament and personality traits from early childhood through adulthood. We use the Big Five trait structure, along with the trait of activity level, to organize this taxonomy. In the fourth section, we discuss the current research on the psychological and biological processes that underlie individual differences in the Big Five traits in childhood and adulthood. In the final sections, we offer concluding thoughts on the nature of personality trait development and suggestions for future research. This is an exciting time in the study of personality in part because of the marked progress in uncovering the basic structure of traits across the lifespan.

### **2011-026: The Time of the Infant, Parent-Infant Desynchronization and Attachment Disorganization, or How Long Does it Take for a Preventive Action to be Effective?**

Antoine Guedeney, Nicole Guedeney, Susana Tereno, Romain Dugravier, Tim Greacen, Bertrand Welniarz, Thomas Saias and CAPEDEP Study Group

**Abstract:** The classical version of early development by psychoanalysis has been largely challenged by developmental psychology, and particularly by attachment theory. Psychopathology appears to be much more linked with a sequence of events involving interpersonal relationship disorders rather than with intra-psychic conflicts, as hypothesised by drive theory. Establishing synchrony between parent and infant is probably one of the major tasks of the first year of life. Attachment theory appears to be the modern paradigm to understand how the several types of answers from caregivers to stressing situations in the infant give way to different emotional and cognitive regulatory strategies, with impact on the effectiveness of the stress buffer systems. This paper presents what we can figure out about what is time to the infant, the importance of synchronization within infant and caregiver, the key concept of attachment disorganization, the concept of sustained social withdrawal as a defence mechanism and an alarm

## Working Papers, continued

signal when synchronisation fails, and finally the key issue of conditions for effectiveness of early parent- infant preventive intervention.

### 2011-027: Wage Premia in Employment Clusters: How Important is Worker Heterogeneity?

Shihe Fu and Stephen Ross

**Abstract:** This paper tests whether the correlation between wages and the spatial concentration of employment can be explained by unobserved worker productivity differences. Residential location is used as a proxy for a worker's unobserved productivity, and average workplace commute time is used to test whether location-based productivity differences are compensated away by longer commutes. Analyses using confidential data from the 2000 Decennial Census Long Form find that the agglomeration estimates are robust to comparisons within residential location and that the estimates do not persist after controlling for commuting costs suggesting that the productivity differences across locations are not due to productivity differences across individuals.

### 2011-028: What Explains Schooling Differences Across Countries?

Juan Carlos Cordoba and Marla Ripoll

**Abstract:** This paper provides a theory that explains the cross-country distribution of average years of schooling, as well as the so called human capital premium puzzle. In our theory, credit frictions as well as differences in access to public education, fertility and mortality turn out to be the key reasons why schooling differs across countries. Differences in growth rates and in wages are second order.

### 2011-029: Women's Rights and Development

Raquel Fernandez

**Abstract:** Why has the expansion of women's economic and political rights coincided with economic development? This paper investigates this question, focusing on a key economic right for women: property rights. The basic hypothesis is that the process of development (i.e., capital accumulation and declining fertility) exacerbated the tension in men's conflicting interests as husbands versus fathers, ultimately resolving them in favor of the latter. As husbands, men stood to gain from their privileged position in a patriarchal world whereas, as fathers, they were hurt by a system that afforded few rights to their daughters. The model predicts that declining fertility would hasten reform of women's property rights whereas legal systems that were initially more favorable to women would delay them. The theoretical relationship between capital and the relative attractiveness of reform is non-monotonic but growth inevitably leads to reform. I explore the empirical validity of the theoretical predictions by using cross-state variation in the US in the timing of married women obtaining property and earning rights between 1850 and 1920.

## Working Papers, continued

### 2011-030: Group Decision Making with Uncertain Outcomes: Unpacking Child-Parent Choices of High School Tracks

Pamela Giustinelli

**Abstract:** Predicting group decisions with uncertain outcomes involves the empirically difficult task of disentangling individual decision makers' beliefs and preferences over outcomes' states from the group's decision rule. This paper addresses the problem within the context of a consequential family decision concerning the high school track of adolescent children in presence of curricular stratification. The paper combines novel data on children's and parents' probabilistic beliefs, their stated choice preferences, and families' decision rules with standard data on actual choices to estimate a simple model of curriculum choice featuring both uncertainty and heterogeneous cooperative-type decisions. The model's estimates are used to quantify the impact on curriculum enrollment of policies affecting family members' expectations via awareness campaigns, publication of education statistics, and changes in curricular specialization and standards. The latter exercise reveals that identity of policy recipients--whether children, parents, or both--matters for enrollment response, and underlines the importance of incorporating information on decision makers' beliefs and decision rules when evaluating policies.

### 2011-031: Intrahousehold Distribution and Child Poverty: Theory and Evidence from Côte d'Ivoire

Olivier Bargain, Olivier Donni and Prudence Kwenda

**Abstract:** Poverty measures in developing countries often ignore the distribution of resources within families and the gains from joint consumption. In this paper, we extend the collective model of household consumption to recover mother's, father's and children's shares together with economies of scale, using the observation of adult-specific goods and an extended version of the Rothbarth method. The application on data from Côte d'Ivoire shows that children command a reasonable fraction of household resources, though not enough to avoid a very large extent of child poverty compared to what is found in traditional measures based on per capita expenditure. We find no significant evidence of discrimination against girls, and educated mothers have more command over household resources. Baseline results on children's shares are robust to using alternative identifying assumptions, which consolidates a general approach grounded on a flexible version of the Rothbarth method. Individual measures of poverty show that parents are highly compensated by the scale economies due to joint consumption.

### 2011-032: On the Importance of Household Production in Collective Models: Evidence from U.S. Data

Olivier Donni and Eleonora Matteazzi

**Abstract:** The present paper develops a theoretical model of labor supply with domestic production. It is shown that the structural components of the model can be identified without using a distribution factor, thereby generalizing the initial results of Apps and Rees (1997) and Chiappori (1997). The theoretical model is then estimated using the ATUS data. The empirical results are compared to those obtained from a similar model without domestic production.

## Working Papers, continued

### 2011-033: Caught in the Bulimic Trap? Persistence and State Dependence of Bulimia among Young Women

Michelle Goeree, John Ham and Daniela Iorio

**Abstract:** Eating disorders are an important and growing health concern, and bulimia nervosa (BN) accounts for the largest fraction of eating disorders. Health consequences of BN are substantial and especially serious given the increasingly compulsive nature of the disorder. However, remarkably little is known about the mechanisms underlying the persistent nature of BN. Using a unique panel data set on young women and instrumental variable techniques, we document that unobserved heterogeneity plays a role in the persistence of BN, but strikingly up to two thirds is due to true state dependence. Our findings have important implications for public policy since they suggest that the timing of the policy is crucial: preventive educational programs should be coupled with more intense (rehabilitation) treatment at the early stages of bingeing and purging behaviors. Our results are robust to different model specifications and identifying assumptions.

### 2011-034: Race, Social Class, and Bulimia Nervosa

Michelle S. Goeree, John C. Ham and Daniela Iorio

**Abstract:** In this paper we explore a serious eating disorder, bulimia nervosa (BN), which afflicts a surprising number of girls in the US. We challenge the long-held belief that BN primarily affects high income White teenagers, using a unique data set on adolescent females evaluated regarding their tendencies towards bulimic behaviors independent of any diagnoses or treatment they have received. Our results reveal that African Americans are more likely to exhibit bulimic behavior than Whites; as are girls from low income families compared to middle and high income families. We use another data set to show that who is diagnosed with an eating disorder is in accord with popular beliefs, suggesting that African American and low-income girls are being under-diagnosed for BN. Our findings have important implications for public policy since they provide direction to policy makers regarding which adolescent females are most at risk for BN. Our results are robust to different model specifications and identifying assumptions.

### 2011-035: Will You Still Want Me Tomorrow? The Dynamics of Families' Long-Term Care Arrangements

Michelle Goeree, Bridget Hiedemann and Steven Stern

**Abstract:** We estimate dynamic models of elder-care arrangements using data from the Assets and Health Dynamics among the Oldest Old Survey. We model the use of institutional care, formal home health care, care provided by a child, and care provided by a spouse in the selection of each care arrangement, the primary arrangement, and hours in each arrangement. Our results indicate that both observed heterogeneity and true state dependence play roles in the persistence of care arrangements. We find that positive state dependence (i.e., inertia) dominates caregiver burnout, and that formal care decisions depend on the cost and quality of care.

## Working Papers, continued

### 2011-036: Credit Constraints in Education

Lance Lochner and Alexander Monge-Naranjo

**Abstract:** We review studies of the impact of credit constraints on the accumulation of human capital. Evidence suggests that credit constraints are increasingly important for schooling and other aspects of households' behavior. We highlight the importance of early childhood investments, since their response largely determines the impact of credit constraints on the overall lifetime acquisition of human capital. We also review the intergenerational literature and examine the macroeconomic impacts of credit constraints on social mobility and the income distribution. A common limitation across all areas of the human capital literature is the imposition of ad hoc constraints on credit. We propose a more careful treatment of the structure of government student loan programs as well as the incentive problems underlying private credit. We show that endogenizing constraints on credit for human capital helps explain observed borrowing, schooling, and default patterns and offers new insights about the design of government policy.

### 2011-037: The Changing Role of Family Income and Ability in Determining Educational Achievement

Philippe Belley and Lance Lochner

**Abstract:** This paper uses data from the 1979 and 1997 National Longitudinal Survey of Youth cohorts (NLSY79 and NLSY97) to estimate changes in the effects of ability and family income on educational attainment for youth in their late teens during the early 1980s and early 2000s. Cognitive ability plays an important role in determining educational outcomes for both NLSY cohorts, while family income plays little role in determining high school completion in either cohort. Most interestingly, we document a dramatic increase in the effects of family income on college attendance (particularly among the least able) from the NLSY79 to the NLSY97. Family income has also become a much more important determinant of college 'quality' and hours/weeks worked during the academic year (the latter among the most able) in the NLSY97. Family income has little effect on college delay in either sample. To interpret our empirical findings on college attendance, we develop an educational choice model that incorporates both borrowing constraints and a 'consumption' value of schooling - two of the most commonly invoked explanations for a positive family income-schooling relationship. Without borrowing constraints, the model cannot explain the rising effects of family income on college attendance in response to the sharply rising costs and returns to college experienced from the early 1980s to early 2000s: the incentives created by a 'consumption' value of schooling imply that income should have become less important over time (or even negatively related to attendance). Instead, the data are more broadly consistent with the hypothesis that more youth are borrowing constrained today than were in the early 1980s.

### 2011-038: Exploring the Impacts of Public Childcare on Mothers and Children in Italy: Does Rationing Play a Role?

Ylenia Brilli, Daniela Del Boca and Chiara Pronzato

**Abstract:** This paper investigates the effects of public childcare availability in Italy on mothers' working status and children's scholastic achievements. We use a newly available dataset

## Working Papers, continued

containing individual standardized test scores of pupils attending second grade of primary school in 2008-09 in conjunction with data on public childcare availability. Public childcare coverage in Italy is scarce (12.7 percent versus the OECD average of 30 percent) and the service is "rationed": each municipality allocates the available slots according to eligibility criteria. We contribute to the existing literature taking into account rationing in public childcare access and the functioning of childcare market. Our estimates indicate that childcare availability has positive and significant effects on both mothers' working status and children's language test scores. The effects are stronger when the degree of rationing is high and for low educated mothers and children living in lower income areas of the country.

### **2011-039: Household Choices and Child Development**

Daniela Del Boca, Christopher Flinn and Matthew Wiswall

**Abstract:** The growth in labor market participation among women with young children has raised concerns about the potential negative impact of the mother's absence from home on child outcomes. Recent data show that mother's time spent with children has declined in the last decade, while the indicators of children's cognitive and noncognitive outcomes have worsened. The objective of our research is to estimate a model of the cognitive development process of children nested within an otherwise standard model of household life cycle behavior. The model generates endogenous dynamic interrelationships between the child quality and employment processes in the household, which are found to be consistent with patterns observed in the data. The estimated model is used to explore the effects of schooling subsidies and employment restrictions on household welfare and child development.

### **2011-040: Supporting a Culture of Evidence-Based Practice and Continuous Program Improvement: A Staged Approach to Implementing and Studying International Early Childhood Development Programs**

Kimberly Boller, Christine Ross and Diane Paulsell

**Abstract:** This concept paper proposes a four-stage approach to in-country/region ECD program development, selection, and inquiry designed to build the evidence base required to guide program and policy decisions. The foundation of the approach is a strengths-based continuous program improvement framework. Feedback loops would be tied to indicators of program fidelity, family participation, and outcomes. This approach includes developing a partnership between stakeholders and researchers at each stage (a community of learners). The proposed staged approach builds on the medical model of clinical research on innovative treatments and drug therapies as well as design options for evaluating program enhancements to the federal Head Start program in the United States (Ross et al., 2005).

### **2011-041: A Registry of International Early Childhood Development Research: Essential Infrastructure Supports for Knowledge Management, Collaboration, and Efficient Translation of Science to Practice**

Kimberly Boller

**Abstract:** To design studies that fill gaps in existing knowledge and build on innovations in research and practice, international early childhood researchers studying interventions and

## Working Papers, continued

policies targeting early childhood development (ECD) need to sort quickly through the existing evidence. Researchers have no systematic resources or tools to manage the vast amount of existing knowledge, document which interventions have been tried in a given country/region, and support collaboration among groups of researchers with similar interests. Duplication of effort within and across countries and regions is a drain on the limited research funds available and slows down the translation of intervention science to practice. The publication bias toward studies that find significant results also impedes knowledge development and transfer. There is no way to learn about what has been tried in international ECD intervention programs and failed to affect targeted outcomes. Inefficiencies based on lack of systems that document scientific progress impede the provision of effective interventions to children in need. An international registry of early childhood development (ECD) intervention research and evaluation projects can serve as an important first step in filling this resource gap.

### **2011-042: A Working Document on the Abecedarian Educational Program and its Probable Relationships to Child Outcome Behaviors**

Joseph Sparling

**Abstract:** The Abecedarian Approach is a suite of teaching and learning strategies that were developed for the Abecedarian Studies (the Abecedarian Project, CARE, and IHDP), three longitudinal investigations to test the power of high quality early childhood services to improve the later academic achievement of children from at-risk and under-resourced families.

### **2012-001: Wage and Earnings Profiles at Older Ages**

Maria Casanova

**Abstract:** The inverted U shape of the lifetime wage profile is frequently taken to be a stylized fact. This implies a smooth decline in wages as workers approach retirement. Instead, this paper shows that the hourly wage of the typical older worker increases slightly with age for as long as he is employed full time. It declines discretely only when he enters partial retirement, a transitional period characterized by the prevalence of part-time work, and remains mostly at thereafter. That is, the wage path at older ages is best represented by a step function. The smoothly-declining profile often found in the literature is the result of aggregation over individuals who enter partial retirement at different ages. This conclusion is robust to controlling for self-selection into partial and full retirement. More importantly, the transition out of full time work is a choice for most workers, and the subsequent wage change is endogenously determined. While standard labor supply models would rationalize the reduction in hours worked upon partial retirement as a response to an exogenously declining wage trajectory, the evidence presented in the paper indicates instead that workers choose to trade more leisure for a lower hourly wage in a context in which a better paid, full-time job is available. In other words, wages and hours are jointly determined at older ages. These findings have important implications for the analysis of saving and labor supply decisions over the life cycle.

## Working Papers, continued

### 2012-002: Equilibrium Tuition, Applications, Admissions and Enrollment in the College Market

Chao Fu

**Abstract:** I develop and estimate a structural equilibrium model of the college market. Students, having heterogeneous abilities and preferences, make college application decisions, subject to uncertainty and application costs. Colleges, observing only noisy measures of student ability, choose tuition and admissions policies to compete for more able students. Tuition, applications, admissions and enrollment are joint outcomes from a subgame perfect Nash equilibrium. I estimate the structural parameters of the model using data from the National Longitudinal Survey of Youth 1997, via a three-step procedure to deal with potential multiple equilibria. In counterfactual experiments, I use the model first to examine the extent to which college enrollment can be increased by expanding the supply of colleges, and then to assess the importance of various measures of student ability.

### 2012-003: Temperament in the Classroom

Angela Lee Duckworth and Kelly M. Allred

**Abstract:** (None)

### 2012-004: School Poverty Concentration and Kindergarten Students' Numerical Skills

Thomas B. Hoffer and Shobha Shagle

**Abstract:** (None)

### 2012-005: Capital Punishment and Deterrence: Understanding Disparate Results

Steven N. Durlauf, Chao Fu and Salvador Navarro

**Abstract:** Objectives: Investigate how different model assumptions have driven the conflicting findings in the literature on the deterrence effect of capital punishment. Methods: The deterrence effect of capital punishment is estimated across different models that reflect the following sources of model uncertainty: 1) the uncertainty about the probability model generating the aggregate murder rate equation, 2) the uncertainty about the determinants of individual's choice of committing a murder or not, 3) the uncertainty about state level heterogeneity, and 4) the uncertainty about the exchangeability between observations with zero murder case and those with positive murder cases. Results: First, the estimated deterrence effects exhibit great dispersion across models. Second, a particular subset of models--linear models with constant coefficients--always predicts a positive deterrence effect. All other models predict negative deterrence effects. Third, the magnitudes of the point estimates of deterrence effect differ mainly because of the choice of linear versus logistic specifications. Conclusions: The question about the deterrence effect of capital cannot be answered independently from substantive assumptions on what determines individual behavior. The need for judgment cannot be escaped in empirical work.

## Working Papers, continued

### 2012-006: Children's and Parents' Time-Use Choices and Cognitive Development during Adolescence

Daniela Del Boca, Chiara Monfardini, Cheti Nicoletti

**Abstract:** While a large literature has focused on the impact of parental investments on child cognitive development, very little is known about the children's own investments. Information on how children use their time separately from parents is probably less informative for babies and toddlers, but it becomes more important in later stages of life, such as adolescence, when children start to take decisions independently. The objective of this research is to explore and compare the impacts of time investments by parents and children on child cognitive outcomes. By using the Child Development Supplement of the PSID (Panel Study of Income Dynamics) 1997-2007 we show that own time investments have a significant effect on cognitive outcomes of children aged 11-15, while mothers' time inputs appear less important. For younger children, the impact of mothers' time is greater.

### 2012-007: Early Childhood "Pay-For-Success" Social Impact Finance: A PKSE Bond Example to Increase School Readiness and Reduce Special Education Costs

Robert Dugger and Robert Litan

**Abstract:** Experts have long believed that the high economic returns on sound early childhood programs means it should be possible to pay for such programs with so-called "invest-in-kid bonds", a form of social impact finance that would pay income and repay invested capital from the proceeds of the economic gains from high-quality early childhood programs. The field of "pay for success" social impact finance has been evolving for over a decade, and transactions are taking many forms. This paper reviews the economic research, statutory and contractual, and community involvement standards that would need to be met in order to apply social impact finance in early childhood programs. Particular attention is given to implementation challenges in jurisdictionally and demographically complex urban regions. To aid understanding, a specific program concept is examined in detail. The paper presents an operational example of how social impact bonds might be used to pay for early learning to increase school readiness, paid for by lower public school special education costs. These pay for pre-k to reduce special-ed costs are called PKSE ("peek see") bonds. The example program is based on the 2009 Pennsylvania Pre-K Counts study of 10,000 children and uses data from the Bethlehem Area School District in PA's Lehigh Valley.

### 2012-008: Primate Evidence on the Late Health Effects of Early Life Adversity

Gabriella Conti, Christopher Hansman, James J. Heckman, Matthew F. X. Novak, Angela Ruggiero and Stephen J. Suomi

**Abstract:** This paper exploits a unique ongoing experiment to analyze the effects of early rearing conditions on physical and mental health in a sample of rhesus monkeys (*Macaca mulatta*). We analyze the health records of 231 monkeys which were randomly allocated at birth across three rearing conditions: Mother Rearing, Peer Rearing, and Surrogate Peer Rearing. We show that the lack of a secure attachment relationship in the early years engendered by adverse rearing conditions has detrimental long-term effects on health which are not compensated by a normal social environment later in life.

## Working Papers, continued

### 2012-009: The Money Value of a Man

Mark Huggett and Greg Kaplan

**Abstract:** This paper posits a notion of the value of an individual's human capital and the associated return on human capital. These concepts are examined using U.S. data on male earnings and financial asset returns. We decompose the value of human capital into a bond, a stock and a residual value component. We find that (1) the bond component of human capital is larger than the stock component at all ages, (2) the value of human capital is far below the value implied by discounting earnings at the risk-free rate, (3) mean human capital returns exceed stock returns early in life and decline with age and (4) human capital returns and stock returns have a small positive correlation over the working lifetime.

### 2012-010: Gender and Well-being around the World: Some Insights from the Economics of Happiness

Carol Graham and Soumya Chattopadhyay

**Abstract:** A wide body of research explores gender differences in welfare outcomes, and their implications for economic development. We aim to contribute to this work by looking at differences in reported well-being (happiness) across genders around the world. We examine differences across genders within countries, comparing age, income, education, and urban versus rural cohorts, and explore how those same within country differences vary in countries of different development levels. Our findings, based also on previous research on well-being more generally, highlight some consistent patterns across genders, with women typically happier than men in the world as a whole, with the exception of the poorest sample of countries. We also find substantial differences in the standard relationships between key variables - such as marriage - and happiness when we take differences in gender rights into account. Our research also suggests that cross-gender differences in well-being are affected by the same empirical and methodological factors that drive the paradoxes underlying the income and happiness debates more generally, with norms and expectations playing an important mediating role. Women's happiness seems to fall - at least in the short-term - when there are changes/improvements in gender rights, in keeping with our more general findings on the drops in reported well-being that are often associated with the process of acquiring agency.

### 2012-011: Lifetime Labor Supply and Human Capital Investments

Rodolfo Manuelli, Ananth Seshadri and Yongseok Shin

**Abstract:** We develop a model of retirement and human capital investment to study the effects of tax and retirement policies. Workers choose the supply of raw labor (career length) and also the human capital embodied in their labor. Our model explains a significant fraction of the US-Europe difference in schooling and retirement. The model predicts that reforms of the European retirement policies modeled after the US can deliver 15-35 percent gains in per-worker output in the long run. Increased human capital investment in and out of school accounts for most of the gains, with relatively small changes in career length.

### 2012-012: Behavioral Fair Social Choice

Marc Fleurbaey and Erik Schokkaert

**Abstract:** Behavioral economics has shaken the view that individuals have well-defined, consistent and stable preferences. This raises a challenge for welfare economics, which takes as a

## Working Papers, continued

key postulate that individual preferences should be respected. This paper scrutinizes the challenge and argues, in agreement with Bernheim (2009) and Bernheim and Rangel (2009) that behavioral economics is compatible with consistency of partial preferences. While Bernheim and Rangel have focused on how to incorporate insights from behavioral economics into traditional concepts of welfare economics (Pareto optimality, compensation tests), we explore how the approach can be extended to deal with distributive issues. This paper revisits some key results of the theory in a framework with partial preferences and shows how one can derive partial orderings of individual and social situations.

### 2012-013: Household Behavior and the Marriage Market

Daniela del Boca and Christopher Flinn

**Abstract:** There is some controversy in the field of household economics regarding the efficiency of household decisions. We make the point that a flexible specification of spousal preferences and the household production technology precludes the possibility of using revealed preference data on household time allocations to determine the manner in which spouses interact: efficiently or inefficiently. Under strong, but standard, assumptions regarding marriage market equilibria, marital sorting patterns can be used essentially as "out of sample" information that allows us to assess whether household behavior is efficient or not. We develop a new likelihood-based metric to compare marriage market fits under the two alternative behavioral assumptions. We use a sample of households drawn from a recent wave of the Panel Study of Income Dynamics, and find strong evidence supporting the view that household behavior is (constrained) efficient.

# Human Capital and Economic Opportunity Global Working Group

## Event Programs

Summer School on Socioeconomic Inequality, July 9-15, 2012, Chicago	58
Early Childhood Development and Human Capital Accumulation in Developing Countries: Interpretive Models and Policy Interventions, co-sponsored conference, June 25-26, 2012	70
Family Inequality Network workshop on <i>Family Economics and Human Capital in the Family</i> , June 26, 2012	75
Markets Network workshop on Financing Human Capital, Credit Constraints, and Market Frictions, June 4-6, 2012	78
Measuring and Interpreting Inequality Working Group conference on <i>Intergenerational Mobility</i> , May 12-13, 2012	82
Early Childhood Interventions Working Group First Conference, April 21, 2012	85
Chicago Initiative for Economic Development and Early Childhood (CEDEC) Conference, April 20-21, 2012	88
Measuring and Interpreting Inequality Working Group first meeting, February 18, 2012	94
Markets Working Group meeting on <i>Financing Human Capital Investment</i> , January 5, 2012	97
Health Inequality Network Inaugural Meeting and Conference The Role of Genetic and Environmental Factors across the Life Course: Improving the Rigor of Causal Inference, September 15, 2011	99
ICREA-MOVE Conference on <i>Family Economics</i> , March 25-26, 2011	106



# SUMMER SCHOOL ON SOCIOECONOMIC INEQUALITY JULY 9-15, 2012

## WHEN

July 9-15, 2012

## WHERE

**Charles M. Harper Center**  
Room C10  
Chicago Booth School of Business  
5807 S. Woodlawn Ave  
Chicago, IL 60637

## LODGING

**South Campus Residence Hall**  
6031 South Ellis Avenue  
Chicago, IL 60637

## DIRECTORS

**Steven Durlauf**  
*University of Wisconsin, Madison*

**James J. Heckman**  
*University of Chicago*

## PRESENTATIONS

**Early Childhood Inequality**  
**James J. Heckman**  
*University of Chicago*

**Identity and Inequality**  
**Rachel Kranton**  
*Duke University*

**Measuring Inequality**  
**James Foster**  
*George Washington University*

**Abduction: Modes of Inference**  
**Burton Singer**  
*University of Florida*

**Education and Inequality**  
**Lance Lochner**  
*University of Western Ontario*

**Market Incompleteness and Inequality**  
**P. Dean Corbae**  
*University of Wisconsin, Madison*

**Market Design Approaches to Inequality**  
**Scott Duke Kominers**  
*Becker Friedman Institute for Research in Economics, University of Chicago*

**Social Interactions**  
**Steven Durlauf**  
*University of Wisconsin, Madison*

**The Economics of Matching**  
**Lones Smith**  
*University of Wisconsin, Madison*

**Families and Inequality**  
**Pierre-Andre Chiappori**  
*Columbia University*



**July 9, 2012**

- 8:30-10:30 **Inequality: An Overview**  
James J. Heckman and Steven Durlauf
- 10:30-10:45 **Break**
- 10:45-12:45 **Identity and Inequality I**  
Rachel Kranton
- 12:45-1:45 **Lunch**
- 1:45-3:45 **Identity and Inequality II**  
Rachel Kranton
- 3:45-5:00 **Discussion Period**

**July 10, 2012**

- 8:30-10:30 **Measuring Inequality I**  
James Foster
- 10:30-10:45 **Break**
- 10:45-12:45 **Measuring Inequality II**  
James Foster
- 12:45-1:45 **Lunch**
- 1:45-3:45 **Abduction: Modes of Inference I**  
Burton Singer
- 3:45-5:00 **Discussion Period**

**July 11, 2012**

- 8:30-10:30 **Abduction: Modes of Inference II**  
Burton Singer
- 10:30-10:45 **Break**
- 10:45-12:45 **Education and Inequality I**  
Lance Lochner
- 12:45-1:45 **Lunch**
- 1:45-3:45 **Education and Inequality II**  
Lance Lochner
- 3:45-5:00 **Discussion Period**

**July 12, 2012**

- 8:30-10:30 **Market Incompleteness and Inequality I**  
P. Dean Corbae
- 10:30-10:45 **Break**
- 10:45-12:45 **Market Incompleteness and Inequality II**  
P. Dean Corbae
- 12:45-1:45 **Lunch**
- 1:45-3:45 **Market Design Approaches to Inequality I**  
Scott Kominers
- 3:45-5:00 **Discussion Period**

**July 13, 2012**

- 8:30-10:30 **Market Design Approaches to Inequality II**  
Scott Kominers
- 10:30-10:45 **Break**
- 10:45-12:45 **Social Interactions I**  
Steven Durlauf
- 12:45-1:45 **Lunch**
- 1:45-3:45 **Social Interactions II**  
Steven Durlauf
- 3:45-4:00 **Break**
- 4:00-6:00 **The Economics of Matching I**  
Lones Smith
- 6:00-7:15 **Break**
- 7:30-9:00 **Poster Session**

**July 14, 2012**

- 8:30-10:30 **Families and Inequality I**  
Pierre-Andre Chiappori
- 10:30-10:45 **Break**
- 10:45-12:45 **Families and Inequality II**  
Pierre-Andre Chiappori
- 12:45-1:45 **Lunch**
- 1:45-3:45 **Early Childhood Inequality**  
James J. Heckman
- 3:45-4:00 **Break**
- 4:00-6:00 **The Economics of Matching II**  
Lones Smith
- 6:00-7:15 **Break**
- 7:30-9:00 **Poster Session**

**July 15, 2012**

- 8:30-9:00 **Group Photo**
- 9:00-12:00 **Panel Discussion**
- 12:00-2:00 **Closing Lunch**

# Human Capital and Economic Opportunity Global Working Group Summer School on Socioeconomic Inequality 2012 Participant List

**Brant Abbott**

*University of British Columbia*

**S Anukriti**

*Columbia University*

**Wallace Ao**

*University of Wisconsin - Madison*

**Anton Badev**

*University of Pennsylvania*

**James Best**

*University of Chicago*

**Syon Bhanot**

*Harvard University*

**Peter Blair**

*The Wharton School*

**Teodora Boneva**

*University of Cambridge*

**Mary Cox**

*Oxford University*

**Maria Lucia Del-Carpio**

*Princeton University*

**Martin Fiszbein**

*Brown University*

**Sebastian Gallegos**

*University of Chicago*

**Julia Garlick**

*Yale University*

**Deborah Goldschmidt**

*Boston University*

**Kaiyuan Joel Han**

*University of Wisconsin - Madison*

**Maria Hedvig Horvath**

*University of California at Berkeley*

**Andrew Johnston**

*The Wharton School*

**Amanda Michelle Jones**

*University of Chicago*

**Martyna Kobus**

*University of Warsaw*

**Margaret Leighton**

*Toulouse School of Economics*

**Erin Lentz**

*Cornell University*

**Ana Sofia Leon Lince**

*University of Chicago*

**Corinne Low**

*Columbia University*

**Leonardo Morales**

*University of North Carolina at Chapel Hill*

**Stefano Mosso**

*University of Chicago*

**Joseph Mullins**

*New York University*

**Petra Persson**

*Columbia University*

**Ana Luisa Toledo Piza Pessoa-Araujo**

*UCLA*

**Malgorzata (Gosia) Poplawska**

*Tinbergen Institute/Vrije Universiteit  
Amsterdam*

**Christopher Rauh**

*Universitat Autònoma de Barcelona*

**Ariel Roginsky**

*University of Wisconsin*

**Irina Shaorshadze**

*University of Cambridge*

**Ying Shi**

*Duke University*

**Kegon Teng Kok Tan**

*University of Wisconsin - Madison*

**Maxime To**

*Sciences-Po and CREST*

**Alyn Turner**

*University of Wisconsin - Madison*

**Elizabeth Wrigley-Field**

*University of Wisconsin - Madison*

# Human Capital and Economic Opportunity

## Global Working Group

### Summer School on Socioeconomic Inequality Reading List

#### Early Childhood Inequality

**James J. Heckman**

- Cunha, Flavio and James J. Heckman (2007). "The Technology of Skill Formation," *American Economic Review*, 97(2):31-47.
- Cunha, Flavio and James J. Heckman. (2009). The Marshall Lecture: "The Economics and Psychology of Inequality and Human Development." *Journal of the European Economic Association*, 7(2-3): 320-364.
- Cunha, Flavio and Heckman, James J. (2008). "Formulating, Identifying and Estimating the Technology of Cognitive and Noncognitive Skill Formation," *Journal of Human Resources*, 43(4):738-782.
- Cunha, Flavio, Heckman, James J., Lochner, Lance J. and Masterov, Dimitriy V. (2006). " Interpreting the Evidence on Life Cycle Skill Formation ," In *Handbook of the Economics of Education*, edited by E. Hanushek and F. Welch. Amsterdam: North Holland, Chapter 12, pp. 697-812.
- Cunha, Flavio, James J. Heckman and Susanne Schennach. (2010). "Estimating the Technology of Cognitive and Noncognitive Skill Formation," *Econometrica*, 78(3): 883-931.
- Heckman, James J. (2008). "Schools, Skills, and Synapses." *Economic Inquiry*, 46(3): 289-324.
- Heckman, James J., Moon, Seong Hyeok, Pinto, Rodrigo, Savelyev, Peter A. and Yavitz, Adam Q. (2010). "Analyzing Social Experiments as Implemented: A Reexamination of the Evidence from the HighScope Perry Preschool Program." *Quantitative Economics* 1(1): 1-46.
- Heckman, James J., Moon, Seong Hyeok, Pinto, Rodrigo, Savelyev, Peter A. and Yavitz, Adam Q. (2010). "The Rate of Return to the HighScope Perry Preschool Program." *Journal of Public Economics* 94(1-2): 114-128.

#### Identity and Inequality

**Rachel Kranton**

Many economic decisions and interactions are shaped by social relationships and framed by identity, norms, and culture. This course considers economic theories of identity, discrimination, and social norms, with particular attention to the consequences for inequality. The lectures will provide an overview of how economists historically have engaged these topics and then focus on social identity. The reading list provides references for main theoretical contributions as well as some applications, empirical studies, and new experimental work.

**Essential papers are marked with \*\*. Please read these before the class begins.**

#### 0. Theories of Social Norms, Culture, and Identity

- Akerlof, George. (1976). "[The Economics of Caste and of the Rat Race and Other Woeful Tales](#)," *Quarterly Journal of Economics*, 90(4), p. 599-617.
- \*\*Akerlof, George and Rachel Kranton. (2000). "[Economics and Identity](#)," *Quarterly Journal of Economics*, 115(3), p. 715-753.
- Akerlof, George and Rachel Kranton. (2010). [Identity Economics](#). Princeton: Princeton University Press.

## Summer School on Socioeconomic Inequality Reading List, continued

- \*\*Bénabou, Roland and Jean Tirole. (2011). "[Identity, Morals and Taboos](#)," *Quarterly Journal of Economics*, 126(2), pp. 805-855.
- Bénabou, Roland and Jean Tirole. (2006). "[Incentives and Prosocial Behavior](#)," *American Economic Review*, 96(5), p. 1652-1678.
- Bisin, Alberto and Thierry Verdier. (2001). "[The Economics of Cultural Transmission and the Dynamics of Preferences](#)," *Journal of Economic Theory*, 97, p. 298-319.
- Cole, H.L., George Mailath and Andrew Postlewaite. (1992). "[Social Norms, Savings Behavior and Growth](#)," *Journal of Political Economy*, 100, p. 1092-1095.
- Kandori, Michihiro. (1992). "[Social Norms and Community Enforcement](#)," *Review of Economic Studies*, 59(1), p. 63-80.
- Kuran, Timur and William Sandholm. (2008). "[Cultural Integration and Its Discontents](#)," *Review of Economic Studies*, 75, p. 201-228.
- Lazaer, Edward. (1999). "[Culture and Language](#)," *Journal of Political Economy*, 107 (December), p. S95-29.
- Tirole, Jean. (1996). "[A Theory of Collective Reputations, with Applications to the Persistence of Corruption](#)," *Review of Economic Studies*, 63, p. 1-22.
- Young, Peyton. (1996). "[The Economics of Convention](#)," *Journal of Economic Perspectives*, 10, p. 105-122.

### 1. Identity Experiments, Allocation of Income, and Social Preferences

- \*\*Chen, Yan and Sherry Li. (1999). "[Group Identity and Social Preferences](#)," *American Economic Review*, 99(1), p. 431-457.
- Fershtman, Chaim & Uri Gneezy. (2000). "[Discrimination in a Segmented Society: An Experimental Approach](#)," *Quarterly Journal of Economics*, 116(1), p. 351-377.
- Glaeser, Edward and David Laibson, Jose Scheinkman, Christine Souter. (2000). "[Measuring Trust](#)," *Quarterly Journal of Economics*, 115(3), pp. 811-846.
- Klor, Esteban and Moses Shayo. (2010). "[Social Identity and Preferences over Redistribution](#)," *Journal of Public Economics* 94(3-4), pp. 269-278.
- Kranton, Rachel, Seth Sanders, Matthew Pease, and Scott Huettel. (2012). "[Identity, Group Conflict, and Social Preferences](#)," Working paper, Duke University.

### 2. Discrimination and Integration

- Becker, George. (1957). *The Economics of Discrimination*. Chicago: University of Chicago Press.
- Arrow, Kenneth J. (1972). "[Models of Job Discrimination](#)," (including the appendix, "Some Mathematical Models of Race Discrimination in the Labor Market.") In Anthony H. Pascal, ed., *Racial Discrimination in Economic Life*. Lexington, MA: Heath.
- Akerlof, George and Rachel Kranton. (2000). "[Economics and Identity](#)," *Quarterly Journal of Economics*, 115(3), p. 715-753.
- Algan, Yann, Thierry Mayer and Mathias Thoenig. (2012). "[The Economic Incentives of Cultural Transmission: Spatial Evidence from Naming Patterns across France](#)," Working paper, Sciences Po.
- Bisin, A, E. Patacchini, T. Verdier and Y. Zenou. (2010). "[Bend it Like Beckham: Ethnic Identity and Integration](#)," NBER Working Paper 16465.
- Coate, Stephen and Glenn C. Loury. 1993. "[Will Affirmative-Action Policies Eliminate Negative Stereotypes?](#)" *American Economic Review*, 83(5), pp. 1220-1240.
- \*\*Fryer, Roland and Glenn Loury, 2005. "[Affirmative Action and Its Mythology](#)," *Journal of Economic Perspectives*, 19(3), pp. 147-162.

# Summer School on Socioeconomic Inequality Reading List, continued

## 3. Identity and Academic Underachievement

- \*\*Akerlof, George and Rachel Kranton. (2002). "[Identity and Schooling: Some Lessons for the Economics of Education](#)," *Journal of Economic Literature* 40(4), pp. 1167-1201.
- \*\*Austen-Smith, David and Roland Fryer. (2005). "[An Economic Analysis of 'Acting White'](#)," *Quarterly Journal of Economics*, 120(2), p. 551-583.
- Currarini, Sergio, Matthew Jackson, and Paolo Pin. (2009). "[An Economic Model of Friendship: Homophily, Minorities, and Segregation](#)," *Econometrica* 77 (4), 1003-1045.
- Currarini, Sergio, Matthew Jackson, and Paolo Pin. (2010). "[Identifying the roles of race-based choice and chance in high school friendship network formation](#)," *Proceedings of the National Academy of Sciences*, 107(11), pp. 4857-4861.
- Deaux, Kay, Nida Bikmen, Alwyn Gilkes, Ana Ventuneac, Yvanne Joseph, Yasser A. Payne and Claude M. Steele (2007). "[Becoming American: Stereotype Threats in Afro-Caribbean Immigrant Groups](#)," *Social Psychology Quarterly*, 70(4), pp. 384-404.
- Ferguson, Ronald, Jens Ludwig and Wilbur Rich. (2001). "[A Diagnostic Analysis of Black-White GPA Disparities in Shaker Heights, Ohio](#)," *Brookings Papers on Education Policy*, 4, pp. 347-414.
- Fryer, Roland and Paul Torelli. (2010). "[An Empirical Analysis of Acting White](#)," *Journal of Public Economics*, 94(5-6), pp. 380-396.
- Steele, Claude. (1997). "[A Threat in the Air: How Stereotypes Shape Intellectual Identity and Performance](#)," *American Psychologist*, 5(6), pp. 613-619.
- Steele, Claude, and Joshua Aronson. (1995). "[Stereotype Threat and the Intellectual Test Performance of African Americans](#)," *Journal of Personality and Social Psychology*, 69(5), pp. 797-811.

## 4. Identity, Social Groups/Networks, and Unemployment

- Akerlof, George and Rachel Kranton. (2000). "[Economics and Identity](#)," *Quarterly Journal of Economics*, 115(3), p. 715-753.
- Calvó-Armengol, Antoni and Matthew Jackson. (2004). "[The Effects of Social Networks on Employment and Inequality](#)," *American Economic Review*, 94(3), p. 426-454.
- Calvó-Armengol, Antoni and Matthew Jackson. (2007). "[Networks in Labor Markets: Wage and Employment Dynamics and Inequality](#)," *Journal of Economic Theory*, 132(1), p. 27-46.
- Munshi, Kaivan and Mark Rosensweig. (2006). "[Traditional Institutions Meet the Modern World: Caste, Gender, and Schooling Choice in a Globalizing Economy](#)," *American Economic Review*, 96(4), p. 1225-1252.
- Munshi, Kaivan. (2003). "[Networks in the Modern Economy: Mexican Migrants in the US Labor Market](#)," *Quarterly Journal of Economics*, 118(2), p. 549-597.

## Measuring Inequality

**James Foster**

### I. Basic Theory

- Foster, J. E. and Sen, A. (1997), 'On Economic Inequality: After a Quarter Century' in Sen (1997) *On Economic Inequality*, Clarendon Press: Oxford. The annex to the original 1973 monograph. Surveys the recent related literature, including work on poverty measurement and the capabilities approach.
  1. Data
    - Foster, J.E. '[Inequality Measurement](#)' in *Elgar Companion to Development Studies* (D. Clark, Ed.) London: Edward Elgar Very basic introduction to inequality measurement and to the income standard approach.

# Summer School on Socioeconomic Inequality Reading List, continued

## 2. Measures

- Foster, J.E., and Ok, E. A. (1999). "[Lorenz Dominance and the Variance of Logarithms](#)" *Econometrica*, 67: 901-908. Shows how badly the variance of logarithms can go wrong as a measure of inequality. A short paper with a crisp example.

## 3. Properties

## 4. Quasi-Orderings

## 5. Characterizations

## II. Topics

### 6. Income standards

- Foster, J.E. '[Inequality Measurement](#)' in *Elgar Companion to Development Studies* (D. Clark, Ed.) London: Edward Elgar
- Foster, J. E., and Szekely, M. (2008). "[Is Economic Growth Good for the Poor? Tracking Low Incomes Using General Means](#)," *International Economic Review*, 49(4): 1143-1172. A great application of the income standard approach. Contains key theorem on incomes standards and an informative graph of Mexico vs. Costa Rica

### 7. Inequality of opportunity

### 8. Polarization

- Foster, J. E., and Wolfson, M. C. (2010). "[Polarization and the Decline of the Middle Class: Canada and the U.S.](#)," *Journal of Economic Inequality*, 8(2): 247-273. Defines polarization and shows its relationship to inequality.

### 9. Ordinal Variables

- Allison, R. A., and Foster, J. E. (2004)., "[Measuring Health Inequality Using Qualitative Data](#)," *Journal of Health Economics*, 23(3): 505-524. When "self reported health" is the variable of interest, the mean and hence the inequality level is not well defined. This paper presents an approach that can work for an ordinal variable. It is based on the median of the distribution, rather than the mean, and uses "median preserving spreads" to create an inequality ordering.

### 10. Multidimensionality

- Foster, J. E. and Sen, A. (1997). 'On Economic Inequality: After a Quarter Century' in Sen (1997) *On Economic Inequality*, Clarendon Press: Oxford.
- Kolm, Serge-Christophe (1977), '[Multidimensional Egalitarianisms](#)', *Quarterly Journal of Economics*, 91, 416-42. A very clear paper that generalizes the fixed mean result linking Lorenz rankings and unambiguous welfare comparisons to the multidimensional setting. Uses bistochastic matrices in the characterization.

## Abduction: Modes of Inference

### *Burton Singer*

NOTE: We recommend that items with the designation \* be read in advance of the lectures. The book *Perfect Order: Recognizing Complexity in Bali*, by J. Stephen Lansing is available in hard copy at the University of Chicago library, and for [purchase at Amazon](#). Professor Singer will be covering material from this book in lectures.

### A. Basic Concepts and Philosophy

- Fann KT (1970). *Peirce's Theory of Abduction*, The Hague: Martinusnijhoff. Material from this book is supplemental to the course. It is available in hard copy at the University of Chicago library.

## Summer School on Socioeconomic Inequality Reading List, continued

- \* Singer B (2008) "[Comment: Implication Analysis as Abductive Inference.](#)" in Yu Xie (ed). *Sociological Methodology*, 2008. New York: John Wiley & Sons – Blackwell. pp. 75 – 83
- Sebeok TA & Umiker-Sebeol J (1983) "'You Know My Method': A Juxtaposition of Charles S. Peirce and Sherlock Holmes." in Umberto Eco and Thomas S. Sebeok (Eds.) *The Sign of Three: Dupin, Holmes, Peirce*. Bloomington: Indiana University Press. pp. 11 - 54
- \* Josephson JR (1996). "[Conceptual analysis of abduction.](#)" in JR Josephson and SG Josephson, *Abductive Inference: Computation, Philosophy, Technology*, Cambridge: Cambridge University Press. pp. 1 -15

### B. Case Studies of Abduction - Part I

- Lansing JS (2006). *Perfect Order: Recognizing Complexity in Bali*. Princeton: Princeton University Press.
- Lansing JS, Kurafeit TM, Schoenfelder J, Hammer MF (2008). "[A DNA signature for the expansion of irrigation in Bali?](#)" in A. Sanchez-Mazas, R. Blench, M. Ross, I. Peiros, M. Lin (Eds.) *Human Migrations in East Asia and Taiwan: matching archaeology, linguistics, and genetics*. London: Routledge. pp.376 - 394
- Lansing JS & de Vet TA (2012). "[The Functional Role of Balinese Water Temples: A Response to Critics.](#)" *Human Ecology*, 40(3): 453-467.
- \* Lansing JS & Fox KM (2011). "[Niche construction on Bali: the gods of the countryside.](#)" *Philosophical Transactions of the Royal Society B*, 366: 927-934
- Katz R and Singer B (2007). "[Can an attribution assessment be made for Yellow Rain?](#)" *Politics and the Life Sciences*, 26(1): 24-42

### C. Abduction and Expert Systems

- Lindsay RK, Buchanan BG, Feigenbaum EA, Lederberg J (1993). "[DENDRAL: a case study of the first expert system for scientific hypothesis formation.](#)" *Artificial Intelligence*, 61: 209-261.
- Lederberg J (1987). "[How DENDRAL was conceived and born.](#)" *ACM Symposium on the History of Medical Informatics*. National Library of Medicine, November, 1987, pp. 1 - 25
- \* Feigenbaum EA, Buchanan BG, Lederberg J (1971). "[On generality and problem solving: Case study using the DENDRAL program.](#)" in B. Meltzer and D. Michie (Eds.) *Machine Intelligence 6*, Edinburgh: Edinburgh University Press. pp. 165 - 190  
<http://en.wikipedia.org/wiki/Mycin>

### D. Causal Claims

- \* Wagemans J, van Lier R, and Scholl BJ (2006). "[Introduction to Michotte's heritage in perception and cognition research.](#)" *Acta Psychologica*, 123: 1-19.
- Saxe R and Carey S (2006). "[The perception of causality in infancy.](#)" *Acta Psychologica*, 123: 144-165
- Bonawitz EB, Ferranti D, Saxe R, Gopnick A, Meltzoff AN, Woodward J and Schultz LE (2010). "[Just do it? Investigating the gap between prediction and action in toddler's causal inferences.](#)" *Cognition*, 115: 104-117
- \* Cartwright N (2007). "[Causal claims: warranting them and using them.](#)" Chapter 3 in Part 1 of N. Cartwright, *Hunting causes and using them*, New York: Cambridge University Press.
- Evans AC (1976). "[Causation and Disease: The Henle - Koch Postulates Revisited.](#)" *The Yale Journal of Biology and Medicine*, 49: 175-195
- Evans AC (1991). "[Causation and Disease: Effect of Technology on Postulates of Causation.](#)" *The Yale Journal of Biology and Medicine*, 64: 513-528

## Education and Inequality

*Lance Lochner*

# Summer School on Socioeconomic Inequality Reading List, continued

Lectures will be largely based on:

- Lochner L, Monge-Naranjo A. (2012). "[Credit constraints in education.](#)" *Annual Reviews of Economics* 4.
  - See references in this paper for other related materials that may be of interest.

## **Other readings that will be emphasized:**

- Becker, G. S. (1967). "[Human capital and the personal distribution of income: An analytical approach,](#)" in 'Woytinsky Lecture No. 1', University of Michigan, Institute of Public Administration, Ann Arbor.
- Becker, G. S. and Tomes, N. (1986). "[Human capital and the rise and fall of families,](#)" *Journal of Labor Economics* 4(3), S1-S39.
- Belley, P., Frenette, M. and Lochner, L. (2011). "[Post-secondary attendance by parental income in the U.S. and Canada: What role for financial aid policy?](#)" Working Paper 17218, National Bureau of Economic Research.
- Belley, P. and Lochner L. (2007). "[The changing role of family income and ability in determining educational achievement.](#)" *Journal of Human Capital* 1:37-89
- Carneiro P. and Heckman JJ. (2002). "[The evidence on credit constraints in post-secondary schooling.](#)" *Economic Journal* 112:705-34
- Caucutt, E. and Lochner, L. (2011). "[Early and late human capital investments, borrowing constraints, and the family.](#)" Working Paper, University of Western Ontario.
- Cunha, F. and Heckman, J. (2007). "[The technology of skill formation,](#)" *American Economic Review* 97(2), 31-47.
- Johnson M. (2011). "[Borrowing constraints, college enrolment, and delayed entry.](#)" Working Paper, Mathematica Policy Research, Princeton, NJ
- Keane M. and Wolpin KI. (2001). "[The effect of parental transfers and borrowing constraints on educational attainment.](#)" *International Economic Review* 42:1051-103
- Lochner L. and Monge-Naranjo A. (2011). "[The nature of credit constraints and human capital.](#)" *American Economic Review* 101:2487-529

**For very new research (ideas) on modeling credit and insurance for human capital investment with commitment and private information problems, see the following:**

- Workshop on '[Financing Human Capital, Credit Constraints, and Market Frictions](#)' and '[background materials](#)'

## **Market Incompleteness and Inequality**

### **P. Dean Corbae**

This set of lectures explores the quantitative implications of asset market incompleteness for the wealth distribution in the U.S.

Part 1 describes U.S. data on earnings and wealth inequality as well as mobility from the Survey of Consumer Finances and the Panel Study on Income Dynamics.

Part 2 begins with a simple dynamic quantitative model where households experience idiosyncratic shocks to their earnings and the absence of complete markets induces an endogenous wealth distribution which can be compared to the actual data. The model can be used to quantify the implications of rising earnings inequality for the wealth distribution. Differences in borrowing constraints imply different wealth distributions. One particular example studied is where the borrowing constraint respects U.S. Chapter 7 bankruptcy law and financial intermediaries price unsecured borrowing to reflect default risk.

# Summer School on Socioeconomic Inequality Reading List, continued

Part 3 explores the implications of endogenous government policy if a median voter chooses a tax redistributive tax policy in the presence of an endogenous wealth distribution and rising earnings inequality.

Starred items will be covered in class. A computer assignment will familiarize students with quantitative modeling of the wealth distribution.

## Part 1. The Data

- \*Díaz-Giménez, J., A. Glover, and José-Víctor Ríos-Rull. (2011). "[Facts on the Distributions of Earnings, Income, and Wealth in the United States: 2007 Update](#)," *Federal Reserve Bank of Minneapolis Quarterly Review*, 34(1): 2–31.

## Part 2. Models to Understand the Data

- Aiyagari, R. (1994). "[Uninsured Idiosyncratic Risk and Aggregate Saving](#)," *Quarterly Journal of Economics*, 109: 659-684.
- Athreya, K. (2002). "[Welfare Implications of the Bankruptcy Reform Act of 1999](#)," *Journal of Monetary Economics*, 49(8): 1567-1595.
- \*Chatterjee, S., D. Corbae, M. Nakajima, and V. Rios-Rull. (2007). "[A Quantitative Theory of Unsecured Consumer Credit with Risk of Default](#)," *Econometrica*, 75(6): 1525-1589.
- \*Huggett, M. (1993). "[The Risk-Free Rate in Heterogeneous-Agent Incomplete-Insurance Economies](#)," *Journal of Economic Dynamics and Control*, 17: 953-969.
- Huggett, M. (1996). "[Wealth Distribution in Life-Cycle Economies](#)," *Journal of Monetary Economics*, 38: 469-494.

## Part 3. Political Economy and Redistribution

- Aiyagari, R. (1995). "[Optimal Capital Income Taxation with Incomplete Markets, Borrowing Constraints, and Constant Discounting](#)," *Journal of Political Economy*, 103: 1158-1175.
- \*Corbae, D., P. D. Erasmó, B. Kuruscu. (2009). "[Politico-Economic Consequences of Rising Earnings Inequality](#)," *Journal of Monetary Economics*, 56: 43-61.
- Krusell, P., V. Quadrini and V. Ríos Rull. (1997). "[Politico-Economic Equilibrium and Economic Growth](#)," *Journal of Economic Dynamics and Control*, 21(1): 243-272.
- Meltzer, A. and S. Richard. (1981). "[A Rational Theory of the Size of Government](#)," *Journal of Political Economy*, 89: 914-927.

## Market Design Approaches to Inequality

### Scott Duke Kominers

Professor Kominers will be updating his syllabus, so please use [this link](#) to view it. He has asked that students read two papers prior to the start of his lectures:

### Pre-Reading/Introduction.

- Roth, Alvin E. (2007). "[The art of designing markets](#)," *Harvard Business Review*, 85:118-126.
- Pathak, Parag A. and Tayfun Sönmez. (2008). "[Leveling the playing field: Sincere and sophisticated players in the Boston mechanism](#)," *American Economic Review*, 98:1636-1652.

## Social Interactions

### Steven Durlauf

My lectures will be based on:

- Blume, L. W. Brock, S. Durlauf, and Y. Ioannides, (2011), "[Identification of Social Interactions](#)," in *Handbook of Social Economics*, J. Benhabib, A. Bisin, and M. Jackson, eds. Amsterdam: Elsevier.

## Summer School on Socioeconomic Inequality Reading List, continued

- Brock, W. and S. Durlauf, (2001), "[Interactions-Based Models](#)," in *Handbook of Econometrics* 5, J. Heckman and E. Leamer eds., Amsterdam: Elsevier.
- Durlauf, S., (2004), "[Neighborhood Effects](#)," in J. V. Henderson and J.-F. Thisse, eds., *Handbook of Regional and Urban Economics* 4, Amsterdam: Elsevier.

It would be useful to read these in advance of the lectures. They are repetitive of one another, but hopefully give a sense of how the social interactions literature has evolved.

In addition, there is a [supplementary reading list](#) which I have used for a graduate course on "Social Interactions and Inequality" that I have taught at the University of Chicago for the last 4 years.

### The Economics of Matching

**Lones Smith**

#### I. Frictionless Matching

- Gale, D. and L. S. Shapley (1962). "[College admissions and the stability of marriage](#)," *American Mathematical Monthly*, 69(1): 9-15.
- Becker, Gary S. (1973). "[A Theory of Marriage, Part I](#)," *Journal of Political Economy*, 81(4): 813-846.

#### II. Search Theory

- Chade, Hector and Lones Smith. (2006). "[Simultaneous Search](#)," *Econometrica*, 74(5): 1293-1307.

#### III. Frictional Trade

##### A. The Trade Model with Search Frictions

- Smith, Lones. (1995, revised 2002). "[A Model of Exchange Where Beauty is in the Eye of the Beholder](#)," Unpublished manuscript, University of Wisconsin--Madison.

##### B. The Assignment Model with Search Frictions

- Smith, Lones. (2006). "[The Marriage Model with Search Frictions](#)," *Journal of Political Economy*, 114(6): 1124-1144.
- Smith, Lones. (2011). "[Frictional Matching Models](#)," *Annual Review of Economics*, 3: 319-338

##### C. The Assignment Model with Information Frictions

- Anderson, Axel and Lones Smith. (2010). "[Dynamic Matching and Evolving Reputations](#)," *Review of Economic Studies*, 77(1): 3-29.
- Chade, Hector, Gregory Lewis, and Lones Smith. (2011). "[Student Portfolios and the College Admission Problem](#)," Unpublished manuscript, University of Arizona. Under revision for *Review of Economic Studies*.

#### IV. Matching and Implicit Markets

- Quercioli, Elena and Lones Smith. (2012) "The Economics of Counterfeiting," Unpublished manuscript, Stanford University. Under revision for *Econometrica*.

### Families and Inequality

**Pierre-André Chiappori**

#### Part 1. Intra-household inequality: concepts, models, empirical estimation

- Bourguignon, F., M. Browning, Chiappori, P.A. and V. Lechene. (1994). "[Incomes and Outcomes: a Structural Model of Intra-Household Allocation](#)", *Journal of Political Economy*, 201(6): 1067-1097.

## Summer School on Socioeconomic Inequality Reading List, continued

- Browning, M., Chiappori, P.A. and Y. Weiss, *Family Economics*, Cambridge University Press (forthcoming), [Chapters 3, 4, and 5](#).
- Chiappori, P.A., B. Fortin and G. Lacroix. (2002). "[Household Labor Supply, Sharing Rule and the Marriage Market](#)", *Journal of Political Economy*, 110(1): 37-72.
- Lise, J. and S. Seitz. (2011). "[Consumption Inequality and Intra-Household Allocations](#)", *Review of Economic Studies*, 78: 328-355.

### **Part 2. Inequality and the marriage market**

- Browning, M., Chiappori, P.A. and Y. Weiss, *Family Economics*, Cambridge University Press (forthcoming), [Chapters 7 and 8](#).
- Chiappori, P.A., M. Iyigun and Y. Weiss. (2009). "[Investment in Schooling and the Marriage Market](#)", *American Economic Review*, 99(5): 1689-1717
- Chiappori, P.A., B. Salanié and Y. Weiss. (2011). "[Partner Choice and the Marital College Premium](#)", Unpublished manuscript, Columbia University.
- Choo, E. and A. Siow. (2006). "[Who Marries Whom and Why](#)", *Journal of Political Economy*, 114: 175-201.

# Promises For Preschoolers: Early Childhood Development and Human Capital Accumulation

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Christopher Ingold Auditorium, UCL, 25-26 June 2012

Organizers:



*University College London*



*EDePo@IFS*



International Initiative  
for Impact Evaluation

*3ie*



*Human Capital and Economic Opportunity Global Working Group at the Institute for New Economic Thinking*

## Session 1. Describing and Interpreting Cognitive Development

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**Chair: Ted Melhuish**

- 09:30-10:00 **Melissa Hidrobo** (IFPRI)  
“SES gradients in child development in very young children from India, Indonesia, Peru and Senegal.”  
(Lia Fernald, Patricia Kariger and Paul Gertler)
- 10:00-10:30 **Norbert Schady** (Inter-American Development Bank): **“Wealth gradients in early childhood cognitive development in five Latin American countries”** (co-authors: David Bravo, Maria Caridad Araujo, Rodrigo Azuero, Raquel Bernal, Florencia Lopez-Boo, Karen Macours, Daniela Marshall, Christina Paxson and Renos Vakis)
- 10:30-11:00 Coffee and Networking Break
- 11:00- **Sally Grantham-McGregor**

- 11:30 “Wealth gradients in Bangladesh” (co-authors: Jena Hamadami and Orazio Attanasio)
- 11:30-12:00 **Pedro Carneiro** (UCL & Georgetown): “The timing of income shocks and human capital development” (co-authors: Italo Lopez, Kjell Salvanes and Emma Tominey).
- 12:00-12:30 **Panel Discussion:** What are the policy implications of the existence of a large SES gradient in child development and one that emerges very early?
- Pablo Stansbery**, Save the Children, USA; **Melissa Kelly**, Save the Children, USA.
- 12:30-13:40 Lunch

The early years in the life of an individual have been proven to be crucial for his/her development. Events in early years have long lasting consequences. Moreover, development in early years can be affected by policy interventions. A good understanding of the process through which human capital, in its many dimensions, is developed is therefore crucial for the design of good policies. An understanding of the factors and constraints that affect household investment decisions in human capital is also key. And yet there are many unresolved issues. This conference brings together economists, child development specialists, policy makers, staff of international financial organizations to discuss the main issues of this research agenda and exchange experiences on several interventions.

## Monday, 25 June

- 08:30-09:00 Registration and coffee
- 09:00-09:15 **Opening Address: Andrew Mitchell (Secretary of State, DfID) (TBC)**
- 09:15-09:30 **Introduction: Orazio Attanasio, University College London and Howard White, 3ie**

### Session 2. Investing in the Very Early Years

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**Chair: Orazio Attanasio**

- 13:40-14:20 **Arianna Zanolini** (University of Chicago):  
**“Labor market returns to early childhood stimulation: a 20 year follow up to the Jamaica Study”**  
 (co-authors: Paul Gertler, Rodrigo Pinto, James Heckman, Susan Walker, Susan Chang, Christel Vermeersch and Sally Grantham-McGregor).
- 14:20-15:00 **Marta Rubio-Codina** (EDePo@IFS):  
**“Stimulation and childhood development in Colombia: the impact of a scalable intervention”**  
 (co-authors: Orazio Attanasio, Emla Fitzsimons, Sally Grantham-McGregor and Costas Meghir).

- 15:00-15:30 Coffee and Networking Break
- 15:30-16:00 **Karen Macours** (PSE):  
 “Experimental evidence from an early childhood parenting intervention in Nicaragua” (co-authors: Patrick Premand, Norbert Schady and Renos Vakis).
- 16:00-16:30 **Orla Doyle** (University College Dublin):  
“Measuring Investment in Human Capital Formation: An Experimental Analysis of Early Life Outcomes” (co-authors: Colm Harmon, James Heckman, C. Logue, Seong Moon).
- 16:30-17:00 Coffee and Networking Break
- 17:00-17:30 **Emanuela Galasso** (World Bank):  
 “The role of beliefs in parenting and early childhood development” (co-authors: Pedro Carneiro and Italo Lopez)
- 17:30-18:00 **Panel Discussion:** What are productive, cost effective and scalable very early years interventions (targeted to children aged 0 to 2 years)? Who should run them and why? What further evidence do we need to assist in the design and implementation of these programs?  
**Stefan Dercon**, Chief Economist, DFID, UK; **Ms Nurper Ulkuer**, Chief, ECD Unit, UNICEF New York, USA.

## Tuesday 26 June

### Session 3. The pre-school years

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- Chair: Howard White**
- 08:30-09:00 Coffee
- 09:00-09:30 **Helen Baker-Henningham** (Tropical Medicine Research Institute, University of the West Indies):  
 “Preventing child conduct problems and promoting social-emotional competence: A universal intervention in Jamaican preschools” (co-authors: Stephen Scott and Susan Walker)
- 09:30-10:00 **Lia Fernald** (University of California, Berkeley):  
 “CONAFE early childhood intervention” (co-authors Pat Engel and Lynette Neufeld)
- 10:00-10:30 **Sebastian Martinez** (IDB):  
 “The promise of Pre-school in Africa” (co-authors: Sophie Nadeau and Vitor Pereira)
- 10:30-11:00 Coffee and Networking Break
- 11:00- **Hugh Waddington:**

- 11:20 Systematic reviews: A useful tool for establishing evidence.
- 11:20-11:50 **Paola Gadsden** (INSP, Mexico):  
 “Systematic Review of The Effectiveness of Day Care interventions on Child Health, Nutrition and Development in Developing Countries”
- 11:50-12:20 **Panel Discussion:** What are productive, cost effective and scalable pre-school, centre based interventions (targeted to children 3 to 5)? Who should run them and why? What further evidence do we need to assist in the design and implementation of these programs?  
**Andrea Portugal**, Director of Cuna Mas, Peru; **Margaret Okai**, National Coordinator, ECD Unit, Ghana Education Services.
- 12:20-13:30 Lunch

#### Session 4. Accumulation of Human Capital

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**Chair: Howard White**

- 13:30-14:10 **Limor Golan** (Washington University at St Louis):  
“Estimating the returns to parental time investment in children using a lifecycle dynastic model”  
 (co-authors: G. Gayle and Mehmet Soytas)
- Presentation**
- 14:10-14:50 **Sue Walker** (Tropical Medicine Research Institute, University of the West Indies):  
 “Do early childhood experiences affect development in the next generation: Preliminary findings from the Jamaica intergenerational study” (co-authors: Susan Chang, Sally Grantham-McGregor, Clive Osmond and Florencia Lopez-Boo)
- 14:50-15:20 Coffee and Networking Break
- 15:20-16:00 **Flavio Cunha** (U Penn):  
 “Eliciting Maternal Beliefs about the Technology of Skill Formation” (co-authors: Jennifer Culhane and Irma Elo).
- 16:00-16:40 **Maureen Black** (University of Maryland School of Medicine):  
“Integrating nutrition and child development interventions among infants in rural India: Lessons from the field” (co-authors: Sylvia Fernandez Rao, Kristen Hurley, Shahnaz Vazir, Madhavan Nair, Nagalla Balakrishna, Sashikiran Boindala, Radhakrishna, Nick Tilton, Kim Harding, and Greg Rheinhardt).
- 16:40-17:10 Coffee and Networking Break
- 17:10-17:40 **Panel Discussion:** What financial models could be used to scale up effective ECD interventions? What should the role of government, foundations, corporate philanthropy be?

**Peter Colenso**, Children's Investment Fund Foundation; **Arturo Saenz**, CONAFE, Mexico; **Orazio Attanasio** (IFS & UCL).

17:40 **Closing Remarks**

**Jenny Amery**, Chief Professional Officer of Human Development, DFID (TBC)



**WHEN**

June 26, 2012, 09:00 - 18:00

**WHERE**

Bank of Italy  
Via Nazionale, 91  
00184 Rome, Italy

**CONFERENCE DINNER**

June 26, 2012, 20:00  
La Carbonara  
via Panisperna, 214  
00184 Rome

**ORGANIZERS**

**Pierre-André Chiappori**  
*Columbia University*

**Marco Cosconati**  
*Bank of Italy*

**Flavio Cunha**  
*University of Pennsylvania*

**PRESENTATIONS**

**Household Choices and Child Development**  
Chris Flinn, New York University

**Primary-School Enrollment, Attendance, and Completion during the Age of Illiteracy Abatement (Italy, 1880's): An Empirical Assessment within a Family Context**  
Melissa Tartari, Yale University

**Happy Together: A Structural Model of Retirement**  
Maria Casanova, UCLA

**Technology and the Changing Family A Unified Model of Marriage, Divorce, Educational Attainment and Married Female Labor-Force Participation**  
Nezih Guner, Universitat Autònoma de Barcelona

**The Disappearing Gender Gap: The Impact of Divorce, Wages, and Preferences on Education Choices and Women's Work**  
Raquel Fernandez, New York University

**Taxation and Labor Force Participation: The Case of Italy**  
Stefania Marcassa, Université de Cergy-Pontoise

**Black-White Marital Matching: Race, Anthropometrics, and Socioeconomics**  
Sonia Oreffice, Universitat d'Alacant

**Sharing Rule Identification Bounds for General Collective Consumption Models**  
Frederic Vermeulen, Tilburg University

# Family Inequality Working Group

## Family Economics and Human Capital in the Family

Organized by Pierre-André Chiappori, Marco Cosconati (local organizer), and Flavio Cunha  
Human Capital and Economic Opportunity Global Working Group

June 26, 2012

Bank of Italy, Rome, Italy

### Program

**9:15- 9:30 WELCOMING REMARKS** Paolo Sestito, Bank Of Italy

**9:30-10:30 HUMAN CAPITAL IN THE FAMILY**

**Chair:** Pierre-André Chiappori, Columbia University

**9:30 "Household Choices and Child Development,"**

**Chris Flinn, New York University** (with Daniela del Boca, University of Turin and Collegio Carlo Alberto and Matthew Wiswall, New York University)

**Discussant:** Franco Peracchi, Tor Vergata University

**10:15 "Primary-school enrollment, attendance, and completion during the age of illiteracy abatement (Italy, 1880's): an empirical assessment within a family context,"**

**Melissa Tartari, Yale University**

**Discussant:** Marco Cosconati, Bank of Italy

**11:00-11:30 COFFEE BREAK**

**11:30 "Happy Together: A Structural Model of Retirement,"**

**Maria Casanova, UCLA**

**Discussant:** Melissa Tartari, Yale University

**12:15-13:45 LUNCH**

**13:45-16:00 LABOR FORCE PARTICIPATION AND EDUCATIONAL CHOICES IN THE FAMILY**

**Chair:** Nezh Guner, Universitat Autònoma de Barcelona

**13:45 "Technology and the Changing Family A Unified Model of Marriage, Divorce, Educational Attainment and Married Female Labor-Force Participation,"**

**Nezh Guner, Universitat Autònoma de Barcelona** (with Jeremy Greenwood, Georgi Kocharkov, and Cezar Santos, University of Pennsylvania)

**Discussant:** Emmanuele Bobbio, Bank of Italy

**14:30 "The Disappearing Gender Gap: The Impact of Divorce, Wages, and Preferences on Education Choices and Women's Work,"**

**Raquel Fernandez, New York University** (with Joyce Wong, New York University)

**Discussant:** Fabrizio Colonna, Bank of Italy

**15:15 "Taxation and Labor Force Participation: The Case of Italy,"**

**Stefania Marcassa, Université de Cergy-Pontoise** (with Fabrizio Colonna, Bank of Italy)

**Discussant:** Daniela del Boca, University of Turin and Collegio Carlo Alberto

**16:00-16:30 COFFEE BREAK**

**16:30-18:00 MARRIAGE DYNAMICS AND COLLECTIVE MODELS**

**Chair:** Marco Cosconati, Bank of Italy

**16:30 "Black-White Marital Matching: Race, Anthropometrics, and Socioeconomics,"**

**Sonia Oreffice, Universitat d'Alacant** (with Pierre-André Chiappori, Columbia University and Climent Quintana-Domeque, Universitat d'Alacant)

**Discussant:** Laurens Cherchye, University of Leuven

**17:15 "Sharing Rule Identification Bounds for General Collective Consumption Models,"**

**Frederic Vermeulen, Tilburg University** (with Laurens Cherchye, University of Leuven, Bram De Rock, ECARES, and Arthur Lewbel, Boston College)

**Discussant:** Pierre-André Chiappori, Columbia University

**18:00 CONCLUDING REMARKS** Pierre-André Chiappori and Marco Cosconati

# Family Inequality Working Group

## Family Economics and Human Capital in the Family

### Participants

**Effrosyni Adamopoulou**

Universidad Carlos III de Madrid

**Emmanuele Bobbio**

Bank of Italy

**Maria Casanova**

UCLA

**Laurens Cherchye**

University of Leuven

**Pierre-André Chiappori**

Columbia University

**Fabrizio Colonna**

Bank of Italy

**Marco Cosconati**

Bank of Italy

**Daniela del Boca**

University of Turin and Collegio Carlo Alberto

**Thomas Demuynck**

University of Leuven

**Raquel Fernandez**

New York University

**Christopher Flinn**

New York University

**Dario Focarelli**

Tanaka Business School, Imperial College  
London

**Marion Gousse**

Sciences Po

**Nezih Guner**

Universitat Autònoma de Barcelona

**Stefania Marcassa**

Université de Cergy-Pontoise

**Sonia Oreffice**

Universitat d'Alacant

**Monica Paiella**

University of Naples Parthenope

**Franco Perrachi**

Tor Vergata Univeristy

**Climent Quintana-Domeque**

Universitat d'Alacant

**Paolo Sestito**

Bank of Italy

**Melissa Tartari**

Yale University

**Andrea Tiseno**

Bank of Italy

**Frederic Vermeulen**

Tilburg University



# MARKETS NETWORK

## FINANCING HUMAN CAPITAL, CREDIT CONSTRAINTS, AND MARKET FRICTIONS WORKSHOP

**JUNE 4-6, 2012**

### WHEN

**June 4-6:** 9:00am - 5:00pm

*Reception and Dinner*

**June 5, 6:30PM - 9:00PM**

BIN 36

339 North Dearborn Street  
Chicago, IL 60610

### WHERE

**Federal Reserve Bank of Chicago**

230 South LaSalle Street  
Chicago, IL 60604

### ORGANIZERS

**Mariacristina De Nardi**

*Federal Reserve Bank of Chicago*

**Lance Lochner**

*University of Western Ontario*

### WORKSHOP SESSIONS

#### Introduction to Basic Issues

**Speakers:**

Lance Lochner (University of Western Ontario) and  
Alexander Monge-Naranjo (Federal Reserve Bank of St. Louis)

#### Limited Commitment Problems

**Speakers:**

B Ravikumar (Federal Reserve Bank of St. Louis) and  
Mark Wright (Federal Reserve Bank of Chicago)

#### Moral Hazard

**Speakers:**

Nicola Pavoni (Università Bocconi) and  
Gianluca Violante (New York University)

#### Dynamic Optimal Taxation in Lifecycle Human Capital Models

**Speaker:**

Marek Kapicka (University of California, Santa Barbara)

#### Search, Optimal UE Insurance and Student Credit

**Speaker:**

Florian Hoffman (University of British Columbia)

#### Adverse Selection Problems

**Speaker:**

P. Dean Corbae (University of Wisconsin, Madison)

#### Data and Structural Estimation

**Speakers:**

Giovanni Gallipoli (University of British Columbia) and  
Salvador Navarro (University of Western Ontario)

#### Credit and Family Investments in Children

**Speaker:**

Flavio Cunha (University of Pennsylvania)

#### Loan Repayment Issues

**Speakers:**

Meta Brown and Donghoon Lee (Federal Reserve Bank of New York)

# Financing Human Capital, Credit Constraints, and Market Frictions Workshop

Organized by Mariacristina De Nardi and Lance Lochner

Markets Network, Human Capital and Economic Opportunity Working Group

June 4-6, 2012

Federal Reserve Bank of Chicago, 230 South LaSalle Street, Chicago, Illinois 60604

## Program

### Monday, June 4, 2012

#### 9:00AM MORNING SESSION

##### Introduction of basic issues

- Structure of student aid and private lending and brief overview of evidence on constraints in the US (Lance Lochner, University of Western Ontario)
- Introduction to limited commitment, moral hazard, adverse selection problems in a two-period human capital framework (Alexander Monge-Naranjo, Federal Reserve Bank of St. Louis)

#### 12:00PM LUNCH

#### 1:00PM AFTERNOON SESSION

##### Limited commitment problems, II (B Ravikumar, Federal Reserve Bank of St. Louis, and Mark Wright, Federal Reserve Bank of Chicago)

- Lifecycle frameworks
- Uncertainty

### Tuesday, June 5, 2012

#### 9:00AM MORNING SESSION

##### Moral hazard and human capital investment (Nicola Pavoni, Università Bocconi)

##### Dynamic optimal taxation in lifecycle human capital models (Marek Kapička, University of California, Santa Barbara)

#### 12:00PM LUNCH

#### 1:00PM AFTERNOON SESSION

##### Search, optimal UE insurance and student credit (Florian Hoffman, University of British Columbia)

##### Adverse selection problems and human capital (P. Dean Corbae, University of Wisconsin and Andrew Glover, University of Texas)

#### 6:30PM -9:00PM RECEPTION AND DINNER

**BIN 36**, 339 North Dearborn, Chicago, IL 60610

# Financing Human Capital, Credit Constraints, and Market Frictions Workshop Program

**Wednesday, June 6, 2012**

**9:00AM MORNING SESSION**

**Data and structural estimation** (Giovanni Gallipoli, University of British Columbia, and Salvador Navarro, University of Western Ontario)

**12:00PM LUNCH**

**1:00PM AFTERNOON SESSION**

**Data and structural estimation**

- Loan repayment issues (Meta Brown and Donghoon Lee, Federal Reserve Bank of New York)

# Financing Human Capital, Credit Constraints, and Market Frictions Workshop

Organized by Mariacristina De Nardi and Lance Lochner

Markets Network, Human Capital and Economic Opportunity Working Group  
June 4-6, 2012

Federal Reserve Bank of Chicago, 230 South LaSalle Street, Chicago, Illinois 60604

## Participants

### **Dan Aaronson**

Federal Reserve Bank of Chicago

### **Gadi Barlevy**

Federal Reserve Bank of Chicago

### **Marco Bassetto**

Federal Reserve Bank of Chicago

### **Luca Benzoni**

Federal Reserve Bank of Chicago

### **Meta Brown**

Federal Reserve Bank of New York

### **Elizabeth Caucutt**

University of Western Ontario

### **P. Dean Corbae**

University of Wisconsin

### **Mariacristina De Nardi**

Federal Reserve Bank of Chicago

### **Matthias Doepke**

Northwestern University

### **Eric French**

Federal Reserve Bank of Chicago

### **Chao Fu**

University of Wisconsin

### **Giovanni Gallipoli**

University of British Columbia

### **Martin Gervais**

University of Iowa

### **Andrew Glover**

University of Texas at Austin

### **Florian Hoffmann**

University of British Columbia

### **Mark Huggett**

Georgetown University

### **Juanna Schrøter Joensen**

Stockholm School of Economics

### **Marek Kapicka**

University of California, Santa Barbara

### **Donghoon Lee**

Federal Reserve Bank of New York

### **Lance Lochner**

University of Western Ontario

### **Martí Mestieri**

Toulouse School of Economics

### **Alexander Monge-Naranjo**

Federal Reserve Bank of St. Louis

### **Salvador Navarro**

University of Western Ontario

### **Ezra Oberfield**

Federal Reserve Bank of Chicago

### **Nicola Pavoni**

Università Bocconi

### **B Ravikumar**

Federal Reserve Bank of St. Louis

### **Marcelo Veracierto**

Federal Reserve Bank of Chicago

### **Gianluca Violante**

New York University

### **Mark Wright**

Federal Reserve Bank of Chicago

### **Yuzhe Zhang**

Texas A&M University

# MEASURING AND INTERPRETING INEQUALITY WORKING GROUP

## CONFERENCE ON

# INTERGENERATIONAL MOBILITY

MAY 12-13, 2012

### WHEN

**May 12:** 9:00am - 5:00pm

**May 13:** 9:00am - 1:00pm

### Reception and Dinner

**May 12, 5:30PM**

Osteria Via Stato  
620 N. State Street  
Chicago, IL 60610

### WHERE

**Rosenwald Hall, Room 015**  
**University of Chicago**  
1101 E. 58th Street, Chicago, IL 60637

### ORGANIZERS

Bhash Mazumder  
*Federal Reserve Bank of Chicago*  
Steven N. Durlauf  
*University of Wisconsin, Madison*  
Scott Duke Kominers  
*Becker Friedman Institute*

### PRESENTATIONS

"The Role of Parental Income over the Life Cycle: A Comparison of Sweden and the UK"  
*Anders Björklund*

"Early and Late Human Capital Investments, Borrowing Constraints, and the Family"  
*Lance Lochner*

"Racial Peer effects in the Classroom"  
*Daryl Fairweather*

"Rich Dad, Smart Dad: Decomposing the Intergenerational Transmission of Income"  
*Matthew Lindquist*

"Nature and Nurture in the Transmission of Economic Status"  
*Ananth Seshadri*

"What is the True Rate of Social Mobility? Evidence from the Information Content of Surnames"  
*Greg Clark*

"British, American, and British-American Social Mobility: Intergenerational Occupational Change Among Migrants and Non-Migrants in the Late 19th Century"  
*Joseph Ferrie*

"Mismatch, Rematch, and Investment"  
*Andrew Newman*

"Black-White Differences in Intergenerational Mobility in the U.S."  
*Bhash Mazumder*

"The Effects of Residential Segregation during Childhood on Life Chances: Causal Evidence Using Historical Railroad Track Configurations"  
*Rucker Johnson*

"Gender, Geography and Generations: Intergenerational Educational Mobility in Post-reform India"  
*Shahe Emran*

"The Measurement of Educational Inequality: Achievement and Opportunity"  
*Francisco Ferreira*

# Measuring and Interpreting Inequality Working Group Conference on Intergenerational Mobility

Organized by Bhash Mazumder, Steven N. Durlauf, and Scott Duke Kominers  
Human Capital and Economic Opportunity Global Working Group

May 12-13, 2012

University of Chicago, Rosenwald Hall, 1101 E. 58th Street, Chicago IL 60637

## Program

### SATURDAY MAY 12<sup>TH</sup>, ROSENWALD 015

- 8:15AM-9:15AM Breakfast  
9:15AM-9:55AM "The Role of Parental Income over the Life Cycle: A Comparison of Sweden and the UK"  
Anders Björklund (joint work with Markus Jäntti and Martin Nybom)  
9:55AM-10:35AM "Early and Late Human Capital Investments, Borrowing Constraints, and the Family"  
Lance Lochner (joint work with Elizabeth Caucutt)  
10:35AM-10:50AM Break  
10:50AM-11:30AM "Racial Peer effects in the Classroom"  
Daryl Fairweather  
11:30AM-11:55AM Discussion  
11:55AM- 1:00PM **LUNCH, ROOM 011**  
1:00PM-1:40PM "Rich Dad, Smart Dad: Decomposing the Intergenerational Transmission of Income"  
Matthew Lindquist (joint work with Lars Lefgren and David Sims)  
1:40PM-2:20PM "Nature and Nurture in the Transmission of Economic Status"  
Ananth Seshadri (joint work with Sang Yoon Lee)  
2:20PM-2:35PM Break  
2:35PM-3:15PM "What is the True Rate of Social Mobility? Evidence from the Information Content of Surnames"  
Greg Clark  
3:15PM-3:55PM "British, American, and British-American Social Mobility: Intergenerational  
Occupational Change Among Migrants and Non-Migrants in the Late 19th Century"  
Joseph Ferrie (joint work with Jason Long)  
3:55PM-4:10PM Break  
4:10PM-4:50PM "Mismatch, Rematch, and Investment"  
Andrew Newman (joint work with Thomas Gall and Patrick Legros)  
5:30PM-8:00PM Reception and Dinner at Osteria Via Stato, 620 N. State Street, Chicago, IL 60610

### SUNDAY MAY 13<sup>TH</sup>, ROSENWALD 015

- 9:00AM-9:40AM "Black-White Differences in Intergenerational Mobility in the U.S."  
Bhash Mazumder  
9:40AM-10:20AM "The Effects of Residential Segregation during Childhood on Life Chances: Causal  
Evidence Using Historical Railroad Track Configurations"  
Rucker Johnson  
10:20AM- 10:35AM Break  
10:35AM-11:15AM "Gender, Geography and Generations: Intergenerational Educational Mobility in Post-reform India"  
Shahe Emran(joint work with Forhad Shilpi)  
11:15AM-11:55AM "The Measurement of Educational Inequality: Achievement and Opportunity"  
Francisco Ferreira (joint work with Jérémie Gignoux)  
11:55AM-1:00PM **LUNCH, ROOM 011**  
2:00PM Adjourn

# Measuring and Interpreting Inequality Working Group

## Conference on Intergenerational Mobility

Organized by Bhash Mazumder, Steven N. Durlauf, and Scott Duke Kominers  
Human Capital and Economic Opportunity Global Working Group

May 12-13, 2012

University of Chicago, Rosenwald Hall, 1101 E. 58th Street, Chicago IL 60637

### Participant List

**Wallice Ao**

University of Wisconsin, Madison

**Alison Baulos**

University of Chicago

**Pietro Biorli**

University of Chicago

**Alberto Bisin**

New York University

**Anders Björklund**

Swedish Institute for Social Research (SOFI), Stockholm University

**Dan Black**

University of Chicago

**Sandra Black**

University of Texas-Austin

**Gregory Clark**

University of California - Davis

**Dean Corbae**

University of Wisconsin, Madison

**Steven Durlauf**

University of Wisconsin, Madison

**M. Shahe Emran**

IPD, Columbia University

**Daryl Fairweather**

University of Chicago

**Francisco Ferreira**

World Bank

**Joseph Ferrie**

Northwestern University

**Marc Fleurbaey**

Princeton University

**Benjamin Galick**

University of Chicago

**Sebastian Gallegos**

Harris School of Public Policy Studies

**Miriam Gensowski**

University of Chicago

**Paul Goldsmith-Pinkham**

Harvard University

**James J. Heckman**

University of Chicago

**Andres Hojman**

University of Chicago

**Yannis Ioannides**

Tufts University

**Sonia Jaffe**

Harvard University

**Rucker Johnson**

University of California at Berkeley

**Scott Kominers**

University of Chicago

**Hon Ho Kwok**

University of Wisconsin, Madison

**Rasmus Lentz**

University of Wisconsin, Madison

**Matthew Lindquist**

Swedish Institute for Social Research (SOFI), Stockholm University

**Lance Lochner**

University of Western Ontario

**Bhashkar Mazumder**

Federal Reserve Bank of Chicago

**Ji Min Park**

University of Chicago

**Seong Moon**

University of Chicago

**Sara Moreira**

University of Chicago

**Stefano Mosso**

University of Chicago

**Andrew Newman**

Boston University

**Arik Roginski**

University of Wisconsin, Madison

**Ananth Sheshadri**

University of Wisconsin, Madison

**Edward Sung**

University of Chicago

**Kegon Tan**

University of Wisconsin, Madison

**Atsuko Tanaka**

University of Wisconsin, Madison

**Daniel Tannenbaum**

University of Chicago

**Martin Weidner**

University College London

**Xiangrong Yu**

University of Wisconsin, Madison

**Mariyana Zapryanova**

University of Wisconsin, Madison



**EARLY CHILDHOOD  
INTERVENTIONS  
WORKING GROUP  
INAUGURAL CONFERENCE  
APRIL 21, 2012**

**WHEN**

**April 21:** 1:30pm - 5:45pm

**Reception and Dinner to Follow:**

Osteria Via Stato  
620 N. State Street  
Chicago, IL 60610

**WHERE**

**Swift Hall, University of Chicago**  
1025 E. 58th Street, Chicago, IL  
60637

**ORGANIZERS**

James J. Heckman  
Burton Singer  
Richard Tremblay  
Seong Hyeok Moon  
Rodrigo Pinto

**CONFERENCE SESSIONS**

**Session 1: Strengthening Methodology**

**Stephen Raudenbush** (University of Chicago)  
“Studying the impact of program participation in multi-site trials using instrumental variables”

**Susan Murphy** (University of Michigan)  
“Getting SMART About Adapting Interventions”

**Rodrigo Pinto** (University of Chicago)  
“Statistical and Econometric Issues in Evaluating Early Childhood Interventions”

**Session 2: Measuring Vulnerabilities and Outcomes**

**Jeanne Brooks-Gunn** (Columbia University)  
“Fragile Families: Implications for Parenting and Child Well-Being”

**Stephen Suomi** (NICHD)  
“Epigenetic Consequences of Early Social Experiences in Rhesus Monkeys.”

**Eric Pakulak** (University of Oregon)  
“Experiential, genetic, and epigenetic effects on human neurocognitive development”

**Elizabeth Pungello** (University of North Carolina - Chapel Hill)

# Early Childhood Interventions Working Group Inaugural Conference

Organized by James J. Heckman, Burton Singer, Richard Tremblay, Seong Hyeok Moon, and Rodrigo Pinto

Human Capital and Economic Opportunity Global Working Group  
April 21, 2012  
Swift Hall  
University of Chicago, 1025 E. 58<sup>th</sup> Street, Chicago IL 60637

## Program

12:30 -1:30pm Lunch

1:30 – 2:00pm Welcoming remarks, James J. Heckman (University of Chicago)

2:00 – 3:45pm **Session 1: Strengthening Methodology**

**Moderator:** Burton Singer (University of Florida)

**Speakers :**

**Stephen Raudenbush** (University of Chicago)

“Studying the Impact of Program Participation in Multi-Site Trials Using Instrumental Variables”

**Susan Murphy** (University of Michigan)

“Getting SMART About Adapting Interventions”

**Rodrigo Pinto** (University of Chicago)

“Statistical and Econometric Issues in Evaluating Early Childhood Interventions”

4:00 – 5:45pm **Session 2: Measuring Vulnerabilities and Outcomes**

**Moderator:** Seong Hyeok Moon (University of Chicago)

**Speakers:**

**Jeanne Brooks-Gunn** (Columbia University)

"Fragile Families: Implications for Parenting and Child Well-Being"

**Stephen Suomi** (NICHD)

“Epigenetic Consequences of Early Social Experiences in Rhesus Monkeys.”

**Eric Pakulak** (University of Oregon)

"Experiential, Genetic, and Epigenetic Effects on Human Neurocognitive Development"

**Elizabeth Pungello** (University of North Carolina – Chapel Hill)

6:00pm Depart from Swift Hall to Osteria Via Stato. Transportation will be provided.

6:30-9:15pm Reception and Dinner, Osteria Via Stato, 620 N. State Street, Chicago, IL 60610

9:15pm Dinner adjourns. Transportation will be provided from Osteria to hotels (Radisson blu and Silversmith).

# First Inaugural Conference

## Early Childhood Interventions Network

### Human Capital and Economic Opportunity Global Working Group

Organized by James J. Heckman, Richard Tremblay, Burton Singer Seong Hyeok Moon, Rodrigo Pinto

April 21, 2012

Swift Hall

University of Chicago

1025 E. 58th Street, Chicago, IL 60637

## Participants

Harold Alderman  
*The World Bank*  
Orazio Attanasio  
*University College London*  
Alison Baulos  
*University of Chicago*  
Nazli Baydar  
*Koc University*  
Lupe Bedoya  
*University of Chicago*  
Jere Behrman  
*University of Pennsylvania*  
Pedro Bernal  
*University of Chicago*  
Pietro Biroli  
*University of Chicago*  
Hoyt Bleakley  
*University of Chicago*  
David Bravo  
*Universidad de Chile*  
Jeanne Brooks-Gunn  
*Columbia University*  
Sarah Cattan  
*University of Chicago*  
Ian Caughlin  
*University of Chicago Staff*  
Gabriela Conti  
*University of Chicago*  
Alejandra Cortazar  
*Teachers College-Columbia University*  
Alejandra Cortazar  
*Teachers College-Columbia University*  
Andrea Danese  
*University of Chicago Staff*

Paul Davidson  
*Journal of Post Keynesian Economics*  
Orla Doyle  
*UCD Geary Institute*  
Greg Duncan  
*University of California, Irvine*  
Steven Durlauf  
*University of Wisconsin, Madison*  
Lia Fernald  
*University of California, Berkeley*  
Miriam Gensowski  
*University of Chicago*  
Paul Gertler  
*University of California, Berkeley*  
Maryclare Griffin  
*University of Chicago*  
Megan Gunnar  
*University of Minnesota*  
James Heckman  
*University of Chicago*  
Guanglei Hong  
*University of Chicago*  
Julene Iriarte  
*University of Chicago Staff*  
Ariel Kalil  
*University of Chicago*  
Ana Sofia Leon  
*University of Chicago*  
Costas Meghir  
*Yale University*  
Edward Melhuish  
*Birkbeck, University of London*

Magne Mogstad  
*University College London*  
Seong Moon  
*University of Chicago*  
Susan Murphy  
*University of Michigan*  
Owen Ozier  
*World Bank*  
Ricardo Paes de Barros  
*National Institute for Applied Economic Research*  
Eric Pakulak  
*University of Oregon*  
Ji Min Park  
*University of Chicago*  
Amelie Petitclerc  
*Columbia University*  
Rodrigo Pinto  
*University of Chicago*  
Javaeria Qureshi  
*University of Chicago*  
Craig Ramey  
*Virginia Tech*  
Stephen Raudenbush  
*University of Chicago*  
Patricia Ritter  
*University of Chicago*  
Maria Fernanda Rosales  
*University of Chicago*  
Marta Rubio-Codina  
*The Institute for Fiscal Studies*  
Thomas Saias  
*University of Chicago*  
Daniel Santos

Nobert Schady  
*Inter American Development Bank*  
Lawrence Schweinhart  
*HighScope*  
Burton Singer  
*University of Florida*  
Edward Sung  
*University of Chicago*  
Stephen Suomi  
*National Institute of Child Health & Human Development*  
Duncan Thomas  
*University of Chicago*  
Mary Young  
*Center on the Developing Child at Harvard University*  
Arianna Zanolini  
*University of Chicago*  
Wladimir Zanolini  
*University of Chicago*

**Chicago Initiative for Economic Development and Early  
Childhood (CEDEC) Conference  
April 20-21  
University of Chicago  
The Divinity School**

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This conference will bring together leading researchers and key members of international organizations to discuss state-of-the-art research on early childhood development integrating the role of the family influences with early childhood interventions. The main goals of the conference are the following:

**Goals**

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1. To understand the status of child well-being around the world
2. To compare and integrate in a unifying framework the joint effects of family influence and social interventions on child development.
3. To understand how interventions supplement and interact with family influences
4. To take stock of interventions in countries at different stages of development and understand the mechanism through which they influence child development and late life outcomes
5. To identify priorities: Are early childhood interventions cost effective compared to alternative uses of funds? At what stage of a person's life-cycle and a country's economic development?
6. To discuss the benefits of prevention vs. the costs of remediation
7. To re-conceptualize the notion of inequality of opportunity and the proper measure of child disadvantage

## Sessions

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### *Friday, April 20<sup>th</sup>*

- 8:30-9:00 Breakfast  
9:00-9:10 Introduction by CEDEC  
9:10-9:40 **James Heckman**: Introduction and Opening Remarks

#### *1. Status of children, nature of family influence and the definition of child poverty*

- What does disadvantage means? What does it imply in terms of the role of children's interventions?
- How could we appropriately measure inequality and disadvantage during childhood?
- What do we know about the current physical, cognitive and emotional development of young children around the world? What are the differences across regions?
- How has poverty/disadvantage changed in the last decades? Does this have implications for targeting and designing current interventions?
- What are the limitations of current measures of disadvantage given the modern knowledge about early childhood development?

#### Schedule:

- 9:40-9:45: **Steven Durlauf** (moderator). Introduction and definition of the goals  
9:45-10:10: **Martha Nussbaum**  
10:10-10:35: **Patrice Engle**

10:35-11:05: *Coffee Break*

- 11:05-11:30: **Magne Mogstad**  
11:30-11:55: **Jean Brooks-Gunn**  
11:55-12:25 Discussion and Q&A

12:25-13:25 *Lunch*

## ***2. The family: its influence on cognition, personality and health***

- How does the family influence early childhood development through behavior? Through genes? Through the interaction between the two?
- What is the role of the family on the intergenerational transmission of health, cognition, socio-emotional skills and other traits? On the formation of capabilities over the life-cycle?
- Early vs. late: what are the effects of investing in the womb and in the prenatal period? How do they compare with investments in later periods?
- How important are family influences vs. social influences (school, community and peer influences)?
- How do the mechanisms of family influences on ECD differ across developmental contexts?

Schedule:

13:25 - 13:30: **Amy Claessens** (moderator). Introduction and definition of the goals

13:30 - 13:55: **Greg Duncan**

13:55 - 14:20: **Andrea Danese**

14:20 - 14:45: **Edward Melhuish**

14:45 - 15:10: **Mark Rosenzweig**

15:10 - 15:40: Discussion and Q&A

15:40 - 16:10: *Coffee Break*

### ***3a. Early Interventions as supplements to family life.***

- How does the family respond to interventions? To what extent should interventions aim to influence families as well as children? Is there any evidence of complementarity or substitution?
- What is the role of parental and community involvement in ECI? What environmental and social factors have detrimental effects on the gains obtained by ECIs?
- How do interventions on the mothers impact child wellbeing?

Schedule:

16:10 - 16:15: **Hoyt Bleakley** (moderator). Introduction and definition of the goals

16:15 - 16:40: **Lia Fernald**

16:40 - 17:05: **Jere Behrman**

17:05 - 17:30: **Costas Meghir**

17:30 - 18:00: Discussion and Q&A

18:00 - 19:00: *Mingling Cocktail*

*Saturday, April 21<sup>st</sup>*

**3b. Early Interventions: mechanisms, timing and outcomes**

- In the formation of skills, how can we compare the role of early childhood interventions with the role of the family? How can we evaluate different mechanisms of intervention?
- When should we intervene? For which capabilities is timing critical for remediation and for which ones is timing not an important factor?
- What are the channels/mechanisms through which interventions impact later outcomes? How do they differ between developed and developing countries?

Schedule:

8:30 - 8:35 **Burt Singer** (Moderator) Introduction and definition of the goals

8:35 - 9:00 **Ricardo Paes de Barros**

9:00 - 9:25 **Paul Gertler**

9:25 - 9:50 **Norbert Schady**

9:50 - 10:20 Discussion and Q&A

10:20 -10:50 *Coffee Break*

**4. What is the return to child development compared to other strategies?**

- What are the benefits of early childhood interventions relative to other strategies of economic development?
- What are the costs of remediation versus the benefits of prevention in different economic environments?
- Which aspects of child development have the highest rate of return in different developmental contexts? Nutritional supplementation, cognitive stimulation, parenting, emotional support?
- Prioritization of limited funds: should government invest in early childhood development or focus on other public interventions?

Schedule:

10:50 - 11:00 **James Heckman**: introduction and moderation of the panel

11:00 - 11:45 **Round Table:Greg Duncan, Paul Gertler, Joan Lombardi, Mark Rosenzweig**

*5-8 minutes for each panelist, then open the floor to discussion*

### *5. Overview panel: taking a step forward*

- What are the main lessons from ECD interventions?
- How can interventions be designed or improved to enhance their effectiveness?
- What are the challenges in applying the lessons learned from these interventions to other settings, particularly in developing countries?
- Which developmental dimensions or interactions require more research?
- There is substantial evidence that ECIs are effective, yet there is not much known about best practices, or which components of ECI work. What are the key issues to address to advance this research agenda further?
- In the light of what you have learned through your results and what has been addressed in this conference, if you could go back in time, what would you change in the interventions you have participating in?

Schedule:

11:45 - 11:50 **Steven Durlauf**: Introduction and moderation of the panel

11:50 - 12:35 **Round Table: Jean Brooks-Gunn, Jere Berhman, Norbert Schady, Orazio Attanasio**

*5-8 minutes for each panelist, then open the floor to discussion*

12:25-13:25 *Lunch*

# Chicago Initiative for Economic Development and Early Childhood (CEDEC)

*Investing in Early Childhood: A Global Perspective on the Interplay Between Family and Interventions.*

April 20 – 21, 2012

Swift Hall, University of Chicago

Sonya Anderson  
Orazio Attanasio  
Anirban Basu  
Guadalupe Bedoya  
Jere Behrman  
Lucy Bilaver  
Pietro Biroli  
Dan Black  
Hoyt Bleakley  
David Bravo  
Jeanne Brooks-Gunn  
David Burk  
Elise Chor  
Amy Claessens  
Ellen Cohen  
Gabriella Conti  
Alejandra Cortazar  
Andrea Danese  
Ozlem Ece Demir  
Steven Durlauf  
Philipp Eisenhauer  
Patrice Engle  
Lia Fernald  
Roxanne Fillmore  
Chris Flinn  
Glenda Fulton  
Sebastian Gallegos  
Miriam Gensowski

Paul Gertler  
Phyllis Glink  
Robert Goerge  
Naiqing Gu  
Ann Hanson  
James Heckman  
Daniel Hedblom  
Andres Hojman  
Diane Houdek  
Sam Hwang  
Kelly Jones  
Jaeyoon Lee  
Ana Sofia Leon  
Joan Lombardi  
Nicholas Mader  
Sephora Mangin  
Ioana Marinescu  
Costas Meghir  
Edward Melhuish  
Alicia Menendez  
Bruce Meyer  
Magne Mogstad  
Sara Moreira  
Rebecca Myerson  
Sophie Nadeau  
Martha Nussbaum  
Ozier Owen  
Ricardo Paes De Barros

Amelie Petitclerc  
Andre Pulcherio  
Craig Ramey  
Marcos Rangel  
Sarojini Rao  
Nayoung Rim  
Patricia Ritter  
Alejandra Ros  
Mark Rosenzweig  
Norbert Schady  
Jeff Schoenberg  
Ana Serrano  
Burt Singer  
Laurel Spindel  
Matthew Stagner  
Jin Sun  
Dana Suskind  
Daniel Tannenbaum  
Duncan Thomas  
Maggie Triyana  
Jorge Ugaz  
Pallavi Vyas  
Dominick Washington  
Ann Weber  
Viena Yeung  
Mary Young  
Ariana Zanolini  
Wladimir Zaroni

# MEASURING AND INTERPRETING INEQUALITY WORKING GROUP FIRST MEETING

## FEBRUARY 18, 2012

### HUMAN CAPITAL AND ECONOMIC OPPORTUNITY GLOBAL WORKING GROUP

#### TIME

**8:30AM - 5:15PM**

Reception and dinner to follow

#### LOCATION

**RM 232, NORC**

University of Chicago  
1155 E. 60th Street  
Chicago, IL 60637

#### ORGANIZERS

**Scott Duke Kominers**

University of Chicago

**Steven N. Durlauf**

University of Wisconsin

#### PRESENTATIONS

**Matching with Evolving Human Capital**

*Lones Smith*

**Promoting School Competition through School Choice: A Market Design Approach**

*John William Hatfield*

**School Admissions Reform in Chicago and England: Comparing Mechanisms by Their Vulnerability to Manipulation**

*Tayfun Sonmez*

**Effective Affirmative Action in School Choice**

*M. Bumin Yenmez*

**Matching with Slot-Specific Priorities: Theory and Applications**

*Scott Duke Kominers*

**Do Parents Choose under the Boston Mechanism?**

*Caterina Calsamiglia*

**Consumption and Income Inequality in the U.S. Since the 1960s**

*Bruce D. Meyer*

**Dismantling the Legacy of Caste: Affirmative Action in Indian Higher Education**

*Dennis Epple*

**Homophily and Transitivity in Dynamic Network Formation**

*Bryan Graham*

# Measuring and Interpreting Inequality

## Working Group

### First Meeting

Organized by Scott Duke Kominers and Steven N. Durlauf

Human Capital and Economic Opportunity Global Working Group

February 18, 2012

NORC, The University of Chicago, 1155 E. 60<sup>th</sup> Street, Chicago IL 60637

### Program

#### **NORC, Room 232**

8:30-9:00 Full Breakfast

9:00-9:40 **"Consumption and Income Inequality in the U.S. Since the 1960s"**

Bruce D. Meyer (joint work with James X. Sullivan)

9:40-10:20 **"Dismantling the Legacy of Caste: Affirmative Action in Indian Higher Education"**

Dennis Epple (joint work with Surendrakumar Bagde and Lowell J. Taylor)

10:20-10:35 *Break*

10:35-11:15 **"Promoting School Competition Through School Choice: A Market Design Approach"**

John William Hatfield (joint work with Fuhito Kojima and Yusuke Narita)

11:15-11:55 **"School Admissions Reform in Chicago and England: Comparing Mechanisms by Their Vulnerability to Manipulation"**

Tayfun Sonmez (joint work with Parag Pathak)

#### **NORC, Room 232**

11:55-12:10 *Lunch*

#### **NORC, Room 232**

12:10-1:00 Discussion of MIE Goals and Future Events

1:00-2:00 Invited Address: **"Matching with Evolving Human Capital"**

Lones Smith (joint work with Axel Anderson)

2:00-2:15 *Break*

2:15-2:55 **"Effective Affirmative Action in School Choice"**

M. Bumin Yenmez (joint work with Isa E. Hafalir and Muhammed A. Yildirim)

2:55-3:35 **"Matching with Slot-Specific Priorities: Theory and Applications"**

Scott Duke Kominers (joint work with Tayfun Sonmez)

3:35-3:50 *Break*

3:50-4:30 **"Do Parents Choose under the Boston Mechanism?"**

Caterina Calsamiglia (joint work with Maia Guell)

4:30-5:10 **"Homophily and Transitivity in Dynamic Network Formation"**

Bryan Graham

5:15 Depart from NORC to Hotel Intercontinental. University transportation will be provided

**Hotel Intercontinental, 505 North Michigan Ave., Chicago IL 60611**

5:30-6:30 Free Time

**Joe's Restaurant, 60 East Grand Ave., Chicago IL 60611**

6:30-7:00 Reception

# Measuring and Interpreting Inequality

## Working Group

### First Meeting

### Participants

Organized by Scott Duke Kominers and Steven N. Durlauf

Human Capital and Economic Opportunity Global Working Group  
February 18, 2012

National Opinion Research Center  
The University of Chicago, 1155 E. 60<sup>th</sup> Street, Chicago

Gary Becker  
University of Chicago  
Dan Black  
University of Chicago  
Seth Blumberg  
University of Chicago  
Lawrence Blume  
Cornell University  
Eric Budish  
University of Chicago  
Caterina Calsamiglia  
Universitat Autònoma de Barcelona  
Kerwin Charles  
University of Chicago  
Philipp Eisenhauer  
University of Chicago  
Dennis Epple  
Carnegie Mellon University  
Lee Fennel  
University of Chicago  
James Foster  
George Washington University  
Benjamin Galick  
University of Chicago  
Miriam Gensowski  
University of Chicago  
Bryan Graham  
University of California, Berkeley  
Naiqing Gu  
University of Chicago  
Isa Hafalir  
Carnegie Mellon University  
John Hatfield  
Stanford Graduate School of Business  
James J. Heckman  
University of Chicago  
Brent Hickman  
University of Chicago  
Yannis Ioannides  
Tufts University

Sonia Jaffe  
Harvard University  
Fuhito Kojima  
Stanford University (visiting Columbia)  
Scott Duke Kominers  
University of Chicago  
Glenn Loury  
Brown University  
Bhashkar Mazumder  
Federal Reserve Bank of Chicago  
Bruce Meyer  
University of Chicago  
Seong Hyeok Moon  
University of Chicago  
Stefano Mosso  
University of Chicago  
Yusuke Narita  
Massachusetts Institute of Technology  
Rodrigo Pinto  
University of Chicago  
John Roemer  
Yale Univ  
Arik Roginsky  
University of Wisconsin-Madison  
Mayara Silva  
Cornerstone Research  
Lones Smith  
University of Wisconsin  
Tayfun Sonmez  
Boston College Chestnut Hill  
Ed Sung  
University of Chicago  
Xan Vongsathorn  
University of Chicago  
M. Bumin Yenmez  
Carnegie Mellon University  
Hanzhe Zhang  
University of Chicago  
Congyi Zhou  
University of Chicago

# FINANCING HUMAN CAPITAL INVESTMENT

## JANUARY 5, 2012

### HUMAN CAPITAL AND ECONOMIC OPPORTUNITY MARKETS WORKING GROUP

#### TIME

**8:15 AM - 4:45 PM**

Reception and dinner to follow

#### LOCATION

**RM 408, Gleacher Center**

450 N. Cityfront Plaza  
Chicago, IL 60611

#### ORGANIZERS

**Mariacristina De Nardi**

Chicago Fed

**Lance Lochner**

Univ. of Western Ontario

#### PRESENTATIONS

**Production Function of Human Capital in Developing Countries**

*Orazio Attanasio, University College London*

**The Macroeconomics of Microfinance**

*Francisco Buera, UCLA*

**Equilibrium Effects of Education Policies: A Quantitative Evaluation**

*Giovanni Gallipoli, University of British Columbia*

**The Money Value of a Man**

*Mark Huggett, Georgetown University*

**Understanding the Income Gradient in College Attendance in Mexico: The Role of Heterogeneity in Expected Returns**

*Katja Kaufmann, Bocconi University*

**Human Capital Risk, Contract Enforcement and the Macroeconomy**

*Tom Krebs, University of Mannheim*



BECKER FRIEDMAN INSTITUTE  
FOR RESEARCH IN ECONOMICS  
THE UNIVERSITY OF CHICAGO



Institute for  
New Economic Thinking

CIBC

Centre for  
Human Capital  
& Productivity

The University of Western Ontario

# Conference on Financing Human Capital Investment

Organized by Mariacristina De Nardi and Lance Lochner

Markets Network, Human Capital and Economic Opportunity Working Group

January 5, 2011

Gleacher Center, 405 N. Cityfront Plaza, Chicago IL 60611

## Program

### Gleacher Center Room 408

8:15-8:45 Full Breakfast, Short introduction to the Markets Network

8:45-9:45 "The Money Value of a Man"

Mark Huggett (Georgetown University) and Greg Kaplan (University of Pennsylvania)

*Discussion leader: Luca Benzoni (Federal Reserve Bank of Chicago)*

9:45-10:45 "Human Capital Risk, Contract Enforcement, and the Macroeconomy"

Tom Krebs (University of Mannheim), Moritz Kuhn (University of Bonn), and Mark Wright (UCLA)

*Discussion leader: Matthias Doepke (Northwestern University)*

10:45-11:00 *Break*

11:00-12:00 "Understanding the Income Gradient in College Attendance in Mexico: The Role of Heterogeneity in Expected Returns"

Katja Kaufmann (Bocconi University)

*Discussion leader: Salvador Navarro (Western Ontario)*

### Gleacher Center, Room 420, Lounge

12:00-1:15 *Lunch*

### Gleacher Center, Room 408

1:15-2:15 "The Macroeconomics of Microfinance"

Francisco Buera (UCLA), Joseph Kaboski (University of Notre Dame) and Yongseok Shin (Washington University, St. Louis)

*Discussion leader: Mark Wright (UCLA, Federal Reserve Bank of Chicago, and NBER)*

2:15-2:30 *Break*

2:30-3:30 "Equilibrium Effects of Education Policies: A Quantitative Evaluation"

Giovanni Gallipoli (University of British Columbia), Costas Meghir (Yale University), and Giovanni Violante (New York University)

*Discussion leader: Mariacristina De Nardi (Federal Reserve Bank of Chicago and NBER)*

3:30-3:45 *Break*

3:45-4:45 "The Production Function of Human Capital in Developing Countries"

Orazio Attanasio (University College London)

*Discussion leader: Jim Heckman (University of Chicago)*

### Gleacher Center, Room 420, Lounge

5:15-6:15 Reception

### Osteria Via Stato, 620 North State Street (shuttle provided)

6:30-7:15 Cocktail Hour

7:15 Dinner

# HEALTH INEQUALITY NETWORK

# INAUGURAL MEETING

## SEPTEMBER 15, 2011

### KEY QUESTIONS

- Definition of outcomes/phenotypes: what is health?
- Dependence on proxies of exposure: how to deal with multiple exposures?
- Heterogeneity in behavioral responses: what happens within and across families?
- Critical windows and opportunities for interventions: when shall we intervene to reduce health disparities?
- Latency and nonlinear epigenetic effects: how visible and when are the effects of early-life adversity?
- Will health inequalities always be with us?

### HEALTH INEQUALITY NETWORK MEMBERS

Jere R. Behrman  
Gabriella Conti  
Janet Currie  
George Davey Smith  
Angus Deaton  
Steven N. Durlauf  
Titus Galama  
Donna B. Gilleskie  
Melissa Gilliam

Sir Peter Gluckman  
Keith Godfrey  
Mark Hanson  
James J. Heckman  
Christopher W. Kuzawa  
Thomas McDade  
David Meltzer  
Olufunmilayo I. Olopade  
Kate E. Pickett

Burton Singer  
James P. Smith  
Moshe Szyf



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THE UNIVERSITY OF CHICAGO



Institute for  
New Economic Thinking

## Inaugural Conference of the Health Inequality Network (HINET)

**The Health Inequality Network** is a multidisciplinary research network that has been created at the University of Chicago, within the INET (Institute for New Economic Thinking). It comprises a group of world-class scholars on health research from diverse fields, such as: anthropology, economics, epidemiology, epigenetics and medicine - led by Prof. Heckman, under the coordination of Prof. Janet Currie (senior coordinator) and Dr. Gabriella Conti (junior coordinator).

**The aim of the Health Inequality Network** is to synthesize and extend insights from several disciplines into a unified approach, in order to build up a comprehensive framework for the emergence and the evolution of health disparities over the lifecycle and across generations which incorporates the study of: socioeconomic determinants; genetic inheritance; epigenetic mechanisms; biological and neuronal pathways; policy interventions and behavioral responses.

**The objective of the first HINet workshop** is to allow the network members to deepen the knowledge of each other's work and to start interacting, towards the development of a synergistic approach to understanding the evolution of health disparities over the lifecourse and across generations, integrating frontier approaches in different disciplines. Key aspects which will be investigated include the following:

- **Definition of outcomes/phenotypes: *what is health?***
- **Dependence on proxies of exposure: *how to deal with multiple exposures?***
- **Heterogeneity in behavioral responses: *what happens within and across families?***
- **Critical windows and opportunities for interventions: *when shall we intervene to reduce health disparities?***
- **Latency and nonlinear epigenetic effects: *how visible and when are the effects of early-life adversity?***
- **Will health inequalities always be with us?**

## Agenda

09:00AM – 09:20AM: Introduction -- **Jim Heckman**

09:25AM – 09:45AM: **Janet Currie**

09:45AM – 10:00AM: Discussion

10:00AM – 10:20AM: **Chris Kuzawa**

10:20AM – 10:35AM: Discussion

**10:35AM – 10:50AM: Coffee Break**

10:50AM – 11:10AM: **Steven Durlauf**

11:10AM – 11:25AM: Discussion

11:25AM – 11:45AM: **Jere Behrman**

11:45AM – 12:00PM: Discussion

12:00PM – 12:20PM: **Titus Galama**

12:20PM – 12:35PM: Discussion

**12:35PM – 01:45PM: Lunch**

01:45PM – 02:05PM: **Donna Gilleskie**

02:05PM – 02:20PM: Discussion

02:20PM – 02:40PM: **Funmi Olopade**

02:40PM – 02:55PM: Discussion

02:55PM – 03:15PM: **Peter Gluckman**

03:15PM – 03:30PM: Discussion

03:30PM – 03:50PM: **Burton Singer**

03:50PM – 04:05PM: Discussion

**04:05PM – 04:20PM: Coffee Break**

04:20PM – 04:50PM: Summary of key points and implications for future HINet activity  
**Heckman and Singer**, discussion leaders

## **The Role of Genetic and Environmental Factors across the Lifecourse: *Improving the Rigor of Causal Inference***

There is an established consensus across disciplines on the need to adopt a lifecourse perspective to understand the evolution of health and the ageing process. The aim of this workshop is to bring together researchers at the frontier of their fields to confront and start integrating interdisciplinary approaches to advance our knowledge on the developmental origins of health and ageing, and to set priorities for future research agendas.

The focus of the workshop is to explore the potential synergies and to combine insights from the biological and the medical sciences, together with recent advances in genetic analysis and rigorous statistical modeling, to advance our understanding of:

- the **mechanisms** through which genetic endowments and early life conditions affect the evolution of health across the lifecourse;
- the **importance** of selection effects in estimating the causal role of social and biological factors relevant to health and ageing;
- the **nature** of the selection effects, their evolution across the lifecourse and the mechanisms through which they operate.

## Schedule

09:00AM – 09:15AM: **Introduction and statement of Objectives** --- Jim Heckman

### **Session 1 – Lifecourse Consequences of Early Life Events**

*Questions to be addressed:*

- *What is the evidence from animal and human studies on the lifecourse consequences of early life events? How robust is the evidence?*
- *Are there critical and/or sensitive periods in the development of cognition, mental traits and physical health? How reversible are the effects of compromised development?*

09:15AM – 09:30AM: Mark Hanson

09:30AM – 09:45AM: Keith Godfrey

09:45AM – 10:00AM: L.H. Lumey

10:00AM – 10:25AM: Discussion

10:25AM – 10:45AM: **Coffee**

### **Session 2 – Interpersonal Dynamics and Its Long-Term Consequences**

*Questions to be addressed:*

- *What are the causes and long-term consequences of suboptimal social development?*
- *How does an impaired social development get under the skin in animals and humans?*

10:45AM – 11:00AM: Dario Maestripieri

11:00AM – 11:15AM: Steve Suomi

11:15AM – 11:30AM: Kate Pickett

11:30AM – 11:55AM: Discussion

11:55AM – 01:30PM: **Lunch**

### **Session 3 – Biological Correlates and Pathways**

*Questions to be addressed:*

- *What are the mechanisms (both biological and socioeconomic) through which genetic factors operate, and translate into outcomes?*
- *How do we identify the short- and long-term effects of single exposures from their cumulative effects over the lifecycle and the mechanisms through which they operate, from the cells to the society?*

01:30PM – 01:45PM: George Davey Smith

01:45PM – 02:00PM: Steve Cole

02:00PM – 02:15PM: Allen Rodrigo

02:15PM – 02:40PM: Discussion

### **Session 4 – Psycho-Socio-Biological Linkages across the Lifespan**

*Questions to be addressed:*

- *What is the contribution of genetic and environmental factors to health and ageing?*
- *Do people make their own environments? Do they react to them? How robust is the evidence across research strategies?*

02:40PM – 02:55PM: Timothy York

02:55PM – 03:10PM: Alex Burt

03:10PM – 03:25PM: Jenae Neiderhiser

03:25PM – 03:40PM: Peter Molenaar

03:40PM – 04:05PM: Discussion

04:05PM – 04:25PM: **Coffee**

## Session 5 – Human Molecular Genetics

Questions to be addressed:

- *How does molecular genetics contribute to understanding health and ageing? What are the most promising measures?*
- *What are the determinants and consequences of epigenetic variation? What are the most promising approaches to integrate them into models of behavior?*

04:25PM – 04:40PM: Richard Ebstein

04:40PM – 04:55PM: Caroline Relton

04:55PM – 05:10PM: Andrey Rzhetsky

05:10PM – 05:25PM: Discussion

Closing Remarks and next steps --- Jim Heckman

## ICREA-MOVE Conference on “Family Economics”

Date: March 25-26<sup>th</sup>, 2011

Venue: Faculty of Economics and Business Administration at the Bellaterra campus of the Universitat Autònoma de Barcelona

Organizers: Pierre-Andre Chiappori, Christopher Flinn, Jeremy Greenwood, Nezih Guner and James Heckman

Local organization: Nezih Guner



European  
Research  
Council

The organization of the conference has received funding from the European Research Council under the European Union’s Seventh Framework Programme (FP | 2007-2013) / ERC grant agreement nº263600

### FRIDAY, March 25

08:30 *Shuttle leaves conference hotel*

09:15-09:30 **Registration and Welcome**

#### **Session I** - Investment in Children and Education

**Gabriella Conti** (University of Chicago), “Early Health Shocks, Parental Responses, and Child Outcomes,” with James Heckman (University of Chicago) Junjian Yi (Chinese University of Hong Kong) and Junsen Zhang (Chinese University of Hong Kong).

**Discussant:** Jerome Adda (European University Institute)

09:30-11:45

**Marco Cosconati** (Bank of Italy), “Parenting Style and Development of Human Capital in Children,”

**Discussant:** Lance Lochner (University of Western Ontario)

**Flavio Cunha** (University of Pennsylvania), “Welfare and Fertility”

**Discussant:** Pedro Mira (CEMFI)

11:45-12:15

*COFFEE BREAK*

#### **Session II** - Investment in Children and Education

12:15-13:00

**Meta Brown** (Federal Reserve Bank of New York), “Family Law Effects on Divorce, Fertility and Child Investment,” with Chris Flinn (NYU)

**Discussant:** Sekyu Choi (Universitat Autònoma de Barcelona-MOVE)

13:00-14:15

LUNCH

**Session III** - Investment in Children and Education

**Aloysius Siow** (University of Toronto), "IV Estimation of Peer Effects in Small Groups: An Application to Estimating Sibling Peer Effects in Schooling and Long Run Wages"

14:15-15:45 **Discussant:** Stephane Bonhomme (CEMFI)

**Raquel Fernandez** (New York University), "Why Women Lead Men in Education: A Quantitative Analysis" with Joyce Wong (New York University)

**Discussant:** Murat Iyigun (University of Colorado-Boulder)

15:45-16:15

COFFEE BREAK

**Session IV** - Household Decisions, Marriage and Divorce

**Valerie Lechene** (University College London), "Efficient Responses to Targeted Cash Transfers", with Orazio Attanasio (University College London)

16:15-17:45 **Discussant:** Joan Lull (CEMFI)

**Martin Browning** (Oxford University) "Marriage and Consumption", with Laura Blow (The Institute for Fiscal Studies) and Mette Ejrnaes (University of Copenhagen)

**Discussant:** Jeremy Lise (University College London)

17:45-18:00

COFFEE BREAK

**Session V** - Household Decisions, Marriage and Divorce

18:00-18:45 **Pierre-Andre Chiappori** (Columbia University), "Matching With a Handicap: The Economics of Marital Smoking", with Sonia Oreffice (University of Alicante) and Climent Quintana-Domeque (University of Alicante)

**Discussant:** Marco Francesconi (University of Essex)

19:15

**Shuttle bus leaves UAB**

**SATURDAY, March 26**

08:45

**Shuttle leaves conference hotel**

**Session VI** - Household Decisions, Marriage and Divorce

9:30-11:45 **Costas Meghir** (Yale University and University College London), "Education, Marriage and Welfare Benefits", with Pierre Andre Chiappori (Columbia University) and Monica Costa (The Institute for Fiscal Studies)

**Discussant:** Christopher Flinn (New York University)

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**Jean Marc Robin** (Science Po, Paris and University College London) “Marriage Markets and Labor Supply”

**Discussant:** Elizabeth Caucutt (University of Western Ontario)

**Ahu Gemici** (New York University), “Marriage and Cohabitation”, with Steve Laufer (New York University)

**Discussant:** Effrosyni Adamopoulou (Universidad Carlos III de Madrid)

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11:45-12:15

*COFFEE BREAK*

**Session VII** - Household Decisions, Marriage and Divorce

12:15-13:00

**Yoram Weiss** “The Dynamics of Marriage and Divorce,” with Gustaf Bruze (Aarhus University) and Michael Svarer (Aarhus University)

**Discussant:** John Knowles (University of Southampton)

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13:00-14:15

*LUNCH*

**Session VIII** - Household Decisions, Marriage and Divorce

14:15-15:45

**Cezar Santos** (University of Pennsylvania) and Georgi Kocharkov (Universidad Carlos III de Madrid) “Technology and the Changing Family”, with Jeremy Greenwood (University of Pennsylvania) and Nezih Guner (ICREA-MOVE, UAB, and Barcelona GSE).

**Discussant:** Daniela Del Boca (University of Torino, Collegio Carlo Alberto)

**Peter Rupert** (University of California, Santa Barbara), “Grand Parenting and Labor Supply” joint with Giulio Zanella (University of Bologna)

**Discussant:** Monika Merz (University of Vienna)

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15:45-16:15

*COFFEE BREAK*

**Session IX** - Households and Macroeconomy

**Stefania Albanesi** (Columbia University) “Maternal Health and Fertility: An International Perspective,”

**Discussant:** Andres Erosa (IMDEA, Madrid)

16:15-18:30

**Michele Tertilt** (Stanford University and University of Mannheim) “Does Female Empowerment Promote Economic Development?” with Matthias Doepke (Northwestern University)

**Discussant:** Sonia Oreffice (University of Alicante)

**Greg Kaplan** (University of Pennsylvania), “The Contribution of the Number of Households per person to the Variability of Aggregate Labor”, with Jose Victor Rios-Rull (University of Minnesota)

**Discussant:** Aysegul Sahin (Federal Reserve Bank of New York)

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19:00

*Shuttle bus leaves UAB*

## **Conference Summary: Measuring and Interpreting Inequality Working Group Conference on Intergenerational Mobility**

**Organized by Bhash Mazumder, Steven N. Durlauf, and Scott Duke Kominers**

**May 12-13, 2012**

**Rosenwald Hall, University of Chicago, 1101 E. 58<sup>th</sup> Street, Chicago, IL 60637**

### **Overview**

The purpose of this conference was to create an exchange of ideas and promote possible collaboration among a diverse group of scholars of the Measurement and Interpretation of Inequality network (MIE) on the general topic of intergenerational mobility. The goal of the MIE network is to understand and interpret inequality in all of its manifestations; intergenerational inequality is a key dimension of the group's research objective. Bhashker Mazumder of the Federal Reserve Bank of Chicago, and the co-leaders of the MIE Working Group, Steven Durlauf of the University of Wisconsin-Madison, and Scott Duke Kominers of the Becker Friedman Institute of Research in Economics at the University of Chicago organized presentations and discussions of the following research papers:

- "Early and Late Human Capital Investments, Borrowing Constraints, and the Family"  
Lance Lochner (University of Western Ontario), joint work with Elizabeth Caucutt (University of Western Ontario)
- "Racial Peer Effects in the Classroom"  
Daryl Fairweather (University of Chicago)
- "Rich Dad, Smart Dad: Decomposing the Intergenerational Transmission of Income"  
Matthew Lindquist (Stockholm University), joint work with Lars Lefgren (Brigham Young University) and David Sims (Brigham Young University)
- "Nature and Nurture in the Transmission of Economic Status"  
Ananth Seshadri (University of Wisconsin-Madison), joint work with Sang Yoon Lee (University of Mannheim)
- "What is the True Rate of Social Mobility? Evidence from the Information Content of Surnames"  
Gregory Clark (University of California, Davis)

## Conference Summaries, continued

- “British, American, and British-American Social Mobility: Intergenerational Occupational Change Among Migrants and Non-Migrants in the Late 19<sup>th</sup> Century”  
Joseph Ferrie (Northwestern University and NBER), joint work with Jason Long (Wheaton College)
- “Mismatch, Rematch, and Investment”  
Andrew Newman (Boston University and CEPR), joint work with Thomas Gall (University of Bonn) and Patrick Legros (ECARES, Université Libre de Bruxelles; and CEPR)
- “Black-White Differences in Intergenerational Mobility in the U.S.”  
Bhash Mazumder (Federal Reserve Bank of Chicago)
- “The Effect of Residential Segregation during Childhood on Life Changes: Causal Evidence Using Historical Railroad Track Configurations”  
Rucker Johnson (University of California, Berkeley and NBER)
- “Gender, Geography and Generations: Intergenerational Educational Mobility in Post-reformed India”  
Shahe Emran (IPD, Columbia University) and joint work with Forhad Shilpi (DECRG, World Bank)
- “The Measurement of Educational Inequality: Achievement and Opportunity”  
Francisco Ferreira (World Bank and IZA), joint work with Jérémie Gignoux (Paris School of Economics)

### **I. “Early and Late Human Capital Investments, Borrowing Constraints, and the Family,” Lance Lochner (joint work with Elizabeth Caucutt)**

There is a large body of literature studying the role of borrowing constraints on college attendance. However, most of these studies take earlier investments and family transfers as given. These studies typically find adolescent abilities to be very important in determining future earnings. This paper aims to study the role of borrowing constraints on pre-college investments and family transfers in determining these abilities as well as later schooling choices and earnings.

There are several reasons as to why studying early life borrowing constraints is crucial for thinking about human capital investment and associated economic outcomes:

- Consumption studies have found that borrowing constraints are typically more salient for younger families.
- Younger parents may have large college debts and typically earn less when their children are young.
- In the US as well as many other countries, there are loan programs targeted toward college, but there are no loan programs that specifically target early investment in children.

Some studies have shown that early interventions, such as the Perry Preschool program, have large long-run effects on a range of socioeconomic outcomes; from a cost benefit perspective early childhood investment have high rates of return. However, credit constraints, especially for young parents, inhibit investment and can explain why most low-income children do not participate in quality preschool programs despite the high economic returns. Altogether, family's financial status at earlier ages has relatively large impacts on children's achievements and educational attainments.

## Conference Summaries, continued

The objective of this paper is to understand the following:

- The importance of borrowing constraints at different stages of development.
- The magnitude of dynamic complementarities in human capital investments and how they interact with borrowing constraints
- The effects of policies at one stage of childhood development on investments at other stages.
- Intergenerational transfers and their implications for policy in the short and long run.

Investment in human capital is a multi-stage process that begins early in life. This paper develops a human capital based theory of the family that incorporates the dynamic nature of investment in children, intergenerational transfers, and borrowing constraints faced by parents and college-age youth.

The paper's theoretical model is based on an overlapping generation model with multiple human capital investment periods. Major findings of the theoretical analysis include

- Dynamic complementarity can play a central role in determining the impacts of investment subsidies and borrowing constraints on investment over the lifecycle.
- With sufficient complementarity, policies encouraging investment at one stage of development also increase investment at other stages.
- When investments are substitutable over time, a subsidy or loan increase at one stage of development tends to shift investment to that stage and away from others.

Data from Children of the National Longitudinal Survey of Youth (CNLSY) are used to calibrate the model. The calibrated model provides the following results:

- Raising borrowing limits for young parents produces mixed effects in terms of investment in human capital
  - o In the short run, increasing borrowing limits for young parents causes those parents that are constrained to borrow more
  - o In the long run, asset distributions shift left and there is slightly less overall human capital investments.
  - o Initial generations capture most of the benefits from relaxing borrowing limits.

This paper also simulates the long-run effects of permanent policy changes in addition to the short-run effects typically measured in empirical studies. While short-run effects are based on the current distribution of wealth and human capital in the population, long-run effects take into account changes in the distribution of assets and human capital over time. The simulation results show that:

- Later subsidies are less effective than earlier ones.
  - o There is a strong interaction between dynamic complementarities and borrowing constraints in terms of equilibrium educational investments.
  - o It is costly to increase early investment in response to later subsidies when early borrowing constraints bind.
  - o Subsidies for investment at either early or late stage raise investments at both stages. One should not neglect the response of early investment to late subsidies.

## Conference Summaries, continued

- A one-shot policy that provides income transfers to young parents increases human capital investments more than an equivalent loan to young parents. However, if the policy is permanently put in place, the loan policy increases human capital investment more.
  - o Policies that alter the borrowing constraints for parents directly encourage investment by increasing parental resources and transfers.
  - o Meanwhile, these policies discourage investment by lowering its return, since children will also receive the transfer when they grow up.
  - o A transfer policy has larger current effects from increasing the child's parental resources.
  - o Transfer policy has larger negative future effects by increasing the child's resources relative to a loan policy.

### *Discussion*

- It may be worthwhile to consider whether different sources of permanent income shocks affect optimal investment in children.
- From a policy point of view, it may be helpful if the paper is able to distinguish between policies that relax borrowing constraints and ones that provide education subsidies for families with lower incomes.
- One should also take into account of the neuroscience literature which examines the development of the brain at early ages as this implies that the overall return of the investment on child's human capital may be high regardless of future investments.

## **II. "Racial Peer Effects in the Classroom: Evidence from a Randomized Experiment," Daryl Fairweather**

Previous research on gender peer effects in school has found that increasing the share of female students in a class has positive effects on performance on both male and female students. On the other hand, previous research on racial peer effects in school has found that increasing the share of black students in the classroom has a negative effect on black, Hispanic, and white students. This paper employs data from the Tennessee STAR (Student-Teacher Achievement ratio) Project to study racial peer effects in the classroom.

Project STAR took place from 1985-1989 in 79 Tennessee public schools. Kindergarten students and teachers were randomly assigned within school to three different class types: small, large, and large with teacher aide. The project was put in place mainly to study the effect of class size on educational outcomes but has proven to be a useful source of evidence on peer effects.

This paper provides empirical evidence of the following:

- Black students perform better with a higher share of black students and lower share of other races in the classroom
- White students perform better with a higher share of white student and lower share of other races in the classroom.
- Results are similar with students of other races.

## Conference Summaries, continued

This paper suggests the following:

- It would be worthwhile to explore if the racial effects observed in the paper are driven by changes in student behavior or teacher behavior
  - o Teachers may give more attention to a given race, when more students of that race are present in the classroom.
  - o Students may be bullied more when they are in the minority.
  - o Student may view themselves different when they are in the minority.
- There may be benefits to keeping schools and classrooms homogeneous with regard to race.
- Programs that alter the racial composition of a student's school (examples include charter and magnet schools) should take racial peer effects into account.

### *Discussion*

The structure of the empirical exercise done in this paper is to pool all schools in one regression rather than taking each school in isolation and averaging. If there is heterogeneity in the student populations of different schools, such as differences in family background of the student body in terms of socioeconomic characteristics across schools, this would alter the interpretation of the results and potentially invalidate the interpretation given to the paper's regressions in terms of peer effects.

The results are largely driven by classroom in which a single student is in the minority racial group. One may question whether, if adding one black student to an all-black/all-white classroom has such a strong effect, then why is this particular student there? Why does his family choose to live in the neighborhood where the school is located? It is not clear that the effect of this "type" of student can be generalized to the effect of adding "average" black and white students.

### **III. "Rich Dad, Smart Dad: Decomposing the Intergenerational Transmission of Income," Matthew Lindquist (joint work with Lars Lefgren and David Sims)**

The empirical literature on measuring intergenerational income correlation has provided us with valuable cross-country information on the role of family background in determining economic success. However, it remains an open question as to what the structural mechanisms underlie the transmission of income from one generation to the next. In particular, it remains unclear whether an intergenerational income correlation estimate should be interpreted as the causal effect of financial resources on child quality, the mechanistic persistence of genetic or human capital differences, or something else entirely.

This paper aims to develop an approach to the identification of the mechanisms through which the intergenerational income correlation operates. This approach can be used to discern the relative importance of paternal income versus human capital in intergenerational income mobility. The main research questions of this paper are:

- Why is income correlated between fathers and sons?
- How much of the intergenerational income correlation can be attributed to the causal impact of fathers' income and how much can be attributed to the transmission of his human capital?

## Conference Summaries, continued

This paper proceeds as follows:

- This paper builds a theoretical model in which paternal human capital and financial investments have separate effects on child quality as measured by income.
- Ordinary least squares (OLS) estimates of the intergenerational income correlation are shown to converge to a weighted combination of these two effects.
- The weight on each factor depends on the relative importance of luck and human capital in determining paternal income.
- Instrumental variables (IV) estimates of the intergenerational income correlation identify different combinations of the paternal human capital and financial resource effects with weights that depend on a particular instrument's covariance with paternal human capital and income due to luck.

One can test the assumption that the intergenerational income correlation operates through multiple mechanisms by comparing the IV and OLS estimates.

- Under the null hypothesis that the intergenerational income correlation operates through a single mechanism,
  - o OLS and IV estimates (or any two IV estimates obtained from different correlates of paternal income) should be statistically indistinguishable.
  - o Rejecting this null hypothesis requires the IIE to operate through at least two mechanisms.
- Given an instrument which is correlated with only the luck component of paternal income and another instrument which is correlated with only the human capital component, one can identify the structural parameters underlying the IIE in the model.
- Even if such instruments are not available, IV estimation allows us to identify upper bound estimates of the role of financial resources and lower bound estimates of the importance of human capital using instrument sets derived from correlates for father's income that satisfy a simple monotonicity condition. The paper also demonstrates how to bound the structural parameters in the absence of an instrument that effectively isolates variation in paternal income due to luck.
  - o Identification is achieved with an instrument that isolates variation in paternal income due to human capital combined with an estimate of the fraction of the variance in paternal income attributable to human capital.
  - o The R-squared from a simple Mincerian regression of paternal permanent income on measures of human capital provides a lower bound of this latter quantity.
  - o These in turn provides an alternative method to identify a lower bound of the mechanistic impact of human capital and an upper bound of the causal effect of paternal income.
- In the absence of experimental data and perfect instruments, IV bounding methods can be a valuable tool for understanding causal relationships.

Using a large Swedish dataset, this paper provides the following empirical results:

- The intergenerational income correlation is 0.29, which is consistent with prior estimates in the literature of Scandinavian countries.

## Conference Summaries, continued

- At most, 37% of intergenerational income correlation is due to the causal impact of fathers' financial resources
- The remainder is due to the transmission of fathers' human capital

### *Discussion*

- This paper does not distinguish between an individual's natural endowment, for example, ability, and an individual's choices, for example, effort and time spent. It may be worthwhile to include these distinct income determinants since their respective roles have different policy implications.
- The paper needs to be clearer about how to choose instruments. The degree of orthogonality between the instrument and the error term in the explanatory equation needs to be addressed carefully.

### **IV. "Nature and Nurture in the Transmission of Economic Status," Ananth Seshadri (joint work with Sang Yoon Lee)**

The intergenerational correlation of parents' lifetime earnings to children's lifetime earnings is as high as 0.6. This correlation has attracted a lot of attention and debate as to what the source of this correlation comes from. If this level of correlation is due to causes such as correlation of innate abilities, then there is not much a policy can do to affect socioeconomic mobility. On the other hand, if this level of correlation is due to the presence of market imperfections where a parent's financial constraints prevent him from investing in his child and thereby leading to persistence in income across generations, then policy has the ability to affect socioeconomic mobility and consequently economic efficiency.

There is a large empirical literature on how to correctly measure intergenerational income persistence. In addition, many have also attempted to measure the significance of natural sources of transmission of economic status. This paper moves beyond reduced form analysis and uses quantitative economic theory to address this question. This paper presents a model in which parents invest in the human and physical capital of their children. In particular,

- This paper integrates the intergenerational family human capital investment model (Becker and Tomes (1986)) with the standard human capital theory (Ben-Porath (1967)).
- This paper works with a multi-period model combining intergenerational and life-cycle aspects.
- The resulting model is able to generate predictions on years of schooling, wealth, earnings profiles, inequality as well as mobility.
- The model incorporates ability transmission, schooling, lifecycle earnings determination, and wealth and government policies.
- The model is able to identify the structural parameters, which allow one to conduct quantitative experiments through which one can measure the empirical magnitude of the different theoretical determinants of persistence. Specifically, by matching the model with key moments in the data, one can identify down the component of earnings transmission

## Conference Summaries, continued

that is due to the transmission of innate abilities (nature) and that due to parental investments (nurture).

Quantitative results of the model suggest that:

- A significant portion of intergenerational correlation is due to exogenous ability transmission.
- Richer and better educated parents are able to purchase more resources for their children, as exhibited by the increased mobility when relaxing the borrowing constraint
- Tax-transfer programs and credit constraints play an important role in shaping intergenerational transmission.

### *Discussion*

- In this paper, the production function of human capital is of a very particular functional form. As the production of human capital is very complex, it seems as if the paper is taking a very strong stand regarding how human capital is accumulated over time.
- It is not clear how to map the correlation in IQ to the correlation in abilities which make one successful in the labor market. Perhaps one may be able to draw from the psychology literature to develop better ways to understand how human capital should be modeled as a function of innate ability, resources, and the environment in which one grows up.
- The objective of this paper is to construct a structural model to replicate the high intergenerational correlation observed in the data. And it is driven by two unobservable series. Because of the functional forms of model, this paper is able to provide ways to identify them. Figuring out empirical proxies for these unobservables may be able to provide us additional insights.

### **V. “What is the True Rate of Social Mobility? Evidence from the Information Content of Surnames,” Greg Clark**

This paper aims to study the true rate of social mobility over time. Using surnames, this paper looks at social mobility rates over many generations in England 1086-2011, Sweden, 1700-2011, the USA 1650-2011, India, 1870-2011, Japan, 1870-2011, and China and Taiwan 1700-2011, and tries to recover the long-run measure of social mobility across countries, time periods, and different measure of social status.

There have been many measures of intergenerational correlation within the one-generation framework. These studies suggest the following:

- Intergenerational elasticities are typically of the order of 0.2-0.5 for income, years of education, occupational status, and wealth.
- Income, occupational and social mobility are all largely complete within 2-5 generations.
- The fraction of variance of social position explained by inheritance is low (4% in Scandinavia and 22% in the USA)

## Conference Summaries, continued

- Social mobility rates vary substantially across countries.
- Mobility rates are “too low” in some societies. With better opportunities for the children of low income or status families, more mobility would be possible.

As a measure of the intergenerational transmission of social status, the one generation studies mentioned above suffer a key limitation. Suppose one assumes that the various aspects of social status in the current generation, income, wealth, education, location, are all linked to some fundamental social competence or status, then the regression to the mean exhibited by each partial measure of underlying status will overestimate the regression to the mean of that underlying status. When we classify families as high or low status based on partial measures such as income, wealth, education or occupation, there will appear to be substantial regression to the mean. But if we took a more aggregate measure of status, the regression will be substantially lower. In short, intergenerational correlation estimated from two generation studies will greatly overestimate social mobility in the long run for two reasons:

- The two-generation intergenerational correlation measures the regression just of particular aspects of status;
- It incorporates a regression through those of measured high status having net positive random components in status only in the first generation, which will not occur across future generations.
  - o The greater are the random components in determining measures of status such as income, the greater will be the degree of mismatch between such partial one generation estimates of regression to the mean and the underlying regression of fundamental social status

This paper propose a surname method which measures social mobility not through individual family linkages, but by tracking wealth, income, and status by surnames over multiple generations. In many of the societies discussed in the paper, surnames represent social status of the family. The method proposed in this paper allows one to investigate the rate of regression to the mean of this deeper underlying social status and by implication the long run rate of regression to the mean of income, wealth, occupational status and education.

Studying the surname distributions among elites and underclass for a variety of countries and time period suggests the following about social mobility rates:

- Elites and underclass all tend to mediocrity at a constant rate.
  - o This rate of convergence to the mean is constant across generations.
- The intergenerational mobility measure is higher than conventionally estimated, between 0.7 and 0.8.
  - o Social mobility is extremely low
  - o Complete regression to the mean typically takes 10-16 generations.
- The measure of intergenerational mobility is constant across societies and social systems. It is constant across status-wealth, education, occupation, and across the entire distribution of status, being the same for the upper tail as for lower tail.
- Persistent elites and underclasses only occur in two cases:
  - o An isolated elite with marital endogamy (the Copts in Egypt)

## Conference Summaries, continued

- An elite or underclass that is maintained by selective retention of members with elite or underclass characteristics, and the recruitment of outsiders with the characteristics.
- Assortative mating is what makes the intergenerational persistence high. Mating has become more assortative in the modern world, so mobility rates may decline further.
- Social status is likely mainly of genetic origin.

### *Discussion*

- In the conventional literature of intergenerational mobility, one of fundamental issues is to distinguish permanent and transitory income across years. And this paper is addressing the same issue across families. It is worthwhile to think about heritability along with the results at hand.

### **VI. “British, American, and British-American Social Mobility: Intergenerational Occupational Change Among Migrants and Non-Migrants in the Late 19<sup>th</sup> Century,” Jason Long (joint work with Joseph Ferrie)**

Previous papers that study the trends in intergenerational social mobility in the US and Britain in the 19<sup>th</sup> century have found that mobility in the US in the 19<sup>th</sup> century is significantly greater than in Britain, unlike the present. The current paper complements this previous research by studying the social mobility of the British labor force that was most mobile, that is, the group of trans-Atlantic migrants that left Britain and entered America. Specifically, this paper attempts to answer the following question:

- How much intergenerational mobility did this group experience?
- How did their mobility experience compare with that of non-migrants in both countries?
- What can be said about the selectivity of the migrants? What is the effect of the migration on their mobility?

The previous literature on migration has a few limitations:

- The “quality” of immigrants is usually assessed by examining their labor market performance relative to the native-born in the country to which they migrated.
  - This approach cannot distinguish between the change in overall home-country quality and change in the selectivity of immigration.
  - This approach focuses exclusively on immigrants’ experience after the arrival in the destination.
- A complementary literature focuses on the “brain drain”: selective immigration’s impact on home-country characteristics.
  - This approach focuses exclusively on migrants’ experience before departure in the home country and the non-migrants’ experience in the home country before and after migrants depart. However, this may not capture the immigration experience of the migration from Britain to the US in this period.

## Conference Summaries, continued

- Though there are few studies examine the migrants before departure from home and after arrival at the destination and non-migrants before and after the migrants depart; data on both migrants and non-migrants are seldom available.

The data used in this paper are constructed as follows:

- For non-migrants in both countries, two samples of males are linked across censuses from 1861-1881 and 1881-1901 in Britain, and from 1860-1880 and 1880-1900 in the U.S.
- The linkages are made based on name, year of birth, parish or county (Britain) or state (US) of birth.
- Information from two censuses allows comparison of occupations of fathers and sons observed at the same life-cycle point.
- For migrants, two samples are carefully constructed:
  - o British-born males age 30-39 in the 1880 U.S. Census of Population linked back to the 1861 British Census.
  - o British-born males age 30-39 in the 1900 U.S. Census of Population linked back to the 1881 British Census.

Compared to the existing literature, this paper studies the intergenerational mobility of occupations. This measure can be assessed through the analysis of simple two dimensional matrices, with categories for fathers' occupations arrayed across one dimension and categories for sons' occupations arrayed across the other.

The results of this paper suggest that

- Intergenerational mobility in occupation was greater for the earliest migrants than both British non-immigrants and US native-born.
- Later migrants were still more mobile than British non-immigrants and just as mobile as US native-born.
- In thinking about the role of migration in causing differences in intergenerational mobility, this paper finds positive selection among migrants: they did better in the U.S. than non-migrants would have done in the U.S.

### *Discussion*

- One of the challenges of this paper is the lack of explicit explanation as to why migrants chose to leave for the US until one can sufficiently accounts for the differences in wages in Britain and the US. An important extension of this paper is to incorporate country-specific and time-specific wages into the analysis. This is an important future extension.

## Conference Summaries, continued

### VII. “Mismatch, Rematch, and Investment,” Andrew Newman (joint work with Thomas Gall and Patrick Legros)

Private and social payoffs of many activities depend not only on one’s own characteristics, but also on those of one’s partners, for example, in schools, firms, and marriages. And these characteristics are often the results of prior choices. The prospect of being able to select particular kinds of neighbors, associates or mates, or the environment those partners provide, affects the costs and benefits of the investment. The impact of those investments may extend far beyond our immediate partners to the economy as a whole.

One question arises naturally is whether the market outcome of the set of “matching” decisions leads to outcomes that are socially desirable. Some have argued that there are excessive segregation and social exclusion in many societies today. If the market does “mismatch” people in this way, policy remedies might include “rematching” individuals into other partnerships via affirmative action, school integration or corporate diversity policies. The rationale behind these rematching attempts is that if the degree of segregation in the labor market affects expected investment returns, then the disadvantaged groups may invest too little and the advantaged group may invest too much. This may generate high persistent inequality in income and investments, which lead to negative consequences for TFP and growth. Therefore, if excessive segregation is due to market failure, rematching individuals could raise total surplus compared to laissez-faire.

This paper constructs a formal framework to study market outcomes of an economy which is characterized by a particular source of market failure: rigidities in sharing joint payoffs within firms (non-transferability) so that only a single vector of payoffs is feasible in any firm: each partner obtains exactly half the output. This is the primary source of excessive segregation in labor or education markets. Mismatch and investment distortions in the laissez-faire allocation may generate a role for rematch policies, that is, policies that constrain some matching patterns by imposing conditions on the partners’ attributes.

The paper examines in detail two frequently used policies:

- Affirmative action, which gives precedence to minority candidates only if they are equal in all other characteristics
- Background integration (“busing”), which priority is given to minority candidates unconditional on other characteristics, for instance with an aim to match background composition of teams to the population measures.
- This paper shows that these two policies may improve on the matching resulting laissez-faire and can be ranked in terms of aggregate performance.
- A comparison of these two simple policies suggests that their ranking in terms of inequality in achievement and earnings is a function of the relative proportions of privileged and under-privileged.
  - o This argues against a one-size-fits-all approach for correcting mismatches.

This paper shows that

- Rigidities may generate excessive segregation, inequality, and distorted investment incentives.
  - o Underprivileged individuals invest less than they would in an otherwise identical economy without rigidities, while privileged ones invest more.

## Conference Summaries, continued

- Rematching policies, in particular affirmative action, change market sorting and thus incentives
  - o They can potentially increase surplus and output and lower inequality.

This model can be easily incorporated in other frameworks:

- Multi-stage matching:
  - o One can consider matching happens in school as well as later in the labor market. Then should the rematching occur early, late, or both?
  - o There can be hybrid policies that condition late matches on early ones to create new sorting incentives that may improve on “pure” policies.
- There are other factors to determine whether one belongs to the privileged or the non-privileged: race, caste, or gender.

### *Discussion*

- In a school setting, the difference between affirmative action and “busing” is the following: affirmative action is analogous to giving a couple of extra points of GPA to under-privileged group while “busing” is changing the letter grade from “F” to “A” for the under-privileged group.

## **VIII. “Black-White Differences in Intergenerational Economic Mobility in the US,” Bhash Mazumder**

Intergenerational mobility of blacks is of long standing interest given the legacy of slavery and segregation in the United States. This raises the question of how long blacks may expect to remain a disadvantaged minority in the US: in other words, how long will the black-white inequality persist. A further question of interest is whether blacks today enjoy the same opportunities for economic success as whites, despite differences in family background. Finally, understanding the causes behind racial differences in intergenerational mobility might also shed light on the more general question of the underlying mechanisms behind the relatively high degree of intergenerational persistence of inequality in the US.

Standard estimates of intergenerational mobility are inadequate to examine black-white differences in intergenerational mobility for the following reasons:

- Intergenerational correlation is not well suited for comparing black-white differences in mobility with respect to the entire income distribution (comprising of both blacks and whites). In other words, standard intergenerational mobility analysis does not explicitly incorporate inter-ethnic differences in the mobility process.
  - o Intergenerational correlation for any particular subgroup is only an estimate of the rate of regression to the mean for that particular subgroup, not for the overall distribution.
- Intergenerational samples of black families are relatively small, making it hard to make meaningful inferences about group differences.

This paper tries to overcome the above two limitations by the following:

## Conference Summaries, continued

- This paper proposes a new method to obtain the relevant estimates for measuring group differences in intergenerational mobility:
  - o By estimating transition probabilities, which measure the probabilities of moving across specific quantile intervals of the income distribution over generations, one can therefore compare group difference in mobility with respect to a common distribution.
  - o The inclusion of covariates makes it possible to better understand which factors (e.g. education, family background) are associated with racial difference in mobility

This paper uses transition probabilities and measures of “directional rank mobility” that can identify inter-racial differences in intergenerational mobility. Unlike the transition probabilities which impose arbitrary thresholds for measuring mobility, the directional rank measure uses one’s parent’s rank as a threshold.

The data sets used in the paper include National Longitudinal Survey of Youth (NLSY79), which contains a sample of over 2000 blacks. In addition, an intergenerational dataset that matches families in the Survey of Income and Program Participation (SIPP) to administrative earnings data from the Social Security Administration (SAA) is also used in the paper:

- The SIPP-SSA data provides many more years of data on parents’ earnings that are potentially less prone to measurement error since they are derived from tax records.
- The SIPP contains data on key characteristics of the parents (e.g. wealth, marital history) that are lacking in the NLSY and which could help explain racial differences in intergenerational mobility.

The richness of the data sets provide a more robust set of facts concerning intergenerational mobility differences by race and mechanisms that may account for these differences. Therefore, this paper is able to show how both upward and downward mobility, and racial gaps in these outcomes, are affected by a wide array of covariates concerning characteristics of the parents (e.g. family structure, and wealth) and children (e.g. cognitive skill, non-cognitive skills).

The empirical results of the paper suggest that:

- There is large and significant black-white gap in upward mobility from the bottom
  - o Measuring the difference of likeliness to move upward, blacks are around 25 percentage less likely to move out of the bottom quintile/bottom half of the income/earning distribution.
- Blacks are more downwardly mobile
  - o Blacks are about 15 to 20 percentage points more likely to drop out of the top half of the distribution.
- The implied steady state distributions show that there is no closing of racial gap suggesting that rather than convergence with whites, blacks could be permanently disadvantaged.
- Cognitive skills are highly associated with black-white mobility gaps.
- Education, mainly college attainment, plays an important role in black-white mobility gaps.
- Family structure matters for upward mobility but not downward mobility.
- Low levels of parental wealth among blacks also inhibit the prospects for upward mobility.

## Conference Summaries, continued

### *Discussion*

Using the method developed in this paper, one may be able to look at the black-white difference of economic mobility over generations.

### **IX. “The Effects of Residential Segregation during Childhood on Life Chances: Causal Evidence Using Historical Railroad Track Configuration,” Rucker Johnson**

Human capital accumulation may depend on the neighborhood in which one grows up through a variety of channels, including access to school resources, health and social service funding, neighborhood crime, peer and role model effects, proximity to a chemical dumping ground or related environmental hazards, and connectedness to job networks and informal sources of support. Racial residential segregation patterns may provide us a way to understand and explore the causal factors of black-white gap in intergenerational mobility.

However, there are several challenges in estimating neighborhood effects:

- Neighborhood variables may capture unmeasured aspects of family background.
- Residential location patterns may reflect sorting of preferences for neighborhood amenities.
- It is difficult to measure neighborhood quality:
  - o The choice of factors is often driven by available data, which are limited. Hence causally relevant factors are likely to be missing.
  - o This data limitation requires “neighborhood to be defined as large, diverse areas. And this may lead to uninformative estimates.

This paper provides new causal estimates of the effects of racial residential segregation during childhood on subsequent adult attainment outcomes.

- This paper accounts for the potential endogeneity of segregation and neighborhood location choice using instrumental variables based on 19th Century railroad track configurations, historical migration patterns, political factors, and topographical features.
- It has been shown that cities that were subdivided by railroads into a greater number of physically-defined neighborhoods became significantly more segregated after the Great Migration of African-Americans to northern and western cities.
- To measure a city’s railroad-induced potential for segregation, this paper uses a railroad division index (RDI) which quantifies the extent to which the city’s land is divided into smaller units by railroad.
- The dissimilarity index is the percent of blacks who would need to be reassigned to a different neighborhood for perfect integration to be achieved given the city’s overall racial composition.
  - o The RDI is shown to be positively correlated with the dissimilarity index,
  - o It is a measure of racial composition of the neighborhood.

## Conference Summaries, continued

This paper uses data from the Panel Study of Income Dynamics (PSID) which spans four decades and contains information on neighborhood attributes and school quality resources that prevailed at the time these migrant children were growing up. The data set allows one to examine the consequences of segregation during childhood and analyze the life trajectories of children born since 1950 and followed through 2009.

Results from 2SLS/IV models demonstrate that,

- For blacks, the level of racial residential segregation during childhood negatively impacts subsequent educational attainment, reduces the likelihood of high school graduation, increases the probability of incarceration, reduces adult earnings and the likelihood of intergenerational mobility, increases the annual incidence of poverty in adulthood, and leads to worse health status in adulthood.
- For whites, the segregation effects were not statistically significant across each of these outcomes but the point estimates were in the opposite direction of the corresponding estimates for blacks.
- The results above are consistent with prior studies that have found that increased segregation leads to more inequality in spending on education across districts of the same metropolitan statistical area, thus worsening the relative position of poorer districts.

### *Discussion*

- It would be worthwhile to think about how the measurement of income is affected by life-cycle bias. In the paper, a child's income is measured when they were at their 30's. It may be useful to measure their incomes when they were at their 40's as income tends to be more stable at this stage of life.

## **X. "Gender, Geography and Generations: Intergenerational Educational Mobility in Post-Reform India," Shahe Emran (joint work with Forhad Shilpi)**

Following wide ranging economic liberalization in the early 1990s, India experienced sustained high economic growth. While growth led to a significant poverty reduction, it was also associated with a rise in inequality. Between 1996 and 2008, the wealth of Indian billionaires increased from 0.8 percent of GDP to 23 percent. As Jean Dreze and Amartya Sen (2011) put it, India is an "unprecedented success" in economic growth coupled with "extraordinary failure" in social indicators and improvements in living standard of the common public.

The key question to explore is whether the increase in cross-sectional inequality is an outcome of efficient incentive structure in a liberalized and market-oriented economy that rewards hard work and entrepreneurial risk taking, or it is primarily due to inequality of opportunity due to differential access, for example, to education and markets. The rise in cross-sectional inequality becomes a serious concern when it is primarily a result of inequality of opportunity, i.e., the inability of children born in poorer families and disadvantaged social groups to move beyond their parents' position in economic ladder by their own effort and choices. An immobile society may require policies, public investments and reforms to ensure both efficiency and equality of opportunity. The goal of this paper is to analyze the trends in and levels and patterns of educational mobility over a period of almost a decade and a half after the liberalization in 1991 (1993-2006), with a special focus on possible gender and spatial differences (rural vs. urban and developed vs. less-developed

## Conference Summaries, continued

states). To do so, this paper provides evidence on intergenerational economic mobility in India during the post-liberalization period by focusing on the educational attainment of children. Two related measures of educational mobility are explored in the paper to account for intergenerational economic mobility:

- Sibling correlation in educational attainment
  - o Sibling correlation provides a summary measure of all common family and community background factors that affect child outcomes but are not chosen by children themselves.
  - o A higher sibling correlation implies greater influence of family and community backgrounds on economic outcomes
  - o This in turn indicates that the role one's own effort and choices can play is limited at best.
  
- Persistence in educational attainment across parents and children
  - o Economic analysis of intergenerational mobility in the context of developing and transitional countries remains a largely unexplored area of research
  - o For developed countries, intergenerational correlation between parents and children explains from 9 to 21 percent of variations in children's educational outcome.
  - o Previous studies have found that in developed countries, gender and geographic location (as measured by neighborhood effect) do not exert any significant influence on the intergenerational persistence in children's educational outcomes.
  - o Are gender and geography also largely irrelevant for educational opportunities faced by children in developing countries?

To conduct the empirical analysis, it is important to note the following:

- The data comes from 1992/93 and 2006 rounds of the National Family Health Survey (NFHS) in India.
  
- To examine the spatial aspects in depth, the empirical analysis is done separately for families residing in different areas such as rural vs. urban areas and relatively developed vs. less developed states.
  
- To discern any possible gender bias, empirical analysis is done separately for male and female samples.
  
- A mixed effects model that uses iterated generalized least squares is used to estimate the sibling correlation
  - o An advantage of this approach is that both the family and community level covariates can be included in the analysis to examine their relative influence on sibling correlation
  
- The paper examines the influence of two sets of covariates on sibling and intergenerational correlations
  - o The first set relates to caste and religion of the household which are identified as important determinants of educational attainment in India.
  - o The second relates to common neighborhood environment faced by all children growing up in a village/community.

## Conference Summaries, continued

The empirical results using the full sample suggest the following:

- Overall intergenerational correlation and sibling correlation declined between 1993 and 2006.
  - o The decline is more substantial for women.
  - o But the absolute differences are still higher for women
- Even in 2006, the sibling correlations are relatively high, higher than estimates for Latin American countries.
- The common family and neighborhood factors account for more than 60 percent of variations in schooling attainment
- Caste and religion do not play a significant role.
- Geographic location as measured by neighborhood fixed effects is very important; it explains 40 percent of sibling correlation for women and 33 percent for men.

It has been indicated by previous studies that India exhibits large inter-state differences in growth, poverty and inequality. Taken account for these differences, the paper further finds that

- Both sibling correlation and intergenerational correlation increased for men in less developed states.
- Both sibling correlation and intergenerational correlation remained stable for men in more developed states.
- Both sibling correlation and intergenerational correlation declined for women overall.
- Sibling correlation is slightly smaller for lower caste men and men.
- Sibling correlation among upper and lower caste women declined, while it remained stable for men.
- Women in urban areas experienced substantial decline in sibling correlation.
  - o The decline is especially large for lower caste urban women compared to upper caste urban women.

### *Discussion*

- The decline in sibling correlation does not necessarily point to lower overall inequality. For example, the poor are more mobile, but they just move within the lowest part of the income distribution. Therefore, it may be useful to see how educational attainment has changed over time conditional on parental income in thinking about how inequality evolves over time.

## **XI. “The Measurement of Educational Inequality: Achievement and Opportunity,” Francisco Ferreira (joint work with Jérémie Gignoux)**

In the last decade, the emergence of test-based cognitive achievement surveys that are applied consistently across countries represents a major opportunity for understanding international differences in educational performances and measuring educational inequality. In particular, this paper aims to provide a set of statistically robust international comparison of inequality in educational achievement and educational opportunity.

This paper mainly uses survey data from the Program of International Student Assessment (PISA) in 2006 which includes participating students’ test scores in mathematics, reading, and science, as well as individual-level information such as schools and family backgrounds of participants from 57 countries. This paper also employs several ancillary household survey data sets to correct for the sample selection bias that may emerge from the possibility that the sample in the data is not

## Conference Summaries, continued

representative of the population. In particular, this paper carefully addresses the following issues regarding measurements of educational achievement in a number of ways:

- One issue with the raw PISA score is that the test questions vary in their degree of difficulty. Simply adding up correct answers, or weighing them arbitrarily, does not correctly measure the latent variable of interest – cognitive achievement.
  - o The educational community in charge of international tests such as PISA, TIMSS, PIRLS and IALS processes raw scores through statistical techniques known as Item Response Theory (IRT).
  - o IRT is essentially a statistical technique to account for heterogeneity in the difficulty of test items on the basis of the observed distribution of responses.
- Many common inequality indices are not ordinal invariant in the standardization to which IRT-adjusted test scores are generally subjected.
  - o No meaningful inequality index yields a cardinally identical measure for pre- and post-standardization distributions of the same test scores.
  - o Some common measures are not even ordinal equivalent, including the Gini and the Theil index.
  - o The variance is ordinal invariant to standardization. Therefore, this paper proposes simply using the variance or the standard deviation of test scores.
- PISA student samples are likely to suffer from non-trivial selection biases in a number of countries.
  - o This paper proposes alternative two-sample non-parametric procedures to assess the robustness of the inequality measure to the sample selection biases.

It is important to carefully measure educational opportunity because it addresses how much inequality among students in educational achievement is explained by pre-determined circumstances that beyond their control and do not reflect the choices or actions of the student themselves. In practice, this paper proposes a simple index to measure the inequality of educational opportunity, which is the R-squared of an OLS regression of the child's test score on a vector of individual circumstances. It is also a parametric approximation to the lower bound on the share of overall inequality in educational achievement that is causally explained by pre-determined circumstances.

This paper provides empirical evidence that

- Inequality of opportunity accounts for up to 35 percent of all disparities in educational achievement.
- It is greater in most of continental Europe and Latin America than in Asia, Scandinavia, and North America.
- It is uncorrelated with average educational achievement and only weakly negatively correlated with per capita gross domestic product.
- It correlates negatively with the share of spending in primary schooling, and positive with tracking in secondary schools.

### *Discussion*

- It may be worthwhile to study whether performance differential is due to the inequality in opportunity or difference in the level of effort exerted. And these are not easily distinguishable because one's choice of how much effort to put in may depend on the environment he faces and the potential future outcomes.

# Conference Summary: First Inaugural Conference of the Early Childhood Interventions Network

Organized by James J. Heckman, Richard Tremblay, Burton Singer, Seong Hyeok Moon, and Rodrigo Pinto

April 21, 2012

Swift Hall, University of Chicago, 1025 E. 58<sup>th</sup> Street, Chicago, IL 60637

## Introduction

### Welcoming Remarks by James J. Heckman

The Institute for New Economic Thinking Early Childhood Intervention Working Group (ECI) is convening for the first time as a part of the Human Capital and Economic Opportunity Working Group within The Institute for New Economic Thinking.

The Institute for New Economic Thinking and the Human Capital and Economic Opportunity Working Group aim to open economics to many different perspectives and create a network to study the “determinants of human flourishing” as outlined in the capabilities literature, which goes beyond traditional human capital models. To accomplish these goals, the Human Capital and Economic Opportunity Working Group is organizing conferences to promote understanding, establishing summer schools to introduce students to new economic reasoning and a wide range of professors, and integrating macro- and micro-economic literature, financial and human capital markets, and theoretical and practical policy. As part of this process, the Human Capital and Economic Opportunity Working Group will put out a monograph series on human flourishing in the 21<sup>st</sup> Century.

As a part of the Human Capital and Economic Opportunity Working Group, the goals of ECI are to investigate the early origins of inequality and their lifetime consequences, and to study the provision of equality of opportunity from birth. Leading ECI are Burton Singer, James Heckman, Richard Tremblay, Seong Moon, and Rodrigo Pinto. They believe that the study of early childhood interventions can lead to equality and justice. To accomplish its goals, ECI encourages non-economists, young investigators, and those out of the mainstream who are not just promoting the standard lines to challenge and renew economic thought.

### Introductory Remarks by Steven N. Durlauf

The Human Capital and Economic Opportunity Working Group initiative is very ambitious. The breakdown of barriers and representation of a range of disciplines is not standard procedure in social science. However, early childhood research has the ability to change the way we think about inequality and justice.

### Introductory Remarks by Moderator Burton H. Singer

At this conference, ECI focuses on the theoretical and practical aspects of early childhood interventions. In terms of theory, important questions about methodology and the evaluation of early childhood interventions will be discussed. In terms of practice, some methods being used and those using them will be introduced.

### Session 1: Strengthening Methodology

#### A. “Studying The Impact of Program Participation in Multi-Site Trials Using Instrumental Variables,” Stephen Raudenbush (University of Chicago)

Multi-Site randomized control trials of program participation that include replications of experiments at multiple sites have become increasingly popular in education research. Of 130 large randomized control trials of education done in the last 10 years, about 75% have been implemented at multiple sites. These multi-site trials could allow researchers to model not only the average effect of program participation but also heterogeneity across sites and multiple mediators. In an IV setting, this can be done by implementing random coefficient models under certain assumptions. The model and necessary assumptions were reviewed and future possibilities discussed. This method has great potential for analyzing the Head Start Impact Study, and is described here in the context of curricular reform in Chicago.

The random coefficient model implemented is a person-specific causal model where the average effect of being assigned treatment is the product of the average effect of assignment on participating and the effect of participation on the outcome. The typical assumptions that apply to the single site instrumental variable case are maintained. Additionally, SUTVA and the Exclusion Restriction are imposed within sites. We also assume monotonicity for the effects of assignment and effects of treatment, rather than assuming that they are uncorrelated across sites. There are two ways to approach the technical estimation, both of which were described in detail in the paper presented at the conference.

When this method is applied to the analysis of curricular reform in Chicago, it allows two mediators to be revealed and variations across sites to be examined. Participation in the treatment and the tracking (changes in peer ability composition) caused by the treatment are both found to be sources of the treatment effect, and compliance is shown to be a mediator of both. Because participation in the treatment and the tracking that is sometimes caused by the treatment appear to work in opposite directions, this is an important result.

There is interest in extending this model to either adjust for or estimate peer effects, and some preliminary work is being done.

Model 1 is a random coefficient model within each site, and site-specific estimates vary across sites. This model becomes 2SLS with single instrument and site fixed effects. Model 2 has stronger assumptions and is the generalization of the case of multiple mediators. This model becomes 2SLS with multiple instruments.

There are two examples such as 1997 Algebra for All in Chicago and Double-Dose Algebra. The first case shows a disappointing result but the second case shows good compliance. In conclusion, the reform enhanced math instruction for low-skill students and that helped a lot. Thus, we need to apply this to Head Start and enrich the modeling of mediators.

## Conference Summaries, continued

### B. “Getting SMART about Adapting Interventions,” Susan Murphy (University of Michigan)

Adaptive interventions are individually tailored sequences of interventions, where treatment type and dosage change in response to patient outcomes. These models are related to dynamic models used in economics and statistics. Whereas medical trials allow us to confirm the efficacy of interventions, adaptive interventions allow us to build and operationalize interventions in practice.

Adaptive interventions are appropriate in situations where there is:

- 1) High heterogeneity in response
- 2) Lack of adherence or excessive burden in common
- 3) A need to vary intensity of the treatment

Adaptive interventions are capable of revealing:

- 1) An optimal sequence of treatment(s)
- 2) An optimal timing of treatment alteration(s)
- 3) What information should be used to determine and individualize (1) and (2)

An adaptive drug court program for drug abusing offenders provides an example of an adaptive intervention. The goal of this program, run by the Doug Marlowe at UPenn, is to minimize recidivism and drug use. Treatment is tailored to the results of periodic assessments of risk and compliance.

A Sequential Multiple Assignment Randomized Trial (SMART) is a certain kind of adaptive intervention. Similar to factorial designs used in engineering, a SMART intervention is a multi-stage trial in which each stage corresponds to a critical clinical decision and a randomization. The goal of the trial is to inform the construction of adaptive intervention.

There are four principles of SMART studies.

- 1) Keep it simple: restrict scientific consideration and class of nest treatments.
- 2) Tracks over times
- 3) Choose primary hypotheses that are scientifically important and aid in developing the adaptive intervention
- 4) Conduct the secondary.

The Pelham ADHD study, which includes four very simple interventions, provides an example of a SMART intervention. Responders are divided into adherers and non-adherers and then treatment is assigned according to adherence status.

Greater treatment individualization is possible via Q-Learning, a method of analyzing the results of adaptive interventions. Q-Learning is similar to dynamic programming in that regressions of treatment effects are performed recursively at each stage of treatment assignment. Q-Learning for SMART studies is conducted by performing the regressions in reverse order, beginning with the final stage. Since the dependent variable for the regression in the prior stage is a prediction of the final response under optimal treatment in the final stage, the final stage regression is used to estimate the response to the optimal final stage treatment. The patterns that the regressions identify are the same; medication improves performance for children who were medicated before.

## Conference Summaries, continued

From these regressions we get an adaptive treatment proposal: if medication has not been used in the prior year, then begin with behavioral modification, otherwise select either behavioral modification or medication. There are some issues with deriving confidence intervals for these results.

The major advantage of the adaptive intervention approach is its focus on non-adherence as an outcome. The method encourages researchers to think about non-adherence as an outcome that tells them about the treatment being offered, what might cause those assigned to refuse to comply, and how the treatment can be tailored to increase compliance.

### **C. “Statistical and Econometric Issues in Evaluating Early Childhood Interventions,” Rodrigo Pinto (University of Chicago)**

Many social experiments try to measure the impact of early childhood investment on lifetime outcomes using randomized trials. In many cases treatment groups are well defined, treatment is uniform, samples are small, and the number of outcomes is large. However, compromised randomization is often the rule rather than the exception. Generally, the literature ignores compromised randomization. A permutation testing procedure tailored to this situation permits inference that takes account of compromised randomization and is appropriate in small samples.

To model these randomized trials, we can consider a directed acyclic graph (DAG) to represent a simplified Roy model. We suppose that we can separate the observed mediator into two parts,  $D$ , which is correlated with the unobserved variables that are independent of the outcome of interest,  $Y$ , and  $D'$  that is correlated with unobserved variables that are not independent of the outcome of interest,  $Y$ . These variables are also related to  $X$ , the characteristics of the child and the family, which are related not only to outcomes but, in the case of compromised randomization, are also related to treatment. We require that the local Markov condition holds: variables are independent of all variables except their descendants conditional on their parents. We have then constructed a surrogate causal model for simplified Roy model, which separates the observed mediators into two parts.

Given this model, we can test the null hypothesis of no treatment effects by assuming exchangeability of  $Y$  and  $D$  given  $X$ . If you assume that the outcome is independent of the treatment conditional on observed characteristics and assume that treatment status,  $D$  is exchangeable. Under the null hypothesis of no treatment effects, the outcomes are independent of the assignment  $D$  conditioned on characteristics  $X$ , and exchangeability implies that  $Y$  and  $D$  have the same distribution conditional on  $X$ . Taking the variables that compromised randomization into account, we can classify participants as “always takers”, “never takers”, “compliers”, and “defiers”, and construct permutation orbits for permutation testing that are consistent with all possible randomization schemes. (Note: This procedure may not be possible when sequential randomization occurred.)

The method described here contributes to the development of a general method to evaluate treatment effects in small samples with compromised randomization. The use of a flexible causal framework is the key for examining the problem. The method described can be extended to include a multiple hypothesis testing procedure.

## Conference Summaries, continued

### Session 2: Measuring Vulnerabilities and Outcomes.

#### D. “Fragile Families: Implications for Parenting and Child Well-Being,” Jeanne -Gunn (Columbia University)

The percent of births to unmarried mothers in the United States has decreased dramatically to over 40%. This trend demands we ask the following questions:

- 1) What are the capabilities and circumstances of unmarried parents?
- 2) What is the nature of parental relationships at birth, and how do the relationships change over time?
- 3) How do family structure and stability affect parental resources, investments, and child well-being?

The Fragile Families Study was designed to answer these questions. It is a longitudinal study of a birth cohort of 5,000 children and their parents from 1998 to 2000. The participants were drawn from 75 hospitals in 20 cities with large oversample of non-marital births. Because almost all fathers come to the hospital to see the baby, the child’s parents were both interviewed within 24 hours of birth. This ensured a high rate of response from the children’s fathers (95%). Follow-up interviews are performed when children were 1, 3, 5 and 9 years old. Supplemental data is collected by way of in-depth interviews, medical records, and city/state characteristics and policies. DNA samples were collected at age 9. In the 15 year survey, DNA samples from mothers and children will be added to the Fragile Families data in order to do methylation studies.

The Fragile Families data has been studied extensively and continues to offer insights into how family structure influences children. Results include:

- About 51% of unmarried couples were cohabiting, 32% were visiting, 8% were friends, 9% have little or no contact. There are high rates of instability and new parental partnerships even by age 5.
- Children born to married parents are more likely to live in two parent households at age 5.
- Children born to unmarried parents are much more likely to have siblings from parents’ other partners.
- Fathers who were not married at the child’s birth are more likely to become incarcerated and report depression.
- Co-parenting appears to be important in terms of father involvement, and relationship quality appears to be important to the parental engagement of the father and mother.
- There are higher rates of obesity and aggression in children born to cohabitating or single parents.
- There may be gene by environment interactions for boys. Results suggest that more reactive alleles in the dopamine system correspond to higher rates of aggression when father enters or exits.
- Research on child-care regulations suggests that regulations may affect the quality of non-profit care but not for-profit care.

## Conference Summaries, continued

### E. “Experiential, Genetic, and Epigenetic Effects on Human Neurocognitive Development,” Eric Pakulak (University of Oregon)

More than three decades of the study of human brain development, using behavioral, electrophysiological and fMRI approaches have found that different brain systems and related abilities display different degrees and time periods of neuroplasticity. Some of these systems, such as central vision and central hearing, are more constrained. Other systems, like attention and languages, are modifiable and dependent on experience during particular time periods. Although human brain development is partly determined by genes, it is also determined by environment and gene by environment interactions. Consequently, it is possible for Early Childhood Interventions to both enhance and protect human brain development. Here, we focus on the development of attention.

There are different types of attention, but here we focus on sustained and endogenous selective attention. One way we study this is a technique called event-related potentials (ERPs), which is ideal for studies with children because brain activity is measured by “eavesdropping” on the naturally occurring electrical activity at the scalp with an electrode cap. Studies of differences between deaf people and hearing people provided a starting point for the study of the neuroplasticity of attention. These studies have shown that neuroplasticity is a “double-edged sword” because it can confer the possibility for a system to be enhanceable or vulnerable. Early processes of selective attention (a larger brain response at 100 milliseconds to attended stimuli) are enhanced in adults who were born deaf or blind. Importantly, this enhancement of processing at 100 milliseconds is only found in adults who were born deaf or blind but not when blindness occurred later in development, suggesting that differential experience early in development is crucial. Evidence that these processes are vulnerable comes from studies of children from different socioeconomic status (SES) backgrounds. Children from lower SES backgrounds do not show this early effect (a larger brain response at 100 milliseconds to attended stimuli), while their peers from higher SES backgrounds do, and this deficit is specific to processes important for the suppression of distracting information.

Based on this basic research on neuroplasticity, an intervention targeting the vulnerable but enhanceable attention system was developed. This intervention, called Parents and Children Making Connections – Highlighting Attention (PCMC-A), includes both a parent training component and a child training component, with an emphasis on the parenting component. The parent component emphasizes positive reinforcement, specific praise, high quality language, and consistent discipline with clear expectations and natural consequences. The child component teaches children about the brain, how the brain controls the body, how it feels when attention wanes, how to continue paying attention, and includes activities to teach internal and external awareness. The parent component also includes instruction for parents on attention and home-practice activities they can use with their children.

The lab partnered with local Head Start and conducted a randomized control study with children ages 3-5 living at or below the poverty level and their parents. Participating families were randomly assigned to either PCMC-A or one of two comparison groups: a passive comparison group in which children participated in Head Start as usual, and an active comparison group featuring an intervention with the same components but with more of an emphasis on the child component.

## Conference Summaries, continued

The results show that parents in PCMC-A report reduced stress and decreased problem behaviors and better social skills in their children. Their children show larger increases in language and non-verbal intelligence, and their children begin to show attention patterns more similar to those of their higher SES peers.

There is still much research that needs to be done on the development of attention and its malleability. Future assessments such as objective biomarkers of stress, executive function, parent language behavior, and changes in parents' behavior are essential to understanding how the intervention is working. Ongoing additional assessment using the ERP language paradigm can show results of the training programs for subsystems of language, and MRI results will also provide additional information on the effects of the training program on brain structure. The children are being followed longitudinally, and preliminary results suggest that the gains appear to be holding up over time. PCMC-A should also be tested with a broader demographic. In a follow-up project currently underway, PCMC-A is being adapted and translated into Spanish to serve Latino families, who are a fast-growing and at-risk demographic. Additional information can be found at the website <http://bdl.uoregon.edu/>, and a free video program for nonscientists about the effects of experience on human brain development can be found at: [www.changingbrains.org](http://www.changingbrains.org).

### **F. “Epigenetic Consequences of Early Social Experiences in Rhesus Monkeys,” Stephen Suomi (NICHD)**

Because bonds between baby Rhesus monkeys and caregivers are similar to bonds between human babies and adults, studies of the long-term effects of early social experiences of Rhesus monkeys may shed some light on the long-term effects of similar early social experiences of human children. These particular studies look at the evolution differences between monkeys raised by humans and their peers (henceforth referred to as peer-reared) and mother-reared monkeys over time.

Studies of peer-reared Rhesus monkeys have consistently shown worse outcomes for peer-reared monkeys. Human-reared monkeys become hyper-dependent on each other, develop less sophisticated play and have higher cortisol levels. They become more aggressive and have low levels of serotonin metabolism. When these monkeys are young adults and they can access sweet alcohol, non-alcoholic flavored beverages, or water, the peer-reared monkeys tend to consume alcohol. Additionally, the brains of peer-reared monkeys are different and they show less serotonin binding. They also show higher levels of infections, allergies and gastro-intestinal disorders. They tend to be wounded more often and have more accidents. There is an over-expression of genes involved in inflammation, cell differentiation and transcriptional control in peer-reared monkeys and under-expression of immunoglobulin production and Type 1 interferon antiviral response. These patterns may also be passed on to the next generation, insofar as mothers pass on rearing techniques.

These trends are beginning to be studied in terms of gene methylation. Many genes are differentially methylated depending on whether or not a monkey was peer-reared or mother-reared. Longitudinal methylation data show that the number of genes differentially methylated is about 5,000 at four months and 2,500 differentially methylated genes 2 years later. The number of differentially methylated genes is lower in females, with only 1,000 differentially methylated

## Conference Summaries, continued

genes at two years. These results suggest that therapeutic environment has mediated the effects of peer-rearing versus mother-rearing. It also suggests a new critical period and a new set of genes, which are only observed in females at the onset of puberty.

Because there is strong evidence for long-term effects of rearing techniques, there has been a shift in focus toward understanding why these long-term differences arise. Early mother-infant interactions including mothers' protection of their babies, face-to-face interactions and imitation may be part of the mechanism driving the effects of peer-rearing versus mother-rearing. Like humans, newborn monkeys engage in substantial face-to-face contact with and imitate their mothers for a short period after birth. Differential expression of these behaviors is shown within a few days of birth for peer- and mother-reared monkeys. About 55% of rhesus monkey infants who are nursery-reared imitate by 3 days of age, while 95% of the mother-reared infants imitate by 3 days of age. Imitators play twice as much at 4-6 months of age, and show much higher levels of self-directed behavior such as thumb sucking and body clasping. To see the brain activity, electroencephalogram (EEG) marker documented imitation behaviors. Although the observable behaviors disappear quickly, these patterns persist in EEG measurements.

### Conference Summary: Financing Human Capital Investment

Organized by Mariacristina De Nardi and Lance Lochner

January 5, 2012

Gleacher Center, 405 N. Cityfront Plaza, Chicago IL 60611

#### Overview

The purpose of this conference was to bring together a diverse group of scholars to build links, facilitate discussions, and generate ideas on understanding the determinants and financing of human capital investment. Given the increasing costliness of human capital investment, important efficiency and equity questions arise as to the level and distribution of such investments in an economy.

The conference was structured around the following papers:

“The Money Value of a Man”

Mark Huggett (Georgetown University) and Greg Kaplan (University of Pennsylvania)

Discussion leader: Luca Benzoni (Federal Reserve Bank of Chicago)

“Human Capital Risk, Contract Enforcement, and the Macroeconomy”

Tom Krebs (University of Mannheim), Moritz Kuhn (University of Bonn), and Mark Wright (UCLA)

Discussion leader: Matthias Doepke (Northwestern University)

“Understanding the Income Gradient in College Attendance in Mexico: The Role of Heterogeneity in Expected Returns ”

Katja Kaufmann (Bocconi University)

Discussion leader: Salvador Navarro (Western Ontario)

“The Macroeconomics of Microfinance ”

Francisco Buera (UCLA), Joseph Kaboski (University of Notre Dame), and Yongseok Shin (Washington University, St. Louis)

Discussion leader: Mark Wright (UCLA, Federal Reserve Bank of Chicago and NBER)

“Equilibrium Effect of Education Policies: A Quantitative Evaluation”

Giovanni Gallipoli (University of British Columbia), Costas Meghir (Yale University), and Giovanni Violante (New York University)

Discussion leader: Mariacristina De Nardi (Federal Reserve Bank of Chicago and NBER)

“The Production Function of Human Capital in Developing Countries”

Orazio Attanasio (University College London)

Discussion leader: James Heckman (University of Chicago)

## Conference Summaries, continued

### I. "The Money Value of a Man," Mark Huggett and Greg Kaplan

The most valuable asset people hold is their own human capital. This paper explores two questions

1. What are the properties of the value of an individual's human capital when viewed as an asset?
2. What are the properties of the associated returns on the human capital asset?

The value of human capital is defined as the present value of future earnings, discounted using an individual's own stochastic discount factor. One's stochastic discount factor is defined as the ratio of marginal utility of consumption across time and turns out to be negatively correlated with risk, where risk is measured by the variance of uncertain individual earnings. Returns are calculated by future value plus dividends divided by current value, as the returns of any financial assets. These values are measured using US data on male earnings and financial asset returns. The data suggest that there is substantial persistence in earnings and that income risk is countercyclical.

Taking this model of human capital valuation to data yields the following main results:

- The value of human capital is hump-shaped over the life-cycle.
- The value of human capital is substantially below the present discounted value of future earnings, when the discounting is computed using the risk-free rate. This is due to the following two reasons:
  - Individuals face borrowing constraints.
  - Individuals are not perfectly insured against risk, especially early in life.
- Human capital returns decline with age and greatly exceed the return to stock early in life because future value of human capital greatly exceeds current value at that time.
- Human capital returns and stock returns have a small positive correlation over the working lifetime.

#### *Discussion:*

The paper's finding is sensitive to assumptions about the stochastic processes for earnings and financial asset values. It is common to assume that there is an aggregate component and an idiosyncratic component of labor income. The aggregate component is typically related to what happens in the overall economy; one will therefore expect that cointegration between dividends on the aggregate market portfolio and aggregate labor income, which is not assumed in the empirical analysis. Imposing cointegration can improve the model's empirical success in a number of ways. According to the baseline model in the paper, over the life cycle, the fraction of investments made in stock is relatively flat. In fact, the average holding of stocks is hump-shaped over the life cycle. If one assumes cointegration between aggregate dividends from the stock market portfolio and aggregate labor income, then one may be able to reproduce this empirically observed hump-shape average holding of stocks.

- Earnings here are assumed to be exogenous, which is of course not empirically valid. Therefore, it is worth-while to think more carefully about the production function of human capital and how human capital investment decisions depend on earnings. This is especially important when it is expensive to invest in education and people are likely to face borrowing constraints.
- Some professions seem to be subject to more aggregate risk than others. The portfolio holdings of different people vary depending on what types of shocks they face. It would be

interesting to explore the implications of the value of human capital in terms of different professions.

- The theoretical model employed in the empirical work allows for uncertainty over the life-span. Depending on one's current health, one's life expectancy can vary significantly which would have large implications on the life-time present value of income and thus the value of human capital.

## Conference Summaries, continued

### II. “Human Capital Risk, Contract Enforcement, and the Macroeconomy,” Tom Krebs, Moritz Kuhn, and Mark Wright

For many households, and especially young ones, human capital is the most important part of total wealth. This paper views human capital as an asset and explores the implications of the following three properties of the human capital asset:

- Human capital is risky; one may face health risks and labor market risks that affect one’s labor income and hence human capital’s valuation.
- The expected returns to human capital are heterogeneous; in particular, expectations of returns to human capital are different for young and old households.
- Human capital is not alienable; it cannot be used as collateral to borrow.

These properties of human capital imply an interesting risk-insurance relationship because young households are the most exposed to human capital risk, but they are also the least insured. Young households expect higher returns on human capital than older ones, so they choose to invest more. Therefore, they are more exposed to the risks involved. In an environment with complete markets and perfectly enforced contracts, they would borrow to perfectly insure these risks. However, with limited contract enforcement, they are constrained in their borrowing and are underinsured relative to the perfect enforcement baseline.

The implications of the theory are assessed using data on holdings of life insurance as a measure of insurance against one of the largest human capital risks – the death of a family member. When the returns to human capital investment in the model are calibrated to match the age profile of earnings growth, the analysis finds that:

- The model matches the significant decrease in the fraction of wealth invested in human capital (as measured from the ratio of labor earnings to financial wealth) over the lifecycle;
- The model matches the extent to which insurance against the death of a family member, as measured by purchases of life insurance, increases over the life-cycle.
- The welfare costs of under-insured young households are substantial.

This paper suggests that a number of policy reforms would lead to a welfare-improving increase in insurance and human capital investment. Importantly:

- With default penalties for all borrowers, credit subsidies for young households would increase access to insurance against human capital risk.
- Modifying the bankruptcy code to allow garnishment of labor income would also increase insurance.

#### *Discussion*

The results rely on the assumption that the return to human capital investment decreases with age. For tractability, the authors model returns to human capital investment as constant for a given age, but at rates that decrease with age. To what extent is this assumption restrictive? Does labor market risk vary directly with the level of human capital independently of age? On the one hand, the probability of becoming unemployed is larger for people with less education. Moreover, health insurance in the US is often tied to employment. This suggests that less educated people are more vulnerable to unemployment risk and might be more exposed to health shocks due to the lack of health insurance. On the other hand, the size of the income loss from unemployment is larger for people with more education, and empirically there is no simple, monotone relationship between labor market risk and education.

- The paper focuses on the inalienability of human capital and the resulting limitations of commitment as the source of market failure. Other forms of market failures due to, for example, moral hazard, may also be important. The paper focuses on insurance against the

## Conference Summaries, continued

death of a family member where moral hazard considerations are arguably less important than limited commitment. For other forms of risk, moral hazard may be more important. It would be interesting to extend the model to include other frictions, and to assess whether different policy reforms are warranted.

- After WWII, high taxes were levied in the US and very substantial education grants were given to students. In essence, this policy was designed to address the inability of young people to acquire human capital because they did not have the access to credit. The society at large provided money needed for human capital investment. Economic growth was impressive during that period of time. In recent years, such societal grants are much more limited; borrowing and lending for human capital investment are provided through the private sector. It would be interesting to extend the analysis to consider trade-offs between public and private provision of finance for human capital investment.

### III. “Understanding the Income Gradient in College Attendance in Mexico: The Role of Heterogeneity in Expected Returns,” Katja Kaufmann

Countries in Latin America are characterized by relatively low levels of human capital investments compared to countries with similar per capita incomes. The region is characterized by massive inequality between poor and rich in terms of education attainment, earnings, and wealth. In Mexico, for example, an adolescent from a family of the highest quintile of the income distribution is eight times more likely to attend college than one from a family in the lowest quintile. In recent decades, the returns of attending college have been rising, but college attendance by children of the poor has not responded to this change. This paper attempts to answer the following questions:

- What are the underlying mechanisms determining the correlation between parental income and college attendance?
- What types of policy reforms would lead to high college enrollment of the poor and would be welfare improving?

There are two possible explanations for low college attendance rates among the poor. First, the poor may not be able to attend college due to financial reasons. There is a limited number of student loans and fellowships available. In addition, access to the credit market by poor families is limited due to the lack of collateral. Second, the poor may not want to attend college, because they expect low returns from attendance. They may be poorly informed about career possibilities with a college degree, underestimating the returns to college. This would imply that the decision not to attend could be inefficient. This paper tries to distinguish between these two explanations as they differ substantially in terms of policy implications.

The empirical results of this paper show that:

- Subjective expectations of returns to schooling help to predict schooling decisions, but they are not able to explain the large differences in enrollment rates between poor and rich children.
- Children from poor families require significantly higher expected returns to be induced to attend college than children from affluent ones.
- Children from poor families who have high expected returns to college are particularly sensitive to changes in direct costs of schooling, consistent with credit constraints playing an important role in college enrollment decisions of the poor.
- Counterfactual policy experiments show that a significant fraction of students could be induced to attend. A 10% reduction in tuition costs leads to a 1.5% increase in college attendance among the poor.

## Conference Summaries, continued

Overall, the low college enrollment rates among poor Mexicans are not driven by low expected returns, since a sizeable fraction of individuals with high expected returns are not attending college. Evidence suggests that credit constraints play an important role in college enrollment decisions. Therefore, policies such as student loans and fellowships could increase the poor's access to college and could potentially lead to important welfare improvements.

### *Discussion*

Q: How well does the expected returns to college reflect people's actual earnings if they had attended college? Is it possible that the poor overestimate their future expected college earnings?

A: The data shows that expected returns are increasing with GPA, which is positively correlated with actual earnings.

Q: If we can elicit expectations, why can't we elicit preferences from "carefully" worded questions?

A: It would be useful to consider the underlying reasons for constraints on student borrowing in Mexico. If lenders cannot tell whether poor children have high or low returns, then it is difficult to convince them to lend to the poor even if some poor children knew they would be successful.

## **IV. "The Macroeconomics of Microfinance," Francisco Buera, Joseph Kaboski, and Yongseok Shin**

Microfinance represents credit targeted toward small-scale entrepreneurial activities, consumption smoothing, and human capital investment by the poor, who may otherwise lack access to financing. It has become a pillar of economic development policy. Microfinance has been growing at a fast rate, up to 29 percent a year. For a significant number of developing countries, microfinance loans amounts to close to 10 percent of GDP and affect over 10 percent of the population.

There has been a concerted effort to expand these programs with the goal of alleviating poverty and promoting economic development. However, the macroeconomic effects of economy-wide microfinance have not been explored. This paper attempts to fill this gap by providing a quantitative assessment of the potential impact of economy-wide microfinance availability. This paper studies the general equilibrium effects of microfinance on development.

Previous studies find that in partial equilibrium, microfinance

- Increases total factor productivity (TFP) by allowing entrepreneurs with high marginal product of capital to invest more.
- Redistributes income from talented, high savings individuals to the less-talented, low saving ones as more entrepreneurs compete for workers
- Depresses capital accumulation.

In general equilibrium, microfinance increases the welfare and consumption of some individuals, but it has little impact on aggregate output and consumption.

### *Discussion*

Q: How does this paper relate to papers which have found that microfinance can lower wages and reduce the welfare of the poor?

A:

- This paper assumes that microfinance is an innovation that allows borrowing without any risk of default or intermediation costs. Neither assumption seems empirically valid.

## Conference Summaries, continued

- Human capital accumulation is not considered in this paper. However, many believe that microfinance is important for development as it gives the opportunity for the poor to educate themselves.
- For some regions in developing countries, there is strong market segmentation in credit. One primary benefit of making microfinance more widely available is that it increases the competition in the credit market and reduces the ability that lenders have to extract rents and distort interest rates. This may lead to stronger welfare effects.
- People who borrow through microfinance programs may use the money to buy intermediate inputs or hire labor. Since the output elasticity of these factors of production is much higher than the output elasticity of capital, incorporating this may also lead to a much larger effect on output.

Q: In the empirical analysis, what is the main difference in the underlying distribution of entrepreneurial ability by moving from US data to Indian data?

A: The dispersion of productivity is reduced by 10-15%.

### V. “Equilibrium Effects of Education Policies: A Quantitative Evaluation,” Giovanni Gallipoli, Costas Meghir, and Giovanni Violante

To evaluate education policies, it is important to investigate the interaction between within family inter-vivos transfer and economy-wide educational policies. This paper examines policies that are designed to alter the equilibrium distribution of education and explores the economic consequences of this redistribution. The implications for education choices are studied, along with the role of those decisions in shaping life-cycle earnings and wealth profiles.

This paper builds a life-cycle model with endogenous labor supply, consumption and education choices, allowing for agents’ heterogeneity and for imperfect credit and insurance markets. The model internalizes the dynamic life-cycle effects of access to family resources by allowing altruistic parents to make voluntary inter-vivos transfers to their children at the beginning of their children’s independent life. The model is then used to evaluate education policies such as tuition subsidies.

This paper shows that

- Policy outcomes are sensitive to small changes in marginal returns of education.
- In partial equilibrium, policies such as conditional grant and loan subsidies are effective in substantially increasing education and mildly reducing inequality.
- Partial equilibrium effects on average education outcomes largely disappear in general equilibrium, because subsidies crowd out inter-vivos transfers in equilibrium and are associated with more sorting and inequality.

#### *Discussion*

- This research has incorporated several important ingredients and therefore can potentially explore many different aspects of the equilibrium effects of education policies:
  - Endogenous labor supply;
  - Agent’s heterogeneity (permanent ability and uninsurable efficiency shocks);
  - Transmission of ability across generations
  - Inter-vivos transfers from parents to children to ease liquidity constraints for education decisions.

Q: This paper incorporates several market imperfections: borrowing constraints, labor market risk, and the lack of insurance against child ability. Which market imperfections are the most important?

## Conference Summaries, continued

A: We may be able to use a simplified version of this model to consider what happens when:

- The cost of education increases;
- A credit crisis occurs;
- The labor market is stagnant;
- Demographic changes occur.

Q: The paper concludes that the least educated are hurt by the education policies that include grants and loans. Inequality is transmitted inter-generationally. Are the least educated worse off in an absolute sense or a relative sense? What is the implication in terms of policy advice?

A: This paper offers ways to evaluate policies. Currently, we consider a very simple policy -- a universal subsidy -- and show that in equilibrium it might, in some circumstances, lead to welfare losses among the least educated. However, this form of education subsidy does not well-represent actual financial aid policies. For example, in the UK, there are income-contingent repayment loans. Fortunately, it is possible to use this model to think about designing policies that better target low-skilled individuals to improve their human capital investment.

### **VI. “The Production Function of Human Capital and Parental Investment: Evidence from a Panel Study of Bangladeshi Children,” Orazio Attanasio**

Previous work on early childhood development has shown that a child’s early human capital acquisition is likely to have profound economic and social implications well into the child’s adulthood. Brain development occurs during the early years of life, and the accumulation of human capital is highly persistent. Therefore, it is important to explore policy interventions that affect outcomes in the early years.

Human capital can be viewed as a combination of one’s cognitive skills, non-cognitive skills, and health. It is important to consider what enters the production function of human capital. Many studies have suggested that family environment plays an important role in one’s development of human capital. Here, family environment includes the following inputs: parents’ health, IQ, and education; the quality of parenting; the human capital investment decision; and the financial situation of the family. In addition, recent studies have shown that different combinations of nutritional supplements can also have different outcomes for young children.

The development of human capital is a very complex process that is affected by a wide range of inputs; and these inputs can also lead to different outcomes depending on the timing as to when they are received. Therefore, it is important to consider the dynamic formation of human capital.

This paper models human capital accumulation over time and addresses the following questions:

- What are the inputs into the production function of human capital?
- What are the determinants of the level of human capital over time?
- What are the child investment behaviors of households, and what constraints do they face?
- What are the appropriate policy interventions to implement?

The empirical results show that

- Health plays an important role in a child’s development of cognitive and non-cognitive skills.

## Conference Summaries, continued

- Mother's IQ becomes increasingly important as the child ages.
- Father's education, which is a measure of the family's wealth, is positively correlated with a child's development of human capital.
- There is strong persistence over time for children's development of cognitive skills, non-cognitive skills, and health.

### *Discussion*

- This paper assumes a linear technology; recent research suggests that it would be useful to consider a nonlinear technology to explore richer intertemporal trade-offs.
- It would be interesting to examine the neuroscience literature on the development of brain plasticity. We know that there are certain periods in development in which there is substantial neuron death for example. Perhaps one should focus on the investments prior to these events. More generally, there are certain points of time when interventions may be particularly effective. The neuroscience literature can provide guidance on timing relationships.

# Summary: Inaugural Meeting of the Measuring and Interpreting Inequality Working Group

February 18, 2012

Summary prepared by Xan Vongsathorn

## I. Overview

The conference initiated a conversation between market designers and experts on inequality. Simply allowing prices to clear a market may be deemed unfair by policymakers hoping to reduce inequality; in such cases, the tools of market design provide a natural way of *targeting* alternative social objectives. By the same token, the inequality literature's empirical approach to evaluating outcomes can be of great benefit in *assessing* the effectiveness of mechanisms developed by market designers.

Taken together, the conference papers contributed to a more complete picture of the current state of inequality, and of the tools available to influence inequality as it evolves over time. At the same time, the conference illuminated avenues for further research. It is hoped that the MIE meeting—and the work of HCE more generally—will lead to new work crossing field boundaries to understand and address socioeconomic inequality.

## II. Connection between Market Design and Inequality

When inequality is a concern, free market solutions to allocating scarce resources may be considered unfair. How should resources be allocated in these settings, taking policy objectives into account? Market design provides a natural framework for carefully studying this problem. The tools of market design can be used to evaluate many of the *ad hoc* mechanisms that have arisen independently throughout the world. Market design also suggests alternative mechanisms which may better target policy goals.

A leading example—and a topic that recurred throughout the conference—is the role of market design in *school choice*. How should students be matched to schools? School choice programs must account for the preferences of students while respecting policy goals.

Many of the conference presentations considered how to incorporate *affirmative action* into school choice. Affirmative action addresses existing inequality by favoring disadvantaged groups; however, the best way to implement this goal is not obvious. Poorly chosen mechanisms may be needlessly inefficient, and may hurt many (or even all!) of the intended beneficiaries.

### *Manipulability*

As a benchmark, we consider a basic design change which can help “level the playing field” in school choice.

In the *Boston mechanism*, which has been adopted in many school districts, students submit rank-order lists over schools, and seats at each school are assigned giving priority to students who ranked that school higher on their lists. That mechanism invites strategic behavior on the part of the students. By contrast, the *student-optimal stable mechanism*, in which student priority does not depend on student rank-order lists, is *strategyproof* for students, in the sense that truthful reporting of preferences is always optimal.

## Conference Summaries, continued

Strategyproofness promotes equality: Mechanisms which encourage strategic behavior will tend to favor students with the resources and ability to strategize. By contrast, a strategyproof mechanism does not favor sophisticated players.

Sonmez built upon and extended this point in his presentation of joint work with Parag Pathak, “School Admissions Reform in Chicago and England: Comparing Mechanisms by Their Vulnerability to Manipulation.” He defined a natural measure of relative *manipulability* of mechanisms; under this metric, reductions in manipulability naturally promote equality.

To date, many school districts have not strategyproof mechanisms; nevertheless, a number of them have recently modified their mechanisms, often appealing to concerns about inequality and fairness. Sonmez presented data showing a strong trend toward *less manipulable* mechanisms in the United States and England, even when market designers were not involved. This trend is in line with the prescriptions of market design, and perhaps validates the goal of moving even further in the direction of strategyproofness.

### *Affirmative Action in Theory...*

While strategyproofness and the student-optimal stable mechanism are attractive to market designers even absent inequality concerns, mechanisms may also be designed for the explicit purpose of reducing inequality.

Many school districts wish to match students to schools in a way that promotes diversity and benefits disadvantaged groups. A natural approach is to constrain the number of students of a given type who may attend a given school; some form of affirmative action approach is common practice in many cities. But what sorts of affirmative action constraints are most effective? What precise mechanism should we use? The answer is not immediately clear.

Towards an answer to this question, Scott Kominers presented joint work with Tayfun Sonmez on “Matching with Slot-Specific Priorities.” In Chicago, students are matched to a set of selective public high schools in a simple way that incorporates affirmative action constraints. Students are ranked based on academic achievement and separated into four “tiers.” There is open competition for 40% of the seats at each school, and 15% of the seats are reserved for each of the four tiers. In effect, the student-optimal stable mechanism is run, with the open seats filled before the reserved seats.

Kominers and Sonmez observed that the order in which seats are filled matters: If open seats are filled first, top minorities compete with majority students, whereas if open seats are filled second, lower-ranked minorities compete with majority students. We might therefore expect that the method used in Chicago is especially effective at promoting minority opportunity. Confirming this intuition, Kominers and Sonmez showed empirically that when open seats are instead filled last, about 18% of the seats change hands, with the most disadvantaged students being the most impacted.

### *... and Affirmative Action in Practice*

Evaluation based directly on outcomes has thus far been largely *absent* from market design. If a mechanism is designed to boost the academic achievement of disadvantaged students, might we not want to consider the empirical effect of the mechanism on academic achievement?

Dennis Epple does exactly this, in joint work with Surendrakumar Bagde and Lowell J. Taylor, “Dismantling the Legacy of Caste: Affirmative Action in Indian Higher Education.” The paper considers the impact of affirmative action in India on college enrollment rates and subsequent test scores. (Remarkably, the mechanism that matches students to colleges in this market is related to the Chicago mechanism studied by Kominers and Sonmez.)

## Conference Summaries, continued

The intended beneficiaries of affirmative action policies in India are the lower castes. But are they really helped, and if so, by how much? A market design evaluation would ask whether these students get into more preferred colleges as a result of affirmative action. However, students may not know what is good for them. Indeed, much of the rhetoric surrounding this controversial policy charges that affirmative action may inadvertently harm members of the lower castes, by inserting them into challenging environments for which they are not prepared. To settle the question, information on student rank-order lists is not sufficient. By appealing to outcomes directly, however, Epple and his coauthors argued that affirmative action does in fact benefit the lower castes. He presented evidence that the program increased both college attendance rates and subsequent test scores among the members of the lower castes. In addition, this approach can be used to quantify the magnitude of the gain.

### *Limitations of Affirmative Action and Priority Structure*

Market design has more to say on the topic of affirmative action. Policymakers' true objectives are typically quite complex, and promoting diversity may come at the cost of other objectives such as nonwastefulness, fairness, and strategyproofness. Yet in many school districts, affirmative action constraints are simply mandated in the form of hard upper and lower bounds on the number of students of a given type at a given school. Two natural lines of inquiry follow from this. How can we implement the constraints imposed by law while best satisfying other policy goals? And might there be a mechanism that better achieves the true underlying policy objectives when legal constraints are relaxed in an appropriate way?

M. Bumin Yenmez addressed both of these questions in joint work with Lars Ehlers, Isa E. Hafalir and Muhammad A. Yildirim, "School Choice with Controlled Choice Constraints: Hard Bounds Versus Soft Bounds." Unfortunately it is not always possible to satisfy hard bounds as well as a natural notion of fairness and nonwastefulness. In light of this, Yenmez and his coauthors presented a variant of the student-optimal stable mechanism that respects hard bounds and satisfies weakened notions of fairness and nonwastefulness. As this mechanism is not strategyproof for students, Yenmez and coauthors devised to a mechanism that achieves fairness, nonwastefulness, and strategyproofness when bounds are allowed to be *soft* in a certain sense. The latter mechanism encourages diversity, without forcing it to hold when student preferences are significantly out of line with policy-inspired constraints. In such cases, soft bounds may produce a result that is actually *more* in line with the policymaker's true objectives.

Controlled choice mechanisms ideally strike a balance between accommodating student preferences and achieving distributional goals. Indeed, school choice is not *choice* if the outcome is essentially determined by the priority structure imposed on the students! On a cautionary note, Caterina Calsamiglia presented joint work with Maia Guell and Antonio Miralles, "All About Priorities: On How There is No School Choice Under the Presence of Bad Schools." This work first considered school choice in Barcelona, where students are given priority at nearby schools. Under the Boston mechanism, the safe option is to rank highest a school at which the student has priority, and indeed most students do exactly this. Calsamiglia and coauthors used a change in the definition of "nearby schools" to show empirically that the outcome of the mechanism is highly sensitive to the priority structure. In this sense, student preferences play a small role relative to priorities; this provides a new reason why policymakers may wish to avoid the Boston mechanism.

Calsamiglia also discussed a theoretical model with a continuum of students and a binary priority structure, in which all students fear being placed in the same low-quality school. If the bad school is sufficiently undesirable, then under the Boston mechanism all students apply first to the school at which they have highest priority - irrespective of their preferences. Furthermore, under the student-optimal stable mechanism, students simply end up at the school for which they have highest priority. This model illustrates that priorities can potentially have significant impact on students' assignments.

## Conference Summaries, continued

### *Effects of School Choice on School Quality*

John William Hatfield presented joint work with Fuhito Kojima and Yusuke Narita, “Promoting School Competition Through School Choice: A Market Design Approach.” With student welfare as a top priority, the school choice literature has promoted the student-optimal stable mechanism (which gives the most preferred stable outcome for students) and the top trading cycles mechanism (which is Pareto efficient for students). However, while school choice has been hailed as a way of incentivizing higher school quality through increased competition for schools, past analysis has assumed school quality to be fixed.

In fact, the choice of mechanism may impact schools’ incentives to improve themselves. To address this, Hatfield and coauthors identified circumstances under which a school is made better off when it becomes more attractive to students. Unfortunately, *no* stable or Pareto efficient mechanism always guarantees increases in school welfare following such quality improvements.

On the other hand, stable mechanisms nearly have this property in large markets, while the top trading cycles mechanism does not. This gives a reason to prefer the student-optimal stable mechanism to top trading cycles.

Incentives for school quality are potentially quite relevant to inequality concerns. In particular, we should be particularly concerned if a mechanism enables schools to benefit by decreasing quality in the eyes of students they find *undesirable*, especially to the extent that these are disadvantaged students. There is room for future empirical work considering the impact of school choice mechanisms on school quality, potentially giving special attention to changes in quality for different types of students.

### **III. Matching and the Evolution of Human Capital**

In his invited address, Lones Smith discussed joint work with Axel Anderson, “Matching with Evolving Human Capital.” Variation in human capital is both a form of inequality and a root cause of income inequality and other outcomes of concern. Thus the evolution of inequality over time is closely related to the underlying evolution of human capital.

Smith’s joint work considers a dynamic one-to-one matching model in which agents match each period. Matched agents engage in joint production and augment their future human capital; both processes depend on current human capital levels. An agent’s current match may be beneficial or detrimental to future human capital. And because future human capital matters, wages need not always increase with an agent’s quality.

Whereas the school choice papers discussed above have focused on matching markets with non-transferable utility, the starting point for Smith and Anderson’s work is Becker’s 1973 theory of marriage, a static matching model with transferable utility. By adding in dynamic peer effects, Smith and Anderson endogenize the wage and human capital distributions. This allows them to consider different properties of the production and human capital transition functions, and their consequences for matching and the subsequent evolution of human capital.

After specializing to CES transition functions, Smith described four matching patterns and presented the results of simulations. Similar to Becker’s 1973 model, positive (negative) assortative matching obtains when there is complementarity (substitutability) in the production and transition functions. In addition, two new patterns can arise when the production and transition functions are in tension with each other: individuals may separate into skill-based “clusters,” with members of a given cluster rising to the top of the human capital distribution within the cluster—but no further. These patterns match a number of observed cross-sectional and dynamic wage patterns and suggest a reason for glass ceilings and poverty traps.

## Conference Summaries, continued

### IV. Measurement Issues

The conference was bookended by two talks that highlighted issues of measurement.

Trending inequality is a matter of national importance, and sound measurement of inequality is a precondition for sound policy. At the same time, inequality is a multidimensional issue, and it is hardly obvious how to construct measurements that faithfully capture it. Addressing this, Bruce D. Meyer presented joint work with James X. Sullivan, “Consumption and Income Inequality in the U.S. since the 1960s.” Meyer and Sullivan’s work demonstrates that both the level and pattern of inequality are sensitive to the method of measurement, and suggests numerous shortcomings of previous measurements. Income measures have typically failed to account for taxes or transfers, while consumption measures emphasized nondurable consumption or looked only over short time horizons. In addition, official statistics often focus on the extreme upper tail, even though these individuals make up a very small share of the population.

Meyer and Sullivan considered income inequality after taxes and transfers, and developed an improved measure of consumption that incorporates the flow value of durables. With these modifications, changes in inequality over time become much less pronounced. In particular, consumption inequality has been relatively flat since the mid-1980s. However, the large increase in inequality observed in the late 1970s and early 1980s appears robust to these measurement changes. In his talk, Meyer advised that more work is needed to understand what happened during that period.

Finally, the structure and evolution of inequality over time may be closely tied to the *social network* in which agents are embedded. In many settings it is natural to suppose that economic opportunities are a function of one’s connections; moreover, these connections may endogenously influence future connections and opportunities. Thus it is valuable to understand the process by which the social network itself evolves.

In this vein, Bryan Graham presented “Homophily and Transitivity in Dynamic Network Formation.” Graham introduced an empirical model of network formation that considers how the evolution depends on *homophily* and *transitivity*, as well as the current state of the network. Homophily is the desire to connect with similar agents (“birds of a feather flock together”), while transitivity describes the tendency to connect with nearby agents (“a friend of a friend is a friend”). In principle these can both have implications for inequality. Agents may be drawn to other agents of similar socioeconomic status (homophily), and it may then be difficult to expand beyond nearby agents (transitivity).

Networks are complex objects in which a single link can potentially affect the formation of many future links. However, with many observations of the network, we are effectively able to hold the link history fixed outside of a small neighborhood of a given link. By studying the frequency of link formation within these neighborhoods, we can learn about the determinants of network formation.

# Human Capital and Economic Opportunity

## Global Working Group

### YHC Call: Early Childhood “Pay for Success” Social Impact Finance

April 26, 2012

#### *Participants:*

Robert Dugger, Lance Lochner, Steven Durlauf, Elizabeth Groginsky, Orazio Attanasio

#### *Conference Call Notes*

- I. Origins of the PKSE Bonds and Early Childhood “Pay for Success” Social Impact Finance
  - a. In the Spring of 2003, Rob Dugger, Jim Heckman and Art Rolnick had conversation about areas where America needed to invest resources that would have positive rate of return
    - i. Concerned with GDP being paid for by increasing the debt . Knew this was unstable, and needed to identify areas where resources could be invested with significant positive returns. Looked at various areas and agreed on education.
  - b. Formed the Invest in Kids Working Group
    - i. Grew from 5 people to 1000 people in about 18 months
    - ii. Organized into a partnership with Pew Charitable Trust called Partnership for America’s Economic Success
  - c. Focused on five areas of childhood interventions:
    - i. Microeconomics
    - ii. Macroeconomics
    - iii. Sector definition
    - iv. Financing
    - v. Advocacy
      1. Partnership for America’s Economic Success (PAES) decided to focus on business advocacy after three years of research
        - a. Job creation, work force competitiveness
  - d. The affiliation with Pew ended this year and moved to America’s Promise Alliance where this work is done in conjunction with the Kauffman Foundation
- II. Review of the Presentation: Social Impact “Pay for Success” Finance”: A PKSE Bond Example
  - a. State and Federal Budgets are under pressure and education is being cut at every age level
    - i. One answer to this is the “pay for success” bond program
    - ii. An area where for-profit and non-profit incentives align
  - b. The PKSE captures the early differences between the return on preschool and the return on k-12 schooling
  - c. PKSE Bonds provide three bottom line returns
    - i. Societal: create coalitions of business leaders who can support effective early childhood programs and shape policy

## YHC Call: Early Childhood “Pay for Success” Social Impact Finance, continued

- ii. Economic: higher third-grade reading and math scores, fewer teen pregnancies, better employment and future earnings stronger economic and per capital income growth, etc.
  - iii. Financial: competitive interest rates. First found special-education savings as percent of philanthropic investments are 100%
- III. The PKSE bonds are a kind of social impact bond
  - a. Used to pay for quality Pre-k to reduce special-education costs
  - b. In order for these bonds to be attractive, there needs to be strong state and local state philanthropic investor support
  - c. Need to have rigorous demonstrations and benefits
    - i. The statistical studies that underlay the savings, calibrate the contract between the social impact bond issuing organization (SIBIO) and the school systems
  - d. Bonds need to have familiar terms
    - i. The more plain vanilla the better in terms of marketability
  - e. Need good working relationship with the investment, underwriting, institutional and foundation investor sectors
- IV. Early Education Trials Show Pre-k reduces public school special-education costs
  - a. Randomized Control Trials
    - i. Abecedarian and Perry Preschool studies
  - b. Case Control Trials
    - i. Chicago Child-Parent Centers studies
    - ii. Louisiana LA 4 evaluation
  - c. Statistical Projection Trials
    - i. Pennsylvania Pre-K Counts and the Granite School District studies
  - d. These all show that quality pre-k for three and four year olds is associated with very significant reductions in special education costs when children are in k-12 public school education
    - i. Looks at the students in the program and based on past experience of children who have been assigned usually ends up to be around 18% based on national statistics
    - ii. The pre-k counts program are **projected** to be assigned at a 2.5% assignment rate to special-education, which is a great reduction
    - iii. We need to track the graduates and confirm that these rates are materially lower than they are without the program
      - 1. This needs to be done in each jurisdiction with various socioeconomic industry conditions that would affect special-education assignment rates in that area
      - 2. This is a very localized project
- V. Program parameters
  - a. Assume that the Pre-k does not reduce all assignment to special education
    - i. Rate of 70%
  - b. The number of years in special education
    - i. The numbers are based on a national distribution
    - ii. When they enter they enter in the early years when public school assignment occurs
    - iii. They are assumed to be in special-education for 8-9 years
    - iv. Participation in special-education drops in high school towards the last 3 years mainly because of high school drop outs
  - c. Use 5% discount rate

## YHC Call: Early Childhood “Pay for Success” Social Impact Finance, continued

- i. Higher than most social discount rates because it's more of a capital investment rather than a government program
    - ii. Not truly a venture capital (where 20% discount rates)
    - iii. Thought it was a conservative number which begins to put this in a proper risk context from an investor standpoint
  - d. Mentoring
    - i. Person who goes and works with parent of child and helps them select the best preschool for their child
  - e. Monitor
    - i. School readiness partnership
  - f. Savings rate
    - i. Assume as they are accumulated can be reinvested at 3%
    - ii. Bond repayment is out of accumulated savings
  - g. Program Related Investments (PRI)
    - i. Build this into the program
      - 1. Signaling tool
        - a. If these people are Kellogg, or Gates foundation or any foundation that is looking at these processes very carefully
        - b. The fact they might buy these indicate that the PKSE program meets basic best practices standards
  - h. Bonds
    - i. 2 Tranches
      - 1. 3 yr olds
      - 2. 4 yr olds
    - ii. Payments in the 10<sup>th</sup> and 11<sup>th</sup> year
      - 1. Draws down the savings available for future financing rounds
      - 2. Negative cash flow is dealt with by PRI's
  - i. Maximize the amount of money at each round is to max future financing
    - i. When you have philanthropic PRIs you have a situation where you have significant funds available for the next financing round
      - 1. Done present value comparisons for component
  - j. In the second round even though little money for reinvestment from the first round
    - i. The amount of money needed from PKSE bonds purchasers is steadily falling
    - ii. You can see with 1-5 rounds
    - iii. The amount of money needed to be borrowed is declining, when you get to year 5 and beyond, the savings gains can finance the program entirely
- VI. Better to offer a program and do it with PRIs
  - a. This reaches sustainability very quickly
  - b. Achieves sustainability it initial 38-48 months
- VII. Uncertainty
  - a. Uncertainty associated with local studies may prove to be the case that these can be reduced from 18% to 2% but its closer to 18% to 7% so it is better to go into discussions with (7%) because its more conservative

### Questions, Comments and Guidance

- I. Reductions in special-education (Lance Lochner)
  - a. Regarding Pennsylvania numbers-- do you have similar rates of special-education in Alexandria, Virginia where you are planning on moving in with this?
    - i. We do, as a preliminary matter. When we look at one program in Alexandria, where we are doing a longitudinal study and not a project study as in Pennsylvania.

## YHC Call: Early Childhood “Pay for Success” Social Impact Finance, continued

- ii. Pennsylvania actually needs to set up a PKSE bond program , would need to do a longitudinal study of the Bethlehem study and track them into the elementary schools and see if indeed the rate of special-education assignments is materially different than the assignment for other children situated in that region
  - b. The PKSE Bond paper
    - i. We describe the school district with 15,000 children who would qualify them to be in the program but state budgets restrict them to 500-600 so it could quite clearly be increased significantly
    - ii. The question for Bethlehem School district is that we need to look at the other 14,000 kids not in the program and see what the assignment rate is to special-education.
    - iii. It’s probably 15-20 % if the pre-k count has the effectiveness that the study finds, it will be south of the 5% it would be a financially very viable program. They have to track both categories of kids that did not get any pre-k at all and establish a baseline
  - c. All the savings comes from reduction in special-education, what will happen to special-education teachers who will be out of a job?
    - i. Short run considerations
    - ii. PKSE will crawl before walk and walk before run
      - 1. If you were to introduce the program, you would be adding to pre-k program by 100, and reducing number of children (15,000x18%-->number of kids assigned) from 18% to 7.5% .
      - 2. This won’t affect the budget in its large dimensions at all and won’t affect the budget in a material way until you run programs affecting thousands of kids
    - iii. The natural attrition that comes from teachers retiring or changing work
      - 1. Their life purpose, they might realize, is better achieved by being solid pre-k teachers rather than special-education teachers
      - 2. Reallocate capital to earlier years, the demand for pre-k will go up and there will be positions for the special-education teachers who are quite skilled and qualify to be good pre-school teachers
    - iv. Would likely take 5-8 years to happen
    - v. Thus far we have not sensed resistance
- II. Investment standpoint (Elizabeth Groginsky, United Way)
  - a. Are there conversations around capturing up through third grade and looking at remediation across savings as well as around special-education, cost savings captured if we extend the time and the investment period?
    - i. When we are having these conversations 5-7 years from now, this is a viable strategy
    - ii. They have the potential if done properly from the beginning that they could be for early care and education what mortgages were to housing (30 year instruments)
    - iii. The time period is not so much the issue it’s the “collateral”
      - 1. With PKSE Bonds the collateral walks out the door. It needs to be captured fairly quickly and should be captured within the first 24-26 months whether you have a winner.
      - 2. You will know that because you will see a reduced assignment rate in kinder etc. to know if you have a viable program or not
  - b. Another project is Nurse Family Partnership
    - i. Gains here might be very high within 12 months, you will know whether prenatal care actually results in higher healthy baby deliveries

## YHC Call: Early Childhood “Pay for Success” Social Impact Finance, continued

- ii. Lower Medicaid delivery costs
  - iii. Lower welfare costs associated with abuse and neglect
  - iv. What’s exciting about this is the medical costs associated with low birth weight babies is so high, it may work effectively on this alone
    - 1. Reduce agencies with which you have a contract
    - 2. The government takes savings and rebates back
    - 3. Involves a lot of agencies –S-Chip, criminal justice costs, lots of agencies involved and all their costs you are attempting to reduce
  - c. Structuring the rebate contract so that each agency knows how much it writes a check for to the issuer.
    - i. That is the toughest part of the SIB bond design it’s for that reason that we picked special-education because it involves one agency—the school district.
    - ii. The fundamental contract is the local school district and partnership the contract specifies in careful detail that the school district will write on the check that it hands to the SBIO to service the debt
  - d. If PKSE bonds work it should not be a problem to get state authorizes to direct agencies to work with a conception to age 3 community investors
- III. Political economy: concern that the success of a program of this type would crowd out other government spending on early childhood (Steve Durlauf)
  - a. How do you ensure that the school district/county doesn’t reduce their investments in response to this existence?
  - b. Endogeneity of the youth groups calculations. Would Migration rates increase? If program takes place
  - c. They know that it increases, the minute a struggling low income parent gets a scholarship for their child to go to a quality preschool the whole outlook changes
    - i. The mentor shows up at the door and their life attitudes change and society changes its relationship with them and they might feel more attached to locale that get the scholarships they will look for higher paying work where they will find it
    - ii. To keep them in the school district, you may have to have a contract with parents requiring them to stay. We think that a rebate should go to the programs that provide these services, they need to go back to the capital partnerships that finance them in the first place.
    - iii. If not you will need to set up the rebate programs in large counties where the migration is low enough
    - iv. You will increase the productivity of the parents.
    - v. Another benefit that should be calculated is the parental involvement from age three on probably means that grade retention will drop significantly
- IV. State legislature
  - a. We need to learn how to structure a state legislation to reduce the probability the county cuts back on similar services and the net benefit situation is that you haven’t reduce social welfare costs at all in the community
    - i. Will the county cut back and the net result be that you haven’t affected savings in the community at all and you haven’t reduced costs at all in the community
  - b. There would have to be some netting out and the result was that the benefit reduced spending on child and abuse expenditure was not attained. You would have to have something that prevents that in the contract or the state law.
- V. The issue of gathering evidence on impacts (Orazio Attanasio)
  - a. The idea lives on the ability to capture the returns that are supposed to materialize
  - b. Crucial to have sound statistical evidence of where these returns are
  - c. Would be useful to have a concrete intervention

## YHC Call: Early Childhood “Pay for Success” Social Impact Finance, continued

- i. Should do a small RCT
    - ii. Measureable effects, once you think of the program at scale those effects can be very different because it becomes harder to run a program at that scale
      - 1. Migration
      - 2. Crowding
  - d. How to gather evidence on impacts?
    - i. Data
      - 1. Find in Northern Virginia that as a result of NCLB most children into kindergarten are given an entrance interview
      - 2. Detail about previous health and socioeconomic circumstances
      - 3. Benchmark interview set of results
        - a. Where kid stands in an economic sense
        - b. The information is kept in the school on a year by year basis
    - e. How does the assignment of kids to this program work?
      - i. Children selected at random into the child and family network centers, there are not enough slots for those qualified and wanting to go
      - ii. There are thousands of applicants and they can only accept a hundred or so at a time
        - 1. Applicants are children of motivated parents
        - 2. Suspect that parents that didn't apply are not motivated and did not know.
          - a. Parental involvement matters so much, we suspect strongly that in addition to looking at kids accepted into the program, there is no material difference to those that did and did not get accepted
          - b. Separate study
        - 3. If you expand the slots by 100 a year (which is quite significant) you will be affecting the communities for which these children come
          - a. The mentors come into the communities and meet with families and more than likely the parents will talk
          - b. They will find out what books are reading, activities, diet, etc. this will affect the quality of parenting by kids who are not in the program
            - i. This should be monitored also
          - c. One of the experts in special education is pointing to this demonstration effect is why special-education rates are coming down as a result of cumulative effects of broad range programs that are available
  - VI. Clarify on decreasing expenditures of school district and changes in revenue from state or federal sources
    - a. The money included in the PKSE Bonds
      - i. State public school budgeted spending
      - ii. Federal statute has a maintenance of effort statute (MOE)
        - 1. Only under special circumstances could you reduce the money they are spending from one year to the next
        - 2. Argument is that the federal dollars would still be spent and you couldn't reduce the amount of money that the district receives.
        - 3. There are permissions that indeed this is happening and their maintenance of effort could be reduced
      - iii. Have not taken any federal money into account
        - 1. Problem that they have been told by DOE, they will take up the question of granting waivers for school interventions which is a way they can reduce effort under IDEA part B

## YHC Call: Early Childhood “Pay for Success” Social Impact Finance, continued

- b. If you have multiple agencies you need multiple contracts
  - i. Spinal cord of a SIB operation is the contract
    - 1. If you can't write the contract, you cannot have a program
    - 2. There are hundreds of programs with high economic returns, and there are few programs which you can build a contract and get the government to sign it.
    - 3. Needs to be written so that TO THE PENNY you have the correct amount of money on the check
  - ii. Look for program who have 1-3 agencies, if you have multiple agencies you have increased the difficulty of creating this program
    - 1. Perhaps years from now, you can start to bundle but for now getting people to buy bonds or getting loans based on a contract with multiple agencies could be very difficult
- VII. Regulatory Framework for Bonds
  - a. State could have a federal statute or agency that gives a good house-keeping seal
  - b. Needs to be secured by contract that garners the reduction in costs
    - i. Reductions need to be defined by clarity
    - ii. Paid to the issuer and the issuer uses that money to service the debt
  - c. If non-profits are issuing debts through an agency and the agency is the debtor, as the ultimate security we are talking about a standard municipal bond issuance
    - i. A public finance problem
  - d. State law might have provisions that might describe provisional partnerships or set up an agency to get bonds approved
    - i. Ultimate repayment is the responsibility of the capital partnership and not of the government

# Human Capital and Economic Opportunity

## Global Working Group

### Call Notes: YHC Inaugural Web Conference

## Youth Human Capital and Economic Development Inaugural Web Conference

May 9, 2011

### Participants:

Angela Duckworth, Alison Baulos, Tim Bartik, William Revelle, Stephen L. Ross, Rob Dugger, Jere Behrman, Donna Anderson, Sara Watson, Sarah Paterson

### Webconference Notes

#### Introduction to INET from Rob Dugger and Jim Heckman

1. The early years of human capital development have increasingly come to be known to be important. Human capital is a priority in economic development, but has become a higher priority in other countries (Japan, Europe) and this group will be an attempt to correct that
2. As a result of the economic meltdown, general economics has focused on the idea that the essential inputs to growth have not been paid attention to in the way that they should
3. The goal is to build a global group of researchers who are interested in this process. There are currently seven topical networks

#### Information about the Youth Human Capital Economic Development: Tim Bartik

1. Tim Bartik, *Investing in Kids: Early Child Programs and Local Economic Development*
  - a. Tim is a leading U.S. researcher on the linkages between youth human capital formation and economic growth and development
  - b. He will discuss the econometric estimates of the effects of early childhood program spending on local and regional per capita income growth and economic development
    - i. Provide estimates of early child program investment and economic growth
2. Converted data on well research early childhood development and will interpret it in terms of economic development and growth
3. Main point of *Investing in Kids*
  - a. U.S. state government investments in high quality early childhood programs can be a cost effective way of providing the same real economic benefits as are claimed for traditional state economic development programs of business tax incentives
  - b. The real benefit of traditional state economic development programs is not job growth, but growth that increases state earnings per capita by increasing wage rates and employment rates
  - c. Improvements in state labor market outcomes can be achieved by either working on a demand-side or supply-side of labor market, and improving quantity or quality of either labor demand or supply

## Call Notes: YHC Inaugural Web Conference, continued

4. Long term effects of early childhood interventions probably due to self-reinforcing effects of early investments in “soft skills”
  - a. Initial effects of early childhood programs on “hard skills” fade during K-12 in studies of Perry Preschool, Head Start, many state pre-k programs, and kindergarten quality (Chetty)
  - b. Effects re-emerge in high school graduation, involvement in criminal activity, teen pregnancy, employment rates
  - c. Most plausible explanation is Heckman’s theory that early investments in soft skills increase both hard skills and soft skills, and lead to further investments in, and augmentation of, both types of skills
  - d. Many state residents will stay in the same states for most of their working careers
    - i. Doesn’t vary much by state
    - ii. Reflects that workers have ties to the people and places in their states
5. What is quality in early childhood programs? There is some knowledge but it is imperfect
  - a. We know some things, but not as much as we would like
    - i. Smaller class sizes help, but not lower child/staff ratios
    - ii. Better teachers help, but the relationship of credentials to quality teaching is contested
    - iii. Even slight improvements to quality of teacher/child relationships can significantly increase test scores, and slight early improvements in test scores can significantly raise adult earnings: quality matters a lot
    - iv. Huge variation in quality across different sites of different programs
    - v. While federal Head Start has many effective centers, some of the most cost-effective preschool programs are run by state and local governments
6. To move forward with large scale implementation of pre-k, accompanied by program evaluation, use regression discontinuity evaluation
7. State economic development benefits of early childhood program are far more delayed than the benefits of business incentives
  - a. Short term benefits of early childhood programs:
    - i. Savings in special education costs
    - ii. Increases in property values
8. Summary
  - a. High quality early childhood programs should be part of state economic development strategies
  - b. Compared to traditional business incentives, these programs provide much larger benefits to low and moderate income groups
  - c. Early childhood programs can provide short term benefits such as special education savings and increased property values
  - d. To increase early childhood program quality, need to encourage local flexibility and innovation, while rigorously evaluating outcomes
  - e. Federal role should be to discourage economic development strategies that over-emphasize tax incentives while encouraging states to be innovative and rigorous in evaluation

# Human Capital and Economic Opportunity Global Working Group Call Notes: IP Inaugural Web Conference

## Identity and Personality Inaugural Web Conference

August 2, 2011

### *Participants:*

Dolores Albarracin, Daniel Benjamin, Charles Carver, Soo Hong Chew, Rand Conger, Philip Corr, Ian Dreary, Brent Donnellan, Angela Duckworth, Steve Durlauf, William Fleeson, James Heckman, Carl Lejuez, Shelly Lundberg, Dan McAdams, Terrie Moffitt, Daniel Mrockzek, Lis Nielsen, Robert Pollak, Brent Roberts, Aldo Rustichini, Peter Savelyev, Rebecca Shiner, Burton Singer, Michael Hurd, Ariel Knafo

### *Agenda*

- I. Introduction of subgroups and the INET network
- II. Introduction by Brent Roberts
  - a. Tackle issues that will lead to actual outcomes in terms of publishing articles and working papers
- III. Action Items
  - a. Utilize website better
    - i. Share work
    - ii. Post most recent papers
  - b. Collect information on data sets and surveys that are out there
    - i. Aggregate information from existing data sets and surveys
  - c. Create bridge to language between different disciplines (Psychology and Economics)
  - d. Subgroups
    - i. Resources that will allow for subgroups to meet
    - ii. Co-author papers
    - iii. Facilitate more meetings to get to know research and group members
    - iv. Look at specific measures and ones that already exist that can get at economic constructs, even if this is not done in a manner that is traditional
- IV. Another meeting?
  - a. Possibly have presentations
  - b. Webinar
- V. Papers
  - a. Current working papers
  - b. Introductory work
  - c. Meeting on personality traits and economic parameters that can lead to mini-conferences
- VI. Website
  - a. Utilize the website to share current work

# Human Capital and Economic Opportunity Global Working Group Call Notes: FI Inaugural Web Conference

## Family Inequality (FINet) Inaugural Web Conference

September 30, 2011

### *Participants:*

Richard Blundell, Meta Brown, Maria Casanova, Pierre-Andre Chiappori, Marco Cosconati, Olivier Donni, Raquel Fernandez, Christopher Flinn, Pamela Giustinelli, Limor Golan, V. Joseph Hotz, Valerie Lechene, Jeremy Lise, Maurizio Mazzocco, Costas Meghir, Antonio Merlo, Sonia Oreffice, Juan Pantano, Robert Pollak, Climent Quintana-Domeque, Melissa Tartari, Alessandra Voena, Junjian Yi

### *Webconference Notes*

- I. Introduction to INET by Professor James Heckman
- II. Community of scholars
  - a. Foster research among younger scholars for the next generation
  - b. Look at all aspects of human development, opportunity, inequality
  - c. Would like to develop a working paper series and cross academic boundaries very easily
    - i. Recent example with the HINet (Health Inequality) group
      1. Discussions occurred over two days during the gene-environment conference.
  - d. Public access
- III. Other Networks
  - a. Early Childhood Intervention
  - b. Health Inequality Group
  - c. Markets
    - i. Integrate macro and micro
    - ii. Meeting in January
  - d. Youth and Human Capital Development
  - e. Measuring and Interpreting Inequality
  - f. Identity and Personality

# Human Capital and Economic Opportunity Global Working Group Call Notes: MIE Inaugural Web Conference

## Measuring and Interpreting Inequality Inaugural Web Conference

November 14, 2011

### *Participants:*

Jaime Ahlberg, Larry Blume, Harry Brighthouse, Steven Durlauf, Dennis Epple, Marc Fleurbaey, Carol Graham, Scott Kominers, Bashkar Mazumder, Yusuke Narita, Jonathan Riley, Ingrid Robeyns, John Roemer, Lones Smith, Martin Weidner, Sonia Jaffe

### *Webconference Notes*

- I. Introduction to INET by Professor James Heckman
- II. Individual Introduction of members on the call
  - a. Twenty two members were in attendance
  - b. Note that organizers are interested in suggestions for additional people to add to the group
- III. Introduction to the Network—the Institute for New Economic Thinking
  - a. INET wants to fulfill its name and look at the different ways to approach socioeconomic problems
  - b. The majority of their work is on financial markets and broad topics of economic decision making
  - c. James Heckman has formed the Human Capital and Economic Opportunity Working Group and created a set of interrelated networks:
    - i. Identity and Personality, Health Inequality, Early Childhood Interventions, Family Inequality, Markets, Youth Human Capital and Economic Development
  - d. MIE is most interested in methodological issues, defined with a broad net. The people involved are strict political philosophers, empiricists, political scientists, and econometric/economic theorists.
    - i. Done intentionally because this type of heterogeneous group something unique and interesting can develop through a variety of academic perspectives on similar issues
- IV. Introduction to Group by Coordinators
  - a. Steven Durlauf—Intergenerational Mobility
  - b. Harry Brighthouse—Philosophical Issues
  - c. Scott Duke Kominers—Market Design/Matching
- V. Operationalization of Measuring and Interpreting Inequality working group
  - a. The general expectation is that there will be targeted conferences on specific topics, in order to keep discussions focused; however, all members will be invited
  - b. General Themes
    - i. Intergenerational Mobility

## Call Notes: MIE Inaugural Web Conference, continued

1. Ask how one can bring together the panoply plausible factors that explain intergenerational mobility to do so in a way that one think about their relative and empirical significance, move away from mono-causal explanations
- ii. Philosophical Issues (Harry Brighthouse)
  1. Two different topics
    - a. Which inequalities normatively matter?
    - b. Does inequality of health matter? How much does it matter?
    - c. Do income wealth, educational outcomes, happiness?
      - i. The question is not does each matter, but which ones matter more or less normatively, relative to one another?
  2. Related to intergenerational mobility theme
    - a. Thinking about the different mechanisms of the transmission of advantages and disadvantages
    - b. Which are legitimate?
    - c. How much does each matter empirically?
    - d. In general want to get people to be more attentive to the empirical evidence and how economists are thinking about transmission (for example) and operationalization
- iii. Market Design/Matching
  1. Figure out how market design can ameliorate or exacerbate inequality in various contexts
  2. Ex. Inequality in level of strategic sophistication and how it interacts with market design
    - a. Depending upon the rules of school choice, the opportunity of families to pursue interest of children may depend on the family's understanding the mechanism and making a corresponding strategic choice

# Human Capital and Economic Opportunity Global Working Group Call Notes: ECI Inaugural Web Conference

## Early Childhood Interventions Inaugural Web Conference

December 9, 2011

### *Participants:*

Angus Armstrong, Tim Bartik, Alison Baulos, Samuel Berlinsky, Pietro Biroli, Kim Boller, Frances Campbell, Frances Champagne, Flavio Cunha, Fabienne Doucet, Orla Doyle, Philipp Eisenhauer, Rita Ginja, Scott Groginsky, Elizabeth Groginsky, James Heckman, Maggie Holland, Betina Jean-Louis, Sooin Lee, Edward Melhuish, Seong Moon, Helen Neville, Milagros Nores, Jennifer Pachon, Pia Pinger, Rodrigo Pinto, Raluca Rustandi, Arthur Rolnick, Mark Tomlinson, Arianna Zanolini

### *Webconference Notes*

#### *Introduction to INET by Professor James Heckman*

1. Purpose of the call is to start the organization of the enterprise and try to understand what the goals of the group are and how we can all be engaged.
2. Broader discussion of the Institute of New Economic Thinking
  - a. This is a group that is an alternative approach to various problems of the economy
3. ECI is focused on trying to understand some very general topics
  - a. Build global network of researchers that restores and strengthens human capital development
  - b. Working group is a community of researchers, educators and policy makers that are trying to understand how to tackle inequality at the core
  - c. Study interrelated issues and themes and create groups of researchers who can look at these issues
  - d. Promote collaboration across the groups
4. Funding for the Human Capital and Economic Opportunity Working Group
  - a. Group is housed at the University of Chicago's Becker Friedman Institute for Research in Economics (BFI)
  - b. The Working Group's initial funding is from the Institute for New Economic Thinking (INET)
  - c. Additional funding from foundations, private individuals and governments is actively being sought
5. What the Human Capital and Economic Opportunity Working Group will provide
  - a. Community
  - b. Meetings
  - c. Public access to member work
6. Topical Working groups
  - a. Early Childhood Interventions
  - b. Family Inequality
  - c. Health Inequality
  - d. Identity and personality
  - e. Markets
  - f. Measuring and Interpreting Inequality

## Call Notes: ECI Inaugural Web Conference, continued

### g. Youth and Human Capital Development

#### *Early Childhood Interventions Group*

1. Go beyond meta analyses, look at interventions but also understand interventions by type and region
2. Assemble the evidence
  - a. Look at effects, look at what is available and what is replicable
3. Create a culture that shares ideas and has open discussions
  - a. Make people and data available and make an exchange ideas available to contest, dispute and supplement studies that are ongoing
    - i. What are the studies that are used?
    - ii. What are the populations served?
4. How to strengthen evaluations
  - a. Randomized controlled trials
    - i. Small sample inference
    - ii. Threats to validity
    - iii. Multiple hypothesis testing
  - b. Linking randomized control trials to longitudinal studies
  - c. Beyond treatment effects
    - i. Understanding the mechanisms that generate the evidence
    - ii. Linking the evidence to biology and economic/social models of human development

#### *Action Plan*

1. Seminar Series
  - a. From Spring 2012, at U of Chicago
2. Conferences
  - a. Annual or semiannual
3. Exchange Programs
  - a. Data, Knowledge, and Scholars
4. Inventories
  - a. Database, Web Archives, etc.
5. Publications
  - a. Working Paper Series, Books, etc.
6. Other activities

# Human Capital and Economic Opportunity Global Working Group Press Release: Early Childhood Interventions Conference

Early Childhood Interventions Conference

<http://blogs.worldbank.org/impactevaluations/print/798>



Published on *Development Impact* (<http://blogs.worldbank.org/impactevaluations>)

[Home](#) > [Blogs](#) > [Owen Ozier's blog](#) > Early Childhood Interventions Conference

## Early Childhood Interventions Conference

Submitted by [Owen Ozier](#) <sup>[1]</sup> on Thu, 2012-05-03 08:00

Why aren't all early childhood interventions most effective at the same age? Should we be checking that our randomizations are balanced according to genes that influence behavior? Should we be gathering biological outcomes, in addition to economic ones, even when the intervention does not involve biology?

Early childhood interventions - usually working through either health or education - can have very long-lasting effects, some of which are even transmitted to the next generation. Two weekends ago, the Chicago Initiative for Economic Development and Early Childhood (CEDEC) held a conference to survey what is known in this area and provide a forum for sharing findings from recent projects.

In today's post, I highlight a few bits of the presentations that taught me something I didn't know, gave me a reference I wanted to hold on to, or put old findings in a new perspective.

The conference program is in two parts, linked here: [Part 1](#) <sup>[2]</sup>, and [Part 2](#) <sup>[3]</sup>. Video from the presentations should be available online in the coming week or two.

The conference was interdisciplinary, featuring economists, psychologists, child development specialists, and studies from a variety of countries (even a study of non-human primate behavior). Presentations included methodological innovations, analyses of causal effects of interventions, and novel statistical associations that survive inclusion of enough controls that one starts to wonder whether the links are indeed causal.

A basic insight driving the conference, verbalized by Jim Heckman and Martha Nussbaum (among others), is that if we are concerned with poverty or inequality, we

1 of 4

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## Press Release: Early Childhood Interventions Conference, continued

Early Childhood Interventions Conference

<http://blogs.worldbank.org/impactevaluations/print/798>

may equally be concerned with poverty or inequality of opportunities and capabilities (in the direction of Amartya Sen's work). To the extent that those are constrained by the environment a child experiences early in life, it essential that we consider interventions that are useful at that age. These interventions may have great complementarities with subsequent investments.

Some highlights that stood out to me:

### **Tools you can use**

Lia Fernald presented a toolkit for cognitive assessments in early childhood - a wealth of information if you are interested in collecting data - linked [here](#) [4].

### **The role of biology: mechanisms for economic effects...**

Biologically measurable processes play an important role in linking early childhood shocks to adult outcomes, even when outcomes are economic. Biomarkers for inflammation are one such group of measures, including C-reactive protein. Elevated levels of this and related biomarkers are known risk factors for disease, and in recent work, Andrea Danese and colleagues find elevated inflammation indicators for children who experienced maltreatment in early childhood.

(See the 2007 paper, linked [here](#) [5].)

Greg Duncan and colleagues have been working for some time now on US data from the Panel Study of Income Dynamics, showing that parents' income in the first several years of a child's life are much more predictive of that child's adult outcomes than are parents' incomes in later years. (See, for example, Duncan, Ziol-Guest, and Kalil 2010.) The remarkable connection to Danese's work is that this same identification strategy shows that a child whose parents had higher incomes in the first five years of the child's life also have lower rates of inflammation-linked conditions, such as arthritis and hypertension, in adulthood.

### **...and variation in effects based on biological markers.**

The [Fragile Families study at Princeton](#) [6] is now looking into whether behavioral responses to shocks differ across individuals, according to genetic markers. (An example of this kind of research is [this 2011 PNAS paper](#) [7] on genes that appear to influence psychological reactions to shocks.) Much of this work is still ongoing, but we can look forward to publications from this group in the coming year or two. Lots of related work is already linked on their website.

## Press Release: Early Childhood Interventions Conference, continued

Early Childhood Interventions Conference

<http://blogs.worldbank.org/impactevaluations/print/798>

### **Lasting impacts and heterogeneity**

Paul Gertler discussed his work with Christel Vermeersch and an array of co-authors carrying out the latest follow-up of the very well-known Jamaica study by Sally Grantham-McGregor, Susan Walker, and others. Early childhood nutrition and stimulation among stunted children in Jamaica had very positive effects. The nutrition intervention yielded improved physiological growth, though those effects seemed to fade with time. The stimulation intervention, on the other hand, (basically, encouraging sophisticated play involving both children and their mothers or caregivers) had lasting effects on IQ in the teen years, and it seems, wages in adulthood.

Costas Meghir presented some very preliminary results from work that he, Sally Grantham-McGregor, Orazio Attanasio, Emla Fitzsimmons, and Marta Rubio Codina have undertaken in Colombia, building on the lessons from the project in Jamaica, but this time on a larger scale: randomizing treatment arms among 1,400 participants (compared to a few hundred in Jamaica).

Preliminary results in Colombia suggest that the stimulation intervention is having a large impact; perhaps the largest impact is appearing for children who were 18-24 months old at baseline, rather than 12-17 months old. (This might be because these are children for whom more complex types of play are actually feasible.)

Jere Behrman put things in perspective: in the well-known INCAP study in four villages in Guatemala, where nutritional supplementation seems to have lasting effects, stunting rates in the population were close to 50%. In Guatemala, nutrition is a really serious issue. In Jamaica, the stunting rate is closer to 4%, so while Walker, Grantham-McGregor, and co-authors identified undernourished children in Jamaica for their study, nutrition simply isn't as prominent a concern in Jamaica in general as it is in Guatemala. Colombia, according to the numbers he showed, is somewhere in between these two cases. Bottom line: similar interventions have different effects, depending on the conditions in the area at the time.

*Owen Ozier is an economist in the Development Research Group, currently studying health, education, and economic decisions in Kenya.*

## Press Release: Early Childhood Interventions Conference, continued

Early Childhood Interventions Conference

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Tags: [critical periods](#) [8] [early childhood](#) [9] [Education](#) [10] [Health, Nutrition and Population](#) [11]

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### Links:

- [1] <http://blogs.worldbank.org/impactevaluations/team/owen-ozier>
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- [3] [http://mfi.uchicago.edu/humcap/groups/eci/20120421\\_conference.shtml](http://mfi.uchicago.edu/humcap/groups/eci/20120421_conference.shtml)
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- [5] <http://www.pnas.org/cgi/doi/10.1073/pnas.0610362104>
- [6] <http://www.fragilefamilies.princeton.edu/>
- [7] <http://www.pnas.org/content/108/20/8189>
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## CHILDHOOD

# Measure of a Mother's Love: How Early Neglect Derails Child Development

By MAIA SZALAVITZ | @maiasz | May 24, 2012 | 12

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Most people don't need science to appreciate the importance of a mother's love. But to understand how early maltreatment can derail a child's development requires careful study — and is fraught with ethical peril.

Such research is therefore often conducted in animals. A new analysis of data on 231 rhesus macaque monkeys explored the effects of three early-childhood conditions on the animals' later lives. About half of the monkeys were raised normally by their mothers, living in social groups with other monkeys — a condition similar to their natural environment.

One quarter of the monkeys were reared in a nursery without their mothers until day 37, when they were placed in groups of four other monkeys of a similar age.

The final group was also nursery-raised at first, but then these babies were transferred to a cage, where they spent most of their time, with a hot water bottle covered in terrycloth. (Two hours a day, these monkeys were allowed to interact with other monkeys their age.) The condition was similar to that used in the well-known "cloth mother" primate experiments by Harry Harlow, which had previously demonstrated that proper psychological and physical development of infants requires nurturing and attention from a parent, not just the provision of food and water. In that research, socially isolated monkey babies that were removed from their mothers were found to prefer clinging to a cloth-covered surrogate mother for comfort, rather than a harsh wire sculpture, even when only the metal mother provided bottles of milk.

**(MORE: [Never Wake a Sleeping Baby: Why Depressed Moms Don't Follow that Advice](#))**

While such experimentation sounds cruel, this type of research has been critical in helping change policies in human orphanages that had for centuries treated infants equally inhumanely. Despite early evidence that orphanage infants were far more likely to die than others, proponents argued that it didn't matter whether children had "parents" specially devoted to them at the orphanage, claiming that simply feeding and changing them appropriately would be adequate until adoptive

parents were found. Babies, they said, couldn't remember anyway.

The harrowing consequences of these theories were most vividly brought to light in Romania in the 1980s and '90s, when a ban on abortion led to a surge in orphanage babies. The longer these children were left in their cribs, simply being fed and changed without individualized affection, the more damage was seen, even if the orphanage was clean and well-run. Many children developed autistic-like behaviors, repetitively rocking or banging their heads. Some were cold and withdrawn or indiscriminately affectionate; some alternated between these extremes. And they simply didn't grow like normal infants: their head circumferences were abnormally small and they had problems with attention and comprehension.

Still, orphanage advocates blamed pre-existing problems that had led parents to give up the children in the first place, not institutional conditions. This debate continued until researchers were allowed to randomize abandoned infants without clear birth defects to either usual orphanage care or foster care from birth. (To mitigate the thorny ethics of the study, adoption was encouraged as early as possible for the orphanage-assigned kids, even though that could have potentially weakened the findings.)

Nonetheless, the **study** showed that the children who were placed in foster care developed normally, with appropriate head sizes, and less distress, better attentional skills and a 9-point higher IQ on average, compared with children sent to orphanages. Follow-up **studies** found that the orphanage-raised group was more than twice as likely to develop mental illness, compared with those who'd been in foster care. More than 50% of the orphanage group was diagnosed with at least one mental illness.

#### **(PHOTOS: One Family's Experiment with Attachment Parenting)**

Only after this research was published in 2007 did Romania change its policies, though there are still some countries that continue to place abandoned infants in these dangerous settings. Because the problem persists, and also because other early child abuse and neglect can replicate such situations, ongoing study of what harms children in early childhood and what helps their recovery is needed.

In the new research, the monkeys remained in the various rearing conditions — with their mothers, with peers or mainly isolated — until they were about six months old. That's the human equivalent of age 3 — when the brain is developing at a faster rate than at any other time in postnatal life.

After the 6-month period, the monkeys were placed in a mixed social group, comparable to the normal conditions for their species. They were studied when they were about 1 year old.

The results differed by gender, an effect also seen in humans suffering from child maltreatment. Male monkeys reared in isolation were nearly twice as likely to come down with physical illnesses as those reared by their mothers or with peers. They were also more than five times as likely to show stereotyped behavior, the repetitive motions similar to the rocking or head-banging seen in some cases of autism and in orphanage-reared infants. The peer-reared males were about three times more likely to engage in stereotyped behavior, compared with those raised by their mothers.

In females, surprisingly, the peer-reared group did worse than the monkeys raised in isolation. They were far more likely to be wounded and to suffer hair loss than monkeys raised by their mothers or in isolation. The researchers found that the peer-reared females were more aggressive than other monkeys, suggesting that the wounds may have resulted from fights and the hair loss from hair-pulling by others.

While the males had high levels of a stress hormone known as cortisol and low levels of the metabolite of the mood-related neurotransmitter serotonin, this difference was not seen in females. Lead author Gabriella Conti of the University of Chicago suggests that this may be because in the womb, female fetuses are also more resilient than males.

High levels of stress hormones can increase risk for both mental and physical illnesses, including depression, which also can involve low levels of serotonin.

#### **(MORE: How to Cut Crime, Alcoholism and Addiction? It's Not Elementary, But Preschool)**

The authors conclude: "[T]he lack of a secure attachment relationship in the early years has detrimental consequences for both physical and mental health later in life, with long-lasting effects that vary by sex. The persistence of these effects after the end of treatment emphasizes the need to intervene early in life to prevent long-term damage."

Another of the paper's authors, the Nobel-prize-winning economist James Heckman, has long argued that investing in early childhood education provides a greater return for society than virtually any other type of spending, not only because of increased educational success and productivity, but also because of reduced crime, addiction, distress and disorder. This study, he says, "shows that early life conditions critically affect adult health. Maternal attachment plays a fundamental role in shaping who we are; remove it and the harm is great."

Indeed, research on early interventions for at-risk families, such as the Nurse Family Partnership and the Perry Preschool Project — which, respectively, provides care for low-income mothers and babies, and offers high-quality preschool education for poor African American children — has shown significant reductions in crime and teen pregnancy, along with gains in education and employment when the children involved in the programs grow up.

It may seem obvious that an isolated, parentless toddler — with or without social contact with peers — will suffer emotionally from lack of parental love. What's not obvious is that without devoted, repeated acts of love, a child's brain doesn't make the growth hormone needed for proper mental and physical development and numerous other imbalances are also created.

While we must try to spare all children, and even other primates, from being subjected to these dysfunctional early life environments, we still need to study how to best overcome them. Fortunately, children overcome troubled childhoods all the time: many children who are adopted out of harmful settings do manage to adjust and ultimately thrive. The earlier they are reached, the better they do. Comparing them with those who do not do as well — and in nonhuman primates, focusing on the resilient animals — could provide important insight into how to help.

The **research** was published in the *Proceedings of the National Academy of Sciences*.

Maia Szalavitz is a health writer for TIME.com. Find her on Twitter at [@maiasz](#). You can also continue the discussion on TIME Healthland's [Facebook page](#) and on Twitter at [@TIMEHealthland](#).

**MORE:** [The Man Who Remade Motherhood](#)

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MARCH 19, 2012, 6:00 AM

## The Not-Much-Opportunity Society

By [NANCY FOLBRE](#)

*Nancy Folbre is an economics professor at the [University of Massachusetts, Amherst](#).*

Mitt Romney, the Republican presidential contender, likes to [contrast](#) his vision of an Opportunity Society in which people choose whether to pursue an education or hard work with an Entitlement Society, offered by President Obama, in which government provides every citizen the same or similar rewards.

I'm not sure what Entitlement Society he's talking about, since after-tax income has [grown far more rapidly](#) at the top than elsewhere, and federal taxes and transfers became less redistributive between 1979 and 2007. As far as I can tell, President Obama hasn't done much to reverse this trend.

But what is even more misleading about Mr. Romney's vision is its emphasis on grown-ups. Children, after all, can't simply choose to pursue an education. They are dependent on their parents, their communities and their fellow citizens for the opportunities to do so.

As the University of Chicago economist [Gary Becker](#) noted in his classic "[Treatise on the Family](#)" and his colleague [James Heckman](#) reiterated in a paper written with [Flavio Cunha](#), children don't choose their own parents. They don't choose which country or state they are going to be born in, either, though [geography](#) has a huge impact on their life chances.

Public spending aimed at children in low-income families, including programs like [Head Start](#), has garnered substantial political support precisely because it promises to enhance opportunities. Yet the Head Start program has [never served](#) more than 60 percent of eligible children in extreme poverty.

Since 2000, state support for early childhood education programs has almost doubled the enrollment of 4-year-olds in prekindergarten programs, to 27 percent from 14 percent. Increases in access, quality and [coordination](#) with early years of elementary school would improve both opportunity and outcomes for children.

Yet per-child spending on early childhood education has [declined](#) in the last two years, and the phase-out of the American Recovery and Investment Act will almost certainly lead to [further cuts](#).

A recent Urban Institute [report](#) projects significant declines in federal spending on education and certain discretionary programs for children. Another shows that federal spending is

more [directly focused](#) than state and local spending on children in families with incomes less than twice the poverty level. In 2010, about 44 percent of all children were living in such families.

Most of the federal benefits such children received took the form of direct assistance with basic health, nutrition, housing or education. Children in families with higher income [received 82 percent of their benefits](#) in the form of tax breaks.

Urban Institute researchers focus on a simple comparison between low-income families and others, because the data available doesn't make it possible to break out differences among those above 200 percent of the poverty line.

But a new book edited by the economists [Greg J. Duncan](#) and [Richard Murnane](#), "[Whither Opportunity](#)," documents widening disparities in educational outcomes between children in poor and rich families, finding that educational mobility has declined over time.

[Alan B. Krueger](#), chairman of President Obama's Council of Economic Advisers, recently [summarized](#) international evidence that inequality among adults reduces economic mobility among children. As he puts it, "The fortunes of one's parents seem to matter increasingly in American society."

Mr. Romney [didn't inherit](#) his financial wealth. But he enjoyed an affluent upbringing that included the advantage of an excellent education.

He should acknowledge that entitlement isn't the opposite of opportunity but a necessary - even if not sufficient - condition for it.

# News from the Health Inequality Network

A Human Capital and Economic Opportunity Working Group

This newsletter briefly summarizes the questions and avenues explored at the first meeting of the Health Inequality Network (HINet).

## Defining the big questions in health inequality research

*The first day of the conference was an interdisciplinary survey of key research questions in the health inequalities field.*

### How should we measure health?

Participants debated the advantages and disadvantages of popular measures like birth weight and self-reported health, and incorporated an array of biomarkers into their measures of health.

### What are the key risk factors?

Participants highlighted key risk factors discovered through epidemiological and genetic research.

### What happens during the critical periods of development?

Participants outlined the consequences of developmental mismatch, and explored new hypotheses about the sources of cues delivered during development.

## The role of genetic and environmental factors across the lifecycle: improving the rigor of causal inference

*The second day of the conference explored potential synergies with and insights from the biological and the medical sciences, including recent advances in genetic analysis and statistical modeling.*



The inaugural HINet conference took place at the University of Chicago on September 15–16, 2011.

[What is HINet?](#)

[See the program agenda](#)

### **Lifecourse consequences of early life events**

Through animal studies and the natural experiment of the Dutch Famine, participants discussed the long term effects of maternal nutrition and explored possible mechanisms, emphasizing critical periods and mismatch.

### **Interpersonal dynamics and its long-term consequences**

Participants discussed interpersonal dynamics as a cause of suboptimal health and presented channels through which impaired social development can get “under the skin.”

### **Biological correlates and pathways**

Participants discussed the various mechanisms, both biological and socioeconomic, through which genetic factors and environmental exposure produce long term phenotypes and outcomes.

### **Psycho-socio-biological linkages across the lifespan**

Participants debated over the contribution of genetic and environmental factors to health and aging, and reviewed the robustness of the evidence across research strategies.

### **Human molecular genetics**

Participants explored the potential of human molecular genetics to help us understand health and aging. They also reviewed evidence on determinants and consequences of epigenetic variation, and proposed approaches to integrate epigenetics into behavior models.

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# The Case for Investing in Disadvantaged Young Children

**James J. Heckman**, Henry Schultz Distinguished Service Professor of Economics, University of Chicago, Nobel Laureate in Economics

*Remarks at the White House Conference on December 16, 2011  
Race to the Top - Early Learning Challenge Awards Announcement*

It is an honor to be here today with Secretary Duncan and Secretary Sebelius to share this historic moment for our country. The Early Learning Challenge is a major step in helping states voluntarily build comprehensive early childhood systems that can produce substantial economic and social returns for generations to come.

I applaud the Early Learning Challenge being implemented today because it puts into place the wisdom of solid empirical science. A substantial body of research shows that parents matter and that supplementing parental resources and investing in disadvantaged young children promotes productivity and reduces inequality. Well-designed implementations of early childhood programs pass stringent cost-benefit tests and have high economic and social rates of return. They are one of the few options in the public policy arena that has none of the equity-efficiency tradeoffs that are true of most public policies. What is fair is also economically efficient and will promote the productivity of American society.

Hard empirical evidence shows that high quality early childhood systems foster the development of critical cognitive and socioemotional abilities, especially for disadvantaged children whose lack of family resources and access to early learning opportunities results in large achievement gaps that open before kindergarten starts. Voluntary early intervention with quality early learning attacks inequality at its source and boosts economic productivity.

**Recent research teaches us three lessons that should guide any successful approach to child development.**

## Lesson 1: Develop the Whole Child

Many major economic and social problems such as crime, teenage pregnancy, dropping out of school, and adverse health are linked to low levels of skill and ability. Those with high levels of skill and ability succeed in life.

In promoting successful lives, policy makers need to recognize the multiplicity of human abilities. Currently, public policy in most countries around the world—and the U.S. is no exception—focuses on promoting and measuring cognitive ability as measured by achievement tests.

Scores on No Child Left Behind tests have become a principle target for evaluating the performance of schools in America. PISA tests play a similar role in Europe. This exclusive emphasis on cognition ignores the hard evidence that an exclusive focus on the scores of achievement tests neglects important noncognitive—social, physical and emotional—factors that promote success in school and in life.

There is no question that cognitive abilities are important determinants of socioeconomic success. However, there is also decisive evidence that socioemotional skills—physical and mental health, perseverance, attention, motivation, and self-confidence—are as important in predicting success in life. In many tasks in life, they are more important. There is hard evidence on the power of “soft” skills. They contribute greatly to performance in society at large and in workforce productivity.



## Lesson 2: Inequalities Open Up Early in Life

We live in an era of substantial and growing social and economic inequality. Research in economics, psychology, neuroscience, and genetics examines the origins of inequality and analyzes policies to alleviate it. A major research finding is that the accident of birth is a primary source of inequality. Families play a powerful role in shaping adult outcomes, but it is not just through transmitting their genes. Parental resources, skills and abilities matter greatly.

It is now well established that gaps in both cognitive and noncognitive—socioemotional abilities—between the advantaged and the disadvantaged open up early in the lives of children before they enter school. Family environments of young children are major predictors of these abilities.

Family environments in the U.S. and many other countries around the world have deteriorated over the past 40 years. A greater fraction of children are being born into disadvantaged families where the resources available for parenting are small. Due to growing inequality in parental resources and child rearing environments, the disparity in the resources available to the children of the haves compared to the resources of the have-nots has increased substantially. As a group, children from families at the top of the income distribution receive far more investment in parenting and schooling than ever before, and the disparity between the haves and the have-nots is widening.

This trend shows no sign of abating. In fact, the current economic downturn has accelerated it. Unchecked, it will reduce social mobility and create greater economic and social polarization in the next generation. It will also increase the burdens of ill health, crime, and educational and skill deficits for future generations of Americans. Failure to address this problem will result in greater economic deficits with fewer chances to generate revenue through productivity.

## Lesson 3: Early Intervention is Far More Effective than Later Remediation

The skills that matter can be created. That is the solid promise of recent research for public policy.

Child poverty is not solely determined by the income available to families. It is most accurately measured by the parenting resources—the attachment, the guidance and the supervision accorded children, as well as the quality of the schools and the neighborhoods that parents can draw on.

Experimental evidence establishes the benefits of quality programs that supplement the early lives of children from disadvantaged families. This evidence is consistent with a large body of non-experimental evidence showing that the absence of supportive family environments harms children and diminishes their opportunities as adults.

If society helps early enough in the lives of children, it can improve cognitive and socioemotional abilities and the health of disadvantaged children. Such early efforts promote schooling, reduce crime, foster workforce productivity and reduce teenage pregnancy. They have rates of return to investment that are higher than the return to investments in the stock market even in normal times.

As programs are currently configured in many countries—and there is always room for improvement—improvements early in the life cycle of disadvantaged children have much higher economic and social returns than later-life remediation targeted towards disadvantaged adolescents, such as reduced pupil-teacher ratios, public job training, convict rehabilitation programs, adult literacy programs, tuition subsidies, or expenditures on police.

This substantial benefit from early investments arises because life cycle skill formation is dynamic in nature. Skill begets skill; motivation begets motivation. Motivation cross-fosters skill and skill cross-fosters motivation. A healthy child free of asthma and lead poisoning is a child that is ready to engage, who will learn more and who is more likely to be a productive adult. If a child is not motivated and engaged to learn early on in life, the more likely it is that when the child becomes an adult, he or she will fail in social and economic life. The longer society waits to intervene in the life cycle of a disadvantaged child, the more costly it is to remediate disadvantage.

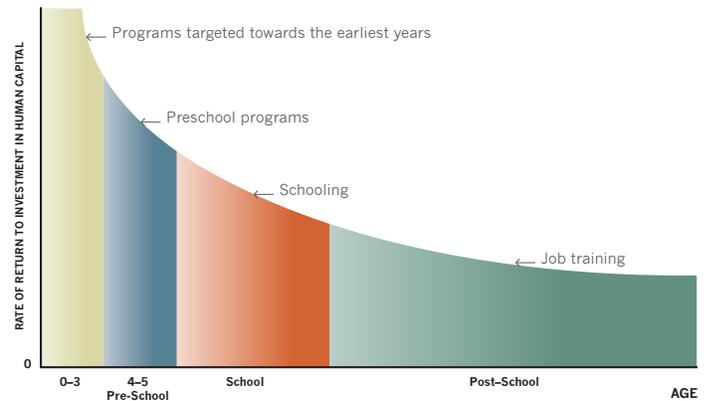


Returns to early childhood programs targeted toward the disadvantaged are so high because they build the cognitive, socioemotional, physical and mental capabilities that create success in schools and work places. They give disadvantaged children some of the advantages already conferred on middle class and upper-middle class children, including important social and emotional skills and health. Acquisition of these early foundational skills has been shown to increase school persistence which, in turn, substantially increases productivity. For example, the rate of return to a college education for bright, motivated, and healthy adolescents is as high as 20% per annum.

Enriched family and social environments can create the skills that produce the capabilities that promote adult success. A major refocus of public policy is required to capitalize on the importance of the early years in creating opportunity and building capabilities and in producing skills for the workforce.<sup>1</sup>

The Early Learning Challenge is a critical first step in recognizing the importance of the early years and in helping states, local communities, private organizations and public institutions work together to build early childhood development systems that will promote better education, health, social, and economic outcomes for all—and for many years to come.

### Returns To A Unit Dollar Invested



Returns to a unit dollar invested at different ages from the perspective of the beginning of life, assuming one dollar initially invested at each age

*The Heckman Equation is supported by the Irving Harris Foundation; The Children's Initiative: A Project of the J.B. and M.K. Pritzker Family Foundation; the McCormick Foundation; and an anonymous funder.*

<sup>1</sup>For further evidence, see Heckman (2008).

References:

Heckman, J. J. (2008), *Schools, Skills, and Synapses*. *Economic Inquiry*, 46: 289–324.  
 This paper is also available as a discussion paper through IZA at <http://ftp.iza.org/dp3515.pdf>.

## Human Capital and Economic Opportunity

### Global Working Group

## Press Release: Markets Conference on Financing Human Capital Investment

### Nobel Prize Winner and University of Chicago Distinguished Professor James Heckman Gathers Prominent Scholars, Business Leaders, and Educators to Discuss Financing Human Capital Development

**Chicago, January 20, 2012** – Prominent economists and policy practitioners from across the globe gathered in Chicago earlier this month to discuss the latest advancements in human capital research. Mariacristina De Nardi of the Federal Reserve Bank of Chicago and NBER, and Lance Lochner of the University of Western Ontario organized presentations and discussions of six papers with topics ranging from “The Money Value of Man” to “The Macroeconomics of Microfinance.” De Nardi and Lochner head the Markets Network. The Markets network was created to study how market frictions affect human capital formation and to determine the effects of policies designed to overcome the borrowing constraints that arise in the presence of such frictions. The network is a component of the [Human Capital and Economic Opportunity Global Working Group](#) (HCE), which is headed by Nobel Prize winner and University of Chicago Distinguished Professor of Economics James Heckman, along with Hanover Investment Group’s Robert Dugger, and the University of Wisconsin – Madison’s Vilas Research Professor Steven Durlauf.

As emphasized in Professor Heckman’s concluding comments, the conference represents the beginning of a systematic effort to understand the relationship between human capital development at the micro level and macro levels. The conference was unique in its bringing together macroeconomists who consider the aggregate consequences of heterogeneity and microeconomists whose research focuses on education. Heckman commended this integration of scholars who normally do not communicate, yet whose work must be integrated if one is to understand the role of finance in human capital formation. Heckman commended these new interactions and urged conference participants to move even farther by broadening their conceptions of the environment in which human capital development occurs and to evaluate potential interventions accordingly. Professor Heckman suggested that human capital accumulation cannot be understood in the context of credit markets alone, so the focus of the research network should be enriched by considering family and community influences. These recommendations reflect the overall objective of HCE to develop a comprehensive understanding of the determinants of human flourishing, of which human capital is an essential component.

## Press Release: Markets Conference on Financing Human Capital Investment, continued

For a detailed view of the conference agenda and participants please visit the HCE website at <http://hceconomics.org>.

HCE was founded in January 2011 through a \$1.5M grant from the [Institute for New Economic Thinking](#) (INET). INET was created in the wake of the recent global financial crisis to bring about a shift in economic thinking through research funding, community building, and spreading the word about the need for change.

The Human Capital and Economic Opportunity Global Working Group is comprised of seven working groups: Early Childhood Interventions led by James Heckman, Seong Moon and Rodrigo Pinto (all University of Chicago), Burton Singer (University of Florida), and Richard Tremblay (University of Montreal); Family Inequality led by Pierre Chiappori (Columbia University), Flavio Cunha (University of Pennsylvania), and Mario Cosconati (Bank of Italy); Health Inequality led by Burton Singer (University of Florida) and Gabriella Conti (Harris School, University of Chicago); Identity and Personality led by Angela Duckworth (University of Pennsylvania), Armin Falk (University of Bonn) and Brent Roberts (University of Illinois); Markets led by Lance Lochner (University of Western Ontario) and Mariacristina De Nardi (Federal Reserve Bank of Chicago and NBER); Measuring and Interpreting Inequality led by Steven Durlauf, Harry Brighthouse (both of University of Wisconsin - Madison) and Scott Kominers (Becker Friedman Institute for Research in Economics, University of Chicago); and Youth Human Capital and Economic Development led by Robert Dugger (Hanover Investment Group). Each working group will host several more conferences this year. The work of HCE's seven working groups can be found at <http://hceconomics.org>

### About the Institute for New Economic Thinking:

Launched in October 2009 with a \$50 million commitment from George Soros and driven by the global financial crisis, the Institute for New Economic Thinking (INET) is dedicated to empowering and supporting the next generation of economists and scholars in related fields through research grants, Task Force groups, academic partnerships, and conferences. INET embraces the professional responsibility to think beyond current paradigms. Ultimately, INET is committed to broadening and accelerating the development of innovative thinking that can lead to insights into and solutions for the great challenges of the 21st century and return economics to its core mission of guiding and protecting society. For more information please visit <http://www.ineteconomics.org/>.

## Human Capital and Economic Opportunity

### Global Working Group

## Press Release: Measuring and Interpreting Inequality (MIE) Inaugural Meeting

### Research Group Explored Approaches to Inequality at Meeting

#### Matching Mechanisms, Market Design Seen as Tools to Address Inequality

**Chicago, February 18, 2012** –Economists gathered to discuss research that focused on identifying and addressing inequality at a meeting hosted by the University of Chicago on February 18, 2012.

The session was the inaugural meeting of the Measuring and Interpreting Inequality Working Group (MIE). Experts specializing in matching and market design—areas of economics that respectively study how parties form mutually beneficial relationships and how markets should be structured—presented work applying theory to issues like school choice and affirmative action.

An invited address by Lones Smith, “Matching with Evolving Human Capital,” illustrated how individual human capital evolves over time. Smith’s results show how individuals may separate into skill-based “clusters,” with members of a given cluster rising to the top of the human capital distribution within the cluster—but no further. These patterns match a number of observed cross-sectional and dynamic wage patterns and suggest a reason for glass ceilings and poverty traps.

Other papers, including “Dismantling the Legacy of Caste: Affirmative Action in Indian Higher Education,” “Promoting School Competition through School Choice: A Market Design Approach,” and “Effective Affirmative Action in School Choice,” illustrated how school choice program design affects both access to education and schools’ incentives. Several novel affirmative action mechanisms were analyzed.

The conference was organized by Scott Duke Kominers, a Becker Friedman Institute Research Scholar at the University of Chicago, and Steven Durlauf, Vilas Research Professor at the University of Wisconsin–Madison.

It initiated a conversation between market designers and experts on inequality. Simply allowing prices to clear a market may be deemed unfair by policymakers hoping to reduce inequality. In such cases, the tools of market design provide a natural way of targeting alternative social objectives. By the same token, the inequality literature’s empirical approach to evaluating outcomes can be of great benefit in assessing the effectiveness of mechanisms developed by market designers.

Taken together, the conference papers contributed to a more complete picture of the current state of inequality and the tools available to influence inequality as it evolves over time. At the same time, the conference illuminated avenues for further research.

## **Press Release: Measuring and Interpreting Inequality (MIE) Inaugural Meeting, continued**

The MIE Working Group is a component of the [Human Capital and Economic Opportunity Global Working Group \(HCE\)](#), which is headed by Nobel Prize winner and University of Chicago Distinguished Professor of Economics James Heckman, along with Wisconsin's Durlauf and Hanover Investment Group's Robert Dugger.

As Professor Heckman explained in his comments at the conference, it is hoped that the MIE meeting—and the work of HCE more generally—will lead to new work crossing field boundaries to understand and address socioeconomic inequality.

For a detailed view of the conference agenda and participants please visit the HCE website at <http://hceconomics.org>.

### **About the [Human Capital and Economic Opportunity Global Working Group](#):**

This initiative was founded in January 2011 with a \$1.5M grant from the Institute for New Economic Thinking (INET), with the aim of advancing research on how human capital develops and impacts the economy as a whole. It creates a collaborative community of researchers, educators and policymakers focused on issues in finance, macroeconomics, health and inequality, all related to human capital.

HCE is comprised of seven topical groups: early childhood interventions; family inequality; health inequality; identity and personality; markets; measuring and interpreting inequality; and youth human capital and economic development. The work of HCE's seven working groups can be found at <http://hceconomics.org>.

### **About the Institute for New Economic Thinking:**

Launched in October 2009 with a \$50 million commitment from George Soros and driven by the global financial crisis, the INET is dedicated to empowering and supporting the next generation of economists and scholars in related fields through research grants, task force groups, academic partnerships, and conferences. INET is committed to broadening and accelerating the development of innovative thinking that can lead to insights into and solutions for the great challenges of the 21st century and return economics to its core mission of guiding and protecting society. For more information please visit <http://www.ineteconomics.org>.

# Human Capital and Economic Opportunity Global Working Group

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