



Northwestern University

news

INSTITUTE FOR POLICY RESEARCH

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Biology and Beyond

Interdisciplinary scholars explore new models of human development



When the Human Genome Project began in 1990, experts believed that people carried an estimated 100,000 or more genes. Since then, the overall count has fallen to fewer than 25,000 genes—or about 7,000 fewer than a fleshy tomato. Does this mean that a human being is less complex than a salad ingredient?

No, says IPR biological anthropologist **Thomas McDade**, who directs Cells to Society (C2S): The Center on Social Disparities and Health at the Institute for Policy Research. Still, the comparison indicates the subtle complexity of gene-environment interplay.

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Help Us Redesign Our Newsletter

IPR will be redesigning its newsletter in 2016 and would like to get your feedback on it and IPR communications. If you take our online survey, you can enter to win one of three Amazon gift cards! See p. 3 for further details.

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Education in the Digital Age

IPR panelists discuss the digital revolution in the classroom



Leslie Kossoff/ILK Photos

From left: U.S. Rep. Bob Dold (R-IL, 10th District) greets Ellen Wartella, Eszter Hargittai, and David Figlio prior to IPR's policy research briefing on Capitol Hill.

The pros and cons of online classes, the worrying gap in young people's Internet skills, and a dramatic increase in pre-school iPad use were just a few of the topics broached during IPR's May 19 policy research briefing on Capitol Hill. Communication studies researchers and IPR associates, **Ellen Wartella** and **Eszter Hargittai**, joined IPR Director and education economist **David Figlio** to discuss technology's impact on education, point out a few misconceptions,

and offer suggestions about its effectiveness and use in classrooms.

"Education is the building block for everything we want to do as a nation," said U.S. Rep. **Bob Dold** (R-IL, 10th) in opening remarks to the 65 congressional staffers, researchers, academics, and journalists in attendance. In addition to Dold, U.S. Rep. **Mike Quigley** (D-IL, 5th) also co-sponsored the event.

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Faculty Receive Guggenheim Fellowships

Two of 13 social science fellows are IPR researchers

IPR faculty researchers **Monica Prasad** and **Jennifer Richeson** were named Guggenheim Fellows on April 9.



Monica Prasad

P. Reese

A total of 175 scholars and artists from the United States and Canada were selected from more than 3,100 applicants in 2015. Prasad, a sociologist, and Richeson, a social psychologist, are two of the 13 social scientists to receive the fellowship this year.

Awarded by the John Simon Guggenheim Memorial Foundation, fellowships are appointed on the basis of prior achievement and exceptional promise.



Jennifer Richeson

J. Ziv

Also in April, Richeson was elected as a member of the U.S. National Academy of Sciences. She is among 84 new members recognized this year for "their distinguished

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Recent Faculty Recognition

Awards and Honors

On June 24, social policy expert **Fay Lomax Cook** delivered the keynote address with **Robert Kaplan**, who is chief science officer at the Agency for Healthcare Research and Quality (see p. 15), at the 20th anniversary celebration of the National Institutes of Health's (NIH) Office of Behavioral and Social Science Research. Cook heads the Social, Behavioral, and Economics Sciences Directorate at the National Science Foundation (NSF).

On June 18, IPR economist **Charles F. Manski** discussed "How Does Measurement Contribute to Uncertainty in Public Policy, and What Can Be Done About It?" at the Federal Reserve Bank of Cleveland's 2015 Policy Summit on Housing, Human Capital, and Inequality in Pittsburgh (see pp. 12–13).

IPR sociologist **Monica Prasad** and social psychologist **Jennifer Richeson** were named 2015 Guggenheim Fellows on April 10. Richeson was also elected a member of the National Academy of Sciences on April 28 (see p. 1).

Daniel Rodriguez, dean of Northwestern Law School and IPR associate, delivered the Jefferson Memorial Lecture at the University of California, Berkeley on April 1. In it, he examined the dynamic relationship between structures of U.S. constitutional governance.

The American Educational Research Association named education researcher and IPR associate **Cynthia Coburn** a fellow for her scholarly contributions to education research.

Northwestern President and Professor **Morton Schapiro** was awarded the 2015 President's Award by NASPA–Student Affairs Administrators in Higher Education on March 24. It honors a university president who has improved the quality of student life on campus by supporting student affairs programs.

IPR political scientist **Wesley G. Skogan** submitted testimony in March on the topic of "building trust and legitimacy" for consideration by President Barack Obama's Task Force on 21st Century Policing.

IPR postdoctoral fellow **Camelia Hostinar** received the 2015 Outstanding Doctoral Dissertation Award from the Society for Research in Child Development in March.

IPR graduate research assistant **Zachary Seeskin** received a U.S. Census Bureau Dissertation Fellowship for 2015–16.

On July 27, the Institute for Education Sciences awarded IPR postdoctoral fellow **Nathan VanHoudnos** its Outstanding Predoctoral Fellow Award. The award recognizes his academic accomplishments and contributions to education research.

Grants

Developmental psychologist **Emma Adam** received a grant from the Spencer Foundation to study whether children living in higher-stress environments have different cycles of the stress hormone cortisol, as well as their responses to and performance during high-stakes testing.

College and the period just after graduation are times when a person's social status might change. Social psychologist **Mesmin Destin** is investigating the antecedents and consequences of perceiving that one's social status is changing, known as "status identity uncertainty," and its impact on achievement and psychological well-being in an NSF-supported project.

Anthropologist **Thomas McDade** is analyzing 4,000 dried blood spot samples for the Anti-Müllerian hormone, an indicator of fertility, to determine the reproductive window in young adult cancer survivors. The research received funding from the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD).

Thanks to an NSF grant, social demographer **Christine Percheski** is seeking to determine how family income and wealth vary by characteristics of the family (such as whether it includes one or two parents) and how these associations have changed between 1980 and 2013.

Supported by an NICHD grant, cognitive and developmental psychologist **Sandra Waxman** is studying the links between language and cognition in infants, as well as the role infants' experiences play in determining these links.



P. Reese

Christine Percheski

Notable Media Coverage

The New York Times profiled a randomized study by IPR economist **Jonathan Guryan** and his colleagues, showing that a program combining daily math tutoring "on steroids" and mentoring leads disadvantaged high schoolers to perform substantially better on standardized math tests, January 31.

The Pacific Standard highlighted developmental psychologist and IPR associate **Claudia Haase's** research on people's trust increasing as they get older, March 19.

Political scientist and IPR associate **Benjamin Page** and IPR graduate research assistant **Fiona Chin** talked about how income inequality functions in the United States in The New York Times, March 29.

The Atlantic cited IPR sociologist **Jeremy Freese's** work on relationships between inequality, health, and aging, April 20.

IPR Director and education economist **David Figlio** discussed his research on changes to Evanston Township High School's Advanced Placement programs on WTTW's Chicago Tonight and PBS, April 27 and May 27.

IPR political scientist **Laurel Harbridge** contributed an opinion piece to the Washington Post's Monkey Cage about how bipartisanship in Congress is not dead, May 4.

IPR social psychologist **Alice Eagly** and Northwestern doctoral student David Miller spoke about their study of worldwide gender stereotypes concerning science in U.S. News & World Report, May 18.

IPR associate and political scientist **Rachel Beatty Riedl** penned an editorial on the church's role in calming the crisis in Burundi for Pacific Standard, June 1.

(Continued on page 3)

Courtesy of D. Rodriguez



Daniel Rodriguez

IPR Economist Tapped for National Economic Initiative

Diane Schanzenbach to lead Brookings' Hamilton Project

The Hamilton Project, a nationwide economic policy initiative of the Brookings Institution based in Washington, D.C., appointed IPR economist **Diane Whitmore Schanzenbach** as its director this August. In addition to her two-year directorship, she will also serve as a senior fellow in economic studies.

"She's a great choice," wrote University of Chicago economist Austan Goolsbee on Twitter following the announcement. He is a colleague and a former chair of the White House Council of Economic Advisers under President Barack Obama from 2010–11.

Schanzenbach, who holds degrees in economics from Princeton (PhD) and Wellesley (BA), studies policies aimed at reducing poverty, in particular the effects of food stamps, early education interventions, and school accountability measures on childhood and adult health and well-being (see p. 11). Taking over from University of Maryland economist Melissa Kearney, Schanzenbach will continue The Hamilton Project's mission to foster broad-based economic growth through innovative policy proposals—especially as the nation still grapples with the lingering effects of the Great Recession.

"The number one economic issue we should be talking about in the next few years is how to foster broad-based growth, and the role for effective government to enhance that," Schanzenbach said.

From her vantage point as an IPR fellow for five years and head of IPR's research program on Child, Adolescent and Family Studies, she sees great similarities between IPR and The Hamilton Project in seeking to bridge the worlds of academia and policy.

The Hamilton Project "shares so many of the core values that IPR has," which include identifying the most important policy questions and studying them from a rigorous, research-based perspective, Schanzenbach explained.

Diane Whitmore Schanzenbach is associate professor of human development and social policy, director of Northwestern's Multidisciplinary Program in Education Sciences, and an IPR fellow.



Courtesy of The Hamilton Project

Diane Schanzenbach

Recent Faculty Recognition *(Continued from page 2)*

The New York Times and others mentioned a report by communication studies researcher and IPR associate **Ellen Wartella** on adolescents' online behaviors, June 2.

Sociologist, African American studies scholar, and IPR associate **Mary Pattillo** addressed the decline of black teachers in Chicago Public Schools on WBEZ, July 14.

The Atlantic covered IPR health psychologists **Edith Chen** and **Gregory Miller**'s research on the physical consequences of self-control for successful African Americans, July 16.

The Washington Post and other media outlets showcased the work of **Craig Garfield**, **Thomas McDade**, **Emma Adam**, and **Lindsay Chase-Lansdale** on how men gain weight after becoming fathers, July 21.

IPR mass communication scholar **Rachel Davis Mersey** referenced the struggle of RedEye, a free daily newspaper aimed at millennials, against encroaching mobile devices in Crain's Chicago Business, July 29.

The New York Times spoke with healthcare economist and IPR associate **Leemore Dafny** about how consolidation in the healthcare industry has adverse effects for consumers, August 2.

The Washington Post's Monkey Cage interviewed IPR political scientist **James Druckman** and his co-author about their book, *Who Governs? Presidents, Public Opinion, and Manipulation*. They used archival records to show what drives presidential decisions and political strategies (see p. 17), August 9.

The Washington Post talked about IPR political scientist **Daniel Galvin**'s research on the role of national political committees, August 18.

IPR sociologist and African American studies scholar **Celeste Watkins-Hayes** shed light on the inequality tennis star Serena Williams faces as a black, female athlete—despite Williams' long string of successes on the court in The Chicago Tribune, September 7.

Take Our Reader Survey and Tell Us What You Think!

IPR produces publications and communications to provide timely and accessible information about faculty research and events. To this end, we are seeking reader input as we redesign our newsletter in 2016. Help us out by taking our online survey at:

www.ipr.northwestern.edu/survey.html

Complete it by **Monday, November 30** at 5 p.m. (CST) and register to enter our drawing* for a chance to win one of three Amazon gift cards. We are giving away one gift card for **\$10**, one for **\$25**, and one for **\$40**.

**Must be 18 or older and a U.S. citizen or legal resident to enter.*

IPR RESEARCH NOTES

Women in Mali Save and Invest Without Banks



Lori Beaman

They live in poor villages that are, on average, 14 miles from the nearest paved road. Traditional banks are neither accessible nor affordable to them. As a result, women in Mali must find other means of saving and lending money.

The newest and most popular saving and lending programs are “savings groups.” Women in each savings group contribute to a group fund every week, then collec-

tively decide if they should loan money from the fund to other members of the group, to be repaid with interest.

In a recent working paper, IPR economist **Lori Beaman**, Dean Karlan of Yale University, and Bram Thuysbaert of Belgium’s Ghent University, evaluate the savings groups’ impact.

With implementation costs as little as \$20 per household, the groups, which use the infrastructure of non-governmental organizations (NGOs) to promote savings and provide loans, are far cheaper than typical microfinance programs. Beaman and her colleagues sought to investigate if they were effective at reducing poverty, despite their low cost.

The researchers surveyed nearly 6,000 households in 500 Malian villages; 209 of which participated in savings groups led by two NGOs, Oxfam America and Freedom from Hunger.

They found that women who participated in the savings groups did not increase their income tremendously, but they did use the money they saved to purchase food regularly.

“Since we’re working in Mali, food security is a first-order concern for households,” Beaman said.

When savings group participants invested their money, they invested it in livestock. They did not invest money in expenses related to health or education—a surprising result, especially since one component of the Oxfam and Freedom From Hunger programs is teaching malaria prevention skills.

Beaman says this outcome might just attest to the dominance of food security, relative to other potential expenditures. Livestock, she notes, act as “buffer stock” in Mali, an ideal form of insurance against economic shocks.

“Maybe households just were not at a point where they thought their food security was solid enough to think about downstream investments in education and health,” she said.

While savings groups alone will not lift households out of poverty, Beaman said, “It’s quite promising, savings being one component of many that can help households in poor countries become more resilient and hopefully decrease poverty.”

Lori Beaman is assistant professor of economics and an IPR fellow. The working paper (WP-14-15) is available on IPR’s website.

Can Microfinance Save the Poor?



Cynthia Kinnan

Microfinance institutions (MFIs)—which extend small loans to impoverished households in developing countries—have exploded over the past 10–15 years. Yet do MFIs actually spur business growth, empower women, and do they lift families out of poverty?

IPR economist **Cynthia Kinnan** and her colleagues undertook the first randomized evaluation of a microcredit lending model.

The results, published in *American Economic Journal: Applied Economics*, are overturning widely held notions about microfinance and its role in poverty reduction.

The researchers assessed the effects of loans offered by Spandana, a MFI serving poor women in Hyderabad, India. They studied impacts on consumption patterns, business creation and business income, and women’s empowerment, measured by a woman’s ability to participate in household decisions about spending, saving, and other factors, for up to three and a half years after Spandana began lending.

Strikingly, instead of the predicted near-universal demand for microloans, only around 33 percent of eligible households borrowed from Spandana, indicating that interest rates were too high or households preferred other sources of credit.

Second, the loans did not lead to large amounts of business creation—“something that is often part of the narrative of how microfinance will affect households,” Kinnan said.

Also part of that narrative is the notion that MFIs increase women’s empowerment. “It’s natural to think that if this source of credit is flowing to women, that may allow women to start or scale up a business, and that may give them more autonomy,” Kinnan explained. However, in their evaluation of Spandana, she and her colleagues did not see this.

Where microfinance did produce “significant and detectable impacts” was changing the composition of household spending: spending more on durable goods, such as a new sewing machine for a tailor; scaling up existing businesses; and spending less on “temptation” goods such as alcohol, tobacco, and gambling. The need to make regular, weekly payments on a microloan might help households stick to their budgetary priorities.

Though these monetary effects could add up over time, “Our takeaway is that microfinance was not the transformational product many hoped it would be,” Kinnan concluded. Five other evaluations of MFIs published in the same issue reached similar conclusions.

Cynthia Kinnan is assistant professor of economics and an IPR fellow.

IPR RESEARCH NOTES

Subtle Discrimination Harms, Too



Emma Adam

“A lot of the conversations around Ferguson, etc., have been about the impacts of these really overt forms of discrimination,” said IPR developmental psychobiologist **Emma Adam**. “But there are more subtle ways in which discrimination is hurting and harming African Americans.”

In a recent IPR working paper, Adam, IPR social psychologist **Jennifer Richeson**, and their colleagues consider whether experiences of perceived racial and ethnic discrimination (PRD) during adolescence and young adulthood affect how bodies react to stress later in life.

The researchers surveyed 120 African American and white adults from the Maryland Adolescent Development in Context Study (MADICS), a longitudinal study that followed nearly 1,500 students in the state for 20 years, starting in seventh grade. Participants were asked about their personal experiences with PRD. Adam, Richeson, and their colleagues then collected saliva samples from 120 of the MADICS participants as adults to assess participants’ diurnal cortisol profiles—a biomarker of stress.

Preliminary results suggest that effects on overall cortisol

levels were stronger for African American participants. Their increased exposure to PRD predicted lower cortisol on waking and throughout the day total when compared with their white counterparts—an indicator of chronic stress.

Furthermore, the researchers find that adolescence might be a particularly critical period when it comes to shaping African American adult stress biology. While more recent experiences of racial and ethnic discrimination during adulthood were associated with acute increases in cortisol, earlier histories of PRD during teen years were associated with considerably lower, flatter cortisol profiles.

“We expected to see the flatter, diurnal rhythms for both blacks and whites, but we didn’t expect to see how much lower the overall curves were for blacks exposed to high PRD in adolescence,” Adam said. “We really need to be addressing, in a very broad societal way, race relations in the United States and improving them.”

Emma Adam is professor of human development and social policy. Jennifer Richeson is MacArthur Foundation Chair and professor of psychology and of African American studies. Both are IPR fellows. The working paper (WP-14-18) is forthcoming in Psychoneuroendocrinology.

Does Medical Malpractice Law Affect Health Outcomes?



Michael Frakes

Over the last several decades, premiums for medical malpractice insurance have climbed sharply, prompting many states to enact tort reforms—laws that deal with injuries to people and property—to mitigate the costs of medical malpractice litigation. The traditional approach that states have employed in response to these developments is the imposition of caps on damages awards. One wonders

whether the reductions in liability pressure following such reforms led, in turn, to deterioration in healthcare quality.

Surprisingly little is known about the relationship between the medical liability system and quality of care, said IPR health and law scholar **Michael Frakes**. The research that does offer some insight, he added, typically comes from “studies that focus on the remedy side of things,” such as damage caps. More often than not, these studies find that tort reforms have little impact on physician behavior.

In an IPR working paper, Frakes and Anupam Jena of Harvard University consider the question using two surveys. They analyze the effects of medical malpractice law on several nationally and internationally recognized measures of inpatient and outpatient healthcare quality. Their results reveal that damage caps have “at most, a modest role” in improving healthcare, findings

consistent with current scholarship. In particular, caps on non-economic damages, or damages awarded for pain, suffering, and loss of companionship, do not appear to affect the quality of care.

Legislatures, however, can modify tort rules in ways beyond limiting the extent of the harm posed by the current system. They might attempt to adopt a system that sets the standards to which physicians are held in an entirely different light. Scholars know even less about how physicians would respond to reforms of this nature. Frakes and Jena fill this gap by testing for changes in healthcare quality when states used national standards to measuring physicians’ care, as opposed to the customary practices of nearby physicians.

In states where healthcare quality was rated more highly before using national standards, adopting national standard laws did not seem to change the quality. But in states with initial low-quality care, adopting national standards was linked to improvements in all quality measures.

“One of the takeaways [of our study] is that it might be a little premature to say that physicians are universally unresponsive to medical liability based solely on the results of those studies exploring responses to damages caps,” Frakes said.

Michael Frakes is associate professor of law and an IPR fellow. The working paper (WP-15-04) is forthcoming in The University of Chicago Law Review.

IPR RESEARCH NOTES

Improving Principals' Transition to a Tough Position

Courtesy of J. Spillane



James Spillane

With fast-paced, fragmented, varied work that requires long hours, being a school principal is a difficult job—and one that often has a steep learning curve. In an *Educational Administration Quarterly* article, education professor and IPR associate **James Spillane**, with the University of Texas at Austin's Linda Lee, examines what new principals face when transitioning

into their positions, and offers recommendations for easing this process.

Spillane and Lee followed two cohorts of novice principals in the Chicago Public Schools system over the first two years after they became principals. Through questionnaires, interviews, and other data, they catalogued the issues the surveyed principals faced, as well as how their experiences varied among schools.

A consistent theme in principals' accounts was the "responsibility shock" they experienced upon starting work and becoming responsible for an entire school.

"They said they were surprised by little else on the job because they had done it before as vice principals and assistant principals, but they were not prepared for this," Spillane said.

The responsibility shock contributed to principals "engaging

in behavior that is counterproductive," he continued. "These principals want to involve others in the work of leading and managing the school. But because of this sense of ultimate responsibility, they report engaging in micromanaging, because they have this sense that they're ultimately accountable."

Spillane and Lee offer several recommendations aimed at improving novice principals' transitions. These included changing the way policymakers set up school accountability policies—having a broader array of people who are held accountable for school performance, rather than just holding the principal accountable.

They also recommend providing principals with adequate time to learn about the schools they will be leading. When principals were thrown into their positions in schools about which they knew little, rather than rising through a school's ranks in a "planned transition," they had more difficulty integrating their new positions.

"Research suggests that the principal is really critical to the well-being and performance of the school," Spillane concluded. "We want to minimize the interruption of that during transition times."

James Spillane is Spencer T. and Ann W. Olin Professor in Learning and Organizational Change and an IPR associate.

The Bright Side of Aging

Courtesy of C. Haase



Claudia Haase

The number of Americans over the age of 65 has more than tripled since 1950, news that has worried policymakers and researchers. But while it might be tempting to assume that age leads to inevitable declines in physical health and cognitive ability, developmental psychologist and IPR associate **Claudia Haase** noted at her recent IPR talk that there is "a bright side" to aging.

She and her colleagues examined data from a number of studies, including a study of the relationships of 156 long-term married couples, followed by Robert Levenson of the University of California, Berkeley and his colleagues every five years since 1989.

As spouses aged, they showed more positive emotional behaviors, such as humor, and fewer negative ones, such as defensiveness, when they were discussing disagreements in their marriage. Spouses were also more likely to avoid conflict.

Haase's studies suggest that as people grow older, their social and emotional lives improve. Yet some age particularly well, while others age particularly poorly. Could DNA offer one explanation? Haase set out to examine how a gene involved in the regulation of serotonin, 5-HTTLPR, affects short-term

emotions and long-term development. She and her colleagues found that people with two short alleles of 5-HTTLPR were more distressed in negative situations, but also smiled and laughed more in positive ones. In contrast, people with one or two long alleles were more even-tempered. These differences in short-term emotions can lead to differences in long-term development, as Haase showed in another study of 5-HTTLPR, emotion, and changes in marital happiness over 20 years.

"People with two short alleles may be like hothouse flowers, blossoming when the emotional climate is good and withering when it is bad," she said. "Conversely, people with one or two long alleles are less sensitive."

Finally, not everything gets better as we age—memory, for example. Can anything slow down age-related cognitive decline? Haase and her colleagues are investigating perhaps one of the biggest public health problems to face an aging population—rocketing numbers of Alzheimer's diagnoses. Their findings from a recent study of nearly 100 healthy, older adults suggest that engaging in activities as simple as playing games or taking walks is associated with better brain health in Alzheimer-relevant regions.

Claudia Haase is assistant professor of human development and social policy and an IPR associate.

IPR RESEARCH NOTES

Combatting the Credibility Crisis in Research



Jeremy Freese

Recently, the journal *Science* retracted a widely reported study on attitudes towards same-sex marriages when it came to light that its dataset and findings had been fabricated. When researchers fudge their data to obtain the statistically significant results that journals tend to publish—or fail to replicate a previous study's results—they reinforce a prevailing belief that science is experiencing a “crisis of credibility.”

In response to this crisis, a new scientific movement, “forensic objectivity,” has arisen. IPR sociologist **Jeremy Freese** and IPR graduate research assistant **David Peterson** chronicle this movement and its future in their recent IPR working paper.

“Normally, one would think of objectivity in science as being primarily grounded in the methods people use,” Freese said. “But there has been this shift toward trying to think more about using sets of findings to speak about the integrity of literatures,” or meta-analysis.

By looking at all published studies on a certain topic simultaneously and using techniques like funnel plots or p-curves, researchers can determine if the statistical patterns in the studies' results are unlikely to occur on their own—and might have been manipulated to be statistically significant.

Another part of the forensic objectivity movement involves open science, in which researchers publicly share their datasets, thought processes, and methodologies. For instance, journals have started rewarding scientists for making their raw data available or for explaining their experimental design in advance of data collection.

According to Freese and Peterson, such efforts will not only engender trust among researchers, but also can help bridge the gap between researchers' conclusions in scientific articles and what they present to the public, for example, in press releases.

“Ultimately, dramatizing findings with the public has this long-run negative effect of leading to unrealistic expectations about science—about what can be learned from an individual study, and ultimately distrust,” Freese said.

The forensic objectivity movement's hope, the researchers conclude, is that its analyses of scientific research will encourage science as a whole to adjust its incentives, making it easier for researchers to publish journal articles without statistically significant results and to self-police their fields.

Jeremy Freese is Ethel and John Lindgren Professor of Sociology and an IPR fellow. The working paper (WP-15-10) is available on IPR's website.

Are Most Published Research Findings False?



Eli Finkel

Over the past decade, articles in mainstream publications and scientific journals have asserted that science is in crisis—and even, as Stanford University's John Ioannidis famously asserted in *PLoS Medicine*, that “most published research findings are false.”

Since the articles that make a researcher's career and boost a journal's popularity feature studies with statistically significant results, this can motivate researchers to tweak their data, thereby creating “false positives” in the scientific literature—that is, instances when researchers conclude that an effect is true, when it is in fact false. Hence, the assertion that research is rife with false conclusions.

The Anti-False-Positives (AFP) movement arose in response to this issue and demands more stringent guidelines for researchers and journals to minimize false positives in scientific data. But in their race to rectify the issue, the AFP movement might have “overreached,” social psychologist and IPR associate **Eli Finkel** and his colleagues argue.

Issues surrounding false positives “are important for us to be discussing, but there's a chance that the correctives, if insufficiently thought out, can do more harm than good,”

Finkel explained. “In particular, as the rules for publication get increasingly stringent, we will exacerbate an equally important type of error called ‘false negatives’—instances when researchers conclude that an effect is false, when it is in fact true.”

The recommendations offered by the AFP movement, including the recommendation that scholars must be skeptical of any findings that deviate from a strict preregistration plan, may serve to marginalize the sorts of rigorous, ambitious longitudinal projects that are especially valuable in understanding human behavior.

Finkel and his colleagues offer guidance on how both researchers and AFP supporters can work within the AFP movement's recommendations for reducing false positives, which include open sharing of materials and data, close replications of published findings, and increasing sample size.

Even as scholars disagree about whether various scientific disciplines are experiencing a replicability crisis, Finkel observes that scholars can agree that “We should view this crisis as an opportunity to evaluate our long-standing practices and the emerging recommendations—and, once we've done that, updating policies as needed,” Finkel said.

Eli Finkel is professor of psychology and an IPR associate.

FACULTY SPOTLIGHT: Rebecca Seligman

Examining Mind-Body Interactions Across Cultures

How do social and cultural experiences become embedded in physical and mental health? This is one of the central questions that drives IPR anthropologist **Rebecca Seligman's** research—and one that has intrigued her since she was a teen attending her first large rally in Washington, D.C.

"It made me wonder—why did it feel so good to participate in this collective ritual?" she recalled.

Seligman went on to study the impact of such rituals by delving into the field of anthropology, eventually obtaining her PhD from Emory University. Her wide-ranging research agenda encompasses examinations of spirit possession in Brazil to investigations of mental health among Mexican-American teenagers, but all of it is united by an interest in mind-body interactions and sociocultural influences.

"My research looks at how psychological practices affect bodily processes, and vice versa—and how cultural and social factors get internalized, both in the mind and in the body, and influence those mental and bodily process in really deep ways," Seligman said.

Embodiment in Afro-Brazilian Regions

For her book, *Possessing Spirits and Healing Selves: Embodiment and Transformation in an Afro-Brazilian Religion* (Palgrave MacMillan, 2014), Seligman studied the spirit possession mediums of Brazil's popular Candomblé religion, which is an African-derived religious tradition originally brought to Brazil by slaves.

Through observing Candomblé ceremonies, interviews, and a kind of psychophysiology measurement called "impedance cardiography," Seligman found that such transformative religious experiences can lead to improved mental and spiritual health in followers.

The mind-body connection responsible for these effects can include negative outcomes "like the ways that discrimination, stigma, and loneliness adversely affect health," Seligman said. "But also more positive effects—like the health benefits of social support and praise, or the positive health outcomes associated with practices like yoga and mindfulness."

Mental Health of Mexican-American Teens

For her most recent project, Seligman is in the early stages of researching Mexican-American youth being treated for mental health problems in a psychiatric clinic.

Mexican-American adolescents are at greater risk for depression and anxiety, and have a higher tendency for suicidal behavior than their non-Hispanic, white counterparts, but little is known about their experiences of diagnosis and treatment in clinical settings.



Rebecca Seligman

Studying these adolescents is important, Seligman said at a March IPR colloquium, because they "occupy a particularly complex position" in the United States: "They are a minority group vulnerable to social and economic hardship; they are youth who have transnational social and cultural affiliations; and they are also figures in politically volatile debates over immigration."

Seligman is observing and interviewing clinicians, as well as the adolescent patients undergoing treatment in a psychiatry clinic, and their families. She will then examine the "fit" between the care expected by the adolescents and that which the clinicians provide. For instance, if Mexican-American culture emphasizes family obligation but psychiatric norms focus on a patient's individual needs, then a clinician evaluating treatment options might wind up selecting a less effective treatment because culture was not accounted for.

Bringing Culture into Neuroscience

While Seligman's research examines the relationship between psychological and biological states, there is one area she still wants to investigate—neurological states.

"I've always harbored a desire to use neuroscience methods in anthropology," she said. "There was a running joke in graduate school about how people needed to invent a portable PET scan [positron emission tomography], so I could take it to the field and see how people's brains were working in trance states."

While this kind of portable brain-scanning technology is still not available, Seligman continues to examine links between anthropology and cultural neuroscience—an emerging field that studies how cultural values, beliefs, and practices shape, and are shaped by, the brain.

In two recently published articles, Seligman and Ryan Brown of the RAND Corporation explore the ways in which neuroscientific methods could be used to investigate questions of culture. One issue the researchers highlight is neuroscience's reliance on laboratory research, as opposed to fieldwork.

Seligman urges those interested in cultural neuroscience to adopt a two-step process. She suggests researchers should first gather measurements for "peripheral" nervous system activity—measures that will provide insight about what's going on in the central nervous system. They then can form hypotheses from these data and test them in the lab.

"The field is where you can actually see people's real practices," Seligman said.

Rebecca Seligman is associate professor of anthropology and an IPR fellow.

FACULTY SPOTLIGHT: Mesmin Destin

Interventions Providing Motivation for Education

When he attended Northwestern as an undergraduate, IPR social psychologist **Mesmin Destin** sensed that something was missing from his syllabus.

“It felt like social class was not a part of the mix of understanding basic human behaviors and outcomes of young people,” Destin said.

This sentiment launched him into research on the issue, and eventually led to a PhD in social psychology from the University of Michigan. Examining social class not only “fulfilled a lot of my intellectual curiosities,” Destin said, but also “directly connected to real things that I thought were important, going on in the real world.”

Since rejoining Northwestern as a faculty member in psychology and education and social policy, Destin continues to seek out interventions to guide high schoolers, middle schoolers, and first-generation college students and that will help address inequities they might face.



Mesmin Destin

First-Generation College Students

Part of his research deals with improving outcomes for “first-generation” college students—who are students whose parents never attended or got a degree from four-year colleges. A minority at elite institutions, first-generation students suffer academically and psychologically on campus, surrounded by “continuing-generation” peers and faculty who often lack understanding of their situation.

Seeking to remedy this situation, Destin and his co-authors, Northwestern’s Nicole Stephens and Stanford’s MarYam Hamedani, designed a “difference-education” intervention. They assigned incoming first-generation freshmen to attend an hour-long orientation session featuring first-generation and continuing-generation panelists. In one session, the panelists gave general advice on succeeding in college, such as, “Go to class and pay attention.” In the other, the panelists linked their backgrounds to their college experiences; for instance, not being able to rely on their parents for help in choosing classes.

The result: “Typically, first-generation freshman GPAs lag behind their peers’ by 0.3 points. The gap was eliminated for students in the session where panelists shared their backgrounds; they also reported being happier, less stressed out, and more willing to seek help than the control group,” The New York Times reported of the study.

Additional interventions that Destin is investigating involve looking in particular at the “factors that set the climate” at elite institutions—such as faculty-student interactions—that “can make it difficult for high-achieving students from low-income backgrounds to continue to excel.”

Motivating Students to Succeed

While motivation is clearly an issue for a college student, what about motivating middle and high school students to succeed in school? Through his experiments, Destin has discovered that a key element entails making academic success relevant to a student’s identity.

While a student who aims to join a profession that requires a lot of education might find it easier to devote herself to school, a student aiming to become an athlete or an entertainer might find such motivation more difficult, Destin and his co-author found.

Destin is targeting such students in two current projects. One aims to increase high school students’ motivation by showing them that a high school diploma is useful

for something more than just going to college. The second project seeks to show middle school students how education can help them attain “more communal types of goals,” such as giving back to the community and building a family.

“Even for middle school kids, we’re finding with that the goals that they have for the future, they’re either focused on things that are really about themselves, or they are focused on things that are really about the community,” Destin said. “That difference matters for the effectiveness of interventions. It has to be tailored toward the things that matter to them.”

Last, Destin is examining how parents can best convey messages on staying focused to their children, and the effectiveness of pairing high school mentors with middle school mentees.

“What are the things that kids in those communities can share with each other, in terms of resources to seek out, and negative forces to avoid?” Destin reflected.

Designing New Interventions

Having attained a “critical mass of basic understanding” about students’ resources, motivations, and their self perceptions through his research, Destin says he plans to bring that understanding to bear on his projects in progress.

In collaboration with IPR health psychologists **Edith Chen** and **Greg Miller**, Destin will design interventions to buffer against the physiological stresses of upward mobility—an extension of Chen and Miller’s work on “skin-deep resilience,” or when youth doing well behaviorally, academically, and emotionally show worse health outcomes.

“To me, it’s exciting to have a certain foundation built that we can continue to build upon,” Destin concluded.

Mesmin Destin is assistant professor of psychology and human development and social policy and an IPR fellow.

FACULTY SPOTLIGHT: Alice Eagly

Pioneering Empirical Study of Gender Differences

The era of second-wave feminism, from the early 1960s to the early 1980s, featured a renewed focus on remedying legal and social inequalities for women. Yet psychological research wasn't initially a robust part of the conversation. IPR social psychologist **Alice Eagly** was among a group of scholars who sought to change that.

Though her early work centered on core issues of social psychology, it was this great second wave of feminism that led her to “branch out to study gender in relation to those issues.”

“Many questions were raised about men and women, about how they think, and what they do,” she explained. “There were many answers, but they came mainly from people who were journalists or who were writing just from personal experience. There was very little science-based work.”

Eagly, who has co-edited or authored many classic titles, including the textbook standard, *The Psychology of Attitudes* (Wadsworth, 1993), is one of the world's most cited scholars in social psychology and in gender research. Her desire to see empirically sound research enter the discussion developed into a scholarly pursuit that has addressed important questions, from why so few women have high-level leadership positions to understanding the psychology of women and men.

Using Meta-Analyses in Gender Research

To begin to create the empirical research she thought was lacking, Eagly pioneered using meta-analyses to look at gender differences and similarities in existing psychological research.

“The studies were there, but they hadn't been in any way deployed to study gender,” she said.

So Eagly and colleagues used data from previous social psychology research—on those same core issues she had been studying—to compare female and male participants in those studies. “That was a unique opportunity—a coming together of statistical techniques for meta-analysis and a set of questions that had not been addressed empirically, but the empirical evidence or data were just sitting around waiting for somebody to scoop them up,” she said.

Constructing Social Role Theory

In conducting the meta-analyses and doing her own primary research, Eagly constructed social role theory of gender. Briefly, it describes how each society's division of labor accounts for our stereotypes of women and men and fosters gender differences.

“If men and women occupy largely different roles, then we use that information to decide what kind of people they are; it's not a mystery,” she said.



Alice Eagly

R. Eagly

For example, if mainly women are seen caring for young children, we view women as more nurturing than men. If mainly men are seen leading organizations and nations, we view men as more assertive and ambitious than women.

“Our observations create gender stereotypes, and we internalize them to some extent as our own gender identities,” Eagly continued. “These stereotypes become social norms that encourage people to stay within the domain of their own gender. Internalized as identities, stereotypes also affect behavior through self-regulatory processes whereby we feel good when we meet our own personal standards.”

She has used social role theory to examine a multitude of gender differences and similarities—helping behavior, aggression,

social influence, mate choice—but she views leadership as one of the most important.

“If you're concerned about gender equality, leadership is the key issue,” Eagly said, citing the large disparities between men and women in positions of power. A substantial body of her recent work has defined leadership stereotypes and detailed the labyrinth that women must successfully navigate to access political or corporate leadership.

Expanding Beyond Gender

One of Eagly's recent lines of research has involved extending social role theory to examine stereotypes of other social groups, like racial or socioeconomic ones. In studying how social groups are differently represented in occupations, Eagly finds the same mechanisms are at play.

“It's easy for people to accept that gender stereotypes are based on the roles that men and women occupy, but it's rather more difficult for people to go along with the idea that stereotypes for other groups are also based on observations of what they do.”

Eagly believes that the idea of “eliminating stereotypes” is noble but often misguided, as the way that we categorize people into groups and make inferences about their attributes based on those observations reflects basic features of human cognition. She believes social change is the only way to change the impressions that produce stereotypes and in particular to eliminate undesirable or disabling stereotypes.

“We can teach people about stereotypes and how individuals are often misjudged in terms of them ... but to believe that you can prevent stereotypes violates our knowledge of human psychology,” she concluded.

Alice Eagly is James Padilla Chair of Arts and Sciences, professor of psychology, and an IPR fellow.

FACULTY SPOTLIGHT: Diane Whitmore Schanzenbach

From Econ 101 to Better Policies for Low-Income Children

Econ 101 at Wellesley was where **Diane Whitmore Schanzenbach** set on her career path. The professor teaching the course, Karl “Chip” Case, “talked about how you can use math and microeconomics to help poor people,” she recalled.

Majoring in economics seemed like a natural fit for this native of Florissant, Mo., who grew up less than two miles from where the Ferguson protests took place. During her education in schools attended by Florissant and Ferguson students from both sides of the socioeconomic spectrum, she honed her talent for math and nurtured her passion for helping the less privileged.

“I’ve been fortunate in my career to be able to look at important questions, and use that math to try to make policies better for poor kids,” Schanzenbach said, and “that my skills and interests were able to align.”



Diane Whitmore Schanzenbach

Weighing the Benefits of Food Stamps

Some of Schanzenbach’s most influential work to date has investigated the role of food stamps, now known as the Supplemental Nutrition Assistance Program, or SNAP.

“We found that there was this long era across which they were introducing the food stamp program. Nobody had used that to look at its impact before,” she said.

In a series of articles, she and her colleagues evaluated food stamps’ influence on a variety of factors. The first articles in the series looked at food stamp recipients’ participation in the labor force and how they used their food vouchers; the later papers, at the program’s impact on children’s long-run health and educational outcomes.

Schanzenbach and her colleagues found that children exposed to food stamps early in life grew up to be healthier, better-educated adults who were also less likely to rely on the safety net later on.

Her research detailing the significant effects of such programs emboldened her to pitch her findings directly to a complete stranger at a dinner, New York Times columnist Paul Krugman. His column appeared in September 2013, at the height of discussion over cutting SNAP’s funding. “I’m not an advocate for SNAP—I’m a scholar,” Schanzenbach pointed out. “But obviously, based on my work, I think the program has been highly effective.”

Evaluating Early Education

Another line of Schanzenbach’s research evaluates the impact of high-quality, early education on children—work that was built off her dissertation on small K–3 classes, and which also led to her think about preschool expansion.

In research published in the *Quarterly Journal of Economics*—and featured on the front page of *The New York Times*—Schanzenbach and her colleagues looked at adult outcomes for children who had participated in Project STAR, a 1980s randomized class-size experiment in Tennessee. The children assigned to smaller classes and better teachers were more likely to go on to college and earn more money as adults.

Prior to this research, economists tended to underestimate the benefits of early childhood education—mainly because its impact on test scores tended to “fade out” by junior high and high school. The Project STAR findings provide evidence that a good teacher might transmit noncognitive skills like patience

and determination that might not be picked up by test scores.

Schanzenbach has also studied potential implications of expanding high-quality, public preschool programs—such as those touted in President Obama’s “Preschool for All” initiative—with her findings showing that expanding preschool will result in increased enrollment, though some of this will be due to children from families with higher-socioeconomic status switching to a public preschool from a private one.

Next Steps

For her next project, Schanzenbach will examine how changes in school finances since 1990 affect children in poorer school districts. The research, funded by the Spencer Foundation, is in its very early stages.

Up until 1990, court-mandated school district reforms encouraged equity between rich and poor school districts by increasing spending in poorer districts. But, “Over time, [school districts] switched from thinking about equity to adequacy,” when allocating money, Schanzenbach explained.

“You can imagine that that’s an interesting thing to take to actual policy,” she said, because those arguing for less spending might be reluctant to allocate money to the poorer schools.

In reflecting on how her education and policy research backgrounds have come together, Schanzenbach distills that the “guiding principle of what I care about is policies that make the lives of low-income kids better.”

She is looking forward to new work that will merge her research interests with policy engagement as she begins her appointment as director of The Hamilton Project (see p. 3).

Diane Whitmore Schanzenbach is associate professor of human development and social policy, chair of IPR’s research program on Child, Adolescent, and Family Studies, and an IPR fellow.

Data and Decisions in an Uncertain World

IPR economist Charles F. Manski talks with the Federal Reserve Bank of Cleveland

Cleveland Fed: You said during your plenary a few times, when we think something has happened in the economy, it hasn't really happened. Explain how that's the case.

Manski: Statistics come out and people take them seriously, and then the same statistic may get changed a month or two later, and something that we thought had happened actually didn't happen. A particular place where this happens is the quarterly estimates of GDP [gross domestic product] growth that come out from the Bureau of Economic Analysis (BEA) at the U.S. Commerce Department. There's a whole sequence of these estimates: There's a first estimate and then a revision a month later and then a second revision two months later. And then at the end of the year, they get new data, and they revise it again.

It can often happen that the first estimate comes out and it looks good—the economy grew at an annual rate of 3 percent, according to the estimate. And then a month later, new data come along and the BEA at the Commerce Department says, “Uh oh, the economy didn't really grow at a 3 percent annual rate. It actually grew at only 1 percent.” Then a revision comes in two months later, and it's, “We need to change it again; actually, the economy contracted.”

People are forming opinions about whether the economy is strong or weak based on the initial estimate, and then it turns out, as the new data come in and they do revisions of the GDP data, that it wasn't correct.

Now, this can have quite the implications. The regional Federal Reserve Banks participate with the Federal Reserve Board in making monetary policy. The Federal Reserve's Board of Governors is looking carefully at the GDP numbers trying to decide whether interest rates should be changed and so

on, and the members of the Federal Open Market Committee could decide that interest rates should stay the same, perhaps because the economy looks one way, and then a month later they find out, “Uh oh, that was wrong.”

This happens quite frequently.

What specifically are you urging publication of as it pertains to uncertainties when it comes to data from the Bureau of Economic Analysis, the Bureau of Labor Statistics, the Census Bureau? Are you urging the publication of the bare necessities or something beyond that, and are you urging it for all data or just for certain kinds?

In principle, I would like to have uncertainty expressed for all the statistics that the federal statistical agencies publish. But let's focus on some of the most important ones like GDP growth, inflation statistics, unemployment rates, income distribution, and poverty rate. These particular statistics draw an enormous amount of media attention, and the public really pays a lot of attention to them. So let's start with them. And the question is, “Well, what should we do?”

The agencies, the Bureau of Labor Statistics, Census Bureau, Department of Commerce, and so on, they put out news releases that get very wide distribution. For the news releases, you're not going to go into deep, technical detail, but the public needs to have a sense of the uncertainty. I think a simple way to do it is to have a range. Instead of saying the GDP growth is 2 percent, try to measure the uncertainty and say the GDP growth seems to be between 1 and 3 percent. Similarly for the unemployment rate, instead of saying it's 5.5 percent, say it's between 5.3 percent and 5.7 percent.

The basic point is to get across some sensible notion of the magnitude of the uncertainty.

Now, that's fine for the news release. For researchers, you need more than that. For the academic researchers, for firms making business decisions that really want to understand things better, then the statistical agencies could dig deeper and provide much more sophisticated measures of the uncertainty for those groups to use.

Why were you driven to write a book [*Public Policy in an Uncertain World*] on this particular topic? I imagine one of the reasons is that you see evidence all around you that people don't pay enough attention to this issue, that you see risks building or some resulting consequences.

I've always been interested in public policy. It has bothered me for many, many years that researchers publish articles claiming to know things that they don't really know. It's not that they make the stuff up, it's not that they're lying, it's not that it's fraudulent research. It's more subtle than that.

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It's important to know that data alone don't tell you anything when you're trying to do research. You have to combine data with some kind of assumptions, some theory, about the way the world works. The subtleties of research are what kinds of assumptions people make that they combine with the data. There are huge incentives to get flashy results that will draw our attention. What that leads people to do is to combine the data that are available with very strong assumptions that allow them to draw strong conclusions.

The first thing I do when I read any piece of empirical research, I don't look at the findings; I look at what data were available and what assumptions were made and how the researcher combined the data with the assumptions. I was finding over and over and over again that the available data, which are never as strong as one would like, were being combined with assumptions that were not just strong but lack credibility.

At a point, about five or six years ago, I decided I really needed to reach out to a broader audience—that it's not sufficient for academic researchers to understand these issues, it's really important for the public to understand them because we're talking about very important public policy questions.

It's your assertion that maybe policy doesn't need to be static, that maybe if data are going to change, we should be flexible. So what horizon do we set? If data continue to be revised, how often do we change policy that's been set before we render ourselves paralyzed?

If we admit that we don't know things and that we shouldn't be making policy once and for all for eternity, then how often should we be reevaluating things? It depends on the circumstance. Some policies are hard to re-evaluate. An example that's current: California is beginning what could be a \$100 billion project to build a high-speed rail system that would go from Los Angeles to San Francisco. You can't really build it piecemeal and see what happens. You have to build it all at once, and it's going to be a long time before that's re-evaluated.

On the other hand, there are very different kinds of public policy, for example, educational policy. What should class size be? What should be the role of educational testing? Well, you get a new cohort of students every year. We can have a much shorter time horizon in evaluating educational testing policies. Five years, 10 years might be enough to see how well a new policy is working in education or in social welfare or in other areas of that sort and then evaluate them and adapt them. The adaptations don't have to be a wholesale changing of a policy. They can be fiddling at the margin and making refinements.

The idea that I specifically recommended—what I've called "adaptive diversification"—would allow one to do this in a continuous way. Let's use the example of evaluating schools by test scores or not. Some schools could be under a testing regime and other schools could be not using a testing regime. They're very different policies, but what you could evaluate smoothly

is the fraction of schools that are using a testing system or are not using a testing system.

As the evidence accumulates, you could modify the fractions. So in the beginning when you don't really know, maybe half the schools get one policy and half get the other. As the data accumulate and it looks like one policy's working better than the other, you go from 50/50 to 60/40 to 70/30, and then when you finally feel comfortable enough that one policy is really the best, then everyone gets that policy.



P. Reese

Charles F. Manski

Is there a particular use of data without quantification of error or without identification of a probable range that makes you cringe the most? Or is there one that you really like?

Let me talk about a case where I think at least there's a good-faith effort to do it well. It's not perfect by any means, but I think we could learn from it.

Climate change is a matter of enormous controversy. It is not a matter of economics, but it certainly impinges on the economy. There are thousands of scientists that try to do forecasts of climate change and try to understand what the effects of policy changes would be on the climate. The United Nations has had this organization called IPCC [Intergovernmental Panel on Climate Change]; it's an international committee of scientists that's supposed to do forecasts of climate change. They have tried to be very careful in trying to separate what are the things that we think we know really well, where we can say, "Yeah, that's it," and we can just go with a point estimate on that, and what are the things that we don't really know very well but maybe we can quantify it enough to put a probability distribution on it.

But then they have a third category of things that are really so uncertain that we don't even want to put probabilities on them. In my literature, in economics, we talk about that as "ambiguity." The scientists who do work on climate change, they call it "deep uncertainty." They are the parts of climate change that are so uncertain that we just have to say, "Well, it could be this scenario or it could be another scenario, but we can't even put probabilities on it." I think that's a nice model.

Charles F. Manski is Board of Trustees Professor in Economics and an IPR fellow. This interview has been edited from the original that appeared in Forefront, the Federal Reserve Bank of Cleveland's magazine, in August. The views expressed in Forefront are not necessarily those of the Federal Reserve Bank of Cleveland or the Federal Reserve System.

Bullish on 2040

Book shares diverse perspectives on future, including for higher education

By Morton Schapiro and Gary Saul Morson

Courtesy of M. Schapiro



Morton Schapiro

Economists tend to be overly optimistic about growth and prosperity, while education experts tend toward unjustified pessimism. But what will the future really look like? (See the related book on p. 18.)

Who will teach?

Tenure in American higher education has been significantly reduced. In 1975, 57 percent of all full-time and part-time

faculty members were in the tenure system. Our guess is that by 2040, that will be only around 10 percent.

But a recent analysis of data from our own university, Northwestern, indicates that the faculty outside the tenure system actually outperform tenure-track and tenured professors in the classroom, at least in introductory classes taken by freshmen. They not only inspire undergraduates to take more classes in a subject, but also lead them to do better in subsequent coursework.

What will happen to support for public research universities?

We believe we are merely at a down part of a long cycle in federal research funding. Our best hope is that the 1990s repeat themselves and state budgets rise faster than the higher-education share of the pie declines. Not very likely.

What will colleges and universities teach?

The STEM [Science, Technology, Engineering, and Math] fields are today's darlings. That approach is shortsighted: No one should confuse starting salaries with ultimate earnings. Looking a decade or so beyond graduation, humanities majors generally have low unemployment rates and, in some cases, salaries mirroring those of workers with more technical training. Still, by 2010 fewer than 8 percent of bachelor's degrees were earned in the humanities. The future of the humanities may depend on a shift away from scholarly trends that for decades have emphasized that there is no such thing as objective or intrinsic literary value. But great literature offers practice in empathy, emotional and intellectual, with people unlike ourselves. Increasing globalization and social diversity will put a premium on that crucial skill.

What will happen to liberal-arts colleges?

More than two decades ago, the economist David Breneman took a close look at the 540 private colleges with few or no graduate programs and found that only 212 had even a large minority of students majoring in traditional arts-and-sciences fields. A recent study found that the number had fallen to only 130. The elite of the 130 remaining liberal-arts colleges are stronger than ever, but market changes will make the true liberal-arts college more of a rarity.

Will technology change how we teach?

Some educators believe massive open online courses [MOOCs] are the wave of the future. That model might productively supplement traditional pedagogy. But replace it? Think of it like this: Could you do psychotherapy this way? Presence matters. Nor do we see the residential experience for undergraduates imperiled by remote learning. Students reflecting on their treasured educational experiences cite favorite courses. It is hard to believe they will ever cite beloved MOOCs.

Who will go to college?

U.S. college-enrollment rates are the highest ever. But gaps in enrollment by income and race have persisted. Significant numbers of academically qualified minority students who would thrive at selective colleges do not enroll.

We agree with the many economists who predict that the college premium will continue to rise and, with it, the demand for higher education. That, however, will not translate into robust growth in college revenues. Economic, political, and competitive pressures imply that net tuition revenue will become a smaller portion of all institutional revenue.

Whether that will mean that more low-income students will attend college—especially selective ones—is as much a matter of sociology as of economics. The focus on “going to college” obscures the fact that college is not a good undifferentiated by quality. The many college-outreach programs put into place in recent years will begin to help students and their families understand that.

Will the United States continue to attract large numbers of foreign students?

International students bring not only talent but also tuition revenue. Even at the most heavily endowed colleges, they receive little or no financial aid. Those dollars are especially crucial at the many less-prestigious colleges and universities that rely heavily on tuition.

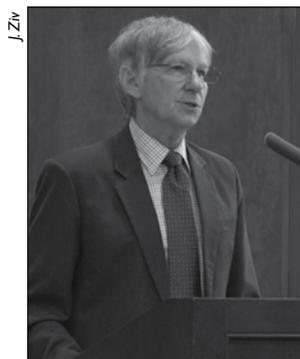
As long as the overall number of students enrolling in a country other than their own continues its rapid climb, the declining share going to the United States need not be a problem.

On the whole, however, we are optimistic about the state of American higher education in 2040. A college degree will continue to be a great economic investment, and enrollments will increase to record levels. American higher education has long been the model for the world, and 25 years into the future, we are confident that will still be the case.

Northwestern President and Professor Morton Schapiro is an IPR fellow. Gary Saul Morson is Lawrence B. Dumas Professor of the Arts and Humanities at Northwestern. This has been edited from their article published in The Chronicle of Higher Education.

Redefining Biomedical Research and Healthcare Spending

IPR lecturer suggests moving beyond “find it, fix it” research models



Robert Kaplan

If you want to extend your life by the longest time possible, should you a) get a pap smear every year, as opposed to every third year, b) strive to keep “bad” cholesterol (low-density lipoprotein, or LDL) under control, or c) get a graduate degree?

According to **Robert Kaplan**, chief science officer at the Agency for Healthcare Research and Quality (AHRQ) in the U.S. Department of Health and Human Services, the best answer is c.

Research from a Whitehall Study follow-up has shown that annual pap smears will prolong your life by a couple of days and keeping bad cholesterol in check will add about six months, but the difference in lifespan between a person with less than a high school degree and one with a graduate degree has been estimated to be as long as 12 years.

These are “huge effects,” Kaplan emphasized for the latter finding, noting similar results from a national study on cardiovascular disease that he is co-authoring. Yet most biomedical research is focused on finding and fixing a specific health issue, largely ignoring complex feedback systems. “There are factors that might have profound effects on health outcomes, which we’re not attending to,” he said.

Kaplan, who delivered IPR’s Winter 2015 Distinguished Public Policy Lecture and who stated that his lecture represented his own views and not those of AHRQ, has devoted his career to assessing the impact of medical treatments on patients’ longevity and quality of life, with thought-provoking results.

In introducing him, IPR health psychologist **Greg Miller** noted his substantial contributions to the field, “Along with our own **Dave Cella**, Bob has been really influential in bringing patient-centered outcomes to the forefront of the way medical decisions are made these days, both in practice and in policy.”

Medical “Quick Fixes” Ignore Longevity

Delving into the state of U.S. healthcare and the thorny issue of reliability and trust in published biomedical research, Kaplan pointed out that the results coming out of basic science laboratories, where scientists study molecular and cell biology, have become increasingly difficult to replicate. This means that a large portion of U.S. investment in this research “never really leads to clinical interventions,” Kaplan said.

The medicines that do result from U.S. biomedical research—about one licensed pharmaceutical product for every 10,000 patented molecules—do “fix” the problems for which they were designed. But these “quick fixes” might not make people live longer or better, Kaplan argued. In fact, they often have no effect on a person’s longevity, and some even decrease it, he continued.

“If you look at all trials with the goal of doing something to make people live longer, it’s been about 18 years since any large trial at the National Heart, Lung, and Blood Institute has shown an increased life expectancy,” he added.

He cited statistics revealing that of wealthy, developed countries, the United States ranks among the lowest in terms of life expectancy; moreover, it has fallen in rank since 1980. In a recent international study, the U.S. ranked dead last of 11 nations in overall healthcare.

“We tell people that we have the best medical care system in the world,” Kaplan said. But “if you look at our health system in relation to other wealthy countries, we’re doing quite poorly.”

Three Eras of Healthcare

The disconnect between U.S. healthcare and the lives of patients reflects a disconnect between current scientific thinking and the design of the American healthcare system, Kaplan remarked. He sees healthcare as having three eras, each dominated by the scientific thinking of the day. The first era focused on the germ theory of disease, “so we built a healthcare system to deal with infectious problems. The goal of this was to reduce deaths,” Kaplan explained. Then, a second one emerged where scientists began identifying risk factors for disease, and healthcare refocused on caring for people in earlier stages of the life cycle.

The U.S. healthcare system is currently stuck in this “second era” of healthcare, but “scientific thinking now has moved beyond this,” Kaplan argued. “We realize that what affects health outcomes is much broader than germs and risk factors,” yet the current model “fails to recognize the complexity within the human body—and also fails to recognize complexity in the social world.”

Suggestions for Improvement

Instead of throwing more money at the U.S. healthcare system in the hopes that it will improve, Kaplan instead suggests reallocating the annual \$2.8 trillion in U.S. healthcare expenditures, perhaps giving more funding to social services like education—in European countries, expenditure is roughly two dollars for other social services for each dollar spent on healthcare, while in the United States, it is about 83 cents. He also recommends reallocating the money that the nation spends on biomedical research, investing more in clinical and behavioral research rather than on basic science.

“If our investment is really designed to make people live longer, healthier lives, we need to redefine a health system that [addresses the full range of health determinants],” he concluded. “Maybe it’s time to make patients and families the center of this discussion.”

Robert Kaplan is Chief Science Officer at the Agency for Healthcare Research and Quality in the U.S. Department of Health and Human Services and professor emeritus at UCLA.

The Economics of Human Development

Nobel laureate James Heckman reflects on career researching human potential

On April 27, more than 180 faculty, students, and members of the public gathered to hear **James Heckman**, a Nobel laureate and University of Chicago economist, speak about his game-changing work on human potential as IPR's Spring 2015 Distinguished Public Policy Lecturer.

"When I think about social scientists who most embody the spirit of a place like IPR, [Heckman is] at the top of my list," said IPR Director **David Figlio**, Orrington Lunt Professor of Education and Social Policy and of Economics, who moderated the discussion.

Studying the Civil Rights Act and Employment

Heckman traces some of his earliest interest in human development outcomes to his travels through segregated Mississippi and Louisiana in college. He was astounded at how quickly the South integrated after the passing of the Civil Rights Act of 1964, which outlawed discrimination in voting and employment.

The act's passage brought about a "huge empirical question," Heckman said: Did it actually boost black employment in the South? "To be honest, I went into that study thinking it probably wasn't the Civil Rights Act. There were a lot of competing explanations," he said. But "in the end, we surrendered. We could see '64 was a real bellwether."

Heckman cites this research as some of his best work, because it combined "all kinds of evidence," from anecdotes to data collected by Southern states to measure Jim Crow compliance. "I personally think that's the way to do empirical work," he said.

Evaluating Early Education's Long-Term Effects

From the Civil Rights Act, Heckman turned to investigating early-life human development interventions, and their effects later on.

Heckman said he was alerted to the benefits of early childhood education programs when evaluating the long-term effects of the Perry Preschool and Abecedarian programs of the 1960s and 1970s. While the programs' effects on IQ faded over time, they boosted participants' socioemotional skills—such as initiative and persistence—as well as improved their physical health. Later in life, participants went on to earn more money and spent less time in prison when compared with their peers who were not in the program.

"Skill investments today percolate over the whole life cycle. Because they create a base, they make it possible for individuals to gain substantial returns over the whole life cycle," Heckman said.

Teachers and parents should work to foster social and emotional skills in schools throughout all stages of education, Heckman argued. He noted, however, that the current emphasis on "stuffing kids with facts" in U.S. schools removes the focus from these skills.

Examining GED Programs and Life Outcomes

Heckman cited his research on GED (General Educational Development) programs as an example of the deleterious effects stemming from an overreliance on test scores.

When he examined life outcomes of GED holders, he found that high school graduates outperformed them in almost every way, even though the GED test ostensibly granted high school equivalency.

This phenomenon, Heckman realized, tied back to Perry. GED holders lacked the same character skills that Perry had fostered in preschoolers. Additionally, the ways educators administered the test encouraged dropping out. In high schools, the test became "an option given to the weaker students to get out," Heckman said. In prisons, the GED became a way to get parole.

Only women who became pregnant and took the GED to return to the workforce

appeared to benefit from the test—likely because they possessed the character skills other GED recipients did not, Heckman said.

Looking Forward and Learning Along the Way

Heckman continues to research human development, most recently working with primatologists to analyze behavior, gene expression, and personality traits.

"There are all these things I would like to know—that I've been trying to know for decades. I'm not completely optimistic I'm ever going to know. But I'm going to struggle anyway, and I think that's the idea," he said. "You go at this with humility, and you also realize you can learn along the way."

Heckman, who referenced research by IPR anthropologist **Christopher Kuzawa**, IPR labor and education economist **Kirabo Jackson**, IPR economist **Jonathan Guryan**, and others during his lecture, also voiced his appreciation for IPR.

"I really respect the work of the people here. It's at a very high level, and extraordinarily useful," Heckman said.



James Heckman (l.) and David Figlio discuss Heckman's game-changing research on human potential.

James Heckman is Henry Schultz Distinguished Service Professor of Economics, founding Director of the Center for the Economics of Human Development at the University of Chicago, and the recipient of the 2000 Nobel Memorial Prize in Economic Sciences.

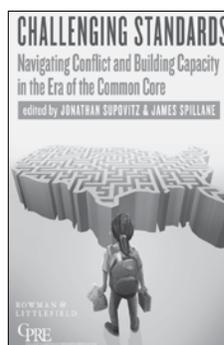
Recent Faculty Books



Is Bipartisanship Dead? Policy Agreement and Agenda-Setting in the House of Representatives

By Laurel Harbridge, Cambridge University Press, 2015, 268 pp.

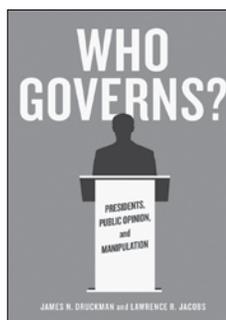
While research on congressional polarization has examined trends in roll-call voting (when a representative votes “yea” or “nay” as his or her name is called for a vote), it ignores other stages of the legislative process, such as cosponsorship coalitions—when representatives cosponsor each others’ bills. The focus on roll-call voting conflates the potential for bipartisanship on legislation with whether leaders pursue legislation with bipartisan agreement. While partisanship in roll-call voting increased between the 1970s and 1990s, partisanship in cosponsorship coalitions was much more stable. In *Is Bipartisanship Dead?*, IPR political scientist **Laurel Harbridge** argues that a variety of factors have contributed to changes in how the majority party structures the legislative roll-call agenda over time in a way that leads legislators to prioritize more partisan bills for the roll call agenda—even if there is underlying bipartisan agreement on certain issues. Understanding the factors that drive partisan conflict in agenda-setting, Harbridge notes, is critical to evaluating which types of political reforms would reduce partisanship in Congress.



Challenging Standards: Investigating Conflict and Building Capacity in the Era of the Common Core

Jonathan Supovitz and James Spillane, eds., Rowman & Littlefield, 2015, 208 pp.

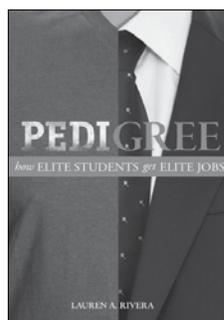
Education professor and IPR associate **James Spillane** and Jonathan Supovitz of the University of Pennsylvania tackle the hotly debated Common Core State Standards in *Challenging Standards*. Forty-six states have adopted the Common Core system, which outlines new expectations for K–12 students’ learning in language arts and mathematics. The book addresses implementing Common Core in schools and systems, enactment in classrooms, building systems capacity through relationships, and navigating politics. It includes the perspectives of 20 education leaders—including Spillane and professor of human development and social policy and IPR associate **Carol Lee**—on a variety of topics related to Common Core. Spillane’s chapter on standards implementation, for instance, addresses the necessity of paying attention to education infrastructures when considering standards, as some school subjects have more elaborate infrastructures for supporting instruction than other subjects, which could have large consequences as schools put standards into practice.



Who Governs? Presidents, Public Opinion, and Manipulation

By James Druckman and Lawrence Jacobs, University of Chicago Press, 2015, 192 pp.

IPR political scientist **James Druckman** and the University of Minnesota’s Lawrence Jacobs use new presidential archival records to reveal what drives presidential decisions and political strategies. The target of the book is the long-standing presumption that government officials and presidents, in particular, pursue the national good, rather than the narrow agendas that they and their supporters favor. The researchers discover that successive presidents from both political parties tracked public opinion to equip them to move Americans to support them and their policies. While these presidents claimed to speak for “the people” and to serve the “public good,” the authors reveal the impact of narrow political segments and economic interests. Careful analyses of rarely studied White House records reveal the impacts—and limits—of the White House’s persistent efforts to move Americans to support them. The cumulative effect of their analysis challenges ideals of American democracy.



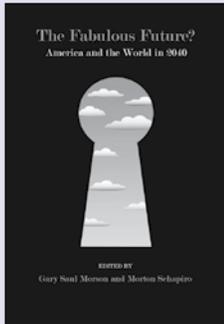
Pedigree: How Elite Students Get Elite Jobs

By Lauren Rivera, Princeton University Press, 2015, 392 pp.

IPR associate **Lauren Rivera**, who is associate professor of management and organizations, interviewed and observed hiring professionals at elite investment banks, consulting firms, and law firms, perceiving that they overwhelmingly favored white, upper-class applicants during every stage of the hiring process. Firms recruited only students from specific prestigious educational institutions and heavily weighed extracurricular activities during the resume screening process, which provided a leg up for affluent candidates who could afford to participate in these activities. Firms also judged interviewees on “fit”—ostensibly, how well they would fit in with the company, but in reality, how much they had in common with their interviewer, who was likely someone white and upper-class. Though non-white, non-upper-class individuals had paths available to them to obtain a job offer, on the whole, Rivera notes, these employers end up “systematically excluding smart, driven, and socially skilled students from less-privileged socioeconomic backgrounds from the highest-paying entry-level jobs in the United States.”

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Faculty Books *(Continued from page 17)*



The Fabulous Future? America and the World in 2040

Gary Saul Morson and Morton Schapiro, eds., Northwestern University Press, 2015, 248 pp.

Fifty years ago, *Fortune's The Fabulous Future in America in 1980* featured experts' predictions on what life would look like in the United

States in 1980—from nuclear-powered refrigerators to mail delivered by intercontinental missiles. Now, **Morton Schapiro**, Northwestern professor, president, and IPR economist, and **Gary Saul Morson**, Dumas Professor of the Arts and Humanities at Northwestern, have edited a volume inspired by *The Fabulous Future*, offering their own predictions of what the United States will look like in 2046, as well as those of today's thought leaders. The researchers also contributed a chapter on the future of education, forecasting that the focus on STEM will decrease while the liberal arts will remain popular; online courses will not supplant in-person teaching, and fewer international students will choose to study in the United States. Still, Schapiro and Morson admit to being optimistic about the future of education, and the importance of a college degree.

Guggenheim *(Continued from page 1)*

and continuing achievements in original research." Membership in the academy is a widely accepted mark of excellence in science.

Monica Prasad

Prasad, professor of sociology, studies comparative-historical sociology, economic sociology and political sociology.

With her Guggenheim fellowship, Prasad is writing a book about the Reagan tax cut of 1981, based on access to previously unseen documents from the Reagan presidential library.

"The idea is that the U.S. has fallen into this low-tax regime where politics is always about cutting taxes, and the Reagan tax cut was really the start of that," Prasad said.

Her recent book, *The Land of Too Much: American Abundance and the Paradox of Poverty* (Harvard University Press, 2012), received several awards, including one from the American Sociological Association for the best book in sociology in 2014. The book develops a demand-side theory of comparative political economy to explain the surprisingly large role of the state in the United States, its origins in the 19th-century revolution in agricultural productivity, and its consequences for undermining a European-style welfare state and leaving U.S. economic growth dependent on "mortgage Keynesianism."

Her first book, *The Politics of Free Markets* (University of Chicago Press, 2006), was also recognized, and she counts a Fulbright and a National Science Foundation CAREER Award among her other honors.

Jennifer Richeson

Richeson, MacArthur Foundation Chair and professor of psychology and of African American studies, researches the social psychological phenomena of cultural diversity. Her work concerns social group membership, particularly the ways race and gender impact the way people think, feel, and behave.

"The fellowship will allow me to integrate the insights from my own research on interracial interactions and diversity with those emerging from organizational psychology, sociology, and political science in a book project on what I call the 'paradox of diversity,'" said Richeson. "Specifically, how can we understand why actual and perceived increases in racial/ethnic diversity can yield both more egalitarian and more exclusionary racial attitudes, and, similarly, engender mixed outcomes in other important life domains, for example, social isolation, creativity, task performance."

Richeson's work has been published in various scholarly journals, including *Psychological Science*, *Journal of Personality and Social Psychology*, and *Journal of Experimental Social Psychology*. In 2009 she received the Distinguished Scientific Award for Early Career Contributions to Psychology from the American Psychological Association. She was named one of 25 MacArthur Fellows in 2006 for her work as a leader in "highlighting and analyzing major challenges facing all races in America and in the continuing role played by prejudice and stereotyping in our lives."

Influence of the Institute for Policy Research

Both Prasad and Richeson cite IPR as instrumental in helping them to shape their research.

"Just going to the [IPR] colloquia week after week allows me to see all of these different methods that people use in their research and familiarizes me with all of the different kinds of research that are happening," Prasad said.

"The rich interdisciplinary, intellectual environment that is IPR consistently motivates me to think beyond my own academic discipline to understand the research questions I pursue," Richeson added. "My fellowship project is definitely a product of this type of broad, cross-disciplinary thinking and perspective."

"Jenn and Monica both personify the IPR ideal of seeking connections across disparate ideas and engaging in pathbreaking social science research," said IPR Director **David Figlio**, Orrington Lunt Professor of Education and Social Policy and of Economics. "I am thrilled that they are both part of Team IPR."

Monica Prasad is professor of sociology, and Jennifer Richeson is MacArthur Foundation Chair and professor of psychology and of African American studies. Both are IPR fellows. For more information about their research, please visit IPR's website.

Recent IPR Working Papers

POLITICS, INSTITUTIONS, AND PUBLIC POLICY

The Emergence of Forensic Objectivity (WP-15-10) by *Jeremy Freese (IPR/Sociology) and David Peterson, Northwestern University*

A central goal of modern science, objectivity, is a concept with a documented history. Its meaning in any specific setting reflects historically situated understandings of both science and self. Recently, various scientific fields have confronted growing mistrust about the replicability of findings. Statistical techniques familiar to forensic investigations have been deployed to articulate a “crisis of false positives.” In response, epistemic activists have invoked a decidedly economic understanding of scientists’ selves. This has prompted a set of proposed reforms including regulating disclosure of “backstage” research details and enhancing incentives for replication. Freese and Peterson argue that, together, these events represent the emergence of a new formulation of objectivity. Forensic objectivity assesses the integrity of research literatures in the results observed in collections of studies rather than in the methodological details of individual studies and, thus, positions meta-analysis as the ultimate arbiter of scientific objectivity. Forensic objectivity not only presents a challenge to scientific communities but also raises new questions for the sociology of science.

Limits and Opportunities of Campaigning on the Web (WVP-15-09) by *James Druckman (IPR/Political Science), Northwestern University; Martin Kifer, High Point University; and Michael Parkin, Oberlin College*

The rise of new media has transformed campaign communications. Virtually all campaigns now launch websites, post on Facebook, Tweet, and send e-mails. How do campaigns view these technologies? What are the implications for the content of communications? The researchers address these questions with a focus on websites of U.S. congressional candidates. They argue that, on the one hand, campaigns face clear limits since they cannot control who visits their sites; yet on the other hand, campaigns can control the content posted. Thus, the authors predict homogeneity, across campaigns, in terms of target audiences, anticipated visitors, and the portrayal of overall campaign strategy, but variation when it comes to content (e.g., going negative, information about the candidate’s background, fund-raising appeals etc.). Consistent with prior work, the key to this content variation lies in whether the candidate is an incumbent or not. The researchers test their expectations with unique data from surveys of those involved with the creation and maintenance of congressional campaign websites between 2008 and 2014. The data strongly support their predictions. These results offer the first definitive portrait of how campaigns view and use websites, and what this means for congressional campaign communication.

Wage Theft, Public Policy, and the Politics of Workers’ Rights (WVP-15-08) by *Daniel Galvin (IPR/Political Science), Northwestern University*

Is wage theft exclusively an economic phenomenon or is there a political dimension to it as well? A long tradition of scholarship holds that the employer’s incentive to underpay rises with expected economic benefits, while the government-imposed costs are so low as to be effectively irrelevant. But this literature has narrowly focused on the federal-level regulatory regime, ignoring the rich variety of penalty schemes that operate in tandem at the state level. Using an original dataset of state-level wage-and-hour laws, new estimates of minimum wage violations, and difference-in-differences analyses of 10 recent wage theft laws, Galvin finds that stronger penalties can serve as an effective deterrent against wage theft, but the structure of the policy matters a great deal, as does its enforcement. Wage theft must, therefore, be seen as the result of policy choices—which are shaped by advocacy group pressures and political alignments—and not solely economic forces.

Cost-Benefit Analysis for a Quinquennial Census: The 2016 Population Census of South Africa (WVP-15-06) by *Bruce Spencer (IPR/Statistics), Northwestern University; Julian May, University of the Western Cape; Steven Kenyon, National Treasury of South Africa; and Zachary Seeskin, Northwestern University*

The question of whether to carry out a quinquennial census, or a census that is held every five years, is being faced increasingly by national statistical offices in many countries, including Australia, Canada, Ireland, Nigeria, and South Africa. The authors describe uses, and limitations of cost-benefit analysis for this decision problem, taking the case of South Africa’s 2016 census. The government of South Africa needed to decide whether to conduct a 2016 census or to rely on increasingly inaccurate post-censal estimates accounting for births, deaths, and migration since the previous (2011) census. The cost-benefit analysis compared predicted costs of the 2016 census with the benefits from improved allocation of intergovernmental revenue, which was considered by the government to be a critical use of the 2016 census, although not the only important benefit. Without the

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Recent IPR Working Papers *(Continued from page 19)*

2016 census, allocations would be based on population estimates. Accuracy of the post-censal estimates was estimated from the performance of past estimates, and the hypothetical expected reduction in errors in allocation due to the 2016 census was estimated. A loss function was introduced to quantify the improvement in allocation. With this evidence, the government was able to decide not to conduct a 2016 census, instead improving data and its capacity to produce post-censal estimates.

Effects of Census Accuracy on Apportionment of Congress and Allocations of Federal Funds (WP-15-05) by *Zachary Seeskin and Bruce Spencer (IPR/Statistics), Northwestern University*

How much accuracy is needed in the 2020 census depends on the cost of attaining accuracy and on the consequences of imperfect accuracy. The cost target for the U.S. 2020 census has been specified, and the U.S. Census Bureau is developing projections of the accuracy attainable for that cost. It is desirable to have information about the consequences of the accuracy that might be attainable for that cost or for alternative cost levels. To assess the consequences of imperfect census accuracy, Seeskin and Spencer consider alternative profiles of accuracy for states and assess their implications for apportionment of the U.S. House of Representatives and for allocation of federal funds. An error in allocation is defined as the difference between the allocation computed under imperfect data and the allocation computed with perfect data. Estimates of expected sums of absolute values of errors are presented for House apportionment and for allocations of federal funds.

Gendered Incentives for Legislative Compromise (WP-14-27) by *Nichole Bauer, University of Alabama; Laurel Harbridge (IPR/Political Science), Northwestern University; and Yanna Krupnikov, Stony Brook University*

Conventional wisdom suggests that incentives to compromise will be especially strong for female legislators, who might be punished more than male legislators for failing to compromise. Through two original national experiments, the researchers instead show that the role of a legislator's gender is limited. The way people respond to female legislators who do not compromise depends on two factors: first, whether these legislators are co-partisans or members of the opposing party, and second, whether the compromise is about a "women's issue." These results suggest that although female legislators might face stronger incentives to compromise under some conditions, under others, male legislators have greater incentives to engage in compromise.

Eliminating the Local Warming Effect (WP-14-26) by *James Druckman (IPR/Political Science), Northwestern University*

A growing body of work shows that perceived deviations in daily local temperatures alter individuals' global warming beliefs and concerns. Little research, however, explores the conditions under which this "local warming" effect occurs. Druckman presents an experiment that shows how a simple prompt reminding individuals to remember how the weather felt over the past year eliminates the local warming effect. The prompt severs the relationship between perceptions of the daily temperature with estimates of last year's temperature deviations, the basis on which many base their opinions on global warming. While the results do not reveal the frequency that local warming effects occur overall, they do demonstrate the limits of the effect and suggest ways to counteract it. *A synopsis of this working paper appeared in Nature Climate Change 5(3): 176–77.*

Long-Term Unemployment and the Great Recession: The Role of Composition, Duration Dependence, and Non-Participation (WP-14-25) by *Kory Kroft, University of Toronto; Fabian Lange, McGill University; Matthew Notowidigdo (IPR/Economics), Northwestern University; and Lawrence Katz, Harvard University*

While short-term unemployment returned to normal levels in 2013 following the Great Recession, long-term unemployment (LTU) among workers aged 25–55 has remained historically high. The rate for 2013 was 45 percent—more than double the 2008 rate. In an IPR working paper, Notowidigdo and his colleagues first explore how conventional compositional shifts, i.e., in demographics and occupations, do not explain this abnormally high rate. They then use Current Population Survey panel data for 2002–07 to calibrate a matching model that incorporates characteristics of the long-term unemployed, shifts in the length of time spent finding a job, and transitions in and out of the labor force. Their calibrated model accounts for almost all of the increase and much of the observed outward shift in the Beveridge Curve, or the relationship between the job vacancy and unemployment rates, between 2008 and 2013. This finding indicates a "self-perpetuating cycle" might be at work—as pointed to by the U.S. Congressional Budget Office and other recent studies—whereby the longer an individual remains unemployed the less likely it is that he or she will land an interview, and thus, the harder it becomes to re-enter the labor force. *This paper is forthcoming in the Journal of Labor Economics.*

State Legislative Institutions, Party Leaders, and Legislators' Weighted Preferences (WP-14-24) by Sarah Anderson, University of California, Santa Barbara; Daniel Butler, Washington University in St. Louis; and Laurel Harbridge (IPR/Political Science), Northwestern University

How, if at all, do parties and their leaders influence the behavior of legislators? Many scholars argue that institutions affect party leaders' power to influence rank-and-file members. The researchers assess one way this could happen, by changing the weight that members put on their leaders' positions. Leveraging variation in state-level institutions, they use original data on state legislators' preferences to test how term limits, legislative professionalism, and majority agenda control predict changes in the weights that legislators put on leaders' positions when forming their policy preferences. *This paper is forthcoming in Legislative Studies Quarterly.*

The Influence of Race on Attitudes About College Athletics (WP-14-23) by James Druckman (IPR/Political Science), Adam Howat, and Andrew Rodheim, Northwestern University

The questions of whether college student-athletes should be paid and/or allowed to unionize have generated a wide-ranging national debate. Public opinion on these issues is starkly divided along racial lines with African Americans being dramatically more supportive than non-African Americans. The authors posit that the race gap stems from fundamentally distinct mind-sets, and they present results from a nationally representative survey experiment that supports their expectations.

Legislative Holdouts (WP-14-21) by Sarah Anderson, University of California, Santa Barbara; Daniel Butler, Washington University in St. Louis; and Laurel Harbridge (IPR/Political Science), Northwestern University

Why do legislators "hold out," or vote against policies they ought to prefer to current ones? Harbridge and her colleagues' original survey of state legislators shows that over a quarter indicate that they would vote against a proposal even though it is closer to their ideal policy than the status quo. Following their pre-analysis plan, the researchers examine a number of possible factors that could explain why these legislators hold out. Their data indicate that Republicans, legislators in the majority, and those who fear that their constituents will punish compromise are most likely to hold out. The results show one way legislative gridlock can occur even when a "super majority" of legislators could be made better off by the policy change.

Competition over the Politicization of Science (WP-14-20) by Toby Bolsen, Georgia State University; and James Druckman (IPR/Political Science), Northwestern University

Few trends in science have generated as much discussion as its politicization—when one explores science's inherent uncertainty to promote a particular agenda. Politicization can stunt support for scientific adaptations by generating uncertainty about whether one can trust scientific information. Bolsen and Druckman study the effects of counteractive communications that precede or follow the politicization of science. Their results provide novel insights about science communication in a politicized era and offer a blueprint for future research.

QUANTITATIVE METHODS IN POLICY RESEARCH

Vaccine Approvals and Mandates Under Uncertainty: Some Simple Analytics (WP-14-29) by Charles F. Manski (IPR/Economics), Northwestern University

This working paper studies the decision problems faced by health planners who must choose whether to approve a new vaccine or mandate an approved one, but who do not know the indirect effect of vaccination. Manski studies vaccine approval as a choice between a zero vaccination rate (rejection of the new vaccine) and whatever vaccination rate the healthcare system will yield if the vaccine is approved. He studies the decision to mandate an approved vaccine as a choice between vaccinating the entire population (the mandate) and the vaccination rate that would be generated by decentralized healthcare decisions. Considering decision-making with partial knowledge, he shows that it might be possible to determine optimal policies in some cases where the planner can only bound the indirect effect of vaccination. Considering settings where optimal policy is indeterminate, he poses several criteria for decision-making—expected utility, minimax, and minimax regret—and derives the policies they yield. He suggests that performance of formal decision analysis can improve prevailing vaccine approval and mandate procedures.

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Recent IPR Working Papers *(Continued from page 21)*

CHILD, ADOLESCENT, AND FAMILY STUDIES

Who Gets to Look Nice and Who Gets to Play? Effects of Child Gender on Household

Expenditure (WP-15-03) by *Krzysztof Karbownik (IPR), Northwestern University; and Michal Myck, Centre for Economic Analysis, Poland*

The researchers examine the relationship between a child's gender and family expenditures using data from the Polish Household Budget Survey. Having a first-born daughter as compared with a first-born son increases the share of household expenditures related to children's and adult females' clothing, but reduces spending on games, toys and hobbies, and kindergarten. These expenditure patterns suggest an as-so-far unexamined role of gender in child development: Parents seem to pay more attention to how girls look, while favoring boys with respect to human capital investment. This could have consequences in adult life and contribute to sustaining gender inequalities.

PERFORMANCE MEASUREMENT AND REWARDS

Hospitals as Insurers of Last Resort (WP-15-07) by *Craig Garthwaite, Northwestern University; Tal Gross, Columbia University; and Matthew Notowidigdo (IPR/Economics), Northwestern University*

American hospitals are required to provide emergency medical care to the uninsured. The researchers use previously confidential hospital financial data to study the resulting uncompensated care, medical care for which no payment is received. They use both panel data methods and case studies from statewide Medicaid disenrollments and find that the uncompensated care costs of hospitals increase in response to the size of the uninsured population. The results suggest that each additional uninsured person costs local hospitals \$900 each year in uncompensated care. Similarly, the closure of a nearby hospital increases the uncompensated care costs of remaining hospitals. Increases in the uninsured population also lower hospital profit margins; this suggests that hospitals cannot simply pass along all increased costs onto privately insured patients. For-profit hospitals are less affected by these factors, suggesting that nonprofit hospitals serve a unique role as part of the social insurance system.

Does Medical Malpractice Law Improve Healthcare Quality? (WP-15-04) by *Michael Frakes (IPR/Law), Northwestern University; and Anupam Jena, Harvard University*

The researchers estimate the relationship between medical liability forces and healthcare quality using clinically validated measures of treatment quality rather than the coarse measures previously relied upon by scholars. Drawing upon remedy-focused tort reforms—e.g., damage caps—they estimate that current liability rules only modestly improve quality. They contend that this limited independent impact might reflect the structural nature of the present system of rules, which hold physicians to standards determined according to industry customs. They find evidence suggesting, however, that physician practices might respond more significantly to substantive reforms, which alter the standards against which physicians are judged.

The Effect of Hospital Acquisitions of Physician Practices on Prices and Spending (WP-15-02) by *Cory Capps, Bates White Economic Consulting; David Dranove (Kellogg/IPR) and Christopher Ody, Northwestern University*

From 2007–13, nearly 10 percent of physicians in the researchers' sample were acquired by a hospital, increasing the share of physicians that are hospital owned by more than 50 percent. Supporters of hospital-physician integration argue that it offers the promise of significant cost savings while opponents raise concerns that integration will result in higher prices. Despite the heightened interest in hospital-physician integration, the research evidence is mixed and of questionable quality. Prior studies suffer from significant data problems that the researchers overcame by using administrative claims data provided by one or more anonymous insurer(s) operating in a number of states. With their data, they are able to (a) identify physician integration at the level of the individual practice, (b) study provider transaction prices before and after integration, and (c) examine broader medical spending. Capps, Dranove, and Ody find that, on average, physician prices increase nearly 14 percent post-integration—with roughly a quarter of this increase attributable to the exploitation of payment rules—and that price increases are larger when the acquiring hospital has a larger share of its inpatient market. They find no evidence that integration leads to reductions in spending, even four years post-integration.

POVERTY, RACE, AND INEQUALITY

Expanding the School Breakfast Program: Impacts on Children’s Consumption, Nutrition, and Health (VWP-14-28) by *Diane Whitmore Schanzenbach (IPR/Human Development and Social Policy), Northwestern University; and Mary Zaki, University of Maryland*

The researchers use experimental data collected by the U.S. Department of Agriculture to measure the impact of two popular policy innovations aimed at increasing access to the school breakfast program. The first, universal free school breakfast, provides a hot breakfast before school (typically served in the school’s cafeteria) to all students regardless of their income eligibility for free or reduced-price meals. The second is the Breakfast in the Classroom program that provides free school breakfast to all children to be eaten in the classroom during the first few minutes of the school day. The researchers find both policies increase the take-up rate of school breakfast, though much of this reflects shifting breakfast consumption from home to school or consumption of multiple breakfasts and relatively little of the increase is from students gaining access to breakfast. They find little evidence of overall improvements in child 24-hour nutritional intake, health, behavior, or achievement, with some evidence of health and behavior improvements among specific subpopulations.

EDUCATION POLICY

Not Too Late: Improving Academic Outcomes for Disadvantaged Youth (WP-15-01) by *Philip J. Cook and Kenneth Dodge, Duke University; George Farkas, University of California, Irvine; Roland G. Fryer, Jr., Harvard University; Jonathan Guryan (IPR/Human Development and Social Policy), Northwestern University; Jens Ludwig, Susan Mayer, and Harold Pollack, University of Chicago; and Laurence Steinberg, Temple University*

The researchers report on a randomized controlled trial of a school-based intervention that provides disadvantaged youth with intensive individualized academic instruction. The study sample consists of 2,718 male ninth and tenth graders in 12 public high schools on the south and west sides of Chicago, of whom 95 percent are either African American or Hispanic and more than 90 percent are eligible for free or reduced-price lunch. Participation increased math achievement test scores by 0.19 to 0.31 standard deviations (SD)—depending on how the researchers standardized—increased math grades by 0.50 SD, and reduced course failures in math by one-half, in addition to reducing failures in nonmath courses. While some questions remain, these impacts on a per-dollar basis—with a cost per participant of around \$3,800, or \$2,500 if delivered at larger scale—are as large as those of almost any other educational intervention whose effectiveness has been rigorously studied.

Does Reading During the Summer Build Reading Skills? Evidence from a Randomized Experiment in 463 Classrooms (VWP-14-22) by *Jonathan Guryan (IPR/Human Development and Social Policy), Northwestern University; James Kim and David Quinn, Harvard University*

There are large gaps in reading skills by family income among school-aged children in the United States. Correlational evidence suggests that reading skills are strongly related to the amount of reading students do outside of school, but experimental evidence testing whether this relationship is causal is lacking. Results from a randomized evaluation of a program that mails one book per week to participants over summer break suggest that the program increased reading during the summer. They show significant effects on reading comprehension test scores in the fall for third grade girls—but not for third-grade boys or second graders of either gender. Additional analyses show evidence that reading more books generates increases in reading comprehension skills, particularly when students read carefully enough to be able to answer basic questions about the books they read, and particularly for girls.

Biology and Beyond *(Continued from page 1)*

In McDade's view, one of the most significant achievements of human genome sequencing, which was completed in 2003, was pinning down the number of human genes. Gene mapping, however, only points to an organism's inherited information; it cannot shed light on how genes "enter into conversation"

IPR Staff



Thomas McDade

with their environment to shape gene expression. In other words, genes are part of the conversation but don't dictate the entire discussion with respect to human outcomes.

"We spent more than \$3 billion to unlock the human genome and discover its secrets," said McDade, "yet we still haven't seen the initially promised breakthroughs in cures for diseases."

That's because these promises were based on what McDade calls an "overly simplistic model" of human biology. For example, even though a woman might have a mutation in a BRCA gene—responsible for tumor suppression—her chances of developing breast or ovarian cancer, while higher than those of the general population, are still not 100 percent. Similarly, humans all carry genes for inflammation that can contribute to diseases of aging, but how often or intensely these genes are expressed depends on environmental factors. McDade emphasizes the importance of moving beyond nature-versus-nurture or DNA-as-destiny metaphors. Doing so encourages us to reconceptualize the human genome as a dynamic substrate that incorporates information from the environment to alter function, with implications for well-being over a lifetime.

Creating complex biopsychosocial models requires new methods that cut across many disciplines. Such circumstances help explain why C2S, which just celebrated its 10th anniversary, has become an interdisciplinary knowledge hub. The center brings together anthropologists, sociologists, physicians, economists, epidemiologists, psychologists, and other social and biomedical scientists to answer a foundational question: How do socioeconomic, racial, and other types of disparities "get under our skin" to affect human health and development?

Inflammation and Early Environments

Considerable C2S research examines how early life experiences and environments affect the regulation of inflammation in later life. Inflammation is a necessary component of human development, but a tricky one. Too little inflammation at certain stages can cause harm. So can too much. Inflammation is a culprit implicated in a variety of illnesses, including cardiovascular disease (CVD), Type 2 diabetes, and psychosocial conditions, such as depression and anxiety.

IPR developmental psychobiologist **Emma Adam** is an innovator in collecting and testing saliva, particularly to detect the presence of cortisol—a hormone that mediates a body's reaction to stress. McDade has led the development and validation of dried blood spots (DBS), which are collected on filter paper. Both are relatively easy to collect and transport in a variety of communities. For most researchers, studying human inflammation has involved drawing blood in a laboratory or other medical setting and then analyzing these draws for the presence of biomarkers—biological measures such as C-reactive protein (CRP) and cortisol. C2S faculty have devised easier, faster, and less costly ways to collect such information.

"For \$1, we can collect a blood sample with a finger prick, a method commonly used by diabetics to monitor their blood sugar," McDade said of the DBS method. No laboratory is needed, and researchers have the means to collect "hundreds, if not thousands, of samples" during site visits.

Now, McDade and others are refining these tools to allow researchers to collect data on "end-point" proteins, such as CRP and inflammatory cytokines, as well as to capture DNA methylation, an epigenetic mechanism that affects how genes are expressed.

He is working on a project with IPR health psychologist **Greg Miller** to do just that. A pioneer in the study of inflammatory gene expression, Miller has long collected molecular data through blood draws in laboratories, but these collections typically involve small samples. They also require study participants who are willing to undertake an often costly commute to a lab to provide a blood sample. The two researchers are conducting a study that will compare the results of gathering epigenetic and gene expression information from DBS with those from a traditional venipuncture blood draw.

If the DBS and venipuncture results prove consistent, this could lead to many other applications in a range of research settings. The project has received funding from the National Science Foundation and the National Institutes of Health.

Stress and Disadvantage

In addition to studying early-life influences, C2S researchers are exploring how adolescent and adult experiences shape outcomes. A particular focus is examining impacts for those from disadvantaged backgrounds. One of Adam's major research streams is targeting stress, especially the stress of racial discrimination, as one explanation for why minority groups tend to have worse health than whites.

One way Adam charts stress exposure is by measuring diurnal cortisol rhythms—levels of cortisol in saliva throughout the day. "You want to have high levels upon waking, because that helps to prepare you to meet the demands of the day," she explained. "You want a strong decline across the day, then low levels at night." When cortisol levels are lower than expected on waking and higher than expected at bedtime, the resulting "flattened" diurnal cortisol profile can indicate chronic stress and be a precursor to illnesses such as CVD.

In early work, Adam and her colleagues discovered that African American and Hispanic adolescents generally had flatter diurnal cortisol profiles than their white counterparts. Socioeconomic status or life stress could not explain these patterns. The researchers hypothesized that discrimination might play a role.

She and her colleagues measured “concurrent discrimination,” or discrimination currently happening, in young people from majority and minority backgrounds. When minority youth experienced discrimination, their cortisol slopes flattened, indicating chronic stress levels; when majority youth experienced discrimination, their cortisol slopes remained the same. “It seemed like the minority youth, in particular, were sensitive to the impact of racial and ethnic discrimination on their physiology,” Adam said.

Concurrent discrimination still did not account for all of the differences in cortisol slopes, so Adam also investigated past incidences of discrimination. She analyzed 20 years of longitudinal data from 120 adults who had experienced discrimination from seventh grade through their early 30s. This led to a remarkable discovery: African Americans who say they experienced high levels of discrimination as adolescents had flatter diurnal cortisol slopes and dramatically lower overall cortisol levels as adults.

This finding reveals that “subtle discriminatory acts matter for your biology, and also for your health,” Adam said. “It’s a costly societal problem that really needs to be addressed.”

She and her colleagues continue to explore the topic. One

of their recent research projects is the first to examine racial and ethnic differences in cortisol rhythms longitudinally. Their five-year, Chicago-based study of 229 white, African American, and Hispanic adults, 50 and older, reveals that older African American adults, like their younger counterparts, were more sensitive to stress than whites.

“We were able to watch the flattening of the slopes unfold in response to chronic stress,” Adam said, “revealing a potential pathway for flattening of these slopes in racial or ethnic minorities.”

Disparities and Adaptations Across Generations

Another area where C2S faculty have broken ground is in using biomarkers to trace how health disparities can transfer from one generation to the next.

Since his days as a doctoral student, IPR anthropologist **Christopher Kuzawa** has been interested in British epidemiologist David Barker’s Fetal Origins Hypothesis, which posits that adult CVD can be traced to undernutrition in the womb.

While writing his doctoral thesis in the late 1990s, Kuzawa traveled to Cebu, the second largest city in the Philippines,

to research how such patterns might become manifest in adults. To test this idea, he implemented biomarkers from the Cebu Study, a project that began in 1983 with more than 3,300 mothers. Its original aim was to examine how using formula or breastfeeding affected their newborns’ subsequent development.

Since then, Kuzawa and the Cebu Study team have continued to collect data on subsequent generations, including reams of biomarker data and DNA samples. This rich data source has led to many important findings by Kuzawa and others. One recent example from their study indicates that women with high stress-hormone levels give birth to smaller babies. Similarly, when a baby is born premature, indicating a prenatal stressor, that child goes on to have altered stress-hormone levels as an adult. These find-



Emma Adam

SESP Staff

ings point to long-term impacts of the mother’s stress levels on her offspring’s growth and health. Kuzawa is working on additional data collection with both Miller and McDade to examine adult outcomes of the study’s first cohort of infants, now in their 30s. The researchers have remained in contact with them throughout their lives and are now following the women in the cohort as they have children of their own—collecting data on their pre- and postnatal states of mental and physical health and adult environments. They plan to use the data to see which factors in the mother’s experience predict birth outcomes and long-term health in their offspring.

A second focus of Kuzawa’s research aims to clarify how humans managed to pull off an interesting trick,” Kuzawa said. “Although we evolved a large and energetically costly brain, our body’s resting energy expenditure is the same as predicted for a mammal of our size. How was this achieved?”

As part of a study, with funding from the National Science Foundation, Kuzawa and his colleagues used positron emission tomography (PET) and magnetic resonance imaging (MRI) brain scan data to estimate how much energy the brain consumes

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Christopher Kuzawa

across developmental stages. Their results explain why, after a certain age, it is difficult to guess the age of a toddler or young child by physical size. By childhood, the brain has become “an energy monster,” nearly halting body growth and using twice as much energy as an adult’s brain.

“Our findings suggest that our bodies can’t afford to grow faster during the toddler and childhood years because a huge quantity of resources are required to fuel the developing human brain,” Kuzawa said, indicating why adequate nutrition is critical in childhood. “As humans we have so much to learn, and that learning requires a complex and energy-hungry brain.”

“As humans we have so much to learn, and that learning requires a complex and energy-hungry brain.”

Biology and Policy Relevance

Looking over the last decade of C2S’s growth and development, McDade says it was crucial for the center to be situated within IPR. Yet at the beginning, when faculty discussed launching the center, they raised a lot of questions about how it would fit within IPR’s framework.

“We were at the very early stages of investigation about how social environments and social policy may matter to biology and health,” McDade recalled. There were no easy answers for how C2S was going to realize its aim of policy-relevant research. Yet C2S faculty also recognized that even if they were not doing policy research immediately, they would get there a lot faster by being part of IPR and collaborating with colleagues who do policy work, he said.

“And we have gotten there,” he continued. “It’s a unique intellectual moment, when the population sciences can make important contributions to our understanding of human biology and its complex, multilevel determinants.”

Thomas McDade is Carlos Montezuma Professor of Anthropology and director of Cells to Society (C2S). Emma Adam is professor of human development and social policy. Greg Miller is professor of psychology. Christopher Kuzawa is professor of anthropology. All are IPR fellows. This article originally appeared in CenterPiece, the magazine of Northwestern University’s Office for Research.

Digital Age *(Continued from page 1)*

Technology, Parents, Early Childhood Educators

Drawing on two recent studies, Wartella discussed technology’s impact on preschool- and elementary-age children, both at home and in the classroom.

She and her team surveyed a nationally representative sample of more than 2,300 parents with children up to eight years old about incorporating technology in their family lives and parenting practices. While parents reported using technology as a tool to manage daily life, they still rely on printed books and toys more than technology. Less than a third of parents reported conflicts over home media use, such as fights over too much screen time, and they were optimistic about the educational benefits of media. Interestingly, the researchers discovered that how much time parents spent using technology mirrored the amount of time their children did.

“It’s not that the young children are dragging their parents into the technology age,” Wartella said. “It’s that the parents of these young children are, indeed, establishing what kind of media use is going on in the home.”



Leslie Kassoff/LK Photos

Dr. Kelly Whitney, chief product officer of e-learning company iCivics, asks a question about early learning and technology.

In the second study, Wartella and her colleagues surveyed more than 2,000 preschool teachers from the National Association for the Education of Young Children (NAEYC) before and after the organization changed its classroom technology policy. Until 2012, NAEYC did not recommend using technology in the classroom, but by 2014, it had changed it to advise using “developmentally appropriate” classroom technologies.

The survey revealed a clear shift to using more technology following the policy change. Most obvious was an “enormous jump” in classroom iPad use, from 29 percent of classrooms in 2013 to 55 percent in 2015.

While the researchers uncovered few differences in access to technology based on children’s income levels, they did encounter “secondary barriers” that would prevent successful technology implementation in classrooms.

“Barriers to using technology in preschools are not access issues, but teachers’ comfort, training, and parental expectations,” Wartella said.

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Digital Age *(Continued from page 26)*

Beyond the Digital Divide

Much has been made over the concept of the “digital divide,” which separates technology users into those who have technology and those who do not. Yet, this is a misleading concept: Just because a person has access to technology, it does not make him or her an “effective and efficient user,” Hargittai explained.

For instance, is a person using new or outdated technology? Does a user have low- or high-quality Internet service, limited or unlimited data usage, and support for resolving technological problems, or none at all? These factors can result in differentiated Internet-use skills and lead to real-world implications, from understanding search functions to assessing online credibility and maintaining one’s online privacy and security.

Hargittai then went on to bust the common myth that all “young people are automatically savvy with technology just because they are born with it.” As an example, she pointed to a survey question from the Web Use Project that she leads, where only 12 percent of young adults were able to correctly identify a bank’s legitimate website.

“Why is this important? It’s important for assessing the credibility of content. It’s important for avoiding phishing or identity theft,” Hargittai said. “These numbers are truly shocking.”

In her extensive research into young people’s Internet skills, Hargittai also underscored that those from less-privileged backgrounds are less skilled at using the Internet than their more-privileged peers.

While an Internet user’s socioeconomic status “is not something that is easy to fix quickly,” she noted that a classroom skills intervention could help to bridge these digital-skill deficits.

“We’re not doing any favors to young adults or children by not offering technological education and support,” Hargittai concluded. “We’re doing a disservice to them—and, frankly, society as a whole—if we don’t educate them to be more informed citizens.”

The Upsides, Downsides to Online Instruction

The number of online course offerings has skyrocketed in the past decade, and Figlio, who was among the first to empirically evaluate the impact of online coursework on student achievement, has been keeping tabs on its growth and the nascent research.

He began by outlining some of the pros and cons of online instruction: Online courses allow for more flexibility and can be much cheaper, especially when offered to many students at

once. On the other hand, they face a host of potential pitfalls, from reduced student accountability to a loss of community feel.

Figlio and his colleagues conducted the first randomized experiment to examine how students performed in an introductory economics course at a large Florida university. Students were assigned to either a large lecture or an online course, both with the same professor, same coursework, and same exams. Across the board, students performed better in the face-to-face setting. Most importantly, it was the “relatively low achievers” who performed the most poorly in online classes—students whose SAT scores and high school GPAs were below average for the university, as well as males, and Latino students. He pointed out that other experiments evaluating online instruction, face-to-face instruction, and “hybrid” instruction (part face-to-face and part online) have produced similar results.

“We’re starting to see a common thread through all of the experimental literature I know of on this subject, which is that the more online you get, the worse the low achievers do,” Figlio said.

He touched on a study from the University of California, Davis in which researchers, led by Cassandra Hart, a former IPR graduate research assistant, evaluated 1 million students in 110 community colleges in California—students who tend to be relatively low achieving. The study’s result? “In almost every case, in almost every community college in the state of California, students who were doing the online classes were underperforming,” Figlio said.

“Just to put these numbers in perspective, here—in some of these cases, you’re 10–15 percent less likely to complete the class,” he added. “That’s a pretty big number when you’re thinking about cases of college affordability and what you’re getting with your tuition dollars.”

Figlio noted that there are many very successful online education models, but the issue, he said, is taking those models to scale.

“Investing in online education could be worth it,” Figlio closed. “We need to keep pushing, keep figuring out ways to use the technology.”

Ellen Wartella is Al-Thani Professor of Communication and an IPR associate. Eszter Hargittai is April McClain-Delaney and John Delaney Research Professor and an IPR associate. Both Wartella and Hargittai are in the School of Communication. IPR Director David Figlio is Orrington Lunt Professor of Education and Social Policy and of Economics. To view video of presentations from the event, go to www.ipr.northwestern.edu/events.



Eszter Hargittai poses with U.S. Rep. John Delaney (D-MD, 6th District), who, with his wife April McClain-Delaney, endowed Hargittai’s professorship.

Summer Research Job Offers Policy Insights, Some Travel

Northwestern undergraduates obtain resume-building experiences

When **Shalin Shah**, a senior majoring in communication sciences and disorders at Northwestern University, signed on to do research with IPR psychobiologist **Emma Adam** this summer, he knew that it was very likely that he would be cleaning up data and working in a lab. But he did not count on being sent to The Big Easy for six days to collect saliva samples from schoolchildren.



IPR summer undergraduate research assistant Jennifer Lee (r.) and graduate research assistant Jennifer Heissel label saliva samples from schoolchildren in New Orleans.

“I never expected to get the opportunity to go to New Orleans for a research project,” Shah said in an email, describing his experiences. “The research I did this summer was valuable experience in understanding how health can be affected by social and economic conditions, as they all become intertwined through policy.”

As one of 46 Northwestern undergraduates taking part in IPR’s Summer Undergraduate Research Assistants (SURA) program, Shah worked closely with Adam and her team members on this project to examine how cortisol—a hormone that regulates stress—is affected when elementary schoolchildren take standardized tests. The team collected saliva samples to measure participants’ cortisol levels. Shah also worked on another study, assessing how to improve teenagers’ sleep behavior.

According to Adam, Shah and his fellow undergraduate research assistants provided indispensable work.

“The research we did this summer really would not have been possible without the help of the IPR undergrad RA program,” she said.

The Benefits of Being a Summer RA

Since IPR launched the program in 1997, hundreds of Northwestern undergraduates have designed, conducted, and analyzed research projects with IPR faculty members.

Giving students the opportunity to extend what they have learned in class to a research setting is part of what makes the

SURA program unique, says IPR education researcher **James Rosenbaum**, who directs the program.

“People know a lot of things that they have gotten from their class, but they have no idea how to use it and where it comes from,” Rosenbaum said. “Research experience gives them that broader context.”

Gaining Experience

Senior **T’Keyah Vaughan**, who is studying biological sciences and science in human culture, got to work with two different faculty members in two different domains. With IPR social demographer **Quincy Thomas Stewart**, Vaughan examined how sociologists were ranked and the role gender and race might play in shaping those rankings. For a project with political scientist and IPR associate **Thomas Ogorzalek**, she collected Chicago election data for a project investigating how the city’s different populations vote.

“I never seriously considered research as a career until working with Professor Stewart,” Vaughan wrote in an email. “It really opened me to prospects I was not considering in the past.”

But even for those RAs who decide not to pursue graduate programs or research careers, the experience of seeing how research is conducted is instrumental.



IPR education researcher and SURA director James Rosenbaum (right) briefs students on what to expect as research assistants.

“We all have political ideas and presumptions, and they are premised on beliefs that we rarely test,” Rosenbaum explained. “Involvement in research gives you an opportunity to question that, and think critically about that—no matter what you do later in life.”

Emma Adam and James Rosenbaum are professors of human development and social policy and IPR fellows. Quincy Thomas Stewart is associate professor of sociology and an IPR fellow. Thomas Ogorzalek is assistant professor of political science and an IPR associate. For more information about the program, visit www.ipr.northwestern.edu/about/student-research/surap.

Improving Education Research Through Summer Training

IPR faculty lead IES-sponsored workshops

Classes might not have been in session, but two groups of education researchers from around the nation were hard at work this summer on Northwestern University's Evanston campus refining their use of cutting-edge education research methodologies. Sponsored by the Institute for Education Sciences (IES) and its National Center for Education Research (NCER), the two training sessions were both led by IPR faculty experts.

Thomas Brock, commissioner of NCER, attended the certificate ceremony for the Summer Research Training Institute on Cluster-Randomized Trials (CRTs), which celebrated its 10th anniversary this year.

"I think the most important and useful thing IES can do to ensure that the studies we fund are high quality is to support research and training methods like this workshop," Brock told CRT participants on July 30.

IPR statistician **Larry Hedges** and Michigan State University's **Spyros Konstantopoulos** ran the CRT Institute with help from former IPR graduate research assistants **Chris Rhoads** of the University of Connecticut and Columbia University's **Elizabeth Tipton**. IPR social psychologist and methodologist **Thomas D. Cook** led the Quasi-Experimental Design and Analysis workshop with **Will Shadish** of the University of California, Merced, as well as former IPR graduate RAs **Vivian Wong** of the University of Virginia and Indiana University's **Coady Wing**, in addition to former IPR postdoctoral fellow **Peter Steiner** of the University of Wisconsin–Madison.

Cluster-Randomized Trials

Hailing from organizations such as the research firm WestEd, the Michigan Department of Education, and the University of Arizona, CRT workshop participants spent 10 days learning about the use of cluster randomization in education research.

Cluster randomization is a methodological tool by which randomization takes place at the level of groups or clusters rather than among individuals. In the field of education, this method is particularly interesting because it allows researchers to measure an intervention's effect on individual students while accounting for group effects of teachers and classrooms.

At the 2015 session, participants listened to lectures, participated in skill-building labs, and worked on group projects applying cluster randomization. The institute culminated in a mock proposal process, allowing groups to receive feedback from their fellow participants and institute faculty, thereby improving their readiness to apply for competitive IES grants.

"The workshop has helped me to build my skills and also to build my confidence to submit a proposal and develop the relationships necessary to submit a proposal," explained participant **Brooks Bowden** of the Center for Benefit-Cost Studies of Education at Columbia University's Teachers College.

Irina Mokrova, a fellow workshop participant and postdoctoral research associate at the University of North Carolina at Chapel Hill echoed this sentiment.

"The workshop definitely increased my interest in

education research methodology. It also increased my confidence in pursuing topics related to education research methodology," noted Mokrova, who studies academic achievement in preschool and elementary schools.

Quasi-Experimental Designs

The second training program on quasi-experimental designs in education welcomed 28 participants for two weeks in August, and promoted the same type of collaborative, hands-on learning.

This year's training exposed participants to a variety of quasi-experimental designs, which are distinct in their use of methods other than randomization to compare groups.

Working closely with workshop leaders and fellow attendees to understand and analyze these designs, participants honed their methodological skills while making critical connections with other researchers.

For **Monique McMillian**, a workshop participant and associate professor at Morgan State University, analyzing quasi-experimental designs alongside other workshop participants will carry over into collaborative research projects outside of the summer training.

One such project will involve developing an interrupted time series study—a type of quasi-experimental design—with a fellow researcher she met during the workshop.

"I will definitely use the knowledge that I gained in combination with his expertise in the field to design a better study," McMillian said. "My goal is for the follow-up study to be in a top-tier journal, and I believe that the knowledge that I gained and the connections that I made will help facilitate this."

Developing the skills taught in these workshops is a critical element of pushing education research forward, Brock emphasized in his address to CRT participants.

"It's incumbent on all of us to continue to improve our methods and to demonstrate how scientific education research can be used, and is being used, to address and solve real problems," Brock said.

Commissioner Thomas Brock heads IES' National Center for Education Research. Larry Hedges is Board of Trustees Professor of Statistics and Education and Social Policy, and professor of psychology. Thomas D. Cook is Joan and Sarepta Harrison Chair of Ethics and Justice, and professor of sociology, psychology, and education and social policy. Both Hedges and Cook are IPR fellows. See IPR's website for more information about the workshops.



NCER commissioner Thomas Brock congratulates Brooks Bowden.

P. Reese

To Reduce Mass Incarceration, Recognize Humanity

Harvard's Bruce Western discusses damaging effects of incarceration

Today, about 1.6 million people are serving time in a state or federal prison in the United States. When including those on parole, awaiting trial, serving short sentences, or under other forms of correctional supervision, that number rises to 7 million.

Harvard sociologist **Bruce Western**, who has pioneered research on America's "prison boom," described the latest research findings in the field, depicted the struggles of former prisoners, and pointed to mass incarceration's pernicious and widespread effects during the Social Inequality and Difference Lecture on May 7. IPR and Northwestern's Department of Sociology jointly organized the event.

"The institutional landscape of poverty has been fundamentally transformed [by mass incarceration]," Western said.

In welcoming him to Northwestern University, IPR sociologist **Anthony Chen** assured the more than 60 attendees that, "If you've been pondering how we got to Ferguson and Baltimore and where we go from here, you've come to the right place."

Incarcerating the Group, Not Individuals

Western argues that it is not the "how many" behind the incarceration numbers that is as striking as the "who."

According to Western, about one-third of African American men born in the 1970s, and without a college education, will likely go to prison at some point in their lives. For those who dropped out of high school, nearly two-thirds are expected to serve time in prison.

"We're no longer incarcerating individuals, but we're incarcerating the group," Western revealed.

"We're no longer incarcerating individuals, but we're incarcerating the group."

Incarceration Passes Along Disadvantages

Western argued this unprecedented growth in concentrated incarceration has created a "very unusual kind" of social and economic inequality in the United States—an inequality that he calls "invisible, cumulative, and intergenerational."

Because incarceration is "hidden" from mainstream society, those who are incarcerated are often neglected by measures of economic well-being, he said. In examining data from the Current Population Survey (CPS)—a survey from the U.S. Census Bureau and the Bureau of Labor Statistics used to calculate national employment statistics—Western and his colleagues found that CPS "significantly overestimates" how many low-income African American men are employed because they are not including data on U.S. prisoners.

For instance, while CPS estimates that about 40 percent of black male dropouts between the ages of 20–34 are employed, when the researchers added inmates into their count, they found the true employment rate dropped to around 20 percent.

"Unless you make deliberate efforts to measure institutional populations, incarceration is often going to be overlooked in our social account of the economic well-being of the population," Western said.

Mass incarceration leads to a snowball effect of inequality, he continued. Its stigma makes it hard for ex-convicts to find jobs once they leave prison—heaping more difficulties on those who are already disadvantaged. Plus, those with prison records who do find jobs encounter more difficulty getting raises and higher salaries when compared with those who never went to prison.

Western also pointed to how the damaging effects of mass incarceration spread beyond those who were jailed, highlighting "intergenerational" inequality. Around 500,000 Latino and 650,000 white children have a parent behind bars. Among African American children, 1.2 million have an incarcerated parent—or one out of every nine black children. Current research suggests that children with incarcerated parents—especially boys—act out in more aggressive or depressive ways and do worse in school.

"The people who are affected by incarceration are also passing along disadvantages to their children as well," Western said.

Listening and Finding Common Ground

Reversing the system of mass incarceration, Western said, requires those without criminal records to listen to the stories of former convicts and find common ground.

In April 2012, Western led a team of Harvard researchers, who began a series of interviews with 135 men and women after they left prison and returned to neighborhoods in the Boston area.

In playing clips of interviews with a former convict during his talk, Western chronicled the struggles that former prisoners faced growing up in poor, often violent, neighborhoods—and the obstacles they encountered after leaving prison.

"Peter," for example, spent most of his adult life in prison for stealing cars, after living through a particularly violent childhood and drug and alcohol addiction. Today, he has found a minimum-wage job through a temporary agency, working from 6 a.m. – 3 p.m. He was able to reconnect with two of his three children, and gave his food stamp money to



Bruce Western discusses how mass incarceration leads to a snowball effect of inequality.

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IPR Research Quoted in White House Report *(Continued from page 32)*

Guryan on Reaching Disadvantaged Youth

Guryan's research points out programs that can improve opportunities for disadvantaged youth to reach their potential and contribute to society. One of four programs highlighted for reducing violence is the Becoming a Man (B.A.M.) program studied by Guryan and his colleagues at the National Bureau of Economic Research (NBER). The researchers found that participation improved school outcomes and reduced violent crime arrests by 44 percent.



Jonathan Guryan

To improve decision making in high-stress situations, the B.A.M. program, which was developed by Youth Guidance, a nonprofit in Chicago, makes

disadvantaged young men more aware of their automatic responses. In-school sessions might be supplemented by after-school training in sports such as martial arts to increase discipline and focus.

Another violence reduction program highlighted in the report is one that Guryan and his colleagues studied at the Cook County Juvenile Temporary Detention Center. A curriculum incorporating cognitive behavior therapy resulted in reductions of 22 percent in rates of return. In this program, trained staff prepared incarcerated youth to respond consciously in high-stress situations and also provided incentives for good behavior.

Guryan worked on both of these studies with Sara Heller, Anuj Shah, Jens Ludwig, Senhil Mullainathan and Harold Pollack.

The report also cites Guryan's 2008 study on racial discrimination and racial wage gaps. Guryan and the University of

Chicago's Kerwin Kofi Charles documented wage discrimination based on racial prejudice, concluding that "racial prejudice among whites accounts for as much as one-fourth of the gap in wages between blacks and whites." The report cites this study as evidence of the troubling obstacles in employment that young people of color face at various stages of their lives.

Schanzenbach on the Benefits of Preschool

Research findings by Schanzenbach are also cited in the White House report. One of the critical milestones discussed in the report is "entering school ready to learn," and Schanzenbach's research provides evidence of the benefits of preschool, especially for low-income children. She reported her findings for the Brookings Institution in "The Impacts of Expanding Access to High-Quality Preschool Education."

When Schanzenbach and Elizabeth Cascio of Dartmouth College tracked children in state-level universal preschool programs in Georgia and Oklahoma, they found school achievement gains that can be measured even in eighth grade. They also estimated the value of increased future earnings from these programs, showing "substantial benefits for each child, likely at least \$2.70 to \$7.20 in benefits for every \$1 spent."

The report also cites Schanzenbach's research on food stamps as it discusses how bridging income gaps can have long-term benefits for children. Schanzenbach's analysis with Hilary Hoynes of the University of California, Berkeley found that "nutritional assistance can improve health outcomes in childhood and adulthood, as well as economic self-sufficiency in adulthood, even if an individual received only temporary income support during childhood."

Ferrie on the Impact of Cash Transfers

The White House report also mentions the research of economist and IPR associate **Joseph Ferrie**, who studies the impact of cash transfers—for example, through government-sponsored welfare programs—on children in poor families. Ferrie discovered that children in families who received transfers lived longer, possibly due to improved health and higher educational attainment and income.

All three of these IPR faculty are economists and research associates with NBER. Guryan researches racial inequality and the economics of education, while Schanzenbach researches early childhood education, economics of education, anti-poverty policy, education and health. Ferrie examines economic mobility, the link between early-life circumstances and later-life outcomes, and the migration from rural areas to cities and towns.

Jonathan Guryan is associate professor of human development and social policy. Diane Whitmore Schanzenbach is associate professor of human development and social policy. Both are IPR fellows. Joseph Ferrie is professor of economics and an IPR associate. This article has been edited from the original published by Northwestern's School of Education and Social Policy.

Mass Incarceration *(Continued from page 30)*

his sister, who housed him. Yet, as Western explained, there is always the possibility that he could relapse, or return to prison. But to break the cycle of mass incarceration, he said, Americans must recognize the possibility of failure—offering help to those who relapse to addiction or who might again come into conflict with the law.

"Can we imagine a citizenry that includes Peter along with the rest of us?" Western asked. "We help people, even when the outcome is uncertain. Because in these cases, the struggle itself is intrinsically meaningful. It's meaningful for those who might envision a better future, and it's meaningful for a community that's done something more than abandon the most disadvantaged among us."

Bruce Western is Guggenheim Professor of Criminal Justice Policy, professor of sociology, and director of the Malcolm Wiener Center for Social Policy at Harvard University.

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IPR Faculty Research Cited in White House Report Evokes promising programs to improve outcomes for disadvantaged youth

Cezary P.



A recent report by the President’s Council of Economic Advisers highlights key findings of IPR economists **Jonathan Guryan**, who has studied youth programs to reduce crime and school dropout rates; **Diane Whitmore Schanzenbach**, who

has studied universal preschool and income inequality; and economist and IPR associate **Joseph Ferrie**, who researches the impact of cash transfers to poor families. The three researchers contributed key evidence about promising programs for the president’s policies on reducing violence and improving education outcomes among disadvantaged youth.

“Economic Costs of Youth Disadvantage and High-Return Opportunities for Change” recommends investment in proven strategies for improving youth opportunities and outcomes. It outlines “key milestones in every young person’s life where we can apply evidence-based practices, and proven strategies, to improve outcomes for our children. When America misses these milestones, we fail our youth—and imperil our economic future,” the report states.

The Council of Economic Advisers (CEA), an agency within the Executive Office of the President, was established by Congress in the Employment Act of 1946. Its three members provide the president with advice on economic policy, which is distilled from the best economic research and empirical evidence available, according to the CEA’s website

(Continued on page 31)

Upcoming IPR Events

Courtesy of A. Leigh



Andrew Leigh

On October 27 in Evanston, **Andrew Leigh**, Australian parliamentarian and shadow assistant treasurer, will speak on “Humans Need Not Apply: Will the Robot Economy Pit Entrepreneurship Against Equality?” as IPR’s Fall 2015 Distinguished Public Policy Lecturer. Before being elected to Australia’s House of Representatives in 2010, he was a professor of economics at the Australian National University. His books include *The Luck of Politics* (2015) and *The Economics of Just About Everything* (2014).

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Michael McPherson, president of the Spencer Foundation, will discuss how an education foundation president deals with performance measurement at a special IPR lecture on November 10 in Evanston.

S. Weiser



Dale Russakoff

Author and journalist **Dale Russakoff** will speak about her book, *The Prize: Who’s In Charge of America’s Schools?* (2015), on December 1 in Evanston.

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On December 4 in Chicago, IPR will hold an interdisciplinary policy research briefing to discuss findings on women leaders. It will feature IPR psychologist **Alice Eagly**, IPR economist **Lori Beaman**, and Brigham Young political scientist **Christopher Karpowitz**.

Details on event registration are available at www.ipr.northwestern.edu.