

PURDUE

PURDUE UNIVERSITY RESEARCH CENTER IN ECONOMICS



ANNUAL REPORT 2022-23

“ STUDENTS IN PURDUE’S NEW SCHOOL OF BUSINESS WILL RECEIVE A WELL-ROUNDED EDUCATION, INCLUDING THE HISTORY, PHILOSOPHY, AND ECONOMIC THEORY OF FREE MARKET SYSTEMS AND A FIRM GROUNDING IN THE LIBERAL ARTS AND THE COMMUNICATION SKILLS THAT COME WITH IT.

MITCHELL E. DANIELS, JR.

Purdue University President Emeritus



WELCOME

This past academic year was an eventful one. PURCE is now housed in the new Mitchell E. Daniels, Jr. School of Business. The vision is to prepare business leaders and entrepreneurs who understand key scientific and technological fields and have strong data analytics and communication skills. In addition, we will teach our students the history of free market capitalism to provide an informed sense of the nobility of their chosen business profession when pursued with integrity.

In November, David Hummels, a PURCE faculty affiliate and Distinguished Professor of Economics, announced that he would step down as dean and return to the faculty. I was asked to serve as co-chair of the Daniels School Transition Steering Committee with Purdue Trustee Gary Lehman. We were charged to search for a new leader and help design the structure and strategy of the new school. Together with an outstanding group of committee members we successfully hired Jim Bullard, President of the Federal Reserve Bank of St. Louis, as the inaugural dean of the Daniels School of Business. Recruiting a scholar with the reputation and experience of Dean Bullard exceeded our expectations. I am excited for the future of the Daniels School under his leadership.

PURCE also had a very successful year. We hosted our fifth year of economic policy luncheons, which bring local business and community leaders to campus to discuss the effects (both intended and unintended) of government policy. We hosted our fourth year of Indiana Statehouse information sessions in Indianapolis to enable legislators and executive branch leaders to interact with our faculty affiliates and discuss important policy issues facing Indiana. We expanded our student engagement through the Econ Scholars Program and by redesigning our Undergraduate Research Assistantship Program. Our core mission and greatest success continues to be producing rigorous empirical evaluation of government programs, laws and regulations to inform policy decisions. You can read more about each of these achievements in the pages of this report.

Our success is a direct result of the generous support of our donors. Your investment in PURCE has created a vibrant university center with an increasing ability to positively affect public policy. I offer my sincere gratitude to the foundations and individuals who helped us get started 10 years ago and to those who continue to support PURCE each year. Thank you!

Sincerely,

Kevin J. Mumford
Kozuch Director of PURCE





OUR MISSION

The Purdue University Research Center in Economics is home to select Daniels School of Business faculty who conduct data-driven research into how laws, regulations and government programs affect the market economy and the well-being of individuals and society.

We share our research findings in top academic journals and with media, policymakers, and community and business leaders, not to push any particular agenda but to provide data and information that can lead to more informed decisions. As a nonprofit research organization, we rely on the generous support of donors to accomplish our mission.

We have a reputation for first-rate, academic research demonstrated by our ongoing activities and publications. Our research areas include:

- COMPETITION
- CRIME
- EDUCATION
- FISCAL POLICY
- HEALTH
- INNOVATION
- MARKET SOLUTIONS
- MONETARY POLICY
- REGULATION
- STATE POLICES
- TRADE
- WORK

PURCE affiliates are often called upon to make sense of our world. In the 2022-2023 fiscal year, our faculty served as experts in publications and media outlets as varied as Inside Indiana Business, the Los Angeles Times, CW Network affiliate DC News Now and WIBC radio. Ralph Siebert's work on how Airbnb bans disrupt rental markets was featured in Fortune magazine. Cathy Zhang was interviewed by Newsweek for a story on stimulus checks. Jillian Carr's research on teen curfews was cited by NPR station WHYY.

We are housed in the Daniels School, one of the top business schools in the country, with 3,109 undergraduate students and 1,245 graduate students. Our school's strengths in analytical and quantitative analysis reflect Purdue's roots in STEM. The Daniels School's curriculum at both the undergraduate and graduate levels emphasizes calculus-based analytics and data analysis.

PURCE's mission of using empirical economic methodologies to analyze the effects of laws, regulations, and government programs fits perfectly with Purdue's strengths.

Located in West Lafayette, Indiana, Purdue University is a world-renowned, public R1 university. Student enrollment is 50,884, of which 75% are undergraduate students. Purdue students graduate in over 200 majors.

WHO WE ARE

PURCE AFFILIATED FACULTY

Timothy Bond	Associate Professor of Economics
Jillian Carr	Associate Professor of Economics
Mario Crucini	Semler Chair and Professor of Economics
Mike Eriksen	Professor of Economics and Director, Dean V. White Real Estate Finance Program
Mara Faccio	Duke Realty Chair in Finance and Professor of Finance
Farid Farrokhi	Assistant Professor of Economics
Trevor Gallen	Assistant Professor of Economics
Huseyin Gulen	Professor of Finance
Aaron Hedlund	Associate Professor of Economics
Russell Hillberry	Professor of Agricultural Economics and Courtesy Appointment with Department of Economics
David Hummels	Distinguished Professor of Economics
Mohitosh Kejriwal	Professor of Economics
Stephen Martin	Professor of Economics
Joe Mazur	Assistant Professor of Economics
John McConnell	Burton D. Morgan Distinguished Chair of Private Enterprise and Professor of Finance
Timothy Moore	Associate Professor of Economics
Kevin Mumford	Professor of Economics and Kozuch Director, PURCE
Seunghoon Na	Assistant Professor of Economics
Victoria Prowse	Marge Magner Chair and Professor of Economics
Mohammad Rahman	Daniels Chair and Professor of Management
Lindsay Relihan	Assistant Professor of Economics
Brian Roberson	Professor of Economics
Miguel Sarzosa	Assistant Professor of Economics
Ralph Siebert	Professor of Economics
Anson Soderbery	Associate Professor of Economics
Colin Sullivan	Assistant Professor of Economics
Justin Tobias	Loeb Chair and Professor of Economics
John Umbeck	Professor of Economics
Chong Xiang	Professor of Economics
Cathy Zhang	Associate Professor of Economics
Ben Zou	Assistant Professor of Economics

PURCE STAFF



KEVIN J. MUMFORD
Kozuch Director



JODI AYERS
Senior Administrative Assistant



NICOLE BROOKS
Media Relations Specialist

PUBLICATIONS

ACADEMIC PUBLICATIONS

PURCE faculty affiliates had more than 40 peer-reviewed research papers accepted at top academic journals, including:

American Economic Journal: Applied Economics
American Economic Journal: Macroeconomics
American Economic Review
European Economic Review
Journal of Political Economy
Journal of Public Economics
Management Science
Real Estate Economics
Review of Economic Studies
Review of Economics and Statistics
Review of Financial Studies

SUMMARIES

Michael D. Eriksen, **“Homeownership in Old Age and at the Time of Death,”** with coauthor Gary V. Engelhardt, *Economics Letters*. In this paper, researchers quantify what happens to housing assets as individuals age and die.

The authors used data from 1992-2014 from the Health and Retirement Study to examine the time-path of homeownership through death and measure what happens to housing assets when people die. They found that less than 8% of Americans over 100 years-old still own a home. Around 40% to 50% of Americans die as homeowners. Among these individuals, 52% of them bequeath their housing assets to a spouse, while 32% give their home to other heirs. Only 16% of Americans who die as homeowners spend down through equity extraction, asset depreciation or transition to non-ownership.



Aaron Hedlund, **“Rural-Urban Migration, Structural Transformation, and Housing Markets in China,”** with coauthors Carlos Garriga, Yang Tang, and Ping Wang, *American Economic Journal: Macroeconomics*. This paper explores the reasons for housing price increases during China’s housing market boom.

The researchers point to structural transformation and the migration from rural to urban areas to explain China’s rapid increase in urban housing prices. Structural transformation refers to China’s shift from an agricultural society to an industrial one, as China’s agricultural employment share was reduced from about 70% in 1980 to approximately 33% in 2012. This research suggests that housing price concerns in China should be addressed by land controls and developer entry regulations rather than mortgage restrictions.



Tim Moore, **“Disability Insurance Income Saves Lives,”** coauthored by Alexander Gelber, Zhuan Pei, and Alexander Strand, *Journal of Political Economy*. In this paper, the authors demonstrate that higher payments from U.S. Social Security Disability Insurance reduces mortality among beneficiaries.

This reduction in mortality affects lower-income beneficiaries. Every \$1,000 additional dollars in annual disability insurance benefits that these beneficiaries received reduced annual mortality by approximately 0.18 to 0.35 percentage points. That translates to around 830 to 1,340 lives saved by giving \$1,000 more income to each beneficiary. These findings prove that social insurance programs can provide previously unrecognized benefits in the form of mortality reduction.

Miguel Sarzosa, **“Unintended Consequences of Free College: Self-Selection into the Teaching Profession,”** with coauthors Ricardo Espinoza and Rosa Castro-Zarzur, *Economics of Education Review*. This paper explores the impact of a reform in Chile that made tuition costs for undergraduate studies free for students from the lower half of the income distribution.

They find that free access to undergraduate studies for lower-income students decreased the likelihood that top-performing students studied to enter a teaching profession. This negatively impacts the academic quality of students pursuing a teaching career. It was found that the free college policy reduced the probability for high-performing students that come from relatively low-income backgrounds of selecting a teaching major by 17%, showing that there can be unintended consequences from the provision of free college education.

Cathy Zhang, **“Lending Relationships and Optimal Monetary Policy,”** coauthored by Zachary Bethune, Guillaume Rocheteau, and Tsz-Nga Wong, *Review of Economic Studies*. In this paper, the researchers built a monetary model of corporate finance to examine how monetary policy influences lending relationships.

They then use this model to study the optimal response of a monetary authority, like a central bank, to a banking crisis that destroys a proportion of existing lending relationships. They found that, given that policymakers can commit over an infinite time horizon that the best policy involves central banks providing “forward guidance” to give clear indications about its future actions and help expedite the formation of new lending relationships.



Ben Zou, **“The Motherhood Penalty in China: Magnitudes, Trends, and the Role of Grandparenting,”** coauthored by Lingsheng Meng and Yunbin Zhang, *Journal of Comparative Economics*. In this paper, researchers study the labor market impacts of parenthood on women in China.

The authors find that while motherhood has negative impacts on women’s labor outcomes in China, these negative effects are shed sooner than in other countries. Grandparents play a significant role in Chinese families by providing childcare for new mothers. The prevalence of this arrangement is documented in the research, as a substantial share of older women quit their jobs or reduce work hours when their first grandchild is born. The role of grandparents in childcare may explain why the negative effects of motherhood on labor market outcomes are alleviated more quickly in China.





RESEARCH HIGHLIGHTS

Research examines disparity in murder rate among young black males

The murder rate in the U.S., while relatively high among other developed countries, has been declining since the 1990s. However, the murder rate for one demographic group, young black males, saw sharp increases throughout the 1980s and remained persistently higher than other demographic groups that experienced long-term declines in their murder rates.

Tim Moore and his coauthors explain why the murder rates for young black males rapidly increased and why they remain substantially higher than most other demographic groups in their paper, "Guns and violence: The enduring impact of crack cocaine markets on young black males," published in the *Journal of Public Economics*.

Moore contends that there is a meaningful relationship between the spread of crack cocaine markets and the sustained increase in the murder rate of young black males. Moore's estimates find that "even today, nearly 25 years after the peak of systemic violence in retail crack markets, crack-related violence and suicide may explain approximately one tenth of the gap in life expectancy between white and black males."

Moore and his coauthors explain that the structure of crack cocaine markets is especially suited for perpetuating violence. Crack cocaine offers an instant, affordable high to consumers that is highly addictive. In contrast to powder cocaine sales that occur primarily between a well-acquainted dealer and customer in private, crack cocaine was often sold in small doses in open-air drug markets to buyers who purchased multiple times a day. Multiple dealers compete, often violently, for the best spots to sell.

Curiously, while systemic violence from crack markets has declined, the gap in murder rates remains and disproportionately affects young black males.

Moore and his coauthors contend that an increased rate of firearm possession is a key reason why the murder rate of young black males remains so high relative to other demographic groups. While most young black males were not participating in the violence associated with crack markets, gun possession increased among those not involved in the drug trade seeking protection from the violence in communities most affected by crack cocaine markets.

The researchers document changes in gun possession among young black males by using gun-related suicides as a proxy for gun possession. They find a sustained increase in gun-related suicide rates among young black males that follows a similar path as murder rates for the same group. They also contend that the increased rates of gun possession among young black males fundamentally altered the lethality of violent interactions within this group.

Since every homicide needs both "a confrontation that rises to the level of violence" and "a method of violence sufficient to end a participant's life," Moore and coauthors say the emergence of crack markets could increase both factors.

Moore illustrates that the effects of crack markets on violence is long-lasting, as their evidence suggests that the murder rate for young black males is 70 percent higher than it otherwise would have been even 16 years after the emergence of these markets.

New framework shows how theory-of-mind ability in childhood affects adult outcomes

Examining the influence of childhood cognitive skills on adult outcomes has been the subject of extensive investigation within the realm of economics. Several studies concentrate on conventional cognitive skills like literacy and math proficiency, but two Purdue economists found that previous economic research on the topic has omitted a skill that is crucial for children to develop into successful adults.

In their discussion paper, "Cognitive Skills, Strategic Sophistication, and Life Outcomes," published in the *Journal of Political Economy*, PURCE faculty affiliate and Professor Victoria Prowse and Professor David Gill in collaboration with coauthor Eduardo Fe of the University of Manchester emphasize the importance of "theory-of-mind" as a cognitive skill.

Theory-of-mind is the ability to understand the thoughts, beliefs, desires and emotions of others. Theory-of-mind helps us imagine what others might be thinking or feeling even if their thoughts or feelings differ from our own.

In their paper, Prowse and coauthors use birth-cohort data from the Avon Longitudinal Study of Parents and Children to analyze how theory-of-mind ability in childhood impacts adult outcomes like social skills and educational participation.

They found that not only does higher theory-of-mind ability correspond to better social skills and higher educational participation, but increased proficiency in theory-of-mind is also tied to better educational attainment, lower fertility in early adulthood and better work performance in larger firms.

Prowse says that her own theory-of-mind abilities help her perform in her professional life. "In our roles as educators, we rely on our theory-of-mind to ensure effective instruction," she says. "I continually strive to understand the perspectives of my students, comprehending what they currently know and identifying what they aspire to learn."

By using a newly developed conceptual framework devised by Prowse and coauthors, this study is likely the first of its kind to systematically examine the effects of childhood theory-of-mind on adult outcomes in the context of economic behavior.

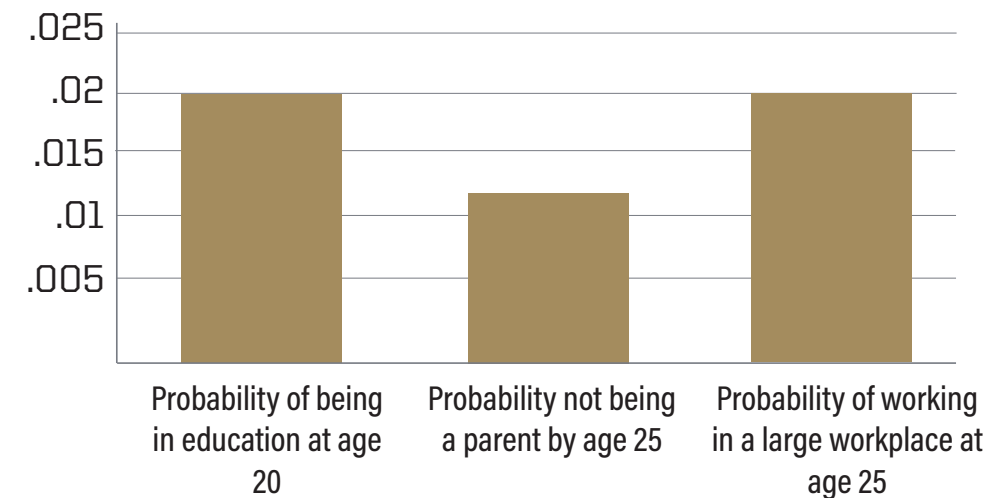
As teamwork and soft skills become increasingly important for continuous learning and overall success, the researchers anticipate that theory-of-mind will become even more valuable in the future. But what action can be taken to improve theory-of-mind ability in childhood?

Prowse and her colleagues say that investing in education might be the answer. Their evidence indicates that higher levels of primary-school spending increases theory-of-mind ability among students, which can lead to better life outcomes in adulthood.

"Investing in early childhood education can yield enormous returns. When implemented effectively, it delivers lifelong benefits not only to the individual but to society at large," says Prowse.

Prowse and coauthors aim to shape a new research agenda in economics, one that better captures people's comprehension of others' mental processes and emphasizes the significance of theory-of-mind and its cultivation as an important cognitive skill.

EFFECT OF A ONE-STANDARD-DEVIATION INCREASE IN CHILDHOOD THEORY-OF-MIND



Short-term rentals make housing less affordable

The rapid expansion of short-term rental platforms (or STRs) has raised concerns among legislators seeking to regulate companies like Airbnb, a leading online hosting platform at the forefront of conversations surrounding the short-term rental market. PURCE affiliate and Professor of Economics Ralph Siebert has examined the effects of regulating Airbnb to learn if short-term rentals pose a threat to housing affordability and/or competition.

Legislators in large U.S. cities like New York City and San Francisco have accused Airbnb of allowing a small group of profit-seeking professional hosts to earn millions of dollars at the expense of residents and nonprofessional hosts looking to rent a single property. To ease tensions with local governments, Airbnb implemented a self-imposed restriction that limits the number of properties a host can manage in certain cities.

Siebert examines the effects of a ban on short-term rentals on long-term rents in a paper titled "Airbnb or Not Airbnb? That is the Question: How Airbnb Bans Disrupt Rental Markets." This research study was conducted with coauthors Michael J. Seiler and Liuming Yang.

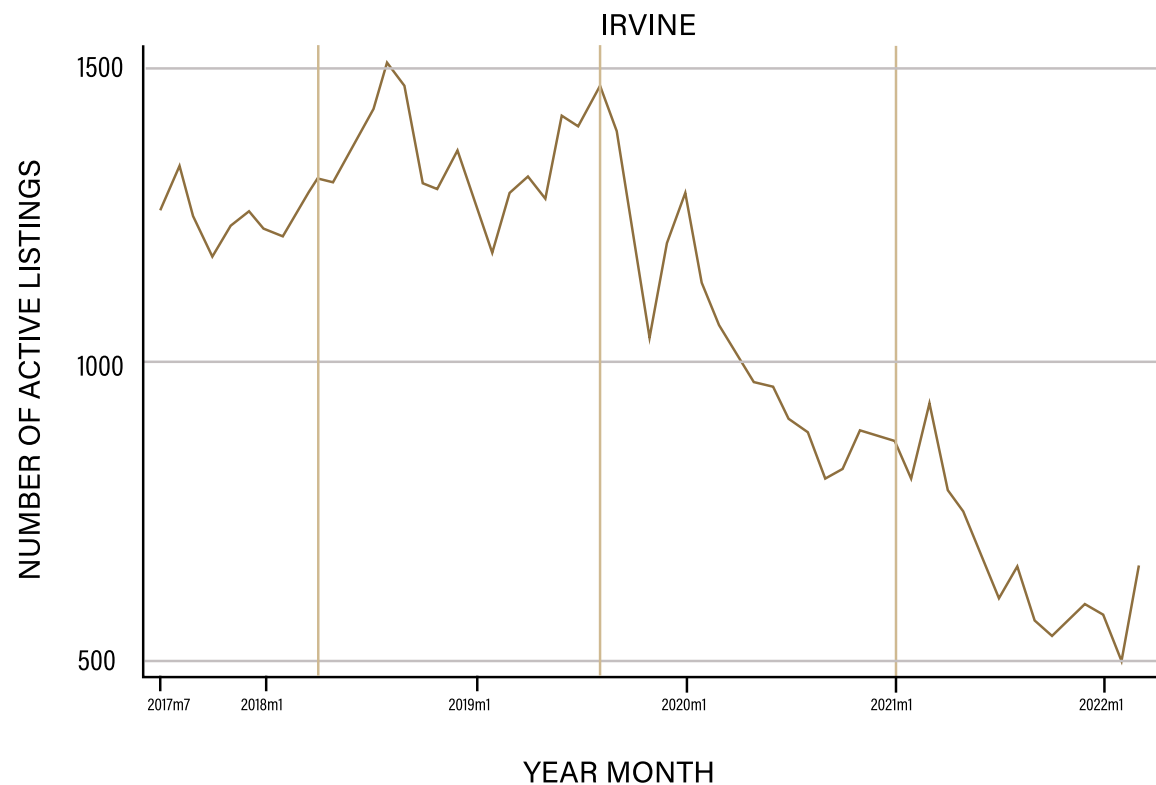
Siebert and coauthors address the notion that short-term rentals contribute to the housing affordability

crisis by incentivizing homeowners to convert long-term rentals to short-term rentals, which leaves a shortage of long-term rental properties and drives up the price. In 2018, the city of Irvine, CA, enacted a complete ban on short-term rentals in residential zones to encourage affordable housing.

Siebert finds that this short-term rental ordinance led to a 2.7% decrease in long-term rental prices on average. The short-term rental ban led to a reduction in \$72 million in annual total rental spending, or \$1,212 in average savings, on rent for Irvine residents per year.

According to Siebert, the key to the efficacy of policies that restrict short-term rentals is proper enforcement of the law. The city of Irvine was unique in its approach, as it strictly enforced its short-term rental legislation by assigning extra resources and a third-party company to monitor and detect violations. Airbnb listings in Irvine declined by 23.1%, which contrasts with cities like New York where a separate study found that 85% of active Airbnb listings were illegal.

The research provides legislators with crucial information regarding Airbnb's effect on local markets. By demonstrating that short-term rentals may harm housing affordability, these researchers provide evidence that highlights the importance of regulation and enforcement for local governments.



A better way to detect employment discrimination, employer preferences

Economists typically rely on "correspondence audit studies" to examine discrimination and analyze how different candidate characteristics are valued by employers. If someone wanted to figure out how unemployment spells, military service, or minority status affects the likelihood of a candidate being hired, correspondence audit studies are a common way to find an answer. Despite its strengths, this approach has some glaring issues that make a new method of obtaining the same important insights invaluable.

Colin D. Sullivan, an assistant professor of economics at Purdue, and his coauthors Judd B. Kessler and Corinne Low, have developed an entirely new technique to study employer preferences and detect discrimination. They call this experimental approach "incentivized resume rating" (IRR) and outline its costs, benefits, and future applications in their paper, "Incentivized Resume Rating: Eliciting Employer Preferences without Deception," published in the *American Economic Association's American Economic Review*.



**AMERICAN
ECONOMIC
ASSOCIATION**

The main problem with correspondence audit studies is that they use deception to solicit relevant information from employers. In a correspondence audit study, a researcher sends out fake resumes under the premise that they are real to measure employer responses to different candidate characteristics. This practice not only wastes the employer's time evaluating fake resumes and pursuing nonexistent candidates, but also damages the validity of future research and harms real job seekers whose resumes are similar to those sent by researchers.

Conversely, the incentivized resume rating system developed by Sullivan and his colleagues avoids using deception altogether. Using IRR, researchers inform employers that the resumes they send are not from real candidates from the outset. Those conducting the study then use the preferences the employers provide based on the fake resumes to match them with real job seekers. Unlike correspondence audit studies, incentivized resume rating rewards employers for their participation and motivates them to provide honest answers without deception.

Sullivan believes that there are two important reasons researchers should avoid deception in economics studies. "One is ethical," says Sullivan. "I think there are ethical and moral reasons that we don't want to deceive our subjects."

"Aside from the ethical point," Sullivan continues, "if people believe that we aren't telling the truth in our experiments then they're going to behave differently. If they think we're gaming them, they're going to game us right back, and we won't end up learning anything."

Another issue with correspondence audit studies is that researchers might confuse an employer's interest in a candidate with the employer's expectation that the candidate would accept a job offer. Incentivized resume rating solves this problem by distinguishing between how much an organization wants to hire a candidate versus how likely an organization thinks a candidate will want to work there in the first place.

Sullivan and his fellow researchers demonstrated this by using IRR in partnership with the University of Pennsylvania Career Services office. They evaluated employers' preferences for hiring hypothetical candidates by asking them how interested they would be in hiring the candidate and how likely they think it is that a candidate would accept a job offer if given one.

The development and implementation of incentivized resume rating is a first-of-its-kind methodology that answers many of the same questions that correspondence audit studies do without the need for deception and with clearer insights about employer preferences. Sullivan's study serves as a proof of concept for IRR, as it found evidence of discrimination among employers recruiting STEM candidates, lower returns to prestigious internships for women and minorities, and that employers report that white female candidates are less likely to accept job offers than their white male counterparts.

"I think this method could be really useful in a lot of areas," says Sullivan, citing the fact that IRR has been or could be used in other policy-relevant applications. Alex Chan, another economics researcher, used the methodology to understand how patients choose their doctors and detect discrimination against doctors of different ethnicities than their patients. Sullivan also contends that IRR could be used to detect discrimination in the housing market, which is further testament to the versatility of his new method.

OUR EVENTS

PURCE hosts events for the public and for select groups that highlight our faculty, their research and the research's ability to explain the effects, both intended and unintended, of policies.

ECONOMIC POLICY LUNCHEONS

Our monthly in-person luncheons on Purdue's West Lafayette campus continue to draw local elected officials, business and community leaders, students, and fellow academic peers. Each event features a catered lunch, research presentation and a Q&A with the faculty or guest speaker. Our lineup for the university's fall 2022 and spring 2023 featured:

- September 2022: Mario Crucini on "U.S. Fiscal Policy: Past, Present and Future"
- October 2022: Mike Eriksen on "The Changing Location of Affordable Housing in Indiana"
- November 2022: Victoria Prowse on "The Long-Lasting Benefits of Childhood Creativity"
- December 2022: Trevor Gallen on "The (Sometimes) Counterintuitive World of Taxation"
- January 2023: Aaron Hedlund on "Economic Policymaking in the White House"
- February 2023: Tim Moore on "The Opioid Crisis: Policy Options"
- March 2023: Lindsay Relihan on "Technology Innovation & Real Estate Markets"
- April 2023: John Umbeck on "Creating a Center for Economics"

PURCE AT THE STATEHOUSE

For the fourth consecutive year, PURCE and Purdue's Office of Government Relations offered a series of discussions on topics important to Indiana. These in-person faculty research presentations were held over lunch in an intimate meeting room across from the Indiana Statehouse on North Capitol Avenue in downtown Indianapolis.

Our 2023 series featured these faculty affiliates:

- Tim Moore on the current trends in the opioid crisis. He examined the effectiveness of policy options including treatment, law enforcement, prevention and harm reduction.
- Kevin Mumford on why there has been a significant and steady drop in the proportion of high school graduates enrolling in college. What does this mean for Indiana?
- Aaron Hedlund on what the latest research and data show about the extent to which public higher education investments translate to greater educational attainment versus subsidizing and facilitating brain drain to other parts of the country.

In addition to state senators and representatives, decision makers from the Indiana Department of Education, the Indiana Commission for Higher Education, Indiana University, Indiana State University and Vincennes University attended.

PURCE Kozuch Director Kevin Mumford, left, leads a discussion with Indiana higher education officials about the steady drop in the proportion of high school graduates enrolling in college.



Purdue Assistant Professor of Economics and PURCE faculty affiliate Miguel Sarzosa standing, at left, leads a discussion on the impact of modernizing Koranic schools on cognitive and socio-emotional development during the center's March 2023 Mid-Midwest Applied Microeconomics Workshop.



MID-MIDWEST WORKSHOP

PURCE faculty affiliate Tim Moore and center staff hosted the third annual Mid-Midwest Applied Microeconomics Workshop in March in the Daniels School's Rawls Hall. The day-long event brought together more than 30 academics from Indiana University at Bloomington, University of Illinois at Urbana-Champaign, University of Notre Dame and Purdue.

Research presentations included understanding the effects of criminal justice policies; how social norms affect teaching and family structure; and the implications of race and race-based policies.

"As at Purdue, there are many economists at nearby schools who do important policy research," Moore says. "This workshop brings these economists together to share ideas and provide feedback in a way that takes advantage of our common interests. Many of the papers presented have already gone on to be published in top econ journals, and it would not be possible without the support of PURCE."

IU's Dr. Kosali Simon, who brought several PhD students to the workshop, agrees that a major benefit of the gathering is the networking with peers and the feedback that faculty and students receive on their research.

"A venue like this is really useful for researchers in the applied economics area to collaborate, especially when there are many new people who enter regularly, and especially in these last few years where we have not had much interaction at in-person conferences," says Simon, the Herman B. Wells Endowed Professor and health economist.

"The workshop is known for generating very high-quality critiques of the research and rich discussion, which are very important inputs into research," Simon says.

Moore plans to continue organizing the collaborative workshop, with another event slated for fall 2023.

SPECIAL EVENTS

The center and its faculty affiliates participate in numerous events for public and private audiences each year, including the Daniels School's alumni conference and the Greater Lafayette Chamber of Commerce's annual Economic Forecast Luncheon.

In November 2022, Kevin Mumford and Cathy Zhang were guest speakers at the chamber's event, which draws hundreds of area business, community and government leaders. Mumford gave an overview of the economy on national and state levels, and Zhang, below, presented on inflation.



OUR PROGRAMS

"The students are so motivated and interested in doing the readings and thinking hard about them, they just run with it. It's been really fun to watch because it's not like a large classroom where I'm having to walk through the questions. The students really drive the conversations themselves."
— Dr. Jillian Carr, second from right



RESEARCH PROGRAMS

GRADUATE RESEARCH ASSISTANTSHIP PROGRAM

Funding is available for Economics Department PhD students being advised by a PURCE faculty affiliate. This funding covers university tuition and fees as well as a teaching/research assistantship.

RESEARCH GRANTS PROGRAM

Research grants are available to PURCE faculty affiliates as well as PhD students being advised by a PURCE faculty affiliate. Recipients produce policy-relevant research papers that are published in top academic journals.

UNDERGRADUATE STUDENT ENGAGEMENT PROGRAMS

ECONOMIC SCHOLARS PROGRAM

Students who have completed a principles of economics course are invited to apply for the program, with a preference for students who are not economics majors. The selected students take a one-credit-hour independent study course in which they complete readings and have a weekly discussion. They are each awarded a \$500 scholarship.

Our Econ Scholars Program is taught by a different professor each semester, and focuses on a different economic topic. Formative texts, including Frédéric Bastiat and John Rawls, are read and discussed alongside recent economic works.

In fall 2022, Jillian Carr taught the course and focused on law and crime in society. After discussing the role of public legal systems in civic life, her students debated the desirability of fictional legal systems. Students watched clips from HBO's *The Wire* and read Philip K. Dick's short story "The Minority Report" and excerpts from Terry Pratchett's fantasy novel *Guards, Guards!* Each piece of media was examined, discussed and evaluated for its depictions of crime and economics. Through analyses spanning both genre and time period, students were given the space to form their own opinions.

"It isn't a class, it's a conversation," Michael Heraty, a biological engineering major, said about Econ Scholars.

In spring 2023, Kevin Mumford taught Econ Scholars, and explored the concept of human capital investment in higher education. The class considered the role of government in education, student loans, and income share agreements.

UNDERGRADUATE RESEARCH ASSISTANTSHIP PROGRAM

Undergraduates meeting strong criteria are employed as hourly researchers. They learn best practices and assist faculty with real-world research projects.

In fall 2022 and spring-summer 2023, we paid eight undergraduates to assist with faculty affiliate research projects. The students were mentored and trained in areas including data archival work; the collection and cleaning a historical international trade database; building a survey and then analyzing the data collected; and researching increases in construction costs.

IMPACT

In 2022, PURCE faculty affiliates represented the center and the business school at more than 140 conferences and research seminars around the world.

These include the Federal Reserve Board of Governors' seminar; the Ifo Institute's Workshop on Labor Economics and Social Policy; Seoul National University's POMS Conference; and the RAND Corporation's Applied Micro Seminar, among many more:

ALABAMA
University of Alabama

CALIFORNIA
RAND Corporation
Southern California Private Equity Conference
The University of California, Davis
The University of California, San Diego
The University of California, Santa Barbara
University of Southern California

CONNECTICUT
Yale University

FLORIDA
Southern Economic Association

GEORGIA
Atlanta Federal Reserve
Financial Management Association
University of Georgia

HAWAII
University of Hawaii

ILLINOIS
Chicago Entrepreneurship Workshop
Midwest Finance Association
University of Chicago

INDIANA
American Economics Association
Craig W. Holden Memorial Conference
Global Trade Analysis Project
Indiana University
Midwest International Economics Group
Purdue University
University of Notre Dame

KANSAS
University of Kansas

KENTUCKY
University of Kentucky

MASSACHUSETTS
Jobs for the Future roundtable
NBER Summer Institute
Massachusetts Institute of Technology

MARYLAND
Social Security Administration
U.S. Census Bureau Center for Economic Studies
University of Maryland

MICHIGAN
Michigan Disability and Retirement Research Center
Michigan State University
Wayne State University

MINNESOTA
Midwest Economic Association
Society of Labor Economists

MISSISSIPPI
University of Mississippi

NEVADA
University of Nevada

NEW YORK
Baruch College
Columbia University
New York University Center for Experimental Social Sciences
Syracuse University

OREGON
Western Economic Association
International

PENNSYLVANIA
Federal Reserve Bank of Philadelphia
Pennsylvania State University
University of Pennsylvania

RHODE ISLAND
Brown University

TENNESSEE
American Economics Association
Vanderbilt University

TEXAS
Federal Reserve Bank of Dallas
Southern Methodist University

UTAH
University of Utah

VIRGINIA
William & Mary

WASHINGTON
University of Washington
Zillow

WASHINGTON, D.C.
Association for Public Policy Analysis and Management
Eastern Finance Association
Federal Reserve Board of Governors
Georgetown University
Inter-American Development Corporation
Journal of Economic Behavior and Organization
National Academies of Sciences, Engineering and Medicine: Committee on Law and Justice
Urban Economics Association

WISCONSIN
Society for Economic Dynamics

WEST VIRGINIA
West Virginia University

AUSTRALIA
Econometric Society
Australasia
Monash University
Society for the Advancement of Economic Theory
University of Melbourne

AUSTRIA
Institute for Advanced Studies
International Conference on Availability, Reliability and Security

CANADA
Simon Fraser University

COLOMBIA
Universidad de los Andes
Universidad del Rosario

DENMARK
Aarhus University

FRANCE
Paris-Panthéon-Assas
University Paris II

GERMANY
CESifo
Ifo Institut
IZA Institute of Labor Economics
Max Planck Institute
University of Cologne

HONG KONG
Hong Kong Baptist University

IRELAND
University College Dublin

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European Society for Population Economics
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NETHERLANDS
European Trade Study Group

NEW ZEALAND
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Korea University
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Yonsei University

SPAIN
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Spanish Industrial Organization Society
Spanish Macroeconomics Network

UNITED KINGDOM
London Business School
The Society for the Promotion of Mechanism and Institution Design
Structural Transformation and Economic Growth
Universities of Bristol, Exeter, Lancaster, and St. Andrews
Queen's University Belfast

CELEBRATING A MILESTONE

In 2023, PURCE celebrated its 10th anniversary.



John Umbeck, Professor of Economics and co-founder of PURCE

OUR CENTER STARTED WITH A VISION

"For as long as I can remember I thought it would be a good idea for our school to have a group of economists all working on a similar set of problems," John Umbeck says. "Namely, regulation, since it's a pervasive force in our economy, ever since the United States has been established and it has a tremendous impact on all of us."

Umbeck is a celebrated Purdue business school economics professor, public speaker, and researcher. He's also adept at sourcing funding and made the initial moves to form a new research center a decade ago.

By sheer coincidence, Umbeck discovered that then-Purdue University President Mitch Daniels and his deputy chief of staff Spencer Deery were working toward an eerily similar goal.

Umbeck was at Disney World with his family when he got a call from Deery, who relayed Daniels' wish to form a free market research center. They decided it made sense to merge their efforts.

Citing his skills as a former door-to-door salesman, Umbeck started drumming up funds with help from Daniels. Umbeck says the president was a tremendous supporter of the center's formation, which gained momentum in 2013.

Deery acted as a catalyst who eliminated red tape any time it cropped up. "Any entity as large as Purdue has some red tape and bureaucracy," says Deery, now an Indiana State Senator. "John and I got into a pretty good habit of letting John work and do his thing. And then, when he would run into a problem, he'd reach out to me, and I'd try and nudge things along with help from the weight of the office of the president."

Umbeck concurs. "I kept running into red tape, and I would call Spencer and pretty soon, there's no tape! It was impressive. He was very helpful," he says.

Umbeck also worked closely with Professors Jack Barron, recently retired, and Justin Tobias, then head of the Economics department.

"My primary role as head was to determine how PURCE could help strengthen the Economics department," Tobias says. Through its decade-long existence, the center has funded econ faculty lines — seven in 2021-22.

PURCE — known as Purdue's Economics Research Center, or PERC, at the time — was officially recognized as a university center on February 2, 2014, with Umbeck as director.

A memo documenting the approval of the center highlights the small scale of the operation. It allocates "cubicle spaces" for new PhD students "in the basement floor of the Krannert building." The memo also clarified that "no additional space [would] be required."

That statement was rendered inaccurate, as PURCE became more successful than any of its founders could have predicted. Umbeck says that they started by funding graduate students to study economics.

"The next thing I knew we were funding faculty positions," he says.

We were elevated from the basement to the newly renovated third floor of the Krannert building in 2017. Today the center boasts more than 30 faculty affiliates across all fields of economics, strengthening the presence of fields like public economics, labor economics and empirical macroeconomics.



The center's mission, as articulated by current director Kevin Mumford, is to conduct and share data-driven research into how laws, regulations and government programs affect the market economy and the well-being of individuals and society. Center faculty affiliates and econ PhD students produce objective empirical analysis in areas including competition, crime, education, fiscal policy, health, innovation, market solutions, state policies, trade and work.

The center's staff consists of a marketing specialist and a senior administrative assistant. Aided by student employees, a part-time communications consultant and the Purdue business school community, all work to fulfill the center's mission of providing data and information that can lead to more informed policy decisions.

"We want to get people and policymakers interested in economic research that otherwise might just sit on a shelf in an academic journal," Mumford says.

Starting with Mumford being named director at the beginning of the 2018-19 academic year, PURCE began hosting regular events, including a monthly faculty talk for area community and business leaders and information sessions for state lawmakers and other government leaders.

The center maintains congenial relationships with fellow policy centers like George Mason University's Mercatus Center and works closely with Purdue's Office of Government Relations and the Purdue business school's development office. The center subsists on the support of a wide variety of donors, from foundations to local business and community leaders.

In recognition of a large gift to the center, Mumford's position was named the Kozuch Director of PURCE in August 2019. He notes that PURCE's future is secure

thanks to the generosity of donors and the efforts of faculty and staff who believe in the center's mission.

Mumford emphasizes that the center doesn't speak with one voice.

"Whichever way the empirical evidence goes, that's the message. You don't have to check with the center director before you say something. Faculty affiliates and PhD students have the freedom to follow the evidence."

"We don't start with conclusions and work backwards," Mumford says. "We follow the empirical evidence to the results that are supported by the data. And our scholars are teaching the next generation of economists these research methods."

“FOR AS LONG AS I CAN REMEMBER I THOUGHT IT WOULD BE A GOOD IDEA FOR OUR SCHOOL TO HAVE A GROUP OF ECONOMISTS ALL WORKING ON A SIMILAR SET OF PROBLEMS.”

JOHN UMBECK

FACULTY UPDATES



We are pleased to announce the addition of Mohitosh Kejriwal to our roster of faculty affiliates. Dr. Kejriwal is a professor of economics whose fields of interest are theoretical and applied econometrics, including a recent focus on the economics of education. He has been with Purdue's business school since 2007 and teaches econometrics at the undergraduate and graduate levels as well as PhD courses in probability and statistics, time series analysis, and more. He recently developed a new online course called Economic Forecasting for our Economics master's program.

Kejriwal's recently published papers include "The Efficacy of Ability Proxies for Estimating the Returns to Schooling: A Factor Model-Based Evaluation" in the *Journal of Applied Econometrics* and "A Two Step Procedure for Testing Partial Parameter Stability in Cointegrated Regression Models" in the *Journal of Time Series Analysis*.

FACULTY LINES

Since PURCE's founding, generous donors have funded the academic year salary, summer salary and benefits for several Department of Economics faculty members. We are able to fund these stellar faculty members:



MARIO CRUCINI

The Daniels School's Jerry and Rosie Semler Chair in Economics recently taught PhD-level International Macroeconomics and was recognized as a Dean's Office Distinguished Instructor, as measured by student evaluations. He's working on, among other things, a paper titled "Early 20th Century American Exceptionalism: Production, Trade and Diffusion of the Automobile."



TIM MOORE

The school's Rising Star Associate Professor of Economics is a Research Associate with the National Bureau of Economic Research's programs on the economics of aging and health economics. He teaches several sections of Health Economics and Public Economics.



VICTORIA PROWSE

Our Marge Wagner Chair and Professor of Economics recently developed and delivered a new 400-level course called Advanced Data Analysis and Machine Learning, which covers advanced topics in applied econometrics. Her research spans diverse topics including labor supply, pension policy, creativity, goal-setting, cheating, disappointment aversion and more.

ACCOLADES

PURCE affiliates are continuously recognized by organizations for their expertise. Here are just a few recent highlights.

MARA FACCIÒ

has more than 25,500 citations on Google Scholar, and in a recent paper on thought leadership in academic finance, "The Inequality of Finance" by Renée Adams and Jing Xu, she was ranked as the #1 female scientist in academic finance.

FARID FARROKHI

was awarded a research grant from STEG (Structural Transformation and Economic Growth) for his working paper "Deforestation: A Global and Dynamic Perspective."

HUSEYIN GULEN & KEVIN MUMFORD

were both cited in the 2023 Economic Report of the President, a document issued by the Council of Economic Advisers, a component of the Executive Office of the President in the Biden-Harris Administration.

MOHAMMAD RAHMAN

was named the inaugural Daniels School Term Professor in the Management Department at the Daniels School of Business.

LINDSAY RELIHAN

received Visiting Scholar support from the Becker Friedman Institute to collaborate with peers at the University of Chicago.

RALPH SIEBERT

won the Best Paper Award from the American Real Estate Society for "Do Real Estate Contingency Clauses Affect Selling Price and Time-on-the-Market?"

CATHY ZHANG

was named the 2023-24 Vice President of the Midwest Economics Association.



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