



PennState
Social Science
Research Institute

Annual Report

2017 - 2018

www.ssri.psu.edu

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Our Mission

The Social Science Research Institute fosters novel, interdisciplinary research in the social and behavioral sciences that addresses critical human and social problems at the local, national, and international levels. We do so by bringing together researchers from different disciplines around emerging areas of study and by providing consultation, financial support, and shared infrastructure and services to social and behavioral scientists at Penn State.

Housed within the Office of the Vice President for Research, the SSRI is one of five university-wide research institutes at Penn State.

The SSRI Welcomes New Director

Jennifer Glick, Ph.D.

Dr. Glick, the Arnold S. and Bette G. Hoffman Professor in Sociology at Penn State, has been appointed as director of the Population Research Institute. Dr. Glick’s research focuses on migration and family processes. She brings with her an international comparative project focusing on migration being funded by the Eunice Kennedy Shriver National Institute of Child Health and Human Development. Dr. Glick received her doctorate in sociology from the University of Texas at Austin before moving onto Arizona State University, where she served as director for the Center for Population Dynamics and was also a professor of sociology.

2014 - 2019 Strategic Research Themes

The Human System

How environments and experiences affect stress and immune functions, social, cognitive, and affective neural processes, and gene-related mechanisms—and the ways in which these processes both shape and are shaped by human behavior, health and development

Social Disparities

Discovery of causes and consequences and development of evidence-based policies and practices for remediating widening gaps in health, education, and resources

Smart and Connected Health

Health and mental health promotion and disease prevention and treatment using novel technologies toward a sustainable health system

Innovative Methods

Novel approaches to research design, data collection, security, and archiving, and modeling and analysis

Dissemination and Implementation Science

The scientific study of best methods for translating knowledge into policies, programs, practices and products

Letter From the Director

Since its launch in 2001, Penn State's Social Science Research Institute (SSRI) has promoted innovation and excellence in research within the social and behavioral sciences. The Institute's mission is to foster novel, interdisciplinary collaborations that address critical human and social problems at the local, national, and international levels and that translate and disseminate this knowledge into measurable outcomes for human behavior, health, and development. The SSRI advances its mission by bringing together researchers from a range of disciplines around emerging areas of study and by providing consultation, financial support, and shared infrastructure development and services to social and behavioral scientists at Penn State. It is one of five, cross-university research institutes supported by the Office of the Vice President for Research, including the Institutes for Energy and Environment, Huck Institutes for the Life Sciences, Institute for CyberScience, and Materials Research Institute.

Research in the social and behavioral sciences ranges from studies of large-scale social forces, including socio-economic, political, and socio-cultural processes and influences, to dynamics in smaller group settings such as families, school classrooms, and work organizations. It also encompasses research on behavior, ranging from overt actions to underlying psychological processes including cognitive, affective, and motivational functioning. And, there is an emphasis on the role of human behavior in adapting to change, in resilience in the face of challenge, and in effecting change—in the self as well as in the social and physical environments. Indeed, social science research extends from the genome to the globe, and its impacts range from the development of evidence-based social policies that target vulnerable populations, to education programs aimed at learning and skill building, to everyday behavioral practices that promote health and prevent disease.

The SSRI's 2017-2018 Annual Report presents some recent research by Penn State's social and behavioral scientists. We focus this year on projects that align with the Institute's 2014-2019 strategic research directions: the human system, social disparities, smart and connected health, innovative methods, and dissemination and implementation science (see box to the left). These articles portray just a sampling of the many groundbreaking, interdisciplinary research projects led by Penn State's social and behavioral scientists. In describing these projects, the Annual Report also highlights the SSRI's research units and activities, the growing number and scope of supports by the SSRI's units, and the success of the SSRI's seed grant program in our faculty's efforts to win external funding for their research.

One measure of the achievements of Penn

State's social and behavioral science faculty is their success in federal funding. This year's annual report by the Consortium of Social Science ranked Penn State as third in the nation for federal R&D funding in the social and behavioral sciences. Expenditures reached almost \$40 million, pushing Penn State up from its number 6 ranking last year.

A major focus of the Institute this year has been advancing its translational agenda. In one initiative, the Institute organized the Integrated Data Systems (IDS) Consortium, comprised of directors of nine research centers and institutes from five colleges across the University by building on the Administrative Data Accelerator (ADA) directed by Max Crowley in the Prevention Research Center and a Robert Wood Johnson-funded program of the Big 10 alliance led by Michelle Frisco, associate director of the Population Research Institute. Administrative data refer to information from records collected by public or private service delivery systems such as Medicaid, criminal, labor, and education records. The capacity to link data together from across multiple service systems can enhance understanding of the health and well-being of populations as well as identify relevant risk and protective factors—thereby providing direction for policy at the local, state and federal levels. The goal of the Consortium is to build Penn State researchers' capacity to address cross-systems questions and share the results in a policy friendly format through collaborations with policy-makers. The Consortium was one of 10 initiatives funded in the first round of the Provost's Strategic Planning Implemental awards.

Also in keeping with its goal of translating scientific knowledge into real-world impact, the SSRI launched an initiative aimed at combating the opioid epidemic. The Commonwealth has been hit especially hard by this crisis with the opioid overdose death rate putting Pennsylvania in the top five states nationally. SSRI's initiative began with the formation of an advisory board comprised of the directors of 15 centers from across the university with expertise that could be brought to bear on the crisis. A first step was a Penn State-wide summit on the opioid crisis. Held in January, this event convened almost 200 researchers and practitioners from across the University with the goal of developing an interdisciplinary and translational agenda aimed at combating the opioid epidemic. The summit provided an opportunity for colleagues to talk about their work and learn about one another's expertise toward developing novel research and community collaborations. Another goal was to identify distinctive Penn State strengths and resources that the faculty could draw on in their efforts to combat the crisis. Following the summit, SSRI announced a call for pilot research projects to further promote interdisciplinary and translational research on the opioid epidemic. Ten seed grants were awarded.

In another effort to advance the Institute's translational mission, SSRI convened a delegation of Penn State social science researchers to attend the Consortium of Social Science Association's 2018 Science Policy Conference and Social Science Advocacy Day in Washington, DC. Penn State was represented by researchers in demography, criminology, sociology, psychology, and human development and family studies from multiple campuses. Penn State researchers attended plenary sessions the first day, then on the second day

met with staff from Pennsylvania's legislative offices including those of Senators Bob Casey and Pat Toomey, and State Representative Glenn Thompson.

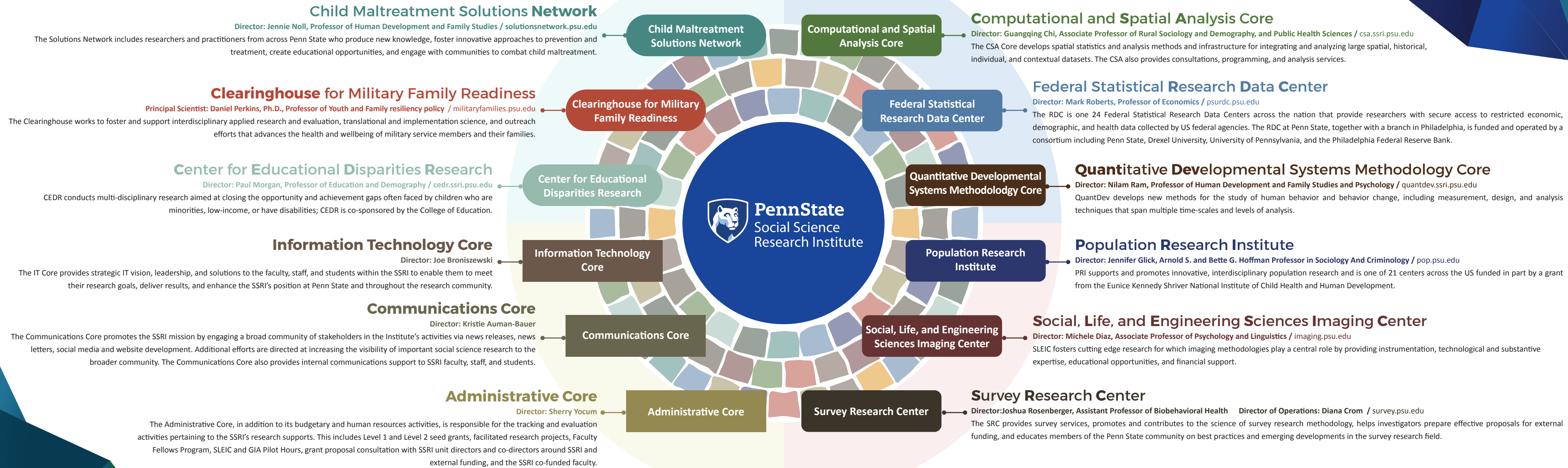
This year, the SSRI welcomed two new co-funded faculty members whose work addresses another significant human and social problem: child maltreatment. Christian Connell, associate professor of human development and family studies and associate director of the Child Maltreatment Solutions Network; and Yolanda Jackson, professor of psychology and associate director of the Child Maltreatment Solutions Network.

Professors Connell and Jackson join a vibrant group of investigators who comprise SSRI's co-funded faculty and whose interdisciplinary research is advancing social and behavioral science. SSRI's co-funded faculty reflect the partnerships between the Institute and academic units around the University. In total, SSRI provides salary support for 42 faculty members from 12 departments in five colleges (see page 8).

As I hope this report communicates, the social and behavioral sciences remain a vibrant component of Penn State research. In the coming year, the Social Science Research Institute, through its infrastructure and support mechanisms, will continue to promote and enhance this vital work.

Susan McHale, Ph.D.
Director





LEADERSHIP

Susan McHale, Ph.D.
Distinguished Professor, Human Development and Family Studies and Professor, Demography

Keith Aronson, Ph.D.
Associate Research Professor, Biobehavioral Health

Sheri A. Berenbaum, Ph.D.
Professor, Psychology and Pediatrics

Leif Jensen, Ph.D.
Distinguished Professor, Rural Sociology and Demography

Joshua Smyth, Ph.D.
Distinguished Professor, Biobehavioral Health and Medicine

Danielle Symons Downs, Ph.D.
Professor, Kinesiology and Obstetrics & Gynecology

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Director, Information Technology Core

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Director, Social, Life, and Engineering Sciences Imaging Center / Associate Professor, Psychology and Linguistics

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Director of Research, Clearinghouse for Military Family Readiness

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Director, Population Research Institute / Arnold S. and Bette G. Hoffman Professor, Sociology and Criminology

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Director, Center for Educational Disparities Research / Professor, Education Policy Studies

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Director, Child Maltreatment Solutions Network / Professor, Human Development and Family Studies

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Director, Quantitative Development Systems Methodology Core / Professor, Human Development and Family Studies, and Psychology

Mark Roberts, Ph.D.
Director, Federal Statistical Research Data Center / Professor, Economics

Joshua Rosenberger, Ph.D.
Director, Survey Research Center / Assistant Professor, Biobehavioral Health

Sherry Yocum
Director, Administrative Core



CO-FUNDED FACULTY

Brian Allen, Psy.D.
Assistant Professor, Pediatrics and Psychiatry

Kristin Buss, Ph.D.
Professor, Psychology

Orfeu Buxton, Ph.D.
Associate Professor, Biobehavioral Health

Soo-yong Byun, Ph.D.
Associate Professor, Educational Theory and Policy

Guangqing Chi, Ph.D.
Associate Professor, Rural Sociology and Demography and Public Health Sciences

Sy-Miin Chow, Ph.D.
Professor, Human Development and Family Studies

H. Harrington Cleveland, III, Ph.D.
Associate Professor, Human Development and Family Studies

Christian Connell, Ph.D.
Associate Professor, Human Development and Family Studies

Michele Diaz, Ph.D.
Associate Professor, Psychology and Linguistics

Sarah Font, Ph.D.
Assistant Professor, Sociology and Criminology

Jennifer Frank, Ph.D.
Assistant Professor, Special Education

Michelle Frisco, Ph.D.
Associate Professor, Sociology, Criminology and Demography

Lisa Gatzke-Kopp, Ph.D.
Associate Professor, Human Development and Family Studies

Charles F. Geier, Ph.D.
Associate Professor, Human Development and Family Studies

Jennifer Glick, Ph.D.
Arnold S. and Bette G. Hoffman Professor, Sociology

Christine Heim, Ph.D.
Professor, Biobehavioral Health

Marianne Hillemeier, Ph.D.
Professor, Health Policy and Administration and Demography

Cynthia Huang-Pollock, Ph.D.
Associate Professor, Psychology

Kent Hymel, M.D.
Child Abuse Pediatrician

Yolanda Jackson, Ph.D.
Professor, Psychology

Kathleen Keller, Ph.D.
Associate Professor, Food Sciences and Nutritional Sciences

Derek Kreager, Ph.D.
Professor, Sociology, Criminology, and Demography

Erika Lunkenheimer, Ph.D.
Associate Professor, Psychology

Sheridan Miyamoto, Ph.D.
Assistant Professor, Nursing

Karen Murphy, Ph.D.
Distinguished Professor, Educational and School Psychology and Special Education

Jenae Neiderhiser, Ph.D.
Distinguished Professor, Psychology

Jennie Noll, Ph.D.
Professor, Human Development and Family Studies

Carlomagno Panlilio, Ph.D.
Assistant Professor, Educational Psychology

Koraly Pérez-Edgar, Ph.D.
Professor, Psychology

Daniel Perkins, Ph.D.
Professor, Family and Youth Resiliency and Policy

David Puts, Ph.D.
Associate Professor, Biological Anthropology

Kai Schafft, Ph.D.
Associate Professor, Educational Leadership and Rural Sociology

Suzy Scherf, Ph.D.
Associate Professor, Psychology

Hannah Schreier, Ph.D.
Assistant Professor, Biobehavioral Health

Idan Shalev, Ph.D.
Assistant Professor, Biobehavioral Health

Gregory Shearer, Ph.D.
Associate Professor, Nutritional Sciences

Chad Shenk, Ph.D.
Associate Professor, Human Development and Family Studies and Pediatrics

Joshua Smyth, Ph.D.
Distinguished Professor, Biobehavioral Health and Medicine

Shedra Amy Snipes, Ph.D.
Assistant Professor, Biobehavioral Health

Robert Turrisi, Ph.D.
Professor, Biobehavioral Health

Jennifer Van Hook, Ph.D.
Roy C. Buck Professor of Sociology and Demography

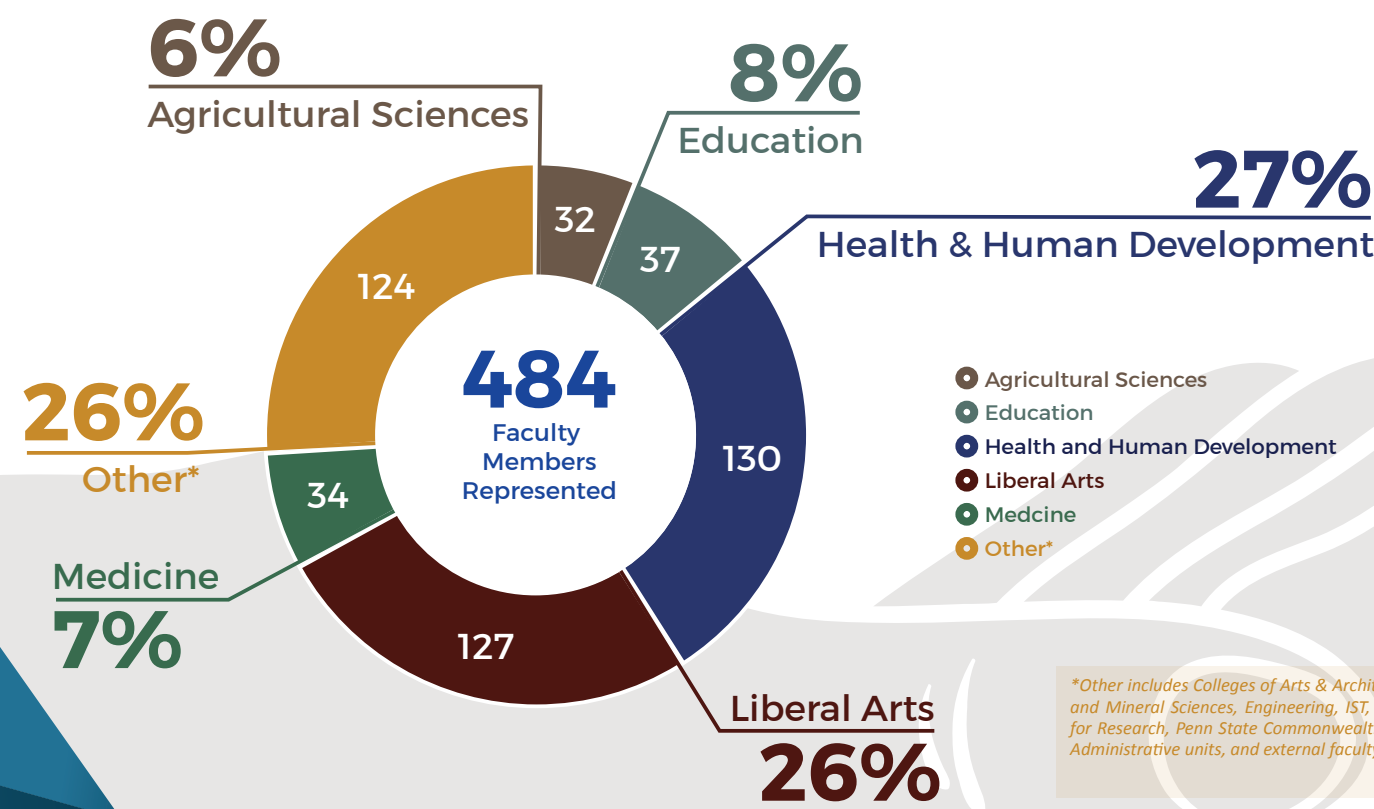
Krista Wilkinson, Ph.D.
Professor, Communication Sciences and Disorders

SSRI by the Numbers

SSRI CONSULTATIONS

During 2017-2018, SSRI directors met with 484 faculty members. Of these, 422 were affiliated with Penn State. The number of consultations by college is shown in the figure below. As in previous years, the breakdown of consultation by college largely followed the distribution of open research expenditures, with faculty members from the Colleges of Health & Human Development and the Liberal Arts receiving the majority of consultations. Consultations were broad in disciplinary scope as reflected in 26% of consultations taking place with faculty from “Other” colleges.

SSRI Pre-Award Consultations



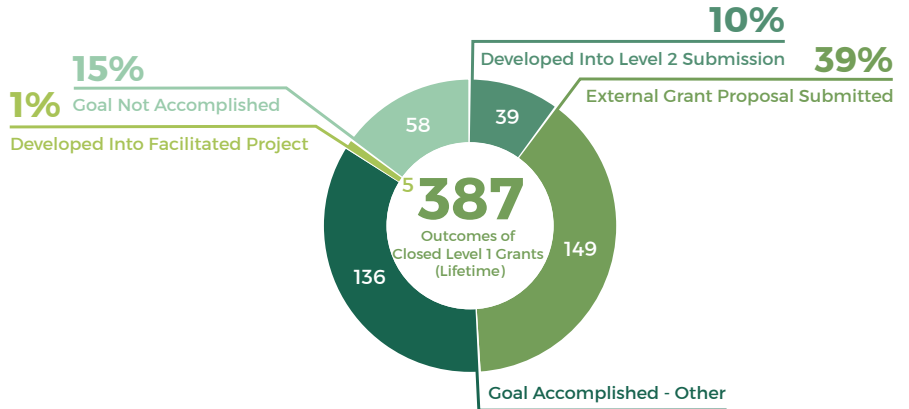
SSRI SEED GRANTS

Here we provide an overview of the outcomes realized by Level 1, Level 2, and Facilitated seed grants since the inception of the SSRI grant program in 1998. The figures below describe “closed” projects only, i.e. projects that have been completed and are no longer being actively tracked for outcomes.

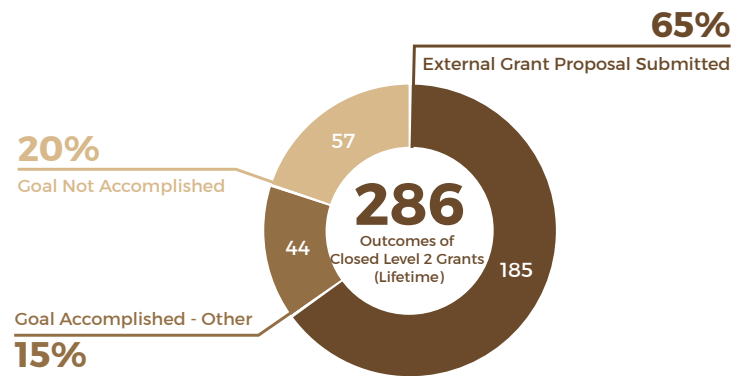
LEVEL 1: 387 Level 1 projects were closed as of June 30, 2018, representing a total investment of over \$1.67 million. From these 387 projects, 236 external grant submissions resulted, and 97 (41%) of these were funded. Awards from lifetime external grants awards based on Level 1 awards now exceed \$68.7 million. In addition, nearly 10% of Level 1 projects progressed to Level 2 submissions. In most other cases, Level 1 projects were evaluated to have met goals either through establishing networking connections of providing professional development and support. As of June 30, 2018, each \$1 invested by the SSRI in Level 1 projects has yielded approximately \$18.22 of indirect return to the University.

LEVEL 2: To date, 286 Level 2 projects have been completed with a total investment of \$5.2 million. From these, Level 2 projects, 338 external proposals were submitted. Of the external proposal submissions, 136 (40%) were funded. The lifetime external grant awards for closed projects as of June 30, 2018 totaled \$104.3 million. Each \$1 invested in Level 2 projects has yielded approximately \$6.64 of indirect return to the University.

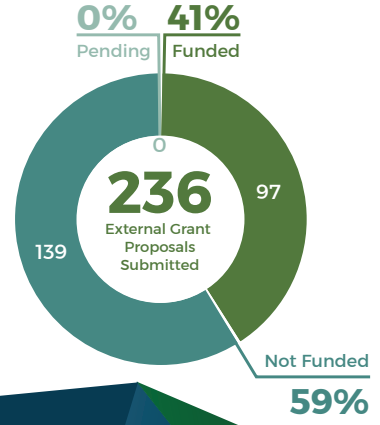
Outcomes of Closed Level 1 Grants (Lifetime)



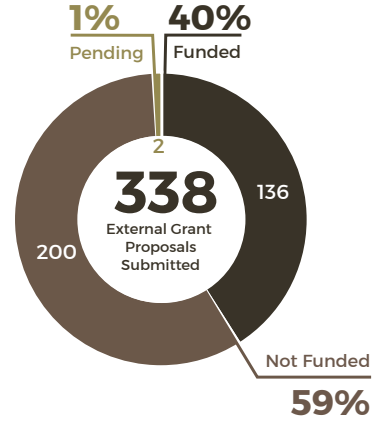
Outcomes of Closed Level 2 Grants (Lifetime)



Level 1 External Grant Proposals Submitted



Level 2 External Grant Proposals Submitted



Events in the SSRI (2017-2018)

Scientific synergy and innovation from Military Family and Child Welfare Contexts

September 27 – 28, 2017

The Child Maltreatment Solutions Network’s sixth annual conference was co-sponsored by the Clearinghouse for Military Readiness and brought together researchers, policy analysts, and practitioners to collaborate and discuss how military family research and programs can be translated into be used in both military and civilian contexts. Topics included information about programs such as child maltreatment assessment protocol, combined parent-child cognitive behavioral therapy for at-risk-families, the Clearinghouse’s GROW! program for children, use of technology to deliver and promote evidence-based programs, and Families OverComing Under Stress family education.

Families and Technology

October 23 – 24, 2017

During the 25th annual National Symposium on Family Issues, researchers from fields such as media, film, and journalism, family social science, sociology, marriage and family therapy, human development and family studies, medicine, and pediatrics gathered to discuss how new technologies are changing both family dynamics and relationship formation. The Family Symposium series is funded in part by a grant from the Eunice Kennedy Shriver National Institute of Child Health and Human Development and also receives support from Penn State’s Clinical and Translational Science Institute, the Prevention Research Center, and the Child Study Center, and the Departments of Sociology and Criminology, Psychology, Human Development and Family Studies, Anthropology, and Biobehavioral Health.

MILITARY FAMILY & CHILD WELFARE CONTEXTS

SEPT 27-28, 2017
at the Nittany Lion Inn, University Park, PA
Register Online by September 13, 2017

CONTACT



Inaugural Summit on the Opioid Epidemic

January 12, 2018

SSRI hosted its first university-wide summit on the opioid epidemic and brought nearly 200 Penn State researchers, practitioners, and educators together to discuss and devise an integrative and translational plan to combat this critical problem. Flash talks and roundtable discussions included topics such as community-university collaborations for prevention programs, the neuroscience of opioid treatment outcomes, economic costs, family and child welfare, criminal justice, and more. In addition to SSRI, the summit was sponsored by Colleges of Agricultural Sciences, Communications, Education, Health and Human Development, Information Sciences and Technology, the Liberal Arts, Medicine, and Nursing, Penn State Law, the Office of the Vice President for Commonwealth Campuses, Penn State Outreach and Online Education, the Addiction Center for Translation, Center for Applied Studies in Health Economics, Center for Health Care and Policy Research, Center for Education Disparities Research, Clearinghouse for Military Family Readiness, Child Maltreatment Solutions Network, Justice Center for Research, Edna Bennett Pierce Prevention Research Center, Population Research Institute, Clinical and Translational Science Institute, and Rock Ethics Institute.

2014 - 2019 STRATEGIC RESEARCH THEMES



The Human System



Social Disparities



Smart and Connected Health



Innovative Methods



Dissemination and
Implementation Science

2018 SSRI STORIES

- Animal-assisted therapy for abused children
- Trends in college attendance rates in rural America
- Penn State ranks third for federal social and behavioral science funding
- International research impacts felt around the world
- New project to reduce racial inequities in kidney transplants
- Grant renewal will support research on aging and language production
- Physical abuse and punishment impact children's academic performance and adjustment
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- Posttraumatic stress affects academics
- School choice policies may impact segregation and diversity of public schools

Animal-assisted therapy for abused children

Animals have been used in therapy for decades to assist with a person's physical, emotional, and social well-being to reduce anxiety and facilitate healing. Until recently, however, there has been little scientific evidence to show the effectiveness of animals in these treatments.

Penn State researchers were awarded a Eunice Kennedy Shriver National Institute of Child Health and Human Development grant to learn more about animal-assisted therapy in child abuse situations.

Specifically, principal investigator Brian Allen, SSRI co-funded faculty member and Assistant Professor of Pediatrics and Psychiatry, and his team will be analyzing the effectiveness of integrating animals into Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT).

"TF-CBT is a structured, 12-session treatment for children who have experienced maltreatment such as physical or sexual abuse or exposure to inter-partner violence," Allen explained. "During the treatment, the child is gradually exposed to their memories and thoughts related to their maltreatment. We are examining whether animal-assisted therapy may improve treatment outcomes reduce patient dropout, and/or improve the process for children during sessions."

The presence of animals seems to allow children to better cope with distress and thereby allow for greater discussion of traumatic memories, as well as improve the rapport between the child and clinician. "For these reasons, nearly one-third of mental health clinicians serving maltreated children reported being somewhat likely to integrate animals during their sessions," said Allen. "Despite this, there is relatively little data to support its effectiveness, and there are no guidelines on their use."

To gauge the effectiveness of animal-assisted therapy, Allen and his team will look at approximately 60 maltreated children ages 6 to 17. Half of the group will receive animal-assisted therapy during their TF-CBT sessions, while the other half will undergo therapy without the animals. "We will compare the groups and measure outcomes such as the improvement of posttraumatic stress, along with reductions

in depression, anxiety, and behavioral problems," Allen said. "Our ultimate goal is to determine if animals enhance or weaken the effects of TF-CBT."

Researchers will also look into other factors, including therapy retention rates, child and care-giver satisfaction ratings, and how often treatments were missed or shortened due to the animal being unavailable or disruptive.

Additionally, the therapy animals will be assessed for stress as a result of them being present during treatment. The research team will be working with Nancy Dreschel, instructor of small animal science at Penn State, who is an expert on the assessment of stress response in dogs.

Researchers will measure animal stress by assessing saliva cortisol levels in the therapy animals along with behavioral responses. Cortisol is a hormone that becomes elevated in the saliva during times of conflict or stress.

"This study will be the first to address animal-assisted therapy for the treatment of maltreated children, and the first to determine the impact of animals participating," said Allen. In the future, Allen would like to expand the study to include a larger group of children to further investigate animal-assisted therapy on TF-CBT and the impacts on the children and animals in the sessions.

Other researchers on the project include Chad Shenk, SSRI co-funded faculty member and Assistant Professor of Human Development and Family Studies, and Ming Wang, Assistant Professor of Public Health Sciences at Penn State College of Medicine.

The Eunice Kennedy Shriver National Institute of Child Health and Human Development and SSRI provided support for the project.



Brian Allen, Psy.D.

Assistant Professor,
Pediatrics and Psychiatry

Strategic Research Themes



Social Disparities



Dissemination and
Implementation Science



Trends in college attendance rates in rural America

The benefits of obtaining a college degree are higher than ever in the current economy, as researchers estimate that by the year 2020, 65 percent of all jobs will require postsecondary education.

While increasing college enrollment and graduation rates is a national priority, targeting the college behaviors of rural students is particularly important, according to Soo-yong Byun, SSRI co-funded faculty member and Associate Professor of Educational Theory and Policy. “Almost 10 million students in America go to public schools in rural areas, but rural students are vastly underrepresented in education research. Few studies have examined the college trajectories of rural youth at a time when the country has witnessed a heightened emphasis on increasing college graduation rates.”

With a growing number of rural students attending two- and four-year colleges, Byun and his team investigated the college attendance of over 2,000 students from rural high schools across the United States using data from the Rural High School Aspirations Study and its follow-up study, administered by the National Research Center on Rural Education Support at the University of North Carolina at Chapel Hill.

Using this unique data set, the research team’s analysis, published in the journal *Research in Higher Education*, is the first to explore postsecondary attendance patterns among contemporary rural youth.

“We found that more than half of rural youth attended two-year institutions during their college career, and about a fourth initially enrolled in a two-year college before enrolling in a four-year college,” Byun said. “We also

found that students who enrolled in a two-year college only, were far less likely to be enrolled in a college preparation program in high school and had the lowest educational aspirations.”

The researchers further identified factors that affect these college choices, revealing that parental education, college preparatory track and preparation experiences, and teacher expectations predicted students’ college attendance patterns.

“Our findings point to the importance of two-year colleges and highlight the influence of family on students’ postsecondary education choices,” said Byun. “Additionally, there are more community colleges now than there were a few decades ago, and their proximity creates a greater number of entry points to a four-year college.”

In the future, Byun would like to examine if students who first enrolled in a two-year college differed from 4-year attendees in terms of degree completion, and how other factors, such as academic, social and financial, affect four-year college attendance and completion. “In addition, incidences of students taking time off from college, transferring between colleges, starting at two-year colleges, delaying college, attending school as a part-time student, and attending multiple four-year institutions are more common than they were a few decades ago and can all affect college attendance and completion,” Byun said.

Other researchers on the project were Judith Meece, professor of educational psychology, and Charlotte Agger, doctoral student in education, both at the University of North Carolina, Chapel Hill.

The project was funded by the Spencer Foundation and the Institute of Educational Sciences, U.S. Department of Education, with additional support from Population Research Institute of the National Institutes of Health and SSRI.



Soo-yong Byun, Ph.D.
Associate Professor,
Educational Theory and Policy

Strategic Research Themes



Innovative Methods



The Human System



Social Disparities

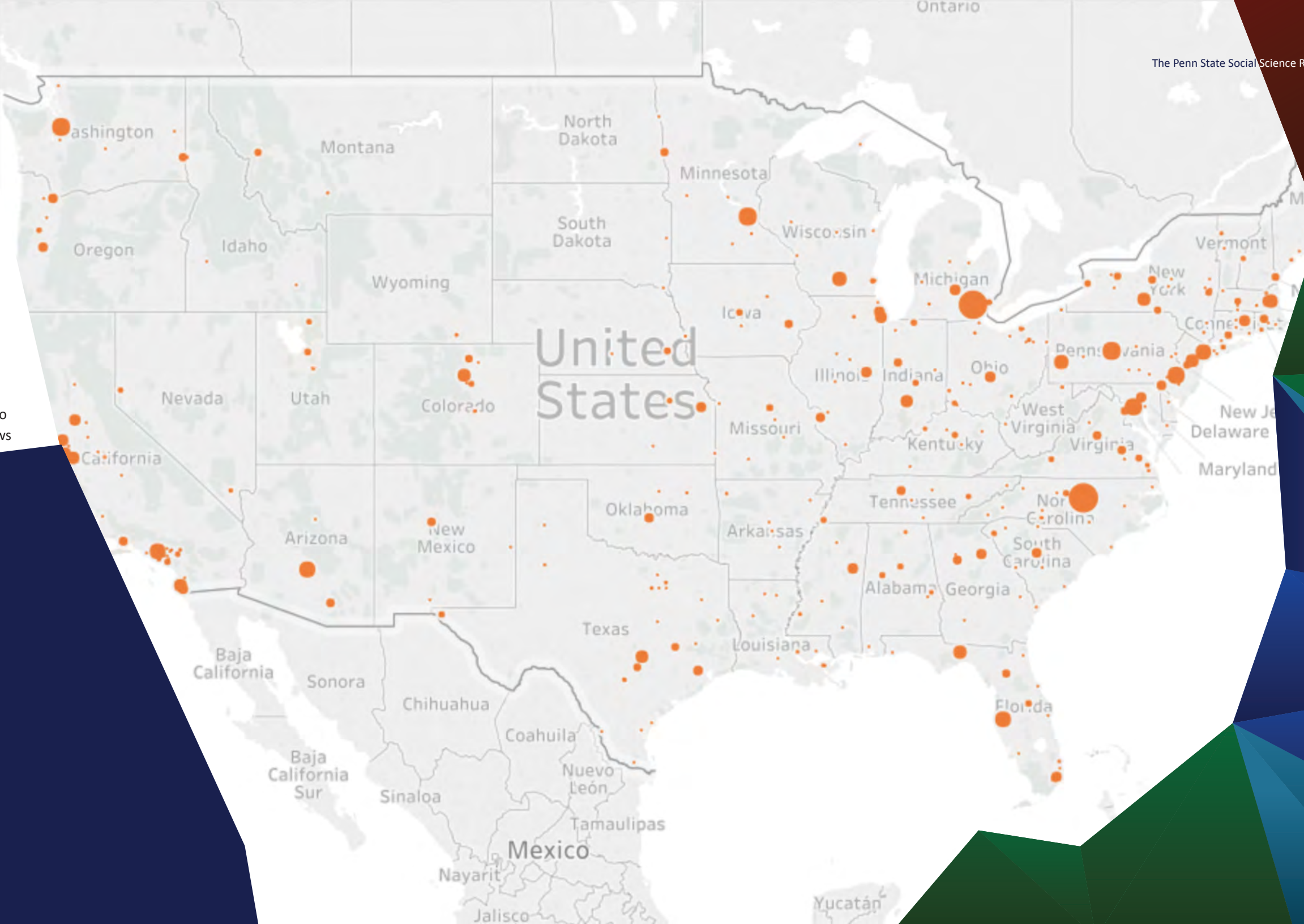
Penn State ranks third for federal social and behavioral science funding

In the 2018 edition of their College and University Rankings for Federal Social and Behavioral R&D, the Consortium of Social Science Associations (COSSA) ranked Penn State No. 3, with almost \$40 million in research and development funding.

The University was ranked No. 6 in 2017. Vice President for Research Neil Sharkey stated “Social and behavioral sciences are an integral part of Penn State’s research community. Human behavior and social relationships play a significant role in the world’s major challenges and thus are central to addressing their solutions.”

The 2018 rankings, which reports total federal research dollars in the social and behavioral sciences awarded to U.S. institutions, feature a new dashboard with an interactive map of recipients of social and behavioral science research and development funding to compare how each university stacks up against more than 400 U.S. institutions.

Based on the most recent available federally collected data, the COSSA rankings use an inclusive selection of fields to calculate the total federal R&D funding received by universities in the social and behavioral sciences. The map shows the location of many of these programs.



Strategic Research Themes



The Human System



Social Disparities



Smart and Connected Health



Innovative Methods



Dissemination and Implementation Science

International research impacts felt around the world

Penn State researchers are working with academic and non-academic partners around the globe.

SSRI co-funded faculty member Guangqing Chi, associate professor of rural sociology and demography and Director of the Computational and Spatial Analysis Core, has spent three years exploring the effects of environmental stress and policy strategies for building more resilient communities in the central Asian highlands in collaboration with other researchers, including SSRI co-funded faculty member Jennifer Glick.

According to Chi, people born and raised at high elevations -- above 8,200 feet -- exhibit distinct physiological characteristics, such as increased blood viscosity caused by higher hemoglobin content. Other issues, including chronic physiological stress and lower reproductive success, make residents of high-elevation communities particularly vulnerable to additional stressors caused by harsh environmental conditions.

"We are evaluating various aspects of environmental changes in human agricultural settlements and associated pasturelands in Kyrgyzstan to assess the impacts on these communities and the land on which the residents make a living," explained Chi. "Our goal is to determine whether a change in pasture conditions can be detected via remote sensing technologies and subsequently linked to community well-being."

Results will inform policies and strategies for local communities to adapt to environmental changes and declining ecosystem services and improve community well-being and pasture productivity sustainably. Recommendations will be adapted and exported to other settings that experience pasture degradation and chronic out-migration.

In another project, Chi and other researchers are examining the links between environmental change and left-behind children's well-being in Kyrgyzstan. "Environmental change can have diverse and unexpected consequences that are not well understood," said Chi. "Labor migration and left-behind children in rural areas are one of these outcomes. The research will recommend strategies for accommodating labor migrants and families with left-behind children and adapting to environmental change and declining ecosystem services."

Leif Jensen, assistant director of SSRI and distinguished professor of rural sociology and demography, is also involved in several international projects.

In one five-year project in Honduras led by Penn State in partnership with Zamorano University, Janelle Larson, project principal investigator and professor of agricultural economics, and other researchers are seeking to understand how the horticultural value chain (HVC) can be a mechanism to support equity and empowerment for women, improve their household nutrition, and provide income-generating opportunities.

"Women play an important role in agricultural production, however they face many more challenges than their male counterparts," Jensen explained. "Gender norms and values as well as the broader socio-economic context influence women's roles in the household, and many have limited control over household financial income."

The researchers are identifying technologies, institutions and policies that facilitate small-scale farmers producing horticultural products to improve the economic and nutritional status of women and their households and to strengthen employment and entrepreneurial opportunities for women.

"We hope to identify a sensitive model for nudging attitudes and behaviors regarding gender, using otherwise technical training in horticultural production as a delivery mechanism," Jensen said.

In another five-year project, Jensen, Rick Bates, project principal investigator and professor of horticulture, and their colleagues are looking to empower women and improve nutrition by promoting women's participation in the value chains for horticultural crops and rice produced via sustainable intensification (SI) practices in Cambodia. "Our goal is to promote gender equity and family nutrition by understanding and breaking down the barriers to women's participation in the value chains for SI," said Jensen. "We contend that horticultural and other foods produced by smallholder farmers via SI are produced and distributed through value chains that can be exploited to create new opportunities for women and improve the nutrition of their families."

In another effort, Jennifer Glick, SSRI co-funded faculty member, director of the Population Research Institute, and Arnold S. and Bette G. Hoffman Professor in Sociology, is exploring the impact of migration on children and adolescents in communities of origin in three interrelated research projects. "By focusing on different developmental outcomes and transitions, the projects combine to create a more holistic view of migration in shaping family environments and opportunities from childhood through the transition to adulthood," Glick

explained.

There are high levels of labor migration in each of the three projects sites: Jalisco, Mexico, Gaza Province, Mozambique, and the Chitwan region of Nepal. At the same time, each of the sites represent a different set of social and institutional conditions for child development and opportunities for transitions during adolescence and into adulthood. The research team includes scholars from five U.S. universities and local research partners at each site.

To date, approximately 3,000 interviews of children and their caregivers have taken place in each of the three settings. Researchers are beginning to analyze these data and make plans for follow-up interviews in two years to provide information on changes in children's home environments and well-being as the migration process unfolds or ends in their households. Uncovering commonalities in the association between labor migration and children's well-being is important for developing programs and policies to assist migrant families and children of migrants in origin communities.

"Our preliminary findings show that parents and caregivers have high aspirations for children's education. But we also find important gendered expectations for children particularly as they enter adolescence. Further analysis will explore how migration is associated with these expectations," said Glick.

Chi's work is being supported by the Land Cover/Land Use Change Program, an interdisciplinary science program in the Earth Science Division of NASA's Science Mission Directorate, and SSRI and the Institutes of Energy and the Environment.

Jensen's work is being funded by U.S. Agency for International Development through the Horticulture Innovation Lab at the University of California, Davis, and Kansas State University's Sustainable Intensification Innovation Lab.

Glick's project is supported by a grant from the Eunice Kennedy Shriver National Institute of Child Health and Human Development (P01HD080659) and by The Population Research Institute (P2C HD041025).



Guangqing Chi, Ph.D.

Director,
Computational and Spatial Analysis Core
Associate Professor,
Rural Sociology and Demography and Public Health Sciences



Leif Jensen, Ph.D.

Distinguished Professor,
Rural Sociology and Demography



Jennifer Glick, Ph.D.

Director,
Population Research Institute
Arnold S. and Bette G. Hoffman Professor,
Sociology

Strategic Research Themes



The Human System



Social Disparities



Innovative Methods

New project to reduce racial inequities in kidney transplants

Kidney disease is one of the top ten leading causes of death in the U.S., with diagnoses rising almost 600 percent in the last 30 years. Kidney transplants by a living donor are often the most effective way of treating the disease, but for many, large racial disparities affect the likelihood of obtaining this life-saving treatment. A \$1.2 million National Institute of Diabetes and Digestive and Kidney Diseases grant will fund a new, five-year Penn State project to investigate and reduce these racial disparities.

According to principal investigator Jonathan Daw, Population Research Institute Associate and Assistant Professor of Sociology, the project will look at the entire pool of potential donors in kidney transplant candidates' networks, and the processes by which candidates and network members negotiate potential living donation.

Motivated by previous research showing that white transplant candidates were more than twice as likely to obtain a living donor kidney transplant, Daw and his research team

conducted a pilot study and found that, contrary to a common hypothesis, African Americans were more likely than whites to have access to promising potential donors, but are less likely to receive those organ donations.

"We theorize key barriers to eliminating racial disparities in living donation kidney transplantation and promoting it for all groups are primarily social, not biomedical, in origin. There is some disconnect with the social process and norms that prevent people from donating, and we are just beginning to understand the factors that get people to go to the hospital to be screened in the first place."

Daw and his research team are trying to identify methods to help kidney transplant candidates efficiently identify and recruit healthy, well-matched, and willing living donors in their family and social networks. They plan to develop and test two interventions intended to assist candidates in their efforts to identify and recruit biomedically suitable, willing living kidney donors.

The team will first develop a search intervention tool to assign those in a candidate network a probability of being biomedically suitable donors for the candidate, which can be adjusted using candidate reports on health status and perceived willingness to donate. This tool will then be combined with social network data also collected in the study to calculate which members of a candidate's network are most likely to be suitable donors, and advise candidates to initiate donation discussions with those individuals.

Next, they plan to use experimental survey studies to develop a series of verbal scripts that can be used by candidates with potential donors in their networks. "The scripts will help candidates initiating conversations with potential donors and ethically increase their effectiveness in discussing donation," said Daw. "We'll look at previous research to determine consistent themes that come up in these conversations and reasons why potential donors end up not donating in order to develop scripts that address these issues."

To test these interventions, researchers will recruit new kidney transplant candidates from two large, racially diverse kidney transplant programs and survey them on their health status, views and knowledge about kidney transplantation. The researchers will also assist the candidates in mapping their social networks, focusing on health status and their relationship with the candidates.



Jonathan Daw, Ph.D.

Assistant Professor,
Sociology

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"Building on this information, we will create the first predictive model to map out a potential donor pool," said Daw. "This information is critical to improve clinical practice and efforts to ethically influence the living donor search process."

Other Penn State researchers on the project are Ashton Verdery, Assistant Professor of Sociology and Demography; and Selena Ortiz, Gregory H. Wolf Professor of Health Policy and Administration. Additional researchers include Peter Reese, Associate Professor of Medicine, and Deirdre Sawinski, Assistant Professor of Medicine, both at the University of Pennsylvania; and Robert Gaston, Endowed Professor of Transplant Nephrology at the University of Alabama-Birmingham.

Support for the project was provided by the National Institute of Diabetes and Digestive and Kidney Diseases and the Population Research Institute.



Grant renewal will support research on aging and language production

Michele Diaz, SSSRI co-funded faculty member, Director of Human imaging for the Social, Life, & Engineering Sciences Imaging Center (SLEIC) and Associate Professor of Psychology, Linguistics, and Neuroscience, received an R01 grant renewal from the National Institute on Aging to support her research on how aging affects language production.

Diaz will use both behavioral measures and neuroimaging techniques to compare older and younger adults to understand why we have more difficulty speaking as we age. As older adults are the largest growing demographic in the country, understanding how we age has large social, financial, and societal significance. Declines in communication can be both frustrating and lead to decreased social and intellectual interactions.

Specifically, Diaz plans to utilize behavioral measures, diffusion tensor imaging, and functional magnetic resonance imaging (fMRI) to uncover the patterns of sparing and decline in phonological and semantic processes that healthy aging has been known to affect. This renewal will support Diaz’s research for the next five years.

Diaz began her education at Penn State, receiving her bachelors in psychology,

then continued at Duke University where she earned both her masters and doctorate in psychology with a certificate in cognitive neuroscience. After completing her academic studies, Diaz went on to become associate director for Duke’s Brain Imaging & Analysis Center and assistant professor of psychiatry before returning to Penn State in 2014.

Throughout her experiences, Diaz has studied the relationship between human behavior, cognitive function, and aging using behavioral, neuropsychological, and neuroimaging methodologies. Some of her previous work focuses on the interaction of sematic and phonological processes during communication and studies figurative language, discourse, and novelty to understand the right brain’s role in language production. She also investigated the best neuroimaging and multi-site experiment methods for the Biomedical Informatics Research Network, a national data and collaborative online database for biomedical research.

The National Institute on Aging and SSRI supports this work.



Michele Diaz, Ph.D.

Associate Professor,
Psychology and Linguistics

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Innovative Methods

Physical abuse and punishment impact children’s academic performance and adjustment

Sarah Font, SSRI co-fund and Assistant Professor of Sociology, and Jamie Cage, Assistant Professor in Virginia Commonwealth University’s School of Social Work, found that physical abuse was associated with decreases in children’s cognitive performance, while non-abusive forms of physical punishment were independently associated with reduced school engagement and increased peer isolation.

While corporal punishment and physical abuse have been previously linked with reduced cognitive development and academic achievement in children, Font’s study is one of the few that simultaneously examines abusive and non-abusive physical punishment as reported by both children and caregivers.

Even if physical punishment does not result in serious physical injury, children may experience fear and distress, and this stress has been found to negatively impact brain structure, development, and overall well-being. “This punishment style is meant to inflict minor pain so the child will change their behavior to avoid future punishment, but it does not give children the opportunity to learn how to behave appropriately through explanation and reasoning,” stated Font.

In this study, over 650 children and their caregivers were examined in three areas of physical punishment: mild corporal punishment, harsh corporal punishment, and physical abuse. The groups reported their use or experience with physical punishment and researchers then measured cognitive outcomes, school engagement, and peer isolation in the children. The data were analyzed to determine trajectories between cognitive and academic performance and how initial and varying exposure to physical punishment and abuse influences them.

“We found that while all forms of physical punishment and abuse are associated with declines in school engagement, only initial exposure to physical abuse has a significant negative influence on cognitive performance and only harsh corporal punishment notably increases peer isolation in children and was observed in both child and caregiver reports. This suggests that preventing physical abuse

could promote children’s cognitive performance, but it may not be enough to get children to be involved and well-adjusted in school,” said Font.

Considering that mild physical punishment can develop into physical abuse and that even these mild punishments have consequences on children’s cognitive and social school functioning, parent education on alternative forms of punishment may be one solution to prevent physical abuse.

Programs that reach parents during services that they regularly use may be one way to give them alternative punishment technique education. This could be a medical professional informing parents during a child’s health visit or staff members of an Early Head Start program providing parent education during the child’s enrollment. “Further research and efforts in these types of interventions needs to continue so we can learn more,” Font said.

This research was made possible with support from the Population Research Institute and SSRI.



Sarah Font, Ph.D.

Assistant Professor,
Sociology

Strategic Research Themes



The Human System



Dissemination and
Implementation Science

Prescription drug monitoring programs evaluated by Penn State researchers

Deaths resulting from prescription drug overdoses have increased more than seven-fold over the last several decades, and public health officials are calling the epidemic the worst drug crisis in American history.

Prescription drug monitoring programs (PDMP) are being implemented in an increasing number of states to address their misuse, and a team of Penn State researchers have been investigating their impact.

According to Yunfeng Shi, Assistant Professor of Health Policy and Administration, inappropriate drug use not only affects health outcomes, but can also cause increases in waste and societal costs. “More and more, we are seeing states monitoring prescription drug use via statewide databases that collect data on the prescribing, dispensing and purchasing of prescription drugs.”

These programs use patient databases to identify inappropriate patient behavior (such as doctor shopping), facilitate drug treatment, and inform public health initiatives designed to combat the misuse of prescription drugs, especially opioids.

The researchers looked at the impact of these programs on drug overdose mortality rates across all drug categories from 1999 to 2014, and each of the categories separately from 1999 to 2010, using data from the US Census Bureau and the Centers for Disease Control and Prevention. They examined 34 states that began operating PDMPs in 2002 or later and found that prescription drug monitoring programs had no appreciable impact on drug overdose mortality rates. Moreover, PDMPs may actually have contributed to increases in mortality rates from the use of illicit drugs and other (unidentified) drugs. These counterintuitive effects were concentrated in states with PDMPs operating for five or more years.

“The literature on PDMPs has been accumulating. However, the findings have not been consistent,” explained Shi. “To our knowledge, this is the first study that analyzes drug overdose deaths across different classes of drugs with a relatively robust statistical model that accounts, in a flexible way, for trends in drug overdose mortality that are unrelated to PDMPs.”

The researchers were surprised by the fact that states with longer-standing PDMPs may actually be exacerbating the problem, especially with respect to illicit drug use.

“However, it is important to note that we only looked at mortality rates; PDMPs could be exerting a positive influence along other dimensions, such as inappropriate prescribing, drug-related emergency room visits, or overconsumption more generally,” said Shi.

“The potentially positive impacts on these outcomes, which were not examined in our study, may eventually lead to a reduction in mortality rates. But that needs to be examined in future research. For now at least, our results point to a potential unintended consequence of PDMPs, whereby reduced access to prescription drugs may have led some individuals with addictive disorders to look for alternatives.”

The findings have several policy and clinical implications, as PDMPs do not seem to be successful in reducing overdose mortality rates, even in the target categories of prescription opioids. “Unfortunately, PDMPs may not be able to fully address prescription diversions, doctor shopping, or other problematic behaviors. Under these programs, potential drug-related illegal activities are only detectable through prescription fillings,” Shi explained. “Further, PDMPs may drive patients away from doctors who could help them address drug abuse or addiction. In addition, the rapid growth of online pharmacies may have increased opportunities for individuals to abuse prescription medications.”

The researchers concluded PDMPs may need to be combined with more comprehensive and prevention-oriented approaches to address drug overdose deaths, such as improving patient education on appropriate drug use, ensuring proper access to prescription drugs for those with medical needs, expanding treatment programs, and providing pain management education for providers.

In the future, the research team plans to examine the effectiveness of PDMPs based on specific program features, which vary substantially from state to state.

Other researchers on the project were Dennis Shea, Professor of Health Policy and Administration; John Moran, Associate Professor of Health Policy and Administration; and Young Hee Nam, current Postdoctoral Researcher at the University of Pennsylvania and former Doctoral Student in Health Policy and Administration at Penn State.



Yunfeng Shi, Ph.D.
Assistant Professor,
Health Policy and Administration

Strategic Research Themes



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Innovative Methods

Posttraumatic stress affects academics

Posttraumatic stress disorder (PTSD) caused by traumatic military experiences is associated with feelings of anxiety, anger, sadness, and/or guilt. New Penn State research is evaluating how PTSD symptoms increase risks for academic difficulties as well.

Steffany Fredman, Assistant Professor of Human Development and Family Studies and the Karl R. Fink and Diane Wendle Fink Early Career Professor for the Study of Families, wanted to explore one potential process by which PTSD symptoms may contribute to academic problems in student veterans.

It's an issue rising to the forefront, as increasing numbers of veterans are enrolling in colleges and universities. "Many of these former service members are experiencing posttraumatic stress symptoms secondary to their military service, and these symptoms are associated with academic difficulties," Fredman explained. "There's an extensive literature demonstrating that PTSD symptoms can cause disruptions in trauma survivors' close relationships. However, less is known about ways that these relationship problems can, in turn, affect other domains of trauma survivors' adjustment, such as students' academic functioning."

The study, recently published in the journal "Psychological Trauma: Theory, Research, Practice, and Policy", is the first to demonstrate the effects of military-related posttraumatic stress on academic adjustment through impairments in veterans' relationships with family and friends.

For the study, Fredman and her collaborators examined data from a large, national sample of students seeking mental health services while enrolled in college. The data were collected from college- or university-based counseling centers affiliated with the Center for Collegiate Mental Health (CCMH). The CCMH, which is housed at Penn State, is a national practice-research network of more than 500 college and university counseling centers that collects standardized data as part of routine clinical care and then pools de-identified data for research and clinical purposes.

Fredman and colleagues looked at a subsample of over 2,000 student service members and veterans, then further divided them into four groups based on relationship status and gender, including both partnered and non-partnered women, and partnered and non-partnered men. They found that, for all groups, military-related

posttraumatic stress was associated with greater family distress and lower support from friends and acquaintances and that these difficulties were, in turn, associated with higher academic dysfunction. Further, the effect of PTSD symptoms on academic dysfunction was strongest for partnered women compared to the other three groups and was due to a greater influence of family problems on partnered women's academic adjustment.

Fredman and colleagues theorize partnered women's tendency to "tend and befriend" when under stress may make them especially susceptible to the negative impacts of relationship problems on other areas of their lives, including academic functioning. According to Fredman, "Partnered women who are already struggling with the effects of posttraumatic stress and its impact on their relationships may be working extra hard to manage those relationships, leaving less time and fewer emotional resources to devote to their studies."

In the future, Fredman would like to expand the project to determine which aspects of student veterans' close relationships are most closely associated with academic success or challenges and to develop and test interventions that simultaneously improve PTSD symptoms, interpersonal relationship adjustment, and academic functioning.

"Our ultimate goal is to develop interventions that can be delivered during critical transitional periods, such as the college years, that can serve as a unique window of opportunity to help trauma survivors address these difficulties so that they can fully benefit from their education and lead happier and healthier lives," said Fredman.

Other Penn State researchers on the project include Amy Marshall, Associate Professor of Psychology; Yunying Le, Graduate Student in Human Development and Family Studies; Keith Aronson, Associate Director of SSRI and the Clearinghouse for Military Family Readiness and Senior Research Associate in Biobehavioral Health; Daniel Perkins, Professor of Youth and Family Resiliency and Policy and Principal Scientist and Founder, Clearinghouse for Military Family Readiness; and Jeffrey Hayes, Professor of Education and Psychology.

This research was supported by SSRI and Fredman's Karl R. Fink and Diane Wendle Fink Early Career Professorship for the Study of Families.



Steffany Fredman, Ph.D.

Assistant Professor,
Human Development and Family Studies

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Innovative Methods

School choice policies may impact segregation and diversity of public schools

Despite decades of educational reform and legal efforts, many U.S. schools are experiencing increasing segregation, with 16 percent of public schools serving both minority and high poverty students. A Supreme Court decision a decade ago eliminated the use of certain types of district policies that had been voluntarily adopted by some school districts to address rising segregation. Now, a Penn State researcher is looking at how student assignment policies may be impacting the diversity of public schools.

According to Erica Frankenberg, Population Research Institute Affiliate, Associate Professor of Education and Demography, and Co-director of the Center for Education and Civil Rights, the new generation of school choice policies adopted in response to legal decisions may actually be increasing school inequalities, despite their goals of maintaining integrated schools. “The current student choice policies do not take race into consideration, but it is unclear whether or not they are creating diverse schools,” Frankenberg explained. “In order to avoid many of the perceived legal risks in adopting policies based on race, many school districts now use socioeconomic status in assigning students, which may not be as effective for racial integration.”

Historically, student assignment policies were meant to reduce segregation and enhance diversity, however current student choice policies and how they affect diversity in an era of increasing segregation haven’t been analyzed. “Maintaining and improving school integration is important, as previous research has shown that students of all races who attend diverse schools demonstrate higher academic achievement in reading, language, mathematics, and science,” reported Frankenberg.

In order to assist some districts in pursuing integration, in 2009 the federal government funded 11 school districts to restructure their student assignment policies, including Jefferson County, Kentucky. In her study, Frankenberg analyzed the use of a new race-conscious student assignment policy being used in Jefferson County.

The 100,000-student school district was previously comprised of mostly black and white students, but in the last decade, Jefferson County doubled in Latino student enrollments. The district also includes students from both low-income and wealthy households and is also one of the nation’s most desegregated systems, a product of a 1970’s court order merging of city and suburban districts to further desegregation.

At the same time, analysis of Census data demonstrates relatively high segregation of black, white, and Latino population in the district. “Because of their racial and socio-economic composition and strong policy design, the school district is the best-case scenario for this type of analysis. If we found that Jefferson County was failing to create racially and economically diverse schools, chances are these types policies wouldn’t be able to achieve diversity goals in any school in the country,” Frankenberg said.

Frankenberg evaluated data from the National Center for Education Statistics’ Common Core of Data from 2006 to 2013, which provides annual school-level information about student’s race and ethnicity, as well as free and reduced lunch data. Frankenberg supplemented this information with data from the school district for the years 2013 to 2015, along with information provided by the students’ kindergarten applications.

She found that Jefferson County’s newer approach to school assignment has resulted in steady enrollment growth with no evidence of flight by white or affluent students to private schools or neighboring school districts. The schools in the district remain considerably diverse, and while there is evidence of a slight growth in racial segregation, Jefferson County’s policy is more effective than most, with segregation levels remaining considerably lower than most large school districts.” “I found that white and Latino student integration in the district was increasing, and while black student integration fell. Integration of low-income and middle-class students remained stable as well,” Frankenberg explained.

Frankenberg suggested that along with Jefferson County’s student assignment policies, the history of the school district may have also played a role in her findings. “Jefferson County has a long history of integration, it is part of the Supreme Court’s legacy of Brown vs Board of Education and the implementation of school desegregation. Although Jefferson County fiercely fought school desegregation in the 1970s, they voluntarily continued their integration plan once court oversight ended in 2000.”

Using student application data from 2014, Frankenberg also compared the segregation of students under the existing policy along with several other common methods of assigning students that are not necessarily focused on diversity. She found that students were less segregated in the district’s managed choice policy than under alternative assignment scenarios such as neighborhood schools or granting every child’s first choice of school. “Such a simulation provides real-time

evidence about how district policy design relates to student composition, and was especially valuable this past school year when the state of Kentucky was threatening to pass a neighborhood schools bill that would have required the district to go back to neighborhood schools,” noted Frankenberg.

According to current population projections, there will be no racial or ethnic majority in the U.S. in a few decades, so it is important to that the new student assignment policies lead to improved student outcomes in the midst of this diversity. “Educators will need to understand how to attend to the development of children and youth in a multiracial setting,” Frankenberg said. “If schools cannot facilitate such development, young people are likely to have increased prejudice and higher dropout rates, with significant implications for the United States’ social and economic health.”

Frankenberg’s research was supported in part by the William T. Grant Foundation and the Population Research Institute.



Erica Frankenberg, Ph.D.

Associate Professor,
Education and Demography

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Social Science Research Institute



The Social Science Research Institute
The Pennsylvania State University
114 Henderson Building
University Park, PA 16802
www.ssri.psu.edu

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