The International Center for Energy, Environment and Sustainability (InCEES) at Washington University in St. Louis is an institutional hub for collaborative efforts and interdisciplinary initiatives.

Founded in 2007, InCEES catalyzes university-wide and external collaborative research and educational activities in the areas of energy, environment and sustainability.

The ultimate goal is to address a range of interconnected energy and environmental challenges that are critical to the well-being of society and the planet.

Mission and Vision

• To connect the Washington University community as the lead institutional hub for research, education and practice in developing improved solutions for energy, environment and sustainability challenges affecting the planet

• Support researchers, pilot studies and large-scale initiatives related to energy, environment and sustainability

• Continue to build local, national and international partnerships

• Prepare students, train future leaders and inform citizens to effectively make decisions that promote sustainability in the use of resources

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About InCEES

Himadri Pakrasi, PhD
Myron and Sonya Glassberg/Albert and Blanche Greensfelder Distinguished University Professor
Founding Director, InCEES

120+ PILOT RESEARCH PROJECTS
200+ INDIVIDUAL RESEARCHERS
50+ PARTNER ORGANIZATIONS

ROI = $120M+

IN EXTERNAL RESEARCH FUNDING FOR PROJECTS SUPPORTED BY InCEES OR DERIVED FROM InCEES PILOT FUNDING

& STUDENT OPPORTUNITIES
IN THE LAB AND FIELD, COMMUNITY OUTREACH AND EDUCATION, PUBLICATIONS AND PRACTICE GUIDELINES, PATENTS AND CURRICULAR INNOVATIONS

Cover Photo
Left to right: Hannah Greenhouse, AB ’18, Ingrid Archibald, BS ’18, and Andrea Godshalk, DrSU ’20, traveled to Bonn, Germany in November 2017 as Washington University delegates to COP 23. Participation in the climate negotiations occurs through application-based acceptance into Environmental Studies Seminar 452: International Climate Negotiations led by Beth Martin, Senior Lecturer in Environmental Studies. The class and COP attendance are generously supported by InCEES, the Environmental Studies Program, and the Washington University Climate Change Program (WUCCP).
“What we do at Washington University will benefit all people everywhere.”

InCEES combines education, research and practice to accelerate the pace of progress in the discovery and application of knowledge addressing the great energy, environmental and sustainability challenges facing our planet.

— Mark S. Wrighton, PhD, Chancellor of Washington University in St. Louis
Signature Partners of InCEES

The seven InCEES partners shown below are leaders on campus and in their individual fields. Each partner uses their own operating framework and mission to educate students, advance research initiatives, cultivate partnerships and engage the community in their particular scope of work.
Institutional Partners

**Washington University Climate Change Program (WUCCP)**
Aiming to expand scientific research, education and public understanding of climate change by connecting and informing a global network of institutions, scholars, practitioners and citizens.

**McDonnell Academy Global Energy & Environment Partnership (MAGEEP)**
A consortium of 35 universities and corporate partners working together in energy, environment and sustainability research, education and operations.

**Environmental Studies Program**
Preparing the next generation of environmental leaders through interdisciplinary, community-engaged coursework, research and practice.

**Tyson Research Center**
A 2,000-acre field station located 25 miles west from the Danforth Campus. It provides opportunities for environmental research and education for faculty, students and staff from Washington University and other institutions.

**Office of Sustainability**
Leading the University’s efforts to transform the campus into a living learning laboratory that connects teaching and research directly to sustainable campus operations.

Sponsored Research Partners

**Photosynthetic Antenna Research Center (PARC)**
Meeting the global need for abundant, clean, economical energy. PARC researchers are studying and using the mechanisms of photosynthesis to produce fuels and other sources of renewable energy.

**Consortium for Clean Coal Utilization (CCCU)**
Improving public understanding of the role of coal as a source of energy, and advancing technologies for clean utilization of coal as both a dependable, low-cost source of energy and a reliable chemical feedstock.
The immense scope of the grand energy, environment and sustainability challenges requires us to ask new questions, form new teams, and find new ways of working together to implement solutions that will have real world impact. InCEES has been a key driver of institutional innovation through:

- **Providing funding** to support novel research questions being pursued through new collaborations
- **Bringing people together** to brainstorm and discuss exploratory research
- **Developing innovative research** and curricular activities to provide applied experiential opportunities for faculty, staff, students and the community

“When talented individuals come together in a meaningful way, that is where Washington University can make significant contributions to meet the world’s grand challenges.”

Himadri Pakrasi, the Myron and Sonya Glassberg/Albert and Blanche Greensfelder Distinguished University Professor and Director of InCEES
Bryce Sadtler, assistant professor of chemistry and 2016 InCEES researcher, discusses a model of cadmium selenide. In 2018, Professor Sadtler was awarded a $610,000 National Science Foundation grant to develop better catalysts for alternative fuels.
The Photosynthetic Antenna Research Center (PARC) is a Department of Energy (DOE) funded Energy Frontier Research Center that is administered through InCEES. PARC brings together a core group of Washington University researchers along with several other select scientists from academia and national laboratories to produce an international interdisciplinary team, focused on the scientific groundwork needed to meet the global need for abundant, clean, and economical energy.

The integration of research and education, along with community outreach, is an essential aspect of PARC’s mission. Since its inception in 2009, PARC has directly impacted approximately 964 teachers and 11,000 students in the Greater St. Louis area and beyond.

As the DOE funding concludes and the work of PARC is absorbed by InCEES and transferred into subsequent projects, laboratories and classrooms, PARC’s innovations will continue to have impact both in the St. Louis region and through our global partners for many years to come.

“Our biggest legacy will be this cadre of scientists that will have trained at PARC and who will help meet the global need for abundant, clean and economical energy.”

Robert E. Blankenship, PhD, Lucille P. Markey Distinguished Professor of Arts and Sciences, Director and P.I., PARC

INNOVATE.
Science in St. Louis is a seminar series, based upon work supported by PARC, designed to connect people with scientists at their local libraries. Washington University graduate student Kaitlyn Faries, a PhD student in chemistry, has been spearheading this incredibly popular program since 2014.
The impact of global challenges will not be isolated or felt by single communities, and the work in addressing these challenges must span multiple areas of inquiry and action. This includes not just technical experts who can identify and develop potential solutions, but community experts who can work with those affected to ensure the implementation of these solutions are embraced locally, culturally appropriate, and, ultimately, successful. It is critical for universities like Washington University to lead the way in identifying solutions and systems that provide access to energy for all people without adversely affecting the environment.

“InCEES is the connective tissue that takes the university from many great individual researchers to a world-class center for energy, environment and sustainability.”

David Fike, InCEES Associate Professor in Earth and Planetary Sciences
Director of the Environmental Studies Program in Arts & Sciences
Associate Director, InCEES
WashU students celebrate their tie for second place in the architecture contest at the 2017 U.S. Department of Energy Solar Decathlon competition in Denver, CO. For two years, students, faculty and staff from the Sam Fox School of Design & Visual Arts, the School of Engineering and Applied Science, and InCEES worked with industry partners to design, fabricate and construct CRETE House – a sustainable, solar-powered concrete home. (Photo: Laurie Loweceey/U.S. Department of Energy Solar Decathlon)
Haiti is a nation facing excessive health and environmental challenges. It is also a country burdened by widespread pollutants, yet there has been very little research performed to understand regional air quality. In the summer of 2018, two Washington University researchers will conduct joint experiments to investigate whether the air quality in Haiti could possibly be linked to anemia in school-aged Haitian children.

Lora Iannotti, associate professor and associate dean for Public Health at the Brown School, has spent nearly three decades conducting global health research in Haiti. Brent Williams, the Raymond R. Tucker Distinguished InCEES Career Development Associate Professor, has studied gases and particles in Earth’s climate system and their impact on human health. Using InCEES seed funding, Lora and Brent will work together with investigators from Université Publique du Nord au Cap-Haïtien and Université d’Etat d’Haïti. Support for this work will enable the multi-disciplinary team to acquire critical data results needed to be competitive for larger-scale funding.

“[\textit{We cannot think about energy and sustainability issues without considering issues across borders and working in close collaboration with other countries.}]”

\textit{Lora Iannotti, Associate Professor and Associate Dean for Public Health, InCEES Researcher}
Lora Iannotti (left page) has consistently been engaged in research addressing health challenges in Haiti. Professor Iannotti collaborated with Zorimar Rivera-Nunez in 2015 on a project focused on water quality and in 2018 with Brent Williams on air quality.
The listening process is sometimes the most underrated part of communication, and yet it is the most critical. Organizing forums for active engagement with the community and bringing in partners and renowned experts is key to anchoring efforts at Washington University, locally and internationally. InCEES strives to educate the general public about the important work being done by Washington University researchers and their partners in the areas of energy, the environment and sustainability. Through annual workshops and lectures, InCEES provides an avenue for key researchers to explain the real-world applications of their work.

“The freedom to conduct innovative and collaborative research is tantamount in addressing the challenges affecting society. However, just as important is the sharing of this information with the public and providing a forum for researchers to communicate about their work.”

Holden Thorp, Provost of Washington University and Chair of the InCEES Steering Committee
Dr. Peter H. Raven, George Engelmann Professor of Botany Emeritus and Dean Barbara Schaal attend and present at the 2018 Saint Louis Climate Summit.
For the first decade of operations, communication through InCEES largely focused on organizing lectures, seminars and international workshops. Through the distinguished lecture series, now known as the Albert P. and Blanche Y. Greensfelder Forum, InCEES has attracted some of the most distinguished scholars to discuss bioenergy and the impacts of climate change on human health, biodiversity and agriculture in the Midwest. InCEES continues to work with on-campus stakeholders and partners focused on energy, environment and sustainability to identify topics for future seminars.

COMMUNICATE.

“Environmental issues are inevitably people issues. Washington University has an opportunity to design solutions for environmental justice and for effective adaptation to environmental change.”

Michael Sherraden, George Warren Brown Distinguished University Professor and founding director of the Center for Social Development at the Brown School

Left to right: Dr. Michael Sherraden, Dr. Lisa Reyes Mason, and Dr. Himadri Pakrasi pose at the 2016 symposium “People and Climate Change: Vulnerability, Adaptation, Social Justice.” The Center for Social Development and InCEES organized the event under Dr. Mason’s leadership.
Maysa Albarcha, from the Islamic Speakers Bureau of St. Louis, shares her perspective at the InCEES (formerly known as I-CARES) Interfaith Panel on Climate Change. The event brought together panelists who explored the role of faith, ethics and social justice as it relates to climate change.
PARTNERS

Steering Committee

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Dean, School of Engineering and Applied Science, and the James M. McKelvey Professor

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A fundamental goal of InCEES is the recruitment, support and engagement of endowed professors working in the fields of energy, the environment and sustainability. These professors are recruited across the university for a variety of appointment types, enabling the university to recruit, support and attract a range of professionals. It is expected that their interdisciplinary focus will model the collaborative nature of InCEES.
GLOBAL REACH
InCEES has significant global impact through a strong network of partners, field research sites and participation in multinational climate change meetings.
Request to be added to our e-newsletter list. Please send a note with your email address to incees@wustl.edu.