About the Institute for Systems Research

The Institute for Systems Research (ISR) was founded in 1985 as one of the National Science Foundation’s original Engineering Research Centers. ISR has been at the international forefront of interdisciplinary research and education in systems engineering and the system sciences. Home to nearly 80 faculty and researchers, and more than 200 graduate students, ISR is a permanent, interdisciplinary research unit within the A. James Clark School of Engineering at the University of Maryland.

ISR leads the way

In addition to ISR’s historical research emphases in control, computing and communication, the Institute is widely recognized for strengths in neuroscience and biology-based technologies, micro and nano devices and systems and robotics. ISR faculty are the vanguard of the next breakthroughs in systems research:

- Building tools that address new types of autonomous, distributed, adaptable, resilient, extensible and economically competitive systems
- Creating new algorithms and sophisticated models for decision making and control
- Pioneering the communications and the computing needed to model and design engineering systems
- Devising new approaches to the planning and multi-objective optimization-based design of engineering systems

A sampling of ISR achievements

- The first micro-air vehicle with independently flapping and programmable wings
- Fast broadband internet over satellite protocols, enabling the creation of DirecPC and DirecWay
- Data mining algorithms that improve manufacturing process performance and efficiency
- Wireless sensors that monitor bridge structural integrity
- Wide bandgap material process sensing, simulation and optimization that produce advantages in high power, high frequency electronic devices
ISR endowed fellowship campaign

In honor of the Institute’s 30th anniversary, ISR is launching a campaign to raise $400,000 for the purpose of establishing an endowed Ph.D.-level student fellowship. This fellowship will live in perpetuity through the annual spendable funds derived from the endowment, and more importantly, will secure ISR’s legacy for generations of students to come. The establishment of this fellowship will ensure ISR’s ability to recruit the best students and increase diversity in the Institute’s research and education programs. To achieve this goal, the Institute calls upon its family and friends who span the globe to demonstrate their personal support through a financial commitment.

Gifts made to the ISR Fellowship Fund will be used to support graduate students. When the account reaches the endowed graduate fellowship threshold, ISR will convert funds into an endowed graduate student fellowship.

For more information, contact:

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ISR students, faculty, and alumni

ISR has an accomplished history of providing model-based systems engineering focused training to graduate and undergraduate students in 14 academic departments and four colleges. The Institute’s longstanding success can be attributed to its faculty’s commitment to confront new societal and technological challenges as they present themselves. Their dedication to addressing the newest frontiers in systems research has immensely benefited their students who have gone on to become leaders in their fields and continue to create significant and impactful bodies of work in academia, science, engineering, and technology.

Where are ISR alumni today?

ISR’s 1600 alumni:

Hold prestigious academic positions at institutions including the University of Illinois, University of Pennsylvania, UC Berkeley, Georgia Tech, Princeton, MIT, Carnegie Mellon and the University of Maryland

Work in the telecommunications, software, aviation, and defense industries including Hughes Network Systems, IBM, Qualcomm, Intel, Lockheed Martin, Northrop Grumman, Microsoft, and Intelligent Automation, Inc.

Serve in distinguished federal careers at agencies and labs including DHS, NSA, NASA, NIST, ARL, NRL, and NIH.

THIRTY YEARS OF SYSTEMS RESEARCH EXCELLENCE