CITRIS-UC Riverside Seed Funding for 2016

We are delighted to announce the inaugural **CITRIS & UC Riverside Seed Funding Program** and grant awardees. As part of CITRIS's annual seed funding process, we partnered this year with UC Riverside to broaden collaboration across University of California campuses on research projects that apply information technology for social impact.

Nine highly competitive proposals from principal investigators at the four CITRIS campuses (UC Berkeley, Davis, Merced, Santa Cruz) and UC Riverside were submitted. Four projects were selected for one year of seed funding, each receiving $60,000 for a total of $240,000 in interdisciplinary research funds. Winning proposals include work that will use sensors, drones, and data analytics to advance the future of natural resource management, preservation of cultural heritage, and security in human-robot interaction.

Integrated Data Management of Micro-Synchrophasors and Behind-the-Meter Sensors for Sustainable Electricity Distribution Systems

This project will co-analyze data from micro phasor-measurement-units with data from behind-the-meter sensors at a real-world test site to enhance situational awareness in power distribution systems. An integrated data management system will be developed to support inter-operability and remote access to enable data verification, calibration, and event-cause identification.

Principal investigators:
Hamed Mohsenian-Rad, Sadrul Ula
(UC Riverside)
Alexandra von Meier (UC Berkeley)

Integrating Electrically Conducting Membranes as In-Situ Sensors in Autonomous Water Treatment Systems

We will develop membrane-based systems that couple electrically conducting membranes with open-source hardware and software. The system will produce an autonomous water treatment technology that can adjust operating conditions to respond to changes in feed water quality, as well as initiate cleaning and maintenance operations without the need for human intervention.

Principal investigators:
David Jassby (UC Riverside)
Mark Matsumoto (UC Merced)

Secure Algorithms for Cloud-Robotics

This project will develop control-theoretic tools for cloud-connected autonomous robots interacting with humans to guarantee security and operability in the face of cyber and physical failures, and malicious tampering. This novel human-robot paradigm will ensure dependable performance in complex applications, such as search and rescue, and autonomous surveillance.

Principal investigators:
Fabio Pasqualetti (UC Riverside)
Ricardo Sanfelice (UC Santa Cruz)

Drones for Cave Archaeology and 3D Mapping

This project advances human/drone interactions in 3D mapping of archaeological cave sites. Using existing technology, the project will develop the capabilities of drone mapping in caves and human-robot co-supervised lighting and ground-truthing protocols. This promises to increase speed, accuracy, and quality in mapping archaeological sites, with reduced costs.

Principal investigators:
Holley Moyes, YangQuan Chen (UC Merced)
Karl Taube (UC Riverside)