

September 27, 2012 | By Doug Ramsey

California Research Institute Launches International Innovation Initiative at UC San Diego

There is a new home base for visiting researchers at the University of California, San Diego, and it also serves engineering and other faculty members who need international funding to help get new technologies closer to commercialization.

The International Innovation Initiative (i3) is part of the UC San Diego division of the California Institute for Telecommunications and Information Technology (Calit2) and it will help drive its international agenda. Initial funding for i3 of \$1 million annually for three years – which could eventually reach \$5 million over five years – was a gift from the Korea Evaluation Institute of Industry Technology (KEIT) via the Korea Electronics Technology Institute (KETI).

“It is critical that the university find new ways of engaging with international partners in the government and private sectors to fund advanced research, especially in a time of decreasing state resources,” said UC San Diego Chancellor Pradeep K. Khosla. “This gift is evidence that even a high-tech economy like Korea’s can benefit from seeking out partnerships with world-class innovation centers such as Calit2 and UC San Diego.”

While the initial funding has come from Korea, i3 exists to broaden international participation in the initiative strategically, and to provide program infrastructure for ongoing projects. To that end, a central office in Atkinson Hall has been established with a program manager (Angela Chen) supporting i3’s program infrastructure design, outreach, and strategy, and a program manager (JJ Hwang) supporting i3’s inaugural visiting fellows from Korea, ongoing project management needs, and engaging dialogue with various countries to expand international collaboration.

Research officials, Jacobs School dean Frieder Seible (fourth from right), Calit2 division director Ramesh Rao (third from right) and Calit2 vice chancellor Paul Yu (second from right) cut the ribbon for the i3 space in Calit2’s Atkinson Hall.



UC San Diego Chancellor Pradeep K. Khosla (left) exchanges MoU with Kyung-Won Kim, President of the Korea Electronics Technology Institute, at Aug. 28 conference.

Talks are already underway with research institutions and government agencies in Asia and Europe.



Funding for i3 supports two types of aims. The first is a professional education program under which Calit2 hosts residencies of up to one year for engineers and research executives from private corporations, research laboratories or government institutions for varying lengths of stays. The inaugural class of fellows from Korea will be working throughout the year on campus in various labs in the Jacobs School of Engineering.

“We are creating a new innovation space that is both local and international – leveraging UCSD’s people and resources in new and exciting ways beyond what was previously available,” said i3 faculty director Truong Nguyen, a professor of electrical and computer engineering in the Jacobs School. “Our goal is to drive specific areas of innovation aligned with Calit2 and UC San Diego strengths by connecting within an interdisciplinary framework that creates international interactions among researchers and yields development initiatives and viable ventures.”

The second objective of the initiative is to fund research projects that synergistically pair teams of UC San Diego faculty or research area leads, who work with the visiting i3 Fellows and engage with researchers at foreign corporations or research institutions (some of which send their researchers to work as i3 Fellows in the labs of the funded faculty members).

“We are making every effort to create a continuous collaboration model within i3, because both sides can learn a lot from each other,” said Ramesh Rao, director of the Calit2 division at UC San Diego. “These projects must also pass a litmus test by demonstrating that any ensuing innovations could take advantage of the rich San Diego technology ecosystem and find their way to the marketplace in the not-too-distant future.”

The first four such projects fall under the category this year of system-on-chip development, or ‘System IC’, as it is popularly known in Korea. They were inaugurated under the banner of the KETI’s Korea-USA System IC (KUSIC) research collaboration, announced at an Aug. 28-29 workshop hosted at Calit2:



UC San Diego electrical and computer engineering professor Truong Nguyen is the lead faculty member for Calit2’s International Innovation Initiative.

- Computer Science and Engineering professors Rajesh Gupta and Ryan Kastner are working on wireless high-definition video signal transmission for consumer electronics, together with research staff at Technology Leaders & Innovators (TLi), a leading system-on-chip design company in Korea.

- Electrical and Computer Engineering professors Mohan Trivedi and Nuno Vasconcelos are working in the field of computer vision and robotics to develop object-recognition algorithms for advanced driving-assistance systems. The PIs will liaise with researchers at the Korean company NextChip Solution.
- Electrical and Computer Engineering professors Peter Asbeck and Paul Yu undertake research in the field of renewable energy and power semiconductors (partnered with KETI). In particular, they are developing semiconductor device and circuit technology to provide efficient power converters, with particular focus on high-frequency operation and high-output accuracy.
- Rady School of Management professor Vish Krishnan and i3 Manager and systems ecologist Angela Chen are analyzing the electric vehicle (EV) market and regulatory environment for energy reduction, with particular interests in product and supply-chain optimization for EV component technologies, as well as creating a consumer and regulatory engagement model for the EV market ecosystem to assess decision-making for sustainability. The researchers are partnered with Korea Automotive Technology Institute (KATECH), which supports the Korean automotive industry's R&D.

Adding to the existing scope, KETI also signed a Memorandum of Understanding in late August with UC San Diego to promote research collaboration in three other fields (with faculty leads in parentheses): robotics in education (Truong Nguyen), media processing (Gert Lanckriet), and energy-efficient power amplifiers (Peter Asbeck).

Corresponding researchers from KETI will partner with the three faculty leads, who presented their planned research during the Aug. 28 official ceremonies to launch i3, which included the formal signing of the MoU by Chancellor Khosla and KETI President Kyung-Won Kim. The proceedings included a keynote presentation on biotechnology by Dr. Hamilton Smith, who shared in the 1978 Nobel Prize in Physiology or Medicine. Dr. Hamilton, now at the J. Craig Venter Institute, delivered the i3 keynote and talked about his group's recent breakthrough that made headlines around the world – when they created the first synthetic bacterial cell.

The following day, faculty members from the first set of four systems-on-chip projects participated in the inaugural i3 ICT Convergence Symposium in Jacobs Hall on the UC San Diego engineering campus.

*quote Hamilton Smith from the J. Craig Venter Institute
keynote presentation during the inaugural i3
on his team's breakthrough in developing the first
bacterial cell.*

“KETI-Calit2 international collaboration is truly reflecting a strategic partnership among industry, institute, and academia for accelerating innovation and shortening the time to product development and commercialization. International collaboration across public and private sector is a challenging task. Catalyzing open and continuous dialogue will be one of



key factors for the success of KETI-Calit2 collaboration which will be instrumental to create new projects for strong i3 program,” said i3 manager JJ Hwang.

The i3 program aims to provide an attractive program infrastructure for all stakeholders and supporting services for international startups to incubate more successfully in San Diego. In years two to three of the new initiative (2013-15), i3’s scope will gradually extend beyond the visiting fellows program and topical research projects to innovation-oriented programs and services that could benefit small businesses

and entrepreneurs in the surrounding San Diego community. These services could include UCSD graduate fellowships, industry demo days, conferences, and provision of rent-free space to organizations that are affiliated with UC San Diego, and which can help speed commercialization of prototypes emerging from i3-funded projects.

“San Diego is a city with deep sector capacities for innovation and entrepreneurship and UCSD is an important part of California’s history of innovation in nanotechnology, life sciences, information technology, and telecommunications,” said i3 manager Angela Chen. “This is where our competitive advantage shines. Investment in Calit2 programs such as this one will ensure UCSD plays an important role in the future of startup innovation in San Diego and abroad.”

The new program has potential to foster academic ties across traditional departmental silos and to remove structural boundaries between academic and industry innovation at UCSD. The i3 program aims to create symbiotic partnerships among international governmental and non-governmental agencies, university researchers and local businesses to accomplish innovative solutions that meet today’s market needs within San Diego’s innovation ecosystem. Housing this initiative as part of Calit2 enables international participants to form long-term partnerships and work side-by-side in the institute’s state-of-the-art living laboratories.

MEDIA CONTACT

Angela Chen, 858-534-7096, anc003@ucsd.edu

JJ Hwang, 858-534-5715, j4hwang@ucsd.edu

UC San Diego’s [Studio Ten 300](#) offers radio and television connections for media interviews with our faculty, which can be coordinated via studio@ucsd.edu. To connect with a UC San Diego faculty expert on relevant issues and trending news stories, visit <https://ucsdnews.ucsd.edu/media-resources/faculty-experts>.

The Campaign For
UC San Diego

Continue the
nontradition
