The Joint Research Institute in Science and Engineering  
*Peking University and UCLA*

**A Message from the Co-directors**

Happy New Year of the Dragon!

The Joint Research Institute (JRI) in Science and Engineering between Peking University (PKU) and the University of California, Los Angeles (UCLA) made great progress during 2011. It now has 59 faculty members from PKU and 78 faculty members from UCLA. This newsletter highlights some of the collaborative research projects in a wide range of areas, including semiconductor materials, microelectronics, climate and environmental changes, and studies of vision cells. JRI also facilitated a number of faculty visits to PKU and UCLA, and the establishment of CERC-LA, a new interdisciplinary clean energy research center at UCLA with multiple research partners from China, including PKU. Furthermore, JRI continues to establish multiple industrial partnerships including Asia-Info – the largest internet infrastructure company in China, Baidu – the provider of the most popular search engine in China, China Mobile – the largest mobile communication provider in China, and Xilinx – the largest programmable logic device provider worldwide. Last, but certainly not least, student exchanges continued to flourish in 2011. Five PKU graduate students are spending the 2011-2012 academic year at UCLA working with various UCLA faculty members in the areas of plant biology, visual prosthesis technology, next-generation Internet, new semiconductor materials and near-Earth space environment in the upper atmosphere. Fourteen UCLA undergraduate and graduate students spent 10 weeks during the summer of 2011 working in various research laboratories at PKU. Their research projects are described inside this newsletter, and their enthusiastic feedback on the program is available on JRI’s website: www.pku-jri.ucla.edu.

We wish to thank all JRI faculty, staff, students, advisors and industrial partners for their great support and contributions in 2011. Together, we look forward to bringing JRI new levels of success in 2012.

**JRI Newsletter**  
*Issue 1*  
February 2012

**Mission of JRI**

- promote collaborative research between PKU and UCLA  
- host student and faculty exchanges  
- train students to be future leaders with a global perspective  
- facilitate the technology transfer of collaboration results

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Collaborative Research Highlights

Material Science Research
PKU Professor XiaoDong Hu
UCLA Professor Ya-Hong Xie

The collaborative research between the labs of UCLA Professor Ya-Hong Xie and PKU Professor XiaoDong Hu on improving the performance of GaN-based technologies began approximately four years ago. Group III nitride is a material family that includes alloys of GaN with AlN and InN, and renders direct energy bandgap ranging from 0.65 eV (infrared) to 6.2 eV (UV). This material family is the semiconductor of choice for optoelectronic applications that include solid state lighting, high efficiency solar cells, solar blind photodetectors, blue lasers, and high power microwave transistors. One of the main technological challenges is the absence of a substrate that is lattice matched to GaN, AlN or InN, leading to unavoidably high dislocation density, and thus inferior device properties.

The objective of their collaboration is to demonstrate an innovative epitaxial growth technique for dislocation-free group III nitrides with a US patent issued to UCLA and Prof. Xie, and the benefit of such a high quality crystalline film to the performance of various devices. This is a common interest shared by the two groups. If successful, this new technology could radically change the landscape of the industry. The PKU group’s main interest is to use the material for laser devices, while the UCLA group’s main interest is in the epitaxial growth of lattice mismatched systems.

Working with another collaborator, Prof. ShouJinn Chang’s group of National Cheng Kung University of Taiwan, the two groups have demonstrated superior GaN thin films with nearly zero dislocation density and excellent photoluminescence spectra. They are working on the growth of device film structures for the purpose of demonstrating an anticipated superior device performance.

In parallel, they have begun working with Sino Nitride, a company in DongGuan, China, to explore the commercial feasibility of this new technology for solid state lighting application. UCLA and Sino Nitride will share the processing steps wherever equipment is available. Epitaxial growth will be carried out at Sino Nitride and characterization will be carried out at UCLA.

The plan for this research is to explore the boundaries of using this new technology for several GaN-based technologies, with the hope of advancing the technology via fundamental materials science research.

Microelectronic Research
PKU Professor Ru Huang
UCLA Professor Jason Cong
UCLA PhD student Bingjun Xiao

The collaboration between UCLA Professor Jason Cong and PKU Professor Ru Huang combines the

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architecture-level experience from Cong’s lab and device-level experience from Huang’s lab to come up with novel circuits and systems with emerging device structures.

The current focus is on the demonstration of new field-programmable gate-arrays (FPGAs) with RRAM-based programmable interconnects. Using RRAMs for routing switches led to significant benefits, such as much smaller areas and non-volatility compared to conventional SRAM-based routing switches. They have finished the architecture design and reported preliminary results at the NanoArch Conference in June 2011.

As part of the 2011 JRI Summer Research Exchange, UCLA graduate student Bingjun Xiao collaborated with researchers at PKU. There, he completed a circuit design for a small FPGA prototype with RRAM-based interconnects at TSMC180nm technology and under the constraints of RRAM’s device parameters. Now, fabrication and final demonstration are underway.

Climate and Environmental Change Research
PKU Professor Yongyun Hu
UCLA Professors Kuo-Nan Liou and Qinbin Li

In collaboration with PKU atmospheric scientists, UCLA professors Kuo-Nan Liou and Qinbin Li of the Joint Institute for Regional Earth Science and Engineering (JIFRESSE) have developed a research plan to study the “Tibetan Plateau and Global Climate Change.” The plan is based on evidence linking black carbon to warming trends, glacier melting and climate change on the Plateau, in Asia and beyond. The collaboration will include undergraduate students from PKU selected for summer research training in the UCLA Atmospheric and Oceanic Sciences Department and at JIFRESSE.

Vision Research
PKU Professor Ming Liang Pu
UCLA Professor Nicholas Brecha

Professors Ming Liang Pu and Nicholas Brecha have an ongoing collaboration in vision research, examining high resolution studies of excitable cells. “We are exchanging mice, and our experiments are proceeding smoothly,” says Brecha.
Events

Annual Symposium
The Third Annual Symposium of PKU/UCLA JRI is slated for early May, 2012, at UCLA. These Annual Symposia are an important venue for generating new faculty connections and collaboration interests. Building on the success of the last two events, this year will continue to provide a forum for exchanging JRI's latest research results in the areas of science, engineering, and medicine, and for stimulating collaborations between UCLA and PKU faculty.

On April 25, 2011, the Second Annual Symposium was held at the Ying Jie Overseas Exchange Center of Peking University. PKU President Qifeng Zhou and UCLA Chancellor Gene Block both attended and welcomed more than 40 professors from both universities.

The symposium featured sessions addressing clean energy, information technology, life sciences, basic medical sciences, and translational medicine. Each session showcased new developments from leading faculty at both universities. Professors also had an opportunity to exchange ideas on joint educational programs. See complete details at http://pku-jri.ucla.edu/events/symposium2.

CERC-LA
One result of the Second Annual Symposium was the founding of CERC-LA, a new clean energy research center at UCLA.

In the wake of U.S. Department of Energy Secretary Steven Chu’s 2010 U.S.-China clean energy initiative, JRI member Professor Lei He, of UCLA’s Electrical Engineering Department, is creating CERC-LA, an international interdisciplinary clean energy research center. JRI helped facilitate the first workshop held at UCLA on October 10, 2011. The workshop brought together Chinese and U.S. business, government and academic leaders in energy.

China is UCLA’s leading partner in this venture to address global challenges of energy generation, transmission, storage and management. PKU is one of the initial collaborators for the center. Professor Dongxiao Zhang, executive vice dean of PKU’s College of Engineering, and founding chair of its Department of Energy and Resources Engineering, was in attendance. Representatives from the Chinese Academy of Sciences and Fudan University also participated. Professor He anticipates focusing on smart grid technology, drawing on the strength of research being done at UCLA. "One of our major focuses is energy," said Vijay Dhir, UCLA’s engineering dean and member of JRI. An example of this is a smart power grid being developed by UCLA engineering faculty that can handle the complex power needs of a system that gets energy from residential solar panels and electric vehicles.

The question posed was how to best structure the center and refine its mission. "(This center) is a real beacon of hope," said UC Regent Bonnie Reiss, former senior advisor to California Governor Arnold Schwarzenegger. Reiss advised on major policy initiatives, including environment and education. "A center like this understands that the only way to succeed — and the true power — is in collaboration ... That's what's so brilliant and visionary about this center."

From Chinese industry, some initial partnerships include the State Grid of China Corp., Shanghai Automotive Industry Corp., Pride Power System Technologies Ltd., and Beijing Dianba (e-bus) Technology Ltd.

"We have many centers at UCLA devoted to sustainability," said Professor He. "But one thing not emphasized enough is that these are global challenges that should be addressed by international collaboration."

For more on the center, visit https://cerc.ucla.edu/
Research and exploring new opportunities for collaboration between UCLA and Peking University thrives as the two universities become increasingly connected.

A number of PKU faculty visited UCLA via JRI in 2011. In August Professor Shaoqing Cai, his wife, Professor Xuan Wang, and their daughter Weijing visited UCLA and the labs of Professors Shuo Lin, Yi-Bin Wang, and Min Guo. Professor Cai and Wang are both from the School of Pharmaceutical Sciences at PKU.

“We wanted to express the hope that JRI would further promote collaborations between PKU and UCLA,” said Liao.

PKU Professors Wenxin Li, Xiangqun Chen, and Yifeng Chen spent a November day visiting various professors to explore student exchange possibilities for undergraduate students in computer science. “It is important for our undergraduates to see the broader world, and we need more opportunities for them,” said Li. The delegation met with JRI members in computer science, information science, electrical engineering, and mechanical and aerospace engineering.

Many UCLA JRI members visited PKU as well, in addition to Symposium attendees in April. Stefano Soatto, professor in computer science, visited Professors Wen Gao, Yizhou Wang, and Tingting Jiang. They discussed potential collaborations, including hosting visits by faculty and students from each other’s labs.

JRI welcomed Rikun Kent Liao who headed a three-person delegation that met with JRI Co-director Jason Cong in October. Upon his arrival at UCLA, Liao attended the inaugural Clean Energy Research Center - Los Angeles (CERC-LA) Workshop, held October 10. “Peking University was pleased to be invited to attend this meeting,” said Liao, vice chief of the Division of Overseas Projects, Office of Scientific Research at PKU. China is a major partner for the new international smart grid research center.

Christine Borgman, presidential chair and professor of information studies, visited PKU’s JRI office in October. Borgman met with Professor Ming Zhang to explore collaborating on information retrieval and digital libraries research.

Majid Sarrafzadeh, professor and director of the UCLA Wireless Health Institute, visited Professor Anpeng Huang’s lab in November and lectured on “End-to-End Research in Wireless Health” for students from the School of Electrical Engineering and Computer Sciences. He also saw former advisees and learned of their progress in wireless health. This was Sarrafzadeh’s second visit to PKU.

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In December, Professor Ya-Hong Xie, Material Sciences and Engineering, went to PKU to conduct experiments with Professor XiaoDong Hu. They are researching innovative epitaxial growth techniques for dislocation-free group III nitrides. Xie also attended the 2011 JRI Symposium at PKU.

In May, Professor Kung Yao, Electrical Engineering and Computer Science, gave a seminar at PKU’s Engineering School in addition to a talk at the 2011 JRI Symposium. Yao is taking his sabbatical at PKU in the spring. ■

Newest Members
UCLA
Matthew Khan, Institute of the Environment
Kuo-Nan Liou and Qinbin Li, Department of Atmospheric and Oceanic Sciences

PKU
Yongyun Hu, Department of Atmospheric and Oceanic Sciences

UCLA Dean of Engineering Rajit Gadh gave a seminar on smart grid technology in December to the Engineering Department at PKU.

Student Exchanges
PKU Graduate Student Research Exchange at UCLA

UCLA has welcomed five talented graduate students from PKU to participate in faculty research during the 2011-2012 academic year. This JRI exchange, now in its second year, waives fees for up to three academic quarters while students participate in research at UCLA labs. PKU PhD students identify a UCLA professor in sciences or engineering with whom they wish to work. With consent of their PKU advisor and chosen UCLA professor, the student is then considered by JRI’s co-directors for the exchange.

An important aspect of the JRI exchange is the opportunity to study and observe foreign technologies and experiments, and for the universities to deepen cooperation and communication.

During her one-year visit at UCLA with the 2010-2011 JRI program, PKU student Yuxin Wang joined Professor Jason Cong’s very-large-scale-integration computer aided design (VLSI CAD) lab where she focused on memory optimization in behavioral synthesis. The behavioral synthesis tools are used for compiling high-level programs into register-transfer level (RTL) specifications. Wang and her collaborators found some interesting problems when using the tool for H.264 video decoder synthesis and developed an efficient method for solving them. They combined memory partitioning with existing data reuse and pipelining algorithms to build an integrated optimization flow. For efficient partitioning of the reuse buffer, they proposed a buffer padding algorithm to handle reuse array indices with modulo operation, and merge partitioned reuse banks into several larger reorganized reuse buffers, with consideration of the area overhead. The flow generates an on-chip reuse buffer system with pipelined loops.

The experimental results show a good throughput and area improvement gained by using their method. Details of this work are depicted in the paper “An Integrated and Automated Memory Optimization Flow for FPGA Behavioral Synthesis,” which will be presented at the 17th Asia and South Pacific Design Automation Conference in Sydney, Australia, later this month.

“My stay at UCLA was impressive,” says Wang. “Professor Cong is a brilliant researcher and a nice advisor. I appreciate the (Continued on page 7)
suggestions and help he gave me. Also, I was honored to work with his group. They are very helpful and interesting visiting students. I gained so much from this visiting experience.”

Improving Internet efficiency and helping to create visual experiences for the blind are among the projects undertaken by JRI’s exchange students in 2011-2012.

Qiang Yu, a plant biology student, is a visitor in the joint lab of Professor Hongwei Guo at PKU and Professor Chentao Lin at UCLA. Their collaborative research is aimed at understanding the molecular mechanism of gene regulation in plants. In Professor Lin's lab, Yu is studying protein dynamics of transcription factors, RNA-binding proteins and E3 ligases in Arabidopsis to better understand the mechanisms of gene regulation.

Xinyi Zhang’s research is in visual prosthesis technology. Zhang is working in UCLA Professor Eric Pei-Yu Chiou’s lab. He is a student in Professor Zhihong Li’s lab at PKU, where he studies electrical stimulation to help produce a visual experience for the blind. Professors Chiou and Li have been collaborating for two years and co-authored an APL paper together. Zhang joined Chiou’s optoelectronic lab and is researching light switchable microelectrode array for retinal prosthesis. “Xinyi’s research has a lot of overlap with our group,” says Chou. For his work, Zhang needed more of the specialized supplies that Chiou could provide, so he decided to spend research time at UCLA. “I wanted to come not only for the research supplies, but also to see and communicate with a broader world,” says Zhang. Chiou welcomed Zhang to his lab, saying, “Xinyi has a very good research attitude, solid training in physics and very good problem solving skills. He has contributed a lot to our lab even though he has only been here a few months.”

Chaoyi Bian, a graduate student in computer science, arrived in the fall of 2011 to work with UCLA Professor Lixia Zhang on the Named Data Network (NDN) project. Professor Zhang is the NDN project leader at UCLA, one of the four projects funded by the National Science Foundation under the Future Internet Architecture program. Twelve U.S. institutions participate in the NDN project. The goal is to address the many challenges in today’s Internet Protocol (IP) by developing a new Internet architecture. Bian comes from PKU’s research group of mobile computing and the Internet, which is part of the Institute of Networking Computing and Information Systems. Bian’s research at UCLA explores new application designs for NDN. “Both UCLA and PKU intend to overcome the inefficiency of current IP-based architecture” says Bian. “Since a new data-centric Internet architecture, which is UCLA’s focus, can tremendously facilitate mobility support over Internet, PKU’s focus, there is great space for collaborative research.”

Hao Long is a senior PhD student with extensive experience in the MOCVD growth of wide-band gap semiconductors. He joins Professor Ya-Hong Xie’s lab at the UCLA Department of Materials Science and Engineering as part of the ongoing effort between Professor Xie and Professor Xiao-Dong Hu from the School of Physics at PKU. Long’s research at UCLA will focus on the characterization and device processing of GaN growth using a unique metalorganic chemical vapor deposition (MOCVD) technique invented by Xie’s group.

“I am a firm believer in collaborations,” says Xie, “(they) allow scientists a higher chance to come up with innovative ideas, having access to complementary strengths in science, while benefiting education through cross fertilization.” Long comes from Professor Guoyi Zhang’s lab at PKU. “I want to learn more about American science culture from Professor Xie,” says Long. Xie says Long will “bring with him the know-how in MOCVD growth. In the meantime, his internship in my group will greatly improve his knowledge in materials science so it is truly a win-win arrangement.”

Zhonghua Yao, from the School of Earth and Space Sciences at PKU, joins Professor Vassilis Angelopoulos’ lab in magnetospheric

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physics at UCLA to compliment his research under PKU Professor Zuyin Pu. Professors Pu and Angelopoulos collaborate in their research on jets of magnetized ionized matter (plasma) in Earth's upper atmosphere, beyond the ionosphere. “This near-Earth space environment is critical for telecommunications, as well as space tourism, astronauts and remote sensing. The space environment is quite dynamic in response to solar variability, and can result in space storms in response to solar storms. We study how ions and electrons are accelerated in that environment, causing space radiation and auroras when plasmas at high speeds (millions of miles an hour) collide with Earth's nightside ionosphere,” says Angelopoulos.

“Collaboration, English and resources at UCLA are all very helpful for me,” says Yao. “At PKU my research focus is on the substorm mechanism. I think analyzing THEMIS data is what I want most at UCLA.” Time history of events and macroscale during substorms (THEMIS) data comes from a NASA heliophysics constellation of satellites that investigates auroras in Earth’s atmosphere. Angelopoulos is principal investigator for the THEMIS mission. Yao’s research question, how the plasma pressure system ahead of the flow fronts results in space currents that feed into the high latitude ionosphere and atmosphere, is on the “cutting-edge of space research today,” says Angelopoulos.

*This year’s submission deadline for the student exchange is April 15. Contact Larissa Harrison, lharrison@international.ucla.edu

Sunshine, Science and Hollywood
An LA experience from visiting PhD student Qiang Yu, PKU

Since Professor Chentao Lin’s lab and our lab at Peking University have been cooperating on a large project (gene regulation in plants), I came to UCLA mainly to do experiments and advance my level of research and academics. Also, I wanted to see life on the beautiful west coast of the United States, experience local customs, listen to novel ideas and make friends with Americans.

When I arrived, the first problem was basic: what to eat? I bought meat, vegetables and rice from a supermarket and learned to cook my own meals, an important life experience I think. My daily routine since has been to go to lab in the morning and come home in the evening. The weather here is so comfortable that a shirt is enough.

One thing I find very friendly is that both on and off campus, pedestrians always have the right-of-way over cars. This is really good for safety! Another thing I like is that people say hello even if we totally do not know each other, such as students in other labs and even hotel custodians.

One of my first adventures was going to Hollywood for Halloween. People dressed like famous characters, like Captain Jack of “Pirates of the Caribbean,” Gandalf of “The Lord of the Rings” and the whole cast of “The Wizard of Oz.” That was great. As for me, I wore a pair of devil horns and claws. Maybe it was cool because a girl asked me to take a photo with her. That was life in my first few weeks at UCLA!
UCLA Student Summer Research Exchange at PKU

In exchange for graduate students from PKU, UCLA undergraduates and graduates are offered the opportunity to spend 10 weeks during the summer in research labs at PKU.

The second Summer Research Exchange Program achieved great success with strong support from both universities.

Similar to the first year, students had 10 weeks to conduct research in various labs at PKU. Fourteen students were selected by UCLA based on academic performance, and PKU was glad to host them in Beijing. Half of these students had never been to China. Each student was required to work in a research lab full-time with other local masters and PhD students to finish a research project designed by their advisors. They also had the opportunity to take four-hour Chinese classes each week and participate in sightseeing tours in and around the city on weekends.

The program ended on September 2 with a poster session, research presentations and a closing dinner where students showed their progress in both research and learning the Chinese language and culture. Vice President Wang from PKU, Professors Jason Cong and Xiaoming Li, co-directors of JRI, and other professors at PKU attended the closing event and listened to students’ experiences in Beijing.

UCLA students had a “wonderful” and “unforgettable” time at PKU. The 10-week program afforded them not only an opportunity to grow academically, but a chance to expand their global perspective by being immersed in a completely different culture.

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<tr>
<th>Student Name</th>
<th>PKU Research Title</th>
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<tbody>
<tr>
<td>Tammy Chang</td>
<td>Hybrid Scheduling Method for Large VoIP Packet Delivery</td>
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<td>Yasaman Demehri</td>
<td>Screening for Novel $\beta_2$-Adrenergic Receptor Agonists</td>
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<td>Xin Ning Guan</td>
<td>Electrodeposition of Thermoelectric $\text{Sb}_x\text{Te}_y$ Nanowires</td>
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<td>Hien Huynh</td>
<td>Embedding V8 Module in Nginx to Run JavaScript Applications at the Server</td>
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<td>Niloufar Iranmanesh</td>
<td>Determination of Eight Compounds of Cinnamon Twig by HPLC</td>
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<td>Brandon Lanthier</td>
<td>A Study of TOUGHREACT_V1.21 and Carbon Dioxide Sequestration</td>
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<td>Ian McRae</td>
<td>Synthesis of Micrandilactone A Skeleton</td>
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<td>Arefeh Orouji</td>
<td>The Effect of Angelica Sinensis on the Blood of Rats</td>
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<td>Jamie Tran</td>
<td>Overexpression of miR-9 in HepG2 Cells Results in Reduced Cell Adhesion and Increased Cell Invasion</td>
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<td>Vincent Tse</td>
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<td>Daniel Wen</td>
<td>Photovoltaic Properties of PBDTC10DBT Polymer Solar Cell</td>
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<td>Bingjun Xiao</td>
<td>mrFPGA: A Novel FPGA Architecture with Memristor-Based Reconfiguration</td>
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<tr>
<td>Defeng Xu</td>
<td>Opportunistic Check and Forward: Recovery from Black Hole Attacks for Location Based Routing</td>
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As an electrical engineering student, Tammy Chang was keen to gain some research experience as she explored the option of pursuing a PhD. A summer program offered by the UCLA-Peking University Joint Research Institute in Science and Engineering (JRI) gave her an opportunity to not only log some hours in a laboratory, but to log those hours more than 6,000 miles away.

“I never expected that I would be able to spend time abroad, but this scholarship combined the opportunity to do research with spending time overseas, which made it very appealing to me,” says Chang, who went to Peking University (PKU) with a dozen other UCLA students, whose majors include civil engineering, physiological science, chemistry and biochemistry, computer science, and molecular, cell and developmental biology.

The students lived in PKU’s international dorm and worked with faculty and graduate students on research projects jointly designed by their advisors at PKU and UCLA. They also participated in weekly Chinese classes and sightseeing tours on weekends.

Chang was born and raised in California; her parents came to the U.S. from Taiwan, and her grandparents were from China. “As a result, I was in a sometimes peculiar position in Beijing because I did not entirely come across as fully ‘American’ from the perspective of many Chinese,” says Chang. “Nevertheless, it was ultimately this same Chinese background that allowed me to communicate and relate to the students and locals on a very personal level, in a way that I believe was very unique.”

As part of the 10-week JRI Summer Exchange Program, Chang worked with a research group advancing China’s next-generation 4G network. In addition, she worked independently on a Voice-over-IP scheduling algorithm. She also assisted a PKU graduate student in the publication of his paper on a sensor application for seamless wireless handover on high-speed trains.

“Experiencing life as a research student in Beijing was memorable in every interaction, whether with professors, students, strangers or local friends,” says Chang. “It was in these interactions that I truly came to understand the different background, lifestyle and mindset of the Chinese people. It is these relationships that I treasure the most.”

Now back in Westwood, she says her memories of playing badminton with PKU students in Beijing’s Olympic stadium, eating authentic Chinese meals, watching Transformers in Chinese, hearing her professors belt out tunes in a karaoke bar, and participating in a conference will be treasured forever.

“Before last summer, the expanse of my thoughts was limited to California. There were limitations to my ability to relate to people around me with strong cultural Chinese backgrounds. Now, my thoughts have been broadened beyond Los Angeles and extend to an entirely different culture on the other side of the world. Those who have the blessing of being able to participate in international education will come to truly experience what it means to broaden their scope of the world.”
Summer Research Exchange at PKU 2012

Details about the program and the online application process for the JRI Summer Research Exchange at PKU 2012 are now available.

Information [http://www.pku-jri.ucla.edu/](http://www.pku-jri.ucla.edu/)
Online Application [http://apply.international.ucla.edu/](http://apply.international.ucla.edu/)
Application deadline is February 5, 2012

Graduate Research Exchange at UCLA 2012-13

As part of the PKU/UCLA Joint Research Institute in Science and Engineering (JRI) agreement, each academic year UCLA may accept up to five graduate students from PKU to conduct research in UCLA labs with tuition and campus fees waived. Students must be recommended by a JRI faculty member at PKU and hosted by a JRI faculty member at UCLA.

Submission deadline is April 15, 2012
For information, contact UCLA’s JRI Program Coordinator Larissa Harrison at lharrison@international.ucla.edu

Annual Faculty Symposium 2012

JRI’s Third Annual Symposium will be held at UCLA in spring 2012. Please watch for dates.
JRI was founded in 2009 by co-directors Xiaoming Li (PKU) and Jason Cong (UCLA) with the intention of fostering new and existing collaborations between the two universities, to train future science and engineering leaders in a global perspective, and to secure joint funding and facilitate technology transfer of research results.

JRI is the first joint research institute between any UC campus and an overseas university.

PKU, the first national, comprehensive university in China, has one of the best health science centers and is the top rated university in the country. UCLA is one of the top recipients of U.S. grants for science, medicine and engineering. UCLA’s hospital is rated “the best hospital in the west,” and its School of Engineering is the birthplace of the Internet.

JRI aims to serve both institutions as they jointly confront global concerns in science and engineering.

**NSF Funding Opportunities**

for collaborations and exchanges between UCLA and PKU

**Science Across Virtual Institutes (SAVI)**

Supports U.S. research communities to build long-term, structured international collaborations (virtual institutes) with partnering countries in science, technology, engineering and mathematics.

Approximately $50,000-$400,000 a year for up to five years

Proposal deadline: ongoing


**Partnerships for International Research and Education (PIRE)**

Supports international activities in science, engineering and education for sustainability (SEES) across all NSF supported disciplines in which advances could not occur without international collaboration.

Approximately $4 million over five years

Proposal deadline: 5/15/2012


**International Research Fellowship Program (IRFP)**

Support for nine to 24 months of research abroad to introduce scientists and engineers in early stages of their careers to international collaborative research opportunities.

Approximately $57,000-$200,000

Proposal deadline: 9/11/2012


**Research Experiences for Undergraduates (REU)**

Supports projects that encourage active research participation by undergraduate students in any of the areas of research funded by the National Science Foundation. The REU program encourages projects with an international dimension.

Approximately $70,000-$110,000 per year for three years

Proposal deadline: 8/22/2012


**Plant Genome Research Program (PGRP)**

Supports plant genome research. Proposals with international collaboration are welcome.

Proposal deadline: 3/5/2012


**East Asia and Pacific Summer Institutes for U.S. Graduate Students (EAPSI)**

Supports U.S. graduate students in sciences and engineering to work in research facilities abroad during the summer. Summer Institutes are hosted by foreign counterparts in East Asia and the Pacific region. UCLA graduate students can work at PKU with JRI members through this fellowship.

$5,000 fellowship for eight-weeks

Proposal deadline: 11/14/2012

[www.nsf.gov/eapsi](http://www.nsf.gov/eapsi)