FALL 2012
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Pictured (left to right): University Distinguished Professor Richard Magin, Professor and Research Resources Center (RRC) Director William Hendrickson, RRC Magnetic Resonance Imaging (MRI) Director Dr. Weiguo Li, Professor and Head of Bioengineering Thomas Royston, UIC Chancellor Paula Allen-Meares, RRC MRI Senior Consultant Dr. Robert Kleps. Occasion: Grand Opening of the new 9.4 Tesla 30 cm bore MRI System (see story inside).
Dear Friends of UIC Bioengineering,

We’ve had a great first year under our new “dual citizenship” in the Colleges of Engineering (COE) and Medicine (COM). This newsletter summarizes some of the highlights. To hit some of the key numbers in brief, our undergraduate enrollment is up from 231 in Fall 2011 to 240 in Fall 2012. Our incoming undergraduate students have an all-time high average ACT score that leads all Engineering programs at UIC, as the Engineering programs overall continue to lead all of UIC. So, I can honestly say we continue to recruit the “best of the best” students to our undergraduate program. Our M.S. enrollment is up from 42 to 48 and PhD enrollment has remained nearly steady at 110. During the past year we proudly awarded 35 B.S., 12 M.S. and 15 Ph.D. degrees in Bioengineering and 5 M.S. and 3 Ph.D. degrees in Biostatistics. With our two doctoral degree programs, we continue to maintain the largest Ph.D. enrollment of any department in the College of Engineering.

During the past year our core faculty amassed external research expenditures of $4.8 million dollars, a 20% increase over the previous year. Our core faculty size is increasing this year with the addition of three new hires – Hananeh Esmailbeigi in Fall 2012, and Dieter Klatt and Ao Ma in Spring 2013. More information about these three outstanding individuals can be found in this newsletter. Beyond the financial and infrastructure investment in Bioengineering as a result of the COE/COM membership, on a number of teaching, research and faculty recruitment fronts I believe the dual status has already shown benefits. For example, please see the feature about our new senior design sequence, Interdisciplinary Medical Product Development (IMPD). Clinician involvement in this undergraduate bioengineering course is a unique enhancement that is a direct outcome of our dual status.

While collaborative research between Bioengineering and College of Medicine faculty was already significant in our department, our new status has helped foster additional and strengthen existing collaborations that I’m sure we’ll be writing about in future newsletters.

Also, I believe that dual citizenship played a significant role in our recruitment of Dr. Ao Ma, who will be joining us from Einstein College of Medicine as an Associate Professor, with tenure held in the UIC College of Medicine. Medicine’s, and, in particular, Dean Azar’s support in recruitng this rising star in Biostatistics were critical. Crucial to this recruitment of Dr. Dieter Klatt are the availability of new high field magnetic resonance imaging (MRI) facilities at UIC for both small animals and human studies. Bioengineering’s leadership in securing a new 30 cm bore 0.4 Tesla MRI machine made possible by a $2 million dollar grant from NSF to University Distinguished Professor Richard Magni is highlighted in this newsletter. Thank you for helping support our continued successes. Gifts targeted to the department can help us achieve our strategic goals, and could include opportunities to endow a named professorship, scholarship, laboratory, or special facility program. See our “Give to UIC BioE” button on our website at bioe.uic.edu. In addition to financial support, I am hoping that the network of UIC BioE alumni and friends continues to help our students find internship and employment opportunities.

Finally, I am always happy to meet our alumni and friends and welcome your visit.

Sincerely,

Thomas J. Royston

Message from the Head

Dieter Klatt

On January 1, 2013, Dr. Dieter Klatt will join the UIC Department of Bioengineering as a tenured Assistant Professor. He will also become the Academic Director of the new 9.4 Tesla 30 cm bore magnetic resonance imaging (MRI) system described on page 9 of this newsletter. Dieter received his PhD in Physics from Charite’ University, Berlin, in 2010 advised by Prof. Ingo Falk. This was immediately followed by a postdoctoral appointment at Charite’, and then at UIC starting in 2011 under Prof. Thomas Royston. The magnetic resonance elastography (MRE) research group led by Prof. Ingo Falk and Jurgen Braun at Charite’ is widely recognized one of the 2 or 3 leading groups in the world in this field, and has specialized on MRE applications to the brain, heart, and liver.

While having only just received his PhD in 2010, Dr. Klatt already has authored or co-authored 20 archival journal publications and more than 50 conference papers in the field of MRE, primarily focused on his application to the brain and diagnosing such conditions as multiple sclerosis and hydrocephalus. In MRE, harmless, low-level vibratory waves are introduced into the tissue of interest. A specialized MRE acquisition sequence is used to capture an image of the vibratory waves, which can then be used in an inverse model to quantitatively map stiffness and damping of the tissues, which can be correlated with disease or response to therapy. Dr. Klatt will strengthen our core of researchers focused on high-field, high-resolution MRE, currently led by Profs. Maehl and Royston, who are involved in collaborations with a number of leading scientists throughout UIC, as well as at University of Chicago and Northwestern.

Hananeh Esmailbeigi

On August 8, 2012, Dr. Hananeh Esmailbeigi joined us as a Clinical Assistant Professor. She received her Ph.D. from UIC in 2010 advised by Dr. Patrick Rousche, where she conducted research on Auditory Cortical Prosthesis. She developed 3-dimensional flexible polyimide based neural implants, and conducted high-resolution fMRI studies of the human auditory cortex at the UIC CMRR.

She then accepted a Postdoctoral Fellowship at the Janelia Farm Research Campus of the Howard Hughes Medical Institute from June 2010 to July 2012. She has developed microfabrication implants enabling novel imaging and nuclear recording applications. She has designed and microfabricated low-power miniature wireless subcutaneous biological recording systems. Dr. Esmailbeigi also worked at the University of Freiburg, Department of Microsystems Engineering – IMTEK Germany, as a visiting researcher under the supervision of Dr. Thomas Stieglitz.

At UIC, Hananeh will be using her background and experiences in the field of neural engineering in developing and teaching neural engineering graduate level courses, as well as the biomimnetration lab, and introductory Bioengineering courses. She will also be involved in educational grants focused on enhancing the bioengineering programs at UIC.

New faculty profiles

As Ma

Dieter Klatt

Hananeh Esmailbeigi

On January 1, 2013, Dr. Ao Ma will join the UIC Department of Bioengineering as a tenured Associate Professor ( tenure held in the College of Medicine). Ao received his Ph.D. in Theoretical Chemistry from Brown University in 2003 under Prof. Richard M. Bratt. This was followed by a Postdoctoral fellowship with Prof. Aaron R. Dinner at the University of Chicago from 2003 to 2006. In 2006 he became an Assistant Professor in the Department of Physiology and Biophysics at the Albert Einstein College of Medicine in the Bronx, NY.

Dr. Ma has made significant research contributions in a number of important areas in computational biophysics and systems biology. In his work on mitotic spindle function, he has been recognized as a pioneer in developing the fundamental theoretical and computational framework for studying this important cell biology problem. His work has provided experimentalists with deep insights and has been a driving force in a number of joint experimental and computational investigations. Dr. Ma’s work on kinetochore, microtubule, and molecular motor has also been recognized as first rate. In addition, his work on quantifying physical characteristics of reactive or electroactive molecules using machine learning techniques addresses a fundamental problem in dynamic systems and is very innovative.

Dr. Ma will strengthen our small but successful core of faculty in Biostatistics, currently comprised of Drs. Yang Dai, Jo Liang, and Hui Lu. The average age at which individuals first become principle investigator (PI) on an NIH R01 grant is 43 years. Dr. Ma has achieved this while in his late 30’s as sole PI on the R01 Grant “Determining the spindle dynamics regulatory network with an integrated approach,” which will result in about $1.2M in external funding to UIC. He is also one of four PIs on a second R01 “Phosphorylation of the kinesin motor domain: structure, dynamics and function,” that just started April 1, 2012, and will also result in a significant external funding to UIC.

Ao Ma

New additions to the Bioengineering core faculty are:
Professor Mike Cho was one of six faculty university-wide who received the University Scholar Award this year in an all-university Awards ceremony on October 4, 2012. The University Scholar Program recognizes outstanding members of the faculty and provides each with $10,000 annually for three years to be used at their discretion to further their scholarly work. The awards are not made for a specific project or proposal, rather, they are a symbol of the recipient’s excellence and the University’s commitment to fostering outstanding people and their work.

Since joining the UIC Department of Bioengineering in 2000 as an Assistant Professor, Mike has had many significant accomplishments as a researcher and scholar that have brought national and international visibility to UIC and the Dept. of Bioengineering in the Cell and Tissue Engineering area. Additionally, Mike has been an outstanding educator and mentor to students, and has undertaken more than his fair share of administrative service for the department. Mike capably served as our Director of Graduate Studies for 7 years, and as Interim Department Head from 2005 to 2006.

Mike has led one of the most successful and active research labs in the College (The Laboratory for Biomolecular Imaging) that has collaborated extensively with other researchers on both east and west campuses. His research is in the area of stem cell-based tissue engineering. This is a relatively new concept, but represents a rapidly expanding multidisciplinary area of research.

Congratulations to Dr. Urmila Diwekar who received the prestigious 2011 Lawrence B. Cecil Award from the American Institute of Chemical Engineering (AIChE). She is the first woman to receive this national award in its 59 year history. The Cecil Award is given by the Environmental Division in recognition of an individual’s outstanding chemical engineering contribution and achievement in the preservation or improvement of the environment. She received the award and delivered the award lecture at the AIChE national meeting in October 2011.

Urmila Diwekar

Professor Urmila Diwekar

Adjunct Professor Michael Cho

Professor Michael Cho – University Scholar

Congratulations to Dr. Urmila Diwekar who received the prestigious 2011 Lawrence B. Cecil Award from the American Institute of Chemical Engineering (AIChE). She is the first woman to receive this national award in its 59 year history. The Cecil Award is given by the Environmental Division in recognition of an individual’s outstanding chemical engineering contribution and achievement in the preservation or improvement of the environment. She received the award and delivered the award lecture at the AIChE national meeting in October 2011.

Dr. Diwekar also received the Ernest Thiele Award of the Chicago Section of the American Institute of Chemical Engineers for outstanding contributions to chemical engineering, which, among other forms of recognition, comes with a $1000 Honorarium.

Lukasz Zientara – Award of Merit

Congratulations to Mr. Lukasz Zientara, our Lab Support Specialist, Website Manager, IT Department, Safety Officer, Mr. Fix-it, Trade Union liaison, etc., for receiving the 2012 UIC Award of Merit! He will join 29 other Academic Professionals and 20 other forms of recognition, comes with a $1000 Honorarium.

New Grants 2012

Dave Edington (Co-PI), Joe Oberhuber (PI, Co-PI), “A Novel Ebre Cell Specific Microfluidic Partitioning and Imaging Device for Islet Potency Testing” NIH R01, $1,657,669. Dave’s (BioE) portion: $366,037

9/11-11/3/11.

Dave Edington, with collaborators Jakies Rahman from UIC Cardiology and Navadeep Chandel from NU “Oxygen Sensing in Endothelial Progenitor Cells” CBER Catalyst grant of $200K ($100K for UIC, $50K for Dave)


3D Imaging of Dynamic Behavior of Primary Tumor Cells” CBB Grant of $500K (100K for UIC, $250K for Dave)


3D Imaging of Dynamic Behavior of Primary Tumor Cells” CBB Grant of $500K (100K for UIC, $250K for Dave)

Aimee Bobko, “Transdermal Morphine for Pain control and Mechanically-Powered Nebulizers” by Aimee Bobko, Amber Langston, Alexandra Ryltsevichka.

The 2012 COE Teaching Award: Michael Cho

2012 COE Teaching Award: Jim Patton

The patent “Apparatus and Methods for Measuring Nasal Function,” US 8,118,752, issued 2/21/2012 to Associate Professor Jamie R. Hardin, is featured in the May 2012 issue of Scientific American. (4/8/12)

Andrews Linninger's funding for RET program extended, with an additional $500k over three years (4/2/12)

Je Liang (PI) has received bridge funding supplement of $93,109 for NIH R01 grant “Computational Assembly of Beta Barl Membrane Protein” extending the period of funding by six months to 8/31/13 while his competitive renewal is in review. The total funding and duration for this grant is now $1,479,240 (3/31/13- 8/31/13).
Bioengineering is excited to launch its inaugural Interdisciplinary Medical Product Development (IMPD) program this year, in partnership with Baxter International. IMPD is part of the interdisciplinary Product Development Program at UIC, which partners with corporations to generate innovation and provide a real world educational experience for students from Business, Design and Engineering. The course is co-taught by Bioengineering, Business and Industrial Design faculty, and includes students from each of the colleges. Interdisciplinary student teams conduct in-depth customer research, generate concepts to the problem statement provided by the partner, and refine the concepts into prototypes as the final deliverable at the end of the two-semester course. Teams are each 5-7 students in size, and each team presents their progress to date to the corporate partners quarterly. The IPD course is able to substantially replicate the experience of interdisciplinary teams working together to do the early stage work of developing a new product within the context of an organizational environment. Teams and faculty sign non-disclosure agreements, and corporate partners own all of the IP generated by the class. The IPD course is offered by the Bioengineering department as a senior design course, a capstone sequence in the undergraduate curriculum.

One way the BioE IMPD course is distinct from the other IPD courses is that it also incorporates clinician feedback and mentoring of the design teams, facilitated by the UIC College of Medicine.

**New undergraduate course**

**BioE IMPD**

**2012 Department of Bioengineering**

**PhD Recipients**

Below are the Department of Bioengineering doctoral graduates for the 2011-2012 academic year.

**Fall 2011**

- Siddhesh Anga, PhD
  Bioengineering Combined Use Of hMMP-2 and Low Intensity Pulsed Ultrasound to Enhance Bone Healing in Large Defects
  Advisor: Viral V. Mittal

- Tamas Ban, PhD
  Bioengineering Development of the Multi-Electrode Electroretinographic Technology, Applications, and Commercialization
  Advisor: Daniel E. Hetling

- Sukhraj Basati, PhD
  Bioengineering An Implantable Intracranial Volume System for Hydrocephalus Therapy
  Advisor: Linenger

- Novena Rangwala, PhD
  Bioengineering Reduction of Arterial Flow From Non-Adiabatic Gradients in Fast Magnetic Resonance Imaging
  Advisor: Arif I. Ansari

**Spring 2012**

- Norman Dyas, PhD
  Bioengineering A Molecular Basis for Liquid State Information Processors
  Advisor: Arif I. Ansari

- Devang Gandhi, PhD
  Bioengineering Assessment of PGA Coated Polyacrylate Microspheres as a Flexible Implanted Neural Interface for CNS
  Advisor: Rousche

- Aman Gupta, PhD
  Bioengineering Ultra-High Field MR Diffusion Tensor Imaging Characterization of Rabbit Tendon and Ligaments
  Advisor: Wang, F.

- Mittal Anuradha, PhD
  Bioinformatics Development and Application of Computational Drug Design Methods Against Microbial Pathogen Enzymes
  Advisor: Jeyssou, M.

- Sunan Mohanty, PhD
  Bioengineering Manual Motor Deficits in Autism Spectrum Disorders (ASD)
  Advisor: Virdi

- Naveed Hammad, PhD
  Bioinformatics Computational Characterization of Striated and Thermodynamic Properties of Alpha 1b Membrane Proteins
  Advisor: Liang

- Muhammad Qasim, PhD
  Bioengineering Initiation and Progression of Lumbar Disc Degeneration under Cyclic Loading: A Finite Element Study
  Advisor: Natarajan, R.

- Ramana Vinakrubhuda, PhD
  Bioengineering The Role of ROCK in Colon Cancer Invasion Using Three-Dimensional Collagen I Micrometastasis
  Advisor: Gaurav

**2012 Department of Bioengineering MS Recipients**

Below are the Department of Bioengineering Masters graduates for the 2011-2012 academic year.

**Fall 2011**

- Shushi Kabu, MS
  Bioengineering Demonstration of a System to Study Multisite Synaptic Response on a Rat Retina
  Advisor: Saggare

- Yolga Pasupuleti, MS
  Bioinformatics Mutagenesis of Bacterial Membrane Proteins to Evaluate the Role of Sequence and Structural Motifs
  Advisor: Liang

**Spring 2012**

- Ashley Greene, MS
  Bioengineering Haptic Interfacing in Animal Behavioral Systems: Implications for Motor Rehabilitation
  Advisor: Patton

- Maggioni Marco, MS
  Bioinformatics GPU-based Linear Algebra for Calculating Steady-State Probability and Dynamics of Molecular Networks
  Advisor: Liang

- Zachary Wright, MS
  Bioengineering Startle Stimuli Reduce the Internal Model of the Startle Response
  Advisor: Liang

- Jonathan Steia, MS
  Bioengineering Cartilage-on-Cartilage Articulating System as a Wear Benchmark for Artificial Replacement Materials
  Advisor: Wimmer

- Sai Lakshmi Subramanian, MS
  Bioinformatics Analysis of Uptake Region of Antibiotic Resistance Genes to Identify Leader Peptides
  Advisor: Liang

- Ying Wang, MS
  Bioengineering Optimal Hydrophilic and Polar Interaction Models for Protein Inverse Folding Problem
  Advisor: Liang

- Ying Wei, MS
  Bioinformatics Visual Annotation of Gene Lists with Functional Enrichment
  Advisor: Liang

- Jonathan Steia, MS
  Bioengineering Cartilage-on-Cartilage Articulating System as a Wear Benchmark for Artificial Replacement Materials
  Advisor: Wimmer

**MS Bioinformatics**

- Naveed Hammad, PhD
  Bioinformatics Computational Characterization of Striated
  Advisor: Liang

- Muhammad Qasim, PhD
  Bioengineering Initiation and Progression of Lumbar Disc Degeneration under Cyclic Loading: A Finite Element Study
  Advisor: Natarajan, R.

- Ramana Vinakrubhuda, PhD
  Bioengineering The Role of ROCK in Colon Cancer Invasion Using Three-Dimensional Collagen I Micrometastasis
  Advisor: Gaurav

- Sunan Mohanty, PhD
  Bioengineering Manual Motor Deficits in Autism Spectrum Disorders (ASD)
  Advisor: Virdi

- Naveed Hammad, PhD
  Bioinformatics Computational Characterization of Striated and Thermodynamic Properties of Alpha 1b Membrane Proteins
  Advisor: Liang

- Mohammad Rahman, PhD
  Bioengineering Evaluation of Biomedical Hydrogel Parameters for Biomolecular Diffusion in Controlled Drug Delivery
  Advisor: Gaurav

- Amy Ross, MS
  Bioengineering Assessment of Molecular Weight and Drug Loading on Release from Hydrogel Therapeutics
  Advisor: Gaurav

**PhD & MS Recipients**

**Bioinstrumentation Lab renovation**

We are excited to announce that the Bioinstrumentation Laboratory is newly renovated during the summer of 2012. The lab is now equipped with 8 lab stations and 16 computers, which can accommodate up to 32 students simultaneously. All the computers provide access to LabView, Matlab, and Creo software. The lab is staffed 5 days a week and is open to all Bioengineering students (priority is given to students in lab courses).
Spotlight on MD/PhD students and MSTP program – past and present

The Medical Scientist Training Program trains outstanding students for careers as physician-scientists. The MD/PhD students are educated to bridge the basic and clinical sciences. They are challenged to take interdisciplinary approaches to bioengineering problems. The bioengineering department has had 6 MD/PhD students since 2005, and currently there are 3 MD/PhD students working toward their PhD degree in the department.

Link to the program: http://chicago.medicine.uic.edu/mstp

BioE alumni of the MSTP 2005-2011:

Kharma Foucher (2005)
Advisors-Debra Harvoot, PhD
Current: Instructor in Orthopedic Surgery, The Rush Human Motion Laboratory, Rush U.

Nathan Stitzel (2006)
Advisors-Garth Winkler, MD, PhD
Residency: Internal Medicine, U. Chicago, Cardiology, Brigham & Women’s Hospital-Harvard U.
Fellowship in Cardiovascular Medicine, Brigham and Women’s Hospital-Harvard University
Current: Cardiologist, Boston, MA

Ronald Jackups (2008)
Advisors-Jie Liang, PhD
Residency: Clinical Pathology, Washington U-Barnes Jewish Hospital, St. Louis
Current: Assistant Professor of Pathology and Immunology, Washington U. School of Medicine.

Terry Chigianos (2009)
Advisors-Patrick Rossouw, PhD
Residency: Emergency Medicine, U of I Hospital

Arpita Kadakia Bahsin (2010)
Advisors-Michael Cho, PhD
Residency: Ophthalmology, U of Texas-Southwestern

Ananda Fine (2011)
Advisors-David Mogul, PhD
Residency: Neurology, New York Hospital/ Columbia University

Current MD-PhD students in BioE:

Farah Shareef-G2
Advisors-Michael Cho, PhD and Dimitri Avram
MD (Ophthalmology)

Michael Fettplace-G1
Advisors-Guy Weinberg, MD (Anesthesiology)
and Richard Minshall, PhD (Pharmacology, Anesthesiology)

Allen Ye-G1
Advisors-Richard Magin, PhD

From Allen Ye: “I received a Bachelor’s in Biomedical Engineering from Case Western in 2009 with a focus on imaging and computing. I spent a year as an MRI Research Assistant at University Hospitals in Cleveland before coming to UIC for the MD/PhD program. At Dr. Magin’s lab we are studying MRI and tissue parameters and how they can be accurately measured and applied.

I believe that there is a need for physician-scientists to help facilitate communication between the two cohorts. I have sincerely appreciated my time spent at UIC and I think the support and opportunities that the MSTP program has provided are on par with any school in the nation.”

New MRI facility & BioE-West expansion – Open House and ribbon cutting on 9/24/12

UIC 9.4 Tesla 30 cm bore Magnetic Resonance Imaging (MRI) System

The application of magnetic resonance (MR) Imaging and spectroscopy is rapidly expanding beyond the traditional domains of chemistry and clinical medicine. Engineers, biologists, and even artists are seeing their problems in new ways through the use of non-contact, radiation free, and fully 3 dimensional MRI imaging. The flow of magnetic, efficiency of catalyt, strength of polymers, and hidden structure of developing plants can all be visualized with sub-millimeter resolution. Neuroscientists can probe models of memory and cognition, while chemical engineers can study diffusion and convectio in porous media. Made possible through a $2M grant from the National Science Foundation with matching support from the following colleges and administrative units: College of Engineering, College of Liberal Arts and Sciences, College of Medicine, College of Pharmacy, as well as the Office of the Vice Chancellor for Research and the Office of the Vice Chancellor for Academic Affairs and Provost, a state-of-the-art 9.4 Tesla MRI Imaging (MRI) system has been acquired from Agilent Technologies. It will be managed by the UIC Research Resources Center as a core facility available for researchers and educators across the campus.

To celebrate the launch of the UIC 9.4 T 30 MRI, a ribbon-cutting ceremony took place on Monday, September 24, 2012 with Chancellor Paul Allen-Meares along with University Distinguished Profes sor Richard Magin during the honors of cutting the ribbon (see photo). This was preceded by some remarks from Richard Magin, Professor in Bioengineering. Excerpts from these remarks are provided here:

“This is a happy day for everyone associated with the project and also for anyone on campus interested in using MRI as a tool to improve their research. I once heard someone observe that new tools allow us not only to break new ground, but they also can enable us to discover whole new fields. Here in the new MRI facility I can foresee discoveries in emerging disciplines such as imaging informatics, functional imaging, and regenerative medicine’. He continued by thanking “all of my co-PIs from the colleges of engineering, liberal arts and sciences, medicine, pharmacy and Allied health sciences, and also faculty from BT, who contributed specific projects to the NSF proposal that I think collectively built a compelling case for this MRI at UIC.”
Engineering World Health

Engineering World Health (EWH) is a non-profit organization that mobilizes engineers to improve the quality of health care at hospitals serving resource-poor communities in the developing world. The Department of Bioengineering at UIC and Baxter International Inc. have invested their resources into making EWH-UIC chapter a success. EWH focuses on sustainable and novel health technologies, providing resources for developing countries from technology that is routine in developed countries. Technology in developing countries has advanced significantly over the past decade, but it has not trickled down to developing countries. Our primary focus is bringing advanced technology to developing countries by designing medical equipment around the resources available in those communities. Our secondary goal is to facilitate equipment donation and maintenance to those communities.

Over the past years, EWH has nationally been facilitating the donation of electro-surgery units (ESU) to developing countries. Hospitals in the US and Europe typically upgrade their medical equipment every few years, and discarded models can be sent to the developing world through the work of charities, non-governmental organizations, and other groups. Our chapter at UIC is dedicated to providing diagnostic tools for this developing world; these tools normally cost thousands of dollars. In the past year, we built ESU testers to ship to the national headquarters of EWH. These kits were built and tested by engineering students at UIC volunteering their time and effort on a weekly basis. The BioE Department played an essential role by providing the equipment required for building these testers as well as providing full access to the Bioinstrumentation lab. ESU testers will be sent to facilities in developing countries.

EWH also provides opportunities to devote time and skill to developing countries through the EWH – Summer Institute program. Our very own BioE Graduate student, Rudhram Gajendran, was selected by the national chapter to participate and provide his valuable knowledge and insight in building healthy communities in Nicaragua. See the separate News article “Rudhram Gajendran Summer experience with EWH – Summer Institute”.

Bioengineering MS student Rudhram Gajendran Summer experience with EWH – Summer Institute

EWH – Summer Institute is an annual training and volunteer program organized by Engineering World Health in association with Duke University in which undergraduates, graduates and working professionals of physics, mathematics and engineering background are trained in medical instrumentation and local language and placed in local hospitals in resource-lacking communities of developing nations to support the hospital staff with technical expertise in repair and maintenance of critical medical devices. This summer, I had the opportunity to participate in this two month long volunteer program in Central America along with 26 other participants from around the world.

This was more than just a technical volunteer experience; it was also a rich cultural experience as we stayed with local families eating local homemade food, learning the language and the culture. The first month in Costa Rica was mainly Spanish and instrumentation classes through the week, and hospital visits during weekends. The Spanish learnt in the first month was critical for communication during the second month. The second month was in Nicaragua, where the students were divided into groups of two and were placed in hospitals all around the country. I, along with another Biomedical Engineering undergraduate from Duke University, was placed in Hospital La Trinidad, located in the community of La Trinidad, Estelí, Nicaragua where we worked full time repairing medical and laboratory equipment, putting them back to service. Apart from technical support, we also participated in painting walls, decorating wards, building benches and cleaning hospital grounds. My teammate and I had the opportunity to work at a prosthetics workshop where we learnt the steps involved in making a prosthetic device starting from patient measurements to finished product.

The weekends were mainly spent travelling to different parts of the country, hiking and sightseeing. The overall experience was truly memorable as I got an opportunity to meet new inspiring people, see new places, learn new language and culture and most importantly contribute to a good cause. Lastly, I would like to thank the Department of Bioengineering, College of Engineering and the Graduate College for their generous support, we also participated in painting walls, decorating wards, building benches and cleaning hospital grounds. My teammate and I had the opportunity to work at a prosthetics workshop where we learnt the steps involved in making a prosthetic device starting from patient measurements to finished product.

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Bioengineering PhD student Zeying Yin and Chemical Engineering Assistant Professor Belinda Akin sit in the control room for the Agilent 9.4 Tesla MRI System.

Professor Magin says a few words right before the ribbon cutting.

A reception and Open House of the new facility followed. Guests had the opportunity to meet new RRC staff responsible for the MRI and toured the facility and the newly renovated west campus Department of Bioengineering space that is contiguous with the new RRC facility.

He continued: “These instruments complement existing NMR systems in the Center for Structural Biology and in the RRC to enable new research across multiple scales from macromolecules to cells to tissues to organs, and to whole animals. And the benefits go beyond just doing better research, the new technology will help us recruit new faculty. But in addition to recruiting, and multi-scale translational studies, the new MRI system also gives us the means to conduct MRI research that spans multiple disciplines. In fact the faculty involved in the NSF grant proposal come almost equally from the East and West sides of campus with participants from all of the COE departments (Biotech, CHE, ECE, CS, ME, CME), many LAS departments, as well as from Kinesiology, Pharmacology, Biochemistry, Psychology, Physiology, and Radiology, to name just a few. This interconnection of faculty and graduate student talent will promote new ground breaking studies in emerging fields such as neural mapping, systems biology, and elastographic tissue analysis, for example. Such studies will lead not only to new knowledge and applications, but to new collaborations and new fields of research, all led by UIC faculty working across disciplines and across the campus.”

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Faculty Position Search
The Department of Bioengineering at the University of Illinois at Chicago invites applications for a tenured/tenure-track faculty position at all ranks. UIC, located just west of downtown, is the largest public research university in the metropolitan Chicago area with a total annual budget of $1.95 billion and research expenditures of $335 million. The campus has 15 colleges and schools including the largest medical school in the country, serving one of the nation’s most diverse student populations, with a total student body of approximately 27,580 and a faculty and staff of 11,500.

For this Faculty position, we seek applicants with an exceptional early- or mid- career track record who will engage in transformational bioengineering or bioinformatics research. Applicants should be outstanding technically in their basic science and engineering niche, yet have a strong collaborative interest in specific application areas. Individuals that can bridge areas of existing expertise in the department listed above with each other and with expertise found elsewhere at UIC and in the Chicago region, such as areas fostered by the Chicago Biomedical Consortium and the following interdepartmental UIC Centers and Institutes: Cancer Center, Center for Clinical and Translational Science, Center for Cardiovascular Research, Center for Magnetic Resonance Research, and Institute for Personalized Respiratory Medicine, or who can leverage other unique regional facilities, such as Argonne National Lab, are especially encouraged to apply. Applicants are required to have an earned Ph.D. in bioengineering or a related field, and are expected to develop and maintain an active, externally-funded research program as well as teach at both the undergraduate and graduate levels.

Screening of applications will begin immediately. The deadline for full consideration is December 14, 2012 although applications will be accepted until the position is filled. The University of Illinois at Chicago is a major research university with a strong commitment to serve its highly diverse community. As such, UIC especially welcomes applications from women, underrepresented minority group members, persons with disabilities, members of sexual minority groups and others who would enrich the University’s research, teaching, and Great Cities’ mission. The University of Illinois at Chicago is an Affirmative Action/Equal Opportunity employer.

Apply electronically at:
https://jobs.uic.edu/job-board/job-details?jobID=12664