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Carnegie Mellon
Welcome to our New Departmental Newsletter!

Carnegie Mellon University, with its top-quality research in engineering and basic sciences and long tradition of cross-discipline collaborations, represents an ideal environment for biomedical engineering. During the first 6 years of its existence, the department has laid a solid foundation under the leadership of Prof. Todd Przybycien, through its impressive growth in educational programs, student body, and faculty. This foundation serves as the point of departure for the growth of the department in the coming decade. Our immediate tasks are to establish a strong identity, to enhance connections with partners, to project aggressively to the outside world, and to build continuously for the future. Our growth will be guided by the overarching principles of balance and collaboration. Over the past few years, BME has built research strengths in cardiovascular devices, image processing and informatics, and regenerative medicine. These targeted areas will be integrated into the broader strengths in biomedical applications and research tools across the campus. Due to the very nature of biomedical engineering, placing distinct “pillars” in the context of complementary “blocks” will likely enhance both the quality and impact of research. To further promote collaborations, the department is strengthening its ties with courtesy members and seeking additional 50/50 joint faculty appointments. We are extremely excited about the arrival of Prof. Ge Yang as a joint faculty member with the Lane Center for Computational Biology, the recruitment of Dr. Byron Yu as a joint faculty member with the Department of Electrical & Computer Engineering, and the ongoing joint faculty search with the Department of Materials Science & Engineering.

The department has also started campaigns to boost its visibility both within and outside Carnegie Mellon, through its web site, publications, seminar series, and presence at professional conferences. We are emphasizing our role in integrating BME research and education across the campus while seeking continuous improvements and growth. The educational mission will be enhanced by improving teaching facilities and the advising system, and by developing strategies to meet the broad career goals of the students. In addition, the department will continue to expand its faculty while balancing and integrating basic and applied research. Of particular interest to the department is “directly translatable” basic research with a broad potential impact on biomedical engineering, and research that bridges and integrates multiple areas of current research. Down the road, the department looks forward to a new biomedical engineering research building on the main campus, at a strategic location and with a structure optimized for collaboration to further enhance its role in promoting synergistic interactions among its 19 partner departments, institutes, and centers.

Sincerely,

Yu-li Wang
New Faculty Focus

Ge Yang  
Assistant Professor, Department of Biomedical Engineering  
and Lane Center for Computational Biology

It is a great pleasure for me to introduce myself to the biomedical engineering community at Carnegie Mellon. I was born in a small town in the southern part of China to a family of doctors: my father is a physician; my mother is a pediatrician. I received my undergraduate education in mechanical and electrical engineering at Tsinghua University in Beijing. After my graduation in 1991, I worked for a few years in industry. This experience helped me to recognize that my real interest is in research. I then studied for my Master’s degree in electrical engineering at the Institute of Automation of the Chinese Academy of Sciences, working on trajectory planning and control of robots. In 1998, I came to the United States to pursue my doctoral training in mechanical engineering at the University of Minnesota, Twin Cities. I was fortunate to join the lab of Dr. Bradley Nelson, a Carnegie Mellon graduate trained at the Robotics Institute with Dr. Pradeep Khosla. From Dr. Nelson I learned the importance of always focusing on developing real solutions to real-world problems. My thesis research was mainly on microrobotics, including the development of a robotic workstation to assemble microfabricated hybrid MEMS parts. During this period, however, my research interests started to shift gradually from system development to computer vision techniques for microscopic imaging. After I graduated in early 2004, I joined the lab of Dr. Gaudenz Danuser in the Department of Cell Biology at the Scripps Research Institute for my postdoctoral training. There I started to work on integrating computer vision, computational and biophysical modeling, and fluorescence live cell imaging to investigate the molecular mechanisms of basic cellular processes. Although my original plan was to focus on developing and applying microscopic computer vision techniques, I became so attracted to the beauty and complexity of the biology of cells that I decided to pursue my future research in computational cell biology. My transition was also assisted greatly by Dr. Danuser, who is a role model for conducting interdisciplinary research. My research over the past five years at Scripps has been focused on understanding how force and motion are generated and regulated in cell division and axonal transport. Specifically, I have been working on analyzing the dynamic architecture of the mitotic spindle and coordination of molecular motors in driving bidirectional cargo transport in neurons. Both have profound connections to human diseases. I believe we are in the most exciting time to study biology. Development of biology over the past half a century has made it possible to identify the genome and proteome of living organisms. The challenge now is to understand how individual components work together to exhibit the function, adaptability, and complexity of living organisms as we observe. Today, biological research is increasingly dependent on engineering perspectives and techniques. Students with solid engineering and computational thinking and skills will have great opportunities to make fundamental research impacts. It is because of this I am particularly excited to join Carnegie Mellon.

My research at Carnegie Mellon will continue to focus on integrating computation, modeling, imaging and other experimental techniques of cell biology, molecular biology, and genetics to understand the mechanisms of cell division and axonal transport, with an emphasis on understanding related human diseases. I am particularly excited about the prospect of expanding my research much further into neuroscience, with an emphasis on using integrated approaches to understand human neurodegenerative diseases such as Alzheimer’s disease. In the fall of 2009, I will start to teach a class on molecular cell biology to senior and graduate engineering students. I look forward to introducing to engineering students the amazing world of cells, which are undoubtedly among the most fascinating engineering systems.

For more information on Dr. Yang:  
http://www.andrew.cmu.edu/user/geyang/
Justin Crowley  
**Ph.D.**  
Assistant Professor of Biological Sciences  
and Biomedical Engineering

I am most pleased to be a member of the Department of Biomedical Engineering! My primary appointment is in Biological Sciences, but I have always appreciated the interface between hypothesis testing and technology development. My lab’s research is focused on the development of the visual system, primarily the mechanisms that form connections in the developing brain, but we are also interested in the “plasticity” that occurs with visual experience. To explore these phenomena, my group uses a combination of structural and functional optical neuroimaging techniques as well as conventional histology.

For more information on Dr. Crowley:  
http://www.cmu.edu/bio/faculty/crowley.shtml

Michael Sacks  
**Ph.D.**  
Adjunct Professor, Department of Biomedical Engineering  
William Kepler Whiteford Professor of Bioengineering, University of Pittsburgh

My overall research focus is characterization and modeling of the structure-function-biomechanics of native and engineered soft tissues, and linking these studies to underlying cell-tissue mechanobiological interactions. In particular, my laboratory has focused on the mechanical behavior and function of the native aortic and mitral heart valves, including the development of the first constitutive (stress-strain) models for these tissues using a structural approach. Recent work includes multi-scale studies of cell/tissue/organ mechanical interactions in native and engineered heart valves. I am particularly interested in determining the local stress environment for heart valve interstitial cells. This work aims to utilize an integrated experimental/multi-scale finite element approach to determine how hemodynamic loading on the valve translates to altered stress states on the valve interstitial cell function and, in-turn, changes in local extra-cellular structure/composition and valve function.

For more information on Dr. Sacks:  
http://www.engr.pitt.edu/biengineering/main/people/faculty/sacks_michael.html

Spotlight on BME Achievements

Robert Tilton,  
Professor of Biomedical Engineering  
and Chemical Engineering  
› Has been appointed to serve in the NIH Nanotechnology Study Section.  
› Together with Professor Todd Przybycien has received an NSF grant to develop protein PEGylation as a means to preserve the biological efficacy of protein therapeutics delivered via biodegradable drug delivery depots.  
› Completed a term as Chair of the American Chemical Society Division of Colloid and Surface Chemistry.

Robert Murphy,  
Ray and Stephanie Lane Professor of Computational Biology and  
Professor of Biological Sciences,  
Biomedical Engineering, and  
Machine Learning  
› Has been appointed to the National Advisory General Medical Sciences Council by the Secretary of Health and Human Services.

Jelena Kovacevic,  
Professor of Biomedical Engineering  
and Electrical & Computer Engineering  
› Was appointed as a regular
member of the NIH Microscopic Imaging Study Section, the primary review panel for the development and applications of microscopy and imaging technologies for BME research.

James Antaki,
Professor of Biomedical Engineering

› Is a recipient of the Steven J. Fenves Award for System Research for his application of system engineering to the optimization of medical devices.
› Awarded a $2.9 million grant from the National Institutes of Health/Heart Lung Blood Institute for a project titled: “Multi-scale Model of Thrombosis in Artificial Circulation.” Professor Ender Finol, courtesy faculty member of BME, is a co-investigator on this 5-year project.
› Recently awarded a $50,000 GAP grant from Carnegie Mellon’s Office of Technology Transfer to begin development for “A Blood Purification System for the Malaria.”

Ender Finol,
Associate Research Professor, Institute for Complex Engineering Systems, Biomedical Engineering and Mechanical Engineering

› Has been invited to join the Editorial Board of the Journal of Endovascular Therapy for 2009-2010.
› Recently received $200,000 in initial funding for a cofounded start-up company, NeuroInterventional Therapeutics, Inc. in Pittsburgh.

Alumnus Focus: Where Are They Now?

Gowri Srinivasa Ph.D.
Professor of Information Science and Engineering, PES School of Engineering (PESSE), Bangalore, India

I graduated from BME in Fall 2008 under the guidance of Prof. Jelena Kovacevic at the Center for Bioimage Informatics. One of first things that struck me about Carnegie Mellon University, particularly BME, was its emphatic spirit of collaboration. How much is achieved when faculty and students from different backgrounds collaborate on interdisciplinary projects! After graduation, I was sure I wanted to continue to work in such a synergistic environment. Moreover, during the course of my graduate studies, Jelena gave me plenty of opportunities to work with undergraduate and masters students on different projects. I enjoyed this experience thoroughly and learned a lot. This was my first reason for considering a job in academia.

“I am very grateful for the continued support of my team at Carnegie Mellon University and the warm reception at PESSE.”

Although this was flattering, it seemed daunting to be on the ‘other side of the table’ so soon! Over the next few months and after many long talks with my friends, it was clear that this would be the best match for me. I am now on the faculty of the Dept. of Information Science and Engineering at the PES School of Engineering in Bangalore. The department is young and energetic and the students’ potential is heartening. Apart from teaching, I am involved in developing the PES Center for Pattern Recognition. Bioimage Informatics is in its nascence here, so I am introducing it to the students and faculty. It is great to be back home, in a job that is fulfilling and gives me time to pursue my interests. I am very grateful for the continued support of my team at Carnegie Mellon University and the warm reception at PESSE.

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New Accelerated Master’s Program

The Department of Biomedical Engineering has launched its new single-year, course-based Master of Biomedical Engineering (MBME) program. The program is particularly appealing to students of traditional engineering or basic sciences who are interested in developing a career in biomedical engineering or medicine. Promoted by the strong collaborative culture of Carnegie Mellon University, a unique feature of the Biomedical Engineering Department is its emphasis on balancing traditional engineering, basic sciences, and biomedical applications. Its undergraduate program offers a mandatory double major, with a curriculum developed and maintained jointly by the BME department and its partners in Chemical Engineering, Electrical & Computer Engineering, Materials Science & Engineering, Mechanical Engineering, and Civil & Environmental Engineering. Students build their expertise in Biomedical Engineering upon an unusually solid foundation, which has contributed greatly to their success in both the job market and professional education.

The MBME program follows a philosophy, accepting students with a background in traditional engineering or basic sciences and turning them into biomedical engineers at an accelerated pace.

“...The MBME program follows a philosophy, accepting students with a background in traditional engineering or basic sciences and turning them into biomedical engineers at an accelerated pace...”

PROFILE: Mr. Satish Ramakrishnan

The first student accepted into the MBME program in Fall 2009, Mr. Satish Ramakrishnan, graduated from the Carnegie Mellon University in 2009 as a university honor student majoring in Biological Sciences. His career goal is to become an intervention cardiologist, combining patient care with research on the regeneration of diseased cardiac tissue. As an undergraduate student, Satish has already gained experience in hospitals as a volunteer for elderly care and as a trainee to shadow medical residents. He has also conducted basic and translational research on cell mechanics, cell motility, and regenerative medicine. However, he felt that a one-year master program in Biomedical Engineering will provide him training on important aspects of modern medicine that are not always available in a M.D. program, in particular connections between biology, medicine, and technology.

The Department of Biomedical Engineering has worked closely with Satish to design a program that meets his goal. Courses he is taking include Engineering Molecular Cell Biology, to understand the general principles of how cells respond to their environments; Biomedical/Host Interactions,
students are required to cover at least four of five core areas. The remaining courses are designed to build depth while allowing flexibility in additional areas such as public policy. Students develop expertise in a specialty area through a large choice of courses from across the campus and from the nearby University of Pittsburgh. In addition, the MBME program may be combined with a unique program in Engineering & Technology Innovation Management (E&TIM) to form a two-year program for dual master degrees.

The MBME program also includes practical training courses. Students with a non-engineering background may benefit from the courses of BME Design to gain first-hand experience in product development, while those with prior engineering training may choose to rotate through either research laboratories or clinical environments offered by BME’s adjunct faculty members in either the University of Pittsburgh Medical Center or Allegheny General Hospital.

Additional information on the MBME program may be found online at:
http://www.bme.cmu.edu/gradprog/ms_mbme.html

Symposia

to understand how cells interact with artificial materials used in regenerative medicine; Surgery for Engineers, to understand how technologies are being applied in an operating room; Rehabilitation Engineering, to understand how technologies facilitate patient recovery and improve their life quality; and Cardiology Clinical Internship, to observe how cardiologists treat patients. The program also allows him to attend many exciting seminars on diverse topics of biomedical engineering, and to interact with students with a wide range of career goals including academic research, industrial R&D, teaching, and entrepreneurship.

Biomechanics Research Builds Momentum at Carnegie Mellon

Kris Dahl | Assistant Professor of Biomedical Engineering, Chemical Engineering, and Materials Science & Engineering

With the successes of many Bioimaging Days and last year’s Biomaterials Day, we were inspired to organize a day to exchange ideas of biomechanics research. When we finally made a list of all of the researchers in the Pittsburgh area, even at Carnegie Mellon, who were working on biomechanics topics, it seemed like a week would have been more appropriate. Since Prof. Yu-Li Wang had just joined the department as the head, we decided to format the talks around the small scale biomechanics in homage to Prof. Wang’s cell mechanics legacy. The first Biomechanics Day is thus: Micro-biomechanics: Thinking Big and Measuring Small. The talks feature professors from math, chemistry, biology, computational biology, mechanical engineering, surgery and of course BME. The breadth of backgrounds has lead to a unique interaction of thoughts and ideas. We also hope that collaborations will be forged from discussions held during the meeting and afterward.

My favorite part in organizing a day like this is seeing the enthusiasm of the presenters when getting involved. Professors starting their careers as well as the most senior established professors all enthusiastically offer support to the meeting. Researchers from both CMU and PITT understand the potential of this meeting in bringing together people of like interest and complementary skills, and everyone is looking forward to presenting their latest finds and brainstorming new ideas. It is this spirit of enthusiasm, collegiality and collaboration that drives research within Carnegie Mellon BME and allows its presence to be felt throughout its sister departments.

For more information visit:
http://www.bme.cmu.edu/research/biomechanicsday.html
Bioimaging Day Showcases World-Class Theoretical and Experimental Research

Organized by the Center for Bioimage Informatics (CBI) and sponsored by the Department of Biomedical Engineering, the 5th Annual Bioimaging Day took place on February 18th, 2009. The Bioimaging Day brings together researchers from across Carnegie Mellon University and the broader Pittsburgh research community who are generating bioimage data in their experimental programs or who are developing cutting-edge methods to extract information from bioimage data. As in previous years, the talks presented an exciting mix of research addressing fundamental questions in biology as well as urgent needs for tomorrow’s healthcare solutions.

Opening the event in front of a packed audience, Prof. Chien Ho, director of the Pittsburgh NMR Center, talked about detection of transplanted organ rejection by MRI, followed by Prof. Eric Ahrens, who presented in vivo cytometry approaches using MRI, and guest speaker Prof. Yuanwei Jin from University of Maryland, who explained applications of time reversal in biomedical imaging. The second morning session was opened by Prof. Robert Murphy, Founding Director of the CBI and Director of the Lane Center for Computational Biology, who informed the participants about active learning approaches for experimental biology, followed by Prof. Gustavo Rohde, who discussed geometric approaches for decoding phenotypic heterogeneity, and he second guest speaker, Prof. Simon Watkins, Director of the Center for Biologic Imaging at University of Pittsburgh, who enticed the audience with stunning microscopy videos on cellular communication between antigen-presenting cells.

Following the tradition of the Bioimaging Day, the lunch break featured 13 poster presentations by undergraduate students, graduate students, and postdocs from many departments across CIT and Mellon College of Sciences, demonstrating commitment to interdisciplinary education of the next generation of researchers at all levels, and creating a platform for those creative minds that form the backbone of Carnegie Mellon’s groundbreaking research machinery.

Prof. Alan Waggoner, Director of the Molecular Biosensor and Imaging Center (MBIC) and an NIH National Technology Center for Networks and Pathways, opened the first afternoon session with a talk on his pioneering work on live cell molecular biosensors, followed by the third guest speaker, Prof. Chakra Chennubhotla from University of Pittsburgh, with a talk on parametric models for image segmentation, and CBI’s latest addition, Prof. Ge Yang (who joined Carnegie Mellon in January 2009 coming from Scripps), with a presentation on computational analysis of cell dynamics. The session was concluded by CBI’s Director, Prof. Jelena Kovacevic, presenting her pioneering work on active mask segmentation. The final session of the day featured research topics by another three of Carnegie Mellon’s talented junior researchers, with Prof. Kris Dahl reporting on interactions between carbon nanotubes and cellular actin filaments, Prof. Yongjie Zhang discussing modeling for planning of lung cancer laser therapies, and Prof. Stefan Zappe presenting technologies for high-throughput Drosophila embryo screens. Graduate student Tao Peng won this year’s poster presenter lottery for a $300 BME cash award.

For more information on the Center for Bioimage Informatics and Bioimaging Day, please visit: http://www.cbi.cmu.edu/
Biomaterials Day

Newell Washburn
Ph.D.  Assistant Professor of Biomedical Engineering and Chemistry

Biomaterials research at Carnegie Mellon University is conducted across campus; it ranges from the synthesis of advanced biomaterials, to the characterization of cell-material interactions, to the development of novel medical devices. The nature of the research is similarly diverse, from fundamental studies of molecular and cellular events at biomaterial interfaces to translational research focused on the development of new devices and therapies. In order to bring together researchers with diverse interests — and diverse locations on campus — Biomaterials Day was organized by Professor Yu-li Wang, the new head of Biomedical Engineering, Professor Mike McHenry of Materials Science and Engineering, and Newell Washburn, Assistant Professor of Biomedical Engineering and Chemistry. Modeled on the highly successful Bioimaging Day series, Biomaterials Day covered talks given by faculty in the Carnegie Institute of Technology, the Mellon College of Science, the Robotics Institute, and Institute for Complex Engineered System.

The morning featured Yu-li Wang, the Matyjaszewski group, and an overview of the collaborative research done by the Tilton and Przybycien groups. After the break, Phil Campbell and Mike McHenry spoke along with two faculty members from the University of Pittsburgh, Thomas Gilbert (a Carnegie Mellon University alumnus — BS in MSE) and Yadong Wang, who recently moved to Pitt from Georgia Tech. There was a lunchtime poster session, followed by talks from the LeDuc, Dahl, Islam, Bockstaller, Sitti, Zappe, and Washburn Groups. The diversity of biomaterials activities presents an opportunity (and challenge) for Dr. Wang who is working to unify the very active Carnegie Mellon University biomaterials research into a coherent program. BME is already planning the next Biomaterials Day and is encouraging the establishment of similar symposium “Days” to bring together researchers with related goals.

Biomedical Engineering and Biotechnology Research Symposium

The Biomedical Engineering and Biotechnology Research Symposium (BEBRS) is an annual event organized by the Graduate Biomedical Engineering Society. The fourth BEBRS Symposium was held on April 23rd, 2009, in Posner Hall of Tepper School of Business. The keynote speaker, invited by BME graduate students, was Dr. Shu Chien, M.D., Ph.D., director of the Whitaker Institute of Biomedical Engineering at University of California, San Diego and a member of all three U.S. National Academies. Dr. Shu Chien gave a visionary speech on exciting fronts of biomedical engineering, how they might impact on the society, and how the field might face future challenges in research and education. The symposium also featured graduate and undergraduate student presentations as posters and talks, which covered a wide range of biomedical engineering from computer modeling to drug delivery. The symposium not only served as a strong stimulation for student inter-actions, but also provided first-hand experience for students to organize, moderate, and participate in research conferences. The Department of Biomedical Engineering acknowledges Fisher Scientific as the major sponsor for this event.
Highlighting 2008-09 BME Advances

**Facilities:**

- **Department Headquarters** – Administrative offices have been set up on the 4th floor of the Pittsburgh Technology Center building on Technology Drive to serve as the home base for the department head, the assistant to department head, and the business manager. Posters are displayed along the fourth floor corridor and a digital display has been installed to feature the diversity of the research conducted within the department. The office in Doherty Hall 2100 remains the central office for student affairs.

- **Student Lounges & Teaching Laboratories** – New space has been allocated in Hamburg Hall as the graduate student lounge. GBMES is leading the effort in setting up the room. Space has also been allocated for a dual-purpose computing facility and undergraduate lounge in Wean Hall. Smith Hall 125 has been converted to an undergraduate teaching laboratory.

- **BME Web Site** – Launched in December 2008, the new web site (www.bme.cmu.edu) presents a clear picture of the university-wide research and education enterprise coordinated by the department, featuring the synergistic interactions among BME faculty members and between BME and partner departments.

**BME Programs:**

- **Ph.D. Admission Process** – To improve the mentoring of Ph.D. students, advisors will no longer be assigned during the admission process. Students will spend the first few weeks upon enrollment interacting with several potential advisors to determine the best fit.

- **New BME Symposia** – The “Biomaterials Day” symposium, aimed at drawing together researchers who develop and apply novel materials for BME from across the campus, debuted in October 2008. A “Biomechanics Day” symposium was launched in 2009. Together with the Bioimaging Day symposium, these symposia serve as part of BME’s efforts to promote interdepartmental interactions and collaborations.

- **Enhanced Seminar Series** – Since the Fall of 2008, BME departmental seminars have been held regularly each week. The faculty series features prominent and emerging leaders as well as faculty members from the Pittsburgh area. The student series provides senior Ph.D. students the same setting to share their research, and to build skills and experience for major research presentations.

**Faculty & Staff Members:**

- **Faculty** – Professor Ge Yang joined the department in 2009 as a joint Assistant Professor with the Lane Center for Computational Biology.

- **Director of Placement and Alumni Relations** – Ms. Hilda Diamond is BME’s first director of Placement and Alumni Relations. Over the past 40 years she has worked for several precursors of the department, helping hundreds of BME students set their feet for a successful career. It is difficult to find a more appropriate person to enhance alumni relations.

- **Associate Head** – Professor Conrad Zapanta became the Associate Head of BME in 2009, with the main mission of enhancing undergraduate education. BME will benefit profoundly from
having a faculty member with outstanding teaching achievements and research experience as its Associate Head.

- **Staff Assistants** – Ms. Vanessa Calvin and Ms. Abigail Fasulo both joined the department staff in 2009. Ms. Calvin is an alumna of Carnegie Mellon and previously worked in the university’s College of Humanities & Social Sciences. Ms. Fasulo is an alumna of Northwestern University and Stanford University and worked in corporate finance before coming to Carnegie Mellon.

**Record, Image & Stipends**

- **Record Graduate Applications** – BME graduate programs have set a new record of attracting applications, with a total of 190 applicants for Fall 2009. The recruitment has an impressive 10% selectivity and 50% yield. Matriculated students have an average GRE quantitative score of 784. The growing reputation of the program and the new web site have contributed to the increase in applicants to the department.

**BME Faculty at Commencement 2009**

Commencement photo of BME faculty, left to right: Yu-li Wang, Conrad Zapanta, Gustavo Rohde, Stefan Zappe, James Antaki, Kris Dahl, Jelena Kovacevic, Todd Przybycien, Ender Finol

**Faculty Recruitment**

The Engineering School of Carnegie Mellon University, ranked #6 by U.S. News, seeks joint appointment of an Assistant Professor between the Departments of Biomedical Engineering and Materials Science & Engineering in the general area of BIOMATERIALS. A successful candidate is expected to bridge actively the two Departments in research and teaching, and to build a vigorous interdisciplinary research program by leveraging institutional strengths in polymeric/inorganic bio-inspired materials, cellular biomechanics, biomolecular interfaces, regenerative medicine, imaging, and microfabrication. Faculty of Carnegie Mellon enjoy a strong interdisciplinary culture nurtured by interdepartmental collaborations and joint appointments, in addition to excellent research support, modest teaching load, top quality students, and comprehensive benefits. Applicants should send their CV, three letters of recommendation, and vision statements on research and teaching, to:

Ms. Vanessa Calvin,
tango-search@andrew.cmu.edu.

Applications will be reviewed through February 2010. Carnegie Mellon University, an Equal Opportunity/Affirmative Action Employer, encourages applications from women, under-represented minorities, individuals with disabilities, and veterans.
Carnegie Mellon University does not discriminate, and Carnegie Mellon University is required not to discriminate, in admission, employment, or administration of its programs or activities on the basis of race, color, national origin, sex, or handicap in violation of Title VI of the Civil Rights Act of 1964, Title IX of the Educational Amendments of 1972, and Section 504 of the Rehabilitation Act of 1973 or other federal, state, or local laws or executive orders. In addition, Carnegie Mellon University does not discriminate in admission, employment, or administration of its programs on the basis of religion, creed, ancestry, belief, age, veteran status, sexual orientation, or gender identity. Carnegie Mellon does not discriminate in violation of federal, state, or local laws or executive orders. However, in the judgment of the Carnegie Mellon Human Relations Commission, the Presidential Executive Order directing the Department of Defense to follow a policy of “Don’t ask, don’t tell, don’t pursue” excludes openly gay, lesbian, and bisexual students from receiving ROTC scholarships or serving in the military. Nevertheless, all ROTC classes at Carnegie Mellon University are available to all students.

Inquiries concerning application of these statements should be directed to the provost, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh, PA 15213, telephone 412-268-6684, or the vice president for enrollment, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh, PA 15213, telephone 412-268-2056.

Carnegie Mellon University publishes an annual campus security report describing the University’s security, alcohol and drug, and sexual assault policies, and containing statistics about the number and type of crimes committed on the campus during the preceding three years. You can obtain a copy by contacting the Carnegie Mellon Police Department at 412-268-2323. The security report is also available online.