Argonne National Laboratory seeks applications for the position of Director of the Biosciences (BIO) Division. Argonne, located about 25 miles southwest of Chicago, Illinois, is one of the U.S. Department of Energy’s largest national laboratories for scientific and engineering research. Argonne is managed by UChicago Argonne, LLC, for the U.S. Department of Energy’s Office of Science. Argonne applies a unique mix of world-class science, engineering, and user facilities to deliver innovative research and technologies that address the grand challenges of our time: plentiful and safe energy, a healthy environment, economic competitiveness, and a secure nation.

The mission of the BIO Division is to use state-of-the-art technology to conduct multidisciplinary basic and applied research that will increase our understanding of the fundamental molecular mechanisms of life, with the goal of enabling important advances in energy production and sustainability, environmental protection and remediation, and human health and welfare. Program areas include structural, computational, environmental, and molecular systems biology.

The BIO Division Director will lead world-class basic and applied research integrating ‘multi-omics’ with microbial and ecosystem science through pursuit of innovative scientific directions; foster collaborative partnerships with national and international researchers from national laboratories, academia, and industry for the advancement of scientific discovery; manage the division’s scientific staff of ~100 members; while promoting innovative research yielding significant scientific contributions and publications; anticipate trends in and needs for biological research in order to develop relevant and effective program strategies; maintain an active role in R&D activities within his/her area of expertise, including publishing scholarly papers in scientific journals and participating in conferences and workshops.

The successful candidate will have a Ph.D. in a relevant discipline; 10+ years of experience in systems biology, synthetic biology, environmental microbiology, or plant biology; a proven record of creating, developing and sustaining research programs with experience in attracting and shaping funding for complex multidisciplinary research operations; and demonstrated leadership abilities. For the appropriate candidate a joint appointment with University of Chicago, Northwestern University, or University of Illinois at Chicago may be possible. For more information about the Biosciences Division or this position please visit our website at http://www.bio.anl.gov/ or contact search committee chair Dr. Robin L. Graham at glocasto@anl.gov.

To apply for the position, please submit your CV, including references, and a cover letter describing your research interests and leadership capabilities to: http://jobs.anl.gov/Xh6tGp

---

**Faculty Openings in EPP at CMU**

The Department of Engineering and Public Policy at Carnegie Mellon seeks the following faculty candidates:

- A behavioral decision scientist committed to collaborative research with engineers on energy, environment, telecommunications, and technological innovation.

- Someone with a strong technical background and knowledge of the relevant literatures to address problems in the management of technical innovation and R&D policy from “inside the black box” in energy, manufacturing, or other technical areas.

- A senior PhD economist with a technical background to work on problems in technology and policy and occupy the Lester B. Lave chair between EPP and the Tepper School of Business.

- An EE or CS PhD to address both the technical and policy aspects of computer or network security.

See [www.epp.cmu.edu](http://www.epp.cmu.edu).

Send resume, references, and 2-3 sample publications to Adam Loucks (aloucks@andrew.cmu.edu).

*Carnegie Mellon is an EEO/AA Employer.*
Opening Industry-Academic Partnerships

Research and development today is about networking, sharing, and partnering. Collaborations between industry and academia are promoted by open innovation programs, which have become a near-universal model for R&D. Pharmaceutical and biotechnology companies offer university researchers access to resources and funding. Academic scientists bring in-depth expertise and basic research data to the table. Open innovation has exploded into megapartnerships of academia, industry, government agencies, and private organizations. These consortia have the potential to solve major medical and public health issues, if they can set terms and goals that reward all parties. By Chris Tachibana

A line between industry and academic research began blurring in the late 20th century. Biotechnology companies such as Genentech in South San Francisco encouraged their scientists to pursue side projects and publish results. Universities started pushing technology transfer and translating research into products. Today, partnerships between corporations and academia are common, although success requires careful advance planning.

Industry-academic collaborations are like partners skilled in different dances trying to reach a compromise between Waltz and Salsa. Rhythms, pace, and expected outcomes can be frustratingly at odds, as university researchers prioritize education and basic research and corporate scientists pursue products and profits. Success depends on finding common goals and negotiating plans that pay off financially and intellectually for all parties.

Let’s Start at the Very Beginning

An entry-level option for academic and industry investigators who want to collaborate is co-advising a Ph.D. student. The Danish Ministry of Science, Innovation and Higher Education sponsors an Industrial Ph.D. program that, in its current form, has funded more than a thousand projects since 2002, mostly in health, natural sciences, and technology. The European Commission Marie Curie Actions has a similar initiative based on the Danish program.

Industrial Ph.D. projects highlight the difficulties of satisfying both academic and business interests. Some professors say they appreciate the funding and credit for graduating a Ph.D. student, but are challenged to find projects that advance their research while meeting an industry need. For students, however, working in industry while getting a university degree is a chance to experience both worlds.

Julie Christina Grew has a Master’s degree in public health and is earning an industrial Ph.D. with the University of Copenhagen and the medical device company Medtronic, whose world headquarters is in Minneapolis, Minnesota. Grew’s project is an anthropological analysis of patients with devices similar to pacemakers that monitor heart rhythm. She hopes her research will launch a career in patient-oriented work for a pharmaceutical or medical device company. Grew appreciates the networking opportunities that come with her training. “It’s a chance to get into industry and see what it is like to take something from an idea to real life, to make things better for patients with chronic diseases,” she says.

At Medtronic Denmark, Elisabeth Reimer Rasmussen’s expertise in health economics, policy, and public affairs made her a natural fit to be Grew’s industry contact. Although the company was not seeking to host a Ph.D. student with an anthropologist’s outlook, Rasmussen says Grew’s fresh perspective has already changed thinking about patient satisfaction. And corporations know, says Rasmussen, “If you want to stay ahead, you have to see things in different ways.”

Make Connections

Industry and academic scientists whose careers are already under way can connect through initiatives from companies, governments, and private organizations. Industry Fellowships from the Royal Society, the United Kingdom’s national academy of science, support open-ended industry-academic collaborations. “The guiding principles of the fellowship are pure, excellent science,” says Joe Sweeney, professor of catalysis and chemical biology, University of Huddersfield, West Yorkshire, England. Sweeney has a fellowship to work with AstraZeneca, which has its corporate headquarters in London and its research headquarters in Södertälje, Sweden, and he is helping to increase...
“Up front, everyone must appreciate that funding strictly depends on meeting timelines, so goals and expectations must be aligned, with everyone on the same page about priorities, specific aims, and go/no-go decisions.”

—Anthony Coyle

networking and knowledge-sharing among the program’s participants. The business exposure is a benefit, he says: “My own university research has improved through what I’ve learned from industry practices about management, engagement with funding agencies, and identifying translational opportunities.”

On the industry side, Lilly, headquartered in Indianapolis, Indiana, has a program that encourages scientists at the pharmaceutical company to collaborate with university researchers. The Lilly Research Awards Program (LRAP) funds precompetitive research proposals developed jointly by Lilly and university scientists. James Stevens, a Lilly distinguished research fellow, says the goals are fostering innovation and cultivating professional relationships. “LRAP allows our scientists to pursue lifelong learning,” he says. “But we also expect returns on investment in innovation and in the development of our scientists.” LRAP allows Lilly scientists to work with academic researchers on high-risk projects. Experiments are conducted at the academic laboratory, and Lilly scientists contribute data analysis, project planning, and other virtual activities.

Open Wide

Also virtual, but more directly targeted to Lilly interests is the Open Innovation Drug Discovery initiatives. Alan Palkowitz, Lilly vice president of discovery chemistry and technologies, says open innovation programs are born of the realization, especially by pharmaceutical companies, that “we can’t do it alone; our current challenges are too big and complex.”

The program is a global, crowdsourced drug candidate search. Scientists working on molecules with therapeutic potential in specific areas such as anti-angiogenesis send them to Lilly. Company scientists perform high throughput assays and screens and send data to the scientists. “Access to external compounds in exchange for biological data—that’s the currency we have developed,” says Palkowitz. “We evaluate the commercial potential of compounds to be optimized into drug candidates. In exchange for the data, Lilly gets first right of access for promising compounds.”

Cultivating long-term relationships is a goal. Palkowitz describes the academic partners as customers as well as collaborators and says Lilly wants the scientists to return to the program as they find new drug candidates. Lilly crafts agreements that ensure confidentiality about the scientists’ compounds, offer mutually beneficial intellectual property rights, and allow publication of the data. Says Palkowitz, “This program will live and die based on the experiences the scientists have, so we put effort into serving their interests, first and foremost.”

While the Lilly model is virtual, Pfizer is investing in an open innovation model based on face-to-face, side-by-side collaborations. The company, which has corporate headquarters in New York, deployed 90 of their own scientists to Centers for Therapeutic Innovations (CTIs) at three U.S. locations so far: San Francisco/San Diego, New York, and Boston. The CTIs have Pfizer laboratory space near academic medical research centers and five-year collaboration agreements with universities.

CTI projects—currently, about 20 are in progress—begin with academic scientists proposing research on protein-based drugs, such as therapeutic antibodies. Accepted proposals, evaluated by a joint industry-academic committee, receive staff funding, supplies, and access to company resources such as antibody libraries and instruments. Pfizer and academic scientists do the research, directed by Pfizer project managers. The endpoint is a proof-of-mechanism clinical trial, after which Pfizer has the first option to develop the potential therapy. Collaboration barriers such as material transfer agreements are removed in advance. Intellectual property arrangements recognize academic interests: at project completion, if Pfizer is not interested, rights to the candidate therapy revert to the university for further study or development.

Stuart A. Aaronson, chair of oncolgical sciences, Icahn School of Medicine at Mount Sinai in New York City, and Gadi Bornstein, Pfizer associate research fellow, are collaborators at the New York-based CTI. Their project is developing therapeutic antibodies against an oncogenic target. “It’s been a good experience,” says Aaronson. “We feel like we’re moving together to a common goal, and we’ve had consensus so far on what’s important to pursue.” Although they have clear deadlines and deliverables, the academic scientists have not felt limited, says Bornstein. “Everyone appreciates that learning more about the target is helpful to the whole project.” Success depends on this mutual vision and contribution, says Bornstein. “The academic scientists have the biological experience with the target system, and Pfizer has the drug discovery expertise.”

CTI projects have hard deadlines, and they are not basic research projects. The mechanism “doesn’t work for everybody in academia and is not a replacement for NIH grants,” says Anthony Coyle, Pfizer chief scientific officer, adding that “total transparency” is crucial. “Up front, everyone must appreciate that funding strictly depends on meeting timelines, so goals and expectations must be aligned, with everyone on the same page about priorities, specific aims, and go/no-go decisions. But we work as a team to achieve pre-agreed steps.” In the next year or so, Coyle expects the first clinical trials from CTIs to start, with three to five candidate proteins identified for trials each year, starting in 2013.

Get Everyone Into the Act

Open innovation is now a megamodel, underlying partnerships of companies, universities, government agencies, and philanthropic organizations. The Innovative Medicines Initiative (IMI) is a public-private endeavor based in Belgium with a €2 billion (approximately US$2.6 billion) budget. Funding comes from the European Commission (EC) and in-kind contributions such as research activities from members of the European Federation of Pharmaceutical Industries and Associations (EFPIA). Governed by EFPIA and EC representatives and guided by scientific advisors and European Union member state representatives, the IMI is accelerating new medicine development. Michel Goldman, executive director, says that the IMI was founded in 2008 because European investment in drug development was declining, with severe economic effects: “To the EC and
EFPIA, it was clear that the only way to restore European competitiveness in drug development was through collaboration."

The IMI funds multinational consortia of companies, universities, hospitals, small businesses, regulatory agencies, and patient organizations. Projects address areas ranging from diabetes to schizophrenia. From the perspective of managing one of the world’s largest private-public partnerships, Goldman says that teamwork among diverse entities can happen "if all parties agree to work toward common objectives, and if each partner is given a clear mission and is carefully evaluated to make sure they are adding value."

The IMI acts as a trusted neutral party that brings businesses, universities, and government agencies together. By cooperating, these diverse entities can take on challenges that are important to all partners, but neglected because they are high risk or have low profit potential, such as developing new antibiotics. Goldman says the IMI also provides a platform for agencies such as the U.S. Food and Drug Administration and the European Medicines Agency to discuss novel regulatory approaches to getting drugs to patients quickly while ensuring safety and efficacy. As part of the IMI’s educational mission, it has five programs for training in regulatory science, including programs in pharmacovigilance and new approaches to toxicology.

GlaxoSmithKline, headquartered in London, is participating in IMI antibiotic initiatives. Andreas Heddini is a medical advisor with the company, and confirms the importance of the IMI in bringing together parties whose interests don’t always align. The IMI is crucial for advancing antibiotic development, says Heddini. "This is a critical area for infectious disease, but it has been neglected for decades. The initiative is great because it has three components: it leads to an increased understanding of resistance mechanisms, brings new candidate drugs forward, and provides a way to share data, including about what does not work."

Data and knowledge-sharing are also essential to the TB Drug Accelerator program. This tuberculosis initiative is just one of many programs supported by the Bill & Melinda Gates Foundation, a philanthropic organization based in Seattle that invests in global health. The TB Drug Accelerator partners include the U.S. National Institutes of Health, six research institutions, and seven pharmaceutical companies. The Wellcome Trust, a charitable organization based in London, is also a contributor.

A major challenge to fighting tuberculosis is the six-month treatment regimen, says Ken Duncan, Gates Foundation deputy director of Global Health Discovery. The TB Drug Accelerator program is seeking medicines that shorten the therapy to a month or less. Companies in the partnership supply compound libraries and drug discovery expertise to the effort, while academic partners contribute knowledge about the disease and facilities for screens and assays. The Foundation, says Duncan, provides financial support and project coordination, setting timelines and milestones and monitoring progress. "Our most important function," he says, "is integration—bringing everybody together."

Duncan, who spent 16 years at GlaxoSmithKline working on diseases of the developing world, says companies in the TB Drug Accelerator program have an unusually open agreement. This includes sharing drug candidate structures and positive and negative results. The consortium will put data in the public domain as quickly as possible, to help prevent research redundancy. While the commercial potential might not be immediate, Duncan says the collaboration could yield concrete rewards for the companies, such as new R&D avenues from identification of novel drug targets. In addition, he says, "the scientists get to apply their energy and expertise to help solve a medical problem and have an impact on global health."

---

**Featured Participants**

<table>
<thead>
<tr>
<th>University of Huddersfield</th>
<th><a href="http://www.hud.ac.uk">www.hud.ac.uk</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>WellPoint</td>
<td><a href="http://www.wellpoint.com">www.wellpoint.com</a></td>
</tr>
<tr>
<td>Innovative Medicines Initiative (IMI)</td>
<td><a href="http://www.imi.europa.eu">www.imi.europa.eu</a></td>
</tr>
<tr>
<td>Lilly</td>
<td><a href="http://www.lilly.com">www.lilly.com</a></td>
</tr>
<tr>
<td>Medtronic</td>
<td><a href="http://www.medtronic.com">www.medtronic.com</a></td>
</tr>
<tr>
<td>Pfizer</td>
<td><a href="http://www.pfizer.com">www.pfizer.com</a></td>
</tr>
<tr>
<td>University of Copenhagen</td>
<td><a href="http://www.ku.dk/english">www.ku.dk/english</a></td>
</tr>
</tbody>
</table>

**Additional Resources**

- Danish Industrial PhD Program
  sci:mz/23Jnu
- Marie Curie Initial Training Networks
  sci:mz/Y2Mxmw
- Royal Society Industry Fellowships
  sci:mz/WujWao

---

**Where We Go From Here**

Patients and patient advocacy groups are now joining private-public partnerships as advisors, connections to trial participants, and conduits for results. Potential users of new therapies can provide valuable insights during development. Patients can also help companies and regulatory agencies explain their products and policies to the general public.

Collaborations among industry, academia, foundations, governments, and end users are becoming more common. The result is a dynamic R&D environment that fits the networked, integrated, and interdisciplinary way people live and work today. Driving open innovation is tight budgets all around. “Everybody is under pressure—academia, pharmaceutical companies—it encourages collaborating effectively,” says Mt. Sinai’s Aaronson.

Regardless of partners, collaborative success rests on three principles: a mutual interest in a common, achievable goal; constant communication about expectations, timelines, and rewards; and transparency throughout the project. Joe Sweeney says, “In my experience, almost all roadblocks to collaboration have not been the project but problems with human interactions—a lack of understanding about requirements. It’s important to have conversations in which all partners explain what they need from the collaboration: funding, deliverables, publications, patents. A good industry-academic partnership is set up from the start as a win-win for all sides.”

—Michel Goldman

---

To the EC and EFPIA, it was clear that the only way to restore European competitiveness in drug development was through collaboration."

—Michel Goldman

---

Chris Tachibana is a science writer based in Seattle, USA, and Copenhagen, Denmark.

DOI: 10.1126/science.opms.r1300132
**Endowed Chair in Microbiology and Immunology**

The Department of Integrative Medical Sciences at the Northeast Ohio Medical University (NEOMED) invites applications to fill the newly created Watanakunakorn Chair in Microbiology and Immunology. We are especially interested in applicants whose research programs will complement existing departmental strengths in cardiovascular disease, regenerative medicine, lipid metabolism, liver biology, inflammation and viral pathogenesis as well as enhance and expand existing ties with NEOMED’s clinical partners in Northeast Ohio. Applicants will be expected to have an internationally recognized research program in basic, translational or clinical microbiology/infectionology/inflammation/infectious disease research; a history of sustained extramural funding; and a commitment to academic excellence in medical and graduate education. Position requirements include a Doctorate (PhD, MD, DVM, or equivalent), a successful history as Principal Investigator of federal research grants, and Associate or Professor level qualifications at an academic medical institution or equivalent. This position will provide the successful candidate with significant laboratory space and research resources, and the opportunity to grow their research at NEOMED through the recruitment of additional junior faculty.

Qualified Candidates should send their CVs along with the names of three references to: Dr. William P. Lynch, Search Committee Chair, c/o Ms. Karen J. Greene (kjg@neomed.edu). Applications will be reviewed beginning May 1, 2013 and continue until a suitable candidate is recruited.

NEOMED is a thriving freestanding Community-based Medical University committed to excellence in medical education, research, and community outreach. The institution is currently in an active growth phase, which includes new state of the art research facilities and expansion of the comparative medicine unit. Uniquely, NEOMED is located in a semi-rural setting with ready access to outstanding urban, suburban and rural cultural, community and recreational activities, along with a very low cost of living index, maximizing quality of life issues.

NEOMED encourages and welcomes diversity in the workplace and is an Equal Opportunity Employer.

---

**DIRECTOR GENERAL**

icipe is an international researchcentre working on improving the livelihoods of people in the tropics through appropriate technological innovations. Headquartered in Nairobi, Kenya, icipe is mandated to develop eco-friendly pest and vector management technologies that are affordable to resource-limited rural and urban communities. icipe’s mandate further extends to the conservation and utilisation of the rich insect biodiversity found in the tropics. icipe is the only international institution in Africa working primarily on arthropods. Consequently, capacity building of individual researchers and institutions is an integral part of all R&D activities at the Centre. For more information visit: www.icipe.org

icipe is now seeking a dynamic Director General to provide leadership in all areas of icipe activity, including ensuring relevance to stakeholders and delivering highest quality scientific research and development (R&D) for solving complex problems according to the remit of icipe, as well as significantly increasing financial resources available to the R&D agenda.

To find the full details for this challenging opportunity, please visit: www.icipe.org/index.php/jobs/701-dg.html

Applications should be received at dg.applications@icipe.org before the 31st of May 2013.

icipe is an equal opportunity employer and women are particularly encouraged to apply.

---

**PROFESSOR AND VICE-CHAIR FOR RESEARCH**

The University of Texas Medical School at Houston is seeking applications and nominations for the position of Professor and Vice-Chair for research of the Department of Orthopedic Surgery. The successful candidate will be an internationally recognized, outstanding scientist with demonstrated success in research, teaching, graduate training and service to the academic community. The Department of Orthopedic Surgery (http://www.uth.tmc.edu/ortho/) is one of 24 Departments and 23 Centers in the Medical School, which has $157 million in research expenditures. The Department has a major clinical program and research interests in sports medicine and trauma. The new Vice-Chair will work directly with the chairman, Dr. Walter Lowe, and will be provided with substantial resources to significantly grow the research effort of the department. The Search Committee is particularly interested in Investigators with research programs in regenerative medicine and/or materials science as they relate to orthopedics. The Medical School is located within the Texas Medical Center, which includes the UT Health Science Center at Houston, Baylor College of Medicine and UT M. D. Anderson Cancer Center.

Qualified candidates can apply at http://jobs.uth.tmc.edu for the Professor and Vice-Chair – Orthopedic Surgery position, Requisition #130855.

UTHealth is committed to creating a diverse environment and is proud to be an Equal Opportunity Employer.

---

**Research Fellow**

**T Cell Receptor Biology**

A postdoctoral position is available immediately to participate in an exciting new area of T cell receptor (TCR) biology involving mechanotransduction. The successful candidate must have a PhD or equivalent and be highly motivated. He/she will work with a team of immunologists and structural biologists seeking to explore the details of how mechanical force upon pMHC ligation signals from the TCR ectodomains through their transmembrane and cytoplasmic tails. The ideal candidate should have excellent skills in biochemistry, molecular biology and T cell functional studies including transfection of T cells, cell growth and functional analysis as well as flow cytometry.

---

**Research Fellow**

**HIV-1 Development**

A postdoctoral position is available in the area of HIV vaccine immunology with the goal to modulate B cell selection and ultimately elicit high affinity, broadly neutralizing antibodies. The candidate will study the cellular and molecular mechanisms regulating B cell immune responses including B cell repertoire analysis and CD4 T cell requirements in a murine model. A strong scientific background with emphasis on B cell and molecular immunology is required. The successful candidate must have a PhD or equivalent and be highly motivated.

If interested, please send your CV, a brief summary of research experience and names of three referees to: Ellis Reinherz, MD, Professor of Medicine, Harvard Medical School and the Department of Medical Oncology, Dana-Farber Cancer Institute, 77 Avenue Louis Pasteur, H5M 419, Boston, MA 02215; Email: ellis_reinherz@dfci.harvard.edu.

Dana-Farber Cancer Institute is an Affirmative Action/Equal Opportunity Employer – committed to diversity and inclusion in our workforce.
The NIH Center for Human Immunology, Autoimmunity and Inflammation (CHI) is a trans-NIH initiative that studies the human immune system in health and disease using high-throughput multiplex assays and then develops novel insights into immune system function and disease by analyzing the resulting dense data sets using advanced computational approaches. CHI utilizes an integrated team of scientists to implement this translational systems approach, including clinical, laboratory, and bioinformatics scientists. Projects are developed collaboratively and are chosen for implementation by consensus.

CHI is seeking to recruit a Chief Scientific Officer. This individual will have supervisory roles at both the laboratory and larger project levels. At the research level, s/he will be oversee technical staff responsible for implementing and conducting antigen-specific T and B lymphocyte assays to complement our high-throughput technologies, such as microarrays, 15 color flow immunocyte phenotyping, multiplex analysis of serum cytokines and proteins, and SNP genotyping. At the project level s/he will contribute human biologic and immunologic insight to the choice and design of CHI research efforts and through collaboration with members of the bioinformatics group, be responsible for providing ongoing biology-based guidance of the computational analysis and interpretation of data emerging from these projects. These latter efforts will provide continuity of input to supplement that provided by the CHI leadership. The incumbent will thus have substantial responsibility for moving CHI projects forward and a significant voice in the future directions of CHI.

The ideal candidate will have an M.D., D.O., Ph.D., or M.D./Ph.D., and a strong record of accomplishment including publications in human immunology: laboratory, clinical, and translational. The candidate must be an outstanding communicator and be a collaborative team player. Experience combining biologic studies with computational analysis is highly desirable (e.g., hands-on experience with the application of bioinformatics approaches for drawing biological insights from large-scale data sets).

**How to Apply:** Applicants may be U.S. Citizens, resident aliens, or non-resident aliens holding or eligible for a valid employment visa. Applications must be accepted until the position is filled. Please submit a curriculum vitae and brief statement of how your experience relates to the needed qualifications along with 3 letters of reference to: Neal S. Young, M.D. Director CHI c/o Christen Sandoval Building 15F2 MSC 2664 NIH Bethesda MD 20892, or electronically to christen.sandoval@nih.gov. Additional information about CHI is available online at http://www.nhlbi.nih.gov/resources/chi/index.htm

HHS and NIH are Equal Opportunity Employers.

---

The NIH Center for Human Immunology, Autoimmunity and Inflammation (CHI) is a trans-NIH initiative that studies the human immune system in health and disease using high-throughput multiplex assays and then integrating the dense data sets using advanced computational approaches to obtain biological insights.

CHI is seeking to recruit an individual who will have responsibilities in the broad area of computational analysis of diverse data sets from high-throughput assays, such as microarrays, flow immunocyte phenotyping, multiplex analysis of serum cytokines and proteins as well as SNP genotyping. This position involves close collaboration with multiple experimentalists and principal investigators to answer biological questions of interest by performing quality control and statistical analyses of the data, as well as analyses to integrate these data and other relevant information to interpret the resulting discoveries in the biological context.

The Staff Scientist/Bioinformatics Lead position is located in CHI’s Bioinformatics Laboratory, and involves supervision of a group of 2-3 who perform the more routine analyses for the CHI. To facilitate efficient data retrieval and data mining, the Bioinformatics Group also has responsibility to build databases and software infrastructure to load, store and organize the diverse data sets, associated metadata, and analysis results. The group also conducts cutting-edge bioinformatics and systems biology research, such as developing novel statistical methods for the analysis and integration of high-dimensional data sets to gain biological insights. Because the computing infrastructure of CHI is by necessity inhomogeneous, the incumbent will likely need to develop or work with custom hard- and software solutions to accomplish these various goals.

The ideal candidate will have a Ph.D. in computational biology, bioinformatics, systems biology, or relevant disciplines and 3+ years of hands-on research experience with the analysis of high-throughput data sets. He/she should possess a sound knowledge of statistics and quantitative modeling and solid computer programming skills with proficiency in Matlab/R, SQL, and at least one scripting language (Perl/Python/Ruby); solid experience with databases design and construction. Proficiency in C/C++ and/or Java as well as experience with multiple OS platforms (Windows, MAC, Linux) are definite plusses as is experience or training in biological/medical science.

The incumbent will be supervised by the CHI Associate Director/Head for Computational Systems Biology and work closely with this individual and the Chief Scientific Officer of the CHI in monitoring the day to day work of the computational staff, planning large scale data analyses, and conducting efforts for creative integration of the diverse and dense data arising from CHI investigations.

**How to Apply:** Applicants may be U.S. Citizens, resident aliens, or non-resident aliens holding or eligible for a valid employment visa. Applications will be accepted until the position is filled. Please submit a curriculum vitae and brief statement of how your experience relates to the needed qualifications along with 3 letters of reference to: Neal S. Young, M.D. Director CHI c/o Christen Sandoval Building 15F2 MSC 2664 NIH Bethesda MD 20892, or electronically to christen.sandoval@nih.gov. Additional information about CHI is available online at http://www.nhlbi.nih.gov/resources/chi/index.htm

HHS and NIH are Equal Opportunity Employers.
To Dr. Shirley Malcom, born and raised in the segregated South more than 65 years ago, a career based on her studies in science seemed even less likely than the launch of the Soviet's Sputnik. But with Sputnik's success, the Space Race officially started and, in an instant, brought a laser-like focus to science education and ways to deliver a proper response. Not long after, Dr. Malcom entered the picture.

Although black schools at the time received fewer dollars per student and did not have sufficient resources to maintain their labs at a level equivalent to the white schools, Dr. Malcom found her way to the University of Washington where she succeeded in obtaining a B.S. in spite of the difficulties of being an African American woman in the field of science. From there she went on to earn a Ph.D. in ecology from Penn State and held a faculty position at the University of North Carolina, Wilmington.

Dr. Malcom has served at the AAAS in multiple capacities, and is presently Head of the Directorate for Education and Human Resources Programs. Nominated by President Clinton to the National Science Board, she also held a position on his Committee of Advisors on Science and Technology. She is currently a member of the Caltech Board of Trustees, a Regent of Morgan State University, and co-chair of the Gender Advisory Board of the UN Commission on Science and Technology for Development. She has held numerous other positions of distinction and is the principal author of *The Double Bind: The Price of Being a Minority Woman in Science*.

Of her active career in science, Dr. Malcom says, “I guess I have become a poster child for taking one's science background and using that in many other ways: we ask questions; we try to understand what we find; we consider what evidence we would need to confirm or refute hypotheses. And that happens in whatever setting one finds oneself.”

At *Science* we are here to help you in your own scientific career with expert career advice, forums, job postings, and more — all for free. Visit *Science* today at [ScienceCareers.org](http://ScienceCareers.org).
The American Association for the Advancement of Science seeks an Associate Editor to join the dynamic editorial team at Science Signaling, the leading weekly research journal and online knowledge environment devoted to cellular signal transduction from the publisher of Science.

Do you prefer reading research and learning new areas of biology to working at the bench focused on a single protein, pathway, or disease? Have you used systems biology approaches to build or analyze cellular regulatory networks? Do you find that your interests lie beyond your current research project? If so, an editorial position at Science Signaling may be right for you.

Science Signaling, the leading weekly research journal and online knowledge environment devoted to cellular signal transduction from the publisher of Science, has an open position for a full-time Associate Editor to work in our Washington, DC, USA office. We are looking for a self-motivated scientist with broad interests in the biological sciences and experience with cutting-edge research related to signaling pathways and networks. The primary responsibilities include the selection of original research submissions, managing and updating the Database of Cell Signaling, as well as inviting and editing Perspectives and Reviews. Candidates should have broad knowledge of signaling pathways, have used systems biology approaches to study signaling networks, enjoy reading and learning new topics in biology, and be familiar with databases containing signaling-relevant information.

Major duties and responsibilities:
- Manages the peer review and selection of primary research manuscripts on cell signaling and related systems biology
- Solicits invited content such as Reviews, Perspectives, and Protocols
- Updates the Database of Cell Signaling
- Discussed and makes recommendations regarding manuscripts and journal content with other editorial staff and advisors
- Coordinates special issues
- Edits content and works with authors on revisions and preparation of manuscripts for publication
- Writes short summaries of published papers on a weekly basis
- Fosters contacts and communication with the scientific community through interactions with scientists and travel to scientific meetings

Minimum qualifications:
- Extensive university or college-level training leading to a Ph.D. in the biological sciences, with experience in cell signaling pathways and networks
- Postdoctoral experience resulting in multiple publications in peer-reviewed journals
- Ability to work independently, as well as constructively as a member of the editorial team
- Excellent written and verbal communication skills
- Previous editorial experience or experience in database curation is a plus

Please visit our job information website http://www.aaas.org/careercenter/employmentataaas/ to get more information, and to apply to AAAS online.

AAAS is an Equal Opportunity Employer.

Faculty Positions Available in Beihang University, China

Established in 1952, located in Haidian District, Beijing, Beihang University is one of the top research-oriented universities in China, focusing on fundamental cutting edge research and high-level education, covering such diverse fields as science, engineering, technology, humanities, economics, management and law. One of the first universities funded by China’s “211” and “985” programs, it has seven national key laboratories and twenty-five provincial and ministerial key laboratories. At present, the university has a total area of two million square meters, and over 3800 faculty and staff.

Beihang University is on a clear path to become a world-class university in many engineering and science disciplines. As part of Beihang’s further pursuit for excellence in research and education, we have expanded our global search for the best research talent to join our International Research Institute for Multidisciplinary Science (IRIMS). Five independent international research centers (IRC) were established recently under the name of IRIMS. As the core part of IRIMS, IRCs are devoted to establish a world-class, advanced and multidisciplinary research platform.

Beihang University invites applications for full-time Professors, Associate Professors and excellent scientists. Preference will be given to candidates whose research emphasis demonstrates the potential to complement and advance the IRIMS existing research strengths. Successful candidates will be provided competitive salaries and start-up funds.

Positions Available
- Position offered by the Recruitment Program of Global Experts (1000 Plan Professorship)
- Position offered by the Chang Jiang Scholars Program
- Position offered by the Recruitment Program of Global Young Experts (1000 Plan Professorship for Young Talents)
- Position offered by Beihang University’s Zhuoyue Program of Professors
- Position offered by Beihang University’s Zhuoyue Program of Associate Professors

Interested individuals should send curriculum vitae by email to rscrb@buaa.edu.cn, with “Faculty Application from Science” in the title. For more information, please visit the university’s Human Resource Department website http://rsc.buaa.edu.cn/, or contact us by email rscrb@buaa.edu.cn or by telephone 86-010-82317779.
AAAS is here – helping scientists achieve career success.

Every month, over 400,000 students and scientists visit ScienceCareers.org in search of the information, advice, and opportunities they need to take the next step in their careers.

A complete career resource, free to the public, Science Careers offers a suite of tools and services developed specifically for scientists. With hundreds of career development articles, webinars and downloadable booklets filled with practical advice, a community forum providing answers to career questions, and thousands of job listings in academia, government, and industry, Science Careers has helped countless individuals prepare themselves for successful careers.

As a AAAS member, your dues help AAAS make this service freely available to the scientific community. If you’re not a member, join us. Together we can make a difference.

To learn more, visit aaas.org/plusyou/sciencecareers
Multiple positions; twelve-month Assistant/Associate/Full Professor

The Central Michigan University College of Medicine (CMED) is seeking highly qualified faculty for multiple tenure-track or fixed-term positions in the basic science disciplines. Successful candidates will be expected to develop a vigorous externally funded research program and assume a role in the development and implementation of a highly integrated, cross disciplinary, clinical presentation and inquiry-based medical school curriculum.

Positions will be at the Assistant/Associate/Full Professor rank, depending on credentials, and are available immediately. Start dates are negotiable. CMED will provide a competitive space and start-up package to support the development of an externally funded vigorous research program. Applications are being sought for teaching expertise in all disciplines of the basic biomedical sciences.

Qualifications:
Required: doctoral degree, strong commitment to innovative approaches to education and learning, ability or commitment to facilitate interactive learning in large and small group settings, experience with independent design and conduct of research consistent with discipline(s), strong collaborative and communication skills; and a demonstrated commitment to diversity. Applicants applying for advanced rank should have a demonstrated record of teaching in large and small group settings and/or an extramurally funded research program.

Preferred: Research - while all areas of research will be considered, collaborative opportunities in basic research exist in neuroscience, mitochondrial biology, cancer vaccines, respiratory control and disease, signal transduction, virology, comparative effectiveness, health services, rural medicine, and clinical trials and outcomes. Teaching - experience with cross disciplinary teaching; documented experience in patient and/or problem-based medical education; experience with, or a strong knowledge of, pedagogical approaches such as team based learning.

General Information:
Established in 1892, Central Michigan University is one of the nation’s 100 largest public universities and the fourth largest in Michigan, with more than 28,000 students in Mount Pleasant, online and at more than 60 locations throughout the United States, Canada and Mexico. CMU offers more than 200 academic programs at the undergraduate through doctoral levels, including several that are nationally recognized. CMU is located in Mount Pleasant, Mich., a classic college town with a blend of natural features, family attractions, small-town life and university culture.

The CMU College of Medicine will welcome its inaugural class in the summer of 2013. The innovative medical school curriculum is being designed to prepare students for practice in mid-to-northern Michigan and the Upper Peninsula, with particular attention to primary care needs in the region. The program is housed in a new facility with advanced technology for teaching. For more information, visit http://www.cmich.edu/med.

Application Procedure:
Review of applications begins immediately and continues until filled. Applications must be submitted through an on-line process at: www.jobs.cmich.edu. Electronically attach a letter of application, curriculum vitae, evidence of teaching ability if available, statement of teaching philosophy, statement of research/scholarly interest, and a list of three professional references, including phone numbers and email addresses. Questions can be directed to Rebecca Messing, Faculty & Staff Affairs Coordinator, Spenc1rl@cmich.edu, 989-774-7862.

Join the Conversation!
Twitter is a great way to connect with AAAS members and staff about the issues that matter to you most. Be a part of the discussion while staying up-to-date on the latest news and information about your personal member benefits.

Follow us @AAASmember and join the conversation with #AAAS

CMU, an AA/EO Institution, strongly and actively strives to increase diversity within its community (see www.cmich.edu/aaeo).
positions open

director

Princeton University Department of Chemistry seeks candidates for the position of Director of the new Small Molecule Screening Center.

The director will provide leadership in managing program activities and will be responsible for the overall operations of the screening center by employing a wide range of contemporary high throughput screening assays; performance of all follow-up organic synthesis activities; and, maintenance of the screening center infrastructure.

The successful candidate must hold a Ph.D. in organic synthesis (or related field) and have broad experience and knowledge in medicinal chemistry. The candidate should have current bench skills, demonstrated proficiency in mass spectroscopy technology and analytical chemistry. For further information and to apply online (required) at website: https://jobs.princeton.edu (requisition #1300162). Submit a cover letter, curriculum vitae, list of publications and contact information for three references. Princeton University is an Equal Opportunity Employer and complies with applicable EEO and Affirmative Action regulations.

postdoctoral/research associate

A postdoctoral/research associate position is available in the Center for Cardiovascular Sciences, Albany Medical College to investigate the functions and mechanisms of cytoskeletal/signaling proteins in respiratory and cardiovascular systems. Highly motivated applicants with Ph.D. degree and experiences in muscle contraction, or molecular biology/techniques, or gene expression are encouraged to apply by sending your application letter, curriculum vitae, and names and contacts of references to Dr. Dale D. Tang at e-mail: tanged@albanymed.edu. An Equal Opportunity/Affirmative Action Employer. Women and Minorities are encouraged to apply.

postdoctoral fellow

Postdoctoral Fellow Positions at UMDNJ-New Jersey Medical School are available to study the molecular and cellular mechanisms underlying chronic pain and opioid tolerance. Strong background and experience in pain biology, electrophysiology, or molecular biology are required. Please send curriculum vitae to Dr. Yuan-Xiang Tao at emails: yuanxiangtao@yahoo.com or ytao1@jhmi.edu.

find your future here.

www.ScienceCareers.org

we deliver customized job alerts.

www.ScienceCareers.org

Download your free copy today.

ScienceCareers.org/booklets

From technology specialists to patent attorneys to policy advisers, learn more about the types of careers that scientists can pursue and the skills needed in order to succeed in nonresearch careers.