President’s Budget Includes Increases for Fundamental Research, Computing

By Peter Harsha

Despite several years of relatively flat or declining budgets, several federal science agencies, including four crucial to computing researchers, are poised for healthy increases in funding after President George W. Bush included the agencies in a surprising new budget initiative aimed at improving future U.S. competitiveness.

Creating a need to maintain the U.S. position as the world’s dominant economic and technological power, the President used his annual State of the Union address to unveil his American Competitiveness Initiative (ACI), a three-pronged plan—fostering innovation, improving education, and reforming workforce and immigration issues—for ensuring U.S. leadership in an intensely competitive world. As part of the innovation package, Bush called for a doubling of the federal government’s investment in fundamental research over the next ten years.

The move comes after House Democrats unveiled a similar plan last December and on the heels of a bipartisan push in the Senate to increase overall federal spending on fundamental research over the next ten years.

Among our new staff is the father of fractal geometry, his renowned mathematician, Benoit Mandelbrot. Dr. Mandelbrot is working with us to mature the strategy for our advanced mathematics program. Known as the father of fractal geometry, his unique ability to think freely and unconventionally lends itself to creating new methods for solving the kinds of computational conundrums that science is currently confronting.

Musings from the Chair

President’s Budget Continued on Page 5

Inside CRN

Expanding the Pipeline...............2
GENI and Your Research.............4
Industrial-Academic Agreement.......3
CS Bachelors’ Degrees.................5
Musings from the Chair..............3
Professional Opportunities..........7

Pacific Northwest National Laboratory Computational and Information Sciences

By George S. Michaels

This is another in a series of CRN articles describing the activities of the GCI’s computational laboratory.

Others are posted at: http://www.cra.org/articles.

As Pacific Northwest National Laboratory, computational science is the foundation upon which this Department of Energy research and development laboratory depends to solve some of the greatest challenges our nation faces in national security, the environment, and life sciences.

That’s a tall order. But that’s what we do at PNNL. And that work would be impossible without the Computational and Information Sciences Directorate (CISD). CISD provides the tools, and the computing and networking infrastructure, our scientists and engineers rely on to be successful. Whether the tools address climate modeling, handling huge data flows in biology and proteomics or modeling the impact of new energy systems, computation is an integral piece of delivering science-based solutions.

About CISD

CISD was formed in fall 2004 to centralize pockets of expertise in computational sciences that were scattered across the laboratory. With our computational power consolidated and aligned with specific areas of research, we are better able to use computation to advance the sciences and serve our clients.

CISD specializes in high-performance, data-intensive computing; bioinformatics and complex pattern recognition; intrinsically secure computing; information analytics; and knowledge foundations. These core research capabilities enable PNNL to provide the next generation of discovery and innovation to the Department of Energy (DOE), the U.S. Department of Homeland Security (DHS) and other clients in government, industry and academia.

Since 2004 we have recruited and hired more than 80 new researchers, bringing CISD’s total to 510 staff members. Many have experience in academia or industry, making them quick to understand the significance of projects and the need for cost-effective solutions. Together they comprise a formidable team, supporting all of the laboratory’s mission areas.

Among our new staff is the renowned mathematician, Benoit Mandelbrot. Dr. Mandelbrot is working with us to mature the strategy for our advanced mathematics program. Known as the father of fractal geometry, his unique ability to think freely and unconventionally lends itself to creating new methods for solving the kinds of computational conundrums that science is currently confronting.

PNL Computation

Continued on Page 6
Expanding the Pipeline

Geographic Shackles and the Academic Careers of Women

By Dina Q. Goldin

Introduction

Last spring, three of my women friends compared life stories at our 20th college reunion. They had all chosen the academic path in mathematics and computer science. While seemingly successful, it turned out that each felt unfulfilled to some degree.

The first had left her tenured position because she hated the atmosphere; a tenured position at another university requires a move, so she has settled for being an independent researcher and consultant. The second had an exhausting commute; she was pessimistically contemplating her options in the growing work closer to home. The third was happy in her job at a prestigious department, but she had yet to get tenure; and, as the tenure-track rat race took precedence over her biological clock, she was still childless in her early forties.

Such stories are unfortunately not atypical. The situations of women in academia, particularly in the sciences, have attracted much attention recently. As a metaphor for the shrinking (or leaking) pipeline is used to illustrate the problem. While various factors have been put forth in trying to explain the shrinking pipeline, this article discusses one that has received somewhat less attention: the overall greater lack of mobility by women. I refer to this lack of mobility as geographic shackles.

While family and career roles for each gender are viewed more flexibly in North America today than in previous generations, unfortunately, however, it still seems to be more common that men are able to initiate a family move when their career calls for it than women are. Geographic shackles are related to the two-body problem where both partners have careers, necessitating dual job searching. But the two problems are distinct. The geographic shackles are not necessarily caused by a partner with a career. In my informal surveys, I found women who have no partner, and some without any immediate family, who still find that geographic ties prevent them from “casting a broad net” when job searching.

For example, women who are single parents or have primary custody of children may feel tied to a location, as would women who have taken on caregiver responsibilities for their elderly parents. In general, the support networks that women tend to build around them, including extended family members, friends, doctors, and babysitters, can also act as deterrents to moving. Whereas the two-body problem makes it more difficult to find a new location satisfying the needs of one career, geographic shackles can also make it more difficult to decide to look for a new location in the first place.

Geographic shackles can provide a unifying explanation for many of the known disparities in academic career success between the genders, such as the shrinking pipeline, the prevalence of childlessness among academic elite women, the prevalence of women at lower-paying and less prestigious institutions, and so on. The aim of this article is to raise awareness of this little-recognized issue, to encourage appropriate studies, and to start working towards solutions.

Obstacles to a Successful Career

The trajectory of a successful academic career is common to men and women. They find a position as an assistant professor after they graduate; they may have to change jobs if their position does not work out for some reason; they take on visiting assignments that increase their visibility; finally, they may be lured away for a prestigious position as endowed chair or center director elsewhere.

Academics with strong geographic constraints face obstacles at every stage along this trajectory:

• During a job search, their choice of open positions is greatly limited, increasing the chance that they will settle for lower status or lower-paying jobs, or that they may leave academia altogether. (The latter is particularly likely in computing, given the lure of industry.)
• It can be difficult to gracefully recover from tenure denial or other termination of a pre-tenured position; many other research universities in a given locale may only have one open position which a fully tenured faculty member will have an open tenured position in a given specialty.
• They cannot always move when a given job provides a bad fit, so they find themselves stuck in less-productive or dead-end positions.
• They find it much more difficult (or impossible) to accept high-profile visiting assignments that might further boost their careers.
• They cannot grab opportunities for prestigious positions in other chairs or center directors when those open up elsewhere.
• They cannot use outside job offers to gain negotiating leverage with their current institution in matters of promotions or pay rates; this tactic works only if the threatened job change is believable.

Tenure denial is a particularly disruptive event. Because the tenure review process is inevitably a combination of objective and subjective factors, it can unfortun-
**Musings from the Chair**

### The Future of American Innovation: The Gathering Storm

By Dan Reed, CRA Board Chair

In response to a Congressional request and stimulated by a set of earlier studies (notably the National Innovation Initiative’s “Innovate America” report), the National Academies recently issued a report entitled “Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Future.” This report was produced in response to growing concern that a weakening of U.S. leadership (and, by extension, North American leadership) in science and technology would jeopardize future prosperity. This concern was based on the fact that a major fraction of economic growth in recent decades has been a direct consequence of prior investment in basic research. The report committee was asked to address two questions:

1. **What are the top 10 actions, in priority order, that federal policymakers could take to enhance the science and technology enterprise so the United States can successfully compete, prosper and be secure in the global community of the twenty-first century?**

2. **What implementation strategy, with several concrete steps, could be used to implement each of those actions?**

Based on interviews, reviews of other documents and reports, and deliberations, the committee produced four recommendations, each backed by a more detailed set of implementation plans:

1. *Increase America’s talent pool by vastly improving K-12 science and mathematics education.*

2. *Sustain and strengthen the nation’s traditional commitment to long-term basic research that has the potential to be transformational to maintain the flow of new ideas that fuel the economy, provide security, and enhance the quality of life.*

3. *Make the United States the most attractive setting in which to study and perform research so we can develop, recruit, and retain the best and brightest students, scientists, and engineers from within the United States and throughout the world.*

4. *Ensure that the United States is the premier place in the world to innovate; invest in downstream activities such as manufacturing and marketing; and create high-paying jobs that are based on innovation by modernizing the patent system, rethinking tax policies to encourage innovation, and ensuring affordable broadband access.*

Although one may debate the recommendation details, there is little doubt that global competition is rising and that the competitive pressures are real. Many of us live in regions whose traditional economic base has been reshaped by global trade. In computing, we have seen shifting trends in graduate student enrollment, flat to only slightly rising research budgets, and declining proposal success rates for research funding.

In his January 2006 State of the Union address, President Bush announced the American Competitiveness Initiative, which would increase the number of trained secondary-school teachers in advanced mathematics and science. He also called for a doubling of federal investment in basic research in the physical sciences, which includes information technology.

Bipartisan bills have also been introduced in the U.S. Congress to increase investment in education and research. As part of a group of professional societies, industry-academic partnerships and universities, CRA is working to support increased funding for long-term basic research, greater investment in scientific education, and mechanisms to broaden the base of participation in information technology. I encourage you to follow these activities on the CRA blog (www.cra.org/govaffairs/blog). Get involved—talk to your colleagues, raise awareness, and make a difference! In a knowledge economy, a trained workforce and basic research are the enablers.

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**Notes:**
- The report can be ordered and excerpts read at: http://books.nap.edu/catalog/11463.html.
- See the famous CSTB “tire tracks” diagram for details (www.cra.org/govaffairs/images/bandw2.png).

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**Correction:** In the November 2005 issue of Computing Research News (Vol. 17/No. 5), in the article “Results of CRA’s 2004 Salary Survey of Computing Research Staff in Industrial Lab,” appearing on page 3, Table 2 and its accompanying text comparing 2004 to 2002 salaries have been revised. The corrected version can be seen at: http://www.cra.org/CRN/Articles/Nov05/Salaries.html.

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**By J Strother Moore**

Chair of the Department of Computer Sciences at the University of Texas at Austin, and a member of the CRA Board of Directors.
GENI and Your Research

By Peter A. Freeman, Assistant Director of NSF for CISE

GENI (Global Environment for Networking Innovations) is an advanced experimental infrastructure and accompanying research program being planned by CISE to explore new capabilities that will advance innovations in many areas.1 GENI responds to an urgent and important challenge of the 21st century to ensure that the future Internet will be worthy of our trust, able to continue to grow robustly, and capable of supporting even more innovation in all areas of activity than the current Internet has enabled.2 Ultimately, achieving this goal will depend on a large number of factors—including legal, regulatory, policy, commercial and technical—but it begins with exploring new networking and distributed system architectures that can respond to the demands of the future.

Nonetheless, this effort will ultimately touch many areas of computer science and engineering (CS&E) research. Because GENI has the potential to touch your research and perhaps change it fundamentally in the long run, and because it will be a major undertaking for CISE, I want you to be fully aware of what is being done and of the potential for you and the field.

We intend that it will provide a platform for innovative research in many areas. GENI itself is a complex system. While the conceptual development to date indicates that the GENI facility can be realized without major research activity, designing and constructing it over the next seven or eight years will undoubtedly uncover compelling research opportunities in a number of areas. Second, as GENI is used to experiment with new networking and distributed system architectures at scale, new services and applications will follow very rapidly. These, in turn, will require or uncover new fundamental developments in CS&E, and enable new generations of research in CS&E fields like robotics and artificial intelligence that may not be directly involved with the underlying systems research.

Third, and most importantly in my opinion, GENI will enable and encourage a return to large-scale experimentation—a research modality that was dominant and highly productive in the early years of our field but has waned in recent years. Initially, this will be experimentation in networking and closely related fields, but the nature of the GENI facility is such that it will also permit experimentation in other areas, such as distributed databases, as well.

Beyond the instrumental use of the GENI facility, we believe this project will demonstrate the importance and effectiveness of large-scale experimentation in CS&E in general. This will then pave the way for experimentation (and the infrastructure necessary to support it) in other areas such as computer and system architecture.

Even at this early stage we are already seeing another laudable and highly valuable development—the involvement of theoreticians along with the experimentalists.4 CS&E has never had the virtuous cycle of observation-theorizing-experimentation followed by more observing, theorizing, and experimentation that other sciences have had. We believe the field has matured to the point where it must employ this modality vigorously. GENI and, ultimately, other efforts, will afford this modality.

Another and more mundane issue regarding GENI and your research is that of funding. Constructing the GENI facility will be expensive, and the first question that you might ask is, “Why not spend that money on more research like that which is already being supported—small grants?” The first and most important thing you need to understand is that money appropriated for GENI construction, if approved, may not be used to support research grants. And CISE funds currently supporting research grants will not be redirected to support GENI construction. While CISE certainly plans to devote future networking research budgets to research conducted using the GENI facility, other programs will not be impacted unless they determine that it is in the interest of their fields to leverage GENI capabilities. A second important thing to understand is that the nature of science funding—indeed of funding for projects in general—is that it is the ambitious, paradigm-shifting projects that capture the attention of those responsible for appropriating funds. The result is often a general infusion of money into a field that has many positive benefits that are ancillary to the original project.

This country is facing serious challenges in the area of innovation and economic development. CS&E has clearly shown its relevance to innovation (and thus to economic competitiveness) in many ways, but much of the current innovation occurs not in the research community but in the commercial arena. While this is clearly the desired end result, those innovations are invariably based on fundamental ideas and inventions that were developed—usually many years ago—in our labs. We must re-energize the type of activity that a generation ago produced most of the fundamental concepts that fuel today’s commercial innovations.

We will be asking the broad CS&E research community, not just networking and distributed systems, to form a community consortium to guide the scientific and administrative development of the GENI facility and then its usage. Over time, this representative proxy for the CS&E research community will have the opportunity to propose other major projects to support our research. I encourage you to cooperatefully support the coordination and operation of this consortium. It will enable us to speak clearly and effectively as a community about what we can do and what it will take to move forward.

GENI is the first in what I hope will be a series of major efforts to rekindle fundamental invention in our field. Our nation’s innovative posture depends on it.

I look forward to hearing from you. Please send general comments to me at pfreeman@nsf.gov, or comments specific to GENI to geni-info@nsf.gov.

Peter A. Freeman is Assistant Director of NSF for CISE.

Notes:
1 See www.cra.org/CRN/articles/nov05/freeman.html for a high-level description. Consult www.geni.net for current and more complete technical information. For NSF plans and comments, see www.nsf.gov/cise/geni/.
2 Two recent and influential reports (National Innovation Initiative Interim Report www.compete.org/ and Rising Above the Gathering Storm www.nap.edu/catalog/11463.html) have stressed the essential role of innovation to our nation, and the absolutely necessary role of research and education. It is becoming widely understood that the Internet has already enabled a surge of innovation, but it is clear to those most knowledgeable that this cannot continue without some fundamentally new research. This effort, then, is intended to address this situation and to help ensure the innovation being called for nationally.
3 The reasons for this are varied and need not be debated here. A return, however, to a modality in which the field includes, but not exclusively, a strong experimental activity is generally considered to be essential for the vitality of computer science and engineering.

Collaborative Research Experiences for Undergraduates (CREU)

Application Deadline: May 19, 2006
Sponsored by CRA’s Committee on the Status of Women in Computing Research (CRA-W) and the Coalition to Diversify Computing (CDC), the CREU program is geared toward increasing the number of women and minorities who go on to CS&E graduate programs. Participants have the opportunity to conduct research with a small team at their home institution during the academic year. Students receive a stipend and accommodations. Each participating team also receives $500 to be used for supporting materials and activities or as an honorarium for the sponsoring faculty member(s).

See: http://www.cra.org/craw/creu

Making Waves
Grace Hopper Celebration of Women in Computing 2006 Conference
October 4-7, 2006
San Diego, California

Details: http://www.gracehopper.org/
Drop in CS Bachelor's Degree Production

By Jay Vegso

CRA's Taulbee Survey of Ph.D.-granting Computer Science (CS) and Computer Engineering departments in North America has been conducted annually since 1974. Results from the most recent survey were provided to participants and CRA members in February. They will be published on the CRA website (www.cra.org/statistics) and in Computing Research News in May. Due to widespread interest, CRA releases data on undergraduate degrees early.

This article reports on CS bachelor's degree enrollments and production among Ph.D.-granting departments in the United States since the late 1990s. In order to limit the effect of variations in response rates, data are reported in both raw numbers and as a percentage per department. Results from the Taulbee Survey should be compared with data produced by the National Science Foundation (NSF), which surveys all institutions that grant CS degrees. NSF's most recent data are from academic year (AY) 2003/2004. Traditionally, the Taulbee Survey's Ph.D.-granting schools have produced a little less than 30 percent of the undergraduate CS degrees reported by NSF.

According to UCLA/HERI, the percentage of incoming undergraduates among all degree-granting institutions who indicated they would major in CS declined by 70 percent between fall 2000 and 2005.1 Unsurprisingly, the number of students who declared their major in CS among the Ph.D.-granting departments surveyed by CRA also has fallen (Figure 1). After five years of declines, the number of new CS majors in fall 2005 was half of what it was in fall 2000 (15,958 vs. 7,952). As a result, the number of students enrolled in CS has fallen for several years (Figure 2).

These declines have now shown up further down the pipeline. Following several years of increases, the total number of bachelor's degrees granted in CS fell 17 percent between AY 2003/2004 and 2004/2005, to 11,806 (Figure 3). The median number of degrees granted per department declined by 18 percent (to 595). In light of the sustained drop in students interested in CS as a major, it seems reasonable to assume that degree production numbers will continue to drop in the near term.

It is important to note that a steep drop in degree production among CS departments has happened before. According to Table B.5 in the 2001 Taulbee Survey, between 1980 and 1986 undergraduate CS production nearly quadrupled to more than 42,000 degrees.

Notes:

1. UCLA/HERI's “CIRP Freshman Survey” is an annual survey of the characteristics of students attending colleges and universities in the United States. For more information, see “Congress Provides Symbolic Increase for NSF,” CRN, Vol. 18, No. 1, January 2006.

Peter Harsha (harsha@cra.org) is CRA’s Director of Congressional Affairs.
Among these challenges are managing, measuring and making sense of vast amounts of data generated by proteomics research, information analytics and cyber security. One aspect of Dr. Mandelberg’s work at PNNL is establishing a more advanced curriculum in fractal mathematics in high schools. Other new capabilities available to our staff are a virtual research laboratory for evaluating key technology components and newly emerging systems for data-intensive computing. Additionally, other new capabilities include an information analytics laboratory for advancing technologies that enable powerful visual methods for acquiring, analyzing and presenting information.

Solving Information Overload—A New Approach

Advances in computing technology have enabled scientists to collect massive amounts of data over the past two decades. However, the ability to extract valuable knowledge from multiple types of data obtained from multiple sources and scales in real time continues to be a major challenge.

Many government agencies, including DOE, the National Institutes of Health, DHS, the Department of Defense and the intelligence community, need effective tools to guide them beyond the current state of the art to solve problems involving large, complex data sets. Bringing large data sets together for analysis requires a different computing approach; it requires tools for transforming data into information that we can use. This type of approach—data-intensive computing—is one of CISD’s specialties. Our researchers work on every step of the development pathway from real-time data collection to information analysis.

Knowledge Centers—Informational Tools for Visual Analysis

A significant tool to address information overload is visual analysis. CISD has created three types of knowledge centers—science-based, technology-based and mission-based—to tackle the daunting tasks of collecting, managing, visualizing and analyzing massive data accumulation using unique software products.

For example, the National Visualization and Analytics Center (NVAC)1 is a science-based knowledge center at PNNL, established by DHS to develop the next generation of tools and scientists for creating visual methods of analyzing and conveying complex information. NVAC has been tasked with establishing the nation’s research agenda in this area and taking visual technologies to new levels.

Through NVAC, we are organizing a consortium of stakeholders—made up of multiple government agencies, academia and industry—to ensure relevant research, integration and interoperability resulting in deployable systems for defending our nation. We recently held the first consortium meeting at PNNL, which was attended by leading computational and analytical companies. As a result, industry leaders by leading the way to developing partnerships with universities to advance the science, including establishing regional visualization and analytics centers (RVACs) to bring academic expertise to the task of supercomputing unstructured data. This means a steady flow of skilled resource, building new curriculums, and hosting interdisciplinary workshops and conferences among academia, industry and other laboratories.

Changing the Game

CISD aims to deliver the highest-end computing capability for the nation. To achieve this goal, we are partnering with universities, industry and academia to drive the development of new computing paradigms in both supercomputing architectures and scalable software.

In supercomputing, we are developing new approaches to discover through visual methods using high-performance computing based on informatics rather than only physics. This approach addresses the need to produce, collect, store, explore, analyze and quickly share huge amounts of scientific information. Much of the effort is centered on creating algorithms, software, operating systems and new computational and storage systems to solve a broad set of problems involving large, complex heterogeneous data.

On the software side, we are creating new scalable data-analysis tools and new tools for discovering patterns in large heterogeneous databases by integrating data across different space and time scales. For example, we demonstrated the potential of high throughput access to remote file system in a computational chemistry simulation that received the StormCloud Award at the 2005 Supercomputing Conference.

PNNL also finished second in the Bandwidth Challenge, transferring 41 Gigapots per second during the challenge test. At the low end, this equals transferring and processing a full DVD of video every second. Both demonstrations operated over the recently announced High-Performance PNNL Regional Optical Network and UltraScience Network to move data between a Hewlett-Packard parallel file system located at the conference in Seattle and an Intelanium cluster located at the laboratory.

CISD is also taking a leading role in global and national challenges. We invite others interested in making immediate as well as long-term impacts to join us in conducting research and developing technology in the computational and information sciences that will drive changes in computing over the next decade.

For more information about CISD see the CSD Web site at: http://computing.pnl.gov/.

Dr. George S. Michaels (george.michaels@pnnl.gov) is Associate Laboratory Director of Pacific Northwest National Laboratory’s (PNNL) Computational and Information Sciences Directorate. A pioneer in bioinformatics, Dr. Michaels founded one of the nation’s first doctoral programs in computational sciences while teaching at George Mason University in Fairfax, Virginia. Much of his career has focused on computational analysis and applying statistical models to life science research.

Transitions

Daniel Atkins has been named Director of the National Science Foundation’s new Office of Cyberinfrastructure, effective June 5. Dr. Atkins is a professor in the School of Information and in the Department of Electrical and Computer Engineering at the University of Michigan, Ann Arbor.

CRA Board Member David Tenenhouse is the new Chief Executive Officer of A9.com, Inc., a subsidiary of Amazon.com, Inc. Dr. Tenenhouse was formerly Vice President of the Corporate Technology Group and Director of Research at Intel.
Allegeny College
Department of Computer Science
Faculty Position

The Department of Computer Science invites applications and nominations for an assistant professor position beginning Fall 2006, pending approval. Qualifications include a Ph.D. in computer science or a related area. The Department seeks candidates who can contribute to the overall mission of the department in a variety of ways, including teaching and advising undergraduate students, guiding students in senior research projects, and contributing to the discipline-related curriculum. Responsibilities include teaching and advising undergraduate students. The candidate will be competitive; start-up funds are available. Send application materials immediately.

Allegheny College is an Equal Opportunity Employer. Women and minorities are especially encouraged to apply.

Please submit resume, letters of recommendation, and a statement of teaching and research interests to Dr. Robert S. Roos, Director of the Department of Computer Science, Allegheny College, 130 South College Avenue, Meadville, PA 16335. Review of applications will begin immediately.

Further information about the hiring process and application materials is available at http://www.ac.PersistentTenureTrack.com.

Binghamton University
Department of Computer Science
Post-Doctoral Research Associate

The Department of Computer Science at Binghamton University invites applications for a post-doctoral research associate position immediately. The position is supported by the U.S. Army Medical Research and Materiel Command. The position is for one year, with possibility of renewal, pending satisfactory performance and funding availability. The position involves research and development of Parallel Health Care Systems. The successful candidate will have a Ph.D. in computer science, electrical engineering, or related field with a strong emphasis of host-pathogen interactions and computational science or related field with a strong emphasis of host-pathogen interactions. The candidate will develop industry relationships, and be active in publishing. The position requires a strong demonstrated research capability with the ability to teach advanced topics. Both senior and junior professors will be considered for this position. The candidate will be the only scientist on the computer security research team which is a part of the University's Cybersecurity Research Center.

The candidate must have an earned Ph.D. in computer science or related field, with solid background in computer systems, networking and security. The candidate will be expected to participate in research and teaching in the University's Department of Computer Science. In addition, the candidate will be expected to develop new courses in computer security, networking, or other areas. The candidate will be expected to participate in research and teaching in the University's Department of Computer Science. In addition, the candidate will be expected to develop new courses in computer security, networking, or other areas.

The University is an Equal Opportunity/Affirmative Action employer. Women and minorities are strongly encouraged to apply.

Further information about the program and application materials are available at http://www.cse.binghamton.edu/csr/.

Computer Science and Bioinformatics
Technological Staff and Postdoctoral Positions

The Department of Computer Science & Engineering at the University of Minnesota invites applications in computer science and bioinformatics for positions available in the area of digital technology. A $63.4M renovation of Walter Library was completed in late December 2001. The Digital Technology Center (DTC) of Minnesota and the nation. This initiative affirms the strong commitment of the State of Minnesota in strengthening the University as a leader in educating the most skilled digital technologists of the future. The University provides a synergistic complement to ongoing efforts within the Disease Threat and Preparedness Program as well as within the Minnesota Supercomputing Institute. The DTC is a unique entity at a U.S. land-grant institution with a $22M annual budget. The DTC has 42,000 assignable square feet or approximately one-third of the space in Walter Library, and consists of more than 30 faculty members from the University's Electrical and Computer Engineering, Mathematics, and Computer Science Departments. The DTC is committed to excellence in education and research in digital technology, computer science, and bioinformatics.

The DTC has a strong interest in faculty who can contribute to the overall mission of the department in a variety of ways, including teaching and advising undergraduate students, guiding students in senior research projects, and contributing to the discipline-related curriculum. Responsibilities include teaching and advising undergraduate students. The candidate will be competitive; start-up funds are available. Send application materials immediately.

The successful candidate will

1. design and develop new courses in computer science and bioinformatics that broaden the education and research opportunities that are less than an hour from campus.

2. help shape the direction of the Digital Technology Center.

3. develop industry relationships, and be active in publishing. The position requires a strong demonstrated research capability with the ability to teach advanced topics. Both senior and junior professors will be considered for this position. The individual will join the research group on computer security which has been very successful in obtaining research and education grants.

Applications should include curriculum vitae and the names of three references. We will begin interviewing and making offers March 30, 2006. Applications and other materials must be received for full consideration. Applications and references must be received by April 1, 2006. Further information about the program and application materials are available at http://www.cse.umn.edu/.

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Faculty Positions

Department of Computer Science

The University of Kentucky is an equal-opportunity/affirmative action employer.

To apply for job #SM508219, a UK Online Application may be submitted at https://ejobs.uky.edu. Applicants are encouraged to submit complete applications immediately and will continue until the position is filled. Successful candidates will be expected to participate fully in the life of the university through teaching and service. Teaching experience and the ability to contribute to the research mission of the department would also be considered. Selection of candidates will be considered regardless of their field of specialization.

Wright State University is an AA/EEOC employer/educator.

Computer Science Faculty Position

Stony Brook University Department of Computer Science is a research-oriented department in all areas of computer science and engineering. The friendly, supportive and collegial environment of the department is enhanced with relevant research opportunities, makes the department an ideal place to launch and develop a successful academic career. Our Department offers graduate programs at the M.Sc. and Ph.D. levels and has a vibrant undergraduate teaching program.

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