**President’s FY 2006 Budget Cuts IT R&D Funding Overall**

*IT R&D at NSF Sees Small Increase; DOE, NIH, NASA Face Reductions*

By Peter Harsha

Citing a need to continue to foster economic growth and address the deficit, as well as continued need to prosecute the War on Terror, President Bush released an austere FY 2006 Budget Request that would sharply limit overall discretionary spending, including a significant reduction in the overall federal investment in information technology research and development.

The President's budget plan, released February 7, 2005, would cut overall spending in FY 2006 for the Networking and Information Technology Research and Development (NITRD) program—the federal crosscut for all agencies involved in funding information technology R&D—by 7 percent compared with FY 2005, decreasing the federal investment to $2.127 billion from $2.282 billion planned for FY 2005. The $155-million cut includes a significant reduction in IT R&D activities at the National Aeronautics and Space Administration, and additional cuts at the National Institutes of Health and the Department of Energy. The National Science Foundation, Department of Defense, Department of Commerce and the Environmental Protection Agency would all see slight increases under the President's plan compared with their FY 2005 funding levels.

**National Science Foundation**

NSF is the lead agency in the NITRD program and would benefit from a slight increase in FY 2006 in the President's budget request. Funding for IT R&D at NSF would increase by $8 million to $803 million for FY 2006, an increase of 1 percent. NSF's overall budget would increase 2.4 percent to $56.6 billion in the President's plan—making up the ground lost after a 2 percent overall cut to the agency by appropriators in the FY 2005 Omnibus Appropriations bill passed in December. However, given an average annual inflation rate of 2.75 percent, the President's requested level for NSF represents a slight decrease in real dollars for the agency.

Within NSF, the Computer and Information Science and Engineering (CISE) directorate, home to the bulk of IT R&D funding, would also see an increase in funding in the President's budget. For FY 2006, CISE would grow by $6.8 million over the FY 2005 level to $621 million, an increase of 1.1 percent. However, CISE also benefited from some additional priority-setting by NSF Director Arden Bement for the FY 2005. Concerns from inside NSF and within the computing community over exceptionally low award rates in CISE put pressure on the NSF Director to address the issue by finding additional funding for the directorate. As Peter Freeman, Assistant Director for CISE, reported in the January 2005 edition of Computing Research News (vol. 17, no. 1), the directorate's overall award rate of 16 percent in FY 2004—with award rates in some critical programs like Cyber Trust falling below 10 percent—was the lowest among directorates in the Foundation.

Bement took advantage of some flexibility in funding decisions provided by congressional appropriations in the FY 2005 Omnibus Appropriation to place a priority on CISE funding for the FY 2005 fiscal year. While most directorates suffered cuts ranging from $4 million to $6 million, CISE was provided an increase of $8.5 million in FY 2005 and a smaller $6.8 million increase in FY 2006. As a result of the increase in the FY 2005 planned budget and the President's requested FY 2006 budget, CISE would see a growth of $15.2 million in FY 2006 compared with the year just completed (FY 2004), a total increase of 2.5 percent. Only the Social, Behavioral and Economic directorate would grow faster over that period (by 7.9 percent, to $199 million in FY 2006).
**Computing Research News**

**March 2005**

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**Expanding the Pipeline**

Want to Increase Retention of Your Female Students?

By Linda L. Werner, Brian Hanks, Charlie McDowell, Heather Bullock, and Julian Fernald

A nerdy-looking guy sits alone working at a computer late at night. Is this a portrait of your typical computer science student? Or instead, does your typical student look like a pair of students working together at one computer—laughing, talking, pointing to the monitor, looking at each other, and having fun?

This latter picture is possible if you use pair programming. Pair programming has been found to be very beneficial in educational settings. Students who pair in their introductory programming course are more confident, have greater course completion and pass rates in that course, and are more likely to persist in computer-related majors. Although pairing helps all students, we believe that it is particularly beneficial for women because it addresses several significant factors that limit women’s participation in computer science—their fears for safety while working in computer laboratories at night, their lack of confidence in computer programming and computer science.

A 2000 UCLA survey of more than 700 incoming freshmen at 717 colleges and universities across the United States reported the largest gender gap in computer skills confidence in the 35-year history of the survey. The gender gap in computer use was almost nonexistent (79.5% of men and 77.8% of women reported frequent computer use); however, only 23.2% of the women, vs. 46.4% of the men, reported their computer skills as “above average” or within the “top 10 percent” of their peers. Any guesses, or the men vs. 1.8% of the women indicated they intended to pursue computer programming careers [Exu 2000].

This gender gap has been written about extensively and, unfortunately, the pipeline has been shrinking. Even among the most mathematically talented, women favor medicine and law as professions over careers in information technology because they perceive these professions as more socially meaningful and more interesting [Lightbody et al. 1997]. This is consistent with the AAUW report [AAUW 2000] that girls are not avoiding math and science careers because they are failing.

The use of pair programming in your CS1 introductory programming course has the potential to increase the retention of women in your CS-related majors. In the working world, the retention of women in your CS-related field, those who paired were also more likely to have declared a CS-related major one year later, compared with only 17 of the 36 (47.3%) who worked alone. This result is also both practically and statistically significant (χ^2(1) = 14.4, p < .05).

The results are great for the men, too, among the group of men who indicated on the first day of the introductory course that they planned to major in a CS-related field, those who paired were also more likely to have declared a CS-related major one year later, compared with only 2 out of 9 (22.2%) of the women who worked alone. This result is both practically and statistically significant (χ^2(1) = 14.4, p < .05).

For more detailed information regarding our pair programming experiment, look for guidelines and teaching materials for its use in your programming courses, see http://www.soe.ucsc.edu/~charlere/projects/pairprogramming.

Linda Werner is a lecturer in Computer Science at the University of California, Santa Cruz (UCSC). Brian Hanks is an assistant professor of Computer Science Information Systems at Fort Lewis College. During Spring 2000, Charlie McDowell is a professor of Computer Science (UCSC). Heather Bullock is an assistant professor in Psychology (UCSC), and Julian Fernald is assistant director of Institutional Research at UCSC.

This work was funded by National Science Foundation grants EIA-2005993, CNS-2005993, and occasionally, and conclusions or recommendations expressed in this paper are those of the authors and do not necessarily reflect the views of the National Science Foundation.

Notes:

CS Bachelor’s Degree Production Grows in 2004; Poised for Decline

By Jay Vegso

CRA’s Taulbee Survey of Ph.D.-granting Computer Science (CS) and Computer Engineering departments in North America has been conducted each fall since 1974. Results from the latest survey were provided to participants and CRA members in February. They will be published on CRA’s website (www.cra.org/statistics/) and in Computing Research News in May. Due to the interest in the data on undergraduate degrees, however, CRA has decided to release a portion of the results early.

This article reports on CS bachelor’s degree enrollments and production among Ph.D.-granting departments in the United States since the mid-1990s. For figures that group CS departments by rank, the rankings are based on information collected in the 1995 assessment of research and doctorate programs in the United States conducted by the National Research Council (see http://www.cra.org/nrc).

As can be seen in Figure 1, total bachelor’s degree production increased in the 2003/2004 academic year to 14,185. Nevertheless, this was its slowest rate of growth (5 percent) since the mid-1990s. In addition, growth in the number of degrees granted by the top 36 departments ranked by the NRC began to slow in 2001/2002, and production shrunk last year by 3 percent. The median number of degrees granted by the top 36 departments has declined for the past two years, to 109. At the same time, growth among those ranked 37 and above continued at about 10 percent last year, and the median number of degrees granted by them increased to 65.

It is important to remember that these results are for Ph.D.-granting departments only. The National Science Foundation publishes results for all institutions that grant CS degrees, but its most recent data are from 2000/2001. Traditionally, the Taulbee Survey’s Ph.D.-granting schools have produced a little less than 30 percent of the undergraduate CS degrees reported by the NSF. As a result, it is possible to estimate that a little more than 50,000 undergraduate CS degrees were granted in 2003/2004.

While the current undergraduate CS degree production numbers are strong, they appear poised to decline in coming years. The number of students who declared their major in CS has declined for the past four years and is now 39 percent lower than in the fall of 2000 (Figure 2). The number of new CS majors among departments ranked 37 and above has declined steadily since 2000, and since 2002 for those ranked in the top 36. The impact of these declines is now being felt among enrollments, which have decreased by 7 percent in each of the past two years (Figure 3). The greatest decline in the past few years has occurred among the top 36 departments, where enrollments fell by 19 percent between 1999/2000 and 2003/2004. In comparison, enrollments for those ranked 37 and above dropped 13 percent between their peak in 2001/2002 and last year.

A downturn in undergraduate CS degree production therefore seems likely in the coming decade. This is not surprising in light of the volatile history of the field. According to the NSF, undergraduate CS production nearly quadrupled between 1980 and 1986, to over 42,000 degrees. This period was followed by a swift decline and leveling off during the 1990s, with several years during which the number of degrees granted hovered at around 25,000. During the late 1990s, CS degree production again surged, to over 43,000 in 2001. Another downward trend was foreseeable. Indeed, survey results from the Higher Education Research Institute have indicated a declining interest in CS as a major among incoming freshmen for the last five years: from 3.8 percent in 1999 to 1.4 percent in 2004. How much of an impact this will have on degree production, and whether this will simply be part of a pattern, are unknown.
The biggest cut at NSF would be in the Department of Energy Science Programs, to $207 million in FY 2006, an 11 percent cut to DOE's FY 2005 estimate. DOE would spend $355 million on IT R&D, down from $383 million in FY 2005, a decrease of 4 percent. Information and Communications Technology would increase 34 percent, to $201 million, an increase of 34 percent.

National Aeronautics and Space Administration

The NASA IT R&D budget would take the largest hit of any NITRD agency, according to the funding levels included in the President's budget. While the agency would enjoy an overall funding increase of $37 million in FY 2006, to $294 million under the President's request, an increase of 6 percent. While basic research at DARPA is also slated to drop to $222 million in FY 2006 from $246 million planned in FY 2005, applied research at the agency would see a slight gain to $2.01 billion from $1.96 billion in FY 2005. Two funding lines at DARPA of particular interest to computing research would also see increases. Information and Communications Technology would grow by $11 million in FY 2006 to $199 million, an increase of 6 percent. Cognitive Computing Systems would grow by $51 million to $201 million, an increase of 34 percent.

Department of Energy

Overall, the Department of Energy's IT R&D Programs would see a reduction of $137 million in FY 2006, to $3.46 billion from $3.60 billion planned for FY 2005, a decrease of 4 percent. Included in that reduction is a $28 million cut to DOE NITRD-related funding. In FY 2006, DOE would spend $335 million on IT R&D, down from $383 million in FY 2005.

The President's plan also calls for an 11 percent cut to DOE's Advanced Scientific Computing program, to $207 million in FY 2006 from $239 million.

CRA-W Career Mentoring Workshop

April 16-17, 2005
Washington, DC

Details: http://www.cra.org

Program in 2001, 2002, and 2004
Clarke chaired CRA's Academic Careers Workshop Committee in 2002 and 2004, and has chaired the CRA Outstanding Undergraduate Awards Committee.

In 2004, Professor Clarke was awarded the Distinguished Engineering Alumnus Award in the Research and Invention Category from the University of Colorado School of Engineering. She has received both a Faculty Fellowship Award and Chancellor's Distinguished Faculty award from the University of Massachusetts. Her research interests include software verification and testing of distributed systems. Clarke has a Ph.D. in Computer Science from the University of Colorado at Boulder.

Carla Schletter Ellis

Professor Ellis joined the CRA board in 2003. She has been a member of CRA's Committee on the Status of Women in Computing Research since 2002, and is currently its co-chair. She also served on CRA's Committee on Recruitment and Retention in 2002-03, and has frequently been a mentor in CRA-W's Distributed Mentoring Program.

Professor Ellis has chaired ACM SIGOPS (1995-99) and SIGCSE's Governing Board (1998-2000). She has served on the ACM Executive Committee and as a Council Member. Other activities include Editor-in-Chief, ACM Transactions on Computer Systems (TOCS) in 2003, and Program Chair of the USENIX Annual Technical Conference in 2002.

Professor Ellis's research interests include operating systems, mobile computing, parallel and distributed systems, and energy management. She is a graduate of the University of Washington with a Ph.D. in Computer Science.

Dr. Bernstein is also an active contributor to professional activities in the database research community. He is currently a member of the Board of Trustees of the Very Large Data Base Endowment, a member of the Advisory Board of University of Washington, Tacoma, and has been both a member and chair of the ACM SIGMOD Awards Committee.

CRA is grateful to all the members of the current Executive Committee for their service during the period July 2001 to June 2005—James D. Foley (Georgia Institute of Technology) as Chair; Janice Cuny (University of Oregon) as Vice Chair; Phil Bernstein (Microsoft) as Treasurer; Kathleen McKeeon (Columbia University) as Secretary; and Lori Clarke (University of Massachusetts, Amherst) appointed member.
Transitions/Appointments

The University of Waterloo has announced that Thomas E. Coleman has been named Dean of the University of Waterloo's Faculty of Mathematics, effective July 1, 2005. He is currently Professor of Computer Science and Applied Mathematics at Cornell University and Director of the Cornell Theory Center and its spinoff, CTC-Manhattan. Professor Coleman received his Ph.D. from Waterloo.

Former CRA board member Barbara J. Grosz, has been appointed chair of the Task Force on Women in Science and Engineering at Harvard. This is one of two task forces recently appointed by Harvard’s President to address the barriers to advancement that women faculty face in academic careers. (http://webnews.harvard.edu/letters/daily/2005/02/d20050213-women.html)

Jennifer Rexford has been appointed a Professor of Computer Science at Princeton University, effective February 2005. Professor Rexford, who recently became one of ACM’s representatives on the CRA board of directors, was previously a member of the Network Measurement and Engineering department at AT&T Labs—Research in Florham Park, New Jersey.

NAE Announces New Members and Foreign Associates

Congratulations to all members of the CSE community who were recently elected members and foreign associates of the National Academy of Engineering.

CRA board member Leah H. Jamieson, Rambur Professor of Electrical and Computer Engineering and associate dean for undergraduate education, Purdue University, was elected to the NAE for innovations in integrating engineering education and community service.

Others recognized for computer-related accomplishments include: Rodney C. Adukins (IBM Systems and Technology Group); Paul G. Allen (Microsoft Corp.); Ivo M. Babuska (University of Texas, Austin); Marsha J. Berger (New York University); Mark T.Bohr (Intel Corp.); John Edward Bowers (UC, Santa Barbara); Edmund M. Clarke (Carnegie Mellon University); James Q. Crowe (Communications Inc.); David E. Culler (UC Berkeley); Richard D. Gitlin (Bell Labs, Lucent Technologies, retired); Shafirsha Goldwasser (MIT); Gerald J. Holtzmann (Jet Propulsion Laboratory); Roger T. Howe (UC Berkeley); David A. Landgrebe (Purdue University); Michael E. Lesh (Rutgers University); Jonathan J. Rubinstein (Apple Computer Inc.); Frederick D. Weber (AMD); Jennifer Widom (Stanford University); and Bruce F. Wollenberg (University of Minnesota).

According to the NAE press release dated February 11, 2005, election to the National Academy of Engineering is among the highest professional distinctions accorded an engineer. Academy membership honors those who have made outstanding contributions to “engineering research, practice, or education, including, where appropriate, significant contributions to the engineering literature” and to the “pioneering of new and developing fields of technology, making major advancements in traditional fields of engineering, or developing/implementing innovative approaches to engineering education.”

The Academy elected a total of 74 new members and 10 foreign associates. A complete list and additional details can be accessed from the NAE website at: http://www.nae.edu.

New STEM Workforce Report

Preparing the STEM Workforce of the 21st Century: Broadening Participation through a Comprehensive, Integrated System, prepared by C. Dianne Martin (The George Washington University) and Willie Pearson, Jr. (Georgia Institute of Technology), has recently been released.

The report summarizes discussions and recommendations resulting from a workshop convened at the National Science Foundation to examine issues surrounding the development of a diverse and well-prepared science and engineering workforce for the 21st century. Workshop attendees represented a range of diverse leaders employed in a variety of sectors and representing the disciplines supported by the National Science Foundation.

The continuing lack of full and diverse participation of all citizens in the science, technology, engineering, and mathematics (STEM) workforce threatens the economic strength, national security, and well-being of U.S. citizens. As groups under-represented in the STEM workforce become an increasingly larger part of the U.S. population, the vitality of the STEM workforce may further decline unless action is taken to broaden participation of all parts of our society.

Federal agencies and other funding organizations must implement program principles designed to increase the full and diverse participation of all citizens in STEM fields, and seven principles that apply to all research, education and infrastructure funding programs were recommended by the workshop. Realizing the capability of all citizens to contribute to and benefit from the new development of human resources as inseparable from the goal of expanding the research frontier.

The full report can be found at: www.seas.gwu.edu/~stem/

Hard copies can be ordered from: School of History, Technology and Society, 655 Cherry Street, NW, Georgia Institute of Technology, Atlanta, GA 30312-0345. Tel: 404-385-2265.
Pennsylvania State University invites applications for a tenure-track position opening in Fall 2003. Preference will be given to candidates in the areas of applications data mining, data management, and data integration. Applicants must be committed to both teaching and research. Applicants should have a PhD degree in computer science or closely related field. Some evidence of professional experience will be considered. Applications must include: a letter of interest and teaching philosophy; a CV; letters of reference; and a research statement. The College of Information Technologies at the Pennsylvania State University is committed to increasing the numbers of faculty in the areas of technology and information science. The Department of Computer Science at the Pennsylvania State University is an accredited member of the Computing Accreditations Council of the Computing Sciences Accreditation Board. The University is an Affirmative Action/Equal Opportunity Employer. Please send inquiries to Dr. Brian Zafke, Executive Vice President for Academic Affairs, Pennsylvania State University, University Park, PA 16802. The University is an Equal Opportunity/Affirmative Action Employer. Women and underrepresented minorities are encouraged to apply.

Indiana University
Department of Computer Science & School of Informatics
Natural Language Processing
The School of Informatics and the Department of Computer Science at Indiana University-Muncie (IUM) invite applications for a faculty position starting Fall 2003. Applications must propose a research agenda related to natural language processing and a strong commitment to teaching. Additionally, a PhD in a related field is required. Preference will be given to candidates with demonstrated strength in natural language processing or linguistics. Candidates should have a strong research record and a commitment to teaching excellence. Review of applications will commence February 1, 2004, and will continue until the position is filled. IUM is an EO/AA employer.

Iowa State University
Electrical and Computer Engineering Department
Faculty Position in Speech Recognition
Join the Speech Recognition Program within the Department of Electrical and Computer Engineering. The program is open for a permanent full-time position and involves individuals with experience in automatic speech recognition. Program faculty teach courses in automatic speech recognition and work on research projects in the area of automatic speech recognition. Rank and salary are commensurate with qualifications. The position will be a joint appointment in the Department of Electrical and Computer Engineering and the School of Human Communication Sciences. Applications should be sent to: John V. Haslam, Chair, Department of Electrical and Computer Engineering, Iowa State University, 319 Kirkwood Hall, Ames, IA 50011-2242. The University is an Affirmative Action/Equal Opportunity employer. Women and underrepresented minority candidates are encouraged to apply.

Ohio State University
Computing & Information Sciences
Faculty Position in Parallel Processing
Applications are invited for a faculty position in parallel processing, with a start date of September 1, 2004. The Department of Computing & Information Sciences at Ohio State University is seeking candidates with research interests in parallel processing, especially in heterogeneous parallel processing. If you are interested in applying, please send your CV to: Dr. Robert Cutkosky, Chair, Department of Computing & Information Sciences, The Ohio State University, 140 W. 18th Ave., Columbus, OH 43210. The Ohio State University is an Affirmative Action/Equal Opportunity employer.

University of Georgia
Division of Computing
Faculty Position in Speech Recognition
The University of Georgia is accepting applications for a faculty position to start in Fall 2005. The position is expected to be in the area of automatic speech recognition. The successful candidate is expected to have strong research and teaching qualifications in the area of automatic speech recognition. Rank and salary are commensurate with qualifications. The University of Georgia is an equal opportunity employer. Women and underrepresented minority candidates are encouraged to apply.

University of Oregon
Electrical & Computer Engineering
Faculty Position in Signal Processing
The Department of Electrical & Computer Engineering at the University of Oregon invites applications for an Assistant Professor position to start in Fall 2005. The department is particularly interested in faculty members with research interests in signal processing, as well as related areas such as communications, control, and computer science. Applicants should have a Ph.D. in signal processing or a closely related field. The University of Oregon is an equal opportunity employer and an Affirmative Action/Equal Opportunity employer. Women, minorities, and people with disabilities are encouraged to apply.

Washington University in St. Louis
School of Medicine
Center for Advanced Computing Research
Faculty Position in Computer Science
The Center for Advanced Computing Research (CACR) at Washington University invites applications for a faculty position at the rank of Assistant Professor or higher. Candidates must hold a Ph.D. in computer science or a closely related field. Areas of interest include computer science, machine learning, and artificial intelligence. Rank and salary are commensurate with qualifications. Women and underrepresented minority candidates are encouraged to apply.

Washington State University
Computing and Information Sciences
Assistant or Associate Professor of Computer Science
Washington State University is accepting applications for an Assistant or Associate Professor position in Computer Science. The position is a full-time, tenure-track position at the Assistant or Associate Professor level, starting in Fall 2005. The successful candidate should have a PhD in computer science or a closely related field and demonstrate strong research potential and the capacity to attract extramural funding. Rank and salary are commensurate with qualifications. Women and underrepresented minority candidates are encouraged to apply.

National Science Foundation
Division of Computing and Communication Foundations
Program Director
NSF's Directorate for Computer and Information Science and Engineering invites applications for the position of Program Director in the Theoretical Foundations Division (CCF). The Program Director will have primary responsibilities related to proposal evaluation, project development and support, program planning and, collaboration, and evaluation. Rank and salary are commensurate with qualifications. Applicants must have a PhD in computer science or a closely related field. The successful candidate should have an outstanding record of research, teaching, and service at the highest levels. Women and underrepresented candidates are encouraged to apply.

Civil Engineering
Faculty Position: Language and Speech Processing
The Johns Hopkins University, Whiting School of Engineering, invites applications for a tenure-track faculty appointment in the area of automatic speech recognition. Rank and salary are commensurate with qualifications. The University is an Affirmative Action/Equal Opportunity employer. Women and underrepresented minority candidates are encouraged to apply.

University of California Berkeley
Department of Electrical Engineering
Speech Recognition Faculty Position
The University of California, Berkeley, invites applications for a faculty position at the rank of Professor in the area of automatic speech recognition. Rank and salary are commensurate with qualifications. Women and underrepresented minority candidates are encouraged to apply.

University of Colorado Denver
School of Computing
Professor of Computer Science
The School of Computing at the University of Colorado Denver is seeking an individual to serve as Director of the School of Computing. Rank and salary are commensurate with qualifications. Women and underrepresented minority candidates are encouraged to apply.

University of Tennessee
Department of Computer Science
Faculty Position in Scientific Computing
The Department of Computer Science at the University of Tennessee, Knoxville, invites applications for a faculty position at the rank of Assistant Professor or Associate Professor. Rank and salary are commensurate with qualifications. Women and underrepresented minority candidates are encouraged to apply.
The Department of Computer Science and Electrical Engineering (CEEE) at the University of Missouri-Kansas City (UMKC) is seeking applications for several junior level tenure-track positions starting Fall 2005 (exceptional senior applicants will be considered.)

UMKC is one of four premier campuses in the University of Missouri System and Kansas City is sometimes referred to as the boot heel secret of the mid-west. We are seeking outstanding candidates with a solid record of research accomplishments (publications and externally generated research funds appropriate for the rank), and with outstanding teaching and leadership abilities for these areas:

1) Electrical and Computer Engineering, (mixed signal design, computer architectures, and design, chip or VLSI layout)
2) Software Systems (software engineering, web-engineering, multimedia, distributed systems), and

The Department has 20 tenure-track faculty members with funding accomplishments from NSF, DARPA, and industries. CSEE provides a rich environment for junior faculty including faculty mentoring. Candidates must have a Ph.D. degree by August 2005 in Computer Science, Electrical or Computer Engineering, or a closely aligned discipline.

Submit your application materials to:

CSEEFacPos@umkc.edu

See http://www.csee.umkc.edu for additional information regarding application procedures and about the department. Review of applications will begin January 15, 2005 and continue until positions are filled.

UMKC is an Equal Opportunity Employer/ Affirmative Action Employer. Candidates from under-represented groups are especially encouraged to apply.

University of Southern California
Program in Molecular and Computational Biology, Department of Biological Sciences
Faculty Position in Computational Biology and Bioinformatics
Assistant Professor/ Associate Professor/ Assistant Professor

The University of Southern California invites applications for a position at the Assistant Professor or Associate Professor level. Candidates with a strong background in computer science, computational or systems biology with applications to molecular biology including genomics and proteomics are encouraged to apply. The position is in the interdisciplinary Program in Molecular and Computational Biology in the Department of Biological Sciences. Many of the current faculty hold joint appointments in other departments.

Interested candidates should send a curriculum vitae, including research plans and a summary of three references to:

Michael S. Waterman
Search Committee
Department of Biological Sciences
SH 122
University of Southern California
Los Angeles, CA 90089-1340
Website: http://www.bsc.usc.edu

University of Victoria
Department of Computer Science
Faculty Positions

Applications are invited for two regular tenure-track positions at the Assistant Professor level. Applicants in all areas of computer science will be considered. However, one position is designated to be in support of teaching and research in networking and distributed systems, the second position is to support one or more of our new combined programs. Those with Geography (in Geomatics), Health Information Sciences, Music, Psychology, and Visual Arts. Duties will include teaching at the undergraduate and graduate levels, graduate student supervision, and research. Applicants should possess a Ph.D., in an appropriate field, a strong research record, and a strong commitment to teaching. Full details may be found at http://www.cse. uvic.ca/csepositions.html.

The University of Victoria is an equal opportunity employer and encourages applications from women, persons with disabilities, visible minorities, aboriginal peoples, people of all sexual orientations and genders, and others who may contribute to the further diversification of the University. The University has excellent policies which establish employment equity obligations, including paid maternity/paternity leave and a generous pension plan.

The Department of Computer Science and Software Engineering at Concordia University invites applications for one tenure-track faculty position. We are looking for an excellent candidate in any area of Computer Science or Software Engineering. The rank and salary will be commensurate with qualifications and experience. The position is targeted for candidates whose research focuses on computational biology or bioinformatics, and whose interests overlap the aforementioned areas. We are also interested in high-performance computing, machine learning, software engineering, and theory. This position is one of several that the Department has announced to transform itself as a part of a larger initiative in Molecular Biology. It provides an unrivaled environment for a top computer scientist to join a critical mass of colleagues from many disciplines including life sciences and biologists.

Candidates must have a PhD degree in computer science or a related discipline, and the ability to develop an innovative interdisciplinary research program.

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