For the period July 1, 2001, through June 30, 2002, the Computer Science Department was staffed by twenty full time faculty. As of Fall term, according to figures of Institutional Research and Planning, there were 77 graduate students enrolled in degree programs, and 474 declared undergraduate majors. The number of students, primarily non-majors, taking service courses was 1327. As a group, the faculty authored or co-authored eighty-one research articles. They also gave fifteen presentations at professional meetings. Many faculty serve on editorial boards of distinguished journals. The faculty were PI, Co-PI, or contributor to twenty externally funded research projects. Professors Arpinar, Hybinette and Watterson were welcomed as new faculty members. Professors Arpınar and Watterson were hired as part of the state's Yamacraw initiative. This initiative has provided strong support this year for additional faculty positions, staff positions, and facilities within the department, as well as prompting new curriculum development.
Summary

For the period July 1, 2001, through June 30, 2002, the resident faculty of the Computer Science Department were Professors Bhandarkar, Canfield, Gries, Kochut, Miller, Potter, Robinson, Sheth, Taha; Associate Professors Arabnia, Kraemer, Smith; Assistant Professors Arpinar, Bishop, Chandra, Everett, Hybinette, Lowenthal, Rasheed, Watterson; and Instructors Basnayake, Lether. Permanent professional persons associated with the department include three secretarial staff members (Ms. Power, Ms. Sewell, Ms. Williams), three technical support personnel (Mr. Powell, Mr. Misztal, Mr. Steward), and an Undergraduate Advisor (Ms. Menken).

Beginning in January, 2002, the department worked with Dean Wyatt Anderson to select the next Head of Department. Dr. Krys Kochut will become Head effective July 1, 2002, with Dr. Rodney Canfield stepping down after nine years of service. The department thanks all the senior faculty who graciously permitted their names to be placed in nomination for this responsibility, and we are also very appreciative of the job done by the Coordinating Committee – Professors Arabnia, Kraemer, and Lowenthal – in facilitating the internal search. Congratulations are also in order for Professor Lowenthal, who this year underwent review, successfully, for promotion to Associate Professor and Tenure.

As of Fall, 2001, there were 77 graduate students enrolled in graduate degree programs: 19 in the doctoral program, 56 in the MS, and 2 in the MAMS. During this year the department graduated its second doctoral student. Dr. Guangming Xing, supervised by Professor Rodney Canfield, graduated in Fall, 2001, and taught during Spring term at Albany State University (Albany, Georgia); beginning Fall, 2002, Guangming will be a tenure-track faculty member of the Computer Science Department at Western Kentucky University (Bowling Green, KY). Approximately 53 graduate students received financial support each semester, as follows: Graduate Laboratory Assistants, 45%; Graduate Teaching Assistants (in charge of a course), 7%; faculty teaching replacement, 1%; Research Assistants supported by external funding, 42%; University Wide Assistantships, 5%. From time to time one or two students receive assistantships in return for which they provide system support and technical assistance to the Graduate School and/or the CAPA system.

There are a number of successful research labs functioning within the department; we will highlight three of them in this summary. Professor Sheth completed his term as CEO of Taalee, in June 2001, at which time the company was acquired by Voquette, Inc. This commercial venture was based on research done in the LSDIS laboratory in the area of Semantic Web. Professor Suchi Bhandarkar heads up the Visual and Parallel Computing Laboratory. The goals of the VPCL are to undertake projects that advance the state of the art in the theory and applications of Visual Computing and Parallel Computing. Professor Eileen Kraemer’s research focuses on computational steering - the monitoring, visualization, and control of long-running, complex systems. The algorithms, techniques, and systems developed are being applied to
problems in computational biology, network management, and parallel and distributed computing in general.

During the academic year, Professor Liming Cai, from Ohio University (Athens, Ohio) was a visitor in the department. Dr. Cai received his Ph.D. at Texas A&M University in 1994, and is taking a leave of absence for the year from his tenured Associate Professor position at The Ohio University. He is an expert in computational complexity theory who has begun to investigate applications to bio-informatics. Dr. Cai is expected to collaborate with the departmental theory group as well as with researchers from a number of other departments who are participating in UGA’s interdisciplinary functional genomics initiative. Dr. Cai gave courses in algorithms at both the beginning and advanced levels, as well as a course that is part of the Master’s of Internet Technology degree program. Dr. Cai has an NSF-funded grant in local search via parameterization. During his visit, he initiated research with Professor Russell Malmberg (Plant Biology), and we are pleased to announce that Professor Cai will join the department as Associate Professor beginning Fall, 2002.

As of Fall, 2001, there were 474 declared undergraduate CS majors, 34 less than this time one year ago. This represents 3.4% of the College undergraduate student population; our twenty resident faculty for the past year comprise roughly 2% of the College Faculty. Many of these declared undergraduate majors students have not yet taken a course with a CSCI prefix. The flow of students through our major courses is discussed further under "Enrollment Management." Despite the drop in total number of undergraduates, a record 34 bachelor’s degrees were awarded. This increased graduation rate suggests that the enrollment management plan is working as intended.

In addition to graduate students and majors, the department taught several courses of a service nature:
- CSCI 1100 (Introduction to Personal Computing)
- CSCI 1210 (Introduction to Computational Science)
- CSCI 1301 (Introduction to Computing and Programming)
- CSCI 2040 (Gender and Computing: Information Systems Design)
A total of 1488 seats were offered in these courses (and they generally fill quickly to capacity), a decrease of 24 from the previous year and increase of 77 from two years before.

2001-2002 Awards/Honors:

<table>
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<th>Major</th>
<th>Significant</th>
<th>Minor</th>
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<td>1</td>
<td>3</td>
<td>14</td>
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</tbody>
</table>
Dr. Liming Cai received his B.S. and M.S. in Computer Science from Tsinghua University in Beijing China. Dr. Cai received his Ph.D. in Computer Science from Texas A&M University in 1994. He is an expert in computational complexity theory who has begun to investigate applications to bio-informatics. Dr. Cai is expected to collaborate with the departmental theory group as well as with researchers from a number of other departments who are participating in UGA’s interdisciplinary functional genomics initiative. Dr. Cai has an NSF-funded grant in local search via parameterization. We are pleased to announce that Professor Cai will join the department as Associate Professor beginning Fall, 2002.
Strategic Planning

The departmental Long Term Planning committee is comprised of Professors Canfield, Kochut, Kraemer, and Lowenthal. After careful review and consideration they formulated a strategic plan for the five years 1999-2004 which has been influential in guiding developments over the past two years. The complete plan was included in the department’s 1999-2000 Annual Report. So much progress has been made already that an update to the strategic plan is envisioned to be completed during the 2001-2002 academic year.

Assessment

On advice from a university review committee, the department discontinued its existing assessment plan, and has begun the process of shaping and approving a new one. One of our greatest concerns is with the delicate question of balancing demand for our courses with faculty and laboratory resources. The enrollment management plan was begun Fall, 1998, students having been notified the previous Winter Quarter. We are still evaluating the first two years of this policy. Philosophically, it is not the sole purpose of this policy just to ``hold down the number of majors.” The latter is a concern, given current facilities and faculty numbers, but there is a further concern of equal, or greater, significance. Our experience of the past few years indicated clearly that students who performed marginally in the lower level courses had an extremely difficult time getting a "C" or better in the more advanced courses, such as Algorithms, Compilers, and Operating Systems. These students were taking several courses two, and sometimes, more times. This created a log-jam, and since the older students had priority on registration, many younger and well qualified students were leaving the major in frustration. Combined with serious concerns about professional integrity (given the high levels of responsibility our graduates are taking in critical applications), we adopted a policy whereby students who entered courses numbered 2670 (Theory) and higher could be expected to complete each major course on one try with a "C" or better.

We are teaching a first course in programming (CSCI 1301) to 638 students per year. Probably 40% of these are intended majors, the rest taking it as a service course. Of these, some 200 per year take the follow-up gateway classes, CSCI 2610 and CSCI 1302. Approximately 60 students per year are earning the B's in these latter courses, and proceeding on to the rest of the major.

Overall Health

The record of the faculty in instruction and research is excellent; likewise the accomplishments of our graduates. Within the context of the current economic and technological environment in the state of Georgia, the upper administration of the University and University System have made significant strives to provide greater access of CS Department courses for UGA students. We have made it our goal to achieve this without significant change to teaching loads or class sizes, so that the quality of both departmental research and instruction can continue to improve. There were three outstanding additions to staff this year. Our recent success at faculty recruitment indicate that the professional environment for computer science at UGA is good; however, the resignation of one faculty member is a reminder that we are in a period of intense competition for faculty recruitment within the profession. The allocation of 1800 additional
square feet of space to the department in Barrow Hall was critical to enabling faculty recruitment this year. The department looks forward to future opportunities for growth, in later years that will allow us to strengthen expertise in economically and academically important subareas of Computer Science.

Appendices

Attached are the more detailed listings of professional activities, grants, publications, and presentations of the faculty for the past year.
PROFESSIONAL HONORS AND RECOGNITIONS

H. R. Arabnia


Chair, Program Committee, The 2002 International Conference on Parallel and Distributed Processing Techniques and Applications, PDPTA'02, June 24-27, 2002, Las Vegas.

Member, Program Committee, The 2002 International Conference on Communications in Computing, CIC'02, June 24-27, 2002, Las Vegas.


Member, Program Committee, The 2002 International Conference on Internet Computing, IC'02, June 24-27, 2002, Las Vegas.

Co-Chair, Program Committee, The 2002 International Conference on Artificial Intelligence, IC-AI'02, June 24-27, 2002, Las Vegas.


Member, Program Committee, The 2002 International Conference on Mathematics and Engineering Techniques in Medicine and Biological Sciences, METMBS'02, June 24-27, 2002, Las Vegas.

Co-Chair, Program Committee, The 2002 International Conference on Security and Management, SAM'02, June 24-27, 2002, Las Vegas.

Member, Program Committee, The 2002 International Conference on VLSI, VLSI'02, June 24-27, 2002, Las Vegas.


Member of American Association for the Advancement of Science (1999 - Present)

Member of World Occam and Transputer User Group (WoTUG), 1986 - present.

Member of the Editorial Board of the International Journal of Parallel and Distributed Systems and Networks (IJPDSN) (1996 - present).

Chair, North American Transputer Users Group, NATUG Association (1996 - present).

Member of Advisory Board of Virtual Medical Worlds - an on-line magazine by Euromed (European Commission in Telemedicine), http://www.hoise.com/project/VMW (1997-Present).


Member, Program Committee, FUSION 2001 Conference, Montreal, Canada, August 2001.


Member, Advisory Committee, 2001 International Conference on Parallel and Distributed Computing and Systems (PDCS'2001), Anaheim, California, USA, August 2001.
I. Budak Arpinar

Member of IEEE Computer Society

Member of ACM

S. M. Bhandarkar

Associate Editor, International Journal of Applied Intelligence, November 99 - present.


Member, Technical Committee on Pattern Analysis and Machine Intelligence, IEEE Computer Society, 1992-present.

Member, Association for Computing Machinery (ACM), 1990-present.

Member, International Society of Photo-optical and Instrumentation Engineers (SPIE), 1987-present.

Member, American Association for Artificial Intelligence (AAAI), 1985-present.

Member, Institute for Electrical and Electronic Engineering (IEEE), 1982-present.

**B. J. Bishop**

Member IEEE and ACM

Publicity Co-Chair IEEE International Symposium on VLSI

**E. R. Canfield**

Member of the Association for Computing Machinery.

Electronic Journal of Combinatorics, Editor.

**S. Chandra**

Member of ACM (SIGOPS and SIGMOBILE)

Member of USENIX

**Maria Hybinette**

Member of Association for Computing Machinery
Member of Institute of Electrical and Electronics Engineers

**D. R. Gries**

Steering Group, AAAS Section on Information Computing, and Communication (T), 2000-present


**K. J. Kochut**

Member of The Computer Journal

Member of Transputer Communications Journal

Member of International Journal of Computer Simulation

Member of Journal of American Society for Information Sciences

Member of Data and Knowledge Engineering

Member of IEEE Transactions on Knowledge and Data Engineering

Member of Cole Publishing

**E. T. Kraemer**


Finance Chair, 2002 IEEE Symposia on Human Centric Computing, Languages and Environments

**D. K. Lowenthal**

Program Committee Member, Workshop on Languages, Compilers, and Run-Time Systems for Scalable Computing

Program Committee Member, Workshop on High-Level Programming and Supportive Environments.
Member, ACM, 1992-present

Member SIGPLAN, 1992-present

Member, SIGOPS, 1992-present

**J. A. Miller**

Associate Editor for ACM Transactions on Modeling and Computer Simulation (TOMACS), 1999-present

Associate Editor for IEEE Transactions on Systems, Man and Cybernetics (TSMC), 1999-present

**W. D. Potter**


Program Committee Member, International Conference on Artificial Intelligence (IC-AI’2002), June, 2002, Las Vegas, Nevada.


**K. M. Rasheed**

Member of Institute of Electrical and Electronics Engineers (IEEE)

Member of IEEE Computer Society

Member of American Association for Artificial Intelligence (AAAI)

Workshop Co-organizer, Genetic and Evolutionary Computation Conference (GECCO'2002).

Program Committee Member, Genetic and Evolutionary Computation Conference (GECCO'2002)

**R. W. Robinson**

Foundation Fellow, Institute of Combinatorics and its Applications

Member of American Mathematical Society

Member of Association for Computing Machinery

Member of European Association for Theoretical Computer Science

Member of Combinatorial Society of Australasia

A. P. Sheth

Editor, IEEE Multimedia, November 1998 - present.

Member of the Editorial Board, Information Systems - an Intl. Journal, 1993 – present


Member of the Editorial Board, Journal on Distributed and Parallel Databases, 1992 - present. Associate Editor, SIGMOD Record, 1988 - present.

Member, Association for Computing Machinery, SIGMOD and other SIGs.

Member, IEEE Computer Society, including Technical Committee on Database Engineering.

Program Committee Member, 6th Intl Conference on Cooperative Information Systems (CoopIS 2001), Trento, Italy, September 5-7, 2001.

Program Committee Member, 5th Intl Workshop CIA-2001 on Cooperative Information Agents, Modena, Italy, September 6-8, 2001.


Member of the Board and Founding Member, International Foundation on Cooperative Information Systems, 1996-present.


Advisory Board, Coca-Cola Center for Marketing Studies, Terry College of Business, 2001-present.

J. W. Smith


T. R. Taha

Member of the Association of Computing Machinery (ACM)

Member of the Society for Industrial and Applied Mathematics (SIAM)

Member of the SIAM SEAS

Member of the International Association for Mathematics and Computers in Simulation (IMACS)

Member of the SIAM Activity Group on Supercomputing

Member of the Middle East Advisory Panel on the Fulbright Senior Scholar Program for CIES (Council for International Exchange of Scholars), 1999 - present

Member of the IMACS technical committee on Dynamical Systems and Nonlinear Science, 1992 - present.

Member of the Institute of Electrical and Electronics Engineers (IEEE), Inc.

Chairman and Conference Coordinator of the IMACS International Conference on "Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory", Athens, Georgia, April 19-12, 2001

Scott Watterson

Member Association for Computing Machinery

Member ACM SIGMICRO

Member IEEE
EXTERNALLY FUNDED GRANTS:


University of Georgia Yamacraw Program (2001-2002), E. Rodney Canfield (PI), Jeffrey W. Smith and Hamid R. Arabnia, Georgia Governor’s office, $878,592, continued support for permanent/continued staff and faculty positions (includes startup funds for new faculty) for the Department of Computer Science.

Donation to support graduate education in the CS Dept., E. Rodney Canfield (PI), $10,000, 2002-2003.


David Lowenthal (PI), Eileen Kraemer and Suchendra Bhandarkar (Co-Pi’s), National Science Foundation Major Research Instrumentation Grant, “Instrumentation Grant for Research in Parallel and Distributed Computing”, Experimental and Integrative Activities, March 2000-February 2003, $114,000 (includes matching from the University of Georgia Research Foundation).

Benjamin Bishop (PI), Altera Corporation – Instruction support donation, $22,560.


Benjamin Bishop (PI), Mosis/USC IC fabrication services – MEP Research
Grant, (competitive award) ~$24,955 approved August 2001.


Doyle Knight (PI), Khaled Rasheed (Co-PI) and 3 other Co-PIs, National Science Foundation (NSF), "Data Driven Design Optimization in Engineering Using Concurrent Integrated Experiment and Simulation", $1,200,000 (UGA's portion $137,295), 2001-2004.


A. Sheth, Clemens Bertram, Kshitij Shah, “Video Anywhere: A System to Search, Access and Manage Any Type of Video Assets Anywhere”, Royalty research proceeds from invention, 2001-2002 $5,000.

A. Sheth, Donations from various sources to support the research activities in the LSDIS Lab at UGA, current funding, $90,000.


EXTERNALLY FUNDED GRANTS:


David Lownenthal (PI), Eileen Kraemer and Suchendra Bhandarkar (Co-PI’s), National Science Foundation Major Research Instrumentation Grant, “Instrumentation Grant for Research in Parallel and Distributed Computing”, Experimental and Integrative Activities, March 2000-February 2003, $114,000 (includes matching from the University of Georgia Research Foundation).

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S. M. Bhandarkar and S.R. Chandrasekaran, Parallel Parsing of MPEG Video, Parallel Computing, under review.


Surendar Chandra, “Beacond: A Peer-to-Peer System to Teach Ubiquitous Computing”, submitted


R.W. Robinson (with E.M. Palmer and R.C. Read) "Counting claw-free cubic graphs", *SIAM J. Discrete Math*, accepted subject to revision and revision submitted.


PRESENTATIONS AT MEETINGS:

H. R. Arabnia, Computer Science Education in Iran - Challenges. Beheshti University, Tehran, Iran, August 8, 2001.

H. R. Arabnia, Committee Reports (IT Task Forces) and Conference Opening; The 2002 International Multiconference in Computer Science; June 24, 2002, Las Vegas, Nevada.


John A. Miller, “Using Simulation to Facilitate Effective Workflow Adaptation”, Proceedings of the 35th Annual Simulation Symposium (ANNSS’02), San Diego, CA (April 2002).


PRESENTATIONS AT MEETINGS:


