1. Number of students graduated:

   Number of BS in Computer Science Majors 241 (Headcount)
   Number of BS in Computer Science Majors 215.4 (FTE)
   Number of MS in Computer Science Majors 110 (Headcount)
   Number of MS in Computer Science Majors 64.7 (FTE)
   Bachelor of Science in Computer Science - 26
   Master of Science in Computer Science - 36

   Total SCH on-campus: 5382 +
   31 graduate thesis continuation for zero credits

   Total SCH off-campus: 111

   Master Thesis - 5 completed
   10 in progress

Emad Abolelela:

<table>
<thead>
<tr>
<th>Semester</th>
<th>Student</th>
<th>Thesis Title</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2003</td>
<td>Yiluo Song</td>
<td>Performance Evaluation of the IP Packet Forwarding Techniques Based on Partitioned Lookup Table</td>
<td>Completed, thesis was published.</td>
</tr>
<tr>
<td>Spring 2004</td>
<td>Sheetal Naik</td>
<td>Internet Emulation Utilizing the VPN</td>
<td>In progress</td>
</tr>
</tbody>
</table>

Ramprasad Balasubramanian:

Raxit Shah, Development of device driver for Autopro A444, December 2003
Bin John – in progress
Ayan Chaudhari – in progress
Vishal Sood – in progress
Sourish Ray – in progress
Jan Bergandy:
Prashant Ram, *Design Patterns in Resource Management*, December 2003

Paul Bergstein:
Thorat Sangram, in progress

Eugene Eberbach:
Chia-Hsin Lu, *Sequence Alignment Analysis with Genetic Algorithm*, June 2004

Boleslaw Mikolajczak:
Fengzhi Ke, (co-advised with Dr. Avijit Ghandopadhy from Physics Department), *Performance Study of Parallel Ocean Code for North Pacific and North Atlantic with ROM*, in progress
Rahul Chaudhari, *Verification and Validation of IP Sec (IP Security Protocol of Cisco) with Colored Petri Nets*, in progress
Jianlun Chen, *Complexity of Workflow Mining Alpha Algorithm*, in progress

Shelley Zhang:
Qinhe Zheng, *The study of the formation of virtual organization*, in progress

Master Projects

<table>
<thead>
<tr>
<th>Semester</th>
<th>Student</th>
<th>Project Title</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2003</td>
<td>Weichih Ni</td>
<td>Multimedia Router Configuration and Traffic Analysis</td>
<td>Completed</td>
</tr>
</tbody>
</table>

Emad Aboelela:

18 completed
8 in progress
<table>
<thead>
<tr>
<th>Semester</th>
<th>Name</th>
<th>Project/Task</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2003</td>
<td>Vinod Agrawal</td>
<td>PC-Phone Communication over IP</td>
<td>Completed</td>
</tr>
<tr>
<td>Fall 2003</td>
<td>Sheetal Naik</td>
<td>Internet Emulator</td>
<td>Completed</td>
</tr>
<tr>
<td>Spring 2004</td>
<td>Sparsh Parimoo</td>
<td>Anti-spam System Based on Routing Information</td>
<td>In progress</td>
</tr>
</tbody>
</table>

**Ramprasad Balasubramanian:**

ANDRA, RAMANAMURTY K. - completed  
GULIPALLI, SRINIVAS - completed  
RAY, SOURISH - completed  
AJAY SAINI - completed  
EHRENS, DAVID M – in progress  
JOSEPH, SHIJI GEORGE – in progress  
SANTIAGO, MARCIO F – in progress

**Eugene Eberbach:**


Kunal Gaurav, *Implementation of \( k \) Omega Optimization: Single Agent Scenario*, completed 2004


**Boleslaw Mikolajczak:**


Fengzhi Ke, (co-advised with Dr. Avijit Ghandopadhy from Physics Department), *Performance Study of Parallel Ocean Code for North Pacific and North Atlantic with ROM*, in progress


Rahul Chaudhari, *Verification and Validation of IP Sec (IP Security Protocol of Cisco with Colored Petri Nets*, in progress

Haiping Xu:

Tseng, Ying-Chang, *Web Based Application: Online Used Bookstore – Model Design and Implementation*, completed.

Hsu, Kuei Chih, *Web Based Application: Online Used Bookstore – View and Controller Design and Implementation*, completed.


Valladares Pernas, Jose, *Multi-Agent System for Online Auctions*, in progress.

Shelley Zhang

Rajiv Malhotra, *Simulation of traffic flow based on swarm intelligence*. in progress

Qinhe Zheng, *Simulation of the formation of virtual organization*, completed

**Off campus:**

5 graduate courses (NUWC - 2, Taiwan –3)  
1 section of Master Projects – 13 students (Taiwan)  
1 section of Master Projects – 2 students (Raytheon)  
1 section of Master Thesis – 1 student (Raytheon)  
4 undergraduate courses (Taiwan program)

**Certificates:**

2 graduate certificates

**Ph.D.**

None

2. **Research grants obtained by faculty:**

PI, Title, funding agency, amount, duration

Emad Aboelela

**Grants approved:**

Ramprasad Balasubramanian

Grants applied:


Eugene Eberbach:

Grants obtained:


Office of Naval Research ONR N000140310421 grant under ONR BAA 02-016. The Undersea Weaponry Science and Technology Program: University/Laboratory Initiative; Graduate Student Support for the Autonomous Group Control and Autonomous Group Control, UMassD & NUWC, PI, $64,000 UMassD, 2004-2005.


Boleslaw Mikolajczak

Grants obtained:

NSF 01-52, Track – ATE Articulation Partnerships, Establishing an Articulated Computer Science Program: From BCC through UMD, co-principal investigator with P. Grocer, BCC, UMass Dartmouth component for AY 2003-2004 is $31,997; this was second year of grant implementation; two CIS faculty and three computer science students participated and were supported by this grant with full tuition waiver.

Two travel grants of $500 each from provost to participate in two conferences – Fall 2003 and Spring 2004.
Grants applied:

Commonwealth Information Technology Initiative, Phase II, member of the Program Committee, application filed in August 2003; grant awarded in April 2004 for a period of June 2004-August 2005.

The Fulton Project, TRIM Software Development, co-PI jointly with Ram Bala, currently in the stage of project definition, planned for period of June 2004-August 2005.

Iren Valova

Grants applied:


Richard Upchurch

Grants applied:

Received funding from the Provost to continue development and use of electronic portfolios. ($40K).

NSF ASA research activity

Shelley Zhang

Grants obtained:


Grants applied:


3. Names of students supported by research grants and the amount:

Agrawal Vinod - $17,500, CITS Funds, GA, 20 hours per week, whole year
Basnet Animesh - $3,500, NSF BCC-UMD ATE Grant, RA, 10 hours per week; whole year; grant holder - B. Mikolajczak

Chaudhuri Ayan - $3,500, NSF BCC-UMD ATE Grant, RA, 10 hours per week, whole year, grant holder - B. Mikolajczak

Ram Prashant - $1,750, NSF BCC-UMD ATE Grant, RA, 10 hours per week, Fall 2003, grant holder - B. Mikolajczak

Devurkar Priyank - $1,750, NSF BCC-UMD ATE Grant, RA, 10 hours per week, Spring 2004, grant holder - B. Mikolajczak

Dahodwala Aliasgar - $3,590, RA, whole year; grant holder - Shelly Zhang

Parimoo Sparsh - $10,000, CITS Funds, GA, 20 hours/week, whole year

Sameer Nanda, $17,500, CITS Funds, GA, 20 hours per week, whole year

Shiji George, $1,200, RA, Physics Funds, RA, 10 hours, Fall 2003

Singh Ravinder - $10,000, CITS Funds, GA, 20 hours per week, whole year

Takkallapally Anirundakh - $1,500, CMAST Funds, RA, Fall 2003

Thorat Sangram - $3,000, DCE Funds, 10 hours/week, GA

Zheng Quinhe - $3,200, RA, 10 hours per week, grant holder – Zhang, whole year

Total RA/GA grant support for computer science graduate students - $77,990.

Total TA/RA support from CSF account for computer science graduate students $60,000

Overall Total $137,990

4. List of Journal Publications by faculty:

Iren Valova

Published

Accepted:


Shelley Zhang

Published:


Accepted:


Haiping Xu

Published:


5. List of papers in conference proceedings

Emad Aboelela

Published:

Accepted:


Y. Song and E. Aboelela, A Parallel IP-Address Forwarding Approach Based on Partitioned Lookup Table Techniques, 13th International Conference on Computer Communications and Networks, Chicago, IL, October 11-13, 2004.

Ramprasad Balasubramanian

Published:


Accepted:


Eugene Eberbach:

Published:


Accepted:


Boleslaw Mikolajczak

Published:


Accepted:


**Iren Valova**

**Published:**


**Accepted:**


Richard Upchurch

Published and Accepted:

Frontiers in Education 2003, Boulder, CO


Frontiers in Education 2004
Sims-Knight, J. & Upchurch, R. Assessment of the Structure of Student Design Knowledge Accepted

Upchurch, R. & Sims-Knight, J. TEAMING ASSESSMENT: IS THERE A CONNECTION BETWEEN PROCESS AND PRODUCT? Accepted.

Shelley Zhang

Published:


Accepted:

Other Publications:

Eugene Eberbach


6. List of presentations in conferences without proceedings


7. Books published:

Anish Mathuria (resigned on Dec. 29, 2002)


8. Book Chapters published:

Emad Aboelela

Published:


9. Other special accomplishments by faculty and students:

A. Computer Science Seminar Series – presentations during AY 2003-2004:

<table>
<thead>
<tr>
<th>Date</th>
<th>Name</th>
<th>Title</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/26/03</td>
<td>Ram Bala</td>
<td>Visualization and Physical Oceanography</td>
<td>UMassD</td>
</tr>
<tr>
<td>10/10/03</td>
<td>Iren Valova</td>
<td>Spiking Neurons for Modeling Olfactory Bulb Functionality</td>
<td>UMassD</td>
</tr>
<tr>
<td>10/24/03</td>
<td>Don Towsley</td>
<td>Internet worms: modeling and detection</td>
<td>UMass, Amherst</td>
</tr>
<tr>
<td>11/07/03</td>
<td>Bolek Mikolajczak</td>
<td>Study of Structural and Behavioral Petri net Properties with respect to Abstraction and Refinement</td>
<td>UMassD</td>
</tr>
<tr>
<td>3/5/04</td>
<td>Jurgen Schulze</td>
<td>Volume rendering in the CAVE</td>
<td>UMassD</td>
</tr>
<tr>
<td>4/30/04</td>
<td>Jan Bergandy</td>
<td>Design Patterns and Software Development Process</td>
<td>UMassD</td>
</tr>
<tr>
<td>3/26/04</td>
<td>Sol Neeman</td>
<td>Arts, Computers and Artificial intelligence</td>
<td>Johnson and Wales University</td>
</tr>
<tr>
<td>4/9/04</td>
<td>Haiping Xu</td>
<td>A Security Based Model for Mobile Agent Software Systems</td>
<td>UMassD</td>
</tr>
<tr>
<td>4/23/04</td>
<td>Emad Aboelela</td>
<td>Redundant Traffic Encoding And Marking Scheme For Voice-Over-Ip Quality-Of-Service</td>
<td>UMassD</td>
</tr>
</tbody>
</table>

B. Outreach Activities to Local High Schools:

J. Bergandy and B. Mikolajczak organized a two-day Professional Development Program for High School Teachers “Programming with Java”, in cooperation with Ralph Samford from BCC. J. Bergandy was the presenter of the seminar. The purpose of the seminar was to “build bridges” with teachers teaching computer related courses at local high schools and to help them with transition to Java in advanced placement courses.

Visit to Dartmouth High School of the following CIS faculty: Emad Aboelela, Ram Bala, Jan Bergandy, Bolek Mikolajczak, Iren Valova, and Shelley Zhang on May 26, 2004 to present a full day Career Day on “Computer Science and Computer Profession”. We reached out to around 200 freshmen, sophomores, and juniors.
C. Faculty Professional Consulting:


2. J. Bergandy assisted Thomson Corporation in Boston in designing C# training for their software engineering staff.

3. E. Eberbach taught CIS565 Evolutionary Computation course for NUWC employees, Fall 2003 (DCE Contract).


D. New course developments and significant course improvements:

Dr. H. Xu introduced a new computer science graduate course CIS 582: Advanced Software Engineering

Dr. S. Zhang and Dr. Valova introduced a new computer science technical elective course CIS 455 Bioinformatics

Dr. S. Zhang introduced a new computer science technical elective course CIS 477 Computer and Information Security

Dr. H.Xu designed a set of brand new lab and project assignments for CIS 181 to accommodate new teaching methodology; these course improvements can be inspected on: http://www.cis.umassd.edu/~hxu/courses/cis181/s04/prog_assignments.html

E. Faculty External Seminar Presentations:


E. Eberbach, University of Massachusetts Lowell, A Portable Language for Control of Multiple Autonomous Vehicles and Distributed Problem Solving, April 2004.

F. Faculty Professional Activities:

H. Xu was a referee for the IEEE Transactions on Software Engineering.


E. Eberbach was Program Committee Member of CEC’04 Congress on Evolutionary Computation, 2004 and Session Chair at CIRAS’03 Conference in Singapore, 2003.


B. Mikolajczak was a Member of the Program Committee of the International Conference on Artificial Intelligence to be held in Siedlce, Poland, September 2004.


B. Mikolajczak is a Member of the Advisory Board for the CIS Department at Bristol Community College – since AY 2001-2002 – 2 meetings attended + frequent consultation on board-related issues with Priscilla Grocer, chair of the CIS Department at BCC.

B. Mikolajczak organized a 2-day 10-hour long Professional Development Program for local High School teachers in computer science at BCC and UMD facilities, jointly with Mike Flannagan and Raymond Steele. Ralph Sanford and Jan Bergandy implemented the program on March 24 and April 1, 2004 with Java Programming Workshop. There are plans to repeat this workshop for larger audience in Fall 2004.
