

# RAM BYTES

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*Knowledge to Go Places*

## Message from the Department Chair

Welcome to the Fall 2004 CS Newsletter!

The Computer Science Department continues to thrive despite changes in how universities are funded in Colorado. If all goes as planned, CSU will become an “enterprise” of the State of Colorado rather than a traditionally funded state university. The portion of CSU’s budget corresponding to direct state funding will drop well below 10 percent. The advantage is that we will have greater financial independence.



**Darrell Whitley**

We expect to do well under this model. We are already generating about 10 percent of our budget from distance education activities. We expect a tuition increase of 12 percent next year for CS students, but CSU tuition will still be less than almost all of our peer institutions. The additional tuition will allow us to upgrade labs and add new classes and faculty. If all goes as planned, the CS will have expanded from 16 to 20 faculty between 2003 and 2008.

These changes do place additional financial burden on our students. We are making every effort to increase the number of scholarships available to students. On a related note, the number of new CS freshman is half of what it was just two years ago. Students continue to have the impression that there are no jobs. In reality, we still have the highest employment rate in the College and the highest starting salaries. The challenge is to get this message out to high schools and prospective students.

### Attention Alumni

The Department is working on its thesis and dissertation library.

If you completed your graduate work here, we would like to include your thesis and/or dissertation.

Please submit material or send inquiries to:

Sharon Van Gorder  
 Computer Science Department  
 1873 Campus Delivery  
 Fort Collins, CO 80523-1873

### New ACT Degree?

The department is considering a new bachelor’s degree in Applied Computing Technology (ACT). This program would be the same as a traditional CS degree for the first two years, but in years 3 and 4, students could develop a program that applies computer science to another discipline like atmospheric sciences, biology, business, education, or medicine.

What do you think of this program? Send your comments to:

[newsletter@cs.colostate.edu](mailto:newsletter@cs.colostate.edu)

**Department Faculty**

- Roger T. Alexander, Ph.D.
- Charles Anderson, Ph.D.
- J. Ross Beveridge Ph.D.
- James M. Bieman, Ph.D.
- Elizabeth Boese, M.S.
- A. P. Willem Böhm, Ph.D.
- Bruce A. Draper, Ph.D.
- Robert B. France, Ph.D.
- Sudipto Ghosh, Ph.D.
- Dale H. Grit, Ph.D.
- Van Howbert, M.S.
- Adele E. Howe, Ph.D.
- Anura P. Jayasumana, Ph.D.
- Yashwant K. Malaiya, Ph.D.
- Daniel F. Massey, Ph.D.
- Ross M. McConnell, Ph.D.
- Sanjay Rajopadhye, Ph.D.
- Indrajit Ray, Ph.D.
- Indrakshi Ray, Ph.D.
- Carolyn Schauble, Ph.D.
- Sandy Schleiffers, Ph.D.
- H. J. Siegel, Ph.D.
- L. Darrell Whitley, Ph.D., Chair

**Faculty Research Spotlight**

**Dr. Daniel F. Massey**



The Department is excited to welcome Colorado native, Dr. Dan Massey to the faculty of the Security Group. Originally from Pueblo, and an alumnus of Pueblo Central High School, Dr. Massey received his B.A. in Mathematics and Computer Science from the University of California San Diego and graduate degrees from UCLA. Prior to joining CSU last summer, he was Research Assistant Professor at the USC Information Sciences Institute.

Dr. Massey’s current research focuses on security and resiliency for large-scale distributed systems. He is particularly interested in issues related to the global Internet BGP routing system and the DNS naming system. “Large systems with distributed control, like the internet, are difficult to manage. How do we make large systems that are efficient, secure, and continue to grow? How do we respond to faults and problems?”


Almost any real system has imperfect components that can fail or be compromised. These components may simply fail (a link fails or a server crashes), but often they continue operating incorrectly. In large-scale systems with distributed control, these faults are common. No central authority exists to detect or remove faulty components, so we rely on resilient algorithm design that will operate despite the faults. Dr. Massey is addressing the challenge of designing resilient protocols for large-scale systems with distributed control.

Dr. Massey believes “security should be a native part of any system expected to grow big.” Until recently, security has been an after-thought to algorithm and protocol design. BGP and DNS protocols contain virtually no authentication and are vulnerable to a wide range of attacks, but Dr. Massey is trying to correct this. In one of his research projects, he proposed to use the existing DNS Security Extensions (DNSSEC) to improve the overall security of the DNS system. In his current research projects, he proposed techniques to improve the overall security of the BGP routing system and the DNS system. Dr. Massey has presented work on BGP resilience at the North American Network Operators Group (NANOG) and is Co-Editor of the DNS Security Extensions, official standards for the Internet published by the Internet Engineering Task Force.

Aside from his research, Dr. Massey enjoys working with students. He is currently teaching “Advanced Networking and the Internet” – a popular experimental course. His is also coordinating a Department research symposium this spring to highlight student research. He says the most important lesson his students can learn about large-scale, distributed systems is to “accept that you do not control the system.”

Dr. Massey’s research is funded by NSF and DARPA.

**Research Symposium**



**Monday April 11, 2005**  
**Ammons Hall Rooms 106 and 123**

The Research Symposium will present the research activities of the Colorado State University Computer Science Department. CS Department research projects and graduate students will prepare posters describing their work. Graduate students will be available to answer questions about their posters and research activities.

## Fall 2004 Department Awards

*Anita Read Graduate Award:* **Albert Lionelle** and **Eunjee Song**

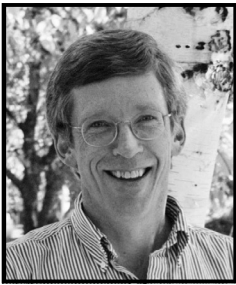
*Mohilner Memorial Scholarship 2004-2005:* **Alexander Deyke**

*Heidenfelder Scholarship for Academic Achievement and Service 2004-2005:* **Jonathan Haywood, Kyle Thayer, and Dustin Lehr**

## Students as Leaders in Science Give Awards to CS Faculty

*Teaching Award:* **Dr. Charles Anderson** and **Dr. Elaine Regelson**

*Outstanding Mentor Award:* **Dr. Darrell Whitley**



### Dr. Ross McConnell Named 2005 CSU Best Teacher

Dr. Ross McConnell was one of six recipients of the CSU 2005 Best Teacher Award.

## CS Faculty Research Awards

**Ross Beveridge, Bruce Draper,** and Geof Givens (Statistics). *Covariate Analysis of Face Recognition Algorithms.* Department of Defense (Army).

**Dan Massey.** *Beyond BGP — Flexible & Scalable Interdomain Routing (BBGP).* National Science Foundation (NSF).

Michael Kirby (Math), **Ross Beveridge, Bruce Draper,** and **Chuck Anderson.** *New Tools in Algebraic-Geometric Data Analysis.* National Science Foundation (NSF).

**Dan Massey** and **Ross McConnell.** *Monitoring & Analysis of Routing dynamics & Path Redundancy in the Global Internet (NETPATH).* DARPA.

Pat Burns (ACNS) and **Sanjay Rajopadhye.** *Meeting the Need for Premises and Animal Identification Traces.* Colorado Department of Agriculture.

**Ross Beveridge** and **Bruce Draper.** *Understanding Image-feature & Decision-procedure Choice for Human Face Detection.* National Science Foundation (NSF).

### ACM Activities

- ☆ The ACM Club kicked off the semester with an ice cream and wacky trivia social.
- ☆ The club was formatted to present alternating technical meetings and lecture meetings. Thank you to the graduate students who helped in technical workshops.
- ☆ CS Mock Interview Day was held in cooperation with CNS. Industry representatives came in and gave tips and pointers on aspects of technical interviews. Thank you Agilent and Sun Microsystems!
- ☆ ACM hosted a Hawaiian themed Web Surfing Contest and decorated the CS lab for Halloween. (Although many joked that it's hard to make it much spookier!)
- ☆ The annual picnic/softball game was held in October with Dr. Beveridge as grill master. The rivalry between the undergrads vs. faculty and grads softball game will continue next year.

### Industrial Advisory Board

Agilent Technologies  
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 Dako-Cytomation  
 Decisions LLC  
 Electronic Data Service  
 Hewlett-Packard Company  
 IBM  
 Intel Corporation  
 John Deere  
 KinetX  
 Lockheed Martin Space Systems  
 LSI Logic  
 The MITRE Corporation  
 Northrop-Grumman  
 OnRamp Technologies  
 ProtoTest  
 Qwest  
 Sun Microsystems  
 Xilinx Laboratories

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 WEB  
 SITE**

We have a new look!

Check out the Department's new Web site...

[www.cs.colostate.edu](http://www.cs.colostate.edu)



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Lisa Knebl

**Faculty Advisor**

Dr. Charles Anderson

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[newsletter@cs.colostate.edu](mailto:newsletter@cs.colostate.edu)

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<http://www.cs.colostate.edu>

**Colorado  
State  
University**

*Knowledge to Go Places*

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Permit Number 19

**MASTERS DEGREES  
AWARDED**

**FALL 2004**

Abhijit Ashok Bare  
Fang Chen  
Lashi C. Dodge  
Brahmila Kamalakar  
Suzhen Li  
Atul Uday Nulkar  
Kishore Siddha Reddy  
Inderaj Singh Bains  
Kelly Jean Carpenter  
Krishna Gottigere  
Lourdes W. Herling  
Mariana Muller  
James Esequé Panem  
Vinodkannan Raju  
Geetha B. Reddy  
Priyanka Samantroy



**Honors Undergraduates**

**Fall 2004**

*Magna Cum Laude*

Jacob Kemerer Latham

Jilmil Saraf

*Cum Laude*

Abdulrahman AM Almanea