

# SIGCSE 2003

Reno, Nevada



## The 34<sup>th</sup> Technical Symposium on Computer Science Education

Final Program

February 19 - 22, 2003

*<http://sigcse.org>*



Sponsored by:  
The Association for Computing Machinery  
Special Interest Group on Computer Science Education

## **Welcome to SIGCSE 2003 in Reno**

As you probably already know, the SIGCSE Symposium is an annual family gathering of faculty who care about their teaching. You will find plenty of activities from which to choose, ranging from formal presentations to informal discussions. Associated events include the SIGCSE Doctoral Consortium and the ACM Student Research Contest. Eric Roberts is the recipient of the 2003 SIGCSE Award for Outstanding Contributions to Computer Science Education and is the keynote speaker, and Harriet Taylor is the recipient of the 2003 SIGCSE Award for Lifetime Service.

Exhibits feature new and exciting teaching materials in the form of textbooks, hardware, and software. The Thursday evening reception offers opportunities for renewing old friendships and making new ones. Be sure to keep your eyes and ears open for our corporate sponsors who often have receptions of their own on Friday night.

Planning for this event has been ongoing for two years and has involved the time and talents of many. I thank all of the authors, reviewers, session chairs, symposium committee members, corporate sponsors, and the Reno Hilton staff for their efforts. Enjoy the Symposium. I hope you find a few ideas and meet new colleagues that have an impact on your teaching.

Scott Grissom, Symposium Chair

## Symposium at a Glance

Day	Time	Event	Location
Wednesday	7:00 – 10:00	Workshops 1 – 3 and 27	See Workshops
Thursday	8:30 – 10:00	Opening and Keynote	Reno Ballroom
	10:00 – 10:45	Coffee Break & Exhibits	Hilton Pavilion
	10:45 – 12:00	Technical Sessions	
	12:00 – 2:00	First Timers' Lunch	Reno Ballroom
	2:00 – 3:15	Technical Sessions	
	3:15 – 4:00	Break, Exhibits, & Student Posters	Hilton Pavilion
	4:00 – 5:15	Technical Sessions	
	5:30 – 6:15	Birds of a Feather: Session I	Mezzanine
	6:30 – 7:15	Birds of a Feather: Session II	Mezzanine
	7:30 – 11:00	SIGCSE Reception	Reno Ballroom
Friday	8:45 – 10:00	Technical Sessions	
	10:00 – 10:45	Coffee Break & Exhibits	Hilton Pavilion
	10:45 – 12:00	Technical Sessions	
	12:00 – 2:00	SIGCSE Luncheon	Reno Ballroom
	2:00 – 3:15	Technical Sessions	
	3:15 – 4:00	Break, Exhibits, Faculty Posters	Hilton Pavilion
	4:00 – 5:15	Technical Sessions	
	5:30 – 6:15	SIGCSE Business Meeting	Crystal 1
	6:15 – 7:00	CCSC Business Meeting	Crystal 5
7:00 – 10:00	Workshops 4 - 12	See Workshops	
Saturday	8:45 – 10:00	Technical Sessions	
	10:00 – 10:45	Coffee Break & Exhibits	Hilton Pavilion
	10:45 – 12:00	Technical Sessions	
	12:15 – 12:45	SIGCSE Wrap-up Session	Crystal 5
	2:00 – 5:00	Workshops 13-21	See Workshops
	7:00 – 10:00	Workshops 22–26 and 28–29	See Workshops

### Registration:

Wednesday	5:00 PM - 10:00 PM
Thursday	7:30 AM - 5:00 PM
Friday	7:30 AM - 5:00 PM
Saturday	7:30 AM - 2:00 PM

### Exhibits:

Thursday	10:00 AM - 5:00 PM
Friday,	9:30 AM - 5:00 PM
Saturday	9:30 AM - 12:00 PM

**SIGCSE 2003 would like to thank our Corporate Supporters**

**Microsoft**

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# 34th SIGCSE Technical Symposium on Computer Science Education

## Thursday Morning, 8:30 a.m. – 10:00 a.m.

- SIGCSE Opening Ceremonies and Keynote Address** Thur. 8:30 – 10:00  
8:30 **Opening Address** Reno Ballroom  
Scott Grissom, Symposium Chair, Grand Valley State University
- 9:00 **Keynote Address:**  
Expanding the Audience for Computer Science  
Eric Roberts, Stanford University  
Eric Roberts is the recipient of the 2003 SIGCSE Award for outstanding contributions to Computer Science Education.

## Thursday Morning, 10:00 a.m. – 10:45 a.m.

- Coffee Break & Exhibits** Thur. 10:00 – 10:45  
Hilton Pavilion

## Thursday Morning, 10:45 a.m. – 12:00 p.m.

- PAPERS Algorithms** Thur. 10:45 – 12:00  
Session Chair: Nancy Kinnersley, The University of Kansas Carson 1
- 10:45 ***Bubble Sort: An Archaeological Algorithmic Analysis***  
Owen Astrachan, Duke University
- 11:10 ***Constructive and Collaborative Learning of Algorithms***  
Teresa Hubscher-Younger, Auburn University  
N. Hari Narayanan, Auburn University
- 11:35 ***The Greedy Trap and Learning From Mistakes***  
David Ginat, Tel-Aviv University

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- PAPERS Database** Thur. 10:45 – 12:00  
Session Chair: Catherine Ricardo, Iona College Carson 2
- 10:45 ***DBMS Course: Web Based Database Administration Tool and Class Projects***  
Sub Ramakrishnan, Bowling Green State University  
Emeka Nwosu, Bowling Green State University
- 11:10 ***Using UML Class Diagrams for a Comparative Analysis of Relational, Object-Oriented, and Object-Relational Database Mappings***  
Susan Urban, Arizona State University  
Suzanne Dietrich, Arizona State University
- 11:35 ***Integrating XML into a Database Systems Course***  
Paul Wagner, University of Wisconsin - Eau Claire  
Thomas Moore, University of Wisconsin - Eau Claire

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- PAPERS    Outcomes Assessment** Thur. 10:45 – 12:00  
Session Chair: Carl G. Alphonse, State University of New York at Buffalo Crystal 1
- 10:45    ***Program assessment tools in Computer Science:  
a report from the trenches***  
Kathryn Sanders, Rhode Island College  
Robert McCartney, Univ. of Connecticut
- 11:10    ***Computer Science Accreditation: The Advantages of Being Different***  
Donald Crouch, University of Minnesota Duluth  
Leslie Schwartzman, Roosevelt University
- 11:35    ***Five Easy but Effective Assessment Methods***  
Dick Blandford, University of Evansville  
Deborah Hwang, University of Evansville
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- PANEL    International Perspective of Women and  
Computer Science** Thur. 10:45 – 12:00  
Crystal 3
- Moderator: Orit Hazzan, Technion - Israel Institute of Technology
- Panelists: Elizabeth S. Adams, James Madison University  
Hrafn Loftsson, Reykjavik University  
Alison Young, UNITEC
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- SPECIAL SESSION    Legos, Java, Programming  
Assignments and CS1** Thur. 10:45 – 12:00  
Carson 3
- Organizer: Pamela Lawhead, University of Mississippi
- Participants: Constance Bland, Mississippi Valley State University  
Michaele Duncan, East Tennessee State University  
Madeleine Schep, Columbia College  
David Barnes, University of Kent at Canterbury  
Michael Goldweber, Xavier University
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- VENDOR SESSION** Thur. 10:45 – 12:00  
Sponsored by Microsoft Tahoe Room  
For details, please see insert in your Registration Packet.
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<b>Thursday Afternoon, 12:00 p.m. – 2:00 p.m.</b>
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- First Timers' Lunch** Thur. 12:00 – 2:00  
Reno Ballroom
- Non-first timers – Check out the eateries at the Hilton and other Reno locations.

<b>Thursday Afternoon, 2:00 p.m. – 3:15 p.m.</b>
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**PAPERS    Gender Issues**

Thur. 2:00 – 3:15

Session Chair: Kim Kihlstrom, Westmont College

Carson 1

2:00    ***Gender Differences in Computer Science Students***

Sylvia Beyer, University of Wisconsin-Parkside  
Kristina Rynes, University of Wisconsin-Parkside  
Julie Perrault, University of Wisconsin-Parkside  
Kelly Hay, University of Wisconsin-Parkside  
Susan Haller, University of Wisconsin-Parkside

2:25    ***Computer-Related Gender Differences***

Ginger Holmes Rowell, Middle Tennessee State University  
Diane Perhac, Middle Tennessee State University  
Judith M. Iriarte-Gross, Middle Tennessee State University  
Judith A. Hankins, Middle Tennessee State University  
Brenda C. Parker, Middle Tennessee State University  
Chrisila C. Pettey, Middle Tennessee State University

2:50    ***An Expanding Pipeline: Gender in Mauritius***

Joel Adams, Calvin College  
Vimala Bauer, University of Mauritius  
Shakuntala Baichoo, University of Mauritius

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**PAPERS    Architecture**

Thur. 2:00 – 3:15

Session Chair: Mohammad Neilforoshan, Stockton College

Carson 2

2:00    ***MiniMIPS - a Simulation Project for the Computer Architecture Laboratory***

Ewa Zofia Bem, University of Western Sydney  
Luke Petelczyc, University of Western Sydney

2:25    ***Teaching Computer Organization using a PDP-8 Simulator***

Brian Shelburne, Wittenberg University

2:50    ***Teaching the SIMD Execution Model: Assembling a Few Parallel Programming Skills***

Ariel Ortiz, ITESM Campus Estado de Mexico

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**PAPERS    Capstone Courses**

Thur. 2:00 – 3:15

Session Chair: Alyce Brady, Kalamazoo College

Crystal 1

2:00    ***Running research-oriented final year projects for CS and IS students***

Bjorn Olsson, Dep. of Computer Science, University of Skövde  
Mikael Berndtsson, Dep. of Computer Science, University of Skövde  
Björn Lundell, Dep. of Computer Science, University of Skövde  
Jörgen Hansson, Dep. of Computer Science, University of Linköping

2:25    ***The Game of Go: An Ideal Environment for Capstone and Undergraduate Research Projects***

Timothy Huang, Middlebury College

2:50    ***Production Programming in the Classroom***

Eric Allen, Rice University  
Robert Cartwright, Rice University  
Charles Reis, Rice University

THURSDAY THURSDAY THURSDAY THURSDAY THURSDAY THURSDAY

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**PANEL**     **Panel on the Development, Maintenance, and Use of Course Web Sites**     Thur. 2:00 – 3:15  
Crystal 3

Moderator:     Jesse Heines, University of Massachusetts Lowell  
Panelists:     Katy Borner, School of Library and Information Science, Indiana  
Melody Y. Ivory, Information School, University of Washington  
Edward F. Gehringer, Dept. of Computer Science, North Carolina State U.

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**SPECIAL SESSION**     **Everything You Always Wanted To Know About Game Theory**     Thur. 2:00 – 3:15  
Carson 3

Organizer:     Daniel Garcia, University of California, Berkeley  
Participants:     David Ginat, Tel-Aviv University  
Peter Henderson, Butler University

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**VENDOR SESSION**     Thur. 2:00 – 3:15  
Sponsored by IBM     Tahoe Room  
For details, please see insert in your Registration Packet.

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**POSTERS**     **ACM Student Research Competition**     Thur. 2:00 – 3:15  
Hilton Pavilion

<b>Thursday Afternoon, 3:15 p.m. – 4:00p.m.</b>
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**Coffee Break, Exhibits, and Student Posters**     Thur. 3:15 – 4:00  
Hilton Pavilion

<b>Thursday Afternoon, 4:00 p.m. – 5:15 p.m.</b>
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**PAPERS**     **Departmental Concerns**     Thur. 4:00 -5:15  
Session Chair: Jim Howatt, Southeastern Louisiana University     Carson 1

4:00     ***Laptops in the Classroom***  
Andrea Campbell, Clemson University  
Roy Pargas, Clemson University

4:25     ***Using Undergraduates as Teaching Assistants at a State University***  
Stuart Reges, University of Arizona

4:50     ***Faculty Turnover in CS Departments***  
J. McGrath Cohoon, University of Virginia  
Rebecca Shwalb, University of Virginia  
Lih-Yuan Chen, University of Virginia

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**PAPERS    Introductory Networks**

Thur. 4:00 -5:15

Session Chair: Bill Teter, SUNY, Plattsburgh

Carson 2

4:00    ***An Introductory Course in Network Administration***

John Cigas, Rockhurst University

4:25    ***The Effectiveness of Simulation in a Hybrid and On-Line  
Networking Course***

Brian Cameron, The Pennsylvania State University

Kay Wijekumar, The Pennsylvania State University Beaver

4:50    ***Using Java to Teach Networking Concepts With a Programmable  
Network Sniffer***

Michael Jipping, Hope College

Agata Bugaj, Carnegie Mellon University

Lilyana Mihalkova, Hope College

Donald Porter, Hendrix College

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**PAPERS    Classroom Management**

Thur. 4:00 – 5:15

Session Chair: Bill Marion, Valparaiso University

Crystal 1

4:00    ***The Conversational Classroom***

William Waite, University of Colorado at Boulder

Michele Jackson, University of Colorado at Boulder

Amer Diwan, University of Colorado at Boulder

4:25    ***New Roles for Students, Instructors, and Computers***

Michael Clancy, University of California, Berkeley

Nate Titterton, University of California, Berkeley

Jim Slotta, University of California, Berkeley

Marcia Linn, University of California, Berkeley

Clint Ryan, University of California, Berkeley

4:50    ***Effectiveness of Online Assessment***

Denise Voit, Ryerson University

David Mason, Ryerson University

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**PANEL Teaching Human-Computer Interaction:  
Reports from the Trenches**

Thur. 4:00 -5:15

Crystal 3

Moderator: Daniel McCracken, City College of New York

Panelists: Julie Barnes, Bowling Green State University

Rob Bryant, Gonzaga University

Susan Reiser, University of North Carolina at Asheville

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**SPECIAL SESSION Taking Advantage of National Science Foundation Funding Opportunities**

Thur. 4:00 – 5:15  
Carson 3

Organizer: Jane Prey, National Science Foundation  
Participants: Ernest McDuffie, National Science Foundation  
Harriet Taylor, National Science Foundation

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**VENDOR SESSION**

Thur. 4:00 – 5:15  
Tahoe Room

Sponsored by Microsoft

For details, please see insert in your Registration Packet.

<b>Thursday Evening, 5:30 p.m. to 6:15 p.m.</b>
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**Birds of a Feather: Session I**

Thur. 5:30 – 6:15  
Mezzanine Meeting Rooms

**The Role of Computer Science in Bioinformatics Undergraduate Programs**

Debra Burhans, Canisius College,  
David Ranum, Luther College

**Implementing the New Curriculum in Small Departments**

Christine Shannon, Centre College  
Joe Oldham, Georgetown College

**Constructive Peer Evaluation**

Michelle Craig, University of Toronto  
Paul Gries, University of Toronto

**SIGCSE Local Chapters**

Bruce Klein, SIGCSE board

**New Curriculum in Computer Engineering**

John Impagliazzo, Hofstra University

**Baccalaureate Programs in Information Technology: Model Curriculum and Accreditation Criteria**

Edith Lawson, RIT

**Implementing the 2001 Imperative First Introductory Curriculum**

Lynn Stauffer, Sonoma State University  
Tia Watts, Sonoma State University

**Security Topics, Courses, and Curricula**

Carol Eastman, University of South Carolina

**Where can I look for good references and/or resources on the Internet for High School and College Computer Science use?**

Howard Whiston

**BlueJ in Introductory Programming - What Can I Get Out Of It?**

Michael Kolling, University of Southern Denmark

**Thursday Evening, 6:30 p.m. to 7:15 p.m.**

**Birds of a Feather: Session II**

Thurs. 6:30 – 7:15  
Mezzanine Meeting Rooms

**Mathematical Thinking in Computer Science**

Doug Baldwin, SUNY Geneseo and Peter Henderson, Butler University

**Focus on the Community College Experience**

Donna Hierstand-Tupper and Andrew Biederman, Community College of Baltimore County, and T.S. Pennington, Longview Community College

**For Better, For Worse: Hitching Your Course to a Course Management System?**

Jeff Popyack, Drexel University

**High School Teachers new to teaching the AP Curriculum and HS Computer Science**

Michael Way, Florida Southern College

**Assisting the Programming Strugglers**

Mark Radcliffe and Lynda Thomas, University of Wales

**Making the Transition: Trials, Tribulations, and Successes of recent Ph.D. Graduates**

Beth Simon, University of California at San Diego

**CS1 Lab Improvements: Envisioned, Attempted, Realized?**

Howard Francis, Pikeville College

**Using Mac OS X in Computer Science**

Michael Rodgers

**Problems and possible solutions to teaching object-oriented programming**

David Scanlon, California State University

**Addressing Gender in Online Computer Science Course Instruction**

David Ferro, Weber State University

**Thursday Evening, 7:30 p.m. to 11:00 p.m.**

**SIGCSE Reception**

Thur. 7:30 -11:00  
Reno Ballroom

**Friday Morning, 8:45 a.m. to 10:00 a.m.**

- PAPERS    Introductory Programming** Fri. 8:45 – 10:00  
Session Chair: Jaime Niño, University of New Orleans Carson 1
- 8:45    ***Introductory Programming, Criterion Referencing, and Bloom***  
Raymond Lister, University of Technology, Sydney  
John Leaney, University of Technology, Sydney
- 9:10    ***Coached Program Planning: Dialogue-Based Support for Novice Program Design***  
H. Chad Lane, University of Pittsburgh  
Kurt VanLehn, University of Pittsburgh
- 9:35    ***Identifying and Correcting Java Programming Errors for Introductory Computer Science Students***  
Rebecca Mercuri, Bryn Mawr College  
Maria Hristova, Bryn Mawr College  
Ananya Misra, Bryn Mawr College  
Megan Rutter, Bryn Mawr College
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- PAPERS    Visualization** Fri. 8:45 – 10:00  
Session Chair: James Cross, Auburn University Carson 2
- 8:45    ***A Preliminary Empirical Evaluation of the Effectiveness of a Finite State Automaton Animator***  
Michael Grinder, Montana Tech of the University of Montana
- 9:10    ***JAWAA: Easy Web-Based Animation from CS 0 to Advanced CS Courses***  
Susan Rodger, Duke University  
Thomas Finley, Duke University  
Ayonike Akingbade, Duke University  
Diana Jackson, Wofford College  
Pretesh Patel, Duke University
- 9:35    ***VisualGraph - A Graph Class Designed for Both Undergraduate Students and Educators***  
Thomas Naps, University of Wisconsin - Oshkosh  
Jeff Lucas, University of Wisconsin - Oshkosh  
Guido Roessling, Darmstadt Technical University
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**PRESENTATIONS    ACM Contest Presentations** Fri. 8:45 – 10:00  
**Undergraduate Students** Sierra

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**PRESENTATIONS    ACM Contest Presentations** Fri. 8:45 – 10:00  
**Graduate Students** Shasta

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**PAPERS    Operating Systems**

Fri. 8:45 – 10:00

Session Chair: John Hill, United States Military Academy

Crystal 1

8:45    ***Exploring Security Vulnerabilities by Exploiting Buffer Overflow using the MIPS ISA***

Andrew Phillips, University of Wisconsin - Eau Claire

Jack Tan, University of Wisconsin - Eau Claire

9:10    ***Using Remote Logging for Teaching Concurrency***

Steven Robbins, The University of Texas at San Antonio

9:35    ***Puzzles and Games: Addressing Different Learning Styles in Teaching Operating Systems Concepts***

John Hill, Dept. of EE&CS, United States Military Academy

Clark Ray, Dept. of EE&CS, United States Military Academy

Jean Blair, Dept. of EE&CS, United States Military Academy

Curtis Carver, Dept. of EE&CS, United States Military Academy

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**PANEL    Serving as Department Chair**

Fri. 8:45 – 10:00

Crystal 3

Moderator: Frank Young, Rose-Hulman Institute of Technology

Panelists: Sandra DeLoatch, Norfolk State University

Henry Walker, Grinnell College

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**PANEL    How Departments Are Responding to the Mathematics Recommendations in CC2001**

Fri. 8:45 – 10:00

Carson 3

Moderator: William Marion, Valparaiso University

Panelists: Kris Powers, Berry College

Adrienne Bloss, Roanoke College

Doug Baldwin, SUNY Geneseo

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**VENDOR SESSION**

Fri. 8:45 – 10:00

Sponsored by Microsoft

Crystal 5

For details, please see insert in your Registration Packet.

**Friday Morning, 10:00 a.m. to 10:45 a.m.**

**Coffee Break & Exhibits**

Fri. 10:00 – 10:45

Hilton Pavilion

FRIDAY FRIDAY FRIDAY FRIDAY FRIDAY FRIDAY FRIDAY FRIDAY

<b>Friday Morning, 10:45 a.m. to 12:00 p.m.</b>
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**PAPERS Introduction to OO**

Fri. 10:45– 12:00

Session Chair: Joel Adams, Calvin College

Carson 1

- 10:45 ***Teaching Objects-First in Introductory Computer Science***  
Stephen Cooper, Saint Joseph's University  
Wanda Dann, Ithaca College  
Randy Pausch, Carnegie Mellon University
- 11:10 ***Redesigning Introductory Computer Programming Using Multi-level Online Modules for a Mixed Audience***  
Nira Herrmann, Drexel University  
Jeffrey Popyack, Drexel University  
Bruce Char, Drexel University  
Paul Zoski, Drexel University  
Christopher D. Cera, Drexel University  
Robert N. Lass, Drexel University  
Aparna Nanjappa, Drexel University
- 11:35 ***Jeroo: A Tool For Introducing Object-Oriented Programming***  
Dean Sanders, Northwest Missouri State University  
Brian Dorn, Iowa State University
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**PAPERS Data Structures**

Fri. 10:45 – 12:00

Session Chair: Karen Anewalt, Mary Washington College

Carson 2

- 10:45 ***Teaching Two-Dimensional Array Concepts in Java With Image Processing Examples***  
Kevin Burger, Rockhurst University
- 11:10 ***A Framework Approach to Teaching Data Structures***  
Josh Tenenberg, University of Washington, Tacoma
- 11:35 ***Language-Independent Interactive Data Visualization***  
Alistair Campbell, Hamilton College  
Geoffrey Catto, Hamilton College  
Eric Hansen, Hamilton College
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**PAPERS Upper Level Courses**

Fri. 10:45 – 12:00

Session Chair: Mario Guimaraes, Kennesaw State University

Crystal 1

- 10:45 ***A Compiler for Teaching about Compilers***  
Doug Baldwin, SUNY Geneseo
- 11:10 ***Using Scientific Data to Teach a Database Systems Course***  
Paul Wagner, University of Wisconsin - Eau Claire  
Elizabeth Shoop, Macalester College  
John Carlis, University of Minnesota
- 11:35 ***A Manageable Web Software Architecture: Searching for Simplicity***  
Arthur Lee, University of Utah
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**PANEL**      **Survivor: Getting Through That Class**      Fri. 10:45 – 12:00  
**The First Time**      Crystal 3  
Moderator: James Huggins, Kettering University  
Panelists: Joseph Bergin, Pace University  
James Caristi, Valparaiso University  
Ellen Walker, Hiram College

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**SPECIAL SESSION**      **Math Educators,**      Fri. 10:45 – 12:00  
**Computer Science Educators:**      Carson 3  
**Working Together**  
Organizer: Peter Henderson, Butler University  
Participants: Susanna Epp, DePaul University  
William Marion, Valparaiso University  
William Barker, Bowdoin College

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**VENDOR SESSION**      Fri. 10:45 – 12:00  
Sponsored by IBM      Crystal 5  
For details, please see insert in your Registration Packet.

**Friday Afternoon, 12:00 p.m. to 2:00 p.m.**

**SIGCSE Luncheon**      Fri. 12:00 – 2:00  
*Luncheon Speakers:* Allan Fisher, Carnegie Mellon University      Reno Ballroom  
Jane Margolis, University of California at Los Angeles  
*Title:* Unlocking the Clubhouse: Women in Computing

*Recipient of the 2003 SIGCSE Award for Lifetime Service*  
Harriet Taylor, Program Director, National Science Foundation, on leave from Louisiana State University

**Friday Afternoon, 2:00 p.m. to 3:15 p.m.**

**PAPERS**      **Breadth-first Approach**      Fri. 2:00 - 3:15  
Session Chair: Seth Bergmann, Rowan University      Carson 1  
2:00      ***Implementing CC2001: A Breadth-First Introductory Course for a***  
***Just-in-Time Curriculum Design***  
Andrew Phillips, University of Wisconsin - Eau Claire  
Daniel Stevenson, University of Wisconsin - Eau Claire  
Michael Wick, University of Wisconsin - Eau Claire  
2:25      ***Breadth-Also: A Rationale and Implementation***  
Kris Powers, Berry College  
2:50      ***Another Breadth-first Approach to CS 1 Using Python***  
Christine Shannon, Centre College

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**PAPERS Networks**

Fri. 2:00 - 3:15

Session Chair: Bill Oblitey, Indiana University of Pennsylvania

Carson 2

2:00 ***A Laboratory-Based Course on Internet Security***

Prabhaker Mateti, Wright State University

2:25 ***Beacon, A Peer-to-Peer System to Teach Ubiquitous Computing***

Surendar Chandra, University of Georgia

2:50 ***A Network Project Course based on Network Processors***

Peter Steenkiste, Carnegie Mellon University

**PANEL The Fulbright Program - Teaching and Curriculum Development Experiences**

Fri. 2:00 - 3:15

Crystal 1

Moderator: Sue Fitzgerald, Metropolitan State University

Panelists: Michael Schneider, Macalester College

Robert Aiken, Temple University

Barry Fagin, US Air Force Academy

**PANEL The Role of Language Paradigms in Teaching Programming**

Fri. 2:00 - 3:15

Crystal 3

Moderator: Peter Van Roy, Universite catholique de Louvain

Panelists: Joe Armstrong, Swedish Institute of Computer Science

Matthew Flatt, University of Utah

Boris Magnusson, Lund University

**SPECIAL SESSION Java in the Morning...**

Fri. 2:00 - 3:15

**Java in the Evening...Java in 2004**

Carson 3

Organizer: Reg Hahne, Atholton High School

Scot Drysdale, Dartmouth College

Judith Hromcik, Arlington High School

Mark Allen Weiss, Florida International University

**VENDOR SESSION Mac OS X:  
The Ultimate Java Platform**

Fri. 2:00 - 3:15

Crystal 5

Sponsored by Apple.

**Friday Afternoon, 3:15 p.m. to 4:00 p.m.****Coffee Break, Exhibits, and Faculty Poster Session**

Fri. 3:15 - 4:00

Hilton Pavilion

Faculty Posters will be available for viewing all day.

See Faculty Posters in this program for poster topics and presenters.

FRIDAY FRIDAY FRIDAY FRIDAY FRIDAY FRIDAY FRIDAY FRIDAY

<b>Friday Afternoon, 4:00 p.m. to 5:15 p.m.</b>
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- PAPERS    Objects** Fri. 4:00 - 5:15  
Session Chair: Chenglie Hu, Carroll College Carson 1
- 4:00    ***Object Centered Design for Java: Teaching OOD in CS-1***  
Joel Adams, Calvin College  
Jeremy Frens, Calvin College
- 4:25    ***Implementing Object Equivalence in Java Using the Template Method Design Pattern***  
Daniel Stevenson, University of Wisconsin - Eau Claire  
Andrew Phillips, University of Wisconsin - Eau Claire
- 4:50    ***An Object-Oriented Refactoring of Huffman Encoding using the Java Collections Framework***  
Michael Wick, University of Wisconsin - Eau Claire
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- PAPERS    Active Learning** Fri. 4:00 - 5:15  
Session Chair: Ann Quade, Minnesota State University, Mankato Carson 2
- 4:00    ***Pre-Games: Games Designed to Introduce CS1 and CS2 Programming Assignments***  
Ray Giguette, Nicholls State University
- 4:25    ***Pilot Study: Living Flowcharts in an Introduction to Programming Course***  
Dennis Bouvier, Saint Louis University
- 4:50    ***Hands-on Labs Without Computers***  
Shannon Pollard, Duke University  
Jeffrey Forbes, Duke University
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- SPECIAL SESSION    The NSF NSDL and its Implications for Computing Education** Fri. 4:00 - 5:15  
Crystal 1
- Organizer: Lillian Cassel, Villanova University  
Participants: Edward Fox, Virginia Tech  
Jane Prey, NSF  
John Impagliazzo, Hofstra University  
Ann Lally, University of Arizona  
Manuel Pérez-Quñones, Virginia Tech
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- PANEL    Transfer To/From Computing Science Education: The Case of Science Education Research** Fri. 4:00 - 5:15  
Crystal 3
- Moderator: Vicki Almstrum, University of Texas at Austin  
Panelists: David Ginat, Tel Aviv University  
Orit Hazzan, Technion - Israel Institute of Technology  
John M. Clement, St. Pius X High School
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**SPECIAL SESSION Toward a K-12  
Computer Science Curriculum**

Fri. 4:00 – 5:15  
Carson 3

Organizer: Allen Tucker, Bowdoin College  
Participants: Fadi Deek, NJIT  
Jill Jones, Carl Hayden High School  
Dennis McCowan, Weston Public Schools  
Chris Stephenson, University of Waterloo  
Anita Verno, Bergen Community College

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**VENDOR SESSION Helping Students 'See' Polymorphism  
Sponsored by Apple.**

Fri. 4:00 – 5:15  
Crystal 5

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**Friday Evening, 5:30 p.m. to 6:15 p.m.**

**SIGCSE Business Meeting**

Fri. 5:30 – 6:15  
Crystal 1

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**Friday Evening, 6:15 p.m. to 7:00 p.m.**

**CCSC Business Meeting**

Fri. 6:15 – 7:00  
Crystal 5

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**Friday Evening, 7:00 p.m. to 10:00 p.m.**

**Workshops 4 – 12**

*See Workshops, listed in this program.*

Mezzanine Rooms  
and Off Site locations

## Saturday Morning, 8:45 a.m. to 10:00 a.m.

### PAPERS    Robotics

Sat. 8:45 –10:00

Session Chair: Reza Sanati, Utah Valley State College

Carson 1

8:45    ***Measuring the Effectiveness of Robots in Teaching Computer Science***

Barry Fagin, US Air Force Academy

Laurence Merkle, Rose-Hulman Institute of Technology

9:10    ***Teaching Neural Networks Using LEGO Handy Board Robots in an Artificial Intelligence Course***

Susan Imberman, College of Staten Island

9:35    ***Python Robotics: An Environment for Exploring Robotics Beyond LEGOs***

Douglas Blank, Bryn Mawr College

Lisa Meeden, Swarthmore College

Deepak Kumar, Bryn Mawr College

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### PAPERS    Attracting Majors

Sat. 8:45 – 10:00

Session Chair: Susan Haller, University of Wisconsin-Parkside

Carson 2

8:45    ***CS Girls Rock: Sparking Interest in Computer Science and Debunking the Stereotypes***

Sandy Graham, University of Waterloo

Celine Latulipe, University of Waterloo

9:10    ***Introducing Middle School Girls to Fault Tolerant Computing***

Paolo Sivilotti, The Ohio State University

Murat Demirbas, The Ohio State University

9:35    ***ISSAC - Indiana Student Software Awards Competition***

Peter Henderson, Butler University

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### PAPERS    Reading, Writing, and Recursion

Sat. 8:45 – 10:00

Session Chair: Deborah Hwang, University of Evansville

Crystal 1

8:45    ***Creating a Computer Science Canon: a Course of Classic Readings in Computer Science***

Michael Eisenberg, University of Colorado

9:10    ***A Technical Writing Class for Computer Science Majors: Measuring Student Perceptions of Learning***

Lisa C. Kaczmarczyk, University of Texas at Austin

9:35    ***Mental Models of Recursion***

Tina Gotschi, University of the Witwatersrand

Ian Sanders, University of the Witwatersrand

Vashti Galpin, University of the Witwatersrand

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**PANEL Undergraduate Cyber Security  
Course Projects**

Sat. 8:45 – 10:00  
Crystal 3

Moderator: Paul Wagner, University of Wisconsin - Eau Claire  
Panelists: D. Paul Benjamin, Pace University  
Charles Border, Rochester Institute of Technology  
Robert Montante, Bloomsburg University

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**SPECIAL SESSION Nifty Assignments**

Sat. 8:45 – 10:00  
Carson 3

Organizer: Nick Parlante, Stanford University  
Participants: Jeffrey Popyack, Drexel University  
Grant Braught, Dickinson College  
Stuart Reges, University of Arizona  
Scott Dexter, Brooklyn College of CUNY  
Chaya Gurwitz, Brooklyn College of CUNY  
Joseph Zachary, University of Utah  
Stephen Weiss, University of North Carolina at Chapel Hill

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**SPECIAL SESSION Computer Engineering  
Computing Curricula**

Sat. 8:45 – 10:00  
Crystal 5

Organizer: John Impagliazzo, Hofstra University  
Participants: Robert Sloan, University of Illinois at Chicago  
Andrew McGettrick, University of Strathclyde  
Pradip Srimani, Clemson University

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**VENDOR SESSION**

Sat. 8:45 – 10:00  
Tahoe Room

Sponsored by Microsoft.  
For details, please see insert in your Registration Packet.

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**Saturday Morning, 10:00 a.m. to 10:45 a.m.**

**Coffee Break & Exhibits**

Sat. 10:00 – 10:45  
Hilton Pavilion

**Saturday Morning, 10:45 a.m. to 12:00 a.m.**

**SPECIAL SESSION Academic Dishonesty  
in a High-Tech Environment**

Sat. 10:45 – 12:00  
Crystal 5

Organizer: Jeffrey Popyack, Drexel University  
Participants: Nira Herrmann, Drexel University  
Paul Zoski, Drexel University  
Bruce Char, Drexel University  
Chris Cera, Drexel University  
Robert Lass, Drexel University

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**PAPERS Collaborative Learning**

Sat. 10:45 – 12:00

Session Chair: David Ginat, Tel-Aviv University

Carson 1

- 10:45 ***Improving the CSI Experience with Pair Programming***  
Nachiappan Nagappan, North Carolina State University  
Laurie Williams, North Carolina State University  
Miriam Ferzli, North Carolina State University  
Eric Wiebe, North Carolina State University  
Kai Yang, North Carolina State University  
Carol Miller, North Carolina State University  
Suzanne Balik, North Carolina State University
- 11:10 ***Code Warriors and Code-a-Phobes - A Study in Attitude and Pair Programming***  
Lynda Thomas, University of Wales, Aberystwyth  
Mark Ratcliffe, University of Wales, Aberystwyth  
Ann Robertson, University of Wales, Aberystwyth
- 11:35 ***Group Dynamics and Collaborative Group Performance***  
Anthony Joseph, Ph. D., Pace University  
Mabel Payne, MS Ed., MA Org. Psych., New York City Department of Education
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**PAPERS Graphics**

Sat. 10:45 – 12:00

Session Chair: Uta Ziegler, Western Kentucky University

Carson 2

- 10:45 ***Computer Graphics in Undergraduate Computational Science Education***  
Steve Cunningham, California State University Stanislaus  
Angela Shiflet, Wofford College
- 11:10 ***Distributed Visualization of Graph Algorithms***  
Alexander Sherstov, Hope College
- 11:35 ***Teaching B-splines Is Not Difficult!***  
Ching-Kuang Shene, Michigan Technological University  
John L. Lowther, Michigan Technological University
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## PAPERS Using the Web

Session Chair: Asad Khailany, Eastern Michigan University

Sat. 10:45 – 12:00

Crystal 1

10:45 **Web Annotator**

Dale Reed, University of Illinois at Chicago

Sam John, University of Illinois at Chicago

11:10 **A Generic e-Learning Multiparadigm Programming Language System**

Jose Emilio Labra Gayo, University of Oviedo

Jose Manuel Morales Gil, University of Oviedo

Alberto Manuel Fernández Álvarez, University of Oviedo

Hernan Sagastegui Chigne, University of Oviedo

11:35 **Exploiting Value-Added Content in an Online Course: Introducing Programming Concepts via HTML and JavaScript**

Joseph Zachary, University of Utah

Peter Jensen, University of Utah

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**PANEL Client Sponsored Projects in Software Engineering Courses**

Sat. 10:45 – 12:00

Crystal 3

Moderator: Judith Williams, William Penn University

Panelists: Bettina Bair, Ohio State University

Jurgen Borstler, Umea University, Sweden

Timothy Lethbridge, University of Ottawa, Canada

Ken Surendran, Southeast Missouri State University

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**PANEL The Role for Framework Libraries in CS2**

Sat 10:45 – 12:00

Carson 3

Moderator: Josh Tenenberg, University of Washington, Tacoma

Panelists: William Collins, Lafayette College

Raymond Lister, University of Technology, Sydney

Suzanne Westbrook, University of Arizona

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**VENDOR SESSION Mac OS X for UNIX Users**

Sat. 10:45 – 12:00

Sponsored by Apple.

Tahoe Room

**Saturday Afternoon, 12:15 p.m. to 12:45 p.m.**

**SIGCSE Wrap-up Session**

Sat. 12:15 – 12:45

Crystal 5

SATURDAY SATURDAY SATURDAY SATURDAY SATURDAY SATURDAY

**Saturday Afternoon, 2:00 p.m. to 5:00 p.m.**

**Workshops 13 – 21**

*See Workshops, listed in this program.*  
locations

Mezzanine Rooms  
and Off Site

**Saturday Evening, 7:00 p.m. to 10:00 p.m.**

**Workshops 22-26, 28-29**

*See Workshops, listed in this program.*

Mezzanine Rooms  
and Off Site locations

## Corporate Sessions

Through the SIGCSE 2003 Symposium, exhibitors have the opportunity to schedule sessions on topics of their choice. The following sessions have been coordinated with the SIGCSE 2003 Committee. The SIGCSE 2003 Committee and SIGCSE appreciate the interest of these companies in computer science education and their willingness to work with the SIGCSE 2003 committee to coordinate these events.

**SIGCSE 2003 would like to thank our Platinum Corporate Supporters**

***Apple IBM Microsoft***

Thursday 10:45 - 12, Tahoe Room

**Title:** *(Please see insert in registration packet)*

**Session Sponsor:** *Microsoft*

Thursday 2:00-3:15, Tahoe Room

**Title:** *(Please see insert in registration packet)*

**Session Sponsor:** *IBM*

Thursday 4:00 - 5:15, Tahoe Room

**Title:** *(Please see insert in registration packet)*

**Session Sponsor:** *Microsoft*

Friday 8:45 – 10:00, Crystal 5

**Title:** *(Please see insert in registration packet)*

**Session Sponsor:** *Microsoft*

Friday 10:45 – 12:00, Crystal 5

**Title:** *(Please see insert in registration packet)*

**Session Sponsor:** *IBM*

Friday 2:00 – 3:15, Crystal 5

**Title:** *Mac OS X: The Ultimate Java Platform*

**Session Sponsor:** *Apple*

Friday 4:00 – 5:15, Crystal 5

**Title:** *Helping Students 'See' Polymorphism*

**Session Sponsor:** *Apple*

Saturday 8:45 – 10:00, Tahoe Room

**Title:** *(Please see insert in registration packet)*

**Session Sponsor:** *Microsoft*

Saturday 10:45 – 12:00, Tahoe Room

**Title:** *Mac OS X for UNIX Users*

**Session Sponsor:** *Apple*

PROGRAM – AT – A - GLANCE

**Thursday, February 20**

	8:30-10:00	10:00-10:45	10:45-12:00	12:00-2:00	2:00-3:15
Carson 1			Algorithms	Lunch On Your Own	Gender Issues
Carson 2			Database		Architecture
Crystal 1			Outcomes Assessment		Capstone Courses
Crystal 3			Int'l Perspective on Women in CS		Course Web Sites
Carson 3			Legos, Java, Prog. and CSI		Game Theory
Reno Ballroom	Welcome & Keynote			1st Timer's Lunch	
Tahoe			Vendor Session		Vendor Session
Hilton Pavilion		Break & Exhibits			Student Posters
Mezzanine					

**Friday, February 21**

	8:45-10:00	10:00-10:45	10:45-12:00	12:00-2:00	2:00-3:15
Carson 1	Intro. Prog.		Introduction to OO		Breadth-First
Carson 2	Visualization		Data Structures		Networks
Crystal 1	Operating Systems		Upper Level Courses		Fulbright Program
Crystal 3	Serving as Dept. Chair		First Class Survivor		Language Paradigms
Carson 3	Math in CC2001		Math & CS Educators		Java in 2004
Reno Ballroom				SIGCSE Luncheon	
Hilton Pavilion		Break & Exhibits			
Crystal 5	Vendor Session		Vendor Session		Vendor Session
Mezzanine	ACM Contest				

**Saturday, February 22**

	8:45-10:00	10:00 – 10:45	10:45-12:00
Carson 1	Robotics		Collaborative Learning
Carson 2	Attracting Majors		Graphics
Crystal 1	Recursion		Using the Web
Crystal 3	Cyber Security Projects		Client Sponsored Projects
Carson 3	Nifty Assignments		Framework Lib., CSII
Tahoe	Vendor Session		Vendor Session
Hilton Pavilion		Break & Exhibits	
Crystal 5	Computer Engineering		Academic Dishonesty

PROGRAM – AT – A - GLANCE

**Thursday, February 20**

	3:15-4:00	4:00-5:15	5:30-6:15	6:30-7:15	7:30-11:00
Carson 1		Departmental Concerns			
Carson 2		Introductory Networks			
Crystal 1		Classroom Management			
Crystal 3		Teaching HCI			
Carson 3		NSF Funding Opportunities			
Reno Ballroom					SIGCSE Reception
Tahoe		Vendor Session			
Hilton Pavilion	Break, Exhibits, & Poster Session				
Mezzanine			Birds Of A Feather	Birds Of A Feather	

**Friday, February 21**

	3:15-4:00	4:00-5:15	5:30-6:15	6:15-7:00	7:00-10:00
Carson 1		Objects			Workshops 4 – 12 Mezzanine and Offsite Locations
Carson 2		Active Learning			
Crystal 1		NSF NSDL	SIGCSE Business Meeting		
Crystal 3		CS Education Research			
Carson 3		K-12 Curriculum			
Reno Ballroom					
Hilton Pavilion	Break, Exhibits & Faculty Posters				
Crystal 5		Vendor Session		CCSC Bus. Mtg.	
Mezzanine					

**Saturday, February 22**

	12:15-12:45	2:00-5:00	7:00-10:00
Carson 1		Workshops 13-21 Mezzanine and Offsite Locations	Workshops 22-26 and 28-29 Mezzanine and Offsite Locations
Carson 2			
Crystal 1			
Crystal 3			
Carson 3			
Tahoe			
Crystal 5	SIGCSE Wrap-Up Session		

# Managing the Academic Career for Faculty Women at Undergraduate

## Computer Science and Engineering Institutions

**Wednesday, February 19, 2003, 8:30a.m. – 5:00p.m.**

**McKinley Room**

The Computing Research Association Committee on the Status of Women in Computer Science and Engineering (CRA-W) offers a career/mentoring workshop to provide faculty members at all levels of undergraduate education critical information and tools to build successful academic careers. This daylong workshop features presentations and Panel sessions with formal and informal group activities. Workshop sessions concentrate on providing mentoring advice by experienced women professors, as well as providing sufficient time for audience participation and dialog. Through a grant from the National Science Foundation, CRA-W offers limited funding for registration, travel and hotel accommodation to participants who need assistance to attend. For more information on the program, see <http://www.cra.org/Activities/craw/>.

## The 2003 ACM International Student Research Contest

The Student Research Competition sponsored by Microsoft Research awards prizes to the top three graduate and undergraduate students as determined by conference attendee evaluations of their research projects. Initially, students use the interactive nature of a visual presentation to highlight different aspects of their research to individual evaluators. These presentations are evaluated on their quality, the significance of the work, and the clarity of the informal discussion. The semi-finalists, the top five students in each category, present their contributions using the standard forum of conference presentation during two conference sessions. This venue provides selected audience attendees with another platform for evaluation, the student with experience in formal presentations, and conference participants with the opportunity to learn of ongoing, current research in computer science.

The first round of competition takes place in the Hilton Pavilion from 1:00-5:00 p.m. on Thursday and the semi-finalists give their conference presentations in Sierra (undergraduate) and Shasta (graduate) from 8:45 – 10:00 a.m. on Friday. The winners receive their awards during Friday's luncheon.

# The SIGCSE 2003 Doctorial Consortium

## Wednesday, February 19, 2003, 8:00 AM – 5:00 PM

### Teton

#### **Coordinators**

Joe Chase, Radford University

Sue Fitzgerald, Metropolitan State University

#### **Description**

The Doctorial Consortium is held the day before the regular sessions of the SIGCSE Technical Symposium begin. The aims of the Doctorial Consortium are:

- To offer a friendly forum for students to discuss their work and receive constructive feedback.
- To offer relevant information on issues important to doctoral candidates.
- To nurture a community of researchers.

The Consortium is designed for students currently enrolled in a Ph.D. program at any stage of study, and students in any area of computing are welcome to apply. The Consortium allows participants to interact with established researchers / educators (our 'discussants') and with other students, and to reflect -- through short activities, information sessions, and discussions -- on the process and lessons of research and life in academia. Each participant gives a short, critiqued, research presentation.

#### **Discussants**

Raymond Lister, University of Technology, Sydney

Mark Ratcliffe, University of Wales, Aberystwyth

Lynda A. Thomas, University of Wales, Aberystwyth

J. Philip East, University of Northern Iowa

Ann E. Fleury, Aurora University

Marian Petre, The Open University

# SIGCSE 2003 Birds of a Feather

Birds of a Feather sessions are informal gatherings of attendees who share a common interest. All Birds of a Feather sessions meet in the Mezzanine Meeting Rooms.

## Session I: Thursday, February 20, 2003, 5:30 – 6:15 Mezzanine Meeting Rooms

### **The Role of Computer Science in Bioinformatics Undergraduate Programs**

Thur. 5:30 – 6:15

Debra Burhans, Canisius College and David Ranum, Luther College

A large number of undergraduate programs in bioinformatics have been proposed or started in the last few years. Most of these programs are based either in computer science or in biology departments. With bioinformatics students participating in many CS majors' courses, and the importance of computer science to the field of bioinformatics, it is important for computer scientists to become aware of this new area, including opportunities to become involved in education and research.

### **Implementing the New Curriculum in Small Departments**

Thur. 5:30 – 6:15

Christine Shannon, Centre College and Joe Oldham, Georgetown College

Small departments face their own set of problems in trying to implement the recommendations of CC2001. On the one hand it would seem that a small department has less inertia to overcome. With fewer personalities involved, it might be easier to come to consensus on a coherent, agreeable curriculum. On the other hand, a small department also means that there are only a few people to share the burden of the work involved. The need for consensus, as opposed to a simple majority vote, is probably more important in a small program. Finally, a small department must carefully consider the expertise of its faculty members. We are interested in bringing together a group of people from small departments across the nation for a conversation dealing with implementing the new recommendations in colleges of our type.

### **Constructive Peer Evaluation**

Thur. 5:30 – 6:15

Michelle Craig and Paul Gries, University of Toronto

This BOF session will discuss peer evaluation schemes and how to use them effectively. We will begin by having participants share what types of teaching evaluation are presently used at their institution. We will then collectively brainstorm other evaluation schemes that could be tried in CS. For each scheme represented we will discuss the strengths, the weaknesses and the potential pitfalls. We will have an opportunity to hear both the horror stories and the success stories from our colleagues who have experienced some of the evaluation approaches firsthand.

### **Bring SIGCSE Activities to Your Neighborhood**

Thur. 5:30 – 6:15

Bruce Klein, SIGCSE board

Do you wish that you could extend the excitement of the SIGCSE Symposium to your locale? Do you want to share your ideas and problems more than once a year? Would you like to have a local organization that encouraged computing faculty in your area to meet? Because the SIGCSE Board believed that many people would say "YES" to these questions, it has approved an initiative to encourage the formation of SIGCSE chapters. Those people with an interest in helping form a chapter should attend this BOF. We will outline the lightweight process for the chartering of a chapter. But more importantly, we

will have a free flowing discussion of the kind of activities and programs chapters can support.

### **New Curriculum in Computer Engineering**

Thur. 5:30 – 6:15

John Impagliazzo, Hofstra University

The discipline of computer engineering has emerged from the fields of electrical engineering and computer science as a separate discipline. Computer engineering supports the underlying principles of professionalism, which fosters computer ethics, best practices, and professional conduct. The discipline focuses on the design of computer elements and computer-based systems; it integrates hardware and software within these systems and provides human-systems interfaces to produce efficient cost-effective products to solve technical and engineering problems and their applications. The past fifty years have demonstrated that computing has become an extremely broad area that extends beyond the boundaries of what we know as computer science. It encompasses many independent disciplines, including computer engineering, software engineering, information systems, and many other areas. The focus of this session is to discuss the elements of the computer engineering volume of the CC2001 report.

### **Baccalaureate Programs in Information Technology: Model Curriculum and Accreditation Criteria**

Thur. 5:30 – 6:15

Edith Lawson, RIT

A discussion of the draft model curriculum and accreditation criteria developed thus far by the participating universities in the proposed SIGITE (Special Interest Group Information Technology Education) society. The last ten years has seen the development of demand for a new type of computing professional that has resulted in the emergence of a new curriculum (Information Technology) to address this need. Numerous colleges and universities have responded by developing programs without the advantage of an existing model for guidance. The time is now propitious for a collaborative effort to establish guidelines for the educational preparation of these new computing professionals. Over the last year several universities have organized two national meetings that brought together representatives from over 40 universities as well as representatives from ABET, ACM and IEEE to discuss curriculum and accreditation issues in Information Technology and the formation of a professional society devoted to the field of Information Technology.

### **Implementing the 2001 Imperative First Introductory Curriculum**

Thur. 5:30 – 6:15

Lynn Stauffer and Tia Watts, Sonoma State University

We expect that many computer science departments are working to incorporate the recently recommended Computing Curricula 2001 guidelines. This session will focus on the specifics of implementing an imperative first approach within an existing computer science program. The discussion will further focus on the particular issues faced by academic institutions whose primary focus is undergraduate education.

### **Security Topics, Courses, and Curricula**

Thur. 5:30 – 6:15

Carol Eastman, University of South Carolina

The focus of this session is the incorporation of computer security topics within computing curricula. A variety of models to include these topics have been developed by different institutions; these range from inclusion of a small number of topics in existing courses to degree programs and certificates at undergraduate and graduate levels. Discussion will include curricular recommendations, curricular models for security topics, and experiences within different environments.

**Where can I look for good references and/or resources on the Internet for High School and College Computer Science use?**

Thur. 5:30 – 6:15

Howard Whitston

Let's share Internet Resources like the Technical History site or York University's Information Technology links or Free On-Line textbooks sites.

**BlueJ in Introductory Programming - What Can I Get Out Of It?**

Thur. 5:30 – 6:15

Michael Kolling, University of Southern Denmark

Now is the time where a significant number of people have actually used the BlueJ environment in their own teaching for some time, and we have reached a point where an exchange of experiences can benefit us all. We expect exchange of observations and ideas concerning:

- activities that worked well, and those that didn't
- how to use BlueJ's tools to illustrate selected concepts
- problems with BlueJ
- good examples and projects
- how to structure labs and lectures around BlueJ projects
- miscellaneous questions (e.g. when to switch out of BlueJ, what to use after BlueJ, etc)

**Session II: Thursday, February 20, 2003, 6:30 – 7:15 PM**

**Mezzanine Meeting Rooms**

**Mathematical Thinking in Computer Science**

Thur. 6:30 – 7:15

Doug Baldwin, SUNY Geneseo and Peter Henderson, Butler University

“Mathematical reasoning is central to computer science. Mathematics should therefore be an integral part of the entire CS curriculum.” These statements are self-evident to some, but anachronistic relics of computing's past to others. This session discusses the evolving place of mathematics in computer science curricula.

**Focus on the Community College Experience**

Thur. 6:30 – 7:15

Donna Hierstand-Tupper and Andrew Biederman, Community College of Baltimore County, and T.S. Pennington, Longview Community College

This birds-of-a-feather session is for computer science and information systems faculty who either teaches at the community college level or who work with community college colleagues for articulations agreements. Topics addressed in this session will be implementation of the Guidelines for Associate-Degree Programs in Computer Science ([www.acmtyc.org](http://www.acmtyc.org)), needs for new curriculum guidelines in information science and information technology areas, and general issues of pedagogy, use of labs, industry certifications and keeping with the current technologies.

**For Better, For Worse: Hitching Your Course to a Course Management System?**

Thur. 6:30 – 7:15

Jeff Popyack, Drexel University

This discussion will focus on the use of course management systems (WebCT, Blackboard, TopClass, et al.) by computer science educators to administer their courses. Come share success stories, “war stories”, workarounds, advice, and the like.

### **High School Teachers new to teaching the AP Curriculum and HS Computer Science**

Thur. 6:30 – 7:15

Michael Way, Florida Southern College

The APCS examinations are moving to Java and the concerns of some HS instructors are growing. This session will serve to disseminate best practices, provide connections to good techniques and answer some of the questions about how to handle Java in the HS classroom.

### **Assisting the programming strugglers**

Thur. 6:30 – 7:15

Mark Radcliffe and Lynda Thomas, University of Wales

An informal birds-of-a-feather group at the 2003 SIGCSE conference raised the point that perhaps we are failing to get across the principles of Object Oriented Programming. This year's Birds-of-a-feather session will continue from its beginnings at last year's SIGCSE session, to share ideas that might be used to tackle this ever-increasing problem. Participants will be encouraged to share ideas and explore the approaches that might be used. One of the conclusions might be for the organizers to develop a web page where we can publicize successful approaches. It is hoped that this session will be attracted to anyone involved in teaching programming, particularly those using object-oriented languages.

### **Making the Transition: Trials, Tribulations, and Successes of recent Ph.D. Graduates**

Thur. 6:30 – 7:15

Beth Simon, University of San Diego

Discussion of the difficulties in transitioning from full-time Ph.D. research to teaching. Discussion of teaching preparation in Ph.D. programs (or lack thereof), discovering the personality and expectations of your department and your Dean, time management techniques, class lecture/learning techniques, maintaining research at a less-than-full-time rate, balancing the theory and practice of computer science in the classroom, women's and minority issues. This BOF will provide a forum for the "newbies" to meet and network. Attendance by a few selected "mentors with experience" may help encourage and develop young faculty. May spur new ideas and collaborations from people just starting their careers.

### **CS1 Lab Improvements: Envisioned, Attempted, Realized?**

Thur. 6:30 – 7:15

Howard Francis, Pikeville College

The objective of this session is to bring together those who are involved in the CS1 lab. We hope to share ideas about how to make the lab more useful. A number of great ideas were suggested at last year's CS1 Lab BOF session and many of us have stories to tell about our experiences over the past year. Topics for discussion could include

- How the CS1 course is structured at various institutions particularly with respect to labs
- Changes attempted as a result of last year's BOF (or through other motivation)
- What activities are held during lab time
- Success stories: what we tried and found worked
- Horror stories: what we tried and found didn't work
- Dreams and hurdles: what we would like to try next year

**Using Mac OS X in Computer Science**

Thur. 6:30 – 7:15

Michael Rogers, Millikin University

Since Mac OS X is a relatively new and evolving operating system, those CS faculty who use or are contemplating the use of MAC OS X have doubts, anxieties, and questions. This BOF will attempt to reduce those doubts and anxieties, by answering their questions, or, at the least, by providing a forum for sharing secrets, brainstorming, and, at universities with particularly narrow-minded technology staff, commiserating.

**Problems and possible solutions to teaching  
object-oriented programming**

Thur. 6:30 – 7:15

David Scanlan, California State University

This topic is significant because many CS, CIS, and MIS departments are having problems introducing object-oriented programming into their curricula. Our MIS department at California State University is not an exception. We first introduced object-oriented programming during the Fall of 2001. The programming sequence consists of three courses: (1) Visual Basic, (2) Java, and (3) Advance Java. To our surprise, many students could not solve simple programming problems after the second course. Because of this, a major restructuring of the programming sequence was necessary. After talking to 12 professors from a variety of universities, all of these professors indicated that they were having difficulties similar to ours; that is, many students could not solve simple programming problems after two, or sometimes, three programming courses.

**Addressing Gender in Online Computer Science  
Course Instruction**

Thur. 6:30 – 7:15

David Ferro, Weber State University

The objective of this Birds-of-a-Feather is to learn whether the makeup of online classes in computer science (CS), particularly introductory classes, can and should reduce the downward trend in the percentage of women pursuing a computer science education compared to traditionally taught “in-class” courses. I would like to gather individuals experienced and interested in the subjects of women in computer science as well as online pedagogy.

# SIGCSE 2003 Faculty Poster Session

**Friday, February 21, 3:15 – 4:00**

**Hilton Pavilion**

Faculty posters will be available for viewing all day. Posters present work-in-progress and other topics, for which dialog with Symposium attendees is particularly appropriate.

## **How to Teach Discrete Mathematics in a Large Class**

Jenq-Foung (J.F.) Yao, Georgia College & State University

## **Recent Accomplishments of the ACM Two-Year College Education Committee**

Karl J. Klee, Alfred State College

Elizabeth Hawthorne, Union County College

## **Pros and Cons of Programming Exams in CS1**

Jenq-Foung (J.F.) Yao, and Yongqiao Xiao, Georgia College & State University

## **A Study of Gender and Career Selection**

Bettina Bair, Ohio State University

## **A First Semester Course Including Two Models of Computation**

Joe Oldham, Georgetown College

## **What Constitutes a “Better” Student Program?**

Charlie McDowell, Brian Hanks, and Linda Werner, University of California

## **A Tool for Formatting Computer Science Lectures in HTML**

Hugh McGuire, University of California - Santa Barbara

## **The Presenter System for Tablet PC-Based Classroom Presentations**

Richard Anderson, Ruth Anderson, Tammy VanDeGrift, Steven A. Wolfman, and Ken Yasuhara, University of Washington, Seattle, WA

## **Problems And Possible Solutions To Teaching Object-Oriented Programming**

David A. Scanlan, California State University

## **Capturing Collaborative Designs to Assist the Pedagogical Process**

Mark Ratcliffe, Lynda Thomas, Wayne Ellis, University of Wales

## **Improving Asynchronous Learning In CS1 Via Information-Rich Tutorials**

Jon A. Preston and Jeff Chastine, Clayton College and State University

## **An Investigation of the Development of Adult Education Students in an Introductory Programming Logic Course**

Gregory W. Butler, Regis University

## **A Realistic Integration of the Imperative First Computing Curricula 2001 into an Existing Curriculum**

Lynn Stauffer and Tia Watts, Sonoma State University

### **A Dramatic Assignment for the Computer Networks Class**

James W. McGuffee, St. Edward's University

### **The Role of Two-Year Colleges in Educating the Cyber-Security Workforce**

Elizabeth K. Hawthorne, Union County College

Karl J. Klee, Alfred State College

### **Development and Validation of a Computer Science Self-Efficacy Scale for CS0 Courses and the Group Analysis of CS0 Student Self-Efficacy**

Ann Quade, Minnesota State University, Mankato

### **Machine Learning Algorithms Suitable as Programming Assignments to Junior/Senior Level Students**

Soe Than, Virginia Military Institute

### **Integrating Action Research Based Projects into In-Service Computer Science Teacher Training**

Bruria Haberman, Weizmann Institute of Science

Ela Lev, Kerrary College

Dorothy Langely, Weizmann Institute of Science

### **SFC – A Structured Flow Chart Editor Version 3**

Tia Watts, Sonoma State University

### **ServletApp: Making Servlets Compile and Run Like Java Applications**

Allan M. Hart and James M. Slack, Minnesota State University

### **Automated Grader & Feedback System Or “How we're trying to use technology to speed up grading and improve the quality of feedback”**

Stefan Brandle and David Whittington, Taylor University

### **A Gentle Introduction to Linked Lists**

Michael Goldwasser, Loyola University Chicago

### **Computer Science Programs and Gender: The “College of Engineering Effect” Revisited**

Lecia Jane Barker, Timothy Weston, Kathy Garvin-Doxas, and Changkuk Jung, University of Colorado

### **The Number Circle – A Model for Integer Arithmetic**

Herbert H. Holland, Jr., United States Coast Guard Academy

### **Supporting Discrete Structures Courses with a web-based tool**

Christelle Scharff, Pace University

Andrew Wildenberg, State University of New York at Stony Brook

### **"Picobot" - A Short, "Language-Neutral" Computer Science Exercise**

Zachary Dodds, Harvey Mudd College

### **802.11 Wireless Networking Implementation Project**

Brad Richards, Vassar College

**Teaching Object-orientation and Design Patterns in CS1/CS2 with Killer Examples**

Carl G. Alphonse, University at Buffalo, State University of New York

D. X. Nguyen, Rice University

Philip Ventura, University at Buffalo, State University of New York

Stephen Wong, Rice University

**Database Courseware: Support for the First Database Systems Course**

Mario Guimaraes, Kennesaw State University

Martha Myers, Kennesaw State University

**Fundamental Topics in CS1: A Comparison among Textbooks over Time**

Debra T. Burhans, Canisius College

Jeffrey J. McConnell, Canisius College

**Awareness, Competence, and Mastery: Providing a bridge to informal education for graduate women in computer science**

Hilary J. Holz, C. Matthew Johnson, Thomas W. Roby, Elizabeth A. Ginno, California State University, Hayward

**Constructivism, Group Work, and Epistemic Games to Enrich an Introduction to Programming Class**

Graciela González, Sam Houston State University

**Metaposter: Using Poster Presentations in Computing Classes**

Caroline M. Eastman, University of South Carolina

**The Pet code: a pedagogy-based set of code examples for helping students distinguish core programming language concepts**

Hilary J. Holz & James Farrell, California State University, Hayward

# SIGCSE 2003 Workshops

Wednesday Workshops, 7:00-10:00 p.m.

## 1. Intellectual Property Law Basics for Computer Science Instructors

David G. Kay, University of California Irvine

An introduction to the basics of intellectual property law (patents, copyrights, trade secrets, trademarks) designed to give computer science instructors a framework for answering student questions, debunking misconceptions, and understanding how the law and computing interact.

*Location: Sierra*

## 2. Methods and Materials for Teaching Understanding of and Proper Use of Software Development Process

Barry Boehm, University of Southern California

Daniel Port, University of Southern California

David Klappholz, Stevens Institute of Technology

CS577 is an Introduction to Software Engineering Developed by Barry Boehm and Dan Port at USC. It teaches both understanding of and proper application of software development process in a concrete understandable way. It has been tailored to the needs of and taught at a number of universities with far fewer resources than USC. It comes with a set of lecture slides, homeworks/solutions, templates for artifacts, guides to their use, and examples of their use in previous student projects. We will discuss the CS577 approach, its tailoring to diverse sets of needs/resources, and will provide materials for its classroom use.

*Location: Shasta*

## 3. Improving Instruction with Toys in the Computer Science Classroom

Joe Hollingsworth, Indiana University Southeast

We have found the use of physical manipulatives, such as children's stacking cups and Lego® blocks, to be amazingly effective at helping students learn algorithms, data structures, math concepts, etc. Armed with manipulatives when we come to class, we have seen instruction time decrease, and performance on take-home labs improve. The goal of this workshop is to teach computing educators how to incorporate manipulatives into their curriculum so that their students can benefit from this hands-on method of learning.

*Location: Ruby*

## 27. Teaching C# in CS1, CS2, and Advanced Programming Courses

Chris Schulte, University of Arizona

Stuart Reges, University of Arizona

Andrew Lenards, University of Arizona

Matthew Johnson, University of Arizona

This workshop will explore the pros and cons of using C# as a teaching language. Drawing on our experience teaching C# to CS students in the last two years, we will discuss the learning curve for new students along with the benefits and drawbacks of using the C# language with introductory students. We will discuss handouts and assignments we used successfully in our classes, and examine the advanced features of C# in the context of how they can be utilized in high level programming courses. Attendees should be familiar with Java or C++; no prior C# experience is assumed.

*Location: McKinley*

## Friday Workshops, 7:00-10:00 p.m.

### 4. **Teaching Computer Science with Python**

John M. Zelle, Wartburg College

Python is a free, portable, object-oriented, scripting language. Its simplicity and elegance make it a perfect language for beginning programmers and enhance the productivity of experienced professionals. Python is now a standard tool in many areas of software development. Using Python in our CS curriculum has allowed our students to focus more on fundamental concepts and less on arcane language details. This workshop is an introduction to Python with an emphasis on its uses in teaching, from introductory programming incorporating graphics to upper-level courses such as Data Structures, Internet Programming, Databases, Operating Systems, and Computer Graphics.

*Location: Sierra*

### 5. **Improving Computing Programs through Meaningful Objectives and Sound Assessment**

Lillian N. Cassel, Villanova University

Doris Lidtke, ABET Inc.

Intended particularly for faculty in computing programs outside colleges of engineering, this workshop will lead participants through development of instructional objectives and effective techniques for assessment of program outcomes. Participants will learn to describe the objectives of their programs and find the relationship of courses to meeting those objectives. Objectives will be related to outcomes that can be assessed and documented. Assessment results will be seen as input in a process of continuous quality improvement. Participants should bring a copy of their university/college/program mission statements. Generic statements will be available as exercises for those who do not bring their own.

*Location: Shasta*

### 6. **XML in the Classroom**

Helmar Burkhart, University of Basel

XML (EXtensible Markup Language) has established itself as the universal web standard for data description and data exchange. The workshop introduces XML from a teaching perspective. It is composed of two interleaved tracks: Track A is a survey of recent XML standards, while Track B concentrates on courseware samples. After the workshop, attendees have a basic understanding why and how to include XML technologies in the classroom. Participants will be familiar with basic concepts and definitions of XML specification and transformation techniques. Moreover, they will have seen several examples ready to be included in their courses.

*Location: McKinley*

### 7. **Computer Security Fundamentals or How I Learned to Stop Worrying and Love the Bomb**

Linda Null, Penn State Harrisburg

Charlie Zimmerman, Penn State Harrisburg

Computer security, if taught at all, is typically introduced in the curriculum where its impact is minimal. To integrate it throughout the curriculum, teachers need a basic understanding of computer security and a desire to reinforce the concepts. This workshop will present topics in computer security useful for all areas of computer science (CS0, CS1, CS2, OS, and DBase). Participants will learn about common security vulnerabilities and how to deal with potential threats, and will be given a CD of computer security tools. The workshop will also include assignments to encourage students to be more aware of computer security issues.

*Location: Ruby*

## **8. Computer Networks Basics: What Every Professor Should Know**

Curt M. White, DePaul University

Few people today would argue that the topic area of computer networks is not expanding at a phenomenal rate. It is also safe to assume that the importance of introducing computer networks at the undergraduate level is very high. It is our responsibility as computer science educators to prepare our students for this rapidly emerging field of study. To offer this education, we must also be knowledgeable in this area. The following concepts will be introduced during the workshop: basic concepts of data communications; intro to local area networks, intro to metropolitan area networks; intro to wide area networks, including TCP/IP, frame relay, and ATM; intro to wireless systems. All lecture notes will be given out in hardcopy as well as on CD-ROM.

*Location: Teton*

## **9. Introducing Java to High School Teachers**

Richard Kick, Hinsdale Central High School

The Advanced Placement Computer Science curriculum has evolved from procedural to object based programming. It is apparent that further evolution will include object oriented programming in the curriculum. Java is a safe, simple, object oriented programming language that will allow students to learn OO concepts and techniques with support from an extensive standard library. This workshop will provide Advanced Placement Computer Science teachers with hands-on experiences in downloading a Java compiler, creating application and applet source code, compiling Java source code, and executing applications and applets. Several code examples will be distributed and discussed. THIS IS A COMPUTER LAB WORKSHOP.

*Location: University of Nevada–Reno, see bus schedule available at the registration desk.*

## **10. jGRASP: An Integrated Development Environment with Visualizations for Teaching Java in the First Programming Course and Beyond**

James H. Cross II, Auburn University

Dean Hendrix, Auburn University

jGRASP is an integrated development environment, created specifically to provide automatic generation of software visualizations for the purpose of improving the comprehensibility of the software. These visualizations, which are particularly well suited for first year students, include the Control Structure Diagram, the UML Class Diagram, and the visual debugger. The workshop will include tutorials and example programs to demonstrate how instructors can improve the learning and programming experience of their students with jGRASP. Instructors are encouraged to bring programs from their own courses to experiment with the visualizations during the workshop. jGRASP is freely available at [www.jgrasp.org](http://www.jgrasp.org). THIS IS A COMPUTER LAB WORKSHOP.

*Location: University of Nevada–Reno, see bus schedule available at the registration desk*

## 11. Java Servlets

Karen Anewalt, Mary Washington College

This workshop will introduce participants to Java Servlets. Servlets are Java programs that are typically executed on a web server and can accept and process data entered in forms on web pages. Servlets can also be used to create dynamic web pages in response to the entered data. Participants will learn about free software available to support the creation of Servlets, the process of setting up a basic web server, creating HTML forms, the primary methods of the Servlet class, and examples of programs that can be written using Servlets. THIS IS A COMPUTER LAB WORKSHOP.

*Location: University of Nevada–Reno, see bus schedule available at the registration desk*

## 12. Using DocBook for Computer-related Documentation

John Cigas, Rockhurst University

This workshop provides an introduction to using DocBook to generate online and print versions of computer related documentation. DocBook enables authors to write structured documents using SGML or XML. DocBook is similar to TeX in that it is a markup, rather than a WYSIWYG system. It differs from TeX in that it uses SGML or XML markup and is tailored especially to software documentation. THIS IS A COMPUTER LAB WORKSHOP.

*Location: University of Nevada–Reno, see bus schedule available at the registration desk*

<b>Saturday Workshops, 2:00-5:00 p.m.</b>
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## 13. Active and Cooperative Learning Techniques for Computer Science Education

Jeffrey J. McConnell, Canisius College

Active and cooperative learning provides a powerful mechanism to enhance depth of learning and increase material retention. Active and cooperative learning involve students with the material rather than passively listening to a lecture. This workshop will use introductory material on active and cooperative learning for a number of activities that will give participants direct experience with and the chance to observe these techniques in action.

*Location: Sierra*

## 14. Marine Biology Simulation Case Study

Alyce Brady, Kalamazoo College

Kathleen Larson, Kingston High School

The new Java-based Marine Biology Simulation case study developed for the Advanced Placement program is equally appropriate for CS1/CS2 courses at the high school or college level. The program illustrates topics from the introductory sequence, such as object interaction, interfaces, inheritance, dynamic binding, a variety of data structures, and discrete simulation. The accompanying narrative discusses the program's design and implementation, and presents a number of modifications to introduce new pedagogical topics. It focuses extensively on testing, and includes analysis questions, exercises, and programming assignments. This workshop will introduce the case study and how to integrate it into introductory courses.

*Location: Shasta*

## 15. Teaching Introductory Programming using a Livetext

David Gries, University of Georgia

Paul Gries, University of Toronto

The traditional course material is the textbook. The workshop presenters have developed a "livetext", called "ProgramLive", for the first programming course, using Java. It comes on a CD and contains over 250 2-4 minute recorded lectures with synched animation. Such a livetext provides new opportunities in teaching. For example, a lecture could be a mixture of traditional teaching together with the projection of a recorded lecture or two. Or, students could be asked to listen to a lecture before coming to class, so that the class hour can be more of a higher-level discussion. The CD also comes with a "workbook", which can be used to enforce some participation by students. The adoption of new media, of new teaching materials, always takes time. People have to see them in action. The workshop will explore the various ways in which the livetext can be used to advance the art of teaching introductory programming and discuss our experiences with this new medium.

*Location: McKinley*

## 16. Microsoft .Net Programming (Part 1): Building Applications with C#

Joe Hummel, Lake Forest College

Microsoft .NET is an exciting new framework for programming not only on Windows platforms, but Linux and FreeBSD as well. This workshop will introduce the attendee to .NET programming in C#, in particular with regards to building console-based and GUI applications. Both command-line tools (free) and Visual Studio .NET (\$) will be demonstrated. The purpose of this workshop is to introduce .NET and C#, allowing attendees to evaluate their use in a CS or IT curriculum. PowerPoint presentations will be example-based, and suitable for introducing .NET to students; attendees have access to all PowerPoint slides for use in their classes.

*Location: Ruby*

## 17. Network Programming in Java

Greg Gagne, Westminster College

An introduction to network programming using the Java networking API (java.net) focusing on the client-server model. Topics include TCP/IP and UDP sockets and newer features provided in Java 1.4 including non-blocking I/O (java.nio). We will motivate presentation of the API by constructing several client-server applications including time and echo servers and an HTTP web server. As many client-server applications are often multithreaded, this workshop will also provide a gentle introduction to Java threads. The workshop will conclude with ideas suggesting how the Java networking API could become part of your curriculum.

*Location: Teton*

## 18. Objects for Learning to Program with Java

Byron Weber Becker, University of Waterloo

"Objects early" is an appropriate approach for teaching CS1 with Java. However, this is often interpreted as teaching students to write classes and use the resulting objects simultaneously. This workshop will argue for a "use before write" strategy where students are provided with an interesting set of classes to use in their early programs. Later, after students learn how to use objects, they learn how to write classes to implement them. The approach will be thoroughly illustrated using Karel the Robot as a sample set of classes. THIS IS A COMPUTER LAB WORKSHOP.

*Location: University of Nevada-Reno, see bus schedule available at the registration desk*

## 19. **Spice Up Your Classes Using Flash MX**

Sandra Honda Adams, Sacred Heart University

Domenick Pinto, Sacred Heart University

This 3 hour hands-on workshop using Macromedia's Flash MX, one of the most widely used vector technologies for the Web, will enable the participants to create attractive, resizable, and extremely small and compact vector artwork and navigational interfaces that are dynamic, interactive, and animated. Low bandwidth requirements, lean designs and ease of use has made Flash MX a powerful Web development tool that you will want to teach to your students. **THIS IS A COMPUTER LAB WORKSHOP.**

*Location: University of Nevada-Reno, see bus schedule available at the registration desk*

## 20. **Teaching Component Architecture with JavaBeans**

Barry Burd, Drew University

Classes and objects are very important, but in this workshop, we take OOP to the next level. We use component-based architecture to build reusable, customizable software. A JavaBean is an object whose code has certain useful characteristics. These characteristics allow other objects to instantiate and use the bean with the loosest possible coupling. If you create a JavaBean, then someone else's software can automatically discover the bean's properties and use the bean's functionality. This is an extremely useful programming paradigm, especially for the student who's studying data structures or the student who's creating a GUI interface. **THIS IS A COMPUTER LAB WORKSHOP.**

*Location: University of Nevada-Reno, see bus schedule available at the registration desk*

## 21. **TeachScheme!: An Innovative Approach to Introductory Programming**

Matthew Flatt, University of Utah

Matthias Felleisen, Northeastern University

Robert Bruce Findler, University of Chicago

Shriram Krishnamurthi, Brown University

This workshop will introduce the TeachScheme! curriculum, which is used by a growing number of universities and high schools worldwide. The curriculum is founded on the principle that computer science is an integral part of every liberal arts curriculum. The curriculum's innovations include a series of design recipes, which gently guide beginners through the development process, and DrScheme, a beginner-friendly programming environment. The workshop assumes \*no\* prior experience in any Scheme-like language; it will introduce attendees to the TeachScheme! approach to programming through hands-on exercises. **THIS IS A COMPUTER LAB WORKSHOP.**

*Location: University of Nevada-Reno, see bus schedule available at the registration desk*

<b>Saturday Workshops, 7:00-10:00 p.m.</b>
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## 22. **Calculational Logic in Discrete Math Courses**

David Gries, University of Georgia

We will explore the use of calculational logic to develop proofs in areas typically taught in discrete math courses: set theory, integer arithmetic, combinatorics, solving recurrence relations, etc. (We will also look at the use of calculational logic to prove results from elementary calculus.) We will show that one can actually teach strategies and principles for developing proofs, and teaching calculational logic can help students overcome some of their fear of mathematics.

*Location: Sierra*

### **23. Microsoft .Net Programming (Part 2): Web Apps in ASP.NET and C#**

Joe Hummel, Lake Forest College

Microsoft .NET is an exciting new framework for programming not only traditional applications, but web-based applications as well. This workshop is a follow-on to part 1 ("Application Building with C#"), demonstrating how C#, ASP.NET and IIS are used to create web applications as easily as traditional GUI applications. The purpose of this workshop is to (a) learn more about web programming, and (b) allow attendees to evaluate the use of .NET in a CS or IT curriculum. PowerPoint presentations will be example-based, and suitable for presenting .NET to students; attendees have access to all PowerPoint slides for use in classes.

*Location: Shasta*

### **24. Using Stanford's 145Com Materials to Enhance A Database Course**

Judy Bayard Cushing, The Evergreen State College

Jeff Ullman, Stanford University

Michaelangelo Salcedo, York College of the City University of New York

The pace of research and technology, with a need for theoretical depth and practical experience, make teaching database systems a challenge. This is especially true where faculty teach across CS and service curricula. Com145 provides materials to faculty, including syllabi, slides with voice-over, project deliverables, and test and homework banks. At the workshop, Ullman and faculty who used Com145 in teaching will present the materials, and work through a sample session (lecture, discussion, laboratory, and assignment). Discussion will follow on the applicability and effectiveness of such materials, and how to effectively incorporate them into database classes. See <http://www-db.stanford.edu/~ullman/dscb.html>. Note: Though com145 was developed specifically for Ullman's book, the materials can be used in any database course.

*Location: McKinley*

### **25. Multimedia Construction Projects**

Mark Guzdial, Georgia Institute of Technology

Multimedia construction can be a motivating and creative domain for examples and assignments in computer science classes. Because of the speed and capacity of modern computers, simple and obvious algorithms that fit even at the CS1 and CS2 levels run in reasonable time. In this workshop, we will cover both algorithms and working code for creation and manipulation of sound, image, and video data. Example techniques will include sound synthesis, chroma key ("blue screen") image manipulation, animation, and Photoshop-like effects. Example code will be presented in Smalltalk (Squeak), Python (Jython), and Java.

*Location: Ruby*

## **26. Managing the Learning Environment for Improved Classroom Interaction and Learning**

Kathy Garvin-Doxas and Lecia J. Barker, University of Colorado

This workshop will inform current and future computer science educators about the issues and elements of the learning environment and how knowledge of them can empower them to enhance their classroom teaching. The workshop will: 1) orient participants to the features of the learning environment; 2) actively engage participants in understanding their own classrooms in terms of the learning environment; and 3) facilitate discussion of what behaviors, patterns of interaction, policies, etc. contribute to particular learning environments and how teachers can alter and/or create a more desirable learning environment. This workshop is based on research presented at SIGCSE last year.

*Location: Teton*

## **28. Teaching Multithreaded Programming Made Easy Using ThreadMentor**

Ching-Kuang Shene, Michigan Technological University

Steve Carr, Michigan Technological University

Jean Mayo, Michigan Technological University

Using ThreadMentor, this workshop presents a hands-on approach of teaching multithreaded programming in operating systems and related courses (e.g., concurrent programming). Topics will include thread management, the proper use of synchronization primitives which includes locks, semaphores, monitors, barriers, reader-writer locks and synchronous and asynchronous communication channels, and race conditions. This workshop will also touch upon the way of integrating threaded programming into a typical operating systems course. Sample syllabus, programming assignments, and exam problems will also be discussed. In this workshop, participants will use ThreadMentor to visualize the dynamic of threaded programs and the behavior of synchronization primitives. **THIS IS A COMPUTER LAB WORKSHOP.**

*Location: University of Nevada–Reno, see bus schedule available at the registration desk*

## **29. Java Web Services**

Barry Burd, Drew University

A Web Service is a pluggable software component. It's a piece of programming functionality that's available at run time over the Internet. It's a Web subprogram with no built-in display. The Web Service provides data, and the Web client creates its own customized display. Web Services are all the rage. With the new .NET framework, Microsoft "...is betting its entire next-generation software infrastructure on XML Web services tools" (<http://newsfactor.com/perl/story/18777.html>). But this workshop presents the alternative technology -- the creation and consumption of Web Services using Java's open-source tools. With Java, you can build, register, discover, and use Web Services. **THIS IS A COMPUTER LAB WORKSHOP.**

*Location: University of Nevada–Reno, see bus schedule available at the registration desk*

## SIGCSE 2003 Program Committee

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Grand Valley State University

**Deborah Knox**, Program Chair  
The College of New Jersey

**Wanda Dann**, Publications Chair  
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**Nancy Kinnersley**, Special Sessions  
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Sierra Nevada College

**Frank Young**, Registration  
Rose-Hulman Institute of Technology

## SIGCSE 2003 Symposium Statistics

	<b>Accepted</b>	<b>Submitted</b>
<b>Papers</b>	75	234
<b>Panels</b>	12	17
<b>Special Sessions</b>	10	15
<b>Workshops</b>	29	46
<b>Faculty Posters</b>	35	50

### **Paper Reviewing**

Number of reviewers:	497
Number of reviews received:	1275
Number of reviews assigned to each paper: at least 6	
Number of papers with 6 or 7 reviews:	121
Number of papers with exactly 5 reviews:	94
Number of papers with exactly 4 reviews:	19

**Paper acceptance rate:** 32.05%

## SIGCSE 2003 Award Winners

Eric Roberts, Stanford University

*SIGCSE Award for Outstanding Contribution to Computer Science Education*

Harriet Taylor, Program Director, National Science Foundation,  
on leave from Louisiana State University

*SIGCSE Award for Lifetime Service*

## **ITiCSE '03**

**University of Macedonia, Thessaloniki, Greece**

**June 30- July 2, 2003**

<http://iticse2003.uom.gr/>

### **Conference Chairs**

Vassilios Dagdilelis

Maya Satratzemi

University of Macedonia, Greece

## **SIGCSE 2004**

**Norfolk, Virginia, USA**

**March 3 - 7, 2004**

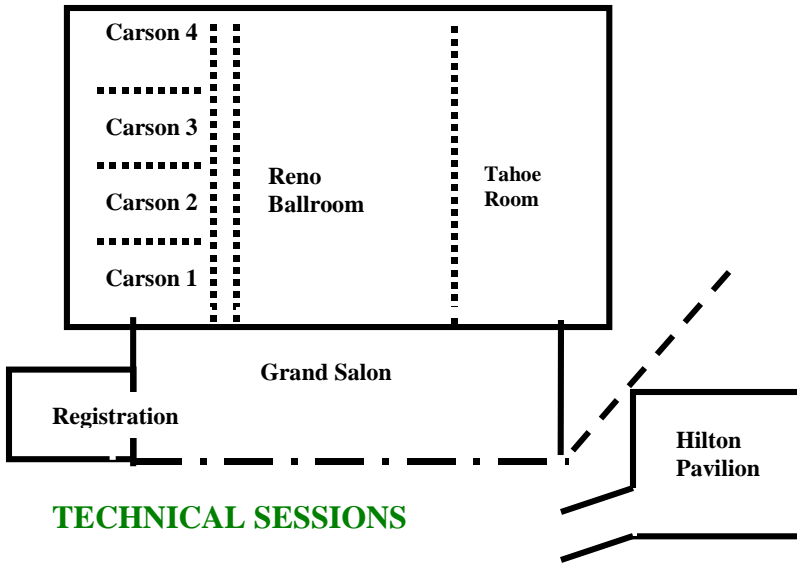
<http://www.csc.villanova.edu/sigcse2004>

### **Symposium Chairs**

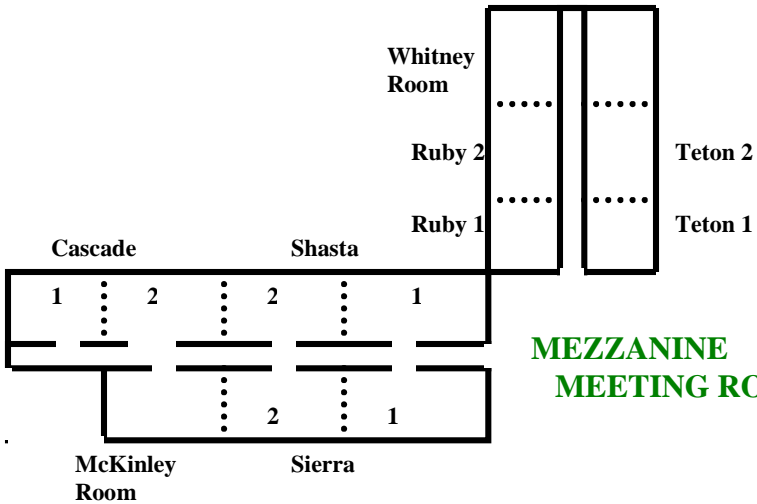
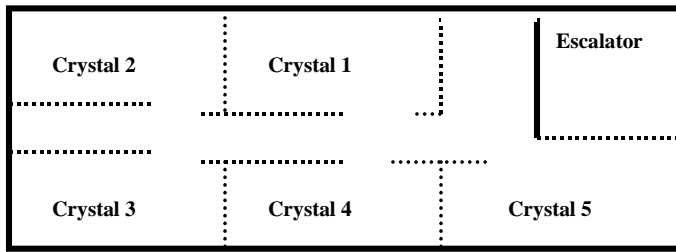
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**TECHNICAL SESSIONS**



**MEZZANINE MEETING ROOMS**