8:00 AM - 12:30 PM  Web Development with the MEAN Stack: A Comprehensive Hands-On Tutorial for Educators (room: L5-L6)
   Adrian German

9:00 AM - 12:00 PM  Fulbright for Computer Science Education (room: L11-L12)
   Athena Fulay
   Andy Riess

9:00 AM - 12:30 PM  Facilitating POGIL Activities to Support All Students (room: L10)
   Helen H. Hu
   Pat Campbell
   Chris Mayfield
   Tricia Shepherd

9:00 AM - 12:30 PM  SIGCAS Workshop on Computing for the Social Good: Educational Practices (room: L9)
   Gregory Hislop

9:00 AM - 5:00 PM  POSSE Roundup (room: Sultana)
   Gregory Hislop

9:00 AM - 5:00 PM  SIGCSE Board Sponsored: New Educators Workshop (room: Mississippi)
   Andrea Danyluk
   Dave Reed

2:00 PM - 5:00 PM  Computing Principles and Computation in the First Course – Exemplars from China (room: L8)
   Ming Zhang

2:00 PM - 5:00 PM  Creating Engaging and Relevant Classroom Activities and Assignments (room: L10)
   Helen H. Hu
   Beth Quinn

2:00 PM - 5:00 PM  Integrating Computing Ethics and Professionalism into the Technical Curriculum (room: L9)
   Don Gotterbarn

2:00 PM - 5:00 PM  Universal Design of Teaching in K-12 Computing (room: L11-L12)
   Brianna Blaser
<table>
<thead>
<tr>
<th>Workshop #101: CReST-Security Knitting Kit: Ready to Use Teaching Resources to Embed Security Topics into Upper Division CS Courses (room: L1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambareen Siraj, Tennessee Tech University</td>
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<tr>
<td>Sheikh Ghafoor, Tennessee Tech University</td>
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<tr>
<th>Workshop #102: Making Music with Computers: Creative Programming in Python (room: L2-L3)</th>
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<tbody>
<tr>
<td>Bill Manaris, College of Charleston</td>
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<td>Tobias Kohn, ETH Zürich</td>
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<tr>
<th>Workshop #103: A Web-Based IDE for Teaching with Any Language (room: L5-L6)</th>
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<tbody>
<tr>
<td>Dan Armendariz, Harvard University</td>
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<td>David Malan, Harvard University</td>
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<td>Nikolai Onken, Cloud9</td>
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<tr>
<th>Workshop #104: High Yield in the Short Term: Planning Strategically to Get Women into your Major (room: L8)</th>
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<tbody>
<tr>
<td>Lecia Barker, University of Texas at Austin</td>
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<td>Leisa Thompson, University of Virginia</td>
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<tr>
<th>Workshop #105: Guiding Students to Discover CS Concepts and Develop Process Skills using POGIL (room: L9)</th>
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<tbody>
<tr>
<td>Clifton Kussmaul, Muhlenberg College</td>
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<td>Helen Hu, Westminster College</td>
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<td>Chris Mayfield, James Madison University</td>
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<tr>
<th>Workshop #106: Engage, Energize and Empower Your Students with Team-Based Learning (room: L10)</th>
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<tbody>
<tr>
<td>Lenore Horowitz, University at Albany</td>
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<td>George Berg, University at Albany</td>
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<td>Kimberly Van Orman, University at Albany</td>
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<tr>
<th>Workshop #107: Teaching Parallel Computing Concepts with OpenMP (room: L11-L12)</th>
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<tr>
<td>Joel Adams, Calvin College</td>
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<td>Richard Brown, St. Olaf College</td>
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<td>Elizabeth Shoop, Macalester College</td>
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<tr>
<th>Workshop #108: Using OpenDSA eTextbooks in Your Class (room: L13-L14)</th>
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<tr>
<td>Clifford Shaffer, Virginia Tech</td>
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<tr>
<td>Thomas Naps, University of Wisconsin--Oshkosh</td>
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<tr>
<td>Susan Rodger, Duke University</td>
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</table>
Workshop #109: Reading and Writing like Computer Scientists: How to Promote Critical Thinking and Student Engagement (room: River Bluff)

Mark Hoffman, Quinnipiac University
Jerod Weinman, Grinnell College

Workshop #110: Lego-based Case Studies for Teaching Software Engineering Concepts throughout the Curriculum (room: Sultana)

Stan Kurkovsky, Central Connecticut State University

Workshop #111: Peer Instruction in Computing: a Focus on Student Learning (room: Mississippi)

Daniel Zingaro, University of Toronto Mississauga
Leo Porter, University of California, San Diego
Quintin Cutts, University of Glasgow
John Glick, University of San Diego
Joe Hummel, University of Illinois at Chicago
Cynthia Lee, Stanford University
Jaime Spacco, Knox College

Workshop #112: How to launch a STARS Computing Corps cohort to improve retention and broaden participation in computing (room: Cotton Row)

Jamie Payton, University of North Carolina at Charlotte
Tiffany Barnes, North Carolina State University
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>THURSDAY 8:30 AM - 10:00 AM</td>
<td>Plenary Session - John Sweller - UNSW Australia</td>
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<tr>
<td>THURSDAY 10:00 AM - 10:45 AM</td>
<td>Break, Exhibits &amp; Demos</td>
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<tr>
<th>Demos (room: Exhibit Hall)</th>
<th>Thu 10:00 AM - 10:45 AM</th>
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<tbody>
<tr>
<td>OpenDSA: An Interactive eTextbook for Computer Science Courses</td>
<td>Clifford Shaffer, Virginia Tech</td>
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</table>
| OSBLE+: A next-generation learning management and analytics environment for computing education | Daniel Olivares, Washington State University  
Christopher Hundhausen, Washington State University |

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<tr>
<th>NSF Showcase (room: Exhibit Hall)</th>
<th>Thu 10:00 AM - 11:30 AM</th>
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<tr>
<td>CrowdGrader: Peer Grading with Incentives</td>
<td>Luca de Alfaro, UC Santa Cruz</td>
</tr>
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</table>
| Project MLExAI: An Innovative Model for Teaching Core AI Concepts | Ingrid Russell, College of Staten Island  
Zdravko Markov, College of Staten Island  
Susan Imberman, College of Staten Island |
| Computing in the Arts: Community Building and Curriculum Development | Jennifer Burg, Wake Forest Univ. |
| C5 - Catalyzing Computing and Cybersecurity in Community Colleges | Melissa Jane Dark, Purdue  
Beth Hawthorne, Purdue  
Corrinne Sande, Purdue |
### THURSDAY 10:45 AM - 12:00 PM

#### Papers: Data Structures (room: L11-L12)

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>10:45</td>
<td>Paper vs. Computer-based Exams: A Study of Errors in Recursive Binary Tree Algorithms</td>
<td>Scott Grissom, Grand Valley State University, Laurie Murphy, Pacific Lutheran University, Renée McCauley, College of Charleston, Sue Fitzgerald, Metropolitan State University</td>
</tr>
<tr>
<td>11:10</td>
<td>Stay on These Roads: Potential Factors Indicating Students’ Performance in a CS2 Course</td>
<td>Holger Danielsiek, Westfälische Wilhelms-Universität Münster, Jan Vahrenhold, Westfälische Wilhelms-Universität Münster</td>
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</tbody>
</table>

#### Papers: Computational Thinking (room: L13-L14)

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<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>10:45</td>
<td>Investigating Differences in Wiki-based Collaborative Activities between Student Engagement Profiles in CS1</td>
<td>Adam Eck, University of Nebraska-Lincoln, Leen-Kiat Soh, University of Nebraska-Lincoln, Duane Shell, University of Nebraska-Lincoln</td>
</tr>
<tr>
<td>11:35</td>
<td>Computational Thinking as Liberal Studies</td>
<td>Dave Mason, Ryerson University, Irfan Khan, Ryerson University, Vadim Farafontov, Ryerson University</td>
</tr>
</tbody>
</table>
Papers: Research on Learning (room: L5-L6)  Thu 10:45 AM - 12:00 PM

10:45 AM  An Examination of Layers of Quizzing in Two Computer Systems Courses  
Cindy Norris, Appalachian State University

11:10 AM  Subgoals Help Students Solve Parsons Problems  
Briana Morrison, Georgia Institute of Technology  
Lauren Margulieux, Georgia Institute of Technology  
Barbara Ericson, Georgia Institute of Technology  
Mark Guzdial, Georgia Institute of Technology

11:35 AM  As CS Enrollments Grow, Are We Attracting Weaker Students?: A Statistical Analysis of Student Performance in Introductory Programming Courses Over Time  
Mehran Sahami, Stanford University  
Chris Piech, Stanford University

Papers: Professional Development (room: L2-L3)  Thu 10:45 AM - 12:00 PM

10:45 AM  Implementation and Outcomes of a Three-Pronged Approach to Professional Development for CS Principles  
Chrystalla Mouza, University of Delaware  
Lori Pollock, University of Delaware  
Kathleen Pusecker, University of Delaware  
Kevin Guidry, University of Delaware  
Ching-Yi Yeh, University of Delaware  
James Atlas, University of Delaware  
Terry Harvey, University of Delaware

11:10 AM  Deploying Exploring Computer Science Statewide  
Helen Hu, Westminster College  
Cecily Heiner, Southern Utah University  
Jay McCarthy, University of Massachusetts Lowell

11:35 AM  TEALS: Teacher Professional Development Using Industry Volunteers  
Nathaniel Granor, Microsoft/TEALS  
Leigh Ann DeLyser, CSNYC  
Kevin Wang, Microsoft/TEALS

Panel (room: Cotton Row)  Thu 10:45 AM - 12:00 PM

Engaging CS Alumni from Afar  
Christine Shannon, Centre College  
James Kiper, Miami University  
Samuel Rebelsky, Grinnell College  
Janet Davis, Whitman College
Panel (room: Steamboat) Thu 10:45 AM - 12:00 PM
Rediscovering the Passion, Beauty, Joy, and Awe: Making Computing Fun Again, part 8
  Daniel Garcia, UC Berkeley
  Josh Caldwell, code.org
  Pamela Fox, Khan Academy
  Jeremy Keeshin, CodeHS

Special Session (room: Mississippi) Thu 10:45 AM - 12:00 PM
The Micro-Cluster Showcase: 7 Inexpensive Beowulf Clusters for Teaching PDC
  Joel Adams, Calvin College
  Jacob Caswell, St. Olaf College
  Suzanne Matthews, U.S. Military Academy
  Charles Peck, Earlham College
  Elizabeth Shoop, Macalester College
  David Toth, Centre College
  James Wolfer, Indiana University, South Bend

Panel (room: L10) Thu 10:45 AM - 12:00 PM
How to Use Open Source Software in Education
  Judith Bishop, Microsoft Research
  Carlos Jensen, Oregon State University
  Walt Scacchi, University of California
  Arfon Smith, GitHub Inc

Supporter Session: Piazza (room: River Bluff) Thu 10:45 AM - 12:00 PM
Research vs. Teaching: What 500 Faculty Conversations Taught Me About Student Engagement
  Tony Luckett, Director of Partnerships

Supporter Session: Teradata (room: Sultana) Thu 10:45 AM - 12:00 PM
Leveraging the Teradata University Network for Data Management Courses
  Karen Davis, Professor, ECE, College of Engineering and Applied Sciences,
  University of Cincinnati
  Susan Baskin, Director, Teradata University Network, Teradata

THURSDAY 12:00 PM - 1:45 PM
LUNCH: FirstTimer's - SIGCSE Award for Lifetime Service to the Computer Science Education Community - Barbara Boucher Owens - Southwestern University
Applying Formal Models of Instructional Design to Measurably Improve Learning in Introductory Computing
   Austin Cory Bart, Virginia Tech

Learning to Program Using Online Forums, A Comparison of Links Posted on Reddit and Stack Overflow
   Caroline D. Hardin, University of Wisconsin-Madison

Open Sourcing the Classroom
   Mike Izbicki, University of California, Riverside

A Wavelet Transform Module for a Speech Recognition Virtual Machine
   Euisung Kim, Minnesota State University, Mankato

Monitoring - An Intervention to Improve Team Results in Software Engineering Education
   Maira Marques, Universidad de Chile

Pair Programming for Teaching Mobile Development
   Mohammed Seyam, Virginia Tech

Community and Collaboration in an All-female Immersive Computer Science Program
   Jeff Stern, University of Michigan

Implementing K-Means Clustering and Collaborative Filtering to Enhance Sustainability of Project Repositories
   Matthew Steuerer, The College of New Jersey

Web-based Visual Programming for Media Computation using Blockly
   Jake Trower, University of Alabama

An Evaluation of Cluster 3.0 as a General Tool for Principal Component Analysis
   Alex Bender, Eastern Mennonite University

Detecting Insider Attacks with Video Websites using Distributed Image Steganalysis
   Christopher Francis-Christie, Kennesaw State University

Programming by Voice to Support Hour of Code for Children with Motor Disabilities
   Caitlin Hanley, University of Alabama
The Role of Chronology in Analyzing Introductory Programming Assignments
Kayla Holcomb, Abilene Christian University
Nevan Simone, Abilene Christian University

A Simple Line Game With Real-Time Visualization of the Internal Data Structure
John Huff, Ohio University

3D-Printed Animatronic Hand with Wireless Mirroring Glove and Precision Control
Cyrus Xiyuan Liu, Wake Forest University

Robotic Navigation Through Gesture Based Control
Nickolas McCarley, University of Alabama

Advances in Phylogenetic-based Stemma Construction
Andrew Miller, The College of New Jersey
Nathan Gould, The College of New Jersey

Syntactic hint generation for Introductory Programming Problems
Aayush Mudgal, Indian Institute of Technology, Kanpur

Novel Logical Reasoning Tutor
Matthew Pfister, Clemson University

Loop Invariants: Learning to Help Teach
Caleb Priester, Clemson University

Mobile Security via Reverse Tether
Donna Young, Kennesaw State University
## THURSDAY 1:45 PM - 3:00 PM

### Papers: Pair Programming (room: L11-L12)

<table>
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<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
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<tr>
<td>1:45 PM</td>
<td>Teaching Mobile Development with Pair Programming</td>
<td>Mohammed Seyam, Virginia Tech, D. Scott McCrickard, Virginia Tech</td>
</tr>
<tr>
<td>2:10 PM</td>
<td>Observations of Pair Programming: Variations in Collaboration Across Demographic Groups</td>
<td>Omar Ruvalcaba, California State University, Northridge, Linda Werner, University of California, Santa Cruz, Jill Denner, Education, Training, and Research</td>
</tr>
<tr>
<td>2:35 PM</td>
<td>Three Years of Student Pair Programming – Action Research Insights And Outcomes</td>
<td>Ian McChesney, Ulster University</td>
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### Papers: Engagement and Diversity (room: L13-L14)

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<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
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<tr>
<td>1:45 PM</td>
<td>Enhancing Engagement by Blending Rigor and Relevance</td>
<td>Sarnath Ramnath, St Cloud state U, John Hoover, St Cloud state U</td>
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<tr>
<td>2:10 PM</td>
<td>Understanding How Research Experiences for Undergraduate Students May Foster Diversity In The Professorate</td>
<td>Burcin Tamer, Computing Research Association, Jane Stout, Computing Research Association</td>
</tr>
<tr>
<td>2:35 PM</td>
<td>Applying the Communal Goal Congruity Perspective to Enhance Diversity and Inclusion in Undergraduate Computing Degrees</td>
<td>Bo Brinkman, Miami University, Amanda Diekman, Miami University</td>
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### Papers: CS Ed Research 1 (room: L5-L6)

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<th>Time</th>
<th>Title</th>
<th>Authors</th>
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<tr>
<td>1:45 PM</td>
<td>An Effective Approach to Enhancing Compiler Error Messages</td>
<td>Brett A. Becker, University College Dublin</td>
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<tr>
<td>2:10 PM</td>
<td>Automatic Inference of Programming Performance and Experience from Typing Patterns</td>
<td>Juho Leinonen, University of Helsinki, Krista Longi, University of Helsinki, Arto Klami, University of Helsinki, Arto Vihavainen, University of Helsinki</td>
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</tbody>
</table>
### Preliminary Program

**SIGCSE 2016 Symposium**

2:35 PM  
A (Updated) Review of Empiricism at the SIGCSE Technical Symposium  
*Ahmed Al-Zubidy, University of Alabama*  
*Jeffrey Carver, University of Alabama*  
*Sarah Heckman, North Carolina State University*  
*Mark Sheriff, University of Virginia*

### Papers: CS0 (room: L2-L3)  
Thu 1:45 PM - 3:00 PM

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
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</table>
| 1:45 PM | CS0 for Computer Science Majors at Ohio University                  | *Cindy Marling, Ohio University*  
*David Juedes, Ohio University* |
| 2:10 PM | Security Injections 2.0: Increasing Ability to Apply Secure Coding Knowledge using Segmented and Interactive Modules in CS0 | *Sagar Raina, Towson University*  
*Siddharth Kaza, Towson University*  
*Blair Taylor, Towson University* |
| 2:35 PM | Combining “Big Data” and “Thick Data” Analyses for Understanding Youth Learning Trajectories in a Summer Coding Camp | *Deborah Fields, Utah State University*  
*Lisa Quirke, University of Toronto*  
*Janell Amely, Utah State University*  
*Jason Maughan, Utah State University* |

### Special Session (room: Cotton Row)  
Thu 1:45 PM - 3:00 PM

Training Teachers to Integrate Computational Thinking into K-12 Teaching  
*Rania Hodhod, Columbus State University*  
*Shamim Khan, Columbus State University*  
*Yesem Kurt-Peker, Columbus State University*  
*Lydia Ray, Columbus State University*  

### Special Session (room: Steamboat)  
Thu 1:45 PM - 3:00 PM

Demystifying Computing with Magic, part III  
*Daniel Garcia, UC Berkeley*  
*David Ginat, Tel-Aviv University*  

### Panel (room: Mississippi)  
Thu 1:45 PM - 3:00 PM

Panel: Engage in Reasoning with Tools  
*Greg Kulczycki, Virginia Tech*  
*Murali Sitaraman, Clemson University*  
*Nigamanth Sridhar, Cleveland State University*  
*Bruce Weide, The Ohio State University*
Supporter Session: Google (room: Sultana)
Thu 1:45 PM - 3:00 PM

Up Close and Personal with Google CS Programs

Chris Stephenson, Head of Computer Science Education Programs, Google
### Demos (room: Exhibit Hall)  Thu 3:00 PM - 3:45 PM

The Speech Recognition Virtual Kitchen Toolkit  
*Rebecca Bates, Minnesota State University, Mankato*  
*Sung Kim, Minnesota State University, Mankato*

The Sensorian Shield: Transforming the Raspberry Pi into an IoT Platform  
*Qusay Mahmoud, UOIT*  
*Dhimiter Qendri, UOIT*  
*Michael Lescisin, UOIT*

### NSF Showcase (room: Exhibit Hall)  Thu 3:00 PM - 4:30 PM

Bringing Real-World Data And Visualizations Into Data Structures Courses Using BRIDGES  
*Kalpathi Subramanian, UNC Charlotte*  
*Jamie Payton, UNC Charlotte*  
*David Burlinson, UNC Charlotte*  
*Mihai Mehedint, UNC Charlotte*

Software Tutors for Introductory Programming: Epplets, Codelets and Problets  
*Amruth N. Kumar, Ramapo College of New Jersey*

Customizable Visualizations for Introducing Database Concepts to Many Majors  
*Suzanne W. Dietrich, Arizona State Univ.*  
*Don Goelman, Villanova Univ.*

Transforming Computer Science Education Research Through Use of Appropriate Empirical Research Methods: Mentoring and Tutorials  
*Jeffrey Carver, Univ. of Alabama*  
*Sarah Heckman, NC State Univ.*  
*Mark Sherriff, Univ. of Virginia*
<table>
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<tr>
<th>Time</th>
<th>Session</th>
<th>Authors/Institutions</th>
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</table>
| 3:45 PM | Papers: Big Data (room: L11-L12)                                                             | VisMap: Exploratory Visualization Support for Introductory Data Science and Visualization  
Dugald Hutchings, Elon University  
Megan Squire, Elon University  
A Practical and Sustainable Model for Learning and Teaching Data Science  
Bina Ramamurthy, University at Buffalo  
Teaching Big Data with a Virtual Cluster  
Joshua Eckroth, Stetson University |
| 4:10 PM | Papers: Teaching with Teams (room: L13-L14)                                                  | Teaching Global Software Engineering by Simulating a Global Project in the Classroom  
Yang Li, Technische Universitaet Muenchen  
Stephan Krusche, Technische Universitaet Muenchen  
Christian Lescher, Technische Universitaet Muenchen  
Bernd Bruegge, Technische Universitaet Muenchen  
Evaluating Student Teams: Do Educators Know What Students Think?  
Anya Tafliovich, University of Toronto Scarborough  
Andrew Petersen, University of Toronto Mississauga  
Jennifer Campbell, University of Toronto  
Exploring Lightweight Teams in a Distributed Learning Environment  
Stephen MacNeil, University of North Carolina at Charlotte  
Celine Latulipe, University of North Carolina at Charlotte  
Bruce Long, University of North Carolina at Charlotte  
Aman Yadav, Michigan State University |
| 4:35 PM | Papers: Program Design (room: L5-L6)                                                          | Modernizing Plan-Composition Studies  
Kathi Fisler, WPI  
Shriram Krishnamurthi, Brown University  
Janet Siegmund, Universität Passau  
On the Interplay Between Bottom-Up and Datatype-Driven Program Design  
Francisco Enrique Vicente Castro, Worcester Polytechnic Institute  
Kathi Fisler, Worcester Polytechnic Institute |
4:35 PM  Can Students Design Software? The Answer Is More Complex Than You Think  
Chenglie Hu, Carroll University

Papers: Scratch (room: L2-L3)  Thu 3:45 PM - 5:00 PM

3:45 PM  ITCH: Individual Testing Of Computer Homework For Scratch Assignments  
David Johnson, University of Utah

4:10 PM  Multi-Track Programming Competitions with Scratch  
Jason Arnold, Marquette University  
Heather Bort, Marquette University  
Ryan Naugle, Marquette University  
Casey O’Hare, Marquette University  
Dennis Brylow, Marquette University

4:35 PM  Initialization in Scratch: Seeking Knowledge Transfer  
Diana Franklin, University of Chicago  
Charlotte Hill, University of California, Santa Barbara  
Hilary Dwyer, University of California, Santa Barbara  
Alexandria Hansen, University of California, Santa Barbara  
Ashley Iveland, University of California, Santa Barbara  
Danielle Harlow, University of California, Santa Barbara

Special Session (room: Cotton Row)  Thu 3:45 PM - 5:00 PM

Special Session: ACM Joint Task Force on Cybersecurity Education  
Diana Burley, George Washington University  
Matt Bishop, University of California, Davis  
Elizabeth Hawthorne, Union County College  
Siddharth Kaza, Towson University  
Lynn Futcher, Nelson Mandela Metropolitan University  
Scott Buck, Intel

Panel (room: Steamboat)  Thu 3:45 PM - 5:00 PM

Technology We Can’t Live Without!, revisited  
Daniel Garcia, UC Berkeley  
Leslie Aaronson, Forshay Learning Center  
Shawn Kenner, Sharon High School  
Colleen Lewis, Harvey Mudd College  
Susan Rodger, Duke University
### Preliminary Program

#### Panel (room: Mississippi)
**Thu 3:45 PM - 5:00 PM**

**igniteCS: Addressing Undergraduate CS Retention**
- Erin Cannon, Google
- Priya Chawla, University of Cincinnati
- Katherine Lo, University of California, Irvine
- Haley Adams, Rhodes College

#### Special Session (room: L10)
**Thu 3:45 PM - 5:00 PM**

**Instructional Design is to Teaching as Software Engineering is to Programming**
- Austin Cory Bart, Virginia Tech
- Clifford Shaffer, Virginia Tech

#### Supporter Session: Zybooks (room: River Bluff)
**Thu 3:45 PM - 5:00 PM**

**Improving CS Teaching: Automated Homework/Labs, Shared Quizzes/Assignments, Student Activity Insights and More**
- Smita Bakshi, zyBooks co-founder/CEO
- Frank Vahid, zyBooks co-founder/CTO and Professor, University of California-Riverside
- Roman Lysecky, Professor, University of Arizona

#### Supporter Session: Oracle (room: Sultana)
**Thu 3:45 PM - 5:00 PM**

**Solve it with SQL - Use SQL to Solve a Mystery**
- Bruce Regittko, Oracle Academy Principal Instructor
## THURSDAY 5:30 PM - 7:30 PM

### Birds of a Feather Flock 1

**Universal Access to Computing Education** (room: Heritage 1, Sheraton)

- Richard Ladner, University of Washington
- Brianna Blaser, University of Washington
- Andreas Stefik, University of Nevada Las Vegas
- Daniela Marghitu, Auburn University

**Updates to the ABET Computing Accreditation Criteria** (room: Heritage 2, Sheraton)

- Allen Parrish, The University of Alabama
- Stan Thomas, Wake Forest University

**Fostering Computational Creativity through Computing in the Arts: A Community of Educators**

- Susan Reiser, UNC Asheville
- Rebecca Bruce, UNC Asheville
- Jennifer Burg, Wake Forest University
- Bill Manaris, College of Charleston

**Birds of Feather: Teaching with Alice** (room: Heritage 4, Sheraton)

- Donald Slater, Carnegie Mellon University
- Wanda Dann, Carnegie Mellon University
- Stephen Cooper, Stanford University

**Small Department Initiative** (room: St. Louis, Sheraton)

- Cathy Bareiss, Olivet Nazarene University

**Reseaching Programming Education with Blackbox** (room: Natchez, Sheraton)

- Neil Brown, University of Kent
- Amjad Altadmri, University of Kent

**Mentoring Student Teaching Assistants for Computer Science** (room: Beale, Sheraton)

- Charles Garrod, Carnegie Mellon University
- Jeffrey Forbes, Duke University
- Colleen Lewis, Harvey Mudd College
- Peter-Michael Osera, Grinnell College
Practical Methods for Broadening Participation Through Student Engagement in CS1/CS2 Courses
(room: Memphis, Sheraton)
Beth Quinn, University of Colorado at Boulder
Alvaro Monge, California State University, Long Beach
Lecia Barker, University of Texas at Austin
Leo Porter, University of California, San Diego
Daniel Zingaro, University of Toronto, Mississauga

A Town Meeting: SIGCSE Committee on Expanding the Women-in-Computing Community (room: Knoxville, Sheraton)
Gloria Townsend, DePauw University

SIGCSE Reads: Time for Book Discussion (room: Chattanooga, Sheraton)
Rebecca Bates, Minnesota State University, Mankato
Valerie Summet, Emory University

Teaching Track Faculty in CS (room: Jackson, Sheraton)
Mark Sherriff, University of Virginia
Dan Garcia, University of California, Berkeley

POGIL in Computer Science for Beginners and Experts (room: Oxford, Sheraton)
Chris Mayfield, James Madison University
Clif Kussmaul, Muhlenberg College
Saturnino Garcia, University of San Diego
Helen Hu, Westminster College
Tammy Pirmann, School District of Springfield Township

Preparing to Teach Humanitarian Open Source (room: Gatlinburg, Sheraton)
Heidi Ellis, Western New England University
Stoney Jackson, Western New England University
Gregory Hislop, Drexel University
S. Monisha Pulimood, The College of New Jersey
Gina Likins, Red Hat - University Outreach

CS Ed PhD Students Unite! (room: Azelea, Sheraton)
Briana Morrison, Georgia Institute of Technology
Jennifer Tsan, North Carolina State University
Rachel Harsley, University of Illinois at Chicago
Francisco Enrique Vicente Castro, Worcester Polytechnic Institute

Defining Concepts, Practices, and Standards for K-12 CS (room: L11-12, Convention Center)
Pat Yongpradit, Code.org
Bonnie MacKellar, St John’s University
Karen Jin, University of New Hampshire at Manchester

<table>
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<th>Birds of a Feather Flock 2</th>
<th>6:30 PM - 7:20 PM</th>
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<tbody>
<tr>
<td>How Do You Teach Debugging? Resources and Strategies for Better Student Debugging (room: Heritage 1, Sheraton)</td>
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<td>Colleen Lewis, Harvey Mudd College</td>
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<td>Chris Gregg, Tufts University</td>
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</tbody>
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Teaching CS to Students of Color (room: Heritage 2, Sheraton)
Jakita Thomas, Spelman College
Shaundra Daily, University of Florida
Mikala Streeter, Mikala Streeter Preparatory School

Current Initiatives and Future Directions of the Computer Science Teachers Association (CSTA) (room: Heritage 3, Sheraton)
David Reed, Creighton University/CSTA
Mark Nelson, Computer Science Teachers Association (CSTA)

Web Programming (room: Heritage 4, Sheraton)
Marty Stepp, Stanford University
Allison Obourn, University of Washington
Jessica Wolk, Microsoft Research
Victoria Kirst, Google

Mathematical Reasoning in Computing Education: Connecting Math We Teach with Writing Correct Programs Birds-of-a-Feather (room: St. Louis, Sheraton)
John Dougherty, Haverford College
Joseph Hollingsworth, Indiana University Southeast
Joan Krone, Denison University
Murali Sitaraman, Clemson University

Exploring Learning Analytics for Computing Education (room: Natchez, Sheraton)
Chris Hundhausen, Washington State University
Adam Carter, Washington State University

Handling Very Large Lecture Courses: Keeping the Wheels on the Bus II (room: Beale, Sheraton)
Josh Hug, UC Berkeley
Daniel D. Garcia, UC Berkeley
Setting Quantifiable Goals for Broadening Participation in Computing (room: Memphis, Sheraton)

Kate Lockwood, University of St. Thomas
Maureen Doyle, Northern Kentucky University

Computer Science Summer Camps: Making Summer Programs Fun and Sustainable (room: Knoxville, Sheraton)

David Johnson, University of Utah, School of Computing

Leveraging CS Teachable Moments in the Maker Movement (room: Chattanooga, Sheraton)

Jennifer (Ginger) Alford, Trinity Valley School/Fort Worth Museum of Science and History
Erik Brunvand, University of Utah

Brainstorming Data Science as a Fluency Course for Non-Majors and as a New Specialization (room: Jackson, Sheraton)

Lillian Cassel, Villanova University
Don Goelman, Villanova University
Darina Dicheva, Winston Salem State University
Heikki Topi, Bentley University

Competency Based Education in Lower-Division Computer Science Taught at Community Colleges (room: Oxford, Sheraton)

Amardeep Kahlon, Austin Community College
Linda Smarzik, Austin Community College
Mary Kohls, Austin Community College

Assessment of Security Knowledge, Skills and Abilities using Hands-On Exercises in 2016 (room: Gatlinburg, Sheraton)

Richard Weiss, The Evergreen State College
Jens Mache, Lewis & Clark College
Michael Locasto, University of Calgary
Blair Taylor, Towson University
Siddharth Kaza, Towson University
Ambareen Siraj, Tennessee Tech University
Elizabeth Hawthorne, Union County College

Student ICTD Research and Service Learning Abroad (room: Azelea, Sheraton)

Joseph Mertz, Carnegie Mellon University

Increasing Programming Contest Participation for Fun and Profit (room: L11-12, Convention Center)

Aaron Bloomfield, University of Virginia
Borja Sotomayor, University of Chicago
Providing Impactful Professional Development Teachers Can Implement (room: L13-14, Convention Center)

*Kathy Menchaca Isbister, Stanford University*

**THURSDAY 7:30 PM - 9:30 PM**
**Reception (room: Ballroom A)**
FRIDAY 8:30 AM - 10:00 AM
Plenary Session - SIGCSE Award for Outstanding Contribution to Computer Science Education - Jan Cuny - National Science Foundation

FRIDAY 10:00 AM - 10:45 AM
Break, Exhibits & Demos

Demos (room: Exhibit Hall) Fri 10:00 AM - 10:45 AM
Creating and Grading IPython/Jupyter Notebook Assignments with NbGrader
Jessica Hamrick, University of California, Berkeley

CodeSnaps: Block-Based Robotic Programming for the Low-Budget Classroom
Jennifer Sabourin, SAS Institute, Inc
Lucy Kosturko, SAS Institute, Inc
Scott McQuiggan, SAS Institute, Inc

NSF Showcase (room: Exhibit Hall) Fri 10:00 AM - 11:30 AM
Integrating Mobile Computing and Security into a Computer Science Curriculum
Xiaohong Yuan, NC A&T Univ.
Kenneth Williams, NC A&T Univ.
Jinsheng Xu, NC A&T Univ.
Kelvin Bryant, NC A&T Univ.

CS1: Creative Computation in the Context of Art and Visual Media
Dianna Xu, Bryn Mawr College
Ira Greenberg, Southern Methodist Univ.
Deepak Kumar, Bryn Mawr College
Aaron Cadle, Fort Worth Country Day School
Ursula Wolz, RiverSound Solutions

Collaborative Education: Building a Skilled Software Verification and Validation User Community
Sushil Acharya, Robert Morris Univ.
Priyadarshan Manohar, Robert Morris Univ.
Peter Wu, Robert Morris Univ.

Supporting Student Learning in Humanitarian Free and Open Source Software (HFOSS) Projects
Heidi J. C. Ellis, Western New England Univ.
Darci Burdge, Nassau Community College
Gregory W. Hislop, Drexel Univ.
Posters (room: Exhibit Hall)  Fri 10:00 AM - 12:00 PM

Integrating Sustainability Concepts into Introductory Programming Courses  
Jeffrey Stone, Penn State University

The Development of Internationalized Computational Thinking Curriculum in Hong Kong Primary Education  
Gary K. W. Wong, The Hong Kong Institute of Education  
Kening Zhu, City University of Hong Kong  
Xiaojuan Ma, The Hong Kong University of Science and Technology  
John Huen, Koding Kingdom

A Holistic Sequence of Programming Assignments for CS2  
Joanna Klukowska, Courant Institute of Mathematical Sciences, New York University  
Stewart Weiss, Hunter College of the City University of New York

Combating Perceptions of Computer Scientists: A Short-term Intervention  
Shaundra Daily, University of Florida  
Alison Leonard, Clemson University  
Sophie Jörg, Clemson University  
Sabarish Babu, Clemson University  
Nikeetha Dsouza, Clemson University  
Dhaval Parmar, Clemson University  
Kara Gunderesen, University of Florida  
Joseph Isaac, Clemson University

Coding, Designing, and Logistics; How Modes Affect Equity In Computer Science Education  
Declan McClintock, Michigan State University  
Niral Shah, Michigan State University

Lights, Camera, but no Action: Exploring Affective Audio-Visual Features of Educational Videos  
Abhay Doke, Tata Research Development and Design Centre  
Niranjan Pedanekar, Tata Research Development and Design Centre

Increasing security awareness in undergraduate courses with labware  
Michael Weeks, Department of Computer Science, Georgia State University  
Yi Pan, Department of Computer Science, Georgia State University  
Yanqing Zhang, Department of Computer Science, Georgia State University
Visualizing Algorithm Analysis Topics

Mohammed Farghally, Virginia Tech
Eric Fouh, Lehigh University
Sally Hamouda, Virginia Tech
Kyu Han Koh, Virginia Tech
Clifford Shaffer, Virginia Tech

The Impact on Student Learning and Satisfaction When a CS2 Course Became Interactive

Steven Huss-Lederman, Beloit College

A Certification-Guided Course for Cloud Computing

Dahai Guo, Florida Gulf Coast University
Anna Koufakou, Florida Gulf Coast University

Automated Analysis of Student Programmer Coding Behavior Patterns

Clinton Staley, California Polytechnic State University, SLO
Corey Ford, California Polytechnic State University, SLO

SPOCK – A System for Encouraging Interaction in Small Private Online Courses

Ryan Hardt, University of Wisconsin-Eau Claire
Grant Wuerker, University of Wisconsin-Eau Claire

Broadening the Path to Cybersecurity Profession in Predominantly Undergraduate and Liberal Arts Institutions

Xenia Mountrouidou, Wofford College
Xiangyang Li, Johns Hopkins University

Leveraging Context to Create Opportunistic Co-Located Learning Environments

Stephen MacNeil, University of North Carolina at Charlotte
Celine Latulipe, University of North Carolina at Charlotte

Student Perceptions of Success in Computer Science Senior Capstone Projects

Rick Parker, University of Colorado at Boulder

Using Small Whiteboards to Engage Students in Active Learning

Victor Norman, Calvin College
Serita Nelesen, Calvin College

Design and Evaluation of a Course Module on Android Cipher Programming

Jinsheng Xu, North Carolina A&T State University
Xiaohong Yuan, North Carolina A&T State University
Ashrith Velma, North Carolina A&T State University
Building Pre-Service Teacher Interest in Computer Science Education through Mentoring Experiences
Kim Huett, University of West Georgia
Mary Alice Varga, University of West Georgia

Computing with a Community Focus: An App Inventor Summer Camp for Middle School Students
Lijun Ni, University of Massachusetts Lowell
Mark Sherman, University of Massachusetts Lowell
Diane Schilder, Evaluation Analysis Solutions
Fred Martin, University of Massachusetts Lowell

Exploring gamification to teach computer science to non-computer science related major
Lorena Martinez-Elizalde, ITESM
Monica Duarte-Dominguez, ITESM

Using Learning Analytics to Trace Academic Trajectories of CS and IT Students to Better Understanding Successful Pathways to Graduation
Huzefa Rangwala, George Mason University
Omaima Almatrafi, George Mason University
Aditya Johri, George Mason University
Jaime Lester, George Mason University

Promote Self-efficacy in Learning of Mobile App and Security with Real-World Relevant Laboratory
Kai Qian, Kennesaw State University
Dan Lo, Kennesaw State University

Data Science for All: An Introductory Course for Non-Majors, in Flipped Format
Lillian Cassel, Villanova University
Darina Dicheva, Winston Salem State University
Christo Dichev, Winston Salem State University
Don Goelman, Villanova University
Michael Posner, Villanova University

Clashroom: A Game to Enhance the Classroom Experience
Shannon Duvall, Elon University
Dan Eagle, Credit Karma
Riese Narcisse, Credit Suisse
Thomas Price, NC State University
We Have Questions: Pedagogical, Technical, and Procedural Assistance Requests in a Large Computational Thinking Curriculum Research Project

Hilarie Nickerson, University of Colorado - Boulder
Jeffrey Bush, University of Colorado - Boulder
Yasko Endo, University of Colorado - Boulder

Autograding and Feedback for Snap!, a visual programming language

Michael Ball, UC Berkeley
Daniel Garcia, UC Berkeley
### FRIDAY 10:45 AM - 12:00 PM

#### Papers: Peer Techniques (room: L11-L12)

**10:45 AM**  
Differences in the Learning Principles Dominating Student-Student vs. Student-Instructor Interactions while Working on Programming Tasks  
*Alessio Gaspar, University of South Florida*  
*Joni Torsella, University of Cincinnati*  
*Nora Honken, University of Cincinnati*  
*Sohum Sohoni, Arizona State University*  
*Colin Arnold, University of South Florida*

**11:10 AM**  
The Effects of Peer- and Self-assessment on the Assessors  
*Joonsuk Park, Cornell University*  
*Kimberly Williams, Cornell University*

**11:35 AM**  
The Sweep: Essential Examples for In-Flow Peer Review  
*Joe Gibbs Politz, Brown University*  
*Joseph Collard, UMass Amherst*  
*Arjun Guha, UMass Amherst*  
*Kathi Fisler, Worcester Polytechnic Institute*  
*Shriram Krishnamurthi, Brown University*

#### Papers: Artistic Approaches (room: L13-L14)

**10:45 AM**  
The MoveLab: Developing Congruence Between Students’ Self-Concepts and Computing  
*Kayla DesPortes, Georgia Institute of Technology*  
*Monet Spells, Georgia Institute of Technology*  
*Betsy DiSalvo, Georgia Institute of Technology*

**11:10 AM**  
Creative Computation in High School  
*Dianna Xu, Bryn Mawr College*  
*Aaron Cadle, Fort Worth Country Day School*  
*Darby Thompson, Sidwell Friends School*  
*Ursula Wolz, RiverSound Solutions*  
*Ira Greenberg, Southern Methodist University*  
*Deepak Kumar, Bryn Mawr College*

**11:35 AM**  
Computational Art - Introducing High School Students to Computing via Art  
*Zoe Wood, California Polytechnic State University*  
*Paul Muhl, Santa Barbara High School*  
*Katelyn Hicks, California Polytechnic State University*
Papers: Tests and Outcomes (room: L5-L6)  Fri 10:45 AM - 12:00 PM

10:45 AM  Introducing and Evaluating Exam Wrappers in CS2
Michelle Craig, University of Toronto
Diane Horton, University of Toronto
Daniel Zingaro, University of Toronto Mississauga
Danny Heap, University of Toronto

11:10 AM  Measuring Effects of Modality on Perceived Test Anxiety for Computer Programming Exams
Robert Deloatch, University of Illinois Urbana Champaign
Brian Bailey, University of Illinois Urbana Champaign
Alex Kirlik, University of Illinois Urbana Champaign

11:35 AM  Impact of Student Achievement Goals on CS1 Outcomes
Daniel Zingaro, University of Toronto Mississauga
Leo Porter, University of California, San Diego

Papers: High School Diversity (room: L2-L3)  Fri 10:45 AM - 12:00 PM

10:45 AM  Towards More Gender Diversity in CS through an Artificial Intelligence Summer Program for High School Girls
Marie Vachovsky, Stanford University
Grace Wu, Stanford University
Sorathan Chaturapruek, Stanford University
Olga Russakovsky, Stanford University
Richard Sommer, Stanford University
Li Fei-Fei, Stanford University

11:10 AM  Investigating the Role of Being a Mentor as a Way of Increasing Interest in Computer Science
Jody Clarke-Midura, Utah State University
Vicki Allan, Utah State University
Kevin Close, Utah State University

11:35 AM  Sisters Rise Up 4 CS: Helping Female Students Pass the Advanced Placement Computer Science A Exam
Barbara Ericson, Georgia Institute of Technology
Miranda Parker, Georgia Institute of Technology
Shelly Engelman, SageFox Consulting Group
Panel (room: Cotton Row)  Fri 10:45 AM - 12:00 PM
Future Directions of Block-based Programming
   Neil Brown, University of Kent
   Jens Mönig, SAP Labs
   Anthony Bau, Phillips Exeter Academy
   David Weintrop, Northwestern University

Panel (room: Steamboat)  Fri 10:45 AM - 12:00 PM
Why Don't Some CS0 Students Succeed? How Important Are Background, Experience, Culture, Aptitude, Habits and Attitude?
   Daniel Garcia, University of California, Berkeley
   Stuart Reges, University of Washington
   Colleen Lewis, Harvey Mudd College
   Nathan Ensmenger, Indiana University

Panel (room: Mississippi)  Fri 10:45 AM - 12:00 PM
Scrum and Agile Methods in Software Engineering Courses
   Jennifer Campbell, University of Toronto
   Stan Kurkovsky, Central Connecticut State University
   Chun Wai Liew, Lafayette College
   Anya Tafliovich, University of Toronto Scarborough

Supporter Session: Vocareum (room: River Bluff)  Fri 10:45 AM - 12:00 PM
Assessment at Scale: The Next Frontier for Universal Computing Literacy
   Sanjay Srivastava, CEO, Vocareum

Supporter Session: Ibm (room: Sultana)  Fri 10:45 AM - 12:00 PM
IBM Supporter Session

FRIDAY 12:00 PM - 1:45 PM
LUNCH: on your own

FRIDAY 12:00 PM - 1:45 PM
Alice 3 to Java – Celebration with the Ghost Train Crew (lunch event, room: Ballroom B)

FRIDAY 12:00 PM - 1:45 PM
New AP Computer Science Principles Course (lunch event, room: L10)
## FRIDAY 1:45 PM - 3:00 PM

### Papers: Problem Solving (room: L11-L12)  
Fri 1:45 PM - 3:00 PM

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<th>Time</th>
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<tr>
<td>1:45 PM</td>
<td>Online CS1: Who Enrols, Why, and How Do They Do?</td>
<td>Diane Horton, University of Toronto</td>
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<td>Jennifer Campbell, University of Toronto</td>
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<td>Michelle Craig, University of Toronto</td>
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</tbody>
</table>
| 2:10 PM| The Influence of Problem Solving Abilities on Students’ Performance on Different Assessment Tasks in CS1. | Alex Lishinski, Michigan State University  
Aman Yadav, Michigan State University  
Richard Enbody, Michigan State University  
Jonathon Good, Michigan State University |
| 2:35 PM| A Course on Programming and Problem Solving                          | Swapneel Sheth, University of Pennsylvania  
Christian Murphy, University of Pennsylvania  
Kenneth Ross, Columbia University  
Dennis Shasha, New York University |

### Papers: Novel Learning Approaches (room: L13-L14)  
Fri 1:45 PM - 3:00 PM

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<th>Time</th>
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| 1:45 PM| The Video Collaboratory as a Learning Environment                     | Vikash Singh, University of North Carolina at Charlotte  
Sarah Abdellahi, University of North Carolina at Charlotte  
Mary Lou Maher, University of North Carolina at Charlotte  
Celine Latulipe, University of North Carolina at Charlotte |
| 2:10 PM| Just-In-Time Learning for the Just Google It Era                      | Elizabeth Boese Boese, University of Colorado - Boulder |
| 2:35 PM| Hackathons as an Informal Learning Platform                            | Arnab Nandi, The Ohio State University  
Meris Mandernach, The Ohio State University |
### Papers: CS Ed Research 2 (room: L5-L6)  
**Fri 1:45 PM - 3:00 PM**

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<th>Time</th>
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| 1:45 PM| A Multi-institutional Study of Peer Instruction in Introductory Computing | Leo Porter, University of California, San Diego  
Dennis Bouvier, Southern Illinois Univ.-Edwardsville  
Quentin Cutts, University of Glasgow  
Scott Grissom, Grand Valley State University  
Cynthia Lee, Stanford University  
Robert McCartney, University of Connecticut  
Daniel Zingaro, University of Toronto, Mississauga  
Beth Simon, University of California, San Diego |
| 2:10 PM| Development of a Concept Inventory for Computer Science Introductory Programming | Ricardo Caceffo, UNICAMP  
Steven Wolfman, University of British Columbia  
Kellogg Booth, University of British Columbia  
Rodolfo Azevedo, UNICAMP |
| 2:35 PM| A data-driven analysis of informatively hard concepts in introductory programming | Rudolf Wiegand, University of Central Florida  
Anthony Bucci, Independent Contractor  
Amruth Kumar, Ramapo College of New Jersey  
Jennifer Albert, The Citadel  
Alessio Gaspar, University of South Florida |

### Papers: K-8 Diversity (room: L2-L3)  
**Fri 1:45 PM - 3:00 PM**

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| 1:45 PM| How Early Does the CS Gender Gap Emerge? A Study of Collaborative Problem Solving in 5th Grade Computer Science | Jennifer Tsan, North Carolina State University  
Kristy Boyer, University of Florida  
Collin Lynch, North Carolina State University |
| 2:10 PM| Differentiating for Diversity: Using Universal Design for Learning in Computer Science Education | Alexandria Hansen, University of California, Santa Barbara  
Eric Hansen, Hope Elementary School, Santa Barbara  
Hilary Dwyer, University of California, Santa Barbara  
Danielle Harlow, University of California, Santa Barbara  
Diana Franklin, University of Chicago |
2:35 PM  Empowering All Students: Closing the CS Confidence Gap with an In-School Intervention for Middle School Students
Philip Buffum, North Carolina State University
Megan Frankosky, North Carolina State University
Kristy Boyer, University of Florida
Eric Wiebe, North Carolina State University
Bradford Mott, North Carolina State University
James Lester, North Carolina State University

Special Session (room: Cotton Row)  Fri 1:45 PM - 3:00 PM
AP Computer Science and Service Learning with We.org
Lien Diaz, College Board
Sandy Czajka, Riverside Brookfield High School
Crystal Furman, College Board

Special Session (room: Mississippi)  Fri 1:45 PM - 3:00 PM
Updating Curricular Guidelines for Associate-Degree Computer Science Programs
Cara Tang, Portland Community College
Cindy Tucker, Bluegrass Community and Technical College
Elizabeth Hawthorne, Union County College

Panel (room: Steamboat)  Fri 1:45 PM - 3:00 PM
CS10K Teachers by 2017? Try CS1K+ students NOW! Coping with the Largest CS1 Courses in History
Daniel Garcia, UC Berkeley
Jennifer Campbell, University of Toronto
John DeNero, UC Berkeley
Mary Lou Dorf, University of Michigan
Stuart Reges, University of Washington

Supporter Session: Google (room: Sultana)  Fri 1:45 PM - 3:00 PM
Surfacing Solutions to the Capacity Crunch
Maggie Johnson, Director of Education and University Relations at Google
Jeff Offut, George Mason University
Heather Pon-Barry, Mount Holyoke College
Kristy Boyer, North Carolina State University/University of Florida
Andrew Tang, Rutgers University
John DeNero, UC Berkeley
### Demos (room: Exhibit Hall) Fri 3:00 PM - 3:45 PM

**OnRamp to Parallel and Distributed Computing: Web-portal for teaching parallel and distributed computing**  
*Samanta Foley, University of Wisconsin-La Crosse*  
*Joshua Hursey, University of Wisconsin-La Crosse*

**Education Modules for Networking, Cloud Computing and Security in Systems Courses**  
*Jay Aikat, UNC - Chapel Hill*  
*Michael Reiter, UNC - Chapel Hill*  
*Kevin Jeffay, UNC - Chapel Hill*

### NSF Showcase (room: Exhibit Hall) Fri 3:00 PM - 4:30 PM

**Increasing Retention in Engineering and Computer Science with a Focus on At-Risk First Year and Sophomore Students**  
*Tammy VonDeGrift, Univ. of Portland*

**Bolstering Security Education in Browser Security**  
*Wenliang Du, Syracuse Univ.*  
*Li Yang, UT Chattanooga*  
*Xiaohong Yuan, NC A&T Univ.*

**On Beyond Sudoku: Pencil Puzzles as an Engaging Problem Domain for Intro CS**  
*Zack Butler, Rochester Institute of Technology*  
*Ivona Bezakova, Rochester Institute of Technology*

**Computational Creativity to Improve CS Education**  
*Leen-Kiat Soh, University of Nebraska*  
*Duane Shell, University of Nebraska*

### Poster Session (room: Exhibit Hall) Fri 3:00 PM - 5:00 PM

**Combining Flipped Learning with Gamification to Improve Student Performance in a Data Structures Course**  
*Darina Dicheva, Winston Salem State University*
Assessing the Effectiveness of Experiential-Learning-Based Teaching Tools in Cybersecurity Courses
Xiaohong Yuan, North Carolina A&T State University
Jinsheng Xu, North Carolina A&T State University
Huiming Yu, North Carolina A&T State University
Jungh Kim, North Carolina A&T State University
Taehee Kim, North Carolina A&T State University

Teaching and Learning in an Introductory Undergraduate Programming Class: A Reflective Autoethnography
S. Zahra Atiq, Purdue University, West Lafayette

18 hours of code with 5th grade students
Katie Davis, California Polytechnic State University – San Luis Obispo
John Wilcox, Peabody Charter School
Zoë Wood, California Polytechnic State University – San Luis Obispo

Multifaceted Efforts to Create an Inclusive Environment and Increase Diversity
Perry Fizzano, Western Washington University
David Hartenstine, Western Washington University

Deepening Learning in High School Computer Science through Practices from the NGSS
Marie Bienkowski, SRI International

Replicating a Validated CS1 Assessment
Miranda Parker, Georgia Institute of Technology
Mark Guzdial, Georgia Institute of Technology

Assessing the Development of Computer Science Pedagogical Content Knowledge in the TEALS Program
Yvonne Kao, WestEd
Leigh Ann DeLyser, CSNYC
Aleata Hubbard, WestEd

A Curiosity-Driven System for Developing Coding Literacy
Neeraj Chatlani, Rollins College
Daniel Myers, Rollins College

Teaching Software Engineering Skills in CS1.5: Incorporating Real-world Practices and Tools
Sarah Heckman, NC State University
Jason King, NC State University
Designing and Refining of Questions to Assess Students’ Ability to Mentally Simulate Programs and Predict Program Behavior

Ashish Aggarwal, University of Florida
Christina McCune, University of Florida
David Touretzky, Carnegie Mellon University

Megas and Gigas Educate (MaGE): A Curricular Peer Mentoring Program

Heather Pon-Barry, Mount Holyoke College
Audrey St. John, Mount Holyoke College
Becky Packard, Mount Holyoke College
Barbara Rotundo, Mount Holyoke College

Pixels, Post-It’s® and CS Principles

Jeffrey Popyack, Drexel University
William Mongan, Drexel University

Adventures in K-5 STEM Outreach Using the NAO Robot

Steven Hadfield, United States Air Force Academy
Christopher Coulston, Pennsylvania State University - Erie
Marissa Hadfield, Academy School District 20
Lillian Warner, United States Air Force Academy

Engaging School Counselors, Creating Computing Allies

Sarah Hug, University of Colorado, Boulder
Jane Krauss, NCWIT

OnRamp to Parallel and Distributed Computing

Samantha Foley, University of Wisconsin-La Crosse
Joshua Hursey, University of Wisconsin-La Crosse

Teaching Computational Thinking Through Bio-Design

Johanna Okerlund, UNC at Charlotte
Orit Shaer, Wellesley College
Celine Latulipe, UNC at Charlotte
User Experience/Feedback - Rensselaer Polytechnic Institute Homework Submission Server
Andrea Wong, Rensselaer Polytechnic Institute
Eric Tran, Rensselaer Polytechnic Institute
Joe Jung, Rensselaer Polytechnic Institute
Marina Espinoza, Rensselaer Polytechnic Institute
Ben Shaw, Rensselaer Polytechnic Institute
Beverly Sihsbhohn, Rensselaer Polytechnic Institute
Melissa Lindquist, Rensselaer Polytechnic Institute
Samuel Breese, Rensselaer Polytechnic Institute
Matthew Peveler, Rensselaer Polytechnic Institute
Barbara Cutler, Rensselaer Polytechnic Institute

Guiding Career Development Prior to Capstone Experiences
Deborah Knox, The College of New Jersey

Bigger Isn’t Better When It Comes to Online Computer Science Teacher Communities
Mackenzie Leake, Stanford University
Colleen Lewis, Harvey Mudd College

The Sol y Agua Project: Enhancing Middle School Education through Computing with an Emphasis on Simulation and Data Science
Ann Gates, University of Texas at El Paso
Mary Roy, University of Texas at El Paso
Monika Akbar, University of Texas at El Paso
Florence Larssen, Cyber-ShARE Center, University of Texas at El Paso
Ivonne Lopez, Cyber-ShARE Center, University of Texas at El Paso
Christian Murga, Cyber-ShARE Center, University of Texas at El Paso
Angel Ortega, Cyber-ShARE Center, University of Texas at El Paso
Jesus Tellez, Cyber-ShARE Center, University of Texas at El Paso
Rebecca Urbina, Cyber-ShARE Center, University of Texas at El Paso

An Expert System for the Prediction of Student Performance in an Initial Computer Science Course
Michael Kuehn, University of North Dakota
Jarred Estad, University of North Dakota
Jeremy Straub, University of North Dakota
Tom Stokke, University of North Dakota

A web-based environment for developing and utilizing teaching languages for novice computer science students
Benjamin Kruger, Northeastern State University
Richard Matzen, Northeastern State University
FunWithSound: A Music Composition and Synthesis Library for Processing

David Hovemeyer, York College of Pennsylvania

Exploring Computer Science in the Liberal Arts

Gary Skuse, Rochester Institute of Technology
Daniel Walzer, University of Massachusetts at Lowell
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| 3:45 PM | Students’ syntactic mistakes in writing seven different types of SQL queries and its application to predicting students’ success | Alireza Ahadi, University of Technology Sydney  
Vahid Behbood, University of Technology Sydney  
Julia Prior, University of Technology Sydney  
Arto Vihavainen, University of Helsinki  
Raymond Lister, University of Technology Sydney |
| 4:10 PM | chidb: Building a Simple Relational Database System from Scratch               | Borja Sotomayor, University of Chicago - Department of Computer Science  
Adam Shaw, University of Chicago - Department of Computer Science |
| 4:35 PM | SQL: From Traditional Databases to Big Data                                   | Yasin Silva, Arizona State University  
Isadora Almeida, Arizona State University  
Michell Queiroz, Arizona State University |
| 3:45 PM | The Performance of Female Computer Science Students across Three Caribbean Islands | Daniel Fokum, The University of the West Indies, Mona  
Daniel Coore, The University of the West Indies, Mona  
Yewande Lewis-Fokum, The University of the West Indies, Mona |
| 4:10 PM | Piloting Computer Science Education Week in Mexico                           | Nora Escherle, Ph FHNW  
Silvia I. Ramirez-Ramirez, Department of Computer Science, Tecnológico de Monterrey  
Ashok Basawapatna, Dept. Mathematics, Computer & Information Science, SUNY, Old Westbury  
Dorit Assaf, School of Education, FHNW  
Alexander Repenning, School of Education, FHNW  
Carmine Maiello, School of Education, FHNW  
Yasko Endo, University of Colorado, Boulder  
Juan Nolazco-Flores, Department of Computer Science, Tecnológico de Monterrey |
| 4:35 PM | Alice in the Middle East: An experience report from the formative phase       | Saquib Razak, Carnegie Mellon University  
Huda Gedawy, Carnegie Mellon University  
Wanda Dann, Carnegie Mellon University  
Donald Slater, Carnegie Mellon University |
Papers:

Software Testing (room: L5-L6)

3:45 PM  
**Testing Strategies for the Automated Grading of Student Programs**  
*Chris Wilcox, Colorado State University*

4:10 PM  
**A strategy to combine test-driven development and test criteria to improve learning of programming skills**  
*Bruno Henrique Pachulski Camara, Faculdade Integrado, Federal University of Technology - Paraná*  
*Marco Aurélio Graciotto Silva, Federal University of Technology - Paraná*

4:35 PM  
**Tool Design and Student Testing Behavior in an Introductory Java Course**  
*Grant Braught, Dickinson College*  
*James Midkiff, Dickinson College*

CS Principles (room: L2-L3)

3:45 PM  
**An Experience Report Assessing A Professional Development MOOC For CS Principles**  
*Jeff Gray, The University of Alabama*  
*Jonathan Corley, The University of Alabama*  
*Brian Eddy, University of West Florida*

4:10 PM  
**Two Teachers, Two Perspectives on CS Principles**  
*Jean Griffin, Temple University*  
*Tammy Pirmann, Gwynedd Mercy University*  
*Brent Gray, Carver Engineering and Science High School*

4:35 PM  
**Lessons Learned from "BJC" CS Principles Professional Development**  
*Thomas W. Price, NC State University*  
*Veronica Catete, NC State University*  
*Jennifer Albert, The Citadel*  
*Tiffany Barnes, NC State University*  
*Daniel D. Garcia, UC Berkeley*

Beale St. Sampler (room: Cotton Row)

3:45 PM  
**A Survey of Ethical Agreements in Information Security Courses**  
*Benedict Chukuka, University of Calgary*  
*Michael Locasto, University of Calgary*

4:10 PM  
**Assessing the Tier-1 Core Learning Outcomes of CS2013**  
*James McGuffee, Northern Kentucky University*  
*E, Palmer, MacMurray College*  
*Indira Guzman, Trident University International*
4:35 PM  
**Seeing Is Believing: Helping Students Visualize Multithreaded Behavior**

*Joel Adams, Calvin College*

*Patrick Crain, Calvin College*

*Christopher Dilley, Calvin College*

*Serita Nelesen, Calvin College*

*Javin Unger, Calvin College*

*Mark Vander Stel, Calvin College*

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**Panel (room: Steamboat)  Fri 3:45 PM - 5:00 PM**

**Booming Enrollments – Survey Data**

*Tracy Camp, Colorado School of Mines*

*Stu Zweben, The Ohio State University*

*Duncan Buell, University of South Carolina*

*Jane Stout, Computing Research Association*

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**Panel (room: Mississippi)  Fri 3:45 PM - 5:00 PM**

**Uncommon Teaching Languages**

*Mark Lewis, Trinity University*

*Douglas Blank, Bryn Mawr College*

*Kim Bruce, Pomona College*

*Peter-Michael Osera, Grinnell College*

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**Supporter Session: Turing’S Craft (room: River Bluff)  Fri 3:45 PM - 5:00 PM**

**Creating Exercises and Engaging With Students**

*David Arnow, President of Turing’s Craft*

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**Supporter Session: Microsoft (room: Sultana)  Fri 3:45 PM - 5:00 PM**

**The BBC micro:bit powered by Microsoft Touch Develop**

*Tom Ball, Research Manager, Microsoft Research*

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**Lightning Talk (room: L10)  Fri 3:45 PM - 5:00 PM**

**Study Support Eliminates the Negative Impact of Gender Stereotypes on Women’s Self-Concept**

*Jane Stout, Computing Research Association*

*Burcin Tamer, Computing Research Association*

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**Computational Making: What Does this Theory Mean for SIGCSE?**

*Jennifer Rode, Drexel University*

*Andrea Marshall, Drexel University*

*Houda El Mimouni, Drexel University*

*Jennifer Booker, Drexel University*
Complexity Tutor: developing an interactive tutoring system for computational complexity
  Mark McCartin-Lim, University of Massachusetts Amherst

A Body of Knowledge for Usable Security and Privacy Education
  Yousra Javed, UNC Charlotte
  Heather Richter Lipford, UNC Charlotte

U.S Army’s Cyber Leader Development Program
  James Finocchiaro, Army Cyber Institute at West Point, NY

Using Instant Chat for Fun and for Profit to Run a Large Class
  Michael Ball, UC Berkeley

Crossing the Streams: Exploring the Interplay between Students’ Online Social Activity and Programming Behavior
  Adam Carter, Washington State University
  Christopher Hundhausen, Washington State University

Social Network Analysis as a Tool for Understanding Student Interaction in Project-based Courses
  Bonnie MacKellar, St John's University

Enhancing teaching of Big Data by using real world datasets
  Anurag Nagar, University of Texas at Dallas

A “Grand Tour” of Computer Science: Re-Designing CS1 for Breadth and Retention
  Natalie Linnell, Santa Clara University
  Nicholas Tran, Santa Clara University

Raising the Awareness of Accessibility Needs in Block Languages
  Amber Wagner, Kennesaw State University
  Jeff Gray, University of Alabama
  Daniela Marghitu, Auburn University
  Andreas Stefik, University of Nevada, Las Vegas

You wouldn’t know it from SIGCSE proceedings, but we don’t only teach CS1
  Colleen Lewis, Harvey Mudd College
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<tbody>
<tr>
<td>FRIDAY 5:10 PM - 6:00 PM</td>
<td>SIGCSE Business Meeting (room: Cotton Row)</td>
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<tr>
<td>FRIDAY 6:00 PM - 7:00 PM</td>
<td>NCWIT Reception (room: Heritage Ballroom, Sheraton)</td>
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<tr>
<td>FRIDAY 6:10 PM - 7:00 PM</td>
<td>CCSC Business Meeting (room: Cotton Row)</td>
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<tr>
<td>FRIDAY 6:30 PM - 8:00 PM</td>
<td>Community College Reception Sponsored by Intel (room: Nashville, Sheraton)</td>
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</tbody>
</table>
FRIDAY 7:00 PM - 10:00 PM
Workshops

Workshop #301: A Hands-On Introduction to the Internet of Things (room: L1)
  Bill Siever, Western Illinois University
  Michael Rogers, Northwest Missouri State University

Workshop #302: Introducing Secure Coding in CS0, CS1, and CS2 (room: L2-L3)
  Blair Taylor, Towson University
  Siddharth Kaza, Towson University

Workshop #303: Building on Blocks: Getting Started With Frames in Greenfoot 3 (room: L5-L6)
  Amjad Altadmri, University of Kent
  Neil Brown, University of Kent

Workshop #304: Rubricking Like a Boss: Writing and Using Rubrics for Faster, Fairer Grading of Student Programs (room: L8)
  Don Blaheta, Longwood University
  Adrienne Decker, Rochester Institute of Technology

Workshop #305: Permeating Data Visualization in CS Courses (room: L9)
  Aaron Cadle, Fort Worth Country Day School
  Ira Greenberg, Southern Methodist University
  Deepak Kumar, Bryn Mawr College
  Dianna Xu, Bryn Mawr College
  Ursula Wolz, RiverSound Solutions

Workshop #306: Learn CS1/2 by Playing and Building Commercial Grade Casual Games: No Background Required (room: L10)
  Kelvin Sung, University of Washington Bothell
  Rob Nash, University of Washington Bothell
  Jason Pace, University of Washington Bothell

Workshop #307: CSinParallel: Using WebMapReduce to teach parallel computing concepts, hands-on (room: L11-L12)
  Richard Brown Brown, St. Olaf College
  Elizabeth Shoop, Macalester College
  Joel Adams, Calvin College

Workshop #308: MUzECS: Block-based Arduino Programming for Exploring Computer Science (room: L13-L14)
  Dennis Brylow, Marquette University
Workshop #309: How to Plan and Run Summer Computing Camps - Logistics (room: River Bluff)
Barbara Ericson, Georgia Institute of Technology
Kristine Nagel, Georgia Gwinnett College
Nannette Napier, Georgia Gwinnett College
Krishnendu Roy, Valdosta State University

Workshop #310: K-12 Teacher Support for Computer Science Principles: An Introduction to the UTeach Course, Thriving in Our Digital World: AP (room: Sultana)
Jeff Mickel, The UTeach Institute, The University of Texas at Austin
Alicia Beth, The UTeach Institute, The University of Texas at Austin

Workshop #311: Conducting educational research in the computer science classroom: Choosing the appropriate research design to address your research questions. (room: Mississippi)
Aman Yadav, Michigan State University

Workshop #312: AP CS Principles and The Beauty and Joy of Computing Curriculum (room: Cotton Row)
Daniel Garcia, UC Berkeley
Tiffany Barnes, NC State
Michael Ball, UC Berkeley
Emil Biga, Millard North High School
Josh Paley, Gunn High School
Marnie Hill, J. H. Rose High School
Nathan Mattix, Piedmont High School
Parisa Safa, Urban School of San Francisco
Sean Morris, Albany High School
Shawn Kenner, Sharon High School
## Papers: Computer Engineering (room: L11-L12)

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
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</table>
| 8:45 AM | Effects of a Program Integrating Course for Students of Computer Science and Engineering | Viggo Kann, KTH Royal Institute of Technology  
Anna-Karin Högfeldt, KTH Royal Institute of Technology |
| 9:10 AM | Undergraduate Assembly Language Instruction Sweetened with the Raspberry Pi | Jalal Kawash, University of Calgary  
Andrew Kuipers, University of Calgary  
Leonard Manzara, University of Calgary  
Robert Collier, Carleton University |
| 9:35 AM | Droning On: Reflections on Integrating UAV Technology into a Computer Engineering Design Laboratory | Meriel Huggard, Trinity College Dublin  
Ciarán Mc Goldrick, Trinity College Dublin |

## Papers: Out-of-school Activities (room: L13-L14)

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<tr>
<th>Time</th>
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</table>
| 8:45 AM | Meeting Graduate Employability Needs Through Open-source Collaboration with Industry | Matthew Forshaw, Newcastle University  
Ellis Solaiman, Newcastle University  
Oonagh McGee, Newcastle University  
Hugo Firth, Newcastle University  
Paul Robinson, Red Hat, Inc.  
Ryan Emerson, Red Hat, Inc. |
| 9:10 AM | Computer History on the Move                                          | Graham Farr, Monash University  
Barbara Ainsworth, Monash University  
Chris Avram, Monash University  
Judy Sheard, Monash University |
| 9:35 AM | Agile Software Development: Study Away                                | Maureen Doyle, Northern Kentucky University  
Candace Gibson, Northern Kentucky University  
Michelle Melish, Northern Kentucky University  
Rees Storm, Northern Kentucky University |
## Papers: Classroom Techniques (room: L5-L6)  
**Sat 8:45 AM - 10:00 AM**

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<tr>
<th>Time</th>
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<th>Authors</th>
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</table>
| 8:45 AM | Animated Examples as Practice Content in Java Programming Course    | Roya Hosseini, University of Pittsburgh  
Teemu Sirkiä, Aalto University  
Julio Guerra, University of Pittsburgh  
Peter Brusilovsky, University of Pittsburgh  
Lauri Malmi, Aalto University |
| 9:10 AM | Improving Engagement in Introductory Courses with Homework Resubmission | Amanda Holland-Minkley, Washington & Jefferson College  
Thomas Lombardi, Washington & Jefferson College |
| 9:35 AM | Memory Diagrams: A Consistant Approach Across Concepts and Languages | Toby Dragon, Ithaca College  
Paul Dickson, Ithaca College |

## Papers: Computing in Middle School (room: L2-L3)  
**Sat 8:45 AM - 10:00 AM**

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<tr>
<th>Time</th>
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</table>
| 8:45 AM | MyCS at 5: Assessing a Middle-years CS Curriculum                    | Brenda Castro, Harvey Mudd College  
Terrence Diaz, Harvey Mudd College  
Marissa Gee, Harvey Mudd College  
Rebekah Justice, Harvey Mudd College  
David Kwan, Harvey Mudd College  
Preethi Seshadri, Harvey Mudd College  
Zachary Dodds, Harvey Mudd College |
| 9:10 AM | Factors Influencing Computer Science Learning in Middle School       | Shuchi Grover, Stanford University/SRI International  
Roy Pea, Stanford University  
Stephen Cooper, Stanford University |
Daisy Rutstein, SRI International  
Eric Snow, SRI International |

## Papers: Games (room: Cotton Row)  
**Sat 8:45 AM - 10:00 AM**

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<tr>
<th>Time</th>
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</table>
| 8:45 AM | A Multidisciplinary, Multifaceted Approach to Improve the Computer Science based Game Design Education: Methodology and Assessment | Chang Yun, University of Houston  
Hesam Panahi, University of Houston  
Zhigang Deng, University of Houston |
9:10 AM  Design Insights into the Creation and Evaluation of a Computer Science Educational Game
Britton Horn, Northeastern University
Christopher Clark, Northeastern University
Oskar Strom, Northeastern University
Hilery Chao, Brown University
Amy Stahl, Northeastern University
Casper Harteveld, Northeastern University
Gillian Smith, Northeastern University

9:35 AM  Experiences from an Experiential Learning Course on Games Development
Stephan Krusche, Technische Universität München
Barbara Reichart, Technische Universität München
Paul Tolstoi, Technische Universität München
Bernd Brüegge, Technische Universität München

Student Research Competition
Sat 8:45 AM - 10:00 AM
Undergraduate Semi-finalist Presentations (room: L8)
Graduate Semi-finalist Presentations (room: L9)

Special Session (room: Steamboat)
Sat 8:45 AM - 10:00 AM
Nifty Assignments
Nick Parlante, Stanford University
Julie Zelenski, Stanford University
Kevin Wayne, Princeton University
John DeNero, University of California, Berkeley
Baker Franke, Code.org
Arvind Bhusnurmath, University of Pennsylvania
Karen Her, University of Pennsylvania
Kristen Gee, University of Pennsylvania
Eric Manley, Drake University
Timothy Urness, Drake University
Marvin Zhang, University of California, Berkeley

Supporter Session: Gradescope (room: River Bluff)
Sat 8:45 AM - 10:00 AM
Build an Autograder in 45 Minutes
Arjun Singh, Gradescope CEO & Co-founder

Supporter Session: Github (room: Sultana)
Sat 8:45 AM - 10:00 AM
Classroom for GitHub: A Tool Designed for Educators
Patrick McKenna, GitHub Trainer
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<td>10:00 AM - 10:45 AM</td>
<td>Break, Exhibits &amp; Demos</td>
<td>Exhibit Hall</td>
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<tr>
<td>10:00 AM - 10:45 AM</td>
<td>Demos (room: Exhibit Hall)</td>
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<tr>
<td>10:00 AM - 11:30 AM</td>
<td>NSF Showcase (room: Exhibit Hall)</td>
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<td>NSF Showcase</td>
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**Demos (room: Exhibit Hall) - Sat 10:00 AM - 10:45 AM**

**Bringing Real-World Data And Visualizations Into Data Structures Courses Using BRIDGES**
- Kalpathi Subramanian, The University of North Carolina at Charlotte
- Jamie Payton, The University of North Carolina at Charlotte
- David Burlinson, The University of North Carolina at Charlotte
- Mihai Mehedint, The University of North Carolina at Charlotte

**ParseIT: A Tool for Teaching Parsing Techniques**
- Amey Karkare, IIT Kanpur
- Nimisha Agarwal, IIT Kanpur

**NSF Showcase (room: Exhibit Hall) - Sat 10:00 AM - 11:30 AM**

**Bringing a Rigorous CS Principles Course to the Largest School System in the U.S.**
- Dan Garcia, UC Berkeley
- Brian Harvey, UC Berkeley
- Tiffany Barnes, NC State
- June Mark, EDC
- E. Paul Goldenberg, EDC

**Patternlets and TSGL: CSinParallel Tools for Visualizing Parallel Behavior**
- Joel C. Adams, Calvin College
- Richard Brown, St. Olaf College
- Elizabeth Shoop, Mcalester College

**Computing in the Arts: Multidisciplinary I**
- Susan Reiser, UNC Asheville
- Rebecca Bruce, UNC Asheville

**Collaborative Project: Building Virtual Research, Interactive, Service, and Experiential Learning Modules for Cyber Security Education**
- Feng Li, Purdue
### SATURDAY 10:45 AM - 12:00 PM

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<tr>
<th>Time</th>
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*Nathan Backman, Buena Vista University*  
A Reflective Approach to Assessing Student Performance in Cybersecurity Exercises  
*Richard Weiss, The Evergreen State College*  
*Michael Locasto, University of Calgary*  
*Jens Mache, Lewis and Clark College*  
The Teaching Privacy Curriculum  
*Serge Egelman, International Computer Science Institute*  
*Julia Bernd, International Computer Science Institute*  
*Gerald Friedland, International Computer Science Institute*  
*Daniel Garcia, University of California, Berkeley*  
A Programming Contest Strategy Guide  
*Aaron Bloomfield, University of Virginia*  
*Borja Sotomayor, University of Chicago*  
Teaching "Lawfulness" With Kodu  
*David Touretzky, Carnegie Mellon University*  
*Christina Gardner-McCune, University of Florida*  
*Ashish Aggarwal, University of Florida*  
Datathons: An Experience Report of Data Hackathons for Data Science Education  
*Craig Anslow, Middlesex University*  
*John Brosz, University of Calgary*  
*Frank Maurer, University of Calgary*  
*Mike Boyes, University of Calgary*  
Retention of Flow: Evaluating a Computer Science Education Week Activity  
*Alexander Repenning, School of Education FHNW*  
*Ashok Basawapatna, SUNY Old Westbury*  
*Dorit Assaf, School of Education FHNW*  
*Carmine Maiello, School of Education FHNW*  
*Nora Escherle, School of Education FHNW* |
11:10 AM  Students' Initial Course Motivation and Their Achievement and Retention in College CS1 Courses  
Duane F. Shell, University of Nebraska-Lincoln  
Leen-Kiat Soh, University of Nebraska-Lincoln  
Abraham Flanigan, University of Nebraska-Lincoln  
Markeya Peteranetz, University of Nebraska-Lincoln

11:35 AM  Towards a Common Framework for Evaluating Computing Outreach Activities  
Adrienne Decker, Rochester Institute of Technology  
Monica M. McGill, Bradley University  
Amber Settle, DePaul University

Papers: K-12 Teaching (room: L2-L3)  Sat 10:45 AM - 12:00 PM
10:45 AM  CS Teacher Experiences with Educational Technology, Problem-Based Learning, and a CS Principles Curriculum  
George Veletsianos, Royal Roads University  
Bradley Beth, The University of Texas at Austin  
Calvin Lin, The University of Texas at Austin

11:10 AM  Contextualized Teaching in the Lower Secondary Education * Long-term Evaluation of a CS Course from Grade 6 to 10  
Arno Pasternak, TU Dortmund

11:35 AM  Landscape of K-12 Computer Science Education in the U.S.: Perceptions, Access, and Barriers  
Jennifer Wang, Google, Inc.  
Hai Hong, Google, Inc.  
Jason Ravitz, Google, Inc.  
Sepehr Moghadam, Google, Inc.

Papers: Tools (room: Cotton Row)  Sat 10:45 AM - 12:00 PM
10:45 AM  Supporting Active Learning by Introducing an Interactive Teaching Tool in a Data Structures and Algorithms Course  
Tommy Färnqvist, Linköping University  
Fredrik Heintz, Linköping University  
Patrick Lambrix, Linköping University  
Linda Mannila, Åbo Akademi University  
Chunyan Wang, Linköping University
11:10 AM  Incorporating Analogies and Worked Out Examples as Pedagogical Strategies in a Computer Science Tutoring System  
*Rachel Harsley, University of Illinois at Chicago*  
*Nick Green, University of Illinois at Chicago*  
*Mehrdad Alizedah, University of Illinois at Chicago*  
*Sabita Acharya, University of Illinois at Chicago*  
*Davide Fossati, Carnegie Mellon University in Qatar*  
*Barbara Di Eugenio, University of Illinois at Chicago*  
*Omar AlZoubi, Carnegie Mellon University in Qatar*

11:35 AM  SEURAT_Edu: A Tool to Assist and Assess Student Decision-Making in Design  
*John Malloy, Miami University*  
*Janet Burge, Wesleyan University*

**Special Session (room: Steamboat)**  
Sat 10:45 AM - 12:00 PM  
Advanced Placement Computer Science Principles (APCSP): A Report from Teachers  
*Owen Astrachan, Duke University*  
*R. Brook Osborne, Code.org*

**Special Session (room: Mississippi)**  
Sat 10:45 AM - 12:00 PM  
Special Session: Helping Students to Develop Communication, Teamwork, and Other Process Skills with POGIL  
*Clifton Kussmaul, Muhlenberg College*  
*Helen Hu, Westminster College*  
*Tammy Pirmann, School District of Springfield Township*

**SATURDAY 12:00 PM - 2:00 PM**  
Luncheon - Karen Lee Ashcraft - University of Colorado Boulder

**SATURDAY 3:00 PM - 6:00 PM**  
Affiliated Event (room: L8)  
Community College Curriculum Development Workshop: Computer Science and Cybersecurity  
*Elizabeth Hawthorne*
Workshop #401: JavaScript Applications for CS0/CS1: Getting Hands-on with Code.org’s App Lab
(room: L1)
Baker Franke, Code.org
Sarah Filman, Code.org
Brook Osborne, Code.org

Workshop #402: Programming Web Services on the Cloud with Node.js (room: L2-L3)
Ariel Ortiz, Tecnologico de Monterrey, Campus Estado de Mexico

Workshop #403: Teaching Robotics Using ROS (room: L5-L6)
Nathan Sprague, James Madison University
Ralph Grove, James Madison University

Workshop #405: Advanced Placement Computer Science Principles Performance Task: Create – Applications from Ideas, Approaches to Programming Collaboratively. It’s a Hackathon Workshop! (room: L9)
Lien Diaz, College Board
Richard Kick, Newbury Park High School
Andrew Kuemmel, Madison West High School

Workshop #406: Scaling up for CS10K: Teaching and Supporting New Computer Science High School Teachers (room: L10)
Tiffany Barnes, North Carolina State University
Jamie Payton, University of North Carolina at Charlotte
Daniel Garcia, University of California and Berkeley

Workshop #407: App Development for All! (room: L11-L12)
David Hayes, Lane Tech College Prep High School (Chicago Public Schools)
Dale Reed, University of Illinois at Chicago

Workshop #408: Mixing Code and 3D Printers with Madeup (room: L13-L14)
Chris Johnson, University of Wisconsin, Eau Claire
Heather Amthauer, University of Wisconsin, Eau Claire
Ryan Hardt, University of Wisconsin, Eau Claire
Peter Bui, University of Notre Dame
Workshop #409: Infusing Cooperative Learning into Early Computer Science Courses to Support Improved Engagement (room: River Bluff)

*Fran Trees, Rutgers University*
*Jeff Gray, University of Alabama*
*Owen Astrachan, Duke University*

Workshop #410: Solving the Cloud Computing Impasse with MBaaS (room: Sultana)

*Michael Rogers, Northwest Missouri State University*
*Bill Siever, Western Illinois University*

Workshop #411: Reviewing NSF Proposals: Learn about Effective Proposal Writing via the Review Process (room: Mississippi)

*Paul Tymann, The National Science Foundation*
*Michael Erlinger, The National Science Foundation*

Workshop #412: Transition to Java Using Alice 3 (room: Cotton Row)

*Donald Slater, Alice Project, Carnegie Mellon University*
*Wanda Dann, Alice Project, Carnegie Mellon University*