SIGCSE 2016 HIGHLIGHTS FOR K-12 Educators

WEDNESDAY

7:00 PM - 10:00 PM Workshops
*These are optional workshops that you can pay to attend.*

**Workshop #2:** Making Music with Computers: Creative Programming in Python (room: L2-L3)
  Bill Manaris, College of Charleston
  Tobias Kohn, ETH Zürich

**Workshop #3:** A Web-Based IDE for Teaching with Any Language (room: L5-L6)
  Dan Armendariz, Harvard University
  David Malan, Harvard University
  Nikolai Onken, Cloud9

**Workshop #4:** High Yield in the Short Term: Planning Strategically to Get Women into your Major (room: L8)
  Lecia Barker, University of Texas at Austin
  Leisa Thompson, University of Virginia

**Workshop #5:** Guiding Students to Discover CS Concepts and Develop Process Skills using POGIL (room: L9)
  Clifton Kussmaul, Muhlenberg College
  Helen Hu, Westminster College
  Chris Mayfield, James Madison University

**Workshop #6:** Engage, Energize and Empower Your Students with Team-Based Learning (room: L10)
  Lenore Horowitz, University at Albany
  George Berg, University at Albany
  Kimberly Van Orman, University at Albany

**Workshop #9:** 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 #10:** Lego-based Case Studies for Teaching Software Engineering Concepts throughout the Curriculum (room: Sultana)
  Stan Kurkovsky, Central Connecticut State University

**Workshop #11:** 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

THURSDAY

8:30 AM - 10:00 AM
  Plenary Session - John Sweller - UNSW Australia

10:00 AM - 10:45 AM - Break, Exhibits & Demos
  Be sure to visit the Exhibit Hall to visit vendor booths, see Demos, and get a snack!
10:45 AM - 12:00 PM - Recommended Sessions

**Papers: Computational Thinking (room: L13-L14)**
10:45 AM Investigating Differences in Wiki-based Collaborative Activities between Student Engagement Profiles in CS1
   - *Adam Eck, University of Nebraska-Lincoln*
   - *Leen-Kiat Soh, University of Nebraska-Lincoln*
   - *Duane Shell, University of Nebraska-Lincoln*
11:10 AM A Study on the Impact of Multidisciplinary Collaboration on Computational Thinking
   - *S. Monisha Pulimood, The College of New Jersey*
   - *Kim Pearson, The College of New Jersey*
   - *Diane C. Bates, The College of New Jersey*
11:35 AM Computational Thinking as Liberal Studies
   - *Dave Mason, Ryerson University*
   - *Irfan Khan, Ryerson University*
   - *Vadim Farafontov, Ryerson University*

**Papers: Research on Learning (room: L5-L6)**
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)**
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: Steamboat)**
Rediscovering the Passion, Beauty, Joy, and Awe: Making Computing Fun Again, part 8
12:00 PM - 1:45 PM - LUNCH:
If this is your first SIGCSE, be sure to go to the FirstTimer's Lunch!

1:45 PM - 3:00 PM - Recommended Sessions

**Papers: CS0 (room: L2-L3)**
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)**
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)**
Demystifying Computing with Magic, part III
   *Daniel Garcia, UC Berkeley*
   *David Ginat, Tel-Aviv University*

**Supporter Session (room: Sultana)**
Google Supporter Session - Up Close and Personal with Google CS Programs

3:00 PM - 3:45 PM - Break, Exhibits & Demos

3:45 PM - 5:00 PM - Recommended Sessions

**Papers: Scratch (room: L2-L3)**
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*
4:35 PM Initialization in Scratch: Seeking Knowledge Transfer

Heather Bort, Marquette University
Ryan Naugle, Marquette University
Casey O'Hare, Marquette University
Dennis Brylow, Marquette University

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)

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)

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

5:30 PM – 6:20 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

Fostering Computational Creativity through Computing in the Arts: A Community of Educators (room: Heritage 3, Sheraton)

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

Defining Concepts, Practices, and Standards for K-12 CS (room: L11-12, Convention Center)

Pat Yongpradit, Code.org
6:30 PM - 7:30 PM – Birds of a Feather Flock 2

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)

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

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

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

Demos (room: Exhibit Hall)
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

10:45 AM - 12:00 PM - Recommended Sessions

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: High School Diversity (room: L2-L3)
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: Steamboat)
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

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

1:45 PM - 3:00 PM - Recommended Sessions

Papers: Problem Solving (room: L11-L12)
1:45 PM Online CS1: Who Enrols, Why, and How Do They Do?
   Diane Horton, University of Toronto
   Jennifer Campbell, University of Toronto
   Michelle Craig, University of Toronto
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: CS Ed Research 2 (room: L5-L6)
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)  
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 Franksky, 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)  
AP Computer Science and Service LearningLearning with We.org  
Lien Diaz, College Board  
Sandy Czajka, Riverside Brookfield High School  
Crystal Furman, College Board

Panel (room: Steamboat)  
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
3:00 PM - 3:45 PM - Break, Exhibits & Demos

3:45 PM - 5:00 PM - Recommended Sessions

**Papers: International Perspectives (room: L13-L14)**

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: 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

6:00 PM - 7:00 PM - NCWIT Reception (room: Heritage Ballroom, Sheraton)

Visit with the folks who run the Aspirations Award for High School (and now College) girls.

7:00 PM - 10:00 PM – Workshops

These are optional workshops that you can pay to attend.
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 #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 #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 #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

SATURDAY

8:45 AM - 10:00 AM - Recommended Sessions

Papers: Computing in Middle School (room: L2-L3)
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

  Shuchi Grover, SRI International
  Daisy Rutstein, SRI International
  Eric Snow, SRI International

Special Session (room: Steamboat)
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

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

10:45 AM - 12:00 PM - Recommended Sessions

Papers: Alternative Learning Experiences (room: L13-L14)
10:45 AM A Programming Contest Strategy Guide
  Aaron Bloomfield, University of Virginia
  Borja Sotomayor, University of Chicago
11:10 AM Teaching "Lawfulness" With Kodu
  David Touretzky, Carnegie Mellon University
  Christina Gardner-McCune, University of Florida
  Ashish Aggarwal, University of Florida

Papers: CS Ed Research 3 (room: L5-L6)
10:45 AM 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

Papers: K-12 Teaching (room: L2-L3)
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.

Special Session (room: Steamboat)
Advanced Placement Computer Science Principles (APCSP): A Report from Teachers
Owen Astrachan, Duke University
R. Brook Osborne, Code.org

12:00 PM - 2:00 PM – Luncheon
This is the official closing session of SIGCSE. There are optional Workshops in the afternoon you can pay to attend.

3:00 PM - 6:00 PM – Workshops
These are optional workshops that you can pay to attend.

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 #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 #412: Transition to Java Using Alice 3 (room: Cotton Row)
Donald Slater, Alice Project, Carnegie Mellon University
Wanda Dann, Alice Project, Carnegie Mellon University