# 2021 Conference on Research in Equitable and Sustained Participation in Engineering, Computing, and Technology (RESPECT 2021)

## Virtual Conference
## 23 – 27 May 2021

IEEE

**IEEE Catalog Number:** CFP21B73-POD
**ISBN:** 978-1-6654-4906-9

**Copyright © 2021 by the Institute of Electrical and Electronics Engineers, Inc.**
**All Rights Reserved**

*Copyright and Reprint Permissions*: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number: CFP21B73-POD
ISBN (Print-On-Demand): 978-1-6654-4906-9
ISBN (Online): 978-1-6654-4905-2

**Additional Copies of This Publication Are Available From:**

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

# RESPECT 2021 | TABLE of CONTENTS


**Welcome** ..... 1

**Organizing Committee** ..... 3

**Program Committee** ..... 4

**Invited Papers** ..... 7

Networked Improvement Communities as Tools for Teacher Empowerment 8
*Joshua Childs, Rebecca Zarch, Ryan Torbey and Carol Fletcher*

Developing Introductory Computer Science Pedagogy for Black Boys 11
*Joseph Isaac Jr. and Christina Gardner-McCune*

Abolitionist Computer Science Teaching: Moving from Access to Justice 17
*Allison Ivey, Stephany Runninghawk Johnson, Max Skorodinsky, Jimmy Snyder and Joanna Goode*

Teacher and Student Empathy Interviews as an Instrument for Considering More Inclusive K-12 Computing Pathways 21
*Pati Ruiz, Kelly Mills, Quinn Burke and Merijke Coenraad*

**Research Papers** ..... 26
*Alphabetical Order by First Author's Last Name*

Making Research Practice Partnerships Work: An Assessment of The Maker Partnership 27
*Cheri Fancsali, Sarah Klevan and Zitsi Mirakhur*

Supporting Mutually Beneficial Near-Peer Mentoring Relationships Within Computing Education Programs 33
*Patricia Garcia, Melissa Perez, Sarah Bork, Devon Farrell, Barbara Ericson and Joi-Lynn Mondisa*

Female Scholars in Computer Science: The Role of Family and Other Factors in Achieving Academic Success 42
*Kathleen Hancock, Rachelle Maranon, Aaron Montgomery and Jodi Tims*

Understanding and Expanding College Students' Perceptions of Computing's Social Impact 50
*Kathleen Isenegger, Yeabtsega Birhane, Vidushi Ojha, Caroline Coxe and Colleen Lewis*

Women of Color in Computing Graduate Education: Structural Supports and Navigation Strategies for a Hostile Culture 60
*Nuria Jaumot-Pascual, Christina Silva, Audrey Martinez-Gudapakkam and Maria Ong*

First-Generation Undergraduate Women and Intersectional Obstacles to Pursuing Post-Baccalaureate Computing Degrees 69
*Kristina Kramarczuk, Jandelyn Plane and Kate Atchison*

Ready to Work: Evaluating the Role of Community Cultural Wealth during the Hiring Ready Process in Computing 77
*Stephanie Lunn and Monique Ross*

Why Do Students Enroll in AP CSP? 88
*June Mark, Julie Zeringue, Kelsey Klein, Tunisia Mitchell and Jos´e Olivares*

Emergency funding for women in undergraduate computing: Toward an asset-based model and research framework 97
*Jason Ravitz, Ruthe Farmer, Kendra Grady and Kenny Clash*

Promoting socio-polititical identification with computer science: How high school youth restory their identities through electronic textile quilts 106
*Mia Shaw, Gayeon Ji, Yi Zhang and Yasmin Kafai*

CS1 Students' Perspectives on the Computer Science Gender Gap: Achieving Equity Requires Awareness 114
*Kimberly Michelle Ying, Alexia Charis Martin, Fernando J. Rodríguez and Kristy Elizabeth Boyer*

**Short Papers..... 123**

Teachers' Perceptions of Barriers Influencing African American and Hispanic Students with Disabilities' Participation in K-12 Computer Science Education 124
*Shetay Ashford-Hanserd, Shailen Singh, Ada Muoneke and Phillip Eaglin*

Implementing Culturally Relevant Pedagogy in Computing Classrooms: Voices and Experiences from Public School Teachers 128
*Yu Chen, Lori Martin, John Underwood, Fernado Alegre, Alicia Whidden, Mahannah El-Farrah and Juana Moreno*

Culturally Sustaining Pedagogies in CS: Modern K12 Outreach and its Adaptability in a Global Crisis 133
*Jazmin Collins, Kami Otero De Owens, Vensan Cabardo, Sarah Hug, Raena Cota and Enrico Pontelli*

Computing Education Pathways from High School to Community College: What Matters to Students? 138
*Jill Denner, Heather Bell, David Torres and Julie Edwards*

Evaluating Face-to-Face vs.Virtual Pedagogical Coding Review Sessions in the CS classroom: An HBCU Case Study 143
*Edward Dillon, Briana Williams, Ayomide Ajayi, Zipporah Bright, Quinlan Kimble-Brown, Chauncey Rogers, Myles Lewis, Joseph Esema, Ben Clinkscale and Krystal L. Williams*

Exposing Early CS Majors to Coding Interview Practices: An HBCU Case Study 148
*Edward Dillon, Briana Williams, Ayomide Ajayi, Zipporah Bright, Quinlan Kimble-Brown, Chauncey Rogers, Myles Lewis, Joseph Esema, Ben Clinkscale and Krystal L. Williams*

Retaining Vulnerable Students in CS Across School Transitions: The role of Cross-Sector Collaborations 152
*Emily Green and Jill Denner*

Examining Equity in Computing-Infused Lessons Made by Novices 157
*Amy Isvik, Veronica Cateté, Erynn Elmore and Tiffany Barnes*

Computing skills, beliefs and identities in young people from underserved communities 162
*Thom Kunkeler and Hayley Leonard*

The Role of 'Intersectional Capital' in Undergraduate Women's Engagement in Research-Focused Computing Workshops 167
*Breauna Spencer, Audrey Rorrer, Sloan Davis, Sepi Hejazi Moghdam and Cori Grainger*

**Experience Reports ..... 173**

An Immersive Virtual Experience to Drive Change in Computer Science Education 174
*David Amiel and Cynthia Blitz*

Diagnosing why Representation Remains Elusive at your University: Lessons Learned from the Center for Inclusive Computing's Site Visits 179
*Carla E. Brodley, Catherine Gill and Sally Wynn*

Honoring Black Women's Work: Creating a Parent and Caring Adult Community to Support Youth STEAM Engagement 183
*Sheena Erete, Naomi Thompson, Miranda Standberry-Wallace, Bo Ju, Denise Nacu and Nichole Pinkard*

A Participatory Design Approach for Re-engaging HBCU Students in Gaming Curricula 188
*Kymberlee Hill, Jenaba Sow, Todd Shurn and Gloria Washington*

Building Common Ground: An Inter-Institutional Computing & Engineering Education Transfer Learning Community 195
*Danyelle Ireland, Rebecca Zarch, Ilana Hipshman and Ashley Clark*

Infusing Computing: Moving a Service Oriented Internship Program Online 199
*Amy Isvik, Veronica Catete, Dave Bell, Isabella Gransbury and Tiffany Barnes*

Incorporating Readings on Diversity and Inclusion into a Traditional Software Engineering Course 204
*Christian Murphy, Anya Mushakevich and Yunha Park*

Educational Programming Practices that Inspire Change: Social Justice as Situated in a Computer Programming Course 209
*Jaye Nias*

**Position Papers ..... 214**

How Colonial Continuities Underlie Algorithmic Injustices in Education 215
*Shamya Karumbaiah and Jamiella Brooks*

A Typology of Models for Integrating Computational Thinking in Science (CT+S) 221
*Ari Krakowski, Eric Greenwald, Jake Duke, Meghan Comstock and Natalie Roman*

Do Abstractions Have Politics? Toward a More Critical Algorithm Analysis 227
*Kevin Lin*

Broadening Gender in Computing for Transgender and Nonbinary Learners 232
*Amanda Menier, Rebecca Zarch and Stacey Sexton*

**Panels ..... 237**

Learner-Centered Pedagogies for Equity and Inclusion in K-12 Introductory Programming 238
*Shuchi Grover, Jill Denner, Jakita Thomas, Deborah Fields and Maya Israel*

Leveraging Community Cultural Wealth to Support K-8 CT Education in Kentucky Appalachia 240
*Emi Iwatani, Traci Tackett, Kelsey Tackett, Neil Arnett and Payton May*

Leveraging Multilingual Students' Resources for Equitable Computer Science Instruction 242
*Sharin Jacob, Sara Vogel, Rose Pozos, Patricia Ordonez and Jean Ryoo*

Panel: An intersectional approach to including disability in BPC 244
*Richard E. Ladner, Cecilia Aragon, Jerry Robinson, Jeremy A. Magruder Waisome and Rua M. Williams*

Ideology of monolingualism: How ignoring bilingualism makes society less inclusive 246
*Consuelo Carr Salas, Laura Gonzales, Carlos Evia and Manuel A. Pérez-Quiñones*

Infusing Equity and Inclusion in K-12 Computer Science Teacher Development 248
*Bryan Twarek, Charity Freeman, Michelle Friend, Maya Israel, Lilibeth Mora and Meg Ray*

Applying CAPE to Assess Equitable CS Education 250
*Carol Fletcher, Bryan Cox, Leigh Ann DeLyser and Amy Ko*

**Lightning Talks ..... 252**

Using Student Experiences to improve Student Experiences (USES): Increasing the Quality of Mentoring Thorough Perspective Taking 253
*Monica Anderson and Christy Pettit*

Designing Online Learning to be Accessible to Students with Disabilities 255
*Sheryl Burgstahler*

Learning Computing through Transformative Works: A Case Study of Game Modding 257
*Brianna Dym, Cole Rockwood and Casey Fiesler*

Ethical Speculation in the Computing Classroom 258
*Casey Fiesler*

Making a Case for Studying the Effects of Using GitHub on HBCU Students' Computational Thinking Skills 259
*Andrea Johnson*

Complementing National Retention Efforts in Computer Science with Local Support 261
*Kyla McMullen, Jeremy Waisome, Mackenzie Hirsh and Christina Gardner-McCune*

Begin Again: Why CS Education Must be Reimagined 263
*Jean Ryoo, Jane Margolis and Allison Scott*

Research, Justice, and Our Opportunity to Cultivate a Political Future Outside the Workforce 265
*Stacey Sexton*

Information Technology and Social Justice. An Interdisciplinary Approach to Enhancing Student Awareness 267
*Joycelyn Streator*

**Posters ..... 268**

Cognitive, Affective, and Politicized Trust in a Community Youth Program: A Participatory Design Research Project 269
*Cinamon Sunrise Bailey, Ibrahim Oluwajoba Adisa, Hazel Vega and Golnaz Arastoopour Irgens*

Experiences of Rural CS Principles Educators 271
*Cassandra Broneak and Jennifer Rosato*

Using Improvement Science Methodology as an Approach to Providing CS Educational Coaching 273
*Francisco Cervantes, Liesa Klyn and Alexis Wyss*

Your Voice is Power: Integrating Computing, Music, Entrepreneurship, and Social Justice Learning 274
*Chalece Delacoudray, Roxanne Moore, Joycelyn Wilson, Stephen W. Garrett, Sunni H. Newton, Meltem Alemdar, Sabrina Grossman, Jason Freeman and Hilah Barbot*

Imagine a More Ethical AI: Using Stories to Develop Teens' Awareness and Understanding of Artificial Intelligence and its Societal Impacts 276
*Stacey Forsyth, Bridget Dalton, Ellie Haberl, Benjamin Walsh, Jacqueline Smilack and Tom Yeh*

STEM-It-Yourself: Exposing rural adolescent girls to STEM through online learning 278
*Siobahn Grady, Francisca Afua Opoku-Boateng, Latasha Reid-Daniels, Natalie Tucker and Lilian Muriungi*

Defining and delivering "equity" in an RPP 281
*Roxana Hadad, Jean Ryoo, Julie Flapan and Steve Kong*

Changing the Game: Adapting Capture the Flag To Underrepresented Groups 283
*Ann-Marie Horcher*

Redesigning an Electronic Textile Activity within Exploring Computer Science for Promoting Critical Computational Engagement 285
*Gayithri Jayathirtha, Joseph Chipps and Luis Morales-Navarro*

How Do We do CS on Top of Everything Else? A Coaching Cycle Approach in Elementary School 287
*Rose Pozos, Jill Denner, Erin Asamoto, Emily Green and Samuel Severance*

Collaborative Problem-Solving Workshops for Improving Confidence and Preparation for Careers in Research for Female Undergraduate CS Students 289
*Shanon Reckinger*

Delivering Virtual K-8 Computing Professional Development in Rural KY 291
*Pati Ruiz, Emi Iwatani, Quinn Burke and Traci Tackett*

"Getting Better at Getting Better": A Connectivist Approach to Building a Community of CSEd Graduate Students 293
*Julie Smith and Alan Peterfreund*

Can a Student Organization Decrease Introductory CS Course Withdrawals among Students of Color? 295
*Khadija Stewart, Allana Johnson and Gloria Townsend*

Learning from the Journey: A Decade of Supporting Women in Computing at a Commuter State College 297
*Mary Villani and Ilknur Aydin*

Choose Your Own Adventure - Designing Equity-focused CS/CT modules for K-5 Elementary Schools 299
*Melissa Zeitz, Katie Bevan, Laura Rita, Scott Wohlers and Rachel Chouinard*

Computational thinking in elementary classrooms: Using classroom dialogue to measure equitable participation 300
*Rachel Larimore, Aman Yadav, Kathryn Rich and Niral Shah*

**Author List ..... 303**