



Current Issues in Education

Mary Lou Fulton Teachers College • Arizona State University
PO Box 37100, Phoenix, AZ 85069, USA



Mary Lou Fulton Teachers College +



Volume 22, Issue 1

January 7, 2021

ISSN 1099-839X

Shaping the Futures of Learning in the Digital Age

Helping STEM Students Thrive: Adult Learning Pathways

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Abstract: Surrounded by stories of underrepresented and first-generation students lagging behind or switching out of STEM majors, three women saw an opportunity to shift the narrative. They created a new online speaker series, *The Next 10 Years: Helping STEM Students Thrive*; where faculty, staff, and students could share ideas, learn from one another, and build a community. They were all members of the Women in STEM Cooperative, which consists of a group of volunteers who are dedicated to advancing women in STEM in their respective communities. It is now in its third season with participants from 56 institutions, eight organizations, four countries, and 23 states.

Keywords: *STEM, women, equity, thrive*

Citation: Prusko, P. T. (2021). Helping STEM students thrive: Adult learning pathways. *Current Issues in Education*, 22(1). Retrieved from <http://cie.asu.edu/ojs/index.php/cieatasu/article/view/1934> This submission is part of a special issue, *Shaping the Futures of Learning in the Digital Age*, guest-edited by Sean Leahy, Samantha Becker, Ben Scragg, and Kim Flintoff.

Accepted: 11/2/2020

Helping STEM Students Thrive: Adult Learning Pathways

Surrounded by stories of underrepresented and first-generation students lagging behind or switching out of STEM majors, three women saw an opportunity to shift the narrative. They created a new online speaker series, *The Next 10 Years: Helping STEM Students Thrive*; where faculty, staff, and students could share ideas, learn from one another, and build a community.

They were all members of the Women in STEM Cooperative, which consists of a group of volunteers who are dedicated to advancing women in STEM in their respective communities. They created this series as an attempt to address some of the systemic challenges faced by students in STEM, and highlighted opportunities for improving student success. In addition to sharing knowledge, one of the goals for this series was to provide a space where students and guest speakers could interact with one another, as well as share challenges and successes that would ultimately build a community where, together, everyone could contribute to and perpetuate stories of STEM students thriving.

The women quickly learned that there was a global desire to better understand how we can help STEM students thrive when 140 people from 56 institutions, eight organizations, four countries, and 23 states registered for this event. Institutions spanned 4-year colleges, community colleges, k-12, and the private sector. They included: Paris Ile-de-France Digital University, Universidad del Sagrado Corazón, Greenfield Community College, Harvard, Penn State, University of Wisconsin Madison, Union College, Schreiner University, Cornell, University at Buffalo, and the Society of Nuclear Medicine, to name a few.

The first in the series aired on October 11, 2017 featuring Dr. Lynne Molter, Dr. Julia Thom-Levy, Dr. Elisabeth Etopio and Dr. Richard Lamb, discussing trends and innovation in higher ed. Season One covered topics related to teaching and learning, and Season Two covered topics surrounding the STEM environment and how we might reimagine it in ways that impart a sense of belonging to women in the field. Guests and specific topics are listed in Appendix 1.

The series is currently led by four women in institutions in the Northeast. They just kicked off Season Three, *Helping STEM Students Thrive: Adult Learning Pathways*, which focuses on shifts in student demographics and how that intersects with women's experiences in different educational environments, such as community college, online schooling, undergraduate and graduate school, and alternative forms of education. This season, in addition to guests sharing their research and discussing programs they are leading, we are including the authentic, personal stories of women. The first session took place on Oct. 23, focusing on community college, with [Bilge Avci](#), Economist Working on Social Justice Issues and Policies Impacting Disadvantaged Communities, and [Dina Refki](#), Executive Director, [Center for Women in Government and Society, Rockefeller College, SUNY Albany](#), sharing their research, and [Ashley Stenel](#), PhD student, Roswell Park-Cancer Sciences sharing her journey from single mother attending community college to her PhD.

Each session begins with an introduction by our distinguished thought leaders, followed by institutional representatives who share insights from their campuses. **Participants may join the conversation, ask questions, share experiences, build networks, and learn more about:**

- Innovations that can expand female or underrepresented minority student participation and success in STEM undergraduate education,
- Effective evidence-based STEM teaching practices commonly adopted at research universities,
- Unique institutional and cultural challenges to achieving STEM diversity,
- What “difference at scale” looks like.

The author's research was on nontraditional women returning to school to study STEM. Each woman in her study initially pursued STEM, but, lacking a support system and meaningful goals, did not persist. Later in life, they arrived at a “tipping point” where all the pieces were

finally in harmony, rekindling their motivation to return to school to complete a STEM degree. Each of these women experienced a “critical event” that enabled them to see how a STEM degree could empower them to achieve personally meaningful goals. Additionally, they now had guidance from a mentor and, crucially, a support system in place. It was these transformations that initially motivated the author to start this series, in hopes that it could be a “tipping point” for other women. It begs the question: How might we use technology to connect women across the globe?

If you are interested in speaking or being added to our List-Serv please contact the coordinators of this effort. Please go here to view recordings from [2017-18](#), [2018-19](#) and [2019-20](#).

Appendix 1

Season One covered topics related to teaching and learning:

Higher Education Trends

- Lynne A. Molter, ScD, Swarthmore College, Professor of Engineering, Consortium for STEM Success
- Julia Thom Levy, PhD, Cornell University, Professor and Vice Provost for Academic Innovation
- Elisabeth Etopio, PhD, University at Buffalo, Interim Assistant Dean for Teacher Education, Interim Director of the Teacher Education Institute
- Richard Lamb, PhD, University at Buffalo, Associate Professor and Director of the Neurocognition Science Laboratory

Learning Spaces

- Jeanne L. Narum, Learning Spaces Collaboratory
- Rebecca Rotundo, MA, University at Buffalo, Instructional Technology Specialist at the Center for Educational Innovation
- Lisa Stephens, PhD, Office of the SUNY Provost, Sr. Strategist- SUNY Academic Innovation
- Xin Li, PhD, Cornell University, Associate University Librarian

Institutional Practices

- Nancy Shapiro, PhD, University System of Maryland, Associate Vice Chancellor for Education and Outreach and Special Assistant to the Chancellor
- Renetta Tull, PhD, University of Maryland, Baltimore County, Associate Vice Provost for Strategic Initiatives at the University of Maryland, Baltimore County (UMBC), and Founding Director/Co-PI for the 12-institution University System of Maryland’s (USM) PROMISE AGEP, and Co-Director/Co-PI for the USM’s Louis Stokes Alliance for Minority Participation (LSAMP)
- Letitia Thomas, PhD, University at Buffalo, Director of STEM Diversity Programs
- Amy Godert, PhD, Cornell University, Executive Director Academic Success Programs

Introductory Undergraduate Courses in STEM

- Jay Labov, PhD, National Research Council, Senior Advisor for Education and Communication, National Academies of Sciences

- Catherine Middlecamp, PhD, University of Wisconsin-Madison, Professor in the Nelson Institute for Environmental Studies
- Liesl Folks, PhD, MBA, University at Buffalo, Dean of the School of Engineering and Applied Sciences and a professor of electrical engineering
- Michael Fontaine, PhD, Cornell University, Professor and Associate Vice Provost of Undergraduate Education

Season Two covered topics looked at the STEM environment and how we might reimagine it in ways that women can have a sense of belonging.

Sexual Harassment in STEM /Sexual Harassment Report from National Academies

- Alexis Stokes, Director of Diversity, Inclusion and Belonging, Harvard John A. Paulson School of Engineering and Applied Sciences
- Sharon Nolan Weiss, Director, Equity, Diversity and Inclusion, University at Buffalo
- Irene Ngun, Associate Program Officer with Committee on Women in Science, Engineering, and Medicine (CWSEM), a standing committee of the National Academies

Course Design for Inclusion in STEM

- Roberta Sullivan, Emerging Technologies Librarian and Head of Media Services, University at Buffalo
- Martin Samuels, Harvard University
- Thomas Tobin, Program Area Director—Distance Teaching & Learning, University of Wisconsin at Madison

Mentoring Women in STEM

- Bryan Dewsbury, Assistant Professor, University of Rhode Island
- Letitia Thomas, Assistant Dean for Diversity, School of Engineering and Applied Sciences; School of Engineering and Applied Sciences, University at Buffalo
- Florence Hudson, Founder & CEO of FDHint, LLC
- Lisa Utzinger Shen, Doctoral Student, Harvard Graduate School of Education

The Current State of Women in STEM: What the Research Says

- Mia Ong, TERC
- Liesl Folks, Dean of the School of Engineering and Applied Sciences, University at Buffalo

Author Notes

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