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Education

- PhD, School of Engineering Education, Purdue University. **Aug 2015**
Dissertation: Scaffolding Early Engineering Design Learning with a Videogame: Exploring Minecraft's Influence on Design Ideation.
- MA, Sociology, Purdue University **May 2010**
Thesis: Bringing Social Psychology into Agent-Based Modeling
- BA, Sociology, Kent State University (Summa Cum Laude) **May 2008**

Positions

Current

2020 to Present, Assistant Professor of Engineering Education, University at Buffalo, SUNY

Previous

2017 to Present, Research Scientist, The Concord Consortium
2015 to 2017, Postdoctoral Researcher, The Concord Consortium
2014 & 2017, Analytical Consultant, Kimberly Clark Corporation

Publications

Articles

- Schimpf, C., Barbrook-Johnson, P., & Castellani, C. (Accepted). Cased-based modelling and scenario simulation for ex-post evaluation. *Evaluation*.
- Schimpf, C. & Castellani, B. (2020). COMPLEX-IT: A Case-Based Modeling and Scenario Simulation Platform for Social Inquiry. *Journal of Open Research Software*.
- Rahman, M.H., Schimpf, C., Xie, C., & Sha, Z. (2019). A CAD-Based Research Platform for Data-Driven Design Thinking Studies. *Journal of Mechanical Design*.
- Barbrook-Johnson, P., Schimpf, C. & Castellani, B. (2019). Reflections on the use of complexity-appropriate computational modeling for public policy evaluation in the UK. *Journal on Policy and Complex Systems*, 5 (1). pp. 55-70.
- Castellani, B., Barbrook-Johnson, P., & Schimpf, C. (2019). Case-based methods and agent-based modelling: bridging the divide to leverage their combined strengths. *International Journal of Social Research Methodology*.
- Chao, J., Xie, C., Massicotte, J., Schimpf, C., Lockwood, J., Huang, X. & Beaulieu, C. (2018). Solarize Your School: A Solar Energy System Design Challenge. *The Science Teacher*.
- Xie, C., Schimpf, C., Chao, J., Nourian, S. & Massicotte, J. (2018). Learning and teaching engineering design through modeling and simulation on a CAD platform. *Computer Applications in Engineering Education*, 1-17.
- Main, J. B., & Schimpf, C. (2017). The Underrepresentation of Women in Computing Fields: A Synthesis of Literature Using a Life Course Perspective. *IEEE Transactions on Education*, PP(99): 1-9.

Beddoes, K., & Schimpf, C. (2016). What's wrong with fairness? How discourses in higher education literature support gender inequalities. *Discourse: Studies in the Cultural Politics of Education*, 1-10.

Pawley, A. L., Schimpf, C., & Nelson, L. (2016). Gender in Engineering Education Research: A Content Analysis of Research in JEE, 1998–2012. *Journal of Engineering Education*, 105(3), 508-528.

Schimpf, C., Mercado Santiago, M., Hoegh, J., Banerjee, D. & Pawley, A. (2013). STEM Faculty and Parental Leave: Understanding an Institution's Policy within a National Policy Context through Structuration Theory. *International Journal of Gender Science and Technology* 5(2), 79-101.

Conference Proceedings

Schimpf, C, Goldstein, M.H., & Xie, C. (2020). Reflection in Time: Using Data Visualization to Identify Student Reflection Modes in Design. *127th ASEE Annual Conference & Exposition*. Presented at the American Society for Engineering Education Annual Conference, Virtual Online.

Goldstein, M.H. & Schimpf, C. (2020). Understanding How High School Students Approach Systems Design. *127th ASEE Annual Conference & Exposition*. Presented at the American Society for Engineering Education Annual Conference, Virtual Online.

Schimpf, C., Huang, X., Xie, C., Sha, Z., & Massicotte, J. (2019). Developing Instructional Design Agents to Support Novice and K-12 Design Education. *126th ASEE Annual Conference & Exposition*. Presented at the American Society for Engineering Education Annual Conference, Tampa, FL.

Dixon, C., Schimpf, C., & Hsi, S. (2019). Beyond Trial & Error: Iteration-to-Learn using Computational Paper Crafts in a STEAM Camp for Girls. *126th ASEE Annual Conference & Exposition*. Presented at the American Society for Engineering Education Annual Conference, Tampa, FL.

Dixon, C., Schimpf, C., & Hsi, S. (2019). The Card-Board DIY Microcontroller for Use with Paper Mechatronics (Resource Exchange). *126th ASEE Annual Conference & Exposition*. Presented at the American Society for Engineering Education Annual Conference, Tampa, FL.

Main, J. B., Ramirez, N. & Schimpf, C. (2018). Student Career Decision Making Approaches and Development of Professional Engineering Trajectories. *125th ASEE Annual Conference & Exposition*. Presented at the American Society for Engineering Education Annual Conference, Salt Lake City, UT.

Schimpf, C., Goldstein, M.H., Chao, J., Purzer, S., Adams, R. & Xie, C. (2018). A Markov Chain Method for Modeling Students' Behavior. *125th ASEE Annual Conference & Exposition*. Presented at the American Society for Engineering Education Annual Conference, Salt Lake City, UT.

Schimpf, C., Sleezer, R.J. & Xie, C. (2018). Visualizing Design Team Analytics for Representing and Understanding Design Teams' Process. *125th ASEE Annual Conference & Exposition*. Presented at the American Society for Engineering Education Annual Conference, Salt Lake City, UT.

Schimpf, C. & Xie, C. (2017). Characterizing Students' Micro-Iterations Strategies through Data-Logged Design Actions. *124th ASEE Annual Conference & Exposition*. Presented at the American Society for Engineering Education Annual Conference, Columbus, OH.

Schimpf, C., Andronicos, A. & Main, J. (2015). Using life course theory to frame women and girls' trajectories toward (or away) from computing: Pre high-school through college years. Presented at the Frontiers in Education Conference, El Paso, TX.

Beddoes, K., Schimpf, C & Pawley, A. (2015). Gender and Department Heads: An Empirically-Inspired Literature Review. *122th ASEE Annual Conference & Exposition*. Presented at the American Society for Engineering Education Annual Conference, Seattle, WA.

Beddoes, K. & Schimpf, C. (2015). Undisciplined Epistemology: Conceptual Heterogeneity in a Field in the Making. 122th ASEE Annual Conference & Exposition. Presented at the American Society for Engineering Education Annual Conference, Seattle, WA.

Schimpf, C. & Main, J. (2014). The Distribution of Family Friendly Benefits Policies across Higher Education Institutions: A Cluster Analysis. *121th ASEE Annual Conference & Exposition*. Presented at the American Society for Engineering Education Annual Conference, Indianapolis, IN.

Beddoes, K., Schimpf, C. & Pawley, A. (2014). New Metaphors for New Understandings: Ontological Questions about Developing Grounded Theories in Engineering Education. 121th ASEE Annual Conference & Exposition. Presented at the American Society for Engineering Education Annual Conference, Indianapolis, IN.

Schimpf, C., Ricco, G. & Ohland, M. (2013). The Dynamics of Attracting Switchers: A Cross-disciplinary Comparison. *120th ASEE Annual Conference & Exposition*. Presented at the American Society for Engineering Education Annual Conference, Atlanta, GA.

Beddoes, K., Schimpf, C. & Pawley, A. (2013). Engaging Foucault to Better Understand Underrepresentation of Female STEM Faculty. 120th ASEE Annual Conference & Exposition. Presented at the American Society for Engineering Education Annual Conference, Atlanta, GA.

Ferguson, D.M., Cawthorne, J.E., Schimpf, C. & Cardella, M. (2013). Learning Strategies and Learning Traits Critical to Practicing Engineers after College. 120th ASEE Annual Conference & Exposition. Presented at the American Society for Engineering Education Annual Conference, Atlanta, GA.

Schimpf, C., Mercado Santiago, M. & Pawley, A. (2012). Access and Definition: Exploring how STEM Faculty, Department Heads, and University Policy Administrators Navigate the Implementation of a Parental Leave Policy. 119th ASEE Annual Conference & Exposition. Presented at the American Society for Engineering Education Annual Conference, San Antonio, TX.

Chen, X., Sambamurthy, N., Schimpf, C. Xian, H. & Madhavan, K. (2011). Weighted Social Tagging Research Methodology for Determining Systemic Trends in Engineering Education Research. *118th ASEE Annual Conference & Exposition*. Presented at the American Society for Engineering Education Annual Conference, Vancouver, Canada.

Book Chapters

Schimpf, C., Purzer, S., Quintana, J., Sereiviene, E., & Xie, C. (2021). "What does it mean to be Authentic? Challenges and Opportunities Faced in Creating K-12 Engineering Design Projects with Multiple Dimensions of Authenticity" in *Design Thinking: Research, Innovation, and Implementation*, Sanzo, K. Eds. Information Age Publishing.

Castellani, B., Schimpf, C. & Haffery, F. (2013). "Medical Sociology and Case-Based Complexity Science: A User's Guide", pp 734-754 in *Medicine and Complexity Science*, Sturmberg, J.P. Eds. Berlin: Springer.

Invited Talks & Popular Media Contributions

Schimpf, C. (2019). Automating Detection of Engineering Design Practices in Energy3D: Integrating Human and Machine Intelligence. *@Concord* 24(2), 8-9.

Guzey, S., & Purzer, S. (Facilitators). Douglas, K., Pellegrino, J., Schimpf, C., Wendell, K., Watkins, J. (Panelists). (2019). Integrating Science and Engineering with a Focus on Evidence of Student Learning. National Association for Research in Science Teaching Conference.

Schimpf, C. (2018). Big Data and AI in Education: A Sociological Analysis. Invited Presentation for *Sociology of Education*, University of Massachusetts Lowell. February 2018.

Professional Service

- Program Chair-Elect for the Design in Engineering Education Division of the American Society of Engineering Education Annual Conference, 2020-2021
- Director for the Design in Engineering Education Division of the American Society for Engineering Education Annual Conference, 2018-2019.
- Panelist for National Science Foundation Grant Review, 2018.
- Reviewer: Journal of Engineering Education, Computer Applications in Engineering Education, International Journal of Gender, Science & Technology, International Journal of Social Research Methods, American Society for Engineering Education, International Design Engineering Technical Conference & Frontiers in Education.