Michigan State University

Burgess Institute for Entrepreneurship & Innovation

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AUBREY WIGNER, PHD

EDUCATION

2017 Arizona State University, Tempe, AZ

Ph.D. in Human and Social Dimensions of Science and Technology "The Maker Movement, the Promise of Higher Education, and the Future of Work" Fields: Sociotechnical Systems; Art, Technology, and Project Based Learning

Committee: Micah Lande, Braden Allenby, Ira Bennet

2011 Colorado School of Mines, Golden, CO

M.S. of International Political Economy of Resources Capstone: Natural gas and the "bridge fuel" metaphor

2009 Colorado School of Mines, Golden, CO

B.S. Chemical and Biochemical Engineering

Focus: Algal biofuels and renewable energy

APPOINTMENTS

2017 - Present

Assistant Professor, Fixed Term, Michigan State University, East Lansing, MI The Burgess Institute for Entrepreneurship & Innovation and the department of Management within the Eli Broad College of Business

Teaching and developing entrepreneurship program and hands-on prototyping courses for cross disciplinary entrepreneurship minor

PUBLICATIONS AND JURIED PROJECTS

- Delborne, J., Hasala, D., **Wigner, A.**, Kinchy, A. (2020) Dueling metaphors, fueling futures: "Bridge fuel" visions of coal and natural gas in the United States, *Energy Research & Social Science*, Volume 61, 2020, 101350, ISSN 2214-6296, https://doi.org/10.1016/j.erss.2019.101350.
- Wigner, A., Halpern, M., Record, I. (2018). Future Design Studio Building a Growth Mindset and a Path to Persistence Through Improvisation and Design Fiction. First Year Engineering Education Conference, ASEE, Glassboro, NJ
- Foster, C., **Wigner, A.**, Lande, M. & Jordan, S. (2018). Learning from parallel pathways of makers to broaden pathways to engineering. *International Journal of STEM Education*. 5:6 1-16. DOI 10.1186/s40594-017-0098-8.
- Wilczynski, V., **Wigner, A.**, Lande, M., Jordan, S. (2017). The Value of Higher Education Academic Makerspaces for Accreditation and Beyond. *Planning for Higher Education*, 46-1
- Wigner, A., Lande, M., Jordan, S. (2016). How Can Maker Skills Fit in with Accreditation Demands for Engineering Programs?. ASEE 2016 Annual Conference, New Orleans, LA

Foster, C., **Wigner, A.**, Lande, M., Jordan, S. (2015). Welcome to the Maker Movement: Parallel Education Pathways of Adult Makers. ASEE Annual Conference. Seattle, WA.

- Wigner, A. (2014) Department of Defense and Environmental Innovation Pathways. In *The Rightful Place of Science: Energy and Government Innovation*. Consortium for Science, Policy & Outcomes.
- Wigner, A. (2014). Leaves of ABS and Twisted Triangles [Rapid prototyping sculptures]. Phoenix, AZ: Shemer Art Center
- Collins, D., **Wigner, A.** (2013) <u>The Würm Hole 3D Portrait Machine</u> [Interactive Installation]. Anaheim, CA: ACM SIGGRAPH Conference 2013
- Makridis, C., **Wigner, A.** (2013) Converging Technologies: A Critical Analysis of Cognitive Enhancement for Public Policy Application. *Science and engineering ethics*, 19(3), 1017-1038, authorship added via erratum 2015

TEACHING EXPERIENCE

- 2017-Present **Assistant Professor,** Michigan State University, East Lansing, MI ESHP 190, The Art of Starting (Introduction to Entrepreneurship) ESHP 170, Business Model Creation (Introduction to Prototyping) MGT 352, New Venture Process
 - 2018-2019 **Team Coach,** University Innovation Fellows, Stanford d.school, Palo Alto, CA Train students from multiple universities in design thinking methodology as part of a Stanford Design School program on Innovation and Entrepreneurship. https://universityinnovationfellows.org/fellows-roles/
 - Faculty Mentor, Consortium for Science Policy and Outcomes (CSPO), Washington DC, Science Outside the Lab. A two-week intensive experiential learning program for STEM graduate students that exposes them to the intricacies and realities of science policy in the Federal Government of the U.S.
 - 2013-2014 **Instructor of Record**, Arizona State University, Tempe, AZ CEE 181, Technological, Social, and Sustainable Systems. For Dr. Brad Allenby's class: planned and taught two to three weekly seminars, met with students, assisted with syllabus development, graded weekly assignments and term papers for 50+ students, entered final grades, mentored students.
 - Graduate Student Liaison, CSPO, Washington DC,
 Science Outside the Lab, week long experiential learning program introducing
 solar and renewable energy masters students to relevant science and technology
 policies and policymakers at the federal level.

2009-2011 **Teaching Assistant**, Colorado School of Mines, Golden, CO SYGN 200, Human Systems. Mentored students and maintained grade and attendance records for 100+ students.

RESEARCH EXPERIENCE

- 2016 2017 **Research Assistant**, Michigan State University Lyman Briggs College, East Lansing, MI. Working with Megan Halpern on Future Design Studio. Lo-Fi speculative prototyping to explore social dimensions of technology. Funded by internal grant.
- 2014 Research Assistant, Arizona State University Polytechnic Campus, Mesa, AZ
 2016 Working with Micah Lande and Shawn Jordan on NSF grant *Might Young*
- Makers Be Engineers of the Future.
- 2012 **Research Assistant**, Arizona State University, Tempe, AZ Innovation pathways in the Department of Defense for environmental and alternative energy technologies.
- 2008 Research Assistant, Colorado School of Mines, Golden, CO
- Biochemistry lab studying algae lipid content and type for use in renewable biofuels.

AWARDS, HONORS, FELLOWSHIPS, AND GRANTS

- 2019 Instructor Excellence Award for the Undergraduate Program for Spring 2019, Broad College of Business (awarded for one of the two highest teaching evaluation averages in the college)
- 2019 AT&T Faculty and Staff Award in Instructional Technology Honorable Mention for BUS 170 – Digital Prototyping for Entrepreneurs Co-awardees – Ken Syzmusiak, Terence O'Neil, and Erica Ervin
- 2017 VentureWell Faculty Development Grant \$5,000 Freshmen course development, Design, Prototype, Fabricate, MAKE!
 PIs Sam Carter Co-PI Ken Syzmusiak, MSU
- 2015 NSF i-Corps L, Entrepreneurial Lead to commercialize \$50,000 Making and Tinkering Camps and STEAM Machines PIs Shawn Jordan and Micah Lande, ASU
- 2015 Epicenter University Innovation Fellow, Stanford and VentureWell. Fellowship focusing on innovative changes in education at universities.

PRESENTATIONS, PANELS, AND WORKSHOPS LED

Wigner, A. (2019). Engaging Business Students in Responsible Innovation, 4S Annual Conference, New Orleans, LA.

- Wigner, A., Halpern, M., Record, I. (2018). Future Design Studio Building a growth mindset and a path to persistence through improvisation and design fiction, Rowan University, First Year Engineering Experience Conference (FYEE), Glassboro, NJ.
- Wigner, A. (2017). <u>Making it Through Failure</u>, Stanford University, Hasso Plattner Institute of Design (d.school), Stanford, CA.
- Wigner, A. (2017). Mentor for University Innovation Fellows Silicon Valley Meetup, Stanford University, Google, Microsoft, Hasso Plattner Institute of Design (d.school), Bay Area, CA.
- Halpern, M., **Wigner, A.,** Brandt, M., Record, I. (2016). Future Design Studio, Michigan State University, Lymon Briggs College, East Lansing, MI.
- Wigner, A., Lande, M., Jordan, S. (2016). Young Makers in the First-Year Engineering Classroom: Educational Pathways, Implementations and Implications. FYEE Conference, Ohio State University, Columbus, OH.
- Wigner, A., Lande, M., Jordan, S. (2016). How can Maker Skills Fit in with Accreditation Demands for Engineering Programs?. ASEE Annual Conference, New Orleans, LA.
- Wigner, A. (2015). Making and Engineering Visions of expertise in interdisciplinary project spaces, 4S Annual Meeting, Denver, CO.
- Wigner, A. (2015). Speaker and Design Session Leader. Maker Educational Pathways. Case Western Reserve University Innovation Summit, Maker School Session, Case Western, Cleveland, OH.
- Wigner, A. (2015). Making and Engineering Visions of expertise in interdisciplinary project spaces, Knowledge from the Margins, Michigan State University, East Lansing, MI.
- Wigner, A. (2015). Mentor. Creative Convergence XX Women's Entrepreneurship Workshop, ASU West. Phoenix, AZ.
- Foster, C., **Wigner, A.**, Lande, M., Jordan, S. (2014). Welcome to the Maker Movement: Parallel Education Pathways of Adult Makers. ASEE Annual Conference, Seattle, WA.
- Wigner, A. (2014). Panelist. Graduate Students in the Maker Movement. Higher Ed Maker Summit, ASU Chandler Innovation Center. Chandler, AZ.
- Wigner, A., Bortfeld, M. (2014). Community, Corporate, and University Makerspaces. SIGGRAPH 2014, Vancouver, BC, Canada.

Wigner, A., Bortfeld, M. (2014) Low Cost 3D Scanning with Structured Infrared Light. SIGGRAPH 2014, Vancouver, BC, Canada.

- Wigner, A. (2014). Makerspaces: Enhancing education through tinkering and community empowerment. STGlobal, Washington DC.
- Wigner, A. (2013). Panelist for: The Value of Making. ASU Maker Summit. ASU Chandler Innovation Center, Chandler AZ
- Collins, D., **Wigner, A.,** Gigantino J. (2013). 3D Data Capture, Modeling, and Fabrication. Presentation and Workshop for the Arizona Chapter of the American Association of Physics Teachers, Tempe AZ.
- Collins, D., **Wigner, A**., et al. (2013). 3D Data Capture Workshop. SIGGRAPH 2013, Anneheim, CA.
- Wigner, A. (2012). Innovation Pathways in the Strategic Environmental Research and Development Program and the Environmental Science Technology Certification Program. STGlobal Conference, Washington DC.

TEACHING INTERESTS

Interdisciplinary Entrepreneurship and Innovation Responsible Innovation Prototyping for Engineers and Entrepreneurs Product Design and Entrepreneurship for Engineers Technological, Social, and Sustainable Systems Humanitarian Design and Engineering Ethics and Design Thinking

OTHER SKILLS

Regular mentor for startup teams participating in Startup Weekend
Proficient in qualitative and mixed methods analysis
Familiar with NVivo and Atlas.ti for qualitative analysis
Familiar with KEEN Integrated e-learning modules
Proficient in Rhinoceros 3D Design Software
Familiar with Autodesk suite of 3D design tools
Familiar with numerous 3D capture methods
Familiar with 3D printers, laser cutters, mills, lathes, and CNC machines
Familiar with Arduino, Raspberry Pi, and Intel Galileo boards

LANGUAGES

Mandarin: Rudimentary level.

PROFESSIONAL MEMBERSHIPS

American Society for Engineering Education 2014 - Present Society for Social Studies of Science (4S) 2011 - Present

PRIOR WORK EXPERIENCE

U.S. Army - Signals Intelligence Analyst Army Commendation Medal TS-SCI Clearance (expired) 2000 - 2005