

# ANDREA MAZZURCO

## Lecturer of Engineering Education

The Engineering Practice Academy  
Faculty of Science, Engineering, and Technology  
Swinburne University of Technology  
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## Research Interests & Skills

- Global Engineering Education, including, humanitarian engineering, sustainable community development, and global/local service learning.
- Development of socio-technical thinking and moral reasoning of engineering students and professionals.
- Development of assessment instruments, both self-rating scales and scenario-based.
- Systematic literature review, scale and survey development, statistical data analysis using R, qualitative data collection and analysis using NVivo.

## Education

### Purdue University

*Doctor of Philosophy, Engineering Education*

Dissertation: "Methods to Facilitate Community Participation in Humanitarian Engineering Projects: Laying the Foundation for a Learning Platform."

**West Lafayette, IN**

*Aug 2016*

### Purdue University

*Master of Science, Aeronautical and Astronautical Engineering*

**West Lafayette, IN**

*Dec 2011*

### Politecnico di Milano

*Bachelor of Science, Aerospace Engineering*

**Milan, Italy**

*Jan 2011*

## Certifications and Training

### Coursera

IBM Data Science Professional Certificate

*Aug 2019 - present*

### The University of Queensland

Designing Assessment Workshop

*Nov 2016*

Research Funding Online Database Training

*Oct 2016*

Managing & Leading People in a Research Context Workshop

*Oct 2016*

Managing & Evaluating Teaching & Learning Projects

*Sept 2016*

**Purdue University**  
Safe Zone Training  
Effective College Teaching Workshop

**West Lafayette, IN**  
Feb 2016  
Feb 2014

## Work Experience

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**The University of Queensland**  
*Educational Researcher – Enhancing Students' Experience*

**St Lucia, QLD**  
Aug 2016 – Aug 2017

**Purdue University**  
*Graduate Research Assistant*

**West Lafayette, IN**  
May 2015 – Jul 2016

**Purdue University**  
*Co-coordinator, Global Engineering Education Collaboratory (GEEC)*

**West Lafayette, IN**  
Jan 2015 – Sep 2016

**Purdue University**  
*Future Faculty Fellow, First Year Engineering*

**West Lafayette, IN**  
May 2014 – May 2015

**Purdue University**  
*Faculty Apprentice, School of Engineering Education*

**West Lafayette, IN**  
Jan - May 2015

**Purdue University**  
*Instructor, School of Languages and Cultures*

**West Lafayette, IN**  
Aug 2010 – May 2014

**Purdue University**  
*Co-Adviser, Global Design Team, Global Engineering Program*

**West Lafayette, IN**  
Jan - May 2013

**Purdue University**  
*Apprentice Adviser, EPICS*

**West Lafayette, IN**  
Aug - Dec 2013

## Peer Reviewed Journal Papers

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Daniel, S., & **Mazzurco, A.** (under review). Assessing co-design expertise in the context of humanitarian engineering. *European Journal of Engineering Education*.

**Mazzurco, A.**, Crossin, E., Chandrasekaran, S., Daniel, S., & Sadewo, G. (under review). A systematic review of research on engineering practice. *Journal of Engineering Education*.

Mann, L., Chang, R., Chandrasekaran, S., Coddington, A., Daniel, S. A., Cook, E., **Mazzurco, A.** ... Smith, T. D. (in press). From problem-based learning to practice-based education: A framework for shaping future engineers. *European Journal of Engineering Education*.

**Mazzurco, A.**, Jesiek, B. K., & Goodwin, A. (in press). Development of the Global Engineering Competency Scale (GECS): Exploratory and confirmatory factor analysis. *Journal of Professional Issues in Engineering Education and Practice*.

**Mazzurco, A.**, & Daniel, S. A. (in press). Socio-technical thinking of students and practitioners in the context of humanitarian engineering. *Journal of Engineering Education*.

- Murzi, H., **Mazzurco, A.**, Pikaar, I., & Gibbes, B. (2019) Measuring development of environmental awareness and moral reasoning: A case-study of a civil engineering course, *European Journal of Engineering Education*, DOI: 10.1080/03043797.2019.1566300
- Jesiek B., **Mazzurco A.**, Thompson, J., & Trellinger, N. (2018). Boundary spanning and engineering: A qualitative systematic review. *Journal of Engineering Education*, 107(3), 380-413
- Mazzurco, A.**, Leydens, J. A., & Jesiek, B. K., (2018). Passive, Consultative, and Co-Constructive Methods: A Framework to Facilitate Community Participation in Design for Development. *Journal of Mechanical Design*, 140(12).
- Smith, J., **Mazzurco, A.**, & Compston, P., (2018). Student engagement with a humanitarian engineering pathway. *Australasian Journal of Engineering Education*.
- Mazzurco, A.**, & Jesiek, B. (2017). Five guiding principles to enhance community participation in humanitarian engineering projects. *Journal of Humanitarian Engineering*, 5(2).
- Mazzurco, A.**, Huff, J. L., & Jesiek, B. K. (2014). The Energy Conversion Playground (ECP) design task: Assessing how students think about technical and non-technical considerations in sustainable community development. *International Journal for Service Learning in Engineering*, 9(2), 64-84.
- Jesiek, B., Zhu, Q., Woo, S., Thompson, J., & **Mazzurco, A.** (2014). Global engineering competency in context: Situations and behaviors. *Online Journal for Global Engineering Education*, 8(1).

## Peer Reviewed Conference Papers

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- Jesiek, B.K., Buswell, N.T., **Mazzurco, A.**, & Zephirin, T. (2019). Toward a typology of the sociotechnical in engineering practice. *2019 Research in Engineering Education Symposium*.
- Mazzurco, A.**, Daniel, S.A., & Smith, J. Development of socio-technical and co-design expertise in engineering students. *2019 Research in Engineering Education Symposium*.
- Coddington, A., Mann, L., Chandrasekaran, S., Cook, E., Crossin, E., Daniel, S., **Mazzurco, A.**, Smith, T., & Turner, J. (2017). Grounded by values: An emergent engineering practice. *Proceedings of the 28th Annual Conference of the Australasian Association for Engineering Education (AAEE 2017)*, Sydney, 10-13 December 2017.
- Murzi, H., **Mazzurco, A.**, & Coulter, B. (2017). Integrating professional practice in the engineering curriculum: BE/ME chemical engineering students' experiences in industry placements. *Proceedings of the 28th Annual Conference of the Australasian Association for Engineering Education (AAEE 2017)*, Sydney, 10-13 December 2017.
- Mazzurco, A.**, Murzi, H., & Pikaar, I. (2017). Moral development of students entering the civil engineering bachelor. *Proceedings of the 28th Annual Conference of the Australasian Association for Engineering Education (AAEE 2017)*, Sydney, 10-13 December 2017.

**Mazzurco, A., & Murzi, H.** (2017). Evaluating humanitarian engineering education initiatives: A scoping review of literature. *Proceedings of the 28th Annual Conference of the Australasian Association for Engineering Education (AAEE 2017)*, Sydney, 10-13 December 2017.

**Mazzurco, A. & Jesiek, B.** (2017). Laying the Foundations of a Learning Platform for Humanitarian Engineering: Methodological Approach and Results. *2017 ASEE Conference and Exposition*.

Murzi, H., Fleming, M., **Mazzurco, A., & Pikaar, I.** (2017). Work-In-Progress: Environmental Course Redesign: Learning Ethics from the Environmental Engineering Perspective. *Proceedings of the 2017 Research in Engineering Education Symposium*, Bogota, Colombia, 6-8 July 2017.

**Mazzurco, A., Murzi, H., Fleming, M.** (2017). Development of the Environmental Engineering Issues Test (E2IT). *Proceedings of the 2017 Research in Engineering Education Symposium*, Bogota, Colombia, 6-8 July 2017.

Fleming, M., **Mazzurco, A., Murzi, H.** (2017). The Enhancing Students' Employability Project: Literature Synthesis of Assessment Instruments. *Proceedings of the 2017 Research in Engineering Education Symposium*, Bogota, Colombia, 6-8 July 2017.

Jesiek, B. K., Trellinger, N. M., **Mazzurco, A.** (2016). Becoming boundary spanning engineers: Research methods and preliminary findings. *2015 ASEE Annual Conference and Exposition*

Jesiek, B. K., **Mazzurco, A., & Trellinger, N. M.** (2015). Becoming boundary spanners in engineering: Identifying roles, activities, and competencies. *Proceedings of the 2015 IEEE Frontiers in Education Annual Conference*.

**Mazzurco A., Zhu, Q., Wuji G., & Zhao, F.** (2014). A comparative study of clay brick and fly ash brick in USA and China: Environmental and sociocultural perspectives. *Proceedings of 2014 International Symposium on Sustainable Systems & Technologies*.

**Mazzurco A., & Jesiek, B. K.** (2014). Learning from failure: developing a typology to enhance global service-learning engineering projects. *Proceedings of 2014 ASEE Conference and Exhibition*.

**Mazzurco A., Huff J. L., & Jesiek, B. K.** (2013). Raising student's cultural awareness through design scenario. *Proceedings of 2013 ASEE Conference and Exhibition*.

**Mazzurco A., Jesiek B., & Ramane K.** (2012). Are Engineering Students Culturally Intelligent? Preliminary Results of a Multi-Institutional Survey. *Proceedings of 2013 ASEE Conference and Exhibition*.

## **Presentations, Workshops, Invited Talks, and Posters**

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Philips, C. M. L., Joslyn, C. H., & **Mazzurco, A.** (2015). Social justice in the engineering curriculum: Course modules to challenge the dominant engineering culture. *2015 Engineering Social Justice and Peace Conference*.

**Mazzurco, A.** (2015). Methods to meaningfully engage community members in humanitarian engineering projects. *2015 Engineering Social Justice and Peace Conference*.

**Mazzurco, A., & Jesiek, B. K.** (2015). Classification of problem framing and solving methods for humanitarian engineering. *Poster at the 2015 Humanitarian Technology Conference, Boston, May 12-14*.

Jesiek, B. K., **Mazzurco, A.**, Lucena, J. C., Lehr, J., Thompson, J. (2014). Frontiers of humanitarian engineering: Learning from social justice, feminism, and failures. *Workshop at the 2014 IEEE Global Humanitarian Technology Conference, San José, CA*.

**Mazzurco A.** (2013). Engenharia dos oprimidos: A model of participatory engineering project for sustainable community development. *2013 Engineering, Social Justice, and Peace Conference*

## Leadership and Service

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### Australia Representative

*Governing board of the Research in Engineering Education Network* Jan 2019 - present

### Reviewer

*Journal of Engineering Education* Jan 2019 - present

*European Journal of Engineering Education* Aug 2018 - present

*Journal of Humanitarian Engineering* Jan 2015 – Present

*ASEE Annual Conference & Exhibition* Jan 2012 – Present

*Research in Engineering Education Symposium* Feb 2017 – Present

*AAEE Annual Conference* Jun 2017 – Present

### Graduate Student Representative

*Engineering Education Faculty Development Recognition Committee, School of Engineering Education, Purdue University.* Fall 2015

### Design Reviewer for EPICS

Aug 2012 – July 2016

## Awards and Recognitions

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### Award Recipient

*Swinburne FSET Small Education Research Grants, \$3000*

*Purdue Graduate Student Government Travel Grant, \$1000*

*Purdue Graduate Student Government Professional Grant, \$800*

*Conference Travel Fund, College of Engineering, Purdue University, \$500*

### Best Poster Award, 3<sup>RD</sup> Place

*Innovation for International Development Expo, Global Engineering Program, Purdue University*

## Professional Memberships and Affiliations

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American Society For Engineering Education (ASEE)

IEEE

Australasian Association For Engineering Education (AAEE)

Research In Engineering Education Network (REEN)

Engineers Australia (EA)