

CYNTHIA J. ATMAN

Curriculum Vitae, updated August 7, 2023

Human Centered Design & Engineering
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EDUCATIONAL HISTORY

Carnegie Mellon University, Pittsburgh, PA
Ph.D., Engineering and Public Policy
1986 – 1990

Thesis: Network Structures as a Foundation for Risk Communication: An Investigation of Structure and Format Differences, Advisor: Baruch Fischhoff

The Ohio State University, Columbus, OH
M.S., Industrial and Systems Engineering, *Magna Cum Laude*
1981 – 1983

West Virginia University, Morgantown, WV
B.S., Industrial Engineering, *Magna Cum Laude*
1975 – 1979

EMPLOYMENT HISTORY

University of Washington, Seattle, WA

- Professor, Human-Centered Design & Engineering (HCDE), (01/2009 - present)
- Chair, Mitchell T. and Lella Blanche Bowie Endowed Chair (01/2006 - present)
- Director, Center for Engineering Learning & Teaching (CELT), (1998 - present)
<http://depts.washington.edu/celtweb/>
 - 9/2015-present: Center to conduct research in engineering learning (in HCDE)
 - 9/1998-9/2015: Center to conduct research in engineering learning and promote teaching effectiveness in engineering classrooms at the UW. (in College of Engineering)
- Co-Director and co-PI, Consortium to Promote Reflection in Engineering Education (CPREE), (3/2014 – 2/2018)
The Leona B. and Harry M. Helmsley Trust funded, \$4.4 million award
<http://cpree.uw.edu/>
- Director and Principal Investigator, Center for the Advancement of Engineering Education (CAEE) (01/2003 - 06/2010)
NSF-funded Center for Learning and Teaching, five year, \$12.2 million award to University of Washington (lead), Colorado School of Mines, Howard University, Stanford University, and University of Minnesota,
<http://www.engr.washington.edu/caee/>
- Professor, Department of Industrial Engineering (9/03 - 1/2009)
- Associate Professor, Department of Industrial Engineering (9/1998 - 9/2003)

University of Pittsburgh, Pittsburgh, PA

- Associate Professor, Department of Industrial Engineering (05/1997 – 09/1998)
- Assistant Professor, Department of Industrial Engineering (09/1991 – 05/1997)
- Whiteford Faculty Fellow (1993 – 1999)

American Association for the Advancement of Science Diplomacy Postdoctoral Fellow

- U. S. Agency for International Development, Washington, DC (09/1990 – 08/1991)
- Bureau for Science and Technology, Office of Education: Responsible for research and project development to address issues of math, science, and technology education in developing countries.

Carnegie Mellon University, Pittsburgh, PA

Research Assistant (09/1986 – 08/1990)

LSW Incorporated, Landover, MD

Senior Software Trainer, U.S. Senate (01/1985 – 08/1986)

IBM Corporation, Bethesda, MD

Associate Programmer Analyst (08/1983 – 12/1984)

Ohio State University, Columbus, OH

Teaching Asst., Engineering Graphics (09/1982 – 06/1983)

University Fellow (09/1981 – 08/1992)

Union Carbide Corporation, Charleston, WV

Advanced Engineer (06/1979 – 09/1981)

AWARDS AND HONORS

- Helen Plants award for most innovative session at the Frontiers in Education Conference, October 2019, "Special Session: Surfacing the Hidden Brain (System 1) in Engineering Education Teaching, Learning, and Research", Dringenberg, E., Wertz, R., Atman, C., Cross, K., Miskioğlu, E., Guanés, G.
- Best paper award for the Design Engineering Education Division of ASEE, 2019. "Design Intentions: Teaching engineering students to plan their design processes." Scalone, G., Joya, A.J., Shroyer, K., & Atman, C.J.
- *Design Studies* 2018 Best Paper Award for "Timescales and Ideospace: An examination of idea generation in design practice", Kathryn Shroyer, Terri Lovins, Jennifer Turns, Monica E. Cardella, Cynthia J. Atman, July, 2018
- IEEE Professional Communication Society Alfred N. Goldsmith Award for Outstanding Achievement in Engineering Communication, July 2017
- David B. Thorud Leadership Award, University of Washington, March 2009
- William Elgin Wickenden Award from the American Society of Engineering Education, for Best Paper in the Journal of Engineering Education in 2008 for "Engineering Design Processes: A Comparison of Students and Expert Practitioner," C.J. Atman, R. S. Adams, S. Mosborg, M. E. Cardella, J. Turns, and J. Saleem, 2008
- American Society of Engineering Education Fellow, May 2006
- American Association for the Advancement of Science Fellow, February 2006
- The Mitchell T. and Lella Blanche Bowie Endowed Chair, January 2006
- *Design Studies* 2003 Best Paper Award for "Educating Effective Engineering Designers: The Role of Reflective Practice" Robin S. Adams, Jennifer Turns, Cynthia J. Atman, May 2003
- ASEE Chester F. Carlson Award for Innovation in Engineering Education, June 2002
- Outstanding Professor in Industrial Engineering, UW (award from students), June 2002

- University of Pittsburgh, Whiteford Faculty Fellow, 1993–1999
- National Science Foundation Young Investigator Award, 1993–1998
- American Association for the Advancement of Science Diplomacy Postdoctoral Fellowship, 1990 – 1991
- University Graduate Fellowship, Ohio State University, 1981–1982
- Outstanding Senior, West Virginia University Industrial Engineering, 1979

KEYNOTE ADDRESSES

- Keynote Speaker, “Good Designers Do ‘X’”, Transdisciplinary Engineering Conference, Hua Hin, Thailand, July 11, 2023.
- UTM Engineering Distinguished Lecture Series. “Engineering Design Expertise: Embracing Design Awareness”, Universiti Teknologi Malaysia, via Zoom, March 10, 2021
- Keynote Speaker, “‘What the hell is process?’: Research and representations of design processes & some teaching examples”, Clive Dym Harvey Mudd Design Workshop XI, Los Angeles, CA, May 31, 2019.
- Keynote Speaker, “Dancing with Ambiguity”: A tale from one educator”, Canadian Engineering Education Association/Association Canadienne De L’Education en Genie Annual Meeting, Vancouver, Canada, June 4, 2018.
- Plenary Panel, “Design process patterns: Opportunities to make a place for peace”, WEEF-GEDC, Albuquerque, New Mexico, November 2018.
- Keynote Speaker. IEEE Professional Communication Conference, Madison, Wisconsin, July 25, 2017. “Concrete & Sticky: An Informal Theory of Change (With Three Worked Examples)”.
- Keynote Speaker. Engineering the Future 2017 Symposium, Dubai Academic City, United Arab Emirates, April 6, 2017, “Opportunities for Engineering Education.”
- Keynote Speaker. 5th Annual ASEE Engineering Education Colloquium, Stanford University, April 7, 2016. “Doing (and Reflecting On) Design: A Productive Pairing.”
- Keynote Speaker, 7th Conference on Engineering Education for Sustainable Development, Vancouver, B.C., June 10, 2015, “Does the Globe Get a Say? Researching & Teaching on Designing in Context.”
- Keynote Speaker, 11th Annual Teaching & Learning Symposium, Center for Learning & Teaching (CLT), University of Washington, April 14, 2015, “Using Reflection to Support Student Learning.”
- Keynote Speaker, SEFI (European Society of Engineering Education) Annual Conference, Birmingham, England, September 15-19, 2014, “Designing Design Learning.”
- Distinguished Lecture, 2014 ASEE Annual Conference and Exposition, Indianapolis, IN, June 18, 2014. “Inspiring Change Agents to Transform Engineering Education: Challenges and Strategies of Engineering Education Pioneers.”
- Distinguished Speaker, 2013 Gochenour Lecture, West Virginia University, October 24-25, 2013. “Making Sense of Engineering Design: Seeing, Hearing and Learning.”
- Featured Speaker, 2013 Pacific Northwest ASEE Conference, Des Moines, WA, March 8, 2013. “Seeing and Hearing Design: Design Representations as Teaching Tools.”
- Keynote Speaker, 15th Annual Conference on Research on Undergraduate Mathematics Education (RUME), Portland, OR, February 24-27, 2012, “The Engineers in your Math Class: What are they Thinking?”
- Distinguished Lecture at the National Science Foundation, Arlington, VA, October 27, 2010. Atman, C.J. and Turns, J., “Enabling Engineering Student Success: Using Research to Inform Engineering Education Decisions.”

- Keynote Speaker, Joint International IGIP-SEFI (European Society for Engineering Education) Annual Conference 2010, Trnava, Slovakia, September 19-22, 2010, “Educating the Well-Rounded Engineer: A View into the U.S. System.”
- Keynote Speaker, FIE Annual Conference, San Antonio, TX, October 20, 2009. “Educating the Well-Rounded Engineer. Insights from the Academic Pathways Study.”
- Keynote Speaker, WEPAN Annual Conference, Austin, TX, June 18, 2009. “Pathways Study of Engineering Undergraduates: A Comparison of Women and Men.”
- Keynote Speaker, ASEE Pacific Northwest Regional Conference, Seattle, WA, November 7, 2008, “Thinking Design, Doing Design...and Becoming Designers.”
- Keynote Speaker, Science, Technology, Engineering, Mathematics Talent Expansion Program (STEP) 2008 Grantees Meeting, Arlington, VA, March 7, 2008, “Undergraduate Pathways to Engineering: Insights from a Longitudinal Study.”
- Keynote Speaker, NAE/CASEE Dane and Mary Louise Miller Symposium, Milwaukee, WI, October 9, 2007, “Center for the Advancement of Engineering Education: An Overview of Accomplishments to Date.”
- Opening Address, Danish Centre for Engineering Education Research and Development, Copenhagen University and Aalborg University, June 8, 2007, “Engineering Education Research: Some History and Examples from the U.S.”
- Keynote Address, First International Computing Education Research Workshop, October 2005
- Keynote Address, Innovation and Technology in Computer Science Education, June 2001

PUBLICATIONS

Refereed archival journal publications

1. Atman, C. J. (2020). Hope, Stress, Sketch & Kvetch: Emphasizing Caring Through Reflection in Online Teaching in the Pandemic, *Advances in Engineering Education*, December 2020. <https://advances.asee.org/hope-stress-sketch-kvetch-emphasizing-caring-through-reflection-in-online-teaching-in-the-pandemic/>
2. Scalone, G., Atman, C., Mejia, K., Twigg-Smith, H., Shroyer, K., Joya, A. (2020). Dealing with Ambiguity: Leveraging Different Types of Expertise to Guide Design Questioning. *International Journal of Engineering Education*, Vol. 36, No. 2, pp. 773–795, 2020.
3. Atman, C. (2019) Design Timelines: Concrete & Sticky Representations of Design Process Expertise. *Design Studies*, Volume 65, November 2019, pages 125-151. (This paper is an invited paper for the 40th anniversary issue of *Design Studies* focused on “Design as a Discipline”) <https://www.sciencedirect.com/science/article/pii/S0142694X19300602?via%3Dihub>
4. Shroyer, K., Terri Lovins, Jennifer Turns, Monica E. Cardella, Cynthia J. Atman (2018). Timescales and Ideospace: An examination of idea generation in design practice, *Design Studies*, Volume 57, July 2018, Pages 9-36. (This paper won the *Design Studies Best Paper 2018* award). <https://www.sciencedirect.com/science/article/pii/S0142694X18300218>
5. Kilgore, D., Atman, C.J., Jocuns, A., Shroyer, K. (2018). From Research to Action in the Classroom: Encouraging Broad Thinking in Engineering Design with Significant Learning Experiences, *International Journal of Engineering Education*, Vol. 34, No. 2(B), pp. 659-673.

6. Borgford-Parnell, J., Turns, J., Atman, C. J., Yasuhara, K., & Fryhle, L. (2017). A pedagogy of larger concerns used as a lens to reflect on the design of student learning experiences. *European Journal of Engineering Education*, 1-16.
7. Yasuhara, K., Campbell, R.C., & Atman, C.J. (2016). "Where do engineering students learn to consider design problem context?" *International Journal of Engineering Education*, Vol. 32,(3), Part B, pp.1472-1480
8. Atman, C.J., Sheppard, S., Turns, J., Adams, R., Yasuhara, K., & Lund, D. (2012) "The Center for the Advancement of Engineering Education: Results and Resources." *International Journal of Engineering Education*, Vol. 28, No. 5, pp.1-14.
9. Yasuhara, K., Lande, M., Chen, H., Sheppard, S., Atman, C. (2012) "Educating Engineering Entrepreneurs: A Multi-Institution Analysis." *International Journal of Engineering Education*, 28(2): 436-447.
10. Kilgore, D., Jocuns, A., Yasuhara, K., and Atman, C.J. (2010). "From Beginning to End: How Engineering Students Think and Talk about Sustainability across the Life Cycle." *International Journal of Engineering Education*, 26(2): 305-313.
11. Borgford-Parnell, J., Deibel, K., and Atman, C.J. (2010). "From Engineering Design Research to Engineering Pedagogy: Bringing Research Results Directly to the Students." *International Journal of Engineering Education*, 26(4): 748-759.
12. Atman, C.J., Kilgore, D., and McKenna, A. (2008). "Characterizing Design Learning: A Mixed-Methods Study of Engineering Designers' Use of Language." *Journal of Engineering Education*, 97(3), 309-326.
13. Atman, C.J., Yasuhara, K., Adams, R. S., Barker, T., Turns, J., and Rhone, E. (2008). "Breadth in Problem-Scoping: A Comparison of Freshman and Senior Engineering Students." *International Journal of Engineering Education*, 24(2), 234-245.
14. Cardella, M. E., Atman, C.J., Turns, J., Adams, R. S. (2008). "Students with Differing Design Processes as Freshmen: Case Studies on Change." *International Journal of Engineering Education*, 24(2), 246-259.
15. Atman, C.J., Adams, R. S., Cardella, M. E., Turns, J., Mosborg, S., and Saleem, J. J. (2007). "Engineering Design Processes: A Comparison of Students and Expert Practitioners." *Journal of Engineering Education*, 96(4), 359-379.
16. Kilgore, D., Atman, C.J., Yasuhara, K., Barker, T. J., and Morozov, A. (2007). "Considering Context: A Study of First-Year Engineering Students." *Journal of Engineering Education*, 96(4), 321-334.
17. Turns, J., Cardella, M.E., Atman, C.J., Martin, J., and Newman, J. (2006). "Tackling the Research-to-Teaching Challenge in Engineering Design Education: Making the Invisible Visible." *International Journal of Engineering Education*, 22(3), 598-608.

18. Cardella, M. E., Atman, C.J., and Adams, R. S. (2006). "Mapping Between Design Activities and External Representations for Engineering Student Designers." *Design Studies*, 27(1), 5-24.
19. Atman, C.J., Cardella, M. E., Turns, J., and Adams, R. (2005). "Comparing Freshman and Senior Engineering Design Processes: an In-depth Follow-up Study." *Design Studies*, 26(4), 325-357.
20. Cardella, Monica E. and Cynthia J. Atman . (2005). A Qualitative Study of the Role of Mathematics in Engineering Capstone Design Projects: Initial Insights," iNEER Special Volume: Innovations, World Innovations in Engineering Education and Research, 2005.
21. Turns, J., Atman, C.J , Adams, R.S., and Barker, T. (2005). "Research on Engineering Student Knowing: Trends and Opportunities." *Journal of Engineering Education*, 94(1), 27-40.
22. Turns, J., Adams, R. S., Linse, A., Martin, J., and Atman, C.J. (2004). "Bridging from Research to Teaching in Undergraduate Engineering Design Education." *International Journal of Engineering Education*, 20(3), 379-390.
23. Adams, R. S., Turns, J., and Atman, C.J. (2003). "Educating Effective Engineering Designers: the Role of Reflective Practice." *Design Studies*, 24(3), 275-294. This paper received the 2003 *Design Studies* Best Paper Award.
24. Adams, R. S., Atman, C.J., Nakamura, R., Kalonji, G., and Denton, D. (2002). "Assessment of an International Freshman Research and Design Experience: A Triangulation Study." *International Journal of Engineering Education*, 18(2), 180-192.
25. McGourty, J., Shuman, L. J., Besterfield-Sacre, M., Atman, C.J., Miller, R., Olds, B., et al. (2002). "Preparing for ABET EC 2000: Research-Based Assessment Methods and Processes." *International Journal of Engineering Education*, 18(2), 157-167.
26. Besterfield-Sacre, M., Moreno, M., Shuman, L. J., and Atman, C.J. (2001). "Gender and Ethnicity Differences in Freshmen Engineering Student Attitudes: A Cross-institutional Study." *Journal of Engineering Education*, 90(4), 477.
27. Besterfield-Sacre, M., Shuman, L. J., Wolfe, H., Atman, C.J., McGourty, J., Miller, R. L., et al. (2000). "Defining the Outcomes: a Framework for EC-2000." *IEEE Transactions on Education*, 43(2), 100-110.
28. Safoutin, M. J., Atman, C.J., Adams, R., Rutar, T., Kramlich, J. C., and Fridley, J. L. (2000). "A Design Attribute Framework for Course Planning and Learning Assessment." *IEEE Transactions on Education*, 43(2), 188-199.
29. Turns, J., Atman, C.J., and Adams, R. (2000). "Concept Maps for Engineering Education: A Cognitively Motivated Tool Supporting Varied Assessment Functions." *IEEE Transactions on Education*, 43(2), 164-173.
30. Mullins, C.A., Atman, C.J., and Shuman, L. J. (1999). "Freshman engineers' performance when solving design problems." *IEEE Transactions on Education*, 42(4), 281-287.

31. Atman, C.J., Chimka, J. R., Bursic, K.M., and Nachtmann, H.L. (1999). "A comparison of Freshman and Senior Engineering Design Processes." *Design Studies*, 20(2), 131-152.
32. Atman, C.J., and Bursic, K.M. (1998). "Verbal protocol analysis as a method to document engineering student design processes." *Journal of Engineering Education*, 87(2), 121-132.
33. Besterfield-Sacre, M., Atman, C.J., and Shuman, L. J. (1998). "Engineering student attitudes assessment." *Journal of Engineering Education*, 87(2), 133.
34. Bursic, K. M., and Atman, C.J. (1997). "Information Gathering: A critical step for quality in the design process." *Quality Management Journal*, 4(4), 60-75.
35. Besterfield-Sacre, M., Atman, C.J., and Shuman, L. J. (1997). "Characteristics of freshman engineering students: models for determining student attrition in engineering." *Journal of Engineering Education*, 86(2), 139-149.
36. Atman, C.J., and Bursic, K. M. (1996). "Teaching engineering design: can reading a textbook make a difference?" *Research in Engineering in Design*, 8, 240-250.
37. Atman, C.J., and Nair, I. (1996). "Engineering in Context: An Empirical study of freshmen students' conceptual frameworks." *Journal of Engineering Education*, 85(4), 317-326.
38. Atman, C.J., Bostrom, A., Fischhoff, B., and Morgan, M. G. (1994). "Designing risk communications: completing and correcting mental models of hazardous processes, part I." *Risk Analysis*, 14(5), 779-788. Reprinted in *Environmental Risk Planning and Management*, Simon Gerrard, R. Kerry Turner and Ian Bateman, (eds.), Cheltenham, UK: Edward Elgar Publishing, 2001.
39. Bostrom, A., Atman, C.J., Fischhoff, B., and Morgan, M. G. (1994). "Evaluating risk communications: completing and correcting mental models of hazardous processes, part II." *Risk Analysis*, 14(5), 789-798. Reprinted in *Environmental Risk Planning and Management*, Simon Gerrard, R. Kerry Turner and Ian Bateman, (eds.), Cheltenham, UK: Edward Elgar Publishing, 2001.
40. Morgan, G. M., Fischhoff, B., Bostrom, A., Lave, L., and Atman, C.J. (1992). "ES & T Features. Communicating Risk to the Public. First, Learn What People Know and Believe." *Environmental Science Technology*, 26(11), 2048-2056.

Complete books written

1. Atman, C.J., Sheppard, S.D., Turns, J., Adams, R.S., Fleming, L.N., Stevens, R., Streveler, R.A., Smith, K.A., Miller, R.L., Leifer, L.J., Yasuhara, K., & Lund, D. *Enabling Engineering Student Success: The Final Report for the Center for the Advancement of Engineering Education*. San Rafael, CA: Morgan & Claypool Publishers, 2010.
2. Morgan, M. G., Fischhoff, B., Bostrom, A., and Atman, C.J. *Risk Communications: A Mental Models Approach*. Cambridge: Cambridge University Press, 2002.

Book Chapters

1. Shroyer, K., Turns, J., Lovins, T., Cardella, M. & Atman, C. J. (2017) Team Idea Generation in the Wild: A View from Four Timescales. In: Christensen, B. T., Ball, L. J. & Halskov, K. (Eds.). *Analysing Design Thinking: Studies of Cross-Cultural Co-Creation*. Leiden: CRC Press/Taylor & Francis. Pages: 521 - 540
2. Sattler, B., Turns, J.A., & Atman, C.J. (2015). "Motherhood: Reflection, Design, and Self-Authorship." *Teacher, Scholar, Mother: Re-Envisioning Motherhood in the Academy*. Lexington Books, Lanham, MD, 2015. (ISBN: 978-1498503402)
3. Atman, C.J., Eris, O., McDonnell, J., Cardella, M., & Borgford-Parnell, J. (2014). "Engineering Design Education: Research, Practice and Examples that Link the Two." *The Cambridge Handbook of Engineering Education Research (CHEER)*, Chapter 11 (pp: 201-226). Cambridge University Press, 2014. (ISBN: 978-1107014107). This book was awarded the AERA Division I Outstanding Publication Award for Books in 2014
4. Borgford-Parnell, J., Deibel, K., Atman, C.J. "Engineering Design Teams: Considering the Forest and the Trees." *Engineering Practice in Global Context*, Chapter 4 (pp: 79-99), CRC Press/Balkema, Taylor & Francis Group, The Netherlands, 2013. (ISBN: 978-0415636964).
5. Atman, C.J., Borgford-Parnell, J, Deibel, K., Kang, A., Ng, W.H., Kilgore, D., and Turns J. "Matters of Context in Design." In J. McDonnell and P. Lloyd, (eds), *About Designing: Analysing Design Meetings*. Taylor and Francis Group, London, 2009. (ISBN: 978-0415440585).
6. Cardella, M. E., and Atman, C.J. "A Qualitative Study of the Role of Mathematics in Engineering Capstone Design Projects: Initial Insights." In W. Aung (Ed.), *Innovations 2005: World Innovations in Engineering Education and Research* (pp. 1024-1035). Arlington, VA: INEER/Begell House Publishing, 2005.
7. Atman, C.J., Turns, J., Fleming, L., Adams, R.S., Leifer, L., Sheppard, S., et al. "The Center for the Advancement of Engineering Education: A Description at Year 2." In *Invention and impact: building excellence in undergraduate science, technology, engineering and mathematics (STEM) education*. Washington, DC: American Association for the Advancement of Science, 2004.
8. Adams, R.S., Turns, J., and Atman, C.J. "The Center for Engineering Learning and Teaching, University of Washington." In J. P. Clarkson and C. Eckert (Eds.), *Design Process Improvement – A Review of Current Practice* (pp. 550-553). London: Springer Verlag. 2004.
9. Atman, C.J., and Turns, J. "Studying Engineering Design Learning: Four Verbal Protocol Studies." In C. M. Eastman, W. M. McCracken and W. C. Newstetter (Eds.), In *Design Knowing and Learning: Cognition in Design Education* (pp. 37-60). New York: Elsevier, 2001.
10. Bostrom, A., Atman, C.J., Baruch, F., and Morgan, G. M. "Public Knowledge About Indoor Radon: The Effects of Risk Communication." In J. Geweke (Ed.), *Decision making under risk and uncertainty: new models and empirical findings*. Dordrecht, The Netherlands; Boston: Kluwer Academic Publishers, 1992.

Refereed Conference Papers with Proceedings and other refereed non-journal articles

1. Turns, J., Mejia, K., and Atman, C.J. (2020). Reflection in Engineering Education: Advancing Conversations, *Proceedings of the American Engineering Education Conference*, Virtual Conference, June 21-24.
2. Scalone, G., Joya, A.J., Shroyer, K., & Atman, C.J. (2019). *Design Intentions: Teaching engineering students to plan their design processes*. Paper presented at the 2019 American Society for Engineering Education (ASEE) Conference, Tampa, FL, June 5-19, 2019. (*This paper won the best paper award for the Design Engineering Education Division (DEED)*).
3. Turns, Jennifer Anne; Scalone, Giovanna; Arif, Ahmer; Lovins, Terri; Atman, Cindy (2017). Dimensions in Designing Reflection Activities, *Proceedings of the World Engineering Education Forum*, Kuala Lumpur, November 2017.
4. Turns, J., Shroyer, K., Lovins, T., and Atman, C.J. (2017). Understanding reflection activities broadly, *Proceedings of the Annual Conference of the American Society for Engineering Education*, Columbus, Ohio, June 2017.
5. Kilgore, Deborah, Cynthia J. Atman, Andy Jocuns, Kathryn Shroyer. (2017) From Research to Action in the Classroom: Encouraging Broad Thinking in Engineering Design with Significant Learning Experiences. *Mudd Design Workshop X. Claremont, CA. June 1-4, 2017*. A revised version of this paper appeared in the *International Journal of Engineering Education*, 34(2), 2018.
6. Shroyer, K.E., Turns, J.A., Lovins, T., Cardella, M., Atman, C.J. (2016) From Idea to Ideospace: Tracing a design discussion in a brainstorming session. *Design Thinking Research Symposium 11 (DTRS11)*, Copenhagen, Denmark. November 2016
7. Allendoerfer, C., Yasuhara, K. Turns, J., Atman, C. (2016) Making an impact on engineering education communities: Learning from the past and looking forward *Proceedings of the Annual Conference of the American Society for Engineering Education*, New Orleans, LA, June 2016.
8. Atman, C.J., Arif, A., Shroyer, K.E., Turns, J.A., & Borgford-Parnell, J. (2016) "Spend another day in our class talking about this research please": Student insights from a research-based design thinking exercise. *Design Research Society, 2016 Design Research Society 50th Anniversary Conference (DRS)*, Brighton, UK. June 27-30, 2016.
9. Borgford-Parnell, J., Turns, J.A., & Atman, C.J., (2015). *A pedagogy of larger concerns manifested in an engineering design seminar*. *Research in Engineering Education Symposium (REES)*. Dublin, Ireland. July 13-15, 2015.
10. McDonnell, J. & Atman, C.J. (2015). *Paying attention to the design process: Critically examining personal design practice*. *LearnxDesign Conference*. Chicago, IL. June 28-30, 2015.
11. Atman, C.J., McDonnell, J., Campbell, R., Borgford-Parnell, J., & Turns, J. A. (2015). *Using design process timelines to teach design: Implementing research results*. *American Society of Engineering Education Annual Conference (ASEE)*. Seattle, WA. June 14-17, 2015.
12. Turns, J.A., Sattler, B., Thomas, L.D., Atman, C.J., Bankhead, R.B., Carberry, A.R., Csavina, K.R., Cunningham, P., Faust, D.K., Harding, T.S., & Yasuhara, K. (2015). *Reflecting on reflection: How*

- educators experience the opportunity to talk about supporting student reflection.* American Society of Engineering Education Annual Conference (ASEE). Seattle, WA. June 14-17, 2015.
13. Sepp, L.A., Orand, M., Turns, J.A., Thomas, L.D., Sattler, B., & Atman, C.J. (2015). *On an upward trend: Reflection in engineering education.* American Society of Engineering Education Annual Conference (ASEE). Seattle, WA. June 14-17, 2015.
 14. Yasuhara, K., Campbell, R.C., & Atman, C.J. (2015). *Where do engineering students learn to consider design problem context?* Mudd Design Workshop IX. Claremont, CA. May 28-30, 2015. A revised version of this paper appeared in the *International Journal of Engineering Education*, 32(2), 2016.
 15. Atman, C.J., McDonnell, J., Campbell, R. & Turns, J.A., *Students Discovering Their Own Design Processes: Using Design Process Representations to Learn about Designing* (Work in Progress), presented at the 2014 Annual Frontiers in Education Conference (FIE), Madrid, Spain, October 22-25, 2014. Presented by Jennifer A. Turns.
 16. Turns, J.A., Sattler, B., Yasuhara, K., Jim Borgford-Parnell, & Atman, C.J. (2014). *Integrating Reflection into Engineering Education.* Proceedings of the 2014 American Society of Engineering Education Conference (ASEE), Indianapolis, IN. June 15-18, 2014. (available online)
 17. Krause, K., Huneke, M., Yasuhara, K & Atman, C., *Undergraduate Reflections on Learning Engineering Design*, presented at the 2013 IEEE International Professional Communication Conference, Vancouver, B.C., July 15-17, 2013
 18. Krause, K., Atman, C.J., Borgford-Parnell, J. & Yasuhara, K., *Designing for Communities: The Impact of Domain Expertise* AC2013-6734, presented at the 2013 ASEE Annual Conference & Exposition, Atlanta, GA, June 23-26, 2013
 19. Krause, K., Atman, C.J., Borgford-Parnell, J, Deibel, K. *Design Considerations: Implications of Domain Expertise.* In proceedings of the Frontiers in Education Conference, Seattle, WA, October 2012.
 20. Campbell, R.C., Yasuhara, K., Atman, C.J., & Shepard, S., *Exploring If and How Knowledge of a Humanitarian Disaster Affects Student Design Thinking.* AC 2012-5232 presented at the 2012 ASEE Annual Conference & Exposition, San Antonio, TX, June 10-13, 2012.
 21. Yasuhara, K., Lande, M., Chen, H., Atman, C.J., Sheppard, S. *Shifting Conceptions of Engineering Design: Longitudinal and Cross-Sectional Studies of Undergraduate Engineering Majors.* Research in Engineering Education Symposium (REES), Madrid, Spain, October 2011. In proceedings of the Mudd Design Workshop VII: Design Education: Innovation and Entrepreneurship, Claremont, CA, May 2011. Revised version of this paper also published in the *International Journal of Engineering Education*, 28(2): 436-447, 2012
 22. Yasuhara, K., Lande, M., Chen, H., Sheppard, S., & Atman, C.J. *Educating Engineering Entrepreneurs: A Multi-Institution Analysis.* In proceedings of the Mudd Design Workshop VII: Design Education: Innovation and Entrepreneurship, Claremont, CA, May, 2011. Revised Version of

this paper also published in the International Journal of Engineering Education, 28(2): 436-447, 2012

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 - ScienceDaily.com, October 15, 2010. Available online at: <http://www.sciencedaily.com/releases/2010/10/101015185838.htm>

- NSF Website, October 7, 2010. Available online at:
http://www.nsf.gov/news/news_summ.jsp?cntn_id=117872&org=EHR&from=news
 - CAEE Website, October 7, 2010. Available online at: <http://www.engr.washington.edu/caee/>
 - University of Washington's Civil & Environmental Engineering website, October 5, 2010. Available online here: http://www.prism-magazine.org/feb11/last_word.cfm
5. Atman, C.J., "Cindy Atman on Critical Research." YouTube video presentation for the ASEE Annual Conference, June 2008. Available online at:
http://www.youtube.com/watch?v=PGE9vrkOI_Y
 6. Atman, C.J., Borgford-Parnell, J., and Deibel, K., "The CELT Model: From Research to Teaching and Back Again." YouTube video presentation for the 2008 CASEE Webinar, October 2008. Available online at: <http://www.youtube.com/watch?v=GrQRp2FQ7oM>

INVITED PRESENTATIONS AND SEMINARS (EXCLUDING KEYNOTE ADDRESSES LISTED ABOVE)

1. Atman, C. J. "Design awareness: From design expertise to design signatures to..." Invited talk to Stanford Mechanical Engineering Department and the dSchool, February 28, 2023. Zoom video [here](#).
2. Atman, C. J. "Researching and Teaching Engineering Design." National Academy of Engineering Symposium on Extraordinary Engineering Impacts on Society, August 19, 2022. Invited participant representing extraordinary impact on engineering education with NSF funding. Fifteen minute video [here](#).
3. "Design Signatures: Empirically Based Representations of Design Processes", Invited speaker in the Engineering Education Research Program at the University of Michigan, Oct 23, 2019.
4. "Design Awareness: An Informal Conversation", Purdue Engineering Education Department, September, 2018.
5. Atman, C.J. (2018, 20 July). *Design Awareness Patterns, Pivots and Persistence*. Invited Talk to The Second IUCEE Leadership Summit: Transformations through Collaborations and Clusters of Excellence, The Hotel Goan Heritage - Gaura Vaddo, Calangute, Bardez, Goa, India.
6. Atman, C.J. (2018, 15 July). *Design Awareness: Patterns, Pivots and Persistence*. Invited Talk to the International Conference on Transformations in Engineering Education – Imparting the Futuristic Skills (ICTIEE AP' 18), SRM University - AP, Amaravati, India
7. Atman, C., Design & Innovation, Invited presentation at the World Engineering Education Forum, Kuala Lumpur, Malaysia, November, 2017.

8. Invited Speaker. Atman, C.J. (2016). "Doing (and Reflecting On) Design: A Productive Pairing." Engineering Education Graduate Student Speaker Series, Purdue University, West Lafayette, IN, March 24, 2016
9. Invited Speaker. Atman, C.J. (2015). "Talking engineering education to policy makers." Building Capacity Workshop, National Science Foundation, Washington D.C., March 12, 2015.
10. Invited Speaker. Atman, C.J. (2014). "Making Sense of Engineering Design: Seeing, Hearing, and Learning." Program of Research on Opportunities and Challenges in Engineering Education in Denmark (PROCEED). Aalborg University, Aalborg, Denmark. April 3, 2014.
11. Sabelli, N., Change, B., Richey, M., Atman, C., Turns, J. "Engineering Socio-Technical Systems and Workforce Innovation: Understanding Internal and External constraints on Engineering Education as a Complex Adaptive System." Invited proposal to NSF's biennial competition for proposal ideas in the Emerging Frontiers in Research and Innovation (EFRI) Program. Proposal submitted: August 2012; short written paper submitted: November 2012; Presentation to panel, Arlington, VA, January 9, 2013. Proposal declined.
12. Atman, C.J. "Possible Future of Engineering Education; Context, Perspective, and Possibilities." Invited Speaker in strategic direction meeting: NSF's Division of Engineering Education and Centers (EEC): A Disruptive Future for Engineering Education, August 8, 2012.
13. Atman, C.J. "Studying Engineering Student Design Processes: Two Views of Context" Invited speaker at the Engineering Education Graduate Research Seminar via Webcast, April 2012. Involving Purdue University, Utah State University, Virginia Tech, and Colorado State University.
14. Atman, C.J., "Developing Design-Related Teaching Goals," National Academy of Engineering's First Frontiers of Engineering Education (FOEE) Symposium, Herndon, VA, November 2009.
15. Atman, C.J., "Creating Engineering Education Opportunities: Campus-Based Centers." Invited presentation at the National Symposium on Creating Engineering Education Opportunities: Why and How, Arlington, VA, March 2009.
16. Atman, C.J., Finelli, C., Fortenberry, N., and Haghighi, K., "Engineering Education Centers & Departments as Drivers of Change Workshop." Invited panelist, American Society for Engineering Education Conference, Pittsburgh, PA, June 2008.
17. Atman, C.J., "CAREER Awards with a Focus on Engineering Education Research." Invited panelist, American Society for Engineering Education Conference, Pittsburgh, PA, June 2008.
18. Atman, C.J., "Undergraduate Pathways to Engineering: Insights from a Longitudinal Study." Invited speaker, Engineering Education Research Center, Washington State University, Pullman, WA, April 2008.
19. Kilgore, D., Atman, C.J., Kang, A., and Deibel, K., "Undergraduate Engineering Students' Information Gathering Behaviors During Design." Abstract presented at the Center for the Integration of Science Education & Research (CISER) Conference: On Being an Engineer, Texas Tech University, Lubbock, TX, February 2008.
20. Atman, C.J. and Borgford-Parnell, J., "Learning Science Research Applied to Engineering," Invited workshop, INFORMS 2007 Teaching Effectiveness Colloquium, Seattle, WA, November 2007.
21. Sheppard, S., Atman, C.J., Courter, S., and Eris, O., "Research on Engineering Education: theory informing practice, informing theory." Invited keynote co-presenter, American Society of

Mechanical Engineers International Mechanical Engineering Education Conference, Coronado, PR, March 2007.

22. Atman, C.J., "Solving Design Problems: A Comparative Study of Engineering Student, Faculty, and Expert Practitioner Design Processes," Open University, London, UK, November 2006.
23. Atman, C.J., "Solving Design Problems: A Comparative Study of Engineering Student, Faculty, and Expert Practitioner Design Processes," University of Kent, Canterbury, UK, September 2006.
24. Atman, C.J., "Describing and Doing Design: Multiple Views of Student and Expert Engineering Designers," Arizona State University, Tempe, AZ, January 2007.
25. Atman, C.J., "Portraying Engineering Design Expertise: Empirical Insights". Invited Keynote Address, First International Computing Education Research Workshop. Seattle, WA, October 2005.
26. Atman, C.J. and Cardella, M. E., "Engineering Learning Research at the Center for Engineering Learning and Teaching" Invited presentation at the American Society for Engineering Education Mathematics and Physics Division Luncheon, Portland, OR, June 2005.
27. Atman, C.J., and Turns, J., "Learning Engineering" Invited presentation at the NSF Research, Evaluation and Communication series on Research on Learning in the Disciplines, Washington, DC, April 2005.
28. Atman, C.J., and Lund, D., "Center for the Advancement of Engineering Education," Invited presentation at the American Society of Engineering Education Regional Conference, Seattle, WA, April 2004.
29. Atman, C.J., Turns, J., Fleming, L., Mathieu, B., "Looking at Learning", Invited workshop at the Course, Curriculum & Laboratory Improvement Conference, Arlington, VA, April 2004.
30. Atman, C.J., "Research Culture for Graduate Students", Invited panelist at the American Society of Engineering Education Conference Proceedings, Salt Lake City, UT, June 2004.
31. Atman, C.J., Adams, R. S. and Turns, J., "Building Capacity in Engineering Education," Invited talk, University of Queensland, Brisbane, Australia, November 2003.
32. Atman, C.J., "How to Improve Engineering Student Learning", Invited Presentation, American Society for Engineering Education, Engineering Deans Institute, Santa Monica, CA, March 2003.
33. Atman, C.J., Felder, R., and Turns, J., "How People Learn Engineering: Two Examples and a Call to Action", Invited presentation to the National Academy of Engineering Retreat on Engineering Education Research Center, Washington, DC, January 2002.
34. Atman, C.J., "What Do Engineering Students Know?" Invited Keynote Address, Innovation and Technology in Computer Science Education, Canterbury, England, June 2001.
35. Atman, C.J., "Student Learning in Engineering and Design", Invited presentation, Department of Design and Innovation, The Open University, Milton Keynes, England, June 2001.

36. Atman, C.J., Adams, R.S., Safoutin, M., and Turns, J., "Unpacking Design: Four Directions to Understand Engineering Student Design Processes," Invited presentation, Center for Design Research, Stanford University, Stanford, CA, October 1999.
37. Atman, C.J. and Turns, J., "Engineering Student Learning: Research in 'Design' and 'Knowledge Integration'," Invited presentation, Stanford Learning Lab, Stanford University, Stanford, CA, October 1999.
38. Atman, C.J. and Turns, J., "Studying Engineering Design Learning: A Case Study in the Application of Protocol Analysis and the Development of Measures," Invited presentation at the conference on Knowing and Learning to Design, Georgia Institute of Technology, Atlanta, GA, April 1999.
39. Atman, C.J., "Engineering Student Design Processes," Invited presentation, Learning Research and Development Center, University of Pittsburgh, Pittsburgh, PA, April 1998.
40. Atman, C.J., "Engineering Student Learning," Invited workshop presentation at the NASA Administrators Fellowship Program, National Research Council, December 1997.
41. Atman, C.J., Invited presentation at the NSF Division of Undergraduate Education Program Effectiveness Review, November 1997.
42. Atman, C.J., "Using Verbal Protocol Analysis to Assess Student Design Learning," Invited presentation at the NSF workshop on Design Education, Georgia Institute of Technology, Atlanta, GA, September 1997.
43. Atman, C.J., "Process Knowledge and Prior Knowledge: Some Assessment Challenges," Invited workshop presentation at the NSF Engineering Education Scholars Workshop, Carnegie Mellon University, Pittsburgh, PA, July 1997.
44. Atman, C.J., "Assessment in Engineering Education," Invited workshop presentation at the American Association of Environmental Engineering Education and Practice Conference, August 1996.
45. Atman, C.J., Leifer, L., Miller, R., and Olds, B., "Innovative Assessment Opportunities," A National Technological University Satellite broadcast to the U.S. engineering education community on November 14, 1995. Number of sites: 152 engineering schools, audience size: 1167.
46. Atman, C.J., "The Problem of Problem Solving," Invited presentation at the NSF Workshop on Assessment for Engineering Coalition schools, July 1995.
47. Atman, C.J., Indira, N., and Nachtmann, H., "Do Engineers and Humanities Majors Perceive STS Issues Differently?" Invited presentation, Bucknell University, Lewisburg, PA, October 1994.
48. Atman, C.J., "Risk Communication," Invited seminar speaker, Graduate School of Public Health, University of Pittsburgh, Pittsburgh, PA, September 1994.

OTHER SCHOLARLY ACTIVITY

Special Sessions, Symposia, Panels, and Presentations at Conferences without Papers.

1. Richards, Larry, Larry Shuman, Karl Smith, "Building on the Past, Creating the Future: Where Are the New Frontiers?" Panel member, Frontiers in Education Conference, San Jose, California, October 4 – 6, 2018.
2. Brunhaver, Samantha, Adam R Carberry, Jeremi London, *Meet the Engineering Education Pioneers – Panel & Roundtable*, Panel member, Frontiers in Education Conference, San Jose, California, October 4 – 6, 2018.
3. Bailey, R., Atman, C., Doepker, P., Kraus, G., McKenna, A.. (2017) Panel honoring the contribution of Clive Dym to Engineering Design Education, American Society of Engineering Education Conference, Columbus, Ohio, June, 2017.
4. Atman, C.J., Sheppard, S.D., Turns, J., Yasuhara, K., Brunhaver, S., Korte, R., Lichtenstein, G., Matusovich, H., et al. "Discovering Implications of the Academic Pathways Study for your Campus." In proceedings of the American Society for Engineering Education Annual Conference, Vancouver, B.C., June 2011.
5. Atman, C.J., Adams, R.S., Paretti, M., & Trenor, J.. Consortium in Engineering Education Panel Discussion, Educational Research & Methods Division. In proceedings of American Society for Engineering Education Annual Conference, Louisville, KY, June 2010.
6. Atman, C.J., Kilgore, D., and Yasuhara, K., "Sustainability and Social Responsibility: Assessing Engineering Students' Consideration of Context", Engineering, Social Justice, and Peace Conference, London, England, August 2010.
7. Atman, C.J., Chachra, D., Yasuhara, K., Turns, J., Sheppard, S., Kilgore, D., Fleming, L., Miller, R., Smith, K., Stevens, R., and Streveler, R. "Linking Research Findings on Engineering Student Learning and Engineering Teaching: Implications for Engineering Education", ASEE Pacific Northwest Regional Conference, Seattle, WA, November 2008.
8. Atman, C.J., Fleming, L., Kilgore, D., Miller, R., Sheppard, S., Smith, K., Stevens R., Streveler, R., and Turns, J., "Special Session – Linking Research Findings on Engineering Student Learning and Engineering Teaching: Implications for Engineering Education." In proceedings of the Frontiers in Education Annual Conference, Saratoga Springs, NY, October 2008. *This was a presentation that included an abstract.*
9. Atman, C.J., Kilgore D., Eris, O., Fleming, L., Miller, R.L., Sheppard, S.D., Smith, K., Stevens, R., Streveler, R., Amos, D.M., Bailey, T., Chachra, D., Chen, H., Donaldson, K., Geist, M., Jones, M., Korte, R., Ledbetter, S., Lichtenstein, G., Loshbaugh, H., Loucks, C., Lund, D., Matusovich, H., McCain, J., Morozov, A., Taylor, A., Turns, J., Williams, D., and Yasuhara, K., "Special Session – Academic Pathways Study: Special Interactive Session on Findings and Implications for

Engineering Education and Practice,” *Frontiers in Education Conference*, Milwaukee, WI, October 2007. *This was a presentation that included an abstract.*

10. Adams, R.S., Nakamura, R., and Atman, C.J., “What Makes a Good Freshmen Research and Design Project?” *American Society for Engineering Education Conference*, Albuquerque, NM, June 2001.
11. Adams, R.S., Lidstrom, M., Atman, C.J., Olson, A., Nelson, K., and Turns, J., “Teaching a Biological Perspective to Engineers,” *American Educational Research Association*, Seattle, WA, April 2001.
12. Turns, J. and Atman, C.J., “Concept Map Use in Course-Level and Program-Level Assessment,” *American Society for Engineering Education Conference*, St. Louis, MO, June 2000.
13. Scott, C., Turns, J., and Atman, C.J., “Learning About Engineering Design Through an Examination of Student Design Strategies,” *American Society for Engineering Education Conference*, St. Louis, MO, June 2000.
14. Atman, C.J. and Turns, J., “Characterizing Engineering Student Design Processes – A Within Subjects Verbal Protocol,” *American Society for Engineering Education Conference*, St. Louis, MO, June 2000.
15. Shuman, L., Besterfield-Sacre, M., Wolfe, H., Atman, C.J., McGourty, J., Miller, R., Olds, B., and Rogers, G., “Defining the Outcomes: A Bloom’s Taxonomy Approach to EC 2000,” *American Society for Engineering Education National Conference*, Charlotte, NC, June 1999.
16. Turns, J., Atman, C.J., and Sidiadinoto, I., “Students Use of Functional, Behavioral and Structural Terms to Describe Artifacts During Design.” *American Society of Engineering Education Conference*, Charlotte, NC, June 1999.
17. Atman, C.J., Chimka, J., and Bursic, K., “Results From a Verbal Protocol Study of the Design Process,” *Frontiers in Education Conference*, Pittsburgh, PA, November 1997.
18. Besterfield-Sacre, M.E., Atman, C.J., and Shuman, L.J., “A Cross Institutional Comparison of Freshman Engineering Attitudes,” *Frontiers in Education Conference*, Pittsburgh, PA, November 1997.
19. Besterfield-Sacre, M., Atman, C.J., Shuman, L., and Wolfe, H., “Outcomes Assessment Using Questionnaires, Protocols and Empirical Models: Pilot Study Results,” *NSF sponsored Best Assessment Processes in Engineering Education Symposium*, Terra Haute, IN, April 1997.
20. Besterfield-Sacre, M.E., Shuman, L., and Atman, C.J., “Engineering Student Attitudes Assessment,” *NSF sponsored Best Assessment Processes in Engineering Education Symposium II*, Terra Haute, IN, April 1997.
21. Atman, C.J., “What Diagrams Do Readers Prefer in Risk Communications?” *Annual Society for Risk Analysis Conference*, December 1995.
22. Bostrom, A. and Atman, C.J., “Correcting Misconceptions about Global Climate Change: Is a Myth-Fact Box a Good Idea?” *Annual Society for Risk Analysis Conference*, December 1995.

23. Atman, C.J. and Bursic, K., "How Effective are Textbooks in Teaching the Engineering Design Process?" Frontiers in Education Conference, Atlanta, GA, November 1995.
24. Redfern, M. and Atman, C.J., "Human Factors at the University of Pittsburgh," Three Rivers Chapter of the Human Factors and Ergonomics Society, November 1995.
25. Atman, C.J., Initiatives at the University of Pittsburgh, American Society of Engineering Education Conference Panel on Restructuring Engineering Education, June 1995.
26. Atman, C.J. and Puerzer, R., "Investigating Advantages for Using Schematic Diagrams to Explain Risk Information," Industrial Engineering Research Conference, May 1995.
27. Atman, C.J. and Bostrom, A., "Unconfounding Content and Structure in the Mental Models Approach for Risk Communication Design," Annual Society for Risk Analysis Conference, December 1994.
28. Atman, C.J., "Have You Tried.....Concept Maps?" Frontiers in Education Conference, November 1994.
29. Atman, C.J., "Using Decision Analytic Structures for Risk Communication," Invited Session, Industrial Engineering Research Conference, May 1994.
30. Atman, C.J., "Proposal Writing Workshop," American Society for Engineering Education Conference, June 1993.
31. Atman, C.J., "Comparing Alternative Information Formats for Effective Risk Communication," Invited Session, Industrial Engineering Research Conference, May 1993.
32. Atman, C.J., "STS and the Freshman: A Survey of Humanities and Engineering Freshmen," National Association for Science, Technology, and Society Conference, January 1993.
33. Bostrom, A., Atman, C.J., Fischhoff, B., and Granger, M., "Risk Communication Evaluation: Mental Models and Other Approaches," Annual Society for Risk Analysis Conference, December 1992.
34. Atman, C.J., "Diagrams, Outlines or Text: What Do Readers Like and Remember?" Annual International Visual Literacy Association Conference, October 1992.
35. Atman, C.J., Bostrom, A., Fischhoff, B., and Granger, M., "Developing Effective Risk Communication: Content and Structure," Annual Society for Risk Analysis Conference, December 1991.
36. Atman, C.J., "Using Decision Analytic Tools for Structuring Written Risk Communication," Annual ORSA/TIMS Conference, October 1990.
37. Atman C.J., "Using Protocol Data to Evaluate Risk Communication: An Indoor Radon Example," Fifth International Conference on the Foundation and Applications of Utility, Risk, and Decision Theories, June 1990.

Classroom Presentations

1. Borgford-Parnell, J., Deibel, K., and Atman, C.J., "Successful Design Processes: Some Research Perspectives," Mechanical Engineering Design (ME 495) April 2009.
2. Atman, C.J. and Borgford-Parnell, J., "Engineering Design Processes," Aerospace Structures (AA 332), taught by Dr. Paolo Passolini's, April 18, 2008. This presentation includes a follow-up quarter-long activity to help students record and monitor their design processes.
3. Atman, C.J. and Borgford-Parnell, J., "How Prepared Are You? Compare Your Engineering Skills with Other Graduating Seniors," Materials Engineering II (MSE 492), taught by Dr. Brian Flinn, February 2008.

Full Meetings/Workshops Delivered

1. Turns, J. and Atman, C.J., "Reflection in Engineering Education Workshop". Sixty participants from across the U.S. attended a 1.5 day workshop sponsored by the Consortium to Promote Reflection in Engineering Education, Seattle, WA, September 14 & 15, 2017.

Workshops and Webinars

1. Atman, Cynthia, J., Yuliana Flores, Eileen Zhang, "Considering Design: Research based teaching activities", Invited presentation for the Brent Felder Webinar Series; Indo Universal Collaboration for Engineering Education (IUCEE), International Federation of Engineering Education Societies (IFEES), Global Engineering Dean's Council (GDEC); April 26, 2023.
2. Atman, C. J., Y. Flores & E. Zhang. "From Doing design to design awareness: What is your design signature?", Workshop to UW engineering undergraduate students, October 15, 2023.
3. Atman, C. J., Y. Flores & E. Zhang. "From Doing design to design awareness: What is your design signature?", Workshop to UW engineering undergraduate students, January 27, 2023.
4. Atman, C. J., Y. Flores & E. Zhang. "From Doing design to design awareness: What is your design signature?", Workshop to Stanford undergraduate and graduate students, February 27, 2023.
5. Dringenberg, E., Wertz, R., Atman, C., Cross, K., Miskioğlu, E., Guanés, G., "Special Session: Surfacing the Hidden Brain (System 1) in Engineering Education Teaching, Learning, and Research", Frontiers in Education, Cincinnati, Ohio, October, 2019. (this session won the Helen Plants award for innovative interactive session)
6. Turns, J.A., Atman, C., Arif, A. "Reflection in Engineering Education", Canadian Engineering Education Association/Association Canadienne De L'Education en Genie, Vancouver, Canada, June 4, 2018.
7. Turns, J.A., Atman, C., & Scalone, G. (2018, April 26). Developing Critical Thinking and Reflection Skills in the Classroom [Webinar]. In American Society for Engineering Education *On Demand Webinars*. Retrieved from https://docs.asee.org/public/Webinars/ASEEWebinarSlides_CriticalThinkingReflection.pdf
8. Atman, C.J., and Scalone, G. (2018, 16 July). *Doing and Teaching Design: Incorporating Research Results in Design Activities*. Workshop presented at the International Conference on

Transformations in Engineering Education – Imparting the Futuristic Skills (ICTIEE AP' 18), SRM University - AP, Amaravati, India.

9. Atman, C.J., and Scalone, G. (2018, 17 July). *Doing and Reflecting on Design: Using reflection to reinforce design learning*. Panel Session presented at the International Conference on Transformations in Engineering Education – Imparting the Futuristic Skills (ICTIEE AP' 18), SRM University - AP, Amaravati, India.
10. Atman, Cindy (2017) Doing and Teaching Design Incorporating Research Results in Design Activities. Workshop a Universiti Teknologi Malaysia, Johore Bahru, Malaysia, November, 2017.
11. Atman, Cindy (2017) Creating reflection activities for engineering education. Workshop a Universiti Teknologi Malaysia, Johore Bahru, Malaysia, November, 2017.
12. Turns, Jennifer; Atman, Cindy (2017) Creating reflection activities for engineering education. Workshop at the World Engineering Education Forum, Kuala Lumpur, Malaysia, November, 2017.
13. Atman, C., Turns, J., Yasuhara, K., Allendoerfer, C. (2017) Engineering Education Career Pathways: Looking Back to Look Forward, NSF EEC PI meeting, Washington DC, September, 2017)
14. Bailey, Reid; Adams, Robin; Turns, Jennifer; Atman, Cindy. (2017) Admissions of a Dutiful Design Educator: Aiming Engineering Design Research at Areas Where Students Struggle. Workshop at Annual Conference of the American Society for Engineering Education, Columbus, Ohio, June 2017.
15. Turns, J., Atman, C.J., Thomas, L. D., & Shroyer, K. "The Productive Pause: Practical Strategies for Incorporating Reflection in Engineering Education." Crossing Boundaries: Transforming STEM Education, AAC&U 2015 Network for Academic Renewal STEM Conference, Seattle, WA, November 12, 2015.
16. Turns, J., Atman, C.J., Sattler, B., & Thomas, L.D. "Promoting Reflection and Reflection Activities in Engineering Education." 2015 American Society of Engineering Education Annual Conference and Exposition, Seattle, WA, June 14, 2015.
17. Atman, C.J., "Engineering Education Research: A Short History and Two Examples." 2011 International Network for Engineering Studies (INES)/Prometheans Workshop, Cleveland, OH, November 2, 2011.
18. Atman, C.J., Deibel, K., Borgford-Parnell, J., Yasuhara, K., "Developing Design Process: Comparing Student and Expert Engineers." 2012 Engineering Practice Roundtable, Madrid, Spain, October 8, 2011.
19. Atman, C.J., Kilgore, D., Turns, J., Yasuhara, K., "Discovering Implications of the Academic Pathways Study for Women on YOUR Campus." 2011 WEPAN Conference, Seattle, WA, June 21-23, 2011.

20. Atman, C.J. & Sheppard, S., "A Conversation about Change in Teaching Engineering: Insights from the Academic Pathways Study." MUDD Design Workshop VIII, "Design Education: Innovation and Entrepreneurship", May 26-28, 2011, Claremont, CA, Harvey Mudd College.
21. Borgford-Parnell, J., Atman, C.J., and Deibel, K., "Bringing Design Research into Engineering Classrooms," ASEE Pacific Northwest Regional Conference, Seattle, WA, November 2008.
22. Atman, C.J. , Chachra, D., Yasuhara, K., Turns, J., Sheppard, S., Kilgore, D., Fleming, L., Miller, R., Smith, K., Stevens, R., and Streveler, R., "Linking Research Findings on Engineering Student Learning and Engineering Teaching: Implications for Engineering Education," Pacific Northwest Regional Conference of the American Society for Engineering Education, Seattle, WA, November 2008.
23. Yasuhara, K., Woods, S., Loshbaugh, H.G., Matusovich, H., Chachra, D., Chen, H., Donaldson, K., Eris, O., Kilgore, D., Morozov, A., Sheppard S., Atman, C.J., Miller, R., and Streveler, R. "Bridging Research and Practice: What does the Academic Pathways Study tell us about women and engineering education?" 2008 WEPAN National Conference, St. Louis, MO, June 2008.
24. Atman, C.J. & Yasuhara, K. "Bridging Research and Practice: What does the Academic Pathways Study tell us about women and engineering education?" Interactive workshop with abstract presented at the 2008 WEPAN National Conference, St. Louis, MO, June 2008.
25. Atman, C.J., and Kilgore, D., "Interactive Session with the Center for the Advancement of Engineering Education Researchers." NAE/CASEE Dane and Mary Louise Miller Symposium, Milwaukee, WI, October 2007.
26. Atman, C.J. , Fleming, L., Smith, K., Streveler, R., Turns, J., Kilgore, D., Matusovich, H., and Jocuns, A., "Using Research Results to Advance the Field of Engineering Education and Practice," NAE/CASEE Dane and Mary Louise Miller Symposium, Milwaukee, WI, October 2007.
27. McGovern, V., Atman, C.J., Augenbraun, E., Stith, A., and Taylor, C., "Multiple Career Pathways", American Association for the Advancement of Science Annual Meeting, St. Louis, MO, February 2006.
28. Atman, C.J., Turns, J., and Fleming, L., "Learning Science Research Applied to Engineering," American Society for Engineering Education Workshop, Portland, OR, June 2005.
29. Atman, C.J., Barker, T., Cardella, M., and Mosborg, S., "Looking at Research on Learning: an Interactive Workshop," University of Washington College of Engineering TA Workshop, Seattle, WA, September 2004.
30. Sheppard, S., Atman, C.J., Adams, R.S., and Richardson, C., "What Do We Know About our Engineering Students," Frontiers in Education Conference, Boston, MA, November 2002.
31. Turns, J., Adams, R.S., Martin, J., Linse, A., and Atman, C.J., "Design Education Workshop: Connecting Research and Practice", American Society for Engineering Education Annual Conference, Montreal, Canada, June 2002.

32. Denton, D., Atman, C.J., and Linse, A., "Faculty Recruitment and Professional Development," Engineering Deans Institute Conference, March 2001.
33. Olds, B., Shuman, L.J., Wolfe, H., Besterfield-Sacre, M., McGourty, J., Miller, R., Atman, C.J., and Rogers, G., "A Baker's Dozen Assessment Methods and Their Strengths and Weaknesses," NSF-Best Assessment Practices III. Rose-Hulman Institute of Technology, Terra Haute, IN, April 2000.
34. Atman, C.J., and Turns, J., "Concept Maps for Assessment in Engineering Education," Rose-Hulman Institute of Technology, Best Assessment Processes III Conference, Terre Haute, IN, April 2000.
35. Sheppard, S., Atman, C.J., Carlson, L., Crawley, E., Eibeck, P., Frey, D., Marchese, A., Richards, D., Sullivan, J., Waitz, I., Van Duzer, E., "Innovations in Engineering Education: What Makes Innovation Possible and Sustainable," Frontiers in Education Conference, April 2000.
36. Besterfield-Sacre, M., Shuman, L., Wolfe, H., Atman, C.J., McGourty, J., Miller, R., Olds, B., and Rogers, G., "EC 2000 Attributes: Definition and Use," Frontiers in Education Conference, November 2000.
37. Atman, C.J., Besterfield-Sacre, M., McGourty, J., Miller, R., Olds, B., Rogers, G., Shuman, L., Turns, J., and Wolfe, H., "Assessment Methods for Addressing EC 2000: An Introduction to Program Assessment," Frontiers in Education Conference, San Juan, Puerto Rico, November 1999.

Poster Sessions

1. Atman, C.J., Borgford-Parnell, J., Adams, R.S., Cardella, M., Deibel, K., & Turns, J.A. (2015). *Design Educators and Design Representations: Exploring Intersections Across Doing, Seeing, Hearing and Teaching Design*. Mudd Design Workshop IX. Claremont, CA. May 28-30, 2015
2. Yasuhara, K., Atman, C.J., Kilgore, D., Campbell, R.C., Anukrati, A., & Krause, K., "How Much do Engineering Students Consider the Context of Design Problems?" Poster presented at the NSF Engineering Education Awardees Conference, Arlington, VA, March 2012. Also presented by Kristina Krause at the UW Teaching & Learning Symposium, April 17, 2012.
3. Campbell, R.C., Yasuhara, K., Chen, H., Haase, S., Lande, M., Atman, C.J., & Sheppard, S.D., "Engineering Design in Context: Breadth of Concerns." Poster presented at the NSF Engineering Education Awardees Conference, Arlington, VA, March 2012. Also Presented by Ryan Campbell at the UW Teaching & Learning Symposium, April 17, 2012.
4. Atman, C.J., Kilgore, D., Yasuhara, K., Turns, J.A., & Borgford-Parnell, J., "Assessing Students' Consideration of Context in Engineering Design." Poster presented by Ken Yasuhara at the NSF Engineering Education Awardees Conference, Reston, VA, February 2010.
5. Atman, C.J., Adams, R., Fleming, L., Miller, R., & Smith, K., "Current Activities of the Center for the Advancement of Engineering Education." Poster presented at the NSF Engineering Education Awardees Conference, Reston, VA, February 2010.

6. Turns, J.A., Kilgore, D., Atman, C.J., & Sattler, B., "Promoting Life-Long learning, Integrated Knowledge, and Professional Identity in the Undergraduate Engineering Students through a Portfolio Development Process." Poster presented at the NSF Engineering Education Awardees Conference, Reston, VA, February 2010.
7. Atman, C.J., "Findings from the Center for the Advancement of Engineering Education." Poster presented at the University of Washington Teaching and Learning Symposium, Seattle, WA, April 2009.
8. Atman, C.J., Yasuhara, K., Kilgore, D., and Morozov, A., "Considering context in engineering: Snapshots from the undergraduate years." - NSF Grant Award #0835836. Poster presented at the NSF REESE PI Meeting, Washington, D.C., February 2009.
9. Atman, C.J., Borgford-Parnell, J., Kilgore, D., Deibel, K., and Saleem, J., "Engineering in Context: Investigations into How Experts and Students Incorporate Global and Societal Issues in Their Engineering Design Processes." - NSF Grant Award #0639895. Poster presented at the NSF Engineering Education Centers Grantees meeting, Reston, VA, February 2009.
10. Atman, C.J., Kilgore, D., Ng, W.H., Kang, A., Morozov, A., & Deibel, K., "Engineering in Context: Investigations into how students and experts incorporate global and societal issues in their engineering design processes." Poster presented at the NSF Engineering Education Awardees Conference, Arlington, VA, September 2007.
11. Turns, J., Adams, R. S., Atman, C.J. & Cardella, M. E., "Moving from research to practice in undergraduate engineering design education." Poster presented at the International Conference for the Learning Sciences, Seattle, WA, October 2002.
12. Tanimoto, S., Adams, R. S., Atman, C.J., Hunt, E., & Winn, W., "Unobtrusive assessment in online learning: Methodology and tools." Poster presented at the International Conference for the Learning Sciences, Seattle, WA, October 2002.
13. Temple, J., Vuong, B., Chin J., and Christensen, J., and Atman, C.J. as Faculty Sponsor. "An Application of Verbal Protocol Analysis to Engineering Design." University of Washington Undergraduate Research Fair, Seattle, WA, 2000.
14. Atman, C.J., & Turns, J., "Engineering Student Design Processes: Four Verbal Protocol Studies," Poster session for the National Science Foundation Research on Education, Policy and Practice PI Meeting, June 1999.
15. Atman, C.J. , Bursic, Karen M., Byron S. Gottfried, John F. Patzer, & Shuman, Larry J., "Engineering Education Research," Poster session for the University of Pittsburgh School of Engineering Research Fair, May 1996.
16. Mullins, Carie & Atman, C.J., "Understanding Freshman Problem Solving," Poster session for the University of Pittsburgh School of Engineering Research Day, April 1994.

17. Puerzer, Richard, Atman, C.J., & Chris Yarsky, “Developing Effective Written Risk Communication,” Poster session for the University of Pittsburgh School of Engineering Research Day, April 1994.
18. Atman, C.J. & Baruch Fischhoff, “The Impact of Format on Recall of Written Risk Information,” Poster session at the Annual Society for Risk Analysis meeting, Dec 1992.

Software and websites

1. Design Signatures Website: designtsignatures.org
The design signatures website presents research on design expertise, a pointer to the Design Signatures App, and all the teaching materials for the Dear Design seminar and workshops.
2. Design Signatures App
<https://app.design-awareness.com> (it works on multiple platforms but is designed for use on a phone).
The intent of the app is to allow users to track their design processes – to see what kinds of “design signatures” their processes look like and enable them to reflect on their design processes.
Authors: Cynthia J Atman, Jordan Yoon-Buck, Khadijah Jordan, Grace Barar, Shiva Anem, Rylie Sweem, Nicole Washington. Released: January 2022.

Art Installations

3. Atman, C. J., G. Barar, Y. Flores, E. Zhang, J. Turns. “Dear Design: Ideal Design Signatures”, Spring 2022 - ongoing.

This interactive installation features student “Ideal Design Signature” postcards generated in Dear Design DRG seminars in the Winter quarter 2022 on birchwood blocks hung on shelves in the fourth-floor hallway of Sieg Hall as well as a digital display of the postcards.

Postcard design representations by Dear Design DRG participants: Adoniah Carmeline, Aishwarya, Alainna Brennan Brown, Alex, Anika Mishra, Anonymous (5), Christian, Christian Ramos, Christina Yu-Lin Kuo, Cindy Atman, Dana, Eileen Zhang, Grace Barar, Hsin-Ya Hung, IB, Isha A, Izzy Armstrong, Jordan Yoon-Buck, Julian, Kathryn Shroyer, Katia, Kayla Chea, Khadijah Jordan, Lubna, Mileena, Mingyue Weng, Mulan Zhu, Nisha, Pallavi, Petrina Chan, Rachel Lee, Vishaka, Will Crisando Sanchez, Yuliana Flores.

GRADUATE STUDENTS

Chaired Doctoral Degrees

Student Name	Dissertation Title	Completed	Current Employer
Kathryn Shroyer	Designing for “seeing across projects” based learning	7/26/23	Health care industry

Monica Cardella	Engineering mathematics : an investigation of students' mathematical thinking from a cognitive engineering perspective	2006	Purdue University
Michael Safoutin	A methodology for empirical measurement of iteration in engineering design processes	2003	EPA

Chaired Masters Degrees

Student Name	Level of Supervision	Thesis/Paper Title	Completed	Current Employer
Theresa Barker	Advisor	N/A	6/05	Self-employed
Eddie Rhone	Advisor	N/A	6/03	Lakeside Partners
Monica Cardella	Advisor	N/A	3/02	Purdue University

Other significant student supervision (undergraduate research supervision, membership on degree committees, reading committees, etc.)

Student Name	Level of Supervision	Thesis/Paper Title	Completed
Kenya Mejia	Committee Member	Exploring How the Exercise of Power Contributes to Creating More Inclusive Spaces in Engineering Education	8/3/23
Ryan Campbell	Committee Member	Engineering to Care : Exploring Humanitarian Engineering Education and Ethics	06/16
Sanne Haase (Aarhus University, Aarhus, Denmark)	Assessment Committee	Professional Identity and Role of the Engineer in a Challenged Society	04/14
Kate Mobrand	Committee Member	Investigating engineering undergraduates' rhetorical awareness and perceived self-efficacy for the communication of engineering practice through creation of preparedness portfolios in a collaborative studio setting	10/12
Brook Sattler	Committee Member	Engineering Student Development: Supporting Self-Authoring Engineers	11/12
Ashley Babcock	Advisor	n/a	n/a
Frank Ashby	Committee member	Community college undergraduate engineering transfer students at a research university	8/08
Robin S. Adams	Committee member	Cognitive Processes in Iterative Design Behavior	5/01

Undergraduate Research Students:

- 2003-present: Many undergraduate students work with both CELT and CAEE on research projects.

- 2001-2002: Russel Dement, Sarah Hayes, Ian Louie, Joshua Martin, Abigail Navarro, Joshua Newman, John Orcutt, Alison Schwerzler, Jennifer Temple, and Michelle Valeriano
- 2000-2001: Jake Burghardt, KaMan Louise Cheung, Jennifer Chin, Daniel Detloff, Jennifer Temple, Julie Christensen, Jana Littleton, Eddie Rhone, Bettina Vuong, and Karl Wiegand
- 1999-2000: Jake Burghardt, KaMan Louise Cheung, Jennifer Chin, Matt Dallas, Kristen Jankowski, Melissa Kagele, Eric Landsness, Novy Phandana, Laura Sanrendatu, Albert Sukianto, Jennifer Temple, and Britton Vidal

University of Pittsburgh Students

Ph.D. Students: Carie Mullins
Justin Chimka

Ph.D. Committee: Mary Besterfield-Sacre

Masters Students: Pamela Moore
Christine Yarsky
Stefanie Lozito

Masters Committees: Gary Rafe

Undergraduate Students: Supported 41 undergraduate students through National Science Foundation Research Experience for Undergraduates and Westinghouse Foundation grants. None of these students had considered graduate school before working with me. As a result of working with my research team, three students have completed Masters degrees and an additional three completed Ph.D.'s in Industrial Engineering.

RESEARCH ACTIVITIES - FUNDED

- “Changing the Conversation with Humanitarian Engineering Context”, PI: Jessica Kaminsky, Co-PIs: Cynthia J. Atman, Jennifer Turns, National Science Foundation, \$345,000, 9/18-8/21.
- “Reflection in engineering education: Advancing conversations.” PI: Jennifer Turns, Co-PI: Cynthia J. Atman. National Science Foundation, Division of Engineering Education and Centers, \$349,562, 09/17-8/20.
- “Promoting Strategic Learning, Preparing Reflective Engineers” PI’s: Cynthia Atman & Jennifer Turns, Co-PI: Ken Yasuhara. The Leona M. and Harry B. Helmsley Charitable Trust, \$4,389,067.00, 03/01/2014-02/28/2018
- “Engineering Education Pioneers and Trajectories of Impact.” PI: Cynthia Atman, Co-PI’s: Ken Yasuhara, Jennifer Turns. National Science Foundation, Division of Engineering Education and Centers, \$373,052.00, 06/13-5/31/2017, NSF # 1263512.
- “Preparing for the Grand Challenges: When and how do engineering students learn broad thinking?” PI: Cynthia Atman, Co-PI’s: Deborah Kilgore, Ken Yasuhara. National Science Foundation, Division of Engineering Education and Centers, \$261,062.00 plus supplemental \$261,062, 09/10-02/14, NSF #1024463.
- “Promoting Lifelong Learning, Integrated Knowledge, and Professional Identity in Undergraduate Engineering Students Through a Portfolio Development Process,” PI: Jennifer Turns, Co-PI’s: Cynthia Atman, James Borgford-Parnell, Deborah Kilgore. National Science Foundation, Division of Engineering Education and Centers, \$571,990, 01/09-12/14, NSF #0835836.
- Collaborative Research, “Engineering Pathways Study: The College-Career Transition Informing Educational Practice,” PI: Cynthia Atman, Co-PI’s: Jennifer Turns, Deborah Kilgore, Ken Yasuhara . National Science Foundation, Division of Undergraduate Education, \$200,376, 10/10-09/15, NSF #1020678.
- “Assessing Students’ Consideration of Context in Engineering Design,” PI: Cynthia J. Atman, Co-PI: Ken Yasuhara. National Science Foundation, Division of Engineering Education and Centers, \$286,997, 01/10-09/13, NSF #0943242.
- “Developing Engineering Lifelong Learners Through Freshman Seminars and Faculty Development Workshops,” PI: Deborah Kilgore, Co-PI’s Cynthia J. Atman, Eve A. Riskin, Frank Ashby, and James Borgford-Parnell. National Science Foundation, Undergraduate Education Division, \$149,842.00., 2/08–1/10. NSF #0737535.
- “Center for the Advancement of Engineering Education,” PI: Cynthia J. Atman, Co-PI’s Reed Stevens at the University of Washington, Sheri Sheppard and Larry Leifer at Stanford University, Lorraine Fleming at Howard University, Ruth Streveler at the Colorado School of Mines, Karl Smith at the University of Minnesota. National Science Foundation, Higher Education Center for

Learning and Teaching, \$12,262,488; University of Washington matching funds \$910,000.00, 1/03-03/10. NSF #0227558.

- “Engineering in Context: An Investigation of how experts and students incorporate global and societal issues in their engineering design processes,” PI: Cynthia J. Atman, National Science Foundation, Engineering Education and Centers Division, \$199,876.00, 9/06–2/09. NSF #0639895.
- “An Engineering Design Expertise Continuum: Filling it in and linking it to Education Practice,” PI: Cynthia J. Atman, Co-PI’s: Robin S. Adams and Jennifer Turns at the University of Washington. National Science Foundation, \$538,196, 9/01-8/06. NSF #0125547.
- “The Teaching Challenges of Engineering Faculty: Insights from a Model Instructional Development Program,” PI: Jennifer Turns, Co-PI’s: Robin S. Adams, Cynthia J. Atman and Angela Linse. National Science Foundation, \$374,973, 7/02-12/06. NSF #0211774.
- “A Learning Environment for Information Technology Concepts Using Intensive, Unobtrusive Assessment,” PI: Steven Tanimoto, Co-PI’s: Cynthia J. Atman, Earl Hunt and William Winn. National Science Foundation, \$1,112,499, 10/01-9/04. NSF #0121345.
- “Toward Enhancing Engineering Design Education: Bringing Research Results into the Classroom,” PI: Jennifer Turns, Co-PI’s: Robin S. Adams, Cynthia J. Atman, GE Fund for \$50,000, 1/01-12/01.
- “Integration of Biology into the Engineering Curriculum at the University of Washington,” PI: Mary E Lidstrom, Co-PI’s: Cynthia J. Atman, Molly Johnson, and Francis A. National Science Foundation, \$499,998 plus \$10,000 Research Experience for Undergraduates Supplement, 9/00-8/03. NSF #0080364.
- “Regional Implementation of Transferable Integrated Design Engineering Education (TIDEE)” PI: Denny C. Davis, Washington State University. Co-PI’s: Michael S. Trevisan, and David I. McLean at Washington State University, Cynthia J. Atman, Dale E. Calkins, Mani Soma at the University of Washington, Patricia D. Daniels and Robert G. Heeren at Seattle University, Kenneth L. Gentili at Tacoma Community College, Robert Christianson and Jeff McCauley at Green River Community College. National Science Foundation, \$1,421,000 for entire coalition and includes \$359,000 plus \$10,000 Research Experience for Undergraduates Supplement for the University of Washington, 7/99-6/02. My role is PI for UW subcontract.
- “Engineering Education: Assessment Methodologies and Curricula Innovations,” PI: Larry Shuman, University of Pittsburgh, Co-PI’s: Mary Besterfield-Sacre, Harvey Wolfe at the University of Pittsburgh, Cynthia J. Atman at the University of Washington, Jack McGourty at Columbia University, Barbara Olds and Ronald Miller at the Colorado School of Mines and Gloria Rogers at the Rose-Hulman Institute of Technology. National Science Foundation, awarded \$852,790 for entire coalition and includes \$114,178 plus \$30,000 Research Experience for Undergraduates Supplement and \$19,996 extension for the University of Washington, 10/98-03/01. My role is PI for UW subcontract.
- “Tracking Undergraduate Engineering Attitudes - A Cross-Institutional Study: Implications for Retention and Success in Engineering Programs,” PI: Larry J. Shuman at the University of

Pittsburgh, Co-PIs: Cynthia J. Atman at the University of Pittsburgh and Mary Besterfield-Sacre at the University of Texas at El Paso. Engineering Information Foundation, \$88,700 to the University of Pittsburgh, 6/98-5/01.

- “Engineering Interface,” PI: Larry J. Shuman, Co-PI’s: Cynthia J. Atman, Byron S. Gottfried and Norman P. Hummon, National Science Foundation Division of Undergraduate Education, \$130,000 to the University of Pittsburgh, 6/97-8/99. NSF #9652861.
- “1997 Frontiers in Education Conference,” PI: Larry Shuman, Co-PI’s: Cynthia J. Atman and Don Chiarulli, National Science Foundation, \$56,771 to the University of Pittsburgh, 5/97-12/97. NSF #9710521.
- “Understanding How Engineering Students Approach Open-Ended Problems — Implications for Engineering Education,” PI: Cynthia J. Atman, National Science Foundation Young Investigator Award. National Science Foundation plus matching funds from General Electric Fund, Ford Motor Company Fund, Westinghouse Foundation, Xerox Corporation, Lockheed Martin totaling \$529,427, 9/93-2/00. NSF #9358516 and #9996153.
- “The Freshman Engineering Experience,” PI: Larry J. Shuman, Co-PI’s: Cynthia J. Atman, Byron S. Gottfried and John F. Patzer, II. National Science Foundation, \$200,000 plus \$10,000 for Research Experience for Undergraduates Supplement to the University of Pittsburgh, 1/93-4/95.
- “Collaborative Research in Decision, Risk, and Management Science,” PI: Cynthia J. Atman, Co-PI: Dr. Ann Bostrom at Georgia Institute of Technology. ,” National Science Foundation Award, Joint Private Industry Initiative with the Electric Power Research Institute, awarded \$113,905 plus \$12,500 addition for Research Experience for Undergraduates, 9/92-7/95. NSF #9209940.
- "Mental Models of Science, Technology and Society Issues: A Comparison of Engineers and Humanities Students," PI: Cynthia J. Atman, Co-PI: Indira Nair at Carnegie Mellon University, National Science Foundation, \$72,000 plus \$10,000 addition for Research Experience for Undergraduates, 9/91-2/94. NSF #9012421.

TEACHING ACTIVITIES

Note: 1998 – 2015 my CELT Director position was 50% in the deans office, resulting in reduced teaching responsibilities; sabbatical leave AY 2021-22

Teaching in Human-Centered Design & Engineering (University of Washington 2009-Present)

Undergraduate Courses

- HCDE 322: Organizational Teamwork, Winter 2023, 2 credits, 38 students
- HCDE 322: Organizational Teamwork, Fall, 2022, 2 credits, 38 students
- HCDE 322: Organizational Teamwork, Winter 2021, 2 credits, 38 students
- HCDE 322: Organizational Teamwork, Fall 2019, 2 credits, 37 students
- HCDE 322: Organizational Teamwork, Winter 2019, 2 credits, 23 students
- HCDE 322: Organizational Teamwork, Winter 2018, 2 credits, 25 students
- HCDE 322: Organizational Teamwork, Winter 2017, 2 credits, 26 students
- HCDE 322: Organizational Teamwork, Fall 2015, 2 credits, 29 students

- HCDE 403A: Project Management, Spring 2012, 3 credits, 23 students
- HCDE 493: Professional Portfolio/Senior Study, Autumn 2010, 3 credits, 13 students
- HCDE 493: Professional Portfolio/Senior Study, Spring 2010, 3 credits, 22 students
- HCDE 322: Organizational Teamwork, Fall 2015, 2 credits, 32 students
- ENGR 100: Introduction to Engineering Design, Oversee Management of Course, 2008-2010

Graduate Courses

- HCDE 546A: Design Thinking, Spring 2020, 4 credits, 18 students (online)
- HCDE 546A: Design Thinking, Spring 2018, 4 credits, 9 students
- HCDE 546A: Design Thinking, Spring 2016, 4 credits, 12 students
- HCDE 546A: Design Thinking, Spring 2015, 4 credits, 4 students
- HCDE 546A: Design Thinking, Spring 2013, 4 credits, 11 students

HCDE Research Groups and Independent Studies:

- HCDE 496: Research in HCDE, Dear Design: Creating Your Ideal Design Signature – Section One, Winter, 2022, 2 Credits, 14 students (online)
- HCDE 496: Research in HCDE, Dear Design: Creating Your Ideal Design Signature – Section Two, Winter, 2022, 2 Credits, 11 students (online)
- HCDE 496: Research in HCDE, Design Awareness App: Research and Testing, Winter, 2021, 2 Credits, 8 students (online)
- HCDE 496: Research in HCDE, Design Awareness App III, Winter, 2021, 2 Credits, 3 students (online)
- HCDE 496: Research in HCDE, Dear Design, Autumn, 2020, 2 Credits, 13 students (online)
- HCDE 496: Research in HCDE, Design Awareness App III, Spring, 2020, 2 Credits, 3 students (online)
- HCDE 496: Research in HCDE, Dear Design, Spring, 2020, 2 Credits, 12 students (online)
- HCDE 496: Research in HCDE, Design Awareness App II, Spring, 2020, 2 Credits, 5 students (online)
- HCDE 496: Research in HCDE, Dear Design, Winter, 2020, 2 Credits, 12 students
- HCDE 496: Research in HCDE, Design Awareness App I, Winter, 2020, 2 Credits, 5 students
- HCDE 496: Research in HCDE, Design Awareness II, Fall, 2019, 2 Credits, 3 students
- HCDE 496: Research in HCDE, Design Awareness I, Spring, 2019, 2 Credits, 5 students
- HCDE 496: Research in HCDE, Examining Self-Directed Learning through Material Inquiry: Developing an Introductory Sewing Project For the CoMotion MakerSpace Sewing Area, Run by Kathryn Shroyer, Winter 2018, 2 Credits, 5 students
- HCDE 496: Research in HCDE, Material Inquiry and Resource Design for Informal Making in CoMotion MakerSpace, Run by Kathryn Shroyer, Fall 2017, 2 Credits, 9 students
- HCDE 496: Research in HCDE, Design Learning Pathways in Makerspaces, Run by Kathryn Shroyer, Spring 2017, 2 Credits, 6 students
- HCDE 496: Research in HCDE, Makerspaces New User Experiences, Run by Kathryn Shroyer, Spring 2017, 2 Credits, 9 students
- HCDE: Independent Study HCDE, Summer 2017, 1 Credits, 1 student (Ben Luster)
- HCDE 496: Research in HCDE, “Chance Favors the Prepared Mind”: Mapping Future Discovery to Current Learning, Winter 2017, 2 Credits, 6 students
- HCDE: Independent Study HCDE, Spring 2016, 2 Credits, 1 student (Kendall Avery, topic: Design and Reflection)

- HCDE 496/596: Research in HCDE, Designing Your Personal Design Process, Spring 2015, 2 Credits, 6 students
- HCDE 496: Research in HCDE, Considering the Possibility of an HCDE MOOC: Learning from a MOOC Experience Fall 2013, 2 credits, 15 students. Jennifer Turns and Andrew Davidson, Co-Instructors
- HCDE 496: Research in HCDE, Designing Your Personal Design Process, Fall 2013, 2 Credits, 5 students
- HCDE 599B: Independent Study, Summer 2013, c/nc, 1 student
- HCDE 546: Design Thinking, Spring 2013, 4 credits, 11 students
- HCDE 496: Research in HCDE, Designing your Personal Design Process, Winter 2013, 2 Credits, 3 students
- HCDE: Independent Study HCDE, Winter 2013, 1 Credits, 1 students
- HCDE 596: Research Group, Spring 2012, 1-2 credits, 5 students
- HCDE 596: Research Group, Winter 2012, 1 credit, 4 students
- HCDE 596: Directed Research, Winter 2012, Kristina Krause, 4 credits
- HCDE 599: Directed Research, Spring 2012, Kristina Krause, 4 credits

Teaching in Industrial Engineering
(University of Pittsburgh 1991-1998)
(University of Washington 1998-2008)

Undergraduate:

- Human Factors Engineering
- Introduction to Industrial Engineering
- Engineering Economic Analysis
- Senior Design Project

Graduate:

- Cognitive Engineering
- Teaching Engineering
- Behavioral Systems Engineering
- Directed Readings on Cognitive Mental Models

SERVICE

Service Activities at the University of Washington

Departmental Service

Human Centered Design & Engineering Departmental Committees

- HCDE ABET Committee Member, 6/2022 - present
- HCDE Awards Committee Member, 9/2019-present (called co-chair, but we really all do it together)
- HCDE Space Committee Member, 9/2019-present
- HCDE Undergraduate Program Committee Member, 9/2015-present
- Merit Review Committee Chair, 2009-2019.

- HCDE Space Committee, 2010-2011

Industrial Engineering Departmental Committees

- Member, Faculty Search Committee, 1999 – 2008
- IE ABET Committee, 2007
- Co-Chair, IE ABET Committee, 1999 – 2001
- Member, Administrative Assistant Selection Committee, 1999

College Service

College of Engineering Committees

- Member, College of Engineering's Undergraduate Strategic Planning Committee, 03/15-9/15
- Member, College of Engineering's Undergraduate Student Experience Committee, 11/13-6/14
- Member, College of Engineering Standing Endowment Committee, 2010-2014)
- Member, Peterson Professorship Review Committee, 1/08 – 7/08
- Member, Technical Communication Chair Search Committee, 2007
- Member, Promotion and Tenure Committee, 2004 –2008
- Member, Mechanical Engineering Strategic Planning Committee, 1999 – 2000
- Member, Oversight Committee for the Integrated Learning Factory, 1999
- Member, Future Faculty Training Certificate Program Advisory Panel, 1999
- Member, Northwest Regional Roundtable working group, 1999
- Member, College of Engineering ABET Committee, 1999 – 2001

University Service

- Co-Member, University-wide Assessment of Student Learning Task Force, 12/2014-03/15
- 2012 Landolt Mentor Award Selection Committee
- Member, MS Degree Program, College of Architecture and Urban Planning, Program Review Committee, 1/08 – 4/08
- Member, Search Committee for Director of the K-12 Science/Math Institute, College of Education, 2005 - 2006
- CIDR Advisory Board, 2000 – 2006
- Advisory Board on Accountability, 1999 – 2000
- University Undergraduate Education Committee, 1999 – 2001
- Advisor, Program for Educational Transformation Through Technology, 1999 – 2003
- U-wired Steering Committee, 1999 – 2000

Professional Society and Other Scholarly Service (*committee memberships, positions and offices held, conference organization, journal editorship, etc.*)

- Member, Advisory Board, Advances in Engineering Education, 01/07-present
- Member, Editorial Board Member, Design Studies, 01/06 – 06/23
- Member, Organizing Committee, Clive L. Dym Mudd Design Workshop, 05/03 - present
- National Academy of Engineering Practices for Engineering Education and Research (PEER) Guidance Group, to begin spring 2021
- ASEE Task Force for Reinvisioning the Engineering Education Curriculum Committee Member, August, 2020 – Present
- External review committee, Department of Planning, Aalborg University, June 15-18, 2020.

- External reviewer of National Academy of Engineering report for NSF “A Vision for the Future of Center-Based Multidisciplinary Engineering Research”, December 2016
- Advisory Board Member, NSF Grant, “Information Literacy Skill Development & Assessment in Engineering (ILSDAE),” Senay Purzer, Purdue University, is the PI, 2014-2017
- Editorial Board Member, European Journal of Engineering Education (EJEE), 2014-Present
- National Research Council (NRC), Consensus Study Panel, “*Barriers and Opportunities in Completing Two- and Four-Year STEM Degrees.*” June 2013-March 2016
- American Association of Universities STEM Initiative Advisory Committee Member, 2013-Present
- Advisory Board Member, NSF CAREER Grant Proposal, “CAREER: Investigating Co-Curricular Participation of Students Underrepresented in Engineering.” Denise Simmons, Virginia Tech, is the PI. 2014-2017
- International Journal of Design Creativity and Innovation Editorial Board Member, 2013-Present
- Search Committee Member for NSF’s Engineering Director Search, 2012.
- NSF Career Advisory Committee Member for the NSF Faculty Early CAREER Development Program (CAREER), Attended meeting at NSF on December 13-15, 2012, Arlington, VA.
- Advisory Board Member-TUES Type I (Assessment & Research) Proposal. With Senay Purzer, Purdue University.
- Advisory Board Member, NSF REE Proposal with Brent Jesiek, Purdue University.
- Advisory Board Member, NSF Project, “Feedback in Complex, Authentic, Industrially Situated Engineering Projects using Episodes as a Discourse Analysis Framework.” With Milo Koretsky, Oregon State University.
- Engineering Education Research Taxonomy Advisory Board Member – National Effort to Define Research Agenda for Engineering Education, Funded by NSF
- ASEE Meriam/Wiley Distinguished Author Award Committee Member, 2011-June 2013 Society Year
- Advisory Board Member, Journal of STEM Education Innovations and Research, 4/10-12/16.
- Member, Electorate Nominating Committee, AAAS, 02/2008-12/2012
- Judge, NAE Grand Challenges for the 21st Century Summit Poster Competition, May 2, 2010
- Member, Working Group, Engineering Education for the Global Economy: Research, Innovation, and Practice (EEGE) Committee, ASEE, 05/08-2010
- Invited forum participant, National Assessment of Educational Progress (NAEP) on Technological Literacy, 05/09
- Member, advisory board, Engineer of the Future 2.0: Summit on Transforming Engineering Education, Franklin W. Olin College of Engineering, 01/09-04/09
- Member, Program Committee, ASME Asia-Pacific Engineering Education Congress, 07/08-04/09
- Member, Harvey Mudd Design Workshop Advisory Committee, 01/04-present
- Chair, ASEE Chester F. Carlson Award Committee, 06/04-06/07
- Attended NSF Roundtable Discussion with Representative Brian Baird, 03/07
- Member, Planning committee for the Engineering and Education Partnership in Higher Education for a Technologically Literate Citizenry meeting, 10/05-10/06
- Invited Member, Engineering Education Research Colloquy series, 09/05-09/06
- Member, ASEE Chester F. Carlson Award Committee, 06/03-05/04
- Member, National Academy of Engineering Committee on Engineering Education, 01/00-06/03
- Associate Editor, Journal of Engineering Education, 12/00-02/03

- Chair, National Academy of Engineering Committee to establish the NAE Center for the Advancement of Scholarship on Engineering Education, 06/01 – 12/02
- Member, AAAS Nominating Committee, 12/98 – 12/01
- Member, National Research Council Board on Engineering Education, 1998-2000
- Member, NSF Panel to Define Program on Assessment (ASA) in the Division of Undergraduate Education, July, 2000
- Co-chair, 1997 Frontiers in Education Conference
- Member, NSF Review Panel for the ECSEL Engineering Education Coalition, 1996-97. Coalition schools are: University of Washington, Morgan State University, Pennsylvania State University, University of Maryland, Howard University, City College of New York and Massachusetts Institute of Technology
- Director at Large for New Engineering Educators, Education Research Methods Division of American Society of Engineering Educators, 1995-1996
- Participant, National Science Foundation Conference on Restructuring Engineering Education, July 1994
- Member, U.S. Department of Education Steering Committee on Mathematics & Science Education, Representative from the Agency for International Development, 1990-1991

International, national, or Governmental Service Proposal Reviews

- Reviewer, National Science Foundation, Graduate Education
- Reviewer, National Science Foundation, Engineering Directorate
- Reviewer, National Science Foundation, Research, Evaluation, and Communications Division
- Member, NSF Review Panel for Distinguished Teaching Scholars
- Member, NSF Review Panel for CAREER Award
- Member, NSF Review Panel for the PFSMETE program.
- Reviewer, National Science Foundation, Decision, Risk and Management Science Division, 06/93-06/98
- Reviewer, U. S. Department of Education, Fund for the Improvement of Post-secondary Education, 09/93-09/95
- Reviewer, National Science Foundation, Division of Undergraduate Education, Chaired panel session, July, 1993

All other service

Journal and Conference Paper Reviews

- Reviewer, Journal of Engineering Education(ongoing)
- Reviewer, Research in Engineering Design (ongoing)
- Reviewer, Design Studies (ongoing)
- Reviewer, Journal of STEM Education
- Reviewer, International Journal of Engineering Education(ongoing)
- Reviewer, Frontiers in Education (FIE) Conference (ongoing)
- Reviewer, American Society for Engineering Education (ASEE) Conference (ongoing)
- Reviewer, Science, 2008
- Member, Review Committee, International Conference on the Learning Sciences, 2002
- Reviewer, ASME Design Automation Conference, 1999
- Reviewer, Industrial Engineering Research Conference, 1992

Active Professional Society Memberships.

- American Association for the Advancement of Science (AAAS)
- American Educational Research Association (AERA)
- American Society for Engineering Education (ASEE)
- Design Society
- International Network of Engineering Studies (INES)
- Society for the History of Technology (SHOT)