

# CARLYE LAUFF

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Carlye is design researcher, educator, and innovation strategist. She is an expert at guiding teams through the design process and tailoring methods for each unique challenge. Carlye leads human-centered design workshops for c-suite executives, co-creates with organizations to develop innovative solutions, and develops research-validated design tools and methods. Her expertise comes from 7+ years of consulting in the private, public, non-profit, and academic sectors. Carlye earned her PhD in Design Theory and Methodology, and her thesis used applied ethnographic methods to understand and improve prototyping efforts in companies.

## EDUCATION

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- 2013—2018 **Doctor of Philosophy (PhD) in Design Theory and Methodology**  
2013—2015 **Master of Science (MS) in Product Design Engineering**  
Department of Mechanical Engineering  
University of Colorado at Boulder · Boulder, CO, USA
- 2009—2013 **Bachelor of Science (BS) in Mechanical Engineering**  
The Pennsylvania State University · University Park, PA, USA

## PROFESSIONAL EXPERIENCE

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- 2013—present **Carlye Lauff Consulting LLC | Human-Centered Innovation Strategy | Global**
- Customize and deliver human-centered design and design innovation workshops, mentoring programs, and project guidance for diverse clients ranging from universities to non-profit organizations
  - One exemplar client is the Robert Wood Johnson Foundation, where I led an interdisciplinary team of 8 people through a 6-month project around the opportunity of increasing social-emotional competencies in children
  - Another exemplar client is PSU World Campus where I co-led design thinking guidance workshops over 4-months for 25 employees, solving the challenge of enhancing team member interactions for digital and remote projects
- 2018—2019 **Design Innovation Fellow | SUTD-MIT International Design Centre (IDC) | Singapore**
- Project Manager for consulting and co-creation design innovation projects, such as with the Land Transport Authority (LTA) of Singapore and ST Engineering
  - Led and facilitated Design Innovation trainings (1-5 days) for c-suite executives and upper management in diverse organizations, such as Singtel, Republic of Singapore Navy, and the Development Bank of Singapore
  - Improved design methods and tools through rapid experimentation, specifically creating the Prototyping Canvas, Design Signatures, and Additive Manufacturing Principle Cards (won the 2019 SG Good Design Mark award)
- 2017—2019 **Design Research & Strategy Consultant | Borough + Block | Denver, CO, USA**
- Conduct qualitative design research for projects with the Till School, Idea Forge, TechStars, and Dell Scholars
  - Led the design thinking integration for the Michael & Susan Dell Foundation scholars' program in Austin, TX
  - Facilitated deep-dive prototyping workshops for CU Boulder's finance, technology, and HR teams
- 2013—2018 **Graduate Design Research Fellow | Design Center, University of Colorado | Boulder, CO, USA**
- Awarded the NSF Graduate Research Fellowship to study and understand the role and impact of prototyping during new product development within four diverse companies (footwear, medical, aerospace, electronics)
  - Conducted independent research that resulted in 10 conference paper proceedings and 3 journal publications
  - Taught in 4 project-based design courses, including Advanced Product Design and Senior Design Mech. Eng.
- 2018 **User Experience Design Strategist | Innovation & Entrepreneurship Initiative | Boulder, CO, USA**
- Planned for and enhanced undergraduate students' entrepreneurial journeys, understanding the various 'on-ramps' and 'off-ramps' for different student experiences in the Boulder community
  - Updated design asset tools, like the CU Boulder Innovation Ecosystem Map and programming for the website
  - Planned the I&E bi-annual retreats, organized portions of Boulder Startup Week, and systematized NVC data
- 2017 **Design Researcher | Swinburne Centre for Design Innovation (CDI) | Melbourne, VIC, Australia**
- Awarded the NSF Global Research Fellowship to collaborate with the CDI on a 10-person team of industrial design engineers on 4 industry projects—2 were successfully launched to market and 2 in the final stages
  - Developed qualitative and quantitative studies to advance each of the design projects including ethnographic observations, interviews, survey development, eye tracking protocols, A/B testing, and market research
- 2015—2018 **Founder | Design for America (DFA) Boulder Studio | Boulder, CO, USA**
- Founded the CU Boulder Design for America Studio in 2015, leading the organization to grow to 30+ students with backgrounds in 10+ areas, awarded CU Boulder Diversity Award for Excellence in 2017
  - Managed over 12 projects, including partnership with Medline that resulted in a patented mobility device

## TEACHNG EXPERIENCE

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- 2018—present **Adjunct Instructor | SUTD Academy | Singapore**
- Lead instructor for the SUTD Academy, which is an organization that provides skills-based professional education and training courses for entry-level jobseekers, mid-career professionals, executives and senior managers
  - Currently teach 3 different courses: Design Innovation Awareness Workshop, Design Innovation Bootcamp, and Design Innovation Leadership Workshop, all while maintaining a high rating of above 4/5 from participants
- 2017—present **Co-Instructor for Communicating Scientific Research Course | Simula & University of Oslo | Norway**
- Co-Instructor for 5-credit Ph.D. course for one-week each year in April 2017, June 2018, May 2019, and May 2020, collaborating with Michael Alley, author of *The Craft of Scientific Presentations & Writing*, and Christine Haas, technical communication consultant, to deliver course to 40+ STEM experts each year
  - Developed curricula to teach effective technical presentations, academic writing, and scientific poster design
- 2017—2018 **Design Instructor | Till School | Boulder, CO, USA & Chicago, IL, USA**
- Worked with Erin Huizenga, founder of the Till School, to implement the Till School in Boulder, CO
  - Till School leads 14 to 21-year-old students through the design process, helping student solve real problems with a community partner using lessons on research, strategy, design thinking, leadership, and storytelling
- 2015—2018 **Prototyping Lecture Series | University of Colorado Boulder | Boulder, CO, USA**
- Created a hands-on workshop and lecture series teaching students the importance of prototyping in the design process, helping students develop the 'build to think' mindset in their design teams
  - Taught these lectures in 4 courses for over 500 students: MCEN 3025 Component Design, MCEN 4045/4085 Senior Design Capstone, MCEN 5055 Advanced Product Design, and MCEN 5065/5075 Graduate Design I/II
- 2013—2018 **Human-Centered Design Workshops | State College, PA, USA & Boulder, CO, USA**
- Developed curriculum to lead design thinking workshops either for 2-hours, 1-day, or over 3-weeks to undergraduate students, graduate students, community members, and professionals
  - Invited to teach these workshops to student organization like Design for America, university groups like New Venture Challenge, outreach efforts like CU Science Discovery, and academic courses including mechanical engineering senior design and graduate design
- 2011—2018 **Technical Communication Instructor | Engineering Ambassador (EA) Network | Across USA**
- Early member of the inaugural Engineering Ambassadors program, whose mission is to empower the next generation of engineers through enhanced technical communication and leadership
  - Lead advanced technical communication trainings to students and professionals throughout the global network
  - Organized the first training workshop and conference in 2012 for 20 universities and 100 participants

## SELECT RESEARCH PUBLICATIONS

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- Lauff, C.A., Knight, D., Kotys-Schwartz, D., Rentschler, M.E., 2020, "The role of prototypes in communication between stakeholders," *Design Studies*, in press in January.
- Lauff, C.A., Weidler-Lewis, J., Kotys-Schwartz, D., and Rentschler, M.E., 2018, "Prototypes as Intermediary Objects for Design Coordination in First-Year Design Courses," *International Journal of Engineering Education*, 34(3), 1085-1103.
- Lauff, C.A., Kotys-Schwartz, D., Rentschler, M.E., 2018, "What is a prototype? What are the roles of prototypes in companies?" *Journal of Mechanical Design*, 140(6), p.061102.
- Lauff, C. A., Menold, J., Wood, K. L., 2019, "Prototyping Canvas: Design Tool for Planning for Purposeful Prototypes," *International Conference on Engineering Design (ICED)*. August 4-8. Delft, Netherlands.
- Lauff, C. A., Perez, K. B., Camburn, B., Wood, K. L., 2019, "Design Principle Cards: Toolset to Support Innovations with Additive Manufacturing," *Proceedings of the ASME 2019 IDETC*, Anaheim, CA. August 18-21. DETC-2019-97231.
- Lauff, C.A., Kotys-Schwartz, D., Rentschler, M.E., 2018, "Company Case Study: Design Methods used during Early Stages of Evolutionary Product Development," *Proceedings of the ASME 2018 IDETC*, Quebec, CA, Aug 26-29. DETC-2018-85406.

## RECENT INVITED TALKS

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- 2019 **[1] Prototypes' Role in Communication.** RMIT, Melbourne, AU. (Nov 8). **[2] Importance of Prototyping in Entrepreneurship.** SUTD. (Oct 7). **[3-4] Intentional Prototyping Practices: Using Prototyping Canvas.** Anaheim, CA, USA (Aug 20) and Delft, NL (Aug 6). **[5] Additive Manufacturing Design Principles.** National Design Centre, Singapore (March 25). **[6] Improving the Design Innovation Process & Methods.** PostDoc Society. Singapore (Jan 17).
- 2018 **[7] Applying Design Innovation to Education.** Design Education Summit. DesignSingapore Council. Singapore. (Nov 1-2). **[8] Teaching Prototyping: Translating Best Practices from Industry to Design Courses.** Salt Lake City, UT, USA (June 24). **[9-12] Prototyping in the Wild: The Role of Prototypes in Companies.** MIT in Cambridge, MA, USA (April 3). UC Berkeley in Berkeley, CA, USA (March 1). Oregon State in Corvallis, OR, USA (Feb 20). Cal Poly in San Luis Obispo, CA, USA (Feb 1). **[13] Demystifying Prototyping.** New Venture Challenge. Boulder, CO, USA (Jan 25).
- 2017 **[12] Prototyping for Social Impact.** Design for America in collaboration with the James Dyson Foundation. Boulder, CO, USA (Nov 9) **[13] Prototyping in the Wild.** ATLAS Institute Research Showcase. Boulder, CO, USA (Oct 30). **[14] Limitations of 3D Modeling & Simulations.** Denver Startup Week. Denver, CO, USA (Sept 26)