

Curriculum Vitae

CASSANDRA L. THIEL, PhD

Contact Information

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Current Appointments and Leadership Positions

Faculty Appointment

- 2016-present Assistant Professor, Tenure Eligible, Population Health & Ophthalmology, New York University, School of Medicine, New York, NY
- 2016- present Assistant Professor, Non-Tenure, NYU Robert F. Wagner School of Public Service, New York, NY
- 2016-present Assistant Professor, Non-Tenure, Civil & Urban Engineering, NYU Tandon School of Engineering, New York, NY

Other Appointments and Leadership Positions

- 2019-present Sustainability in Business Research and Advising, Senior Research Scholar, NYU Stern School of Business, Center for Sustainable Business, New York, NY
- 2018-present Data-Driven Sustainability in the Medical Sector, Associate, Centre for Sustainable Healthcare (CSH), Oxford, UK
- 2017-present Data-Driven Sustainability in the Medical Sector, Expert Contributor, United Nations (UN) Sustainable Procurement in the Health Sector (SPHS) Voices, Istanbul, Turkey
- 2014-present Data-Driven Sustainability in the Medical Sector, Expert Contributor, Global Green and Healthy Hospitals (GGHH) Connect, Planet Earth

Education and Training

Education

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|------|-------------|-----------------------------------|-----------------------------------|
| 2004 | Certificate | | Tomah High School |
| 2009 | BS | Civil Engineering, German (minor) | Michigan Technological University |
| 2013 | PhD | Civil & Environmental Engineering | University of Pittsburgh |

Postdoctoral Training

- 09/2015-08/2016 Postdoctoral Associate, Civil & Environmental Engineering, University of Pittsburgh, Pittsburgh, PA
- 10/2014-03/2015 Fulbright-Nehru Fellow (Research Track), Sustainable Healthcare, Aravind Eye Care System, Pondicherry, India
- 09/2013-09/2014 Postdoctoral Associate, Civil & Environmental Engineering, University of Pittsburgh, Pittsburgh, PA

Previous Appointments and Leadership Positions

N/A

Awards, Honors, and Memberships in Honorary Societies

Internal

N/A

External

- 05/2019 Royal College of Ophthalmologists (RCOphth), Wallace Foulds Trophy for Best Rapid Fire for “Results of beta-testing the global 'EYEFFICIENCY' tool to improve cataract surgical productivity, costs and carbon footprint.”
- 10/2017 Tomah High School (Wisconsin) Distinguished Alumnus, Inaugural Program
- 05/2016 American Association of Ophthalmology (AAO) ‘Best Paper’ Award for “Comparison of Cataract Surgical Wastes and their Associated Costs in both the United States and India.”
- 05/2016 University of Pittsburgh ‘Best Poster’ Award at Postdoctoral Data & Dine Symposium
- 02/2016 The American Ophthalmological Society (AOS) Charitable, Educational and Scientific Trust Fund, Grant Recipient
- 09/2014 Fulbright-Nehru Academic and Professional Excellence Award (Research), Fulbright Scholar Program, Council for International Exchange of Scholars (CIES)
- 08/2014 Alumni of the Year, Summer Institute for Sustainability and Energy (UI-Chicago)
- 06/2014 Sustainability Scholar Award, University of Pittsburgh (NSF 1432890)
- 05/2013 Provost Development Fund Award, University of Pittsburgh
- 12/2011 University of Pittsburgh Medical Center (UPMC) Sustainable Health Care Innovation Competition Winner, Student Division
- 05/2010 National Science Foundation (NSF) Integrative Graduate Education and Research Traineeship (IGERT No. 0504345) Fellowship, University of Pittsburgh
- 01/2009 Tau Beta Pi Engineering Honor Society, Michigan Beta Member
- 01/2007 Chi Epsilon National Civil Engineering Honor Society Member

Research Activity

Research Activities

My research utilizes life cycle assessment and principles of industrial ecology to analyze the environmental performance of infrastructure systems, hospital design, healthcare practice, and medical technologies. My overarching goal is to develop a new field of specialized research focused on clinical and healthcare sustainability, which introduces medical providers to data-driven, environmentally-preferable solutions while simultaneously developing and improving sustainability metrics and tools to better account for medical-specific processes, and human and environmental health.

Grant History

Current

Agency	Role	% Effort	Project Title	Award Type	Grant Number	Project ID	Project Start Date	Project End Date	Annual Project Direct Costs	Annual Project Indirect Costs	Annual Project Total Costs	Annual Project Indirect Costs	Total Project Costs

Pending

Agency	Role	% Effort	Project Title	Award Type	Grant Number	Project ID	Project Start Date	Project End Date	Annual Project Direct Costs	Annual Project Indirect Costs	Annual Project Total Costs	Annual Project Indirect Costs	Total Project Costs

Past

Agency	Role	% Effort	Project Title	Award Type	Grant Number	Project ID	Project Start Date	Project End Date	Annual Project Direct Costs	Annual Project Indirect Costs	Annual Project Total Costs	Annual Project Indirect Costs	Total Project Costs
International Agency for the Prevention of Blindness (IAPB) Seeing is Believing (SIB) Innovation Fund	Co-PI	16%	Eye efficiency Beta Testing	Research Grant	NA	NA	05/2018	12/2019	\$130,000	\$0	\$130,000	\$0	\$130,000
Sustainable Healthcare Coalition (SHC)	PI	100%	Project Funding: Inpatient and MRI Emissions	Research Grant	NA	NA	04/2018	10/2019	\$25,000	\$0	\$25,000	\$0	\$25,000
National Science Foundation (NSF)	PI	In-kind	Research Development Workshop: Environmental Sustainability and Clinical Care	Workshop Grant	1818038	NA	01/01/2018	06/30/2018	\$49,998	\$6174.40	\$94,385.06	\$6174.40	\$94,385.06
NYU Green Grants	PI	In-kind	Workshop for Environmental Sustainability and Clinical Care	Workshop Grant	NA	NA	01/01/2018	06/30/2018	\$20,000	\$6174.40	\$94,385.06	\$6174.40	\$94,385.06
International Agency for the Prevention of Blindness (IAPB) Seeing is Believing (SIB) Innovation Fund	Co-PI	16%	Eye efficiency Pilot Testing	Research Grant	NA	NA	11/2017	05/2018	\$51,500	\$0	\$51,500	\$0	\$51,500
Fulbright Scholar Program, Council for International Exchange of Scholars (CIES)	PI	100%	Life Cycle Environmental Impacts of Cataract Surgery in India	Fulbright-Nehru Academic and Professional Excellence Award (Research)	NA	NA	11/2014	03/2015	\$20,000	\$0	\$20,000	\$0	\$20,000
University of Pittsburgh	PI	10%	Thesis Development	Provost Development Fund Award	NA	NA	05/2014	08/2014	\$5,000	\$0	\$5,000	\$0	\$5,000
Mascaro Center for Sustainable Innovation (MCSI)	Co-I	In-kind	Shaler High School Greening Project	Student Community Grant	NA	NA	03/2010	04/2010	\$5,000	\$0	\$5,000	\$0	\$5,000

Clinical Activity

N/A

Educational Activity

Personal Statement

I am dedicated to educating students and the public on a range of topics, including systems thinking/engineering, triple bottom line sustainability, operations management, industrial

ecology, life cycle assessment (and other environmental assessment tools), healthcare or clinical sustainability, and efficient health services management. The foundation of good teaching and effective learning, for me, lies in five core principles: accessibility and mutual respect, organization and timeliness, expectations and responsibility, excitement and creativity, and a continuous learning environment. I attempt to live these five principles by incorporating in my classes: open and inclusive class dialog and liberal office hours; preplanned and clearly-structured learning activities; clearly defined goals and acceptable behavior guidelines for myself and my students; my own enthusiasm for the topics (thus inviting my students to be engaged); and a constant invitation for my students to look beyond the boundaries of the classroom walls. I have always maintained positive (average) course reviews from my students, and take pride in their comments, such as: "I had never learned about any of this before. This provided a new perspective for how to think about my work I am really glad I took this class." "She was very good at getting the class involved and getting people to participate in positive discussions." "Cassie is a fantastic, responsive, conscientious instructor. It's clear that she is passionate about operations and deeply understands the concepts, and is very good at explaining more complex systems to those who are not familiar with the content coming in."

Teaching Activities

2018,2020 Instructor, Managing for Environmental Sustainability, 20hrs/yr
 2017-2019 Instructor, Operations Management, NYU Wagner, 40hrs/yr
 2017-2019 Guest Lecture, Health Services Management, NYU Wagner, 2hrs/yr
 2017-2019 Guest Lecture, Environmental Science, NYU Enviro. Studies, 2hrs/yr
 2019 Guest Lecture, Practice of Medicine, NYU School of Medicine, 1hr
 2018 Guest Lecture, Healthcare System Innovation and Health Policy, 1.5hrs/yr
 2017 Guest Lecture, Occupational and Environmental Health Training, NYU Nursing, 2hrs
 2016 Guest Lecture, Sustainable Computing, Pitt, 2hrs
 2012-2015 Module Instructor, Engineering and Sustainable Development, Pitt, 8hrs/yr
 2015 Guest Lecture, Introduction to Environmental Engineering, Pitt, 2hrs
 2015 Instructor, Engineering Applications for Society, Pitt, 90hrs
 2013 Guest Lecture, Green Building Design, Pitt, 2hrs
 2012 Instructor, LCA and the Use of SimaPro Software (UFES), 14hrs
 2011 Teaching Assistant, Introduction to Life Cycle Assessment, Pitt, 10hrs
 2011 Guest Lecture, Analise do Ciclo da Vida (UFES), 1hr
 2011 Guest Lecture, Design for the Environment, Pitt, 2hrs
 2011 Teaching Assistant, Design for the Environment, Pitt, 5hrs
 2011 Instructor, Sustainability, Junior Urban Leadership Institute, Kingsley Association, 12hrs
 2010 Teaching Assistant, Nondestructive Evaluation and Structural Health Monitoring, Pitt, 2hrs
 2010 Guest Lecture, Introduction to Life Cycle Assessment, Pitt, 2hrs
 2010 Guest Lecture, Research Methods, Virginia Tech, 2hrs
 2006-2007 Course Coordinator, Calculus I Labs, Michigan Tech, 10hrs/sem
 2005-2006 Teaching Assistant, Calculus I, II, & III Labs, Michigan Tech, 40hrs/sem

Curriculum Development

I am currently developing a 3-credit course on Environmental Life Cycle Assessment (LCA) for upper-level undergraduate and graduate students at NYU. The course will be hosted by Tandon

School of Engineering and will cover introductory topics of triple bottom line sustainability and industrial ecology, before covering the basic approaches to designing and conducting an environmental LCA. In addition, in my NYU Wagner course “Managing for Environmental Sustainability” I am developing online learning content in a flipped-classroom approach for specific lecture content.

Invited Talks and Teaching of Peers

Internal

Sponsored by NYU Langone Health

- 04/05/2019 *NYU SOM Environmental Medicine Interest and Advocacy Group (EMIAG). “Medicine and the Environment.” New York, NY.*
- 06/09/2017 *New York University, Dept. of Population Health. External Advisory Board Meeting. Junior Faculty Spotlight: Environmental Efficiency in Medicine. New York, NY.*
- 04/17/2017 *New York University, Surgical Research Seminar. Sustainability in Surgery: Environmental Impact of Cataracts. New York, NY.*
- 02/17/2016 *Center for Healthcare Innovation and Delivery Science, New York University. New York, NY. Sustainability in Medicine: Metrics for Change.*

Sponsored by all other NYU Schools

- 03/08/2019 *NYU Stern School of Business. NYU Social Innovation Symposium: Striving for the Circular Economy. Industrial Ecology Panel Moderator. New York, NY.*
- 04/22/2017 *March for Science Teach-In. New York University. Is it really green? Auditing emissions with life cycle assessment. Washington, D.C.*
- 04/18/2017 *New York University, College of Nursing. Climate Change and Clinicians Panel Discussion. New York, NY.*
- 04/17/2017 *New York University College of Dentistry. Earth Week: Health Care Sustainability. New York, NY.*
- 04/06/2017 *New York University. What We Waste: An Evening with Dr. Robin Nagle and Dr. Cassandra Thiel. Educating for Sustainability Lecture. New York, NY.*
- 02/24/2017 *New York University. South Asia Conference. Using Technology to Address Inequality Panellist. New York, NY.*
- 02/07/2017 *New York University, College of Dentistry. Professional Development Seminar Speaker. New York, NY.*
- 11/10/2016 *New York University. Zero Waste Challenge Kick-Off. New York, NY. Moderator for discussion on the election’s impact on sustainability efforts.*
- 04/26-27/2016 *New York University, Robert F. Wagner School of Public Service & Tandon School of Engineering. New York, NY. Sustainability in Medicine: Metrics for Change.*

External to NYU Langone Health and all other NYU Schools

- 11/11/2019 *University of Sydney and Wiser Healthcare. Clinical Sustainability Research: Data Driven Approaches to Make Healthcare More Efficient. Sydney, Australia.*
- 11/07/2019 *The Fred Hollows Foundation, Eye Opener. Focus on the Future: Environmentally Sustainable Eye Care Services around the World. Sydney, Australia.*
- 05/08/2019 *2nd Sustainable Healthcare in Aotearoa - NZ Forum. Keynote on Sustainable Procurement for the Healthcare Sector. Wellington, New Zealand.*

- 04/18/2019 *University of Wisconsin-Madison*. Weston Roundtable Lecturer. “Clinically Sustainable: The Possibilities and Challenges of Environmentally Sustainable Healthcare Delivery.” Madison, WI.
- 04/13/2019 *Unite for Sight’s Global Health and Innovation Conference*. “Ophthalmology Around the World: Using Life Cycle Assessment to Measure and Mitigate Health Care Pollution.” New Haven, CT.
- 03/22/2019 *Royal College of Ophthalmology*. Developing Ophthalmic Public Health Sustainability Strategies. Mini-debate. “The World has got H.O.T.” Inverness, Scotland.
- 02/14/2019 *All India Ophthalmological Conference (AIOC)*. Eye Care and Environmental Impact. Indore, India.
- 11/16/2018 *University of Wisconsin-Madison*. Civil and Environmental Engineering Seminar. “Measuring and Improving Environmental Emissions from the Medical Service Industry.” Madison, WI.
- 11/15/2018 *3M Headquarters*. Sustainability in the Medical Supply Chain. St. Paul, MN.
- 08/21-22/2018 *Aravind Eye Hospital October Summit*. Eye Care and Environmental Impact. Leading 3 sessions at this workshop. Pondicherry, India.
- 08/16/2018 *International Agency for Prevention of Blindness (IAPB) Council of Members Meeting*. Overview of environmental sustainability. “Session: Sustainability: Practices today for tomorrow.” Hyderabad, India.
- 08/13/2018 *IAPB Council of Members Meeting*. Co-lead session on IAPB’s Environmental Sustainability Work Group. Hyderabad, India.
- 06/19/2018 *International Council of Ophthalmology (ICO)*. Environmental Sustainability Masterclass. Barcelona, Spain.
- 06/15/2018 *ICO General Assembly*. What is Environmental Sustainability and What Does it Mean for Eye Care? Barcelona, Spain.
- 05/24/2018 *Rethinking Remote 2018*. Sustainability for Remote and Rural Eye Care Delivery. Session: Managing Eye Care in Remote and Rural Environments. Inverness, Scotland.
- 05/23/2018 *Royal College of Ophthalmologists Sustainability Working Group*. Sustainable Cataract Surgery – What Can You Do? Liverpool, UK.
- 05/21/2018 *UKISCRS Cornea & Cataract Day*. Sustainability in Ophthalmology. Liverpool, UK.
- 04/15/2018 *The Joint Commission on Allied Health Personnel in Ophthalmology (JCAHPO) 2018 Technicians and Nurses Program at ASCRS (American Society of Cataract & Refractive Surgery)*. Sustainability in the Ambulatory Surgery Center. Washington, D.C. USA.
- 04/06/2018 *The Workshop on Environmental Sustainability in Clinical Care*. Host, moderator, and speaker. Introduction to Lightning Presentations. Clinical Sustainability Research: Global sampler of interdisciplinary projects in operating rooms. New Haven, CT.
- 01/18/2018 *HSC Belfast Health and Social Care Trust*. Clinical Audit Ophthalmology. Environmental Sustainability in Ophthalmology. Belfast, Northern Ireland.
- 12/21/2017 *National Health Services (NHS) Queen’s Hospital, London*. Grand Rounds presentation on environmental emissions from surgery. London, UK.

- 11/23/2017 *Royal College of Ophthalmologists* How to deliver a sustainable ophthalmology service in the 21st century seminar. Sustainable cataract surgery: The global perspective. London, UK.
- 09/18/2017 *International Association for Prevention of Blindness (IAPB)* Council of Members. Sustainability Workshop. Kathmandu, Nepal.
- 07/25/2017 *Anglia Ruskin University*. Sustainable Health Symposium. Cambridge, UK.
- 04/06/2017 *VA New York Harbor Healthcare System*. Health Science Research & Development Mini Center Meeting. New York, NY.
- 10/31/2016 *Global Green and Healthy Hospitals (GGHH)*. Pre-Conference Workshop Panel Discussion. World Hospital Congress. Durban, South Africa.
- 6/15/2016 *University of Pittsburgh* Postdoctoral Association. Pittsburgh, PA. Postdoc to Postdoc. Improving Efficiency in Medicine: Quantifying Environmental Emissions and Resource-Use of Surgery.
- 05/25/2016 *Royal College of Ophthalmologists* Annual Congress. ICC Birmingham, UK. A Sustainable Future in Ophthalmology. Aravind vs Pittsburgh: The carbon footprint of cataract surgery.
- 01/19/2016 Surgical Team Workgroup Meeting, *University of Pittsburgh Medical Center*. Pittsburgh, PA. Efficiency and Material Optimization Research with UPMC Surgeons.
- 12/14/2015 School of Environment, Enterprise, and Design, *University of Waterloo*. Waterloo, ON Canada. Sustainable Healthcare: Applying Industrial Ecology to Medicine.
- 11/18/2015 School of Environment, Enterprise, and Design, *University of Waterloo*. Waterloo, ON Canada. A Healthy Place to Heal: the Rise of Environmental Sustainability in Healthcare.
- 11/12/2015 *University of Arkansas*. Fayetteville, AR. Sustainability Engineering: From Green Buildings to Green Surgeries.
- 10/15/2015 Seven Steps to Sustainable Eye Care Services, *The Royal College of Ophthalmologists*. London, UK. Higher Volume, Lower Carbon Cataract Surgery in the UK, USA, and India. (with Dan Morris.)
- 05/5/2015 *Google Waterloo*, Kitchener, Ontario. Sustainability Engineering and Healthcare: Efficiency and Waste in the Operating Room.
- 04/20/2015 The Systems Institute, *Johns Hopkins University*. Baltimore, MD. Healthcare and the Environment: Emissions and Effects of Surgical Models and their Material Use.
- 10/23/2014 *Engineers for Sustainable World* and *Engineers for Sustainable Medical Devices* (ESW & ESMD) Workshop Speaker. PITT. Material flow and sustainability assessments.
- 08/29/2014 *Gundersen Health System*. LaCrosse, WI. Sustainability and Healthcare: A Surgical Case Study Quantifying the Environmental Impacts of Hysterectomies.
- 08/19/2014 University of Illinois-Chicago, *SISE 2014*. Chicago, IL. Sustainability within Healthcare: Using Environmental LCA in the OR.
- 04/26/2014 Undergraduate Research Program, *MCSI PITT*. Environmental Footprint of Hospital Operating Rooms.
- 04/26/2014 University of Illinois-Chicago, *SISE Alumni Event*. Chicago, IL. Sustainability within Healthcare: Using Environmental LCA in the OR

- 04/25/2014 Golisano Institute for Sustainability, *Rochester Institute of Technology*. Rochester, NY. Sustainability Engineering Tools and Techniques to Improve Environmental Footprint of Healthcare Systems
- 11/12/2013 *University of Wisconsin - La Crosse*, BioMath Seminar. Sustainability and Healthcare: A Case Study Quantifying the Environmental Impacts of Surgical Hysterectomies.
- 11/02/2013 *Engineers for a Sustainable World (ESW)* Regional Conference. PITT. Beyond Environmental Sustainability: the US Healthcare System.
- 10/30/2013 *UPMC Shadyside Hospital*, Grand Rounds. PITT. Science-Based Sustainability in the Operating Room
- 08/2013 *American Association of University Women (AAUW)* Tomah Branch. Tomah, WI. Creating Sustainability in Healthcare and Our Community.
- 04/2013 *University of Colorado – Boulder*. Civil, Enviro, & Architectural Eng. Seminar. Boulder, CO. Life Cycle Assessment and Implications for Green Building Design

Mentoring and Advising

Pre-Doctoral Students supervised/mentored (Dates, Name, Program, Role, Title)

- 2019 – present Hena Goel, Sustainable Healthcare, Project Manager, Masters Candidate
- 2019 – present Muhammad Anas Jawed, Sustainable Healthcare, Student Researcher, BS Student, CS
- 2019 – present SiWoon Park, Sustainable Healthcare, Student Researcher, BS Student, STS
- 2019 – present Michelle Lam, Sustainable Healthcare, Student Researcher, BS Student, biosci
- 2019 – present Cordelia Kwon, Sustainable Healthcare, Student Researcher, BS Student, PH
- 2019 – present Radhika Pats, Sustainable Healthcare, Student Researcher, BS Student, biosci
- 2019 – present Ankit Sharma, Tandon Summer, Student Researcher, BS Student, Chem/bioE
- 2019 – present AhRam Cho, Tandon Summer, Student Researcher, BS Student, math
- 2019 – present Anthony Chua, Tandon Summer, Student Researcher, BS Student, bio
- 2019 – present Ruhana Amin, Tandon Summer, Student Researcher, BS Student, biosci
- 2018 – present Dhruvi Joshi, Tandon Summer, Student Researcher, BS Student, CE
- 2018 – present Purnima Prasad, Tandon Summer, Student Researcher, BS Student, CE
- 2017 – present David Kleyn, Sustainable Healthcare, Student Researcher, BS Student, Psych
- 2017 – present Danielle Wilkins, Sustainable Healthcare, MS Student, U. Michigan, Professional
- 2019 Ziwei (Ava) Zhang, Tandon Summer, Student Researcher, BS Student, CS
- 2019 Shruti Karmakar, Healthcare Waste Policy, Policy Researcher, Masters Candidate
- 2019 Priyanka Upasani, Sustainable Healthcare, Student Researcher, BS Student, PH
- 2019 Samuel Boahen, Sustainable Healthcare, Student Researcher, BS Student, CS/EE
- 2017-2019 Jenna Tauber, Sustainable Healthcare, Med, Student, Ophtho Drugs, Med Student
- 2017-2019 Ijeoma Chinwuba, Sustainable Healthcare, Resident, Ophtho Drugs, Med Resident
- 2017-2019 Michael Rothschild, Sustainable Healthcare, Resident, Ophtho Drugs, Med Resident
- 2018-2019 Jagan Subramanian, Tandon Summer, Student Researcher, BS Student, EE

2018-2019 Abdur (Mani) Rehman, Tandon Summer, Student Researcher, BS Student, CE
 2014-2019 Emily Schehlein, Sustainable Healthcare, Med, Student Researcher, Med Resident
 2018 Samuel Cytryn, Biostatistics, Med Resident, Med Resident
 2018 Cesar Soria, Biostatistics, Med Resident, Med Resident
 2018 Margot Hedlin, Biostatistics, Med Resident, Med Resident
 2018 Varshini Kumar, Sustainable Healthcare, Student Researcher, BS Student, Business
 2018 Yizhen (Grace) Cai, Sustainable Healthcare, Student Researcher, BS Student, Business
 2017-2018 Chhavi Gupta, Sustainable Healthcare, Research Assistant, Masters Candidate
 2017 Lyndsay Gavin, Sustainable Healthcare, MS Student, Yale U., MS Student
 2015-2017 Ann Shue, Sustainable Healthcare, Resident, Ophtho Drugs, Med Fellow
 2015-2016 Anton Kolomeyer, Sustainable Healthcare, Resident, Ophtho Drugs, Med Fellow
 2014-2015 Sara de la Rosa, Sustainable Healthcare, Med, Student, Ophtho LCA, Med Fellow
 2010-2013 Leah P. Swanzy, Sustainable Healthcare, Med. Student, U. Pittsburgh, Physician

Doctoral students supervised/mentored (Dates, Name, Program, Role, Current Title)

2018-present Alexander Cimprich, Industrial Ecology, PhD Candidate, Engineering, PhD Candidate
 2014-2016 Scott Unger, Sustainable Healthcare, PhD Student, U. Pittsburgh, EPA Researcher
 2014-2016 Harold Rickenbacker, Green Building Design, PhD Student, U. Pittsburgh, Postdoc
 2014-2016 Vaclav Hasik, Green Building Design, PhD Student, U. Pittsburgh, Postdoc
 2013-2015 Nicole Campion, Sustainable Healthcare, PhD Student, U. Pittsburgh, Professional

Post-Doctoral students supervised and/or mentored (Dates, Name, Program, Role, Current Title)

N/A

Faculty mentored

03/2019-present Jonathan Slutzman, Emergency Medicine, Harvard Medical School

Institutional, Local/National Service and Related Activity

Institutional Service

10/2019-present Advisor, NYULH Dept. Population Health GreenFirst Committee
 10/2019-present Member, NYULH Sustainability Advisory Board
 10/2019-present Member, NYULH “FutureClinic”, NYU HiBRID Lab
 08/2019-present Member, NYULH Key Drivers of Waste Project Group
 11/2018-present Member, NYULH Pharmaceutical & Therapeutics Committee
 09/2017- present Reviewer, NYU Office of Sustainability *Green Grants* Committee
 2018 Member, NYU Provost’s Sustainability Work Group
 2017-2019 Advisor, NYU Provost’s Sustainability Work Group

2017 Member, NYU Wagner School Faculty Diversity Committee Focus Group
10/2019-present Faculty Advisor, NYULH GreenFirst Working Group

Professional Service

For Professional Organizations

2019- present Member, American Center for Life Cycle Assessment (ACLCA)
2017- present Member, International Agency for Prevention of Blindness (IAPB)
Environmental Sustainability Working Group
2017- present Vice-Chair, Life Cycle Sustainability Assessment (LCSA) Section,
International Society for Industrial Ecology (ISIE)
2013- present Member, International Society for Industrial Ecology (ISIE)
2017 Member, Interdisciplinary Association for Population Health Science (IAPHS)
2013-2017 Member & Trained Facilitator, American Association of University Women
(AAUW); StartSmart Salary Negotiation Workshop
2015-2016 Member, Association for Research in Vision and Ophthalmology (ARVO)
2013-2015 Member, American Society for Engineering Education (ASEE)
2009-2014 Member, Engineers Without Borders (EWB-USA); State Representative,
Western PA (2010-12); President, EWB North East Region (2012-14)

Peer Review Groups, Grant Application Review Groups, and Study Sections

N/A

Advisory Boards and Consultant Positions

08/2019-present Consultant, Stryker Corporation

Organizing Roles in Scientific Meetings

04/2018 Co-Organizer, The Workshop on Environmental Sustainability in Clinical Care,
Yale University, New Haven, CT.
https://publichealth.yale.edu/climate/research/conferences/copy_of_index.aspx

Editorial and Journal Positions

2018-2019 Guest Editor, Resources, Conservation and Recycling (RCR) Special Issue on
Sustainable Healthcare
2016-2019 Peer Reviewer, Resources, Conservation & Recycling – 4
2019 Peer Reviewer, Journal of Cataract and Refractive Surgery (JCRS) – 1
2019 Peer Reviewer, British Medical Journal (BMJ) Innovations – 1
2019 Peer Reviewer, British Medical Journal (BMJ) Quality and Safety – 1
2018 Peer Reviewer, PLoS ONE – 1
2018 Peer Reviewer, Public Administration Review (PAR) – 1
2018 Peer Reviewer, Acta Ophthalmologica – 1
2017 Reviewer, NYU CHIDS Delivery System Redesign Grants
2017 Peer Reviewer, Int, Journal of Environmental Research and Public Health
(IJERPH) – 1
2017 Reviewer, Swiss National Science Foundation (SNF) ‘Sustainable Economy’
Grants Program – 1
2017 Peer Reviewer, International Society for Industrial Ecology-International
Symposium on Sustainable Systems and Technology (ISIE-ISSST) Joint
Conference – 8
2015-2017 Peer Reviewer, International Journal of Life Cycle Assessment (JLCA) – 6
2016 Peer Reviewer, Health Affairs – 1
2015 Peer Reviewer, Environmental Science and Technology (ES&T) – 1

- 2014 Peer Reviewer, Journal of Industrial Ecology (JIE) – 2
- 2014 Peer Reviewer, ASEE National Conference - Student Division – 3
- 2014 Associate Editor, Proceedings of ISSST2014
- 2013 Reviewer, Simonen, K, (2014), Life Cycle Assessment, Routledge, – 2

Community Service, Volunteer Activities, and Teaching of Patients

- 2017- present Member, 500 Women Scientists New York Pod
- 2013-2016 Volunteer (Photographer), Women in Bio (WIB Pittsburgh), 4River Solutions, AAUW Smart Salary Negotiation Workshop
- 2011-2015 Instructor, Manchester Academic Charter School (MACS) Green Week, Sustainability Day
- 2014-2015 Volunteer, Sri Aurobindo Society, SARVAM & Public Health Projects

Military Service

N/A

Bibliography

Publications

Peer-Reviewed Publications

1. Shrake, S., **Thiel, C.**, Landis, A., Bilec, M. (2012). “Life Cycle Assessment as a Tool for Improving Service Industry Sustainability.” *IEEE, Potentials*. 30:1, 10-15.
2. Campion, N., **Thiel, C.***, DeBlois, J., Woods, N., Landis, A., Bilec, M. (2012). "Life cycle assessment perspectives on delivering an infant in the US." *Science of the Total Environment*. 425(0): 191-198. *corresponding author
3. **Thiel C.**, Campion N, Landis A, Jones A, Schaefer L, Bilec M. (2013) “A Materials Life Cycle Assessment of a Net-Zero Energy Building.” *Energies*. 6(2):1125-1141.
4. **Thiel C.**, Needy, K., Ries, R., Hupp, D., Bilec M. (2014) “Building Design and Performance: A Comparative Longitudinal Assessment of a Green Children’s Hospital.” *Building and Environment*. 78(0), 130-6.
5. **Thiel, C.***, Eckelman, M., Guido, R., Huddleston, M., Landis, A., Sherman, J., Shrake O., Woods, N., Bilec, M. (2014) “Environmental Impacts of Surgical Procedures: Life Cycle Assessment of Hysterectomy in the US.” *Environmental Science and Technology (ES&T)*. 49 (3), 1779-1786. *corresponding author
6. Campion, N., **Thiel, C.**, Woods, N., Swanzy, L., Landis, A., Bilec, M. (2015). "Environmental Life-Cycle Impacts of Surgical Material Supply: A Comparative LCA of Disposable Custom Packs." *Journal of Cleaner Production*. 94: 46-55.
7. Focareta, J., Campion, N., **Thiel, C.**, & Bilec, M. (2015). The Power of Nurses. *Pennsylvania Nurse*, 70(3), 11-12.
8. Venkatesh, R., van Landingham, S. W., Khodifad, A. M., Haripriya, A., **Thiel, C. L.**, Ramulu, P., & Robin, A. L. (2016). Carbon footprint and cost-effectiveness of cataract surgery. *Current Opinion in Ophthalmology*, 27(1), 82-88.
9. Campion, N., **Thiel C.**, Focareta, J., Bilec M. (2016) “Understanding Green Building Design & Healthcare Outcomes: An Evidence Based Design Analysis of an Oncology Unit” *Journal of Architectural Engineering*, 22(3).
10. Hasik, V., Anderson, N., Collinge, W., **Thiel, C.**, Khanna, V., Wirick, J., Piacentini, R., Landis, E., Bilec, M. (2017) “Evaluating the life cycle environmental benefits and tradeoffs of water reuse systems for net-zero buildings” *Environmental Science and Technology (ES&T)*. 51(3), 1110-1119.

11. Grabowski, Z.J., Matsler, A.M., **Thiel, C.**, McPhillips, L., Hum, R., Bradshaw, A., Miller, T., Redman, C. (2017) “Infrastructures as Socio-Eco-Technical Systems: Five Considerations for Interdisciplinary Dialogue.” *Journal of Infrastructure Systems*. 23(4).
12. **Thiel, C.***, Duncan, P., Woods, N. (2017) “Attitude of US obstetricians and gynaecologists to global warming and medical waste” *Journal of Health Services Research & Policy (JHSRP)*, 22(3), 162-167. *corresponding author
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1. **Thiel, C.**, Goel, H., Cassels-Brown, A., Thomas, P., Stancliffe, R., Steinbach, I., Vendries, J. (2019) “Carbon Footprinting for Global Cataract Surgical Services: Development of a Sustainability Auditing Tool.” *Submitted*.
2. Joshi, D., Prasad, P., Agins, J., Allen, R., Pena, F., Velletri, J., Collins, M., **Thiel, C.** (2019) “Environmental Footprint and Waste Generation of an Inpatient Stay in the United States.” *Submitted*.
3. Wilkin, D., Jose, & Thiel, C. (2020). “Life Cycle Emissions of Diabetes Management in the US and Sri Lanka” *Submitted*.
4. Bravo, D., Thiel, C., Melamed, E. (2020) “What a waste?! The impact of unused surgical supplies in hand surgery and how can we improve.” *In Progress*.
5. Lawrence, C., Gavin, L., Mishra, S., Wang, E., Boateng, A., **Thiel, C.**, Dubrow, R., Zafar, J., Sherman, J. (2020) “Carbon Footprint Impact of Reduction in Unnecessary Medical Testing in a Hospital Clinic.” *In Progress*.

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3. Sherman, J. D., MacNeill, A., & **Thiel, C.** (2019). “Reducing Pollution from the Health Care Industry.” *JAMA*. 322(11):1043-1044. doi:10.1001/jama.2019.10823
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Abstracts

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1. Leapman, M., **Thiel, C.**, Gordon, I., Nolte, A., Perecman, A., Overcash, M., Sherman, J. (2020) “Environmental Emissions Associated with Reductions of Low-Value Prostate Biopsy.” *American Urological Association (AUA) Annual Meeting*. May 15-19, 2020. Washington, D.C.
2. Gordon, I., Leapman, M., Nolte, A., Overcash, M., Sherman, J., **Thiel, C.** (2020) “Life Cycle Assessment of Surgical Pathology Biopsies.” *United States and Canadian Academy of Pathology (USCAP)*. Feb 29 - March 5, 2020. Los Angeles, CA. Platform presentation.
3. Poudel R, Walzer D, Thompson R, Triola D, **Thiel C.** “Assessing Medical Student Attitudes Towards Including Environmental Concerns in the Medical School Curriculum.” *NYU Grossman School of Medicine, Annual Medical Education Innovations & Scholarship Day*. November 20, 2019. New York. Poster.
4. Tauber, J., Kahn, J., Chinwuba, I., Rothschild, M., Kleyn, D., Coulon, S., Chen, D., **Thiel, C.** (2019) “Identifying Sources of Greenhouse Gas Emissions in Cataract Care in the United States: Opportunities for Resource Efficiency in the Operating Theatre.” *Royal Australian New Zealand College of Ophthalmology (RANZCO) Annual Congress*. November 10, 2019. Sydney, Australia. Poster. * The Ophthalmic Research Institute of Australia (ORIA) Recommended Poster.
5. Bilec, M., **Thiel, C.**, Slutzman, J., Sanchez, S., Pearson, C. (2019) “Life Cycle Assessment and Healthcare: The Untapped, Under-Explored, and Unwieldy Sector.” *American Center for Life Cycle Assessment (ACLCA) Annual Conference*. Tucson, AZ. September 24, 2019. Special Session.
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7. Cassels-Brown, A., **Thiel, C.**, Morris, D., Thomas, P., Somner, J., Buchan, J., Stancliffe, R., Steinbach, I., Vendries, J. (2019) “Results of beta-testing the global 'EYEFFICIENCY' tool to improve cataract surgical productivity, costs and carbon footprint.” *Royal College of Ophthalmologists Annual Congress*. Edinburgh, Scotland. May 26, 2019. Poster.
8. **Thiel, C.**, Pearson, C. (2019) “Quantifying the environmental footprint of medical practice through life cycle assessment” *CleanMed*. May 8, 2019. Nashville, TN.
9. Collins, A., Sherman, J., Slutzman, J., **Thiel, C.** (2019) “Clinical Sustainability: What is it and How Do We Achieve it?” *CleanMed*. May 7, 2019. Nashville, TN.
10. Costello, A., Sherman, J., Anderko, L., **Thiel, C.**, Eckelman, M., Bilec, M., Barna, S. (2019) “Sustainable Healthcare and Global Environmental Change.” *Consortium of Universities for Global Health (CUGH) Conference*. March 8-10. Chicago, IL.
11. **Thiel, C.**, Sherman, J. Collins, A., Slutzman, J. (2019) “The healthcare sector’s role in environmental emissions mitigation and climate resilience” *National Council for Science and the Environment (NCSE)*. January 2-10. Washington, D.C.
12. Joshi, D., Prasad, P., Collins, M., **Thiel, C.** (2018) “Footprinting of an Inpatient Stay” *Bioinnovation NYUAD Research Conference*. November 5-7. Abu Dhabi, UAE. Poster.
13. Cimprich, A., Santillan-Saldivar, J., **Thiel, C.**, Sonnemann, G., Young, S. (2018) “Towards a systemic foundation for healthcare sustainability: scoping review of a fragmented literature and industrial ecology framework for future research” *International Society for Industrial Ecology, Americas Conference*. October 29-November 1. Cartago, Costa Rica.

14. **Thiel, C.** Kleyn, D., Stancliffe, R., Steinbach, I., Cassels-Brown, A., Thomas, P., Vendries, J. (2018) “Carbon footprinting of global surgeries: the Eyeefficiency auditing tool” *International Society for Industrial Ecology, Americas Conference*. October 29-November 1. Cartago, Costa Rica. Poster.
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23. Morris, D., Cassels-Brown, A., **Thiel, C.**, Vengadesan, N., Stein, A., Thomas, P., Stancliffe, R., Vendries, J., Kleyn, D., Buchan, J., Somner, J., Steinbach, I., Chua, P., Adel, M., Pyott, A., Hewick, S., Hingorani, M., Cook, C., Ravilla, T. (2018) “Results of ‘Triple C’ sustainability pilots in the NHS: Benchmarking Cataract Productivity, Costs and Carbon Footprint.” *Royal College of Ophthalmologists Annual Congress*. 21-24 May. Liverpool, UK. Poster.
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 26. Chinwuba, I., Kleyn, D., Rothschild, M., Tauber, J., Kahn, J., **Thiel, C.** (2018) “Pharmaceutical Waste in Cataract Surgery: Costs and Environmental Impact.” *CleanMed*. 9 May. San Diego, CA.
 27. Steyn, A., **Thiel, C.**, Cassels-Brown, A., Natarajan, V., Ravilla, T., Stancliffe, R., Steinbach, I., Morris, D., Buchan, J., Somner, J., Thomas, P., Cook, C. (2018) “Developing a global cataract “sustainability” audit tool (Triple C) to benchmark and improve surgical productivity, cost and carbon footprint.” *Ophthalmological Society of South Africa (OSSA) 2018 Congress*. 1-4 Feb. Sandton Johannesburg, South Africa. Poster.
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 29. Triola, D., **Thiel, C.** (2017) “When is the best time to teach health care sustainability and climate change in the medical student curriculum?” *NYU Langone Health MedEd Day*. New York, NY. 11 November. Poster.
 30. **Thiel, C.**, Schehlein, E., Saeedi, O., Schuman, J., Robin, A., Venkatesh, R., Ravindran, R.D. (2017). Lessons on Responsible Consumption of Resources from a Developing Country: Environmental LCA of Cataract Surgery in India. *International Society for Industrial Ecology (ISIE) & International Symposium on Sustainable Systems and Technology (ISSST) 2017 Conference*. 25-29 June. Chicago, IL. Poster & Oral.
 31. **Thiel, C.**, Sherman, J., Eckelman, M. (2017). LCIs in the Healthcare Sector: The Case for Better Emissions Data. *International Society for Industrial Ecology (ISIE) & International Symposium on Sustainable Systems and Technology (ISSST) 2017 Conference*. 25-29 June. Chicago, IL. Rapid Fire Poster presentation.
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37. Shue, A., **Thiel, C.**, Schehlein, E., Kolomeyer, A., Saeedi, O., Robin, A., Schuman, J. (2016). Costs of Unused Drugs Disposed of in Cataract Surgery in the United States. *Women in Ophthalmology Summer Symposium*, Williamsburg, VA. Poster.
38. Hasik, V., Anderson, N., Collinge, W., **Thiel, C.**, Khanna, V., Landis, A., Bilec, M. (2016). Comparative Life Cycle Assessment of Decentralized and Centralized Water Systems on a Building Level. *LCA XVI*, Charleston, SC.
39. **Thiel, C.**, Tighe, J., Baratz, M., Bilec, M. (2016). Medicine and the Environment: Using Environmental Life Cycle Assessment to Inform Changes in Surgical Practices. *LCA XVI*, Charleston, SC.
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53. Campion, N., **Thiel, C.**, Landis, A., Sherman, J., Eckelman, M., Woods, N. Bilec, M., (2014). Integrating Environmentally Preferred Solutions into the Healthcare Industry: A Closer Look at Supply Chain and Anesthetic Gases. *LCA XIV*. San Francisco, CA.
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56. Campion, N., Copley-Woods, N., Landis, A., Swanzy, L., **Thiel, C.**, Bilec, M. (2014). The Life Cycle Environmental Impacts of Disposable Custom Packs. *International Symposium on Sustainable Systems and Technology (ISSST)*. Oakland, CA. Poster.
57. Grabowski, Z., Matsler, A., **Thiel, C.**, Hum, R., Bradshaw, A., McPhillips, L., Miller, T., Redman, C. (2014). Weaving the Seamless Web: Conceptualizing Integrated Infrastructures for the 21st Century. *Association of American Geographers (AAG) Annual Meeting*. Tampa, FL.
58. **Thiel, C.** (2013). University of Pittsburgh's Sustainability Initiative in Engineering IGERT Program. *Third Conference for Sustainability IGERTs (C4SI3)*. Portland, OR. Poster.
59. **Thiel, C.**, Huddleston, M., Shrake, S., Landis, A., Copley-Woods, N., Bilec, M. (2013). Life Cycle Assessments of Surgery. *Third Conference for Sustainability IGERTs (C4SI3)*. Portland, OR. Poster.

60. **Thiel, C.**, Shrake, S., Woods, N., Landis, A., Bilec, M. (2013). Analyzing surgical techniques using LCA to inform environmentally sustainable changes in hospital operating rooms. *International Congress on Sustainability Science and Engineering (ICOSSE)*. Cincinnati, OH.
61. **Thiel, C.**, Bilec, M., Needy, K., Reis, R. (2013). Quantifying the Impacts of Green Hospital Design through a Comparative Longitudinal Assessment. *International Symposium on Sustainable Systems and Technology (ISSST)*. Cincinnati, OH.
62. **Thiel, C.**, Huddleston, M., Shrake, S., Landis, A., Copley-Woods, N., Bilec, M. (2013). Environmental Impacts of Minimally Invasive Surgery. *International Symposium on Sustainable Systems and Technology (ISSST)*. Cincinnati, OH. Poster.
63. **Thiel, C.**, Champion, N., Bilec, M., Landis, A., Woods, N. (2013). Improving Environmental Performance of the Operating Room. *CleanMed*. Boston, MA.
64. **Thiel, C.**, Bilec, M., Needy, K., Ries, R. (2013). Benefits of Green Hospital Design: A comparative longitudinal assessment. *Engineering Sustainability*. Pittsburgh, PA.
65. Champion, N., **Thiel, C.**, Landis, A., Bilec, M., (2013). Net-Zero Energy Building Material Perspective: A Life Cycle Assessment. *Engineering Sustainability*. Pittsburgh, PA. Poster.
66. Wood, C., LaScola Needy, K., Shrake, S., **Thiel, C.**, Huddleston, M., Bilec, M. (2013). Emerging Technologies in Healthcare and the Associated Environmental Impacts. *2013 Industrial and Systems Engineering Research Conference (ISERC)*. San Juan, Puerto Rico. Poster.
67. **Thiel, C.**, (2012). Meet the Region & Personal Leadership in EWB-USA Chapters. *Engineers Without Borders-USA North East Regional Conference*. Philadelphia, PA.
68. **Thiel, C.**, Bilec, M., LaScola-Needy, K. (2012). Impacts of Green Design on Hospital Performance in the United States. *4th CIB International Conference on Smart and Sustainable Built Environments (SASBE)*. São Paulo, Brazil. Poster.
69. **Thiel, C.**, (2012). Sustainability Research at University of Pittsburgh & Tools of the Road to Sustainable Healthcare. *3rd Annual PUC-Rio and University of Pittsburgh Workshop: Research on Nonconventional Materials and Technologies*. Pontifical Catholic University of Rio de Janeiro, Brazil.
70. Bilec, M., Landis, A., Shrake, O., **Thiel, C.**, Woods, N. (2012). Using LCA in Healthcare: Focus on Hysterectomy Surgeries. *LCA XII*. Tacoma, WA.
71. **Thiel, C.**, Champion, N., DeBlois, J., Landis, A., Woods, N., Bilec, M. (2012). Life Cycle Assessment of Medical Procedures: Vaginal and Cesarean Section Births. *International Symposium on Sustainable Systems and Technology (ISSST), IEEE*. Boston, MA.
72. **Thiel, C.**, Shrake, S., Champion, N., Bilec, M., Landis, A., Woods, N. (2011). Applications of Life Cycle Assessment: Sustainable Healthcare. *LCA XI*. Chicago, IL.
73. **Thiel, C.**, Champion, N., Bilec, M., Landis, A., Copley-Woods, N. (2011). Use of Life Cycle Assessment in Healthcare: A Preliminary Cesarean Section Case Study. *IEEE: International Symposium on Sustainable Systems and Technology (ISSST)*. Chicago, IL. Poster.
74. Woods, N., Goodman, L., **Thiel, C.** (2011). Creating Sustainable Surgery: A Trashy Operation. *CleanMed*. Phoenix, AZ.

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76. **Thiel, C.,** (2011). Education and outreach programs at MCSI. *Mascaro Center for Sustainable Innovation (MCSI) Advisory Board Committee*. Pittsburgh, PA.
77. **Thiel, C.,** Bilec, M., Landis, A. (2011). Net-Zero Energy Building: A Materials Life Cycle Assessment. *NSF CMMI Research and Innovation Conference*. Atlanta, GA. Poster.
78. **Thiel, C.,** (2010). Development of personal research goals. *ASCE 6th Annual National Civil Engineering Department Heads Conference*. Pittsburgh, PA.
79. **Thiel, C.,** Bilec, M., Landis, A. (2010). Life Cycle Assessment of Net-Zero Energy Building: Focus on Materials. *LCA X*. Portland, OR. Poster.

Patents

N/A