Spencer M. Checkoway

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Education

Rackham Graduate School at the University of Michigan — Ann Arbor, MI
M.S. Sustainable Systems (School for Environment and Sustainability) — Expected April 2024
M.S.E. Environmental Engineering (College of Engineering) — Expected December 2024

Bard College — Annandale-on-Hudson, NY
B.A. Physics and Architecture GPA: 3.84 — May 2022

Awards

University of Michigan Wege and Bulkley Fellowship In Sustainable Systems — August 2022
Alice P. Doyle Prize in Environmental Studies with an Emphasis in Social Practice — May 2022
Liberty League Conference All-Academic Team (Baseball) — May 2020, 2021, 2022

Skills

AutoCAD & Rhino 3D (proficient): Use in architectural drafting and design during undergraduate career
Python & COMSOL Multiphysics (proficient): Use for research in wave optics, image manipulation, and numerical methods
Adobe Creative Suite (proficient): Experience using InDesign and Illustrator for graphic design projects
Microsoft Office Suite (proficient): Experience using Excel, Word, & Powerpoint in academic and professional setting

Experience and Publications

Center for Sustainable Systems - University of Michigan — Ann Arbor, MI
Graduate Research Assistant — Winter 2023-present
Under the advisory of Dr. Greg Keoleian and Dr. Geoff Lewis, I am conducting an LCA and optimzation analysis of the sustainability of the North American Maple Syrup Industry under the USDA's Acer grant. Tasks involve communication with producers and manufacturers, maintenance of confidential data, thermodynamic and fluid mechanics modeling, and life cycle inventory analysis.

Bard College Architecture Design Lab — Annandale-on-Hudson, NY
Assistant Engineer — Summer 2022
Worked with Dr. Ivonne Santoyo-Orozco in setting up an architecture digital lab on the campus of Bard College. Assisted in the design and build of a shock absorption table for a CNC router, as well as the set up and assembly of the router.

Bard Physics Department — Annandale-on-Hudson, NY
Intro Physics I Lab Teaching Assistant — Fall 2021
Aided students in problem solving and lab work for intro physics course at Bard College. Helped to set up, break down, and explain lab procedures. Guided students through questioning and critical thinking exercises to improve research skills. Helped conduct problem set sessions, exam review, and derived fundamental equations in short lectures for students.

Bard Summer Research Institute — Annandale-on-Hudson, NY
Assistant Researcher — Summer 2020 & 2021
Worked under Dr. Antonios Kontos in the gravitational wave optics laboratory as part of the Nobel Prize winning collaboration LIGO. Duties included creating simuations to better understand wave scattering on optical surfaces, taking measurements from an interferometer, Matlab image analysis, and creating an autofocus set up for the two photon absorption lab. Also worked for Dr. Christopher N. Lafratta in the Bard Microfabrication lab as a fabricator and programmer. Captured measurements with the stimulated electron microscope and atomic force microscope.

Bennett Developmental Biology Lab — Annandale-on-Hudson, NY
Research Assistant — Feb 2019-March 2020
Conducted worm husbandry, picking, and staging for experiments on stressor conditioning and survival in populations of genetically modified *C. Elegans* flatworms. Assisted Dr. Heather Bennett in plating, sampling, and transferral of species. Began process of setting up novel genetic crosses.

Publications, Posters, and Installations:

2023
"Life Cycle Modeling of Maple Syrup Production in the United States" (Work in progress); SM Checkoway, J Weinstein, GM Lewis, GA Keoleian

"Recommendations for Lowering Energy Consumption and Emissions for North American Maple Syrup Production" (Work in Progress); SM Checkoway, J Weinstein, GM Lewis, GA Keoleian

2022
"Sustainable Energy Imaginaries: Utilizing Mie Optics to Reengineer Photobioreactors and Reimagine the Socio-spatial Conditions of Autonomous Energy Production" (Bard Digital Commons Senior Projects Spring 2022)

"Numerical Methods for Identifying Light Scattering Defects on Super Polished Mirrors" (Pending further data to go along with numerical simulations before publication) Dr. Antonios Kontos, Spencer Checkoway

2021
"Improving Quantum Noise by Simulating Dust" Spencer Checkoway, Dr. Antonios Kontos, Dr. Christopher N. LaFratta (Poster Oct. 2021); Bard Summer Research Institute (BSRI)

"Bard Campus Engagement Station" (Installation, April 2021) by S Brady, S Checkoway, A Galloway, A Kane, B Sylvester, G Ronen, H Soule, J Brea De Los Angeles, L Rashba, M Gershovich, N Montoya, O Mead, Interboro Partners: D D'Oca, G Theodore, T Armborst

"Housing and Collective Care: An Atlas for Housing Justice" (Installation + Exhibition March, 2021); student collective work by S Checkoway, A Galloway, M Gershovich, A Kane, N Montoya, H Soule, B Sylvester and R Wexler.

2020
"Mirrors are Cool but Scattering is Not" Rabia King, Andrew Poverman, Spencer Checkoway, Dr. Antonios Kontos (Poster Oct. 2020); Bard Summer Research Institute (BSRI)

Articles Including Work:

"Going All-In at Bard Architecture: The Opportunities and Challenges of Architectural Education in a Time of Transformation" by Dante Furioso in *Archinect,* July 2021
https://archinect.com/features/article/150266609/going-all-in-at-bard-architecture-the-opportunities-and-challenges-of-architectural-education-in-a-time-of-transformation

"A Radical Way of Teaching Architecture" by Zach Mortice in *Bloomberg Citylab|Design,* April 2022
https://www.bloomberg.com/news/features/2022-04-05/architecture-education-gets-a-radical-makeover

LinkedIn
https://www.linkedin.com/in/spencer-checkoway-28a4881b5/