



SHELBY R. FABIAN, B.S.M.E., P.E.

PROFESSIONAL BIOGRAPHICAL OUTLINE

BACKGROUND

Ms. Fabian earned a Bachelor of Science in Mechanical Engineering from Lehigh University. At Lehigh University, her senior design project involved the creation of a lightweight, yet strong and secure bike lock that was an innovation to the market. The bike lock later amassed over \$80,000 in a successful Kickstarter campaign in 2017. While at Lehigh University, she conducted research into the codes and standards associated with the design of roller coasters in the amusement industry. She investigated the discrepancies in testing standards between permanent and temporary structures, as well as the differences in regulations of these rides between state and national levels.

During her first six years of post-collegiate work experience, Ms. Fabian design commercial heating, ventilation, and air conditioning systems. She specialized in the design of primary and secondary education buildings, with other designs accommodating office spaces, dance studios, funeral homes, healthcare facilities, hotels, and dormitories.

AREAS OF EXPERTISE

- Mechanical Engineering
- Heating, Ventilation, and Air Conditioning (HVAC) Systems and Components
- HVAC System Design
- Heating and Cooling Plant Design
- Amusement Park Rides
- Mechanical, Electrical, and Plumbing (MEP) Code Compliance
- Building Code Compliance

EDUCATION

- Bachelor of Science in Mechanical Engineering, Business Minor, Lehigh University, December 2016

PROFESSIONAL LICENSES

- Professional Engineer, PA License # PE094368
- Professional Engineer, NY License # 108204

PROFESSIONAL EXPERIENCE

May 2023 – Present | ARCCA, Incorporated | Mechanical Engineer

- Failure analysis of mechanical devices and equipment
- Failure analysis of HVAC systems and components
- Investigates codes, standards, and regulations in mechanical applications
- Conducts evidence, equipment, and site investigations

May 2017 – February 2023 | Snyder Hoffman Associate, Inc. | Mechanical Engineer

- Designed HVAC systems for over 50 commercial projects, including elementary and middle schools, medical office buildings, dance studios, funeral homes, office spaces, and hotels. Followed projects throughout construction to aid in troubleshooting and execution.

PROFESSIONAL SOCIETIES

- Society of Women Engineers (SWE), ID: 2091989
- National Society of Professional Engineers (NSPE), Member ID: 300967030
- Pennsylvania Society of Professional Engineers (PSPE)
- National Council of Examiners for Engineering and Surveying (NCEES) Verified Record, ID: 16-804-47

PROJECTS

Research & Analysis, January 2016 – May 2016

Lehigh University, Bethlehem, PA

- Investigation into the design and testing of roller coasters and other various rides in the amusement park industry.
- Conducted interviews with industry designers, inspectors, and testing agents to analyze standards and procedures.
- Evaluated how current processes could be improved and how the implementation of federal laws would standardize the industry overall.

Product Development, January 2015 – December 2015

Lehigh University, Bethlehem, PA

- Designed a lightweight, high-security bike lock weighing in at 1.23 lb.
- Performed market research by surveying 6 bike shops and 12 cyclists to determine target market.
- Executed prototype iteration with 5 models before choosing final design.

ADDITIONAL SKILLS

- Word, Excel, PowerPoint, Publisher, AutoCAD, Revit, Carrier HAP, SolidWorks, Adobe Photoshop, MATLAB