William J. Foley

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Education and Affiliations

The Cooper Union for the Advancement of Science and Art
New York City, New York

- Masters Mechanical Engineering
  May 2015
- Bachelor of Engineering, Mechanical Engineering
  May 2012

Programs & Skills

Programs: Figma, HTML, CSS, Javascript, SOLIDWORKS, SOLIDWORKS PDM, Microsoft Word, Excel, PowerPoint, AutoCAD, Python, DaVinci Resolve
Skills/ machinery: Ultimaker & MakerBot 3D Printers, Steam/ Hot-Water Generator, Steam/Water Piping Systems, Mill, Lathe, Drill Press

Awards, Selected Publications, and Professional Organizations

GRC Best Presentation Award
September 2015

13 Peer-Reviewed Mechanical Engineering Research Publications
2012 –2016

Member, American Society of Mechanical Engineers
June 2012- Sept 2015

Work Experience

Onboarding Transition Manager, UBS Group AG,
New York City, New York
January 2023-Present

Key Contributions:

- **Onboarding SharePoint Website**: Created an internal SharePoint platform tailored for the Onboarding Team, facilitating the seamless exchange of processes, insights, and best practices, optimizing team efficiency and knowledge sharing.
- **ICLS Global Academy Lessons**: Lead and created the Transitions beginners lessons for the ICLS Global Academy learning platform. Created standardized design templates for lessons on basic systems instructions.

- **Global Family and Institutional Wealth & Cross Assets Solutions:** Specialize with onboarding Family Offices, businesses, and HNW individuals new to the Investment Banking industry.
- **Project Nautilus**: Web based onboarding platform to collect materials from clients and track onboarding progress. Executed user interviews on pain points within the current framework. Designed mock-ups in Figma of a user interface.

Consultant, UBS Group AG
May 2022 – January 2023

- **Onboarding Specialist:** Managed front-to-back account opening process for hedge funds to the investment bank

Mechanical Engineer, MedicaSafe, Inc.
New York City, New York
November 2015 – May 2022

Key Contributions:

- **FDA Regulatory Documentation:** Produced comprehensive documentation adhering to FDA standards for a pioneering drug-device combination product, ensuring compliance and facilitating successful submission.
- **Risk and Compliance Oversight:** Spearheaded the generation of critical assessments including User Needs, Design Inputs, Hazard Analysis, Device and User Related Risk Assessments, Device Failure Modes and Effects Analysis, and Cybersecurity Analysis. These efforts fortified product safety and regulatory adherence.
- **Manufacturer Liaison:** Served as a liaison between external manufacturers, component suppliers, testing vendors, and regulatory consultants.
- **Prototyping and Testing:** Conceptualized, designed, rapidly prototyped, and rigorously tested an electronic handheld tablet dispenser and a secure drug container, leveraging SolidWorks for precise 3D design. Additionally, expedited the prototyping of housing designs for a Pill Tracking concept, showcasing a commitment to innovation and practicality.
- **Product Videos:** Directed, filmed, and edited multiple product demonstration videos, enabling vivid representation and comprehension of product functionalities, contributing significantly to marketing and comprehension for stakeholders.

Founder, Freija, LLC
New York City, NY May
2020 – March 2022

Key Contributions:

- **Plant Health Management Software:** Directed the diagnosis and treatment strategies for common house plant issues encompassing fungal, bacterial, viral, and pest-related problems. Applied comprehensive expertise to ensure the optimal health and well-being of indoor flora.
- **Accessible Plant Care Solutions:** Innovated an intuitive application enabling novice plant enthusiasts to effortlessly diagnose plant ailments by answering user-friendly questions. This

approach democratized plant care, empowering individuals with minimal plant care experience.
- **Founder Responsibilities:** Initiated and led the team as a founding member, overseeing plant health concerns and solutions, orchestrating design initiatives, conducting UX/UI testing, and ensuring meticulous financial accountability, showcasing a holistic entrepreneurial prowess.

Founder, Esja Industries,

New York City, NY September
2016 - March 2020

Key Contributions:

- **Founder and Manager**: Lead the planning, design, and construction phases of a pioneering test heated green roof project installed on a private building. Effectively managed all facets of the project lifecycle, ensuring seamless execution and demonstrable success.
- **Novel Outdoor Plant Growth Technology:** Pioneered an innovative system harnessing building steam to enhance outdoor plant growth on green roofs. The technology facilitated year-round outdoor plant cultivation and enhancing sustainability possibilities.

Research Associate, Center for Innovation and Applied Technology (CIAT), The Cooper Union,
New York City, New York June
2015 – June 2019

Key Contributions:

- **Energy Recovery Research:** Led transformative projects including the development of heated green roofs and Icelandic test gardens, showcasing groundbreaking approaches to environmental sustainability and green technology implementation.
- **Energy Generation Technology:** Conducted engineering research on a novel thermoelectric generator designed for remote location energy production. The device was tested and proven to power an off-grid web camera in Iceland to monitor our test site.

Lead Research Assistant, CIAT, The Cooper Union New York City, NY
2010 – May 2015

Key Contributions:

- **Energy Research Projects Team Lead:** Directed and mentored teams of student research assistant in projects in NYC and Iceland.
- **Green Technology Implementation:** Lead contributions to heated green roofs + Icelandic research gardens.
- **Point of use Power Generator:** Advanced research for thermoelectric generator tailored for remote location energy production.

Intern, Metropolitan Building Consulting Group,
New York City, New York
March 2014 – May 2014

Key Contributions:

- **Engineering Construction Plans:** Generated meticulous building drawings for the New York City Fire Department following comprehensive site inspections and precise building measurements, ensuring accuracy and compliance with regulatory standards.
- **Technical Diagram Expertise:** Produced detailed HVAC diagrams, plan views, and section view drawings utilizing AutoCAD for Zenesis Design/Build, contributing significantly to the design and construction phases of the Grand Concourse building project.

Lead Teaching Assistant, High School Summer Program, The Cooper Union
New York City, NY
July – August, 2012 & 2013

Key Contributions:

- **Engineering Educator:** Delivered instruction on foundational engineering principles with a specialized emphasis on energy. Cultivated an understanding among high school students on engineering mindsets.
- **Skills Enhancement Leadership:** Led dynamic sessions focusing on research methodologies, hands on projects, and improving presentation skills.
- **Hands-On Project Leadership:** Mentored and guided a cohort of 30 students in the design and construction of energy-generating device powered by renewable sources.

Intern, James W. Bos, LLC,
New York City, New York
January 2013 –February 2014

Key Contributions:

- **Elevator Regenerative Breaking Analysis:** Conducted comparative analysis between the energy consumption patterns of standard elevators vs. those employing regenerative braking technology.
- **Efficient Data Retrieval:** Executed data retrieval from high-speed collection and monitoring units installed on elevator control systems, facilitating the extraction of crucial operational insights.

Research Projects

Heated Green Roof Steam Heat Recovery Project
Research Associate/Lead Research Assistant, Center for Innovation and Applied Technology, The Cooper Union,
New York City, New York September
2010 – September 2015

- **Automation and Resource Management System:** Engineered an automated irrigation and control device coupled with a rainwater collection system, optimizing water usage and ensuring efficient plant care.
- **Sustainability Solutions:** Developed and implemented waste building/Combined Heat and Power (CHP) steam harvesting systems, enabling cascade utilization to harness thermal energy for outdoor heated green roofs.

Geothermal Outdoor Heated Gardens Project
Visiting Scientist/ Research Associate, Keilir Institute of Technology, Hveragerði
& Ásbrú, Iceland
June 2012 – September 2015

- **Project Team Lead and Mentor:** Led a collaborative effort involving 27 students over three research trips from Cooper Union, guiding them from project planning to execution, imparting comprehensive knowledge on project objectives, operations, and responsibilities.
- **Project Manager:** Managed both short- and long-term project objectives, delegating roles and fostering team motivation to achieve project milestones.
- **Geothermal hot water delivery system:** Designed and built an gravity-fed hot water delivery system specifically tailored for outdoor heated gardens at the HNLFI Clinic to grow food for the partnering clinic.

Thermoelectric Generator for Low Energy Power Generation in Remote Locations
Research Associate/Lead Research Assistant, Center for Innovation and Applied Technology, The Cooper Union,
New York City, New York + Hveragerði, Iceland

- **Innovative Electricity Generation System:** Thermoelectric generator that utilized clamped surfaces of exposed steam pipes, employing innovative, non-mechanical methods to efficiently produce electricity.
- **Remote Site Power Supply:** Implemented the generator to power a webcam, facilitating real-time monitoring and data collection at a remote experimental site in Iceland.

Waste Steam Energy Recovery- Organic Rankine Cycle Power Generator, Senior Project,
New York City, NY September
2011 – May 2012

- **Re-imagining Power Generation System:** Conceptualized, designed, and analyzed a power generating device based on the Organic Rankine Cycle. This system was designed to efficiently converted waste steam heat into usable work, showcasing a method to utilize low grade heat energy for useful work.

Regenerative Breaking in Elevators - Research Fellow, C.V. Starr Research Foundation, New York City, NY
September 2012 – May 2015

- **Regenerative Breaking Research for Elevators - NYSERDA Grant:** Research initiative supported by a $400,000 NYSERDA grant, dedicated to harnessing waste energy from elevator braking systems.
- **Power Analysis:** Conducted analysis of elevator power data, precisely quantifying both consumed and regenerated power by the system. Insights contributed to understanding energy dynamics and potential recovery.
- **Published Research Findings:** Co-authored an article for NYSERDA, presenting findings and insights derived from elevator energy research, contributing significantly to the discourse on sustainable energy solutions.

Interests

- **Weightlifting:** Engaging in strength training as a regular fitness pursuit, focusing on personal progress and physical well-being.
- **Gardening:** Enjoying the meditative process of tending to gardens, nurturing plants, and creating serene green spaces.
- **Fencing:** Studying, practicing, and teaching the discipline and technique of fencing as a hobby, appreciating the precision and skill involved in this sport.
- **History:** Fascination with exploring historical events and their impact on society, delving into the stories of the past.
- **Baking:** Enjoying the process of baking and experimenting with recipes to share with friends and family.

Selected Publications

ASME IMECE, *Design of a Low-Power Quadruped Robot for Remote Data Acquisition in a Heated Garden*, Nicholas Mitchell, Kristin Miller, C.S. Wei, Runar Unnthorsson, William Foley, Robert Dell, IMECE2016-68177, 2016

ASME IMECE, *Design and Construction of a Heated Garden System Utilizing Steam Condensate from an On-Site Boiler*, Robert Dell, C.S Wei, Raj Parikh, Runar Unnthorsson, Nicholas Mitchell, William Foley IMECE2016-68180, 2016

Geothermal Resources Council (GRC) Annual Meeting, *Accelerated Plant Growth Results from an Intensive Shallow Bottom Heat System Using Waste Geothermal Hot Water and Steam Condensate in Iceland*, Robert Dell, C.S Wei, Runar Unnthorsson, William Foley, 2015

Geothermal Resources Council (GRC) Annual Meeting, *Point of Use Thermoelectric Powered Automated Irrigation System for an Intensive Shallow Bottom Heat System Using Waste Geothermal Hot Water and Steam Condensate in Iceland*, William Foley, C.S Wei, Runar Unnthorsson, Robert Dell, 2015

Geothermal Resources Council (GRC) Annual Meeting, *Enhanced Agricultural Production from an Intensive Bottom Heat System Using Waste Geothermal Hot Water and Steam Condensate in Iceland*, Robert Dell, Runar Unnthorsson, C.S. Wei, William Foley, Portland Oregon, 2014

GRC Annual Meeting, *Web Accessible Security Camera System Independently Powered by a Point of Use Thermoelectric Generator Using Geothermal Pipes as a Heat Source*, Robert Dell, Stan Wei, Runar Unnthorsson, William Foley Mitchell Cady, Malcolm Dell, Michael Isakov and, Alex Livermore, Portland Oregon, 2014

American Society of Mechanical Engineers (ASME) International Mechanical Engineering Congress and Exposition (IMECE) 2014 39077 *Supercapacitors and Battery Configuration for Utilizing a Thermoelectric Generator to Power a WebAccessible Robotics Monitoring System*, Robert Dell, Runar Unnthorsson, Stan Wei, William Foley, Montreal, Canada, 2014

ASME IMECE 2014 38384 *Developing a Methodology for Comparing the Energy Efficiency of Differing Elevator Type* James Bos, Robert Dell, Brad Nemeth, Stan Wei, William Foley, Montreal, Canada

ASME IMECE 2014 39066 *Repurposing Waste Steam and Hot Water to Accelerate Plant Growth in Heated Green Roofs* Robert Dell, Stan Wei, Raj Parikh, Runar Unnthorsson, William Foley

GRC Annual Meeting, *Web Accessible Security Camera System Independently Powered by a Point of Use Thermoelectric Generator Using Geothermal Pipes as a Heat 6 Source*, Robert Dell, C.S. Wei, Runar Unnthorsson, William Foley, Mitchell Cady, Malcolm Dell, Michael Isakov and, Alex Livermore, Portland Oregon, 2014

ASME IMECE 2013 *Repurposing Waste Steam and Hot Water to Accelerate Plant Growth in Heated Green Roofs*, R Dell, C.S. Wei, R. Unnthorsson, W. Foley, IMECE2013-65200, ASME 2013 International Congress, San Diego. Ca.,

ASME IMECE 2013, *Developing a Methodology for Measuring the Comparative Energy Efficiency of Elevators* J. Bos, R. Dell, C.S. Wei, W. Foley, IMECE2013-66663, ASME 2013 International Congress, San Diego. Ca.,

ASME IMECE2012 *Thermoelectric-Based Power Generator for Powering Microcontroller Based Security Camera*, R. Dell, R. Unnthorsson, C. Wei, G. Sidebotham, M. Jonsson, W. Foley, E. Ginsburg, S. Paul, S. Kim, A. Morris, ASME -89611