

March 18, 2026

REZA RASHIDI

Associate Professor of Practice
Department of Mechanical and Aerospace Engineering

WORK ADDRESS

1011 Furnas Hall
University at Buffalo
Buffalo, New York 14260
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200+ students/semester | 40+ industry projects | \$100K+ funding | National competition winners

PROFESSIONAL SUMMARY

Associate Professor of Practice in Mechanical and Aerospace Engineering specializing in experiential and industry-integrated engineering education. Focused on designing learning environments that connect theory to real-world application through hands-on, project-based instruction. Extensive experience in large-scale senior design program development, multidisciplinary collaboration, and mentoring students in translating engineering concepts into functional systems. Committed to preparing students for professional practice through structured, high-impact learning experiences.

SELECTED ACHIEVEMENTS

1. Transformational Redesign of Senior Design Program
 - Redesigned a two-semester capstone ecosystem (MAE 451 → MAE 494)
 - Scaled to 200+ students/semester
 - Integrated industry-sponsored + competition-based projects
 - Created structured deliverables + poster/demo events
2. Large-Scale Industry & Competition Integration
 - Led 40+ industry-sponsored projects
 - Secured and managed \$100K+ cumulative project funding
 - Built partnerships with Moog, GlobalFoundries, Kodak, Navy (ASNE)
 - Delivered real engineering systems (boats, robotics, manufacturing systems)
3. Student Success & National-Level Outcomes
 - Students achieved:
 - ✓ 1st place – NASA Lunabotics
 - ✓ 1st place – Navy PEP Competition

- Strong record of:
 - ✓ Student co-authored publications
 - ✓ Hands-on, build-focused learning
- Established a pipeline from classroom → competition → publication

TEACHING PHILOSOPHY

My teaching philosophy centers on transforming students from passive learners into practicing engineers. I design project-centered, industry-connected learning environments where students engage in real-world problems that require both technical rigor and practical decision-making. Through a structured two-semester capstone sequence, I emphasize ownership, teamwork, and accountability, guiding students from concept development to fully functional systems. My goal is to create an educational experience where students not only learn engineering principles but also apply them in meaningful, high-impact contexts that prepare them for professional practice. This approach emphasizes not only technical competence but also confidence, independence, and readiness for real engineering environments.

EDUCATION

- | | |
|--|----------|
| Ph.D., Mechanical Engineering, University of British Columbia
MEMS Pressure, Temperature and Conductivity Sensor Devices
(SmartChip) for High-Temperature and Harsh Environments | May 2011 |
| M.S., Materials Engineering, University of Tehran
Development of Electrodes for Alkaline Fuel Cells | Aug 1995 |
| B.S., Materials Engineering, Sharif University of Technology
Coupled Experimental–Numerical Validation of SUTCAST
Heat Transfer Simulations for Metal Solidification (FEM/FDM) | Aug 1993 |

PROFESSIONAL EXPERIENCE

- | | |
|---|----------------------|
| Associate Professor of Practice, Dept. of Mech. & Aero. Eng.
SUNY Buffalo, Buffalo, NY | Jan 2023 – Present |
| Associate Professor and Chair, Dept. of Mech. & Elec. Eng. Tech.
SUNY Alfred, Alfred, NY | Jan 2021 – Jan 2023 |
| Assistant Professor, Dept. of Mech. & Elec. Eng. Tech.
SUNY Alfred, Alfred, NY | Sep 2016 – Dec 2020 |
| Senior Engineer, Gas Turbine
Siemens Energy, Charlotte, NC | Nov. 2011 – Aug 2016 |
| Postdoctoral Fellow, Dept. of Elec. and Comp. Eng.
University of British Columbia, Vancouver, BC | Jan 2011 – Nov 2011 |

Teaching Assistant, Dept. of Mech. Eng. Sep 2008 – Dec 2009
University of British Columbia, Vancouver, BC

Research Assistant, Dept. of Mech. Eng. Sep 2006 – Dec 2010
University of British Columbia, Vancouver, BC

HONORS AND AWARDS (ADVISOR)

1st Place at NASA Lunabotics Competition, Best First Year Presentation, Student Advisor,
Orlando, Florida May 2025

1st Place at NAVY Promoting Electric Propulsion Competition, Advisor, Virginia Beach, VA
Apr 2025

3rd Place at NAVY Promoting Electric Propulsion Competition, Advisor, Virginia Beach, VA
Apr 2024

People Choice Award at Panasci Competition, Laser Week Killer, Advisor, Buffalo, NY
Apr 2025

1st Place at Allegany County Startup Collegiate Competition, Advisor, Allegany County, NY
Apr 2022

3rd Place at Allegany County Startup Collegiate Competition, Advisor, Allegany County, NY
Apr 2021

TEACHING AND COURSES TAUGHT**SUNY Buffalo, Buffalo, NY**

MAE 451: Design Process and Methods (Significant Contributions: Redesigned)

Fall 2023 (Total Enrollment: 214)

Spring 2024 (Total Enrollment: 18)

Fall 2024 (Total Enrollment: 198)

Spring 2025 (Total Enrollment: 30)

Fall 2025 (Total Enrollment: 135)

MAE 494: Senior Design Project (Significant Contributions: Redesigned)

Spring 2023 (Total Enrollment: 98)

Spring 2024 (Total Enrollment: 177)

Fall 2024 (Total Enrollment: 18)

Spring 2025 (Total Enrollment: 194)

Fall 2025 (Total Enrollment: 24)

Spring 2026 (Total Enrollment: 133)

SUNY Alfred, Alfred, NY

BSET 8003: Senior Project (Significant Contributions: Redesigned)

Spring 2022, Spring 2021, Fall 2020, Spring 2020, Spring 2019, Spring 2018, Spring 2017

BSET 7001: Senior Seminar and Project Design (Significant Contributions: Redesigned)

Fall 2022, Fall 2021, Fall 2019

MECH 7403: Microfabrication (Significant Contributions: Developed New Course and Lab)

Spring 2022, Summer 2020, Spring 2020, Spring 2019, Spring 2018, Spring 2017

MECH 5900: Independent Study, MEMS Development (Significant Contributions: Developed New Course)

Fall 2017

MECH 5900: Independent Study, Sensors & Actuators (Significant Contributions: Developed New Course)

Fall 2022, Fall 2020, Fall 2019, Fall 2017

MECH 5334: Mechanics of Materials

Fall 2022, Summer 2022, Fall 2021, Winter 2020, Fall 2020, Winter 2019, Fall 2019, Fall 2018, Fall 2017, Fall 2016

ENGR 2201: Eng Science Seminar

Fall 2018, Fall 2017, Fall 2016

ENGR 2001: Engineering Computing Applications (MATLAB)

Spring 2018, Spring 2017

FUNDINGCurrent Funding

1. Project Funds, Global Foundries Inc., Reza Rashidi, 09/01/2025-06/01/2026, Corporate sponsorship, \$11,000 (100% share).
2. Competition Funds, Electric_Powered Endurance Racing Boats, Reza Rashidi, 09/01/2025-06/01/2026, The American Society of Naval Engineers Sponsored by the Office of Naval Research, Annual request, \$13,000 (100% share).

Past Funding

3. Competition Funds, Electric_Powered Endurance Racing Boats, Reza Rashidi, 09/01/2024-06/01/2025, The American Society of Naval Engineers Sponsored by the Office of Naval Research, Annual request, \$11,000 (100% share).

4. Design Validation and Material Selection of NAVY Field Boxes, Reza Rashidi, 02/16/2024-05/15/2024, Beautiful Brains (through TCIE), Industry proposal, \$15,198 (100% share).
5. Corporate Funds for MAE Senior Design Projects, Reza Rashidi, Christine Human and Andrew Olewnik, Corporate sponsorship, 09/01/2023-06/01/2024, SEAS, \$9,500 (100% share).
6. Senior Design Project Lab Upgrade, Reza Rashidi, Timothy Leyh, Gary Simon, 11/10/2023-06/01/2024, Center for Industrial Effectiveness (TCIE), State proposal, \$50,000 (100% share).
7. Competition Funds, Electric_Powered Endurance Racing Boats, Reza Rashidi, 09/01/2023-06/01/2024, The American Society of Naval Engineers Sponsored by the Office of Naval Research, Annual request, \$7,000 (100% share).
8. MAE 451 Poster Presentation Event Sponsorship, Reza Rashidi, 12/11/2023, IPD Engineering, Corporate sponsorship, \$500 (100% share).
9. MAE 451 Poster Presentation Event Sponsorship, Reza Rashidi, 12/11/2023, Stellar Technology, Corporate sponsorship, \$500 (100% share).
10. MAE 451 Poster Presentation Event Sponsorship, Reza Rashidi, 12/11/2023, C&S Companies, Corporate sponsorship, \$500 (100% share).
11. Equipment Purchase Fund, Reza Rashidi, SUNY Alfred, Instructional proposal, ~\$80,000 (100% share), 2016-2022
12. Research Applied Learning Fund, Reza Rashidi, Research proposal, SUNY Alfred, ~\$20,000 (100% share), 2016-2022
13. Research Fund, Development of piezoresistive pressure sensors for use in high temperature applications, Mu Chiao and Reza Rashidi, Canadian Microsystems (CMC), Research proposal, \$10,000 (100% share), 2008 (note: as graduate student, I helped on the proposal preparation)
14. High temperature and harsh environment packaging of piezoresistive pressure sensors, Mu Chiao and Reza Rashidi, Canadian Microsystems (CMC), Research proposal, \$10,000 (100% share), 2008 (note: as graduate student, I helped on the proposal preparation)

PUBLICATIONS AND TECHNICAL PRESENTATIONS

Google Scholar: [link](#) (total citation 339)

Refereed Journal Articles (* denotes graduate students, + denotes undergraduate student)*Submitted*

1. A.J. Hildreth⁺, O.C. Manley⁺, D. DeFord⁺, D. Tantalo⁺, D. Albicker⁺, J. Clement⁺, M. Nasri, N. Amiri, and R. Rashidi, Piezoelectric System for Crack Detection, Analysis, and Self-Repair in Steel Structures, *IEEE Sensors Journal*, Submitted, Nov (2025)

Published

2. R. Hall⁺ and R. Rashidi, Multi-directional universal energy harvesting ball, *Micromachines*, 12 (4) (2021) 457
3. J. Martin⁺ and R. Rashidi, A differential transformer-based force sensor utilizing a magnetic fluid core, *Microsystem Technologies*, 27(1) (2021) 115-126
4. T. Coughlin⁺ and R. Rashidi, A powerless iron oxide based magnetometer, *Microsystem Technologies*, 26 (2020) 2487–98
5. A. DeGraff⁺ and R. Rashidi, Ferrofluid transformer-based tilt sensor, *Microsystem Technologies*, 26 (2020) 2499–2506
6. R. Rashidi, N. Summerville⁺ and M. Nasri, Magnetically actuated piezoelectric-based rotational energy harvester with enhanced output in wide range of rotating speeds, *IEEE Transactions on Magnetics*, 55 (9) (2019) 1-8
7. R. Rashidi, J. Alenezi⁺, J. Czechowski⁺, J. Niver⁺ and S. Mohammad⁺, Graphite-on-paper-based resistive sensing device for aqueous chemical identification, *Chemical Papers*, 73 (11) (2019) 2845-55
8. R. Rashidi, M.S.M. Ali^{*}, D. Lappin⁺, C. Schlosser⁺ and K. Takahata, Inductive antenna stent: design, fabrication, and characterization, *Journal of Micromechanics and Microengineering*, 23 (2) (2013) 025015
9. D. Lappin⁺, R. Rashidi and K. Takahata, An experimental study of electrochemical polishing for micro-electro-discharge-machined stainless-steel stents, *Journal of Materials Science: Materials in Medicine*, 23 (2) (2012) 349-56
10. R. Rashidi, T.C.M. Graham, J.D. Madden and C.P.J. Bennington, Towards a flow following ionic conductivity and temperature sensor package, *Industrial & Engineering Chemistry Research*, 51 (6) (2012) 2738-46
11. R. Rashidi, K. Chen⁺, M.S.M. Ali^{*} and K. Takahata, Radio aneurysm coils for noninvasive detection of cerebral embolization failures: A preliminary study, *Biosensors and Bioelectronics*, 30 (2011) 300-5

12. D. Brox^{*}, R. Rashidi and K. Takahata, A non-lithographically microfabricated capacitive pressure sensor for biomedical applications, *Electronics Letters*, 47 (18) (2011) 1015-17
13. R. Rashidi, C.P.J. Bennington and M. Chiao, Development of a combined piezoresistive pressure and temperature sensor using chemical protective coating for kraft pulp digester process monitoring, *Journal of Micromechanics and Microengineering*, 21 (1) (2011) 015009
14. R. Rashidi, C.P.J. Bennington and M. Chiao, A hybrid capacitive pressure and temperature sensor fabricated by adhesive bonding technique for harsh environment of kraft pulp digesters, *Microsystem Technologies*, 17 (1) (2011) 149-60
15. R. Rashidi, T.C.M. Graham, C.P.J. Bennington and M. Chiao, Development of a compensated capacitive pressure and temperature sensor using adhesive bonding and chemical-resistant coating for multiphase chemical reactors, *Sensors and Actuators A: Physical*, 163 (2) (2010) 471-80
16. M.H. Pishbin, R. Rashidi and M. Nasri, Optimization of manufacturing parameters for Ni-Ag fuel cell electrode, *Fuel Cells*, 7 (4) (2007) 291-97
17. M. Mohandes and R. Rashidi, Variables affecting the fabrication and glazing of zinc oxide varistor blocks, *Journal of Electrical Science and Engineering*, 44 (2005) 43-54 (Persian)
18. A. Zhaam and R. Rashidi, Corrosion and its prevention methods in thermal power plants, *Journal of Electrical Science and Engineering*, 25 (1998) 1-7 (Persian)

Invited or Other Articles

19. R. Rashidi, R. Lohr⁺ and T. Sax⁺, Triboelectric Energy Harvester for Self-Powered Nighttime Running Vest, *SSRN 4713841*, Feb (2024)
20. R. Rashidi, MEMS piezoresistive pressure sensor for high-temperature applications, *CMC Microsystems*, Online application note, 2010
21. R. Rashidi, Packaging of MEMS pressure sensors for harsh environments, *CMC Microsystems*, Online application note, 2010
22. R. Rashidi, Superalloys used in gas turbine blades, *MATN-PAYAM*, 23 (1997) 17-20 (Persian)

Refereed Proceedings Articles (presenter name underlined, *graduate student, +undergraduate student)

1. R. Rashidi, Project-Centered Flipped Senior Design (UB-PCFSD): Multi-Year Redesign and Outcomes in a Two-Course Capstone Sequence, *2026 ASEE Annual Conference & Exposition*, Charlotte, NC, June 2026
2. R. Rashidi, Redesigning Senior Capstone Sequence with Multidisciplinary, Industry-Sponsored Projects, *2023 ASEE Annual Conference & Exposition*, Baltimore, MD, June 2023
3. M.A. Palmateer⁺, J. Plesums⁺, R. Santiago⁺, A. Miller⁺ and R. Rashidi, 3D-Printed Piezoelectric Acoustic Energy Harvester, *2023 ASEE Annual Conference & Exposition*, Baltimore, MD, June 2023
4. G. Bathgate⁺, D. Perlino⁺, C. Howard⁺, O. Frink⁺ and R. Rashidi, Fabrication of Fluidic Devices through Dissolution of 3D Printed Material in PDMS Mold, *2023 ASEE Annual Conference & Exposition*, Baltimore, MD, June 2023
5. B. Miller⁺, S. Barker⁺ and R. Rashidi, Triboelectric-based energy harvesting face mask using recyclable materials, *12th International Conference on Sensor Device Technologies and Applications*, Athens, Greece, Nov. 2021
6. A. Bailey⁺, T. Michelson⁺ and R. Rashidi, An Undergraduate Hands-On Approach to Microfabrication Applied Learning Towards Developing a Silicon-Based Microfluidic Pressure Sensor Array, *2020 ASEE Annual Conference and Exposition*, Montreal, Canada, June 2020
7. I. Cooke⁺, B. DeClerck⁺, J. Hallett⁺, T. Miller⁺, A. Mitchell⁺ and R. Rashidi, A magnetic and shape memory alloy actuated gripper for surgical applications, *ASME International Mechanical Engineering Congress and Exposition (IMECE)*, Salt Lake City, UT, Nov. 2019
8. T. Michelson⁺, J. Rudnick⁺, J. Baxter⁺ and R. Rashidi, A novel ferrofluid-based valveless pump, *ASME International Mechanical Engineering Congress and Exposition (IMECE)*, Salt Lake City, UT, Nov. 2019
9. J. Bianconi⁺, J. Hallett⁺, J. Pealo⁺ and R. Rashidi, A hybrid piezoelectric and inductive rotational energy harvester, *IOP 6th International Conference on Mechanics and Mechatronics Research*, Chongqing, China, July 2019
10. R. Rashidi, N. Summerville⁺ and M. Nasri, A Dual-Purpose Piezoelectric Multi-Beam Energy Harvesting and Frequency Measurement Device for Rotational Applications, *IEEE-MIT Undergraduate Research Technology Conference*, Boston, MA, Oct. 2018

11. K. Bower⁺, R. Colon⁺, C. Karnyski⁺, J. Minkel⁺ and R. Rashidi, Piezoelectric-based monitoring of restless legs syndrome (RLS), *Springer International Conference on Mechatronics and Intelligent Robotics*, Kunming, China, May 2018
12. J. Alenezi⁺, J. Czechowski⁺, J. Niver⁺, S. Mohammad⁺ and R. Rashidi, Graphite Line on Paper as an Aqueous Chemical Sensor, *Springer International Conference on Mechatronics and Intelligent Robotics*, Kunming, China, May 2018
13. T. Duell⁺, M. Muehlbauer⁺, T. Seitzinger⁺, J. Westfall⁺ and R. Rashidi, MEMS Capacitive Sensor for Wound Monitoring Applications, *IOP 5th International Conference on Mechanics and Mechatronics Research*, Tokyo, Japan, July 2018
14. A. Mbaye⁺, C. Kreamer⁺, L. Zink⁺, M. Fredenburg⁺ and R. Rashidi, 3D Printed Micro Check Valve for Biomedical Applications, *IOP 5th International Conference on Mechanics and Mechatronics Research*, Tokyo, Japan, July 2018
15. D. Brox^{*}, R. Rashidi and K. Takahata, Non-Lithographically Micromachined Capacitive Pressure Sensor Based on Stainless Steel for Biomedical Applications, *IEEE Sensors*, Limerick, Ireland, Oct. 2011
16. R. Rashidi and M. Chiao, A simple method for adhesive bonding of capacitive pressure sensors, *2010 ASME International Mechanical Engineering Congress*, Vancouver, Canada, Nov. 2010
17. T.C.M. Graham, E. Liu^{*}, R. Rashidi, N. Sadeghi^{*}, E. Albadvi^{*}, S. Mirabbasi, M. Chiao, J.D. Madden, C.P.J. Bennington, Development of a flow-following sensor package for application in chemical pulp digesters, *EXFOR & Annual Meeting*, Montreal, Canada, Feb. 2010, pp. 51-59
18. R. Rashidi and A. Zhaam, Study on corrosion of thermal power plant condenser tubes, *EUROCORR 2004 conference*, Nice, France, Sep. 2004, pp. 12-16
19. R. Rashidi and A. Zhaam, Study and production of fuel cell electrodes, *ISATA 2000 conference*, Dublin, Ireland, Sep. 2000, pp. 25-27
20. R. Rashidi⁺, A simulation for effect of chill thickness on solidification rate, *The 4th National Congress of Foundry Directors*, China Foundry Association, Beijing, China, May 2000, pp. 5-7
21. R. Rashidi⁺ and P. Davami, Effect of chill thickness on solidification rate of alloy Al-7%Si, *6th Seminar of Iranian Founders Society*, Tehran, Iran, May 1994 (Persian)

Abstracts and Other Conference Presentations (presenter name underlined, *graduate student, +undergraduate student)

3. R. Rashidi and N. Summerville⁺, Piezoelectric energy harvesters for rotational applications, *AUenergy Symposium*, Alfred, NY, October 2018

STUDENT ADVISING (RESULTING IN PUBLICATIONS)

Advising Ph.D Students

1. A study of methodology and technology for wireless monitoring of blood pressure inside a stent
D. Brox, University of British Columbia, PhD work, 2011, Co-advisor (primary advisor: K. Takahata), Co-authored a journal paper & a conference paper

Advising Undergraduate Students

2. Piezoelectric System for Crack Detection, Analysis, and Self-Repair in Steel Structures
A.J. Hildreth, O.C. Manley, D. DeFord, D. Tantaló, D. Albicker, and J. Clement, SUNY Buffalo, Senior Design, 2025, Co-authored a journal paper
3. 3D-Printed Piezoelectric Acoustic Energy Harvester
M.A. Palmateer, J. Plesums, R. Santiago, and A. Miller, SUNY Alfred, Senior Design, 2022, Co-authored a conference paper
4. Fabrication of Fluidic Devices through Dissolution of 3D Printed Material in PDMS Mold
G. Bathgate, D. Perlino, C. Howard, and O. Frink, SUNY Alfred, Senior Design, 2020, Co-authored a conference paper
5. Triboelectric Energy Harvester for Self-Powered Nighttime Running Vest
R. Lohr and T. Sax, SUNY Alfred, Independent study, 2020, Co-authored an online paper
6. Triboelectric-Based Energy Harvesting Facemask Using Recyclable Materials
B. Miller and S. Barker, SUNY Alfred, Independent Study, 2020, Co-authored a conference paper
7. Electromagnetic Energy Harvesters
R. Hall, SUNY Alfred, Independent Study, 2019, Co-authored a journal paper
8. Differential Transformer-Based Force Sensor Utilizing a Magnetic Fluid Core
J. Martin, SUNY Alfred, Independent Study, 2019, Co-authored a journal paper

9. Ferromagnetic Transformer-Based Tilt Sensors Ferrofluid
A. DeGraff, SUNY Alfred, Independent Study, 2019, Co-authored a journal paper
10. Powerless Iron Oxide Based Magnetometer
T. Coughlin, SUNY Alfred, Independent Study, 2019, Co-authored a journal paper
11. Microfabrication of Microfluidic Pressure Sensor Arrays
A. Bailey and T. Michelson, SUNY Alfred, Independent Study, 2019, Co-authored a conference paper
12. Magnetic and Shape Memory Alloy Actuated Grippers
I. Cooke, B. DeClerck, J. Hallett, T. Miller, and A. Mitchell, SUNY Alfred, Senior design, 2019, Advisor, Co-authored a conference paper
13. Ferrofluid Valve-Less Pumps
T. Michelson, J. Rudnick, and J. Baxter, SUNY Alfred, Senior design, 2019, Advisor, Co-authored a conference paper
14. Hybrid Piezoelectric and Inductive Rotational Energy Harvesters
J. Bianconi, J. Hallett, and J. Pealo, SUNY Alfred, Senior design, 2019, Advisor, Co-authored a conference paper
15. Piezoelectric-Based Rotational Energy Harvesters
N. Summerville, SUNY Alfred, Senior design, 2018, Advisor, Co-authored a journal paper & a conference paper
16. Graphite-On-Paper Resistive Sensors for Aqueous Chemical Identification
J. Alenezi, J. Czechowski, J. Niver, and S. Mohammad, SUNY Alfred, Senior design, 2018, Advisor, Co-authored a journal paper & a conference paper
17. MEMS Capacitive Sensors for Wound Monitoring
T. Duell⁺, M. Muehlbauer, T. Seitzinger, and J. Westfall, SUNY Alfred, Senior design, 2018, Advisor, Co-authored a conference paper
18. 3D Printed Micro Check Valves for Biomedical Applications
A. Mbaye, C. Kreamer, L. Zink, and M. Fredenburg, SUNY Alfred, Senior design, 2018, Advisor, Co-authored a conference paper
19. Electrochemical Polishing for Micro-Electro-Discharge-Machined Stainless-Steel Stents

D. Lappin, University of British Columbia, Independent Study, 2011, Co-advisor (primary advisor: K. Takahata), Co-authored a journal paper

INDUSTRY-SPONSORED SENIOR DESIGN PROJECTS

1. ASML Scanner Ultra-Pure Water Bath Level Monitoring, Global Foundries, Malta, NY, 5 Mechanical Engineering students, Budget: \$5,500, Fall 2025 – Spring 2026
2. Polyimide Cupwash Disk Redesign, Global Foundries, Malta, NY, 5 Mechanical Engineering students, Budget: \$5,500, Fall 2025 – Spring 2026
3. Electric_Powered Endurance Racing Boats, The American Society of Naval Engineers sponsored by the Office of Naval Research, Alexandria, VA, 41 Mechanical Engineering students within 6 projects, Budget: \$31,000, Fall 2023 – Spring 2026
4. Can Lid Component for Spooling Machine, Eastman Kodak Co., Rochester, NY, 6 Mechanical Engineering students, Budget: all hardware funded, \$5,000, Fall 2024 – Spring 2025
5. Redesign of Pulse Oxidation Water Disinfection, Oxi-Tech America, East Aurora, NY, 7 Mechanical Engineering students, Budget: \$4,000, Fall 2024 – Spring 2025
6. Surgery Lamp Automatically Tracking a Surgeon's Hands, Center for Plastic Surgery, Buffalo, NY, 6 Mechanical Engineering students, \$5,000, Fall 2024 – Spring 2025
7. Development of PC Wash Supports for CMP Tool, Global Foundries, Malta, NY, 3 Mechanical Engineering students, \$1,500, Fall 2024 – Spring 2025
8. Wash Tunnel for Sustainable Food Washing Machine, Feast Kitchen, LLC, Auburn, NY, 6 Mechanical Engineering students, \$3,000, Fall 2024 – Spring 2025
9. Bell X-22 Prototype: Interactable Ducted Fan Exhibit, Niagara Aerospace Museum, Niagara Falls, NY, 4 Mechanical Engineering and 5 Computer Engineering students (collaboration between two departments), Budget:\$10,000, Fall 2023 – Spring 2025
10. Crack Monitoring and Repair, Collaboration with Alfred University and Buffalo State University, 6 Mechanical Engineering students Budget \$500, Fall 2024 – Spring 2025
11. OLYMPUS BAR: Designed to Incorporate Chest Fly and Bench Press Motion, Tresca Design Group, Buffalo, NY, 5 Mechanical Engineering students, Budget: all software and hardware funded, Fall 2023 – Spring 2024
12. New 3D Printer Frames, Tresca Design Group, Buffalo, NY, 3 Mechanical Engineering students, Budget: all software and hardware funded, Fall 2023 – Spring 2024

13. Interactive Wind Tunnel, Niagara Aerospace Museum, Niagara Falls, NY, 8 Mechanical Engineering students, \$1,500, Fall 2023 – Spring 2024
14. Titan Solid Rocket Motor Upgrade (SRMU) Exhibit, Niagara Aerospace Museum, Niagara Falls, NY, 8 Mechanical Engineering students, Budget: all software and hardware funded, Fall 2023 – Spring 2024
15. Remote Stethoscope, UB Department of Computer Science & Engineering, NY, 2 Mechanical Engineering and 8 Computer Engineering students (collaboration between two departments), Budget: all software and hardware funded by CSE, Fall 2023 – Spring 2024
16. Pump Test Stand, Moog Inc., East Aurora, NY, 5 Mechanical Engineering students, Budget: \$2,000, Fall 2023 – Spring 2024
17. Sheet Metal Flattening Equipment Automation, Niagara Specialty Metals, Akron, NY, Industrial advisor: Nathan Korthals, 6 Mechanical Engineering students, \$1,000, Fall 2023 – Spring 2024
18. Furnace Wasted Heat Energy Recovery, Niagara Specialty Metals, Akron, NY, 6 Mechanical Engineering students, Budget: all software and hardware funded, Fall 2023 – Spring 2024
19. UV Tunnel for Sustainable Food Washing Machine, Feast Kitchen, LLC, Auburn, NY, 7 Mechanical Engineering students, Budget: all software and hardware funded, \$2,000, Fall 2023 – Spring 2024
20. Automate wash process of two cast iron assemblies, HDM Hydraulics, LLC, Tonawanda, NY, 3 students from Mechanical and Electrical Engineering, Budget: \$50,000, Fall 2022
21. Redesign fixture system to eliminate unwanted movement and redesign flushing and air blow system, General Motors – Engine Plant, Tonawanda, NY, 3 students from Mechanical and Computer Engineering, Fall 2022
22. Automatic control of temperature and humidity in a concrete curing room, Encorus, Springville, NY, 2 students from Mechanical and Electrical Engineering, Budget: all hardware funded, Fall 2022
23. Recip Compressor Valve Manifold Design, Siemens Energy, Painted Post, NY, 2 students from Mechanical Engineering, Budget: all hardware funded, Fall 2022

24. Design, build, and test an effective FLISR scheme using relays to simulate faults on the simplified feeder, National Grid, NY, 2 students from Electrical Engineering, Budget: all hardware funded, Fall 2022
25. Design and build a hypochlorous acid electrolyzed water conveyor produce wash system with UV light tunnel, Finger Lakes Incubator and Commercial Kitchen (FLICK), LLC, Auburn, NY, 3 students from Mechanical Engineering, Budget: \$5,000, Fall 2022
26. Integrated Sustainable Building Design (ISBD), Patriot Design and Consulting, Rochester, NY, 3 students from Mechanical and Electrical Engineering, Budget: all software and standards funded, Fall 2022
27. Automate the current packaging process for K-wires, Jabil, Horseheads, NY, 3 students from Mechanical and Computer Engineering, Budget: \$5,000 and more if needed, Fall 2022
28. Automate installing protective tip of drill tip guide wire, Jabil, Horseheads, NY, 3 students from Mechanical and Electrical Engineering, Budget: \$5,000 and more if needed, Fall 2022
29. Design aspects of a building, Pathfinder Engineers & Architects, LLP, Rochester, NY, 3 students from Mechanical and Electrical Engineering, Fall 2022
30. Development of an analysis/reporting software and exploring adding sensors to equipment, Moog – Industrial Controls Division, East Aurora, NY, 3 students from Mechanical, Electrical and Computer Engineering, Budget: all hardware/software funded, Fall 2022
31. Full MEP design of a past IBC project, IBC Engineering P.C., Rochester, NY, 3 students from Mechanical and Electrical Engineering, Fall 2022
32. Event robotic vending machine, SUNY Alfred Applied Learning, Alfred, NY, 3 students from Architecture and Mechanical and electrical Engineering, Budget: \$5,000, Fall 2022
33. Development of a Fanuc robot based semi-automated weld machine, HDM Hydraulics, LLC, Tonawanda, NY, 5 students from Mechanical, Electrical, Computer and Mechatronics Engineering, Budget: \$50,000, Fall 2021 – Spring 2022
34. Large Valve Manifold Design, Siemens Energy, Painted Post, NY, 4 students from Mechanical, electrical and Mechatronics Engineering, Budget: costs paid by the company, Fall 2021 – Spring 2022

35. Optimization and design improvement of semi-automated isolator machine using Stage Gate Project Management (DMAIC) process, Eaton, Olean, NY, 4 students from Mechanical, electrical and Mechatronics Engineering, Budget: \$15,000, Fall 2021 – Spring 2022
36. Development of metal oxide varistor epoxy collar machine, Eaton, Olean, NY, 4 students from Mechanical, electrical and Mechatronics Engineering, Budget: initial \$15,000 and other costs paid by the company, Fall 2021 – Spring 2022
37. Conversion of an existing commercial dishwasher to a hypochlorous acid electrolyzed water conveyor produce wash system with UV light tunnel, Feast Kitchen, LLC, Auburn, NY, 3 students from Mechanical and electrical Engineering, Budget: \$7,500, Fall 2021 – Spring 2022
38. Mass 3D-printed finishing machine, Cross Product Design R&D, Buffalo, NY, 4 students from Mechanical, Electrical and Computer Engineering, Budget: \$2,000, Fall 2021 – Spring 2022
39. Development of a farm biogas digester prototype, Atlantic Ocean Aquaculture LLC & SUNY Alfred, Alfred, NY, 4 students from Mechanical Engineering and Biology, Budget: \$5,000 (funded by VP Academic), Fall 2021 – Spring 2022
40. Evaluation of the feasibility of using native AutoDesk REVIT HVAC load modeling software for system design in comparison to Carrier HAP, Trane Trace and DOE2 eQUEST, Popli Design Group, Penfield, NY, 2 students from Architecture and Mechanical Engineering, Budget: \$1,500, Fall 2021 – Spring 2022
41. Robotic automation of engineering process including 3D modeling and electrical design and implementation, Adaptec Solutions, Rochester, NY, 4 students from Mechanical, electrical, Computer and Mechatronics Engineering, Fall 2021 – Spring 2022
42. Design of energy-efficient HVAC systems, IPD Engineering, Buffalo, NY, 3 students from Mechanical Engineering, Fall 2021 – Spring 2022
43. HVAC design calculations of energy-efficient buildings and energy systems, Patriot Design and Consulting, Rochester, NY, 2 students from Mechanical Engineering, Fall 2021 – Spring 2022
44. HVAC system selection of energy-efficient buildings and energy systems, Patriot Design and Consulting, Rochester, NY, 3 students from Mechanical Engineering, Fall 2021 – Spring 2022

45. Integrated sustainable building design (ISBD) of energy-efficient buildings and energy systems, Patriot Design and Consulting, Rochester, NY, 5 students from Architecture, and Mechanical and Electrical Engineering, Fall 2021 – Spring 2022
46. Feasibility study for conversion of a commercial building located in Climate Zone 5A to a carbon neutral ready building meeting a target annual energy usage index, Pathfinder, Rochester, NY, 4 students from Architecture, and Mechanical and Electrical Engineering, Fall 2021 – Spring 2022
47. Design for conversion of an old warehouse into central New York's PBS television/radio station in Syracuse: HVAC systems zoning, load/energy and ductwork design, and equipment selection, IBC Engineering P.C., Rochester, NY, 7 students from Mechanical Engineering, Fall 2021 – Spring 2022
48. Design for conversion of an old warehouse into central New York's PBS television/radio station in Syracuse: power, lighting and telecommunication systems design, and day light harvesting and electrical panel sizing, IBC Engineering P.C., Rochester, NY, 2 students from Electrical Engineering, Fall 2021 – Spring 2022
49. Power system design of SUNY Alfred medium voltage distribution system, C&S Engineers, Inc., Syracuse, NY, 3 students from Electrical Engineering, Fall 2021 – Spring 2022
50. Development of a data consolidation system for the existing heat exchanger product line, Allegheny Bradford Corp., Bradford, PA, 1 student from Computer Engineering, Budget: \$2,000, Spring 2021
51. Qualification of new bearing babbitting process, Scott Rotary Seals, Olean, NY, 2 students from Mechanical Engineering, Budget: \$2,000, Fall 2017 – Spring 2018

PROFESSIONAL SERVICEReviewer (2008-Present)

1. PhD Thesis Review, Mechatronics Dept., University of Engineering & Technology, Peshawar
2. Nature Communications
3. Energy Conversion and Management
4. Journal of Micromechanics and Microengineering
5. IEEE MEMS Journal

6. IEEE Sensors Journal
7. Smart Materials & Structure
8. Sensors and Actuators A: Physical - Elsevier
9. National Funding Proposals, Romanian National Council for Scientific Research
10. Scientific Research and Essays
11. Journal of Electrical Science and Engineering
12. International Power System Conference
13. IOP Measurement Science and Technology Journal
14. ASEE Annual Conferences & Expositions

Conference Committee Member

1. SEIA' 2025, 11th International Conference on Sensors and Electronic Instrumentation Advances, September 24-26, 2024, Ponta Delgada, San Miguel, Portugal,
2. SEIA' 2024, 10th International Conference on Sensors and Electronic Instrumentation Advances, September 25-27, 2024, Ibiza, Spain,
3. SEIA' 2023, 9th International Conference on Sensors and Electronic Instrumentation Advances, September 20-22, 2023, Funchal (Madeira Island), Portugal
4. ALLSENSORS 2023, 8th International Conference on Advances in Sensors, Actuators, Metering and Sensing, April 24-28, 2023, Venice, Italy
5. SEIA' 2022, 8th International Conference on Sensors and Electronic Instrumental
6. Advances, September 21-23, 2022, Corfu, Greece
7. ALLSENSORS 2022, 7th International Conference on Advances in sensors, Actuators,
8. Metering and Sensing, June 26-30, 2022, Porto, Portugal
9. SEIA' 2021, 7th International Conference on Sensors and Electronic Instrumental Advances, September 22-24, 2021, Palma De Mallorca, Mallorca, Spain
10. ALLSENSORS 2021, 6th International Conference on Advances in Sensors, Actuators, Metering and Sensing, July 18-22, 2021, Nice, France
11. SEIA' 2020, 6th International Conference on Sensors and Electronic Instrumental Advances, September 23-25, 2020, Porto, Portugal

12. ALLSENSORS 2020, 5th International Conference on Advances in Sensors, Actuators, Metering and Sensing, November 21-25, 2020, Valencia, Spain
13. SEIA' 2019, 5th International Conference on Sensors and Electronic Instrumental Advances, September 25-27, 2019, Canary Islands, Spain
14. ALLSENSORS 2019, 4th International Conference on Advances in Sensors, Actuators, Metering and Sensing, February 24-28, 2019, Athens, Greece
15. AUenergy Symposium, 2018 symposium on power grids and generation
16. SEIA' 2018, 4th International Conference on Sensors and Electronic Instrumental Advances, September 19-21, 2018, Amsterdam, Netherlands
17. ICMR 2018, 5th International Conference on Mechanics and Mechatronics Research, July 19-21, 2018, Tokyo, Japan
18. ALLSENSORS 2018, 3rd International Conference on Advances in Sensors, Actuators, Metering and Sensing, March 25-29, 2018, Rome, Italy
19. SEIA' 2017, 3rd International Conference on Sensors and Electronic Instrumental Advances, September 20-22, 2017, Moscow, Russia
20. ALLSENSORS 2017, 2nd International Conference on Advances in Sensors, Actuators, Metering and Sensing, March 19-23, 2017, Nice, France
21. SEIA' 2016, 2nd International Conference on Sensors and Electronic Instrumental Advances, September 22-23, 2016, Barcelona, Spain
22. ALLSENSORS 2016, 1st International Conference on Advances in Sensors, Actuators, Metering and Sensing, April 24-28, 2016, Venice, Italy
23. SEIA' 2015, 1st International Conference on Sensors Engineering and Electronics Instrumental Advances, In conjunction with 1st International Workshop on Recent Advances on Electrical, Sensors and Transducers Equipment, November 21-22, 2015, Dubai, UAE
24. Volunteer, ASME International Mechanical Engineering Congress, Vancouver, BC, 2010
25. Chair, Seminar of Heat Exchangers of Thermal Power Plants, Tehran, Iran, 2000
26. Executive Board and Head of Workshops, 14th International Power System Conference, Tehran, Iran, 1999

Membership in Professional and Honor Societies

1. American Society for Engineering Education, Member 2023–2024
2. American Society of Mechanical Engineers (ASME), Member 2010–2012
3. American Society of Materials (ASM), Member 2013–2017
4. Canadian Microelectronics Corporation (CMC), Member 2007–2011

SELECTED AWARDS AND FELLOWSHIPS

1. \$40k/year Industrial R&D Postdoctoral Fellowship for Two Years, NSERC June 2011
2. \$75k BC Innovation Council Award, BC Province Jan 2011
3. Ph.D. Tuition Full Scholarship, University of British Columbia Sep 2006 – Aug 2010
4. Canada Study Grant, Government of Canada Sep 2006 – Aug 2010

UNIVERSITY SERVICEDepartment Committees

1. Coordinator, MAE Senior Design Sequence Jan 2023 – Present
2. Chair, Ad Hoc Committee for the MAE Senior Design Sequence Jan 2023 – Spring 2024
3. Member, Undergraduate Study Committee (UGSC) Jan 2023 – Present
- Lead, ABET Subcommittee, UGSC Jan 2023 – Present

School Committees

1. Member, SEAS New Engineering Building Dec 2023 – Spring 2024

MENTORING

1. Faculty Advisor, 18-28 Undergraduate Students annually Jan 2023 – Present
2. Faculty mentor, SEAS Freshman Mentoring Initiative Mar 2023 – Dec 2023

MEDIA COVERAGE

1. R. Rashidi, Dr. Rashidi making a big difference with small technology, SUNY Alfred Public Media, July 2, 2021
2. R. Rashidi, S. Barker, B. Miller, R. Lohr, T. Sax, X. Ramos and J. King, SUNY Alfred engineering students developing innovative energy harvesting devices, Olean Times, April 13, 2021

3. R. Rashidi and K. Takahata, UBC researchers devise new technology to monitor brain aneurysms, UBC Public Media, November 4, 2011

ADDITIONAL TEACHING AND CURRICULUM DEVELOPMENT

1. R. Rashidi, Senior Design Poster Presentation and Prototype Demonstration Events, SUNY Buffalo, Fall 2023 – Present.

2. R. Rashidi, Senior Design Project Solicitation from Industry and Faculty, Jan 2023 – Present.

3. R. Rashidi, MAE Senior Design Sequence Modification, Spring 2023 – Present.

4. R. Rashidi, ABET Assessment of MAE 451 and MAE 494, Jan 2023 – Present

5. R. Rashidi and Kris Schindler, Collaboration on three senior design projects between MAE and CSE, Fall 2023 – Spring 2024.

6. R. Rashidi, Participation in a MAE booth at the ISA Niagara Frontier Tech Expo, June 2023.