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HIGHLIGHTS

Leadership Roles & Impact

Vice President and Associate Provost for Academic Strategy (2023-present) Serve as lead for the implementation and execution of the 10-year strategic framework *Notre Dame 2033*, exercising comprehensive oversight over high-impact university initiatives and institutes, tenure-line faculty appointment and promotion processes, and major academic space and capital projects.

- **Strategic Institutional Initiatives:** Directed the governance, financial modeling, and launch of eight flagship, University-wide initiatives, formulating initial launch budgets, recruiting founding directors, and orchestrating collaboration across colleges, schools, institutes, and centers. Oversee seven of the initiatives and two university-wide institutes, including annual review and budgeting, staff and faculty hiring, and facilitating cross-institute and cross-unit collaboration and engagement
- **Capital Advancement & Fundraising:** Partner closely with University Development and executive leadership to spearhead philanthropic campaigns, supporting over \$100M+ in major gifts, philanthropic benefaction, capital allocation, and institutional support
- **Faculty Affairs & Governance:** Review and authorize all junior and senior tenure-track appointments, providing strategic guidance on complex or non-standard hiring cases. Serve on the Provost-level promotion and review committee for all tenure-line faculty advancements and collaborate in guiding institutional proposals through the University's Academic Council
- **Institutional Governance & Operations:** Serve on key University-level leadership committees providing executive oversight for institutional risk planning, long-term academic strategy, senior leadership appointments, and complex university operations
- **Academic Space & Capital Infrastructure:** Oversee a comprehensive portfolio of academic space projects, ranging from campus classroom optimization to major new facilities. Serve as the primary academic liaison collaborating with university facilities, external architects, and developers, notably driving the execution of an off-campus, 200,000 sq. ft., two-building complex in downtown South Bend

Department Chair, Aerospace & Mechanical Engineering (2020-2023) Led a department with 37 tenured/tenure-track (T/TT) faculty, 6 teaching faculty, 6 research faculty, 23 staff, and approximately 450 undergraduate students across two majors (aerospace and mechanical engineering) and 180 graduate (Ph.D.) students across two programs (aerospace & mechanical engineering and bioengineering)

- Led the hiring of seven TT assistant professors, one tenured full professor, and two teaching professors with a focus on increasing the diversity of our faculty resulting in the addition of six women faculty and one faculty from underrepresented groups

- Oversaw the revision of required courses and a reduction of curricular credit requirements to create more inclusive and accessible undergraduate programs
- Prioritized proactive recognition of outstanding faculty, including the retention of a ‘rising star’ woman faculty member, promotion of the first two women faculty to full professor in department history, and recognizing a colleague’s excellence as the youngest endowed chair in department history

Director of Graduate Studies, Aerospace & Mechanical Engineering (2018-2020) Oversaw approximately 170 graduate students, primarily Ph.D. students and led the Graduate Studies Committee

- Ushered in a new qualifying exam and modernized course requirements for Ph.D. program
- Implemented a formal annual review process for all graduate students
- Initiated new graduate recruiting approaches, including targeted outreach to help establish pipeline schools
- Served on the Provost’s Taskforce on Academic Bullying that produced 13 recommendations to address graduate student well-being and advisor/advisee relationships

Research Record & Achievements

- Published over 100 articles (*h*-index: 46-Google Scholar; 37-Web of Science; *i10*-index: 101-Google Scholar) and authored one book (*2nd edition now published*); named Royal Chemistry Society highly cited for 2019 (top 5% in citations)
- Hold or submitted more than ten patents, with five technologies being successfully licensed.
- Secured funding by nearly every major federal agency (NSF, NIH, DOE, AFOSR, ARO, DARPA) totaling ~\$15M as PI or Co-PI
- ASME Fellow, IEEE Senior Member, former President of Electrostatics Society of America, former Associate Editor for *Plasma Sources Science and Technology* (considered top journal in field), former Associate Editor for *Frontiers in Mechanical Engineering*, Editorial Board for *Journal of Electrostatics*, Editorial Board for *Plasma Sources Science and Technology*

Educational Accomplishments & Innovations

- Graduated 17 Ph.D. students as sole advisor (10) or co-advisor (7) and 4 M.S. students; worked with more than 15 post-docs and visiting researchers; mentored more than 60 undergraduate researchers, with several co-authoring journals and progressing to graduate school, and eight high school researchers
- Taught twelve different undergraduate and graduate courses, both required and elective, including a university seminar, and developed multiple new courses and mentored independent project teams on industry-sponsored projects
- Steered the implementation of a new departmental curricular stem for undergraduate mechanical engineering design that involved reimagining and redesigning multiple design courses, including teaching the first implementation of a key new course
- Led the design and launching of a 10,000 square foot undergraduate fabrication facility called the Engineering Innovation Hub in the College of Engineering, including developing and realizing a 2,000 square foot pilot facility, working with benefactors and College leadership to secure funding and equipment, and partnering with College leaders to hire the inaugural managing director and staff

EDUCATION & PROFESSIONAL PROFILE

Education

- 2008 Ph.D., Mechanical Engineering, Purdue University
Ion Generation and Ionic Wind Heat Transfer at Millimeter and Micrometer Scales
Advisors: Prof. Timothy S. Fisher, Prof. Suresh V. Garimella
- 2004 M.S., Aerospace Engineering, University of Cincinnati
- 2001 B.S., Mechanical Engineering, University of Notre Dame

Professional Appointments & Positions

- 2022 – pres. Viola D. Hank Professor of Aerospace and Mechanical Engineering,
University of Notre Dame
- 2019 – 2021 Rooney Family Collegiate Professor of Engineering, University of Notre Dame
- 2019 – pres. Professor, Aerospace and Mechanical Engineering,
Concurrent Professor, Chemical and Biomolecular Engineering,
University of Notre Dame
- 2015 – 2019 Rooney Family Associate Professor of Engineering, University of Notre Dame
- 2015 – 2019 Associate Professor, Aerospace and Mechanical Engineering,
Concurrent Associate Professor, Chemical and Biomolecular Engineering,
University of Notre Dame
- 2013 – 2015 Concurrent Assistant Professor, Chemical and Biomolecular Engineering,
University of Notre Dame
- 2009 – 2015 Assistant Professor, Aerospace and Mechanical Engineering, University of Notre Dame
- 2008 – 2009 Instructor, Aerospace and Mechanical Engineering, University of Notre Dame
- 2004 – 2008 Graduate Research Assistant, School of Mechanical Engineering, Purdue University
- 2007 Research Intern, Mobile Platforms Group, Intel Corporation
- 2001 – 2004 Engineer, Edison Engineering Development Program, General Electric Aircraft Engines

Leadership Appointments & Roles

- 2023 – pres. Vice President and Associate Provost for Academic Strategy, University of Notre Dame
- 2020 – 2023 Department Chair, Aerospace and Mechanical Engineering, University of Notre Dame
- 2019 – 2022 President, Electrostatics Society of America
- 2019 – 2020 Faculty Fellow, Kaneb Center for Teaching and Learning, University of Notre Dame
- 2018 – 2020 Director of Graduate Studies, Aerospace and Mechanical Engineering,
University of Notre Dame

AWARDS & HONORS

Personal

- Viskanta Fellowship, School of Mechanical Engineering, Purdue University, 2025
- Outstanding Mechanical Engineer Award, Purdue University, 2024
- Electrostatics Society of America (ESA) Distinguished Service Award, 2023
- Senior Member, Institute of Electrical and Electronics Engineers (IEEE), 2022
- 2nd Place (Runner-up), 1st Source Bank Commercialization Award, IDEA Center, University of Notre Dame, 2021
 - For software licensed to Indiana Technology and Manufacturing Companies (ITAMCO) and formed basis for Atlas3D start-up in 2018 (<https://atlas3d.xyz/>), shared with collaborators David Hoelzle, Richard Billo, and Hao Peng
- Rev. Edmund P. Joyce, C.S.C. Award for Excellence in Undergraduate Teaching, University of Notre Dame, 2019

- Electrostatics Society of America (ESA) Rising Star Award, 2018
- Institute of Electrical and Electronics Engineers (IEEE) Nuclear & Plasma Sciences Society (NPSS) Early Achievement Award, 2018
- Fellow, American Society of Mechanical Engineers (ASME), 2016
- Electrochemical Society Toyota Young Investigator Fellowship, 2015
- National Science Foundation CAREER Award, 2013
- Air Force Office of Scientific Research Young Investigator Research Award, 2010
- James W. and Carolyn L. Taylor MUACC Travel Award, 2009, 2010
- University of Notre Dame Faculty Scholarship Award, 2010

Advisees

- Student Presentation Award, Electrochemical Society – awarded to postdoctoral researcher Mikhail Vasilev, 2025
- Student Poster Award, American Vacuum Society – awarded to graduate student Ibu Akintola, 2024
- Student Poster Award, Gaseous Electronics Conference – awarded to graduate student Garam Lee, 2023
- Eli J. and Helen Shaheen Graduate School Award in Engineering, University of Notre Dame, awarded to graduate student Hernan Delgado, 2021
- Annual Meeting of the Electrostatics Society of America, Best Student Paper – 1st Place, awarded to graduate student Ankur Saxena, 2021
- American Vacuum Society John Coburn and Harold Winters Student Award in Plasma Science and Technology, graduate student Hernan Delgado recognized as a *finalist*, 2019
- Department of Energy Rickover Fellowship Program in Nuclear Engineering, awarded to graduate student Daniel Martin, 2019
- Annual Meeting of the Electrostatics Society of America, Best Student Paper – 1st Place, awarded to graduate student Daniel Martin, 2018
- International Conference on Plasma Science (ICOPS), Student Paper Award, awarded to graduate student Xi Tan, 2017
- International Conference on Plasma Science (ICOPS), Student Paper Award – 1st Runner Up, awarded to graduate student Xi Tan, 2016
- Annual Meeting of the Electrostatics Society of America, Best Student Paper – 3rd Place, awarded to graduate student Zeinab Ramshani, 2016
- Annual Meeting of the Electrostatics Society of America, Best Student Paper – 1st Place, awarded to graduate students Michael Johnson and Paul Rumbach, 2015
- American Vacuum Society John Coburn and Harold Winters Student Award in Plasma Science and Technology, awarded to graduate student Paul Rumbach, 2014
- Annual Meeting of the Electrostatics Society of America, Best Student Paper – 1st Place, awarded to graduate students Michael Johnson and Paul Rumbach, 2014
- International Conference on Plasma Science (ICOPS), Student Paper Award – Honorable Mention, awarded to graduate student Michael Johnson, 2014
- NASA Space Technology Research Fellowship, awarded to graduate student John Haase, 2013
- Annual Meeting of the Electrostatics Society of America, Best Student Paper – 1st Place, awarded to graduate student Paul Rumbach, 2013
- Annual Meeting of the Electrostatics Society of America, Best Student Paper – 2nd Place, awarded to graduate student Sajjanish Balagopal, 2011
- Annual Meeting of the Electrostatics Society of America, Best Student Paper – 2nd Place, awarded to graduate student Rakshit Tirumala, 2010

Synopsis

Expertise in plasma science & engineering, thermal-fluid sciences, and chemical analysis with contributions to novel electronics cooling technologies, fundamental scaling of non-thermal plasmas, the use of non-thermal plasmas to drive chemical transformations, innovative plasma sources, thermal modeling of manufacturing processes, and microfluidic devices for early disease detection. Significant accomplishments with collaborators include:

- Developing theoretical descriptions for plasma formation at microscale dimensions accounting for additional physics unique to the microscale
- Directly measuring the solvation of plasma electrons into water at a plasma-liquid interface and their subsequent reactions supporting applications in nanomaterial synthesis and water purification
- Revealing scaling behavior and optimal material selection for plasma-catalyst interactions
- Developing a rapid computational framework for simulating metal 3D printing and optimizing part orientation
- Engineering microfluidic devices for the rapid detection of RNA from extra-cellular vesicles for early cancer screening

(* indicates Notre Dame graduate student; # indicates undergraduate student)

Journal Articles (refereed)

1. J. Yang*, O. Dubrovski*, R. Barhouche#, P. Rumbach, D. B. Go, "Ring to spot pattern transition at a plasma-liquid interface," *Plasma Sources Science and Technology* – accepted
2. S. M. Peyres, D. B. Cooney, D. B. Go, R. M. Sankaran, N. B. Üner, "Operating regimes, scaling laws, and optimization of selectivity in plasma-liquid reactions," *Chemical Engineering Science*, vol. 335, art. no. 124342, 2026.
3. I. I. Akintola*, J. Yang*, M. Vasilev*, D. B. Go, "Competition between homogeneous and plasma chemistry in methane conversion at high temperatures: A global kinetic and graph theory analysis," *Chemical Engineering Journal*, vol. 531, art. no. 173730, 2026.
4. Y. Du, J. Yang*, K. Song, Q. Jiang, Y. Zhu, D. B. Go, Y. Zhang, "Autonomous aerosol and plasma co-jet printing of metallic devices at ambient temperature," *Small*, vol. 21, art. no. 2409751, 2025.
5. D. J. Haycock, R. J. Clarke, D. B. Go, W. F. Schneider, J. C. Hicks, "Fundamental insights and emerging opportunities in plasma catalysis for light alkane conversion," *Current Opinion in Green and Sustainable Chemistry*, vol. 51, art. no. 100987, 2025. (**invited perspective**)
6. S. E. Benjamin, D. C. Martin*, J. A. LaVerne, D. B. Go, P. C. Burns, "In-situ uranium extraction through the synthesis of the uranyl peroxide studtite using a non-thermal plasma," *Inorganic Chemistry*, vol. 63, pp. 2102-21098, 2024.
7. Z. Cheng*, K. Wang, W. Shang, A. M. N. Tanvir, T. Luo, Y. Zhang, A. W. Dowling, D. B. Go, "Bayesian optimization of low-temperature non-thermal plasma jet sintering of nanoinks," *ACS Applied Materials and Interfaces*, vol. 16, pp. 46897-46908, 2024.
8. O. Dubrovski*, J. Yang*, F. Veloso, D. B. Go, H.-C. Chang, P. Rumbach, "Noncapillary wave dynamics due to interfacial coupling with plasma patterns at a liquid surface," *Physical Review Letters*, vol. 133, art. no. 105301, 2024. (**Editors' Suggestion**)
9. D. C. Martin*, D. Elg, H. E. Delgado*, P. Rumbach, D. M. Bartels, D. B. Go, "Optical and chemical measurements of solvated electrons produced in plasma electrolysis with a water cathode," *Langmuir*, vol. 40, pp. 14224-14232, 2024.
10. G. Lee*, D. B. Go, C. P. O'Brien, "Non-thermal plasma-stimulated C-N coupling from CH₄ and N₂ depends on the presence of CH_x and plasma-phase CN species" *ACS Applied Materials and Interfaces*, vol. 16, pp. 28367–28378, 2024.

11. G. Lee*, C. Yan, W. F. Schneider, D. B. Go, C. P. O'Brien, "Observation and characterization of vibrationally active surface species accessed with non-thermal nitrogen plasmas" *ACS Applied Materials and Interfaces*, vol. 16, pp. 4561-4569, 2024.
12. I. Akintola*, G. Rivera-Castro, J. Yang, J. Secrist[#], J. C. Hicks, F. Veloso, D. B. Go, "Temperature inhibition of plasma-driven methane conversion in DBD systems," *Plasma Chemistry and Plasma Processing*, vol. 43, 1999-2016, 2023.
13. H. Sharma, V. Yadav, C. D'Souza-Schorey, D. B. Go, S. Senapati, H.-C. Chang, "A scalable high-throughput continuous isoelectric fractionation microfluidic platform for isolation of extracellular RNA nanocarriers," *ACS Nano*, vol. 17, pp. 9388-9404, 2023.
14. L. L. Alves, M. M. Becker, J. van Dijk, T. Gans, D. B. Go, K. Stapelmann, J. Tennyson, M. M. Turner, M. J. Kushner, "Foundations of Plasma Standards," *Plasma Sources Science and Technology*, vol. 32, art. no. 023001, 2023. **(invited perspective)**
15. K. P. McCarthy*, D. B. Go, Senapati, H.-C. Chang, "An integrated ion-exchange membrane-based microfluidic chip for irreversible dissociation and quantification of miRNA from ribonucleoproteins," *Lab on a Chip*, vol. 23, pp. 285-294, 2023.
16. F. J. Alamos*, M. Philo, D. B. Go, S. R. Schmid, "Rough surface contact under creep conditions," *Tribology International*, vol. 176, art. no. 107916, 2022.
17. N. Turan*, M. Saeidi-Javash, Y. Zhang, D. B. Go, "Does plasma jet sintering follow an Arrhenius-type expression?" *Plasma Processes and Polymers*, vol. 19, art. no. 2200011, 2022.
18. B. Mateescu et al., "Phase 2 of extracellular RNA communication consortium charts next-generation approaches for extracellular RNA research", *iScience*, vol. 25, art. no. 104653, 2022
19. C. Yan, C. Waitt, I. Akintola*, G. Lee*, J. Easa, R. Clarke, F. Geng, D. Poirierm H. O. Otor, G. Rivera-Castro, D. B. Go, C. P. O'Brien, J. C. Hicks, W. F. Schneider, "Recent advances in plasma catalysis," *Journal of Physical Chemistry C*, vol. 126, pp. 9611-9614, 2022. **(invited virtual collection, also featured in ACS Catalysis and I&EC)**
20. J. Yang*, E. V. Barnat, S.-K. Im, D. B. Go, "Spatiotemporally-resolved measurements of electric field around a piezoelectric transformer using electric-field induced second harmonic (E-FISH) generation," *Journal of Physics D: Applied Physics*, vol. 55, art. no. 225203, 2022.
21. G. Lee*, D. B. Go, C. P. O'Brien, "Direct observation of plasma-stimulated activation of surface species using multi-modal in-situ/operando spectroscopy combining polarization-modulation infrared reflection-absorption spectroscopy, optical emission spectroscopy, and mass spectrometry," *ACS Applied Materials and Interfaces*, vol. 13, pp. 56242-56253, 2021.
22. D. T. Elg, H. E. Delgado*, D. C. Martin*, R. M. Sankaran, D. M. Bartels, P. Rumbach, D. B. Go, "Recent advances in understanding the role of solvated electrons at the plasma-liquid interface of solution-based gas discharges," *Spectrochimica Acta B*, vol. 186, art. no. 106307, 2021. **(invited review)**
23. N. Turan*, M. Saeidi-Javash*, J. Chen, M. Zeng, Y. Zhang, D. B. Go, "Atmospheric pressure and ambient temperature plasma jet sintering of aerosol jet printed silver nanoparticles," *ACS Applied Materials and Interfaces*, vol. 13, pp. 47244-47251, 2021.
24. F. J. Alamos*, M. Philo, D. B. Go, S. R. Schmid, "Creep contact analysis of a power law-shaped asperity with a rigid flat surface," *Tribology International*, vol. 160, art. no. 107039, 2021.
25. D. C. Martin*, D. M. Bartels, P. Rumbach, D. B. Go, "Experimental confirmation of solvated electron penetration scaling at a plasma-liquid interface," *Plasma Sources Science and Technology*, vol. 30, art. no. 03LT01, 2021.
26. H. E. Delgado*, G. H. Brown[#], D. M. Bartels, P. Rumbach, D. B. Go, "The scaling of kinetic and transport behaviors in the solution-phase chemistry of a plasma-liquid interface," *Journal of Applied Physics*, vol. 129, art. no. 083303, 2021.
27. O. K. Jaenicke[#], F. G. Hita Martinez[#], J. Yang*, S.-K. Im, D. B. Go, "Hand-generated piezoelectric mechanical-to-electrical energy conversion plasma," *Applied Physics Letters*, vol. 117, 093901, 2020. **(Editor's Pick and Featured Article)**

28. A. Guajardo-Cuellar, D. B. Go, M. Sen, "Analysis of energy transport behavior and geometric effects in graphene," *Frontiers of Mechanical Engineering*, vol. 6, art. no. 41, 2020.
29. P. Mehta, P. M. Barboun, Y. Engelmann, D. B. Go, A. Bogaerts, W. F. Schneider, J. C. Hicks, "Plasma-catalytic ammonia synthesis beyond the equilibrium limit," *ACS Catalysis*, vol. 10, pp. 6726–6734, 2020.
30. N. Turan*, P. M. Barboun, P. K. Nayak[#], J. C. Hicks, D. B. Go, "Development of a small-scale helical surface dielectric barrier discharge for characterizing plasma-surface interfaces," *Journal of Physics D: Applied Physics*, vol. 29, art. no. 045016, 2020.
31. J. Yang*, S.-K. Im, D. B. Go, "Time-resolved characterization of a free plasma jet formed off the surface of a piezoelectric crystal," *Plasma Sources Science and Technology*, vol. 29, art. no. 045016, 2020.
32. H. Delgado*, D. T. Elg, D. M. Bartels, P. Rumbach, D. B. Go, "Chemical analysis of secondary electron emission from a water cathode at the interface with a non-thermal plasma," *Langmuir*, vol. 36, pp. 1156-1164, 2020.
33. Z. Chao, K. B. Sezginel, K. Xu, G. M. Crouch, A. E. Gray, C. E. Wilmer, P. W. Bohn, D. B. Go, S. K. Fullerton-Shirey, "Dynamics of silver nanofilament formation in a polymer-ionic liquid thin-film by direct-write," *Advanced Functional Materials*, art. no. 1907950, 2019.
34. P. Rumbach, A. E. Lindsay, D. B. Go, "Turing patterns on a plasma-liquid interface," *Plasma Sources Science and Technology*, vol. 28, art. no. 105014, 2019.
35. Z. Ramshani, C. Zhang, K. Richards, L. Chen, G. Xu, B. L. Stiles, R. Hill, S. Senapati, D. B. Go, H.-C. Chang, "Extracellular vesicle miRNA quantification from plasma using an integrated microfluidic device," *Communications Biology*, vol. 2, art. no. 189, 2019.
36. P. Barboun, P. Mehta, F. A. Herrera*, D. B. Go, W. F. Schneider, J. C. Hicks, "Distinguishing plasma contributions to catalyst performance in plasma-assisted ammonia synthesis," *ACS Sustainable Chemistry & Engineering*, vol. 7, pp. 8621-8630, 2019.
37. P. Mehta, P. Barboun, D. B. Go, J. C. Hicks, W. F. Schneider, "Catalysis enabled by plasma activation of strong bonds: a review," *ACS Energy Letters*, vol. 4, pp. 1115-1133, 2019. **(invited review)**
38. H. E. Delgado*, R. C. Radomsky[#], D. C. Martin*, D. M. Bartels, P. Rumbach, D. B. Go, "Effect of competing oxidizing reactions and transport limitation on the Faradaic efficiency in plasma electrolysis," *Journal of the Electrochemical Society*, vol. 166, pp. E181E186, 2019.
39. D. Han, G. M. Crouch, Z. Chao, S. K. Fullerton-Shirey, D. B. Go, P. W. Bohn, "Nanopore-templated silver nanoparticle arrays photopolymerized in zero-mode waveguides," *Frontiers in Chemistry*, vol. 7, art. no. 216, 2019.
40. F. A. Herrera*, G. Brown[#], P. Barboun, N. Turan*, P. Mehta, W. F. Schneider, J. C. Hicks, D. B. Go, "The impact of transition metal catalysts on macroscopic dielectric barrier discharge (DBD) characteristics in an ammonia synthesis plasma catalysis reactor," *Journal of Physics D: Applied Physics*, vol. 52, art. no. 224002, 2019. **(special issue)**
41. X. Tan*, D. B. Go, "Rational design of plasma-enhanced catalysis at microscale dimensions for the dissociation of CO₂," *Journal of Electrostatics*, vol. 97, pp. 71-74, 2019.
42. P. Rumbach, D. M. Bartels, D. B. Go, "The penetration and concentration of free radicals at a plasma-liquid interface," *Plasma Sources Science and Technology*, vol. 27, art. no. 115013, 2018.
43. Z. Chao, B. P. Radka, K. Xu., G. M. Crouch, D. Han, D. B. Go, P. W. Bohn, S. K. Fullerton-Shirey, "Direct-write formation and dissolution of silver nanofilaments in ionic liquid-polymer electrolyte composites," *Small*, vol. 14, art. no. 1802023, 2018.
44. H. Peng, M. Ghasri-Khouzani, S. Gong, R. Attardo, P. Ostiguy, B. A. Gatrell, J. Budzinski, C. Tomonto, J. Neidig, M. Ravi Shankar, R. Billo, D. B. Go, D. Hoelzle, "Fast prediction of thermal distortion in metal powder bed fusion additive manufacturing: Part 2, a quasi-static thermo-mechanical model," *Additive Manufacturing*, vol. 22, pp. 869-882, 2018.

45. H. Peng, M. Ghasri-Khouzani, S. Gong, R. Attardo, P. Ostiguy, B. A. Gatrell, J. Budzinski, C. Tomonto, J. Neidig, M. Ravi Shankar, R. Billo, D. B. Go, D. Hoelzle, "Fast prediction of thermal distortion in metal powder bed fusion additive manufacturing: Part 1, a thermal circuit network model," *Additive Manufacturing*, vol. 22, pp. 852-868, 2018.
46. S. Marczak, K. Richards, Z. Ramshani, E. Smith, S. Senapati, R. Hill, D. B. Go, H.-C. Chang, "Simultaneous isolation and preconcentration of exosomes by ion concentration polarization," *Electrophoresis*, vol. 39, pp. 2029-2038, 2018.
47. P. Mehta, P. Barboun, F. A. Herrera*, J. Kim, P. Rumbach, D. B. Go, J. C. Hicks, W. F. Schneider, "Overcoming ammonia synthesis scaling relations with plasma-enabled catalysis," *Nature Catalysis*, vol. 1, pp. 269-275, 2018.
48. X. Tan*, D. B. Go, "Understanding the scaling of electron kinetics in the transition from collisional to collisionless conditions in microscale gas discharges," *Journal of Applied Physics*, vol. 123, art. no. 063303, 2018.
49. H. E. Delgado*, P. Rumbach, D. M. Bartels, D. B. Go, "Total internal reflection absorption spectroscopy (TIRAS) for the detection of solvated electrons at a plasma-liquid interface," *Journal of Visualized Experiments*, vol. 131, art. no. e56833, 2018.
50. D. B. Go, J. R. Haase*, J. George, J. Mannert, A. Nojeh, R. Nemenich, "Thermionic energy conversion in the 21st century: Advances and opportunities for space and terrestrial applications," *Frontiers in Mechanical Engineering*, vol. 3, art. no. 13, 2017.
51. S. Ghosh, R. Hawtof, P. Rumbach, D. B. Go, R. Akolkar, R. M. Sankaran, "Quantitative study of electrochemical reduction of Ag^+ to Ag nanoparticles in aqueous solutions by a plasma cathode," *Journal of the Electrochemical Society*, vol. 64, pp. D818-D824, 2017.
52. M. J. Johnson, D. B. Go, "Recent advances in electrohydrodynamic pumps operated by ionic winds: A review," *Plasma Sources Science and Technology*, vol. 26, art. no. 103002, 2017. **(invited review)**
53. K. Yoshida, M. J. Johnson*, D. B. Go, "Enhancement of thin air jets produced by ring-shaped dielectric barrier discharges using an auxiliary electrode," *Journal of Electrostatics*, vol. 87, pp. 293-301, 2017.
54. P. Rumbach, D.B. Go, "Perspectives on plasmas in contact with liquids and its relationship to electrocatalysis for chemical processing and materials synthesis," *Topics in Catalysis*, vol. 60, pp. 799-811, 2017. **(invited perspective)**
55. D. B. Go, M. Z. Atashbar, Z. Ramshani, H.-C. Chang, "Surface acoustic wave devices for chemical sensing and microfluidics: a review and perspective," *Analytical Methods*, vol. 9, pp. 4112-4134, 2017. **(invited review)**
56. P. Rumbach, J.-P. Clarke[#], D. B. Go, "Electrostatic Debye layer formed at a plasma-liquid interface," *Physical Review E*, vol. 95, art. no. 053203, 2017.
57. G. M. Crouch*, D. Han, S. K. Fullerton-Shirey, D. B. Go, P. W. Bohn, "Addressable direct-write nanoscale filament formation and dissolution by nanoparticle-mediated bipolar electrochemistry," *ACS Nano*, vol. 11, pp. 4976-4984, 2017.
58. J. Kim, D. B. Go, J. C. Hicks, "Synergistic effects of plasma-catalyst interactions for CH_4 activation," *Physical Chemistry Chemical Physics*, vol. 19, pp. 13010-13021, 2017.
59. F. Herrera*, T. Luo, D. B. Go, "Thermal rectification under transient conditions: The role of thermal capacitance and thermal conductivity," *Journal of Heat Transfer*, vol. 139, art. no. 091301, 2017.
60. R. J. Flaherty*, S. A. Sarver, L. Sun, G. Brownell, D. B. Go, N. J. Dovichi, "A high voltage power supply that mitigates current reversals in capillary zone electrophoresis-electrospray mass spectrometry," *Journal of American Society of Mass Spectrometry*, vol. 28, pp. 247-252, 2017.
61. X. Tan*, N. Griggs[#], K. L. Jensen, D. B. Go, "Theoretical analysis of 1D resonant tunneling behavior in ion-enhanced cold field and thermo-field emission," *Journal of Applied Physics*, vol. 120, art. no. 213301, 2016.

62. M. J. Johnson*, D. B. Go, "Impingement cooling using the ionic wind generated by a low-voltage piezoelectric transformer," *Frontiers in Mechanical Engineering*, vol. 2, art. no. 7, 2016.
63. P. Rumbach*, R. Xu, D. B. Go, "Electrochemical production of oxalate and formate from CO₂ by solvated electrons produced using an atmospheric-pressure plasma," *Journal of the Electrochemical Society*, vol. 163, pp. F1157-F1161, 2016.
64. Z. Ramshani*, M. J. Johnson*, M. Atashbar, D. B. Go, "A broad area electrospray actuated by a piezoelectric transformer," *Applied Physics Letters*, vol. 109, art. no. 044103, 2016.
65. X. Mu*, Z. Song, Y. Wang, Z. Xu, D. B. Go, T. Luo, "Thermal transport in oxidized polycrystalline graphene," *Carbon*, vol. 108, pp. 318-326, 2016.
66. M. A. Bilici, J. R. Haase*, C. Boyle, D. B. Go, R. M. Sankaran, "Experimental evidence for the transition from a field emission-driven Townsend discharge to a self-sustained microplasma," *Journal of Applied Physics*, vol. 119, art. no. 223301, 2016.
67. J. Kim, M. S. Abbott, D. B. Go, J. C. Hicks, "Enhancing C-H bond activation of methane via temperature-controlled, catalyst-plasma interactions," *ACS Energy Letters*, vol. 1, pp. 94-99, 2016.
68. T. Jiang, X. Zhang, S. Vishwanath, X. Mu*, V. Kanzyuba, D. Sokolov, S. Ptasinka, D. B. Go, H. Xing, T. Luo, "Covalent bonding modulated graphene-metal interfacial thermal transport," *Nanoscale*, vol. 8, pp. 10993-11001, 2016.
69. J. R. Haase*, D. B. Go, "Analysis of thermionic and thermo-field emission in microscale gas discharges," *Journal of Physics D: Applied Physics*, vol. 49, art. no. 055206, 2016.
70. M. J. Johnson*, D. B. Go, "Piezoelectric transformers for low-voltage generation of gas discharges and ionic winds in atmospheric air," *Journal of Applied Physics*, vol. 118, art. no. 2343304, 2015.
71. P. Rumbach*, D. M. Bartels, R. M. Sankaran, D. B. Go, "The effect of air on solvated electron chemistry at a plasma/liquid interface," *Journal of Physics D: Applied Physics*, vol. 48, art. no. 424001, 2015. **(invited)**
72. P. Rumbach*, D. M. Bartels, R. M. Sankaran, D. B. Go, "The solvation of electrons by an atmospheric pressure plasma," *Nature Communications*, vol. 6, art. no. 7248, 2015.
73. D. Taller*, K. Richards*, Z. Slouka, S. Senapati, R. Hill, D. B. Go, H.-C. Chang, "On-chip surface acoustic wave lysis and ion-exchange nanomembrane detection of exosomal RNA for pancreatic cancer study and diagnosis," *Lab on a Chip*, vol. 15, pp. 1656-1666, 2015. **(cover article)**
74. M. J. Johnson*, R. Tirumala*, D. B. Go, "Analysis of geometric scaling of miniature multi-electrode assisted corona discharges for ionic wind generation," *Journal of Electrostatics*, vol. 74, pp. 8-14, 2015.
75. M. J. Johnson*, D. B. Go, "Ferroelectric crystals for the low-voltage operation of surface dielectric barrier discharges," *Applied Physics Letters*, vol. 105, art. no. 264102, 2014.
76. X. Mu*, T. Zhang*, D. B. Go, T. Luo, "Coherent and incoherent phonon thermal transport in isotopically modified graphene superlattices," *Carbon*, vol. 83, pp. 208-216, 2014.
77. D. B. Go, A. Venkatraman, "Microscale gas breakdown: ion-enhanced field emission and the modified Paschen's curve," *Journal of Physics D: Applied Physics*, vol. 47, art. no. 503001, 2014. **(invited review)**
78. P. Rumbach*, N. Griggs#, R. M. Sankaran, D. B. Go, "Visualization of electrolytic reactions at a plasma-liquid interface," *IEEE Transactions on Plasma Science*, vol. 42, pp. 2610-2611, 2014.
79. P. Rumbach*, Y. Li*, S. Martinez#, T. J. Twahirwa#, D. B. Go, "Experimental study of electron impact ionization in field emission-driven microdischarges" *Plasma Sources Science and Technology*, vol. 23, art. no. 065026, 2014.
80. Y. Li*, D. B. Go, "The quantum mechanics of ion-enhanced field emission and how it influences microscale gas breakdown," *Journal of Applied Physics*, vol. 116, art. no. 103306, 2014.
81. M. J. Johnson*, J. Linczer#, D. B. Go, "Thermally induced atmospheric pressure gas discharges using pyroelectric crystals," *Plasma Sources Science and Technology*, vol. 23, art. no. 065018, 2014.

82. S. A. Sarver*, N. Chetwani, N. J. Dovichi, D. B. Go, C. A. Gartner, "A comparison of AC and DC electrospray ionization for mass spectrometry," *The Journal of the American Society of Mass Spectrometry*, vol. 25, pp. 524-529, 2014.
83. X. Mu*, X. Wu*, T. Zhang*, D. B. Go, T. Luo, "Thermal transport in graphene oxide – From ballistic extreme to amorphous limit," *Scientific Reports*, vol. 4, art. no. 3909, 2014.
84. R. Tirumala*, D. B. Go, "Comparative study of corona discharge simulation techniques for electrode configurations inducing non-uniform electric fields," *Journal of Electrostatics*, vol. 72, pp. 99-106, 2014.
85. Y. Li*, D. B. Go, "Using field emission to control the electron energy distribution in high-pressure microdischarges at microscale dimensions," *Applied Physics Letters*, vol. 103, art. no. 234104, 2013.
86. J. Z. Woodruff[#], A. P. C. Buccellato, P. Brenner, D. B. Go, "Environmentally Opportunistic Computing: A distributed waste heat reutilization approach to energy-efficient buildings and data centers," *Energy and Buildings*, vol. 69, pp. 41-50, 2013.
87. P. Rumbach*, M. Witzke, R. M. Sankaran, D. B. Go, "Decoupling interfacial reactions between plasmas and liquids: Charge transfer vs. plasma neutral reactions," *Journal of the American Chemical Society*, vol. 135, pp. 16264-16267, 2013.
88. D. Taller*, D. B. Go, H.-C. Chang, "Modulated exponential films generated by surface acoustic waves and their role in liquid wicking and aerosolization at a pinned drop," *Physical Review E*, vol. 87, art. no. 053004, 2013.
89. Y. Li*, R. Tirumala*, P. Rumbach*, D. B. Go, "The coupling of ion-enhanced field emission and the discharge during microscale breakdown at moderately high pressures," *IEEE Transactions on Plasma Science*, vol. 41, pp. 24-35, 2013.
90. D. B. Go, "Theoretical analysis of ion-enhanced thermionic emission for low-temperature, non-equilibrium gas discharges," *Journal of Physics D: Applied Physics*, vol. 46, art. no. 035202, 2013.
91. D. Taller*, D. B. Go, H.-C. Chang, "Self-similar micro and nanodrops generated by acoustic and Maxwell pressures of scattered and transmitted surface acoustic waves," *Physical Review Letters*, vol. 109, art. no. 224301, 2012.
92. P. Rumbach*, D. B. Go, "Fundamental properties of field emission-driven DC microdischarges," *Journal of Applied Physics*, vol. 112, art. no. 103302, 2012.
93. M. Witzke, P. Rumbach*, D. B. Go, R. M. Sankaran, "Evidence for the electrolysis of water by plasmas formed at the surface of aqueous solutions," *Journal of Physics D: Applied Physics*, vol. 45, art. no. 442001, 2012.
94. Y. Wang*, M. K. Tan, D. B. Go, H.-C. Chang, "Electrospray cone-jet breakup and droplet production for electrolyte solutions," *Europhysics Letters*, vol. 99, art. no. 64003, 2012. **Editor's Choice**
95. R. Tirumala*, D. B. Go, "The multi-electrode assisted corona discharge for electrohydrodynamic flow generation in narrow channels," *IEEE Transactions on Dielectrics and Electrical Insulation*, vol. 18, pp. 1854-1863, 2011.
96. J. Ho, M. K. Tan, D. B. Go, L. Y. Yeo, J. R. Friend, H.-C. Chang, "A paper-based microfluidic surface acoustic wave sample delivery and ionization source for rapid and sensitive ambient mass spectrometry," *Analytical Chemistry*, vol. 83, pp. 3260-3266, 2011. (Accelerated Article)
97. N. Chetwani*, C. A. Cassou[#], D. B. Go, H.-C. Chang, "Frequency dependence of AC electrospray ionization mass spectrometry," *Analytical Chemistry*, vol. 83, pp. 3017-3023, 2011.
98. R. Tirumala*, Y. Li*, D. A. Pohlman[#], D. B. Go "Corona discharges in sub-millimeter electrode gaps," *Journal of Electrostatics*, vol. 69, pp. 36-42, 2011.
99. R. Tirumala*, D. B. Go, "An analytical formulation for the modified Paschen's curve," *Applied Physics Letters*, vol. 97, art. no. 151502, 2010.

100. N. Chetwani*, C. A. Cassou[#], D. B. Go, H.-C. Chang, “High-frequency AC electrospray ionization source for mass spectrometry,” *Journal of the American Society of Mass Spectrometry*, vol. 21, pp. 1852-1856, 2010.
101. D. B. Go, M. Sen, “Thermal rectification using bulk materials,” *Journal of Heat Transfer*, vol. 132, art. no. 124502, 2010.
102. D. B. Go, D. A. Pohlman[#], “A mathematical model of the modified Paschen’s curve for breakdown in microscale gaps,” *Journal of Applied Physics*, vol. 107, art. no. 103303, 2010.
103. A. Guajardo-Cuellar*, D. B. Go, M. Sen, “Evaluation of heat current formulations for equilibrium molecular dynamics calculations of thermal conductivity,” *Journal of Chemical Physics*, vol. 132, art. no. 104111, 2010.
104. D. B. Go, T. S. Fisher, S. V. Garimella, V. B. Bahadur, “Planar microscale ion generation devices in atmospheric air with diamond-based electrodes,” *Plasma Sources Science and Technology*, vol. 18, art. no. 035004, 2009.
105. D. B. Go, T. S. Fisher, S. V. Garimella, “Direct simulation of ionization and ion transport for planar microscale ion generation devices,” *Journal of Physics D: Applied Physics*, vol. 42, art. no. 055203, 2009.
106. D. B. Go, R. A. Maturana, T. S. Fisher, S. V. Garimella, “Enhancement of external forced convection by ionic wind,” *International Journal of Heat Mass and Transfer*, vol. 51, pp. 6047-6053, 2008.
107. D. B. Go, S. V. Garimella, T. S. Fisher, R. K. Mongia, “Ionic winds for locally enhanced cooling,” *Journal of Applied Physics*, vol. 102, art. no. 053302, 2007.
 - also in *Virtual Journal of Nanoscale Science and Technology*, vol. 16, no. 14, 2007.

Book

1. D. B. Go, *Ionization and Ion Transport: A primer for the study of non-equilibrium, low-temperature gas discharges and plasmas*, Institute of Physics (IOP) Concise Physics Series
 - 1st Edition, Morgan & Claypool Publishers: San Rafael, CA, 2018. (ISBN 978-1-6817-4601-2)
 - 2nd Edition, IOP Publishing Ltd: Bristol, UK, 2022. (ISBN 978-0-7503-3991-9)

Book Chapters (invited)

1. K. E. Richards, D. B. Go, R. Hill, “Surface Acoustic Wave Lysis and Ion-Exchange Membrane Quantification of Exosomal MicroRNA,” in *MicroRNA Detection and Target Identification: Methods and Protocols* (ed. T. Dalmay), Methods in Molecular Biology (vol. 1580), pp. 59-70, Springer: New York, 2017.
2. P. Brenner, D. Thain, A. P. C. Buccellato, D. B. Go “Environmentally Opportunistic Computing,” in Handbook of Energy-Aware and Green Computing (ed. I. Ahmad, S. Ranka), CRC Press: New York, NY, 2012.

Magazine Articles (invited)

1. R. Tirumala*, D. B. Go, “Ionic Winds: A New Frontier for Air Cooling,” *Electronics Cooling*, pp. 8-11, March 2012.

Intellectual Property

Patents

1. S. Senapati, H.-C. Chang, H. Sharma, D. B. Go “High Throughput Continuous Isoelectric Fractionation (CIF) Technology for Separation of Nanocarriers,” U.S. Patent 12,498,349, issued 12/16/2025.

2. H.-C. Chang, D. B. Go, Z. Slouka, S. Senapati, Y. Men, Z. Pan “AC Electro sprayed Droplets for Digital and Emulsion PCR,” U.S. Patent 11,293,057, filed 05/09/2017 (application 16/304,870), issued 04/05/2022.
 - licensed to Aopia Biosciences, Inc., 02/13/2020
3. S. Marczak, Z. Ramshani, R. Hill, D. B. Go, H.-C. Chang, S. Senapati “Simultaneous Isolation and Preconcentration of Exosomes by Ion Concentration Polarization Method and Apparatus,” U.S. Patent 10,983,035, issued 04/20/2021.
 - licensed to Aopia Biosciences, Inc., 02/13/2020
4. D. B. Go, Z. Ramshani*, M. J. Johnson*, M. Z. Atashbar “Apparatus and Method for Atomization of Fluid,” U.S. Patent 10,946,407, issued 03/16/2021.
5. N. Chetwani, C. A. Cassou[#], D. B. Go, H.-C. Chang, “Methods and Apparatus for Mass Spectrometry Utilizing an AC Electrospray Device,” U.S. Patent 8,716,675, issued 05/06/2014.
 - licensed to Aopia Biosciences, Inc., 02/13/2020
6. M. MacDonald, R. K. Mongia, D. B. Go “Flow Tube Apparatus,” U.S. Patent 8,274,228, issued 09/25/2012.
7. T. S. Fisher, S. V. Garimella, D. B. Go, R. K. Mongia “Various Methods, Apparatuses, and Systems that Use Ionic Wind to Affect Heat Transfer,” U.S. Patent 7,545,640, issued 06/09/2009.

Invention Disclosures

1. Y. Zhang, D. B. Go, Y. Du, J. Yang, “Autonomous aerosol and plasma co-jet printing system,” Notre Dame Technology I.D. 25-017, filed 09/10/2024, U.S. Provisional Application No. 63/700,338, filed 09/27/2024.
2. S. Benjamin, P. Burns, D. B. Go, D. Martin, “Uranium precipitation via plasma electrolysis,” Notre Dame Technology I.D. D-0480, filed 11/11/2022, U.S. Provisional Application No. 63/385,231, filed 11/29/2022, U.S. Non-Provisional Application No. 63/588,809, filed 10/09/2023. New U.S. Non-Provisional Application No. 19/125,610, filed 04/29/2025.
3. S. Senapati, K. McCarthy, D. B. Go, H.-C. Chang, “An integrated ion-exchange membrane-based microfluidic chip for irreversible dissociation and quantification of RNA from ribonucleoproteins,” Notre Dame Technology I.D. D-0444, filed 06/09/2022, U.S. Provisional Application No. 63/367,414, filed 06/30/2022, U.S. Non-Provisional Application No. 18/173,248, filed 02/23/2023.
4. S. Senapati, H.-C. Chang, H. Sharma, D. B. Go “High Throughput Continuous Isoelectric Fractionation (CIF) Technology for Separation of Nanocarriers,” Notre Dame Technology I.D. D-0406, filed 11/05/2021, U.S. Provisional Application No. 63/268,483, filed 03/02/2022.
5. G. Brownell, D. B. Go, N. Dovichi, R. Flaherty, S. Sarver “CE Electrospray Distal-End Power Supply,” PCT Application No. PCT/US2017/053520, U.S. Utility Patent 15/716,149 filed 09/26/2017. (U.S. Provisional Application No. 62/400,036, filed 09/26/2016) - *withdrawn*
 - licensed to CMP Scientific, 03/25/2019
6. D. Hoelzle, H. Peng, D. B. Go, R. Billo, J. Neidig, J. Budzinski, M.R. Shankar, P. Ostiguy, R. Attardo, S. Gong, B. A. Gatrell, C. Tomonto, “Thermal Stress, Thermal Distortion, and Design Optimization for the Direct Metal Laser Sintering Process,” Notre Dame Technology I.D. 16-067, filed 06/16/2016.
 - licensed to Indiana Technology and Manufacturing Companies (ITAMCO) and formed basis for Atlas3D start-up in 2018 (<https://atlas3d.xyz/>), sold to Siemens in 2019

Invited/Keynote/Plenary Conference and Workshop Presentations

1. D. B. Go “Plasma Electrochemistry: New Opportunities for Revolutionizing Goods Production,” ECS Meeting, Seattle, Washington, 2026.
2. D. B. Go “Plasma Electrochemistry: Fundamentals and Applications in Chemical Processing,” PLASMA Science Summer School, Porquerolles, France, 2025.

3. D. B. Go “Electrifying the Future: Non-Thermal Plasmas for Revolutionizing Goods Production,” International Symposium on Plasma Nanoscience, Hamburg, Germany, 2024.
4. D. B. Go, “Piezoelectric Materials for Plasma Generation,” Gaseous Electronics Conference, San Diego, CA, 2024.
5. D. B. Go, “Are Engineered Systems Organs and Organisms?”, Organs and Origins Conference Series, Notre Dame, IN, 2024.
6. D. B. Go, “Connecting the Dots: Understanding the Nature of Plasma and Liquid Interactions,” European Physics Society Conference on Plasma Physics, Amsterdam, Netherlands, 2022. – *delivered virtually*
7. D. B. Go, “Using Non-Thermal Plasmas to Direct Chemistry at Solid and Liquid Interfaces” International Workshop on Microplasmas, Raleigh, NC, 2022. – *delivered virtually*
8. D. B. Go, “Low Temperature Plasma Catalysis: Uncovering Synergies and Opportunities,” NSF Ecosystem for Collaborative Leadership and Inclusive Innovation in Plasma Science and Engineering (ECLIPSE) Meeting, Washington D.C., 2022.
9. D. B. Go, “Understanding the Behavior of Plasma Interaction with Liquid in Plasma Electrolysis,” International Conference on Plasma-Nano Technology and Science, Nagoya, Japan, 2022. – *delivered virtually*
10. D. B. Go, “Understanding the Behavior of Plasma Interaction with Liquid in Plasma Electrolysis,” Annual Meeting of MRS-J, Pacofico Yokohama North, Japan, 2021. – *delivered virtually*
11. D. B. Go, “Understanding and Designing Plasma-Catalysis Systems using Experiments and Simulations,” AVS International Symposium and Exhibition, Denver, CO, 2020. – *canceled due to COVID-19 pandemic*
12. D. B. Go, “The Mutual Roles of the Plasma and Liquid in Plasma Electrolysis,” ECS Meeting, Montreal, Canada, 2020. – *canceled due to COVID-19 pandemic; presented virtually at 2021 ECS Meeting*
13. D. B. Go, F. Herrera, G. Brown, N. Turan, P. Barboun, P. Mehta, W. F. Schneider, J. C. Hicks, “Comprehensive Studies Toward Understanding and Designing Plasma-Catalysis Systems,” American Chemical Society National Meeting & Expo, Philadelphia, PA, 2020. – *canceled due to COVID-19 pandemic, declined opportunity to present virtually*
14. D. B. Go, “Interfacial low-temperature plasmas for directing chemistry: Perspectives from plasma-liquids and plasma-catalysis,” Advances and Applications in Plasma Physics (*Nature* Conference Series), St. Petersburg, Russia, 2019.
15. D. B. Go, “Solvated electrons at a plasma-liquid interface,” International Conference on Phenomena in Ionized Gases, Sapporo, Japan, 2019.
16. D. B. Go, “Rethinking the Design of Catalysts for Plasma-Catalysis Systems”, International Symposium on Plasma Chemistry, Naples, Italy, 2019.
17. D. B. Go, “Field Emission and its Effect on Microdischarge Formation,” Gaseous Electronics Conference, Pittsburgh, PA, 2017.
18. D. B. Go, “The Role of Field Emission on Plasma Formation at Microscale Dimensions,” International Vacuum Nanoelectronics Conference, Regensburg, Germany, 2017.
19. D. B. Go “The Plasma-Catalyst Interaction: Exploring Synergistic Effects at High Temperature,” International Symposium on Plasma Nanoscience, Antwerp, Belgium, 2017.
20. D. B. Go, “Electrolysis with Plasma Cathodes: Modeling and Experiments to Understand the Electrochemical Interface”, ECS Meeting, New Orleans, LA, 2017.
21. D. B. Go, “Plasma Electrochemistry: Experiments and Modelling of the Plasma/Liquid Interface,” International Conference on Plasmas with Liquids, Prague, Czech Republic, 2017.
22. D. B. Go, “On the Role of Field Emission in Atmospheric-Pressure Microscale Plasmas,” International Vacuum Nanoelectronics Conference, Vancouver, Canada, 2016.

23. D. B. Go, "Solvated Electron Chemistry at the Plasma-Liquid Interface: Detection and Application to Chemical Processing", International Symposium on Plasmas for Catalysis and Energy Materials, Tianjin, China, 2016.
24. P. Rumbach, R. Xu, D. B. Go, "Electrochemical Reduction of $\text{CO}_{2(\text{aq})}$ By Solvated Electrons at a Plasma-Liquid Interface," ECS Meeting, San Diego, CA, 2016.
25. D. B. Go, "Plasmas with Liquid Electrodes: Fundamental Processes and Applications to Chemical Processing", International Conference on Plasma-Nano Technology and Science, Nagoya, Japan, 2016.
26. D. B. Go, "Understanding Charge Transfer Reactions at the Interface of Plasmas in Contact with Liquids," International Conference on Reactive Plasmas/Gaseous Electronics Conference, Honolulu, HI, 2015.
27. D. B. Go, "A Microfluidic Approach to Exosomal RNA Analysis Using Surface Acoustic Wave Lysing and Ion-Exchange Membrane Sensing," Advances in Microfluidics and Nanofluidics, Beijing, China, 2015.
28. D. B. Go, "Atmospheric-Pressure Plasmas: a Radiation-Free Approach to Solvated Electrons," International Workshop on Microplasmas, Newark, NJ, 2015.
29. D. B. Go, "Atmospheric-Pressure Ionization Processes: New Approaches and Applications," International Conference on Electrostatics, Southampton, England, 2015.
30. D. B. Go, P. Rumbach*, D. M. Bartels, R. M. Sankaran, "Detection of Solvated Electrons at a Plasma-Liquid Interface," Gaseous Electronics Conference, Raleigh, NC, 2014.
31. D. B. Go, "Surface Acoustic Wave Microfluidics for Chemical Analysis," Advanced Diagnostics and Therapeutics Annual Symposium, Notre Dame, IN, 2014.
32. D. B. Go, "Microplasmas for Enhanced Thermionic Emission," NASA Workshop on Thermionic Energy Conversion for Space and Earth, Houston, TX, 2014.
33. D. B. Go, "Electron-Initiated Reactions at the Interface of Plasmas and Liquids," International Symposium on Plasma Nanoscience, Málaga, Spain, 2014.
34. D. B. Go "Generating Dielectric Barrier-like Discharges using Polar, Non-Centrosymmetric Crystals," Gordon Research Conference on Plasma Processing Science, Smithfield, RI, 2014.
35. D. B. Go, "Ion-Enhanced Field Emission for Control of Atmospheric Pressure Discharges" AFOSR Young Investigator Research Program, Arlington, VA, 2014.
36. Y. Li, P. Rumbach, D. B. Go, "Field Emission in Microscale Dimensions: A New Approach to Atmospheric Pressure Gas Discharges," AVS International Symposium and Exhibition, Long Beach, CA, 2013.
37. D. B. Go, "Using Surface Processes to Control Electron Energies in Discharges," International Symposium on Plasma Nanoscience, Asilomar, CA, 2013.
38. D. B. Go, "Microplasmas: A New Tool for Nanomaterial Synthesis and New Application for Nanomaterials," CMOS Emerging Technologies Research Symposium, Whistler, BC Canada, 2013.
39. D. B. Go, "Controlling Microdischarge Electron Energy Distributions with Surface Emission Processes," Workshop on Optical Properties of Plasma, University of Notre Dame, IN, 2013.
40. D. B. Go, "Paper-SAW Mass Spectrometry: The Fundamentals of Surface Acoustic Wave Nebulization using Paper Sample Delivery for Ambient Mass Spectrometry" SCIX Conference (The Federation of Analytical Chemistry and Spectroscopy Societies), Kansas City, MO, 2012.
41. D. B. Go, "Direct Current and Alternating Current Electrosprays: The Application of Electrostatics to Chemical Analysis," Annual Meeting of the Electrostatics Society of America, Cambridge, Canada, 2012.
42. D. B. Go, "Breakdown in Microscale Electrode Gaps: The Role of Ion-Enhanced Field Emission in the Modified Paschen's Curve," International Workshop on the Physics of Complex Plasmas, Potsdam, Germany, 2011.

43. D. B. Go, “Low-Temperature Plasma Research in the Small Scale Transport Research Lab”, United States Microplasma Research Community Meeting, Jersey City, NJ, 2011.

Contributed Conference Papers and Extended Abstracts

Over 170 referred and contributed conference papers, presentations, posters, and extended abstracts. Full list available upon request.

RESEARCH SUPPORT

Active External Grants

1. “Scalable Reactor Platform for Material Manufacturing via Plasma-Driven Solution Electrochemistry,” DoD 25.D Phase I STTR, Co-PI (w/ Katherine Lee, Faraday Technology, Inc.), \$99,744 (Notre Dame portion), \$200,000 total, 9 months, 04/06/2026-01/05/2027.
2. “Learning Becomes Service: Expanding Character Education Programs at the University of Notre Dame,” Wake Forest Educating Character Initiative, Co-PI (w/ Prof. Suzanne Shanahan, PI, Prof. Megan Levis, University of Notre Dame), \$500,000, 3 years
 - *one part of a \$1,000,000 total grant awarded to two teams at the University of Notre Dame, where the other team of Prof. Meghan Sullivan and Dr. Jeff Tolly also received \$500,000*
3. “Plasma-Assisted Molecular Activation and Conversion of Light Hydrocarbons to Aromatics,” N00014-23-1-2445, ONR, BAA, Co-PI (w/ Prof. Jason Hicks, PI, Prof. William Schneider, University of Notre Dame), \$602,675, 3 years, 01/16/2024-01/01/2027
 - *expansion award, N00014-25-1-2226, \$302,000, 01/16/2024-01/01/2027*
4. “ECLIPSE/Collaborative Research: Unravelling the Coupled Physics of Piezoelectric and Plasma Behavior in Piezoelectric Stimulated Plasma Sources,” PHY- 2206420, NSF/DOE Partnership in Basic Plasma Science and Engineering and Division of Civil, Mechanical, and Manufacturing Innovation, Co-PI (w/ Prof. Tanvir Farouk, Prof. Sourav Banjaree, University of South Carolina), \$244,359 (Notre Dame portion), 3 years, 06/15/2022-05/31/2025

Completed External Grants

1. “Electrochemistry Promoted by Plasma-solvated Electrons in Non-Aqueous Solutions,” W911NF-23-1-0010, ARO BAA, PI (w/ Mohan Sankaran, University of Illinois), \$515,200, 3 years, 12/05/2022-12/04/2025
2. “Investigation of Reaction Pathways and Temperature Inhibition in Methane DBD Plasmas at the Princeton Collaborative Research Facility (PCRF),” DE-SC0025543, DOE FOA Research on General Plasma Science Collaborative Research Facilities, PI, \$99,600, 1 year, 09/01/2024-08/31/2025
3. “Investigation of Reaction Pathways and Temperature Inhibition in Methane DBD Plasmas,” DOE/PPPL Princeton Collaborative Low Temperature Plasma Research Facility (PCRF), PI, 2 weeks facility time, 1 year, 02/15/2024-02/15/2025
4. “Additive Manufacturing of Reinforced Concrete Structures with Integrated Energy Efficiency,” DE-EE0009070/BASE, DOE EERE ABC, Co-PI (Prof. Ashley Thrall, PI, University of Notre Dame, Eric Kreiger, Brandy Diggs-McGeer, ARL), \$500,000, 3 years, 07/01/2020-06/30/2023 (no cost extension to 12/31/2024)
5. “Effect of Radiolysis within a Confined Volume on Corrosion of Zr Alloys,” PO145217, Naval Nuclear Laboratory – Fluor Marine Propulsion, Knolls Atomic Power Laboratory, Co-PI (Dr. David M. Bartels, University of Notre Dame), \$480,051, 2 years, 02/16/2022-02/15/2024
6. “Next Generation Capabilities for AM,” Kansas City National Security Campus (NSC) – Honeywell, Co-PI (Prof. Ed Kinzel, PI, Prof. Robert Landers), 03/23/2022-08/31/2023
 - **Award 1:** PO N000428013, \$125,604
 - **Award 2:** PO N000475823, \$144,054
5. “Optimizing Additive Manufacturing of Thermoelectric Materials using Bayesian Optimization-Enhanced Artificial Intelligence,” DE-EE0009103/0000, DOE EERE Advanced Manufacturing, Co-PI

- (Prof. Tengfei Luo, PI, Prof. Yanliang Zhang, Prof. Alex Dowling, University of Notre Dame, Michael D. McMurtrey, Idaho National Lab), \$2,000,000, 3 years, 09/01/2020-08/31/2023
7. "Process Intensification by One-Step, Plasma-Assisted Catalytic Synthesis of Liquid Chemicals from Light Hydrocarbons," DE-FE0031862, DOE NETL, Co-PI (w/ Prof. Jason Hicks, PI, Prof. William Schneider, Prof. Casey O'Brien, University of Notre Dame), \$999,954, 3 years, 03/01/2020 - 12/31/2023
 8. "High-Throughput Electrokinetic Fractionation and Analysis of Extracellular (ex)RNA Nano-carriers," 1 UG3 CA241684-01, NIH UG3/UH3 18027, Co-I (w/ Prof. Hsueh-Chia Chang, Prof. Satyajyoti Senapati, Prof. Crislyn D'Souza-Schorey, University of Notre Dame), \$927,000, 2 years, 07/30/2019-07/29/2021
 - **Phase 2 UH3:** 4UH3CA241684-03, \$1,887,990, 2 years, 08/31/2021-07/31/2023
 9. "Plasma-Induced Electrochemistry: Understanding the Behavior of Electrons at a Plasma-Liquid Interface," W911NF-17-1-0119, ARO BAA, PI (w/ Dr. Paul Rumbach, Prof. David Bartels, University of Notre Dame, Prof. R. Mohan Sankaran, Case Western Reserve University), \$450,572, 3 years – extended by 1.5 years, 05/01/2017-10/31/2022
 10. "Energy Harvesting Approaches to Low-Temperature Plasma Generation for Field Applications," PHY-1804091, NSF/DOE Partnership in Basic Plasma Science and Engineering, PI (w/ Prof. Seung-kyun Im, University of Notre Dame), \$274,093, 3 years, 09/01/2018-08/31/2022
 11. "Ultrafast Pulsed Laser Processing in L-PBF," PO_N000399253, Kansas City National Security Campus (NSC) – Honeywell, Co-PI (Prof. Ed Kinzel, PI), \$48,502, 0.25 years, 06/03/2021-08/31/2021
 12. "Electric Field Measurements at the Surface of a Piezoelectric Transformer for Plasma Jet Formation using the Plasma Research Facility at Sandia National Laboratory," DE-SC0021083, DOE Opportunities in Frontier Plasma Science, PI, \$30,588, 1 year, 09/01/2020-08/31/2021
 13. "Electric Field Measurements at the Surface of a Piezoelectric Transformer for Plasma Jet Formation," 2020F0015, DOE/SNL Plasma Facility, PI (w/ Prof. Seung-kyun Im, Korea University, 4 weeks facility time, 1 year, 02/10/2020-02/10/2021
 14. "Plasma-Enhanced Catalysis: A Detailed Study of Surface Interactions Between Low-Temperature Plasma and Catalytic Materials," FA9550-18-1-0157, AFOSR BAA, PI (w/ Prof. Jason Hicks, Prof. William Schneider, University of Notre Dame), \$622,205, 3 years, 02/15/2018-02/14/2021
 15. "High Temperature Gas Pressure Forming and Simulation (TMP R3-3)," LIFT (ALMMII), Co-PI (w/ Martin Philo, GKN Aerospace (PI) + 8 others from GKN Aerospace, Interlaken, American Axle, EWI, University of Michigan), \$1,671,000 (Notre Dame: \$284,000), 1.5 years, 08/07/2017-01/20/2019
 - **Extension 1:** Notre Dame: \$62,345, 11/01/2018-09/30/2019
 - **Extension 2:** Notre Dame: \$12,689, 09/30/2019-12/31/2019
 - **Extension 3:** Notre Dame: \$7,402, 01/01/2020-02/19/2020
 16. "Holographic Assembly of Reconfigurable Nanoscale Plasmonic and Photonic Elements," DARPA A2P, Co-PI (w/ Prof. Paul Bohn (PI) and 4 colleagues, University of Notre Dame), \$900,000, 3 years, 05/01/2015-04/30/2018
 - **Extension:** FA8650-15-C-7546-P00005, \$100,000, 1 year, 08/30/2018-09/30/2019
 17. "Fourier Transform Infrared Spectroscopy System for the in situ Measurement of Plasma-Catalyst Interactions for Enhanced Reaction Control," FA9550-17-1-0376, DoD DURIP, Co-PI (w/ Prof. Jason Hicks, University of Notre Dame), \$131,753, 1 year, 09/30/2017-09/29/2018
 18. "CAREER: Low Temperature Microplasmas For Thermal Energy Conversion, Education, and Outreach," PHY-1254273, NSF/DOE Partnership in Basic Plasma Science and Engineering and CBET Combustion, Fire, and Plasma Processes, PI, \$400,000, 5 years, 05/01/2013-04/31/2018
 19. "An Integrated Microfluidics Platform for Rapid and Sensitive Detection Exosome RNA Analysis," HG009010-01, NIH Parent R21, Co-I (w/ Prof. Hsueh-Chia Chang, Prof. Reginald Hill, Dr. Satyajyoti Senapati, University of Notre Dame), \$414,960, 2 years, 09/14/2016-07/31/2018

20. "A Tunable Laser System for Interfacial Electron Transfer Measurements in Reactive Gas/Liquid Systems" W911NF-17-1-0206, DoD DURIP, PI (w/ Prof. David Bartels, University of Notre Dame), \$277,075, 1 year, 07/15/2017-07/14/2018
21. "Advancing Sustainable Ammonia Synthesis through Plasma-Assisted Catalysis," DE-SC0016543, Department of Energy DE-FOA-0001569, Co-PI (w/ Prof. Jason Hicks, Prof William Schnieder, University of Notre Dame), \$195,000, 1 year, 09/15/2016-09/16/2017
22. "Parametric Design of Functional Support Structures for Metal Alloy Feedstocks," America Makes, Co-PI (University of Pittsburgh lead with Notre Dame sub-contract w/ Prof. David Hoelzle (PI), Prof. Richard Billo, Prof. Steven Schmid), \$805,966, 1.5 years, 07/01/2015-01/31/2017
23. "Coupling Non-Equilibrium, High-Pressure, Micron-Scale Discharges with Surface Reactions: Exploring Synergistic Effects Between Plasma Chemistry and Chemical Catalysis," AFOSR BRI FA9550-14-1-0041, Co-PI (w/ Prof. R. Mohan Sankaran (PI), Prof. Daniel Lacks, Case Western Reserve University, Prof. Jason Hicks, University of Notre Dame), 3 years, \$1,481,558, 03/01/2014-02/28/2017
24. "Chemically Functionalized Graphene as High Performance Heat Spreader," Semiconductor Research Corporation Emerging Technologies in Materials, Processes, and Devices, Co-PI (w/ Prof. Tengfei Luo, Prof. Huili "Grace" Xing, University of Notre Dame), \$300,000, 3 years, 11/01/2014-10/31/2016
25. "Plasma Electrochemistry: A New Approach to Green Electrochemistry," ECS Toyota Young Investigator Fellowship, PI, \$50,000, 1 year, 08/01/2015-07/31/2016
26. "STIR: Probing Electrochemical Reactions at a Plasma-Liquid Interface," ARO BAA, PI (w/ Prof. R. Mohan Sankaran, Prof. Rohan Alkolkar, Case Western Reserve University, Prof. David Bartels, University of Notre Dame), \$48,107, 0.75 years, 05/01/2014-01/31/2015
27. "Pyroelectric and Ferroelectric-Driven Electrohydrodynamics for Low Input Voltage Cooling of Portable Computing," Intel Labs University Research Office, PI, \$299,097, 05/01/2013-04/31/2016
28. "Ion-Enhanced Field Emission for Control of Atmospheric Pressure Discharges," FA9550-11-1-0020, Air Force Office of Scientific Research Young Investigator Award, PI, \$360,000, 3 years, 04/01/2011-03/31/2014
29. "Electrohydrodynamic Flow Tube for Forced Air Cooling of Small-Form Factor Electronics," Intel Corporation Research Council, PI, \$225,000, 3 years, 12/9/2008-05/31/2012

Completed Internal Grants

1. "Plasma-Assisted Recycling of CO₂ into Useful Products", ND Global Latin America Research Development Grant, PI (w/ Dr. Jose Balena, EMBRAPA, Dr. Caue Ribeiro, EMBRAPA, and Dr. Davi Petrolini, Federal University of São Carlos), \$6,500, 1 year, 01/01/2025-12/31/2025.
2. "Collaborative ND-UC|Chile research to improve understanding of highly reactive species in plasma-liquid interfaces," ND-UC|Chile Luksic Scholars Joint Research Award, Co-PI (w/ Prof. Felipe Veloso, UC|Chile), \$43,700, 1 year, 08/01/2022-11/15/2023.
3. "A Framework for Monitoring Human Wellness from Infancy to Adulthood: Analyzing of Umbilical Cord Blood Progenitor Cells for Predicting Future Health Risk" Advanced Diagnostics and Therapeutics Initiative Discovery Fund, Co-PI (w/ Profs. Donny Hanjaya-Putra, Hsueh-Chia Chang, Richard Dahl (IUSM-South Bend), Laura Haneline (IUSM), Robert Munsick (IUSM)), \$79,998, 1 year, 01/01/2019-12/31/2019.
4. "Stem Cells and their Exosomes: to Model and Predict Preeclampsia" Advanced Diagnostics and Therapeutics Initiative Discovery Fund, Co-PI (w/ Prof. Donny Hanjaya-Putra), \$44,000, 1 year, 08/23/2018-08/22/2019.
5. "Plasma Science and Engineering at ND and PUC: A Workshop to Launch Interdisciplinary Collaborations" Luksic Family Collaboration Grant, PI (w/ Profs. Ryan McClarren, Sylwia Ptasińska, Eric Matlis, Sergey Leonov, and Paul Rumbach), \$15,500, 1 year, 11/28/2018-11/27/2019.

6. “Elucidating the Influence of Ferroelectric Polarization on Metal Ion Adsorption to the Surface of Nanoporous Thin Films” NDnano Seed Grant, Co-PI (w/ Prof. William Phillip, Prof. Haifeng Gao), \$50,000, 1 year, 07/01/2018-06/30/2019.
7. “The Nanotech Collaboration Initiative (NCI)” Notre Dame International Mexico City Global Center Collaboration Grant, Co-PI (w/ Prof. Hsueh-Chia Chang, David Balkin), \$20,000, 1 year, 06/20/2017-06/19/2018.
8. “Paper-SAWN Mass Spectrometry Analysis for Rapid Analysis of Pharmaceuticals in Complex Biological Matrices” Advanced Diagnostics and Therapeutics Initiative, PI (w/ Prof. Marya Lieberman, Dr. Matthew Champion), \$54,320, 1 year, 08/01/2013-07/31/2014.
9. “Rapid Separation of Vesicles by Surface Acoustic Wave-inspired Microfluidics for Early Detection and Diagnosis of Pancreatic Cancer,” Walther Cancer Foundation ENSCCII Training Project, Mentor (w/ Daniel Taller (applicant), Prof. Reginald Hill (Co-mentor), University of Notre Dame), \$30,309, 3 years, 06/01/2013-05/31/2016.
10. “AC Electrospray Ionization Mass Spectrometry: A New Technique for the Detection and Identification of Harmful Chemicals,” University of Notre Dame Faculty Scholarship Award Program, PI, \$10,000, 1 year, 01/01/2010-12/31/2010

PROFESSIONAL ACTIVITIES

Invited Lectures and Seminars

- Michigan Institute for Plasma Science and Engineering, University of Michigan, Ann Arbor, MI (fall 2025)
- Viskanta Lecture, School of Mechanical Engineering, Purdue University, West Lafayette, IN (spring 2025)
- Department of Nuclear, Plasma & Radiological Engineering, University of Illinois at Urbana-Champaign, Champaign, IL (fall 2023)
- Faculty of Physics, Pontifical University of Chile, Santiago, Chile (fall 2023)
- Faculty of Engineering and Computing, Dublin City University, Dublin, Ireland (fall 2023)
- Department of Aerospace Engineering, Pennsylvania State University, State College, PA (spring 2023)
- Department of Mechanical Engineering, University of Buffalo, Buffalo, NY (fall 2022)
- Department of Mechanical and Aerospace Engineering, Case Western Reserve University, Cleveland, OH (spring 2022)
- Department of Mechanical Engineering, Brigham Young University, Provo, UT (spring 2022)
- High Temperature and Plasma Laboratory, University of Minnesota, Minneapolis, MN (fall 2021) - *virtual*
- Department of Mechanical Engineering and Engineering Science, University of North Carolina at Charlotte, Charlotte, NC (fall 2021) - *virtual*
- Department of Mechanical Engineering, University of Houston, Houston, TX (fall 2021)
- Institute of Experimental and Applied Physics, Christian-Albrechts-Universität zu Kiel, Kiel, Germany (fall 2020) – *virtual*
- Engineering Physics Department, Polytechnique Montréal, Montreal, Canada (fall 2020) – *virtual*
- Online Low-Temperature Plasma Seminar (fall 2020) – *virtual*
- Department of Mechanical Engineering, Texas A&M, College Stations, TX (spring 2020) – *canceled due to the COVID-19 pandemic*
- Functional Materials Division (Nanoelectronic Materials Branch) Technical Seminar, Air Force Research Laboratory, Wright-Patterson Air Force Base, Dayton, OH (fall 2017)
- Department of Chemical Engineering, University of Pittsburgh, Pittsburgh, PA (fall 2017)
- Department of Chemistry, University of Southampton, Southampton, England (fall 2016)
- York Plasma Institute, University of York, York, England (fall 2016)

- School of Electrical Engineering and Electronics, University of Liverpool, Liverpool, England (fall 2016)
- Engineering Research Institute, Ulster University, Belfast, Northern Ireland (fall 2016)
- Department of Electrical and Computer Engineering, Western Michigan University, Kalamazoo, MI (spring 2015)
- Electromagnetic Technology Branch Seminar, U.S. Naval Research Laboratory, Washington, D.C. (fall 2014)
- Functional Materials Division (Photonic Materials Branch) Technical Seminar, Air Force Research Laboratory, Wright-Patterson Air Force Base, Dayton, OH (fall 2014)
- High Power Microwave Division Technical Seminar, Air Force Research Laboratory, Kirtland Air Force Base, Albuquerque, NM (spring 2014)
- Department of Mechanical Engineering, University of Minnesota, Minneapolis, MN (fall 2013)
- Department of Chemical and Biomolecular Engineering, University of Notre Dame, Notre Dame, IN (spring 2013)
- Department of Chemistry and Biochemistry, Ohio University, Athens, OH (fall 2012)
- Plasma Science Center, Department of Energy, Web Seminar (spring 2012)
- Department of Chemical Engineering, Case Western Reserve University, Cleveland, OH (spring 2012)
- Department of Physics, Andrews University, Berrien Springs, MI (fall 2010)
- Department of Mechanical Engineering, National University of Singapore, Singapore (spring 2010)
- Department of Mechanical and Industrial Engineering, University of Illinois-Chicago, Chicago, IL (fall 2008)

Journal Editorships and Society Leadership

- Member At-Large, ASME Mechanical Engineering Department Heads Executive Committee (MEDHEC), 2022-2023 (two-year term but stepped down due to promotion to Associate Provost)
 - ASME MEDHEC Diversity, Equity, and Inclusion Award Committee
 - ASME MEDHEC Donald N. Zweip Innovation in Education Award Committee
- President, Electrostatics Society of America, 2019-2022 (two-year term extended one year due to COVID-19 pandemic)
- Associate Editor (Thermal and Mass Transport), *Frontiers in Mechanical Engineering*, 2015-2021 (stepped down after becoming Department Chair)
 - Research Topic Editor: Direct Thermal Energy Conversion and Utilization
- Associate Editor, *Plasma Sources Science and Technology*, 2020-2021 (stepped down after becoming Department Chair)
 - Editorial Board, 2017-present
- Editorial Board, *Journal of Electrostatics*, 2015-present
- Executive Council, Electrostatics Society of America, 2015-2019

Conference Organizing

Leadership Positions

- Plasma Science & Technology Division Committee, American Vacuum Society, 2022-present
- International Scientific Committee, International Symposium on Plasmas for Catalysis and Energy Materials, 2019-present
- General Chair, 2018 International Symposium on Plasma Nanoscience (iPlasmaNano-IX)
- Workshop Organizer, 2014 NASA Workshop on Thermionic Energy Conversion for Space and Earth
- General Chair, 2014 Annual Meeting of the Electrostatics Society of America
- Local Organizing Committee, 2013 Midwest Universities Analytical Chemistry Conference

- Local Organizing Committee, 2013 Notre Dame-DARPA Workshop on Optical Properties of Plasmas
- Technical Chair, 2013 Annual Meeting of the Electrostatics Society of America

Session/Symposium

- Session Chair, American Vacuum Society, 2022
- Session Chair, Gaseous Electronics Conference, 2014, 2015, 2017, 2018, 2019, 2021
- Session Chair, International Workshop on Microplasmas, 2015
- Session Chair, Annual Meeting of the Electrostatics Society of America, 2011, 2012, 2018
- Session Chair, Intersociety Conference on Thermal and Thermomechanical Phenomena in Electrical Systems (ITherm2012), 2012
- Symposium Organizer, Central Regional Meeting of the American Chemical Society, 2011

Miscellaneous Activities

- External Review Team, Department of Mechanical Engineering, University of Delaware (2023)
- Co-Organizer, Virtues and Vocations Engineering Education Workshop, Notre Dame, IN (2022)
- Organizing Committee, Future Leaders in Mechanical and Aerospace Engineering: Celebrating Diversity and Innovation, nationwide online seminar series (2022)
- Organizing Committee, International Online Plasma Seminar – IOPS, international online seminar series (2020-2022)
- External Review Team, Graduate Program, Department of Mechanical Engineering, University of South Carolina (2020)
- Rosenbluth Outstanding Doctoral Thesis in Plasma Physics Award Committee, American Physical Society, Division of Plasma Physics (2016-2017)
- Webmaster, IEEE Components, Packaging, and Manufacturing Technology Society, Thermal Management and Thermo-Mechanical Design TC (2007-2015)
- *Proposal Reviewer*: ASEE NRL Postdoctoral Fellowship, Indiana Clinical and Translational Sciences Institute (ICTSI) CTR grant panel, NSF Combustion, Fire and Plasma Systems, NSF/DOE Partnership in Basic Plasma Science and Engineering, NSF Process Systems, Reaction Engineering, & Molecular Thermodynamics, NASA Science and Technology Research Fellowship, ARPA-E, ACS Petroleum Research Fund, Research Foundation - Flanders (Belgium), Research Corporation for Science Advancement, Sandia Plasma Research Facility, Department of Energy SBIR, NSF RII EPSCoR Track 1 (\$20M proposal), Department of Energy Office of Science Graduate Student Research (SCGSR) Program
- Direct Submission Editor for Proceedings of the National Academy of Science
- *Journal Referee*: ACS Catalysis, ACS Energy Letters, ACS Nano, Analyst, Analytical Chemistry, Applied Physics Letters, Applied Thermal Engineering, Biomicrofluidics, Chemical Communications, Chemical Engineering Journal, ChemSusChem, Contributions to Plasma Physics, Electrochemistry Communications, Encyclopedia of Plasma Technology, Energy and Buildings, Experimental Thermal and Fluid Science, Experiments in Fluids, IEEE Electron Device Letters, IEEE Transactions on Components, Packaging and Manufacturing Technology, IEEE Transactions on Plasma Science, International Journal of Heat and Mass Transfer, International Journal of Thermal Systems, Journal of Applied Physics, Journal of Electrochemical Society, Journal of Electronics Packaging, Journal of Electrostatics, Journal of Fluids Engineering, Journal of Physical Chemistry, Journal of Physics D: Applied Physics, Journal of the American Society of Mass Spectrometry, Journal of Vacuum Science and Technology A, Journal of Vacuum Science and Technology B, Journal of Visualization, Nanotechnology, Nature Communications, Optical Materials Express, Physical Review Applied, Physical Review Letters, Physical Review Research, Physics Letters A, Physics of Plasmas, Plasma Science and Technology, Plasma Sources Science and Technology, PLOS ONE, Review of Scientific Instruments, RSC Advances, Scientific Reports

Professional Memberships

- Fellow, American Society of Mechanical Engineers (2004-present, Fellow, 2016)
- Senior Member, Institute of Electrical and Electronics Engineers (2009-present, Senior, 2022)
- Member, Electrostatics Society of America (2010-present)
- Member, American Physical Society (2015-present)
- Member, American Association for the Advancement of Science (2018-present)
- Member, American Chemical Society (2019-present)
- Member, Electrochemical Society (2015-2021)

TEACHING & ADVISING

Teaching and Course Development (* indicates developed the course)

- FYS 10101 Moreau First-Year Seminar (undergraduate-required)
 - 19 students (fall 2025)
- AME 20213/21213 Introduction to Measurements and Data Analysis with laboratory (undergraduate-required)
 - 44 students (fall 2012)
 - 48 students (fall 2011)
 - 29 students (fall 2010)
 - 35 students (fall 2009)
 - 43 students (fall 2008)
- *AME 21268 Design Tools 2 (undergraduate-required) – *part of new design curricular stem*
 - 40 students (spring 2018)
- AME 30334 Heat Transfer (undergraduate-required)
 - 168 students (spring 2017)
 - 134 students (spring 2016)
 - 129 students (spring 2015)
- AME 30362 Design Methodology (undergraduate-required)
 - 124 students (fall 2019)
- AME 34314 Differential Equations, Vibrations, and Control I (undergraduate-required)
 - 12 students (fall 2016, London Program)
- *AME 47431 Designing Energy-Efficient Buildings (undergraduate-elective) – *co-taught with ARCH 41121 (architecture studio course)*
 - 8 students (fall 2018)
 - 8 students (spring 2016)
 - 8 students (spring 2015)
 - 4 students (spring 2014)
- *AME 47560 Independent Undergraduate Design Projects (undergraduate-elective) – *industry-sponsored, small group projects*
 - 8 students (fall 2021) – *sponsored by Marmon Holdings, Indratech Inc.*
 - 4 students (fall 2020) – *sponsored by Marmon Holdings*
 - 5 students (spring 2020) – *sponsored by Marmon Holdings*
 - 5 students (fall 2019) – *co-mentored with Prof. Jim Schmiedeler, sponsored by Marmon Holdings*
 - 6 students (spring 2019) – *co-mentored with Prof. Jim Schmiedeler, sponsored by Marmon Holdings*
- EG35101 Innovation Projects (undergraduate-elective) – *expansion of AME47560 to enable interdisciplinary groups; serve as faculty mentor*
 - 3 students (fall 2022) – *sponsored by Marmon Holdings*
 - 7 students (spring 2022) – *sponsored by Marmon Holdings, Indratech Inc.*

- AME 54535 Energy Systems (undergraduate-elective)
 - 13 students (fall 2016, London Program)
- AME 60634 Intermediate Heat Transfer (graduate)
 - 4 students (fall 2013)
 - 12 students (spring 2013)
 - 8 students (spring 2011)
 - 8 students (spring 2009)
- *AME 60637/70637 Ionization and Ion Transport (graduate)
 - 4 students (spring 2021)
 - 11 students (fall 2017)
 - 7 students (fall 2015)
 - 3 students (spring 2014)
 - 3 students (spring 2012)
 - 9 students (spring 2010)

Visiting Scientists

1. Prof. Felipe Veloso, Pontificia Universidad Catolica de Chile, 12/2022-03/2023
2. Prof. Daniel Elg, University of Southern Indiana, 05/2019-07/2019 and 06/2021-07/2021
3. Prof. Keiichiro Yoshida, Osaka Institute of Technology (Osaka, Japan), 03/2016-07/2016
4. Dr. Jenny Ho, Monash University (Melbourne, Australia), 07/2010 – 11/2010

Postdoctoral Scholars and Research Scientists

1. Dr. Jose Balena Gabriel Filho, Postdoctoral Scholar, 02/2026 – present
2. Dr. Mikhail Vasilev, Postdoctoral Scholar, 11/2024 – present
3. Dr. Jinyu Yang, Postdoctoral Scholar, 05/2022 – 12/2025
4. Dr. Hoang M. Nguyen Postdoctoral Scholar, 01/2024 – 11/2024
5. Dr. Oles Dubrovski (with Prof. Hsueh-Chia Chang), Postdoctoral Scholar, 11/2022 – 12/31/2023
6. Dr. Paul Rumbach, Postdoctoral Scholar and Research Scientist, 01/2016 – 07/2019
7. Dr. Seung-Ryong Kwon (with Prof. Paul Bohn), Postdoctoral Scholar, 08/2018 – 08/2019
8. Dr. Zeinab Ramshani (with Prof. Hsueh-Chia Chang), Postdoctoral Scholar, 01/2017 – 07/2019
9. Dr. Donghoon Han (with Prof. Paul Bohn), Postdoctoral Scholar, 05/2015 – 07/2018
10. Dr. Michael Johnson, Postdoctoral Scholar, 05/2016 – 07/2016
11. Dr. Ying Wang, Postdoctoral Scholar, 01/2015 – 01/2016
12. Dr. Mridul Mandal (with Prof. Marya Lieberman), Postdoctoral Scholar, 03/2014 – 02/2015
13. Dr. Nishant Chetwani, Edison Postdoctoral Scholar, 10/2011 – 01/2012
14. Dr. Ming Tan (with Prof. Hsueh-Chia Chang), Postdoctoral Scholar, 07/2010 – 05/2011

Graduate Students

Ph.D. (graduated, first position after graduation)

1. Ibukunoluwa Akintola, 2026 – MAAT Energy, Boston, MA
2. Garam Lee, (Department of Chemical and Biomolecular Engineering, Co-Advisor Prof. Casey O'Brien), 2024 – Pacific Northwest National Laboratory, Richland, WA
3. Daniel Martin (Co-advisor Dr. David Bartels, Notre Dame Radiation Laboratory), 2024 – Research Engineer, Bettis Atomic Power Laboratory, Pittsburgh, PA
4. Jinyu Yang, (Co-advisor Prof. Seong-kyun Im, Korea University), 2022 – Postdoctoral Scholar, Department of Aerospace and Mechanical Engineering, University of Notre Dame
5. Fernando Alamos (Co-advisor Prof. Steven Schmid, University of North Carolina-Charlotte), 2022 – META, San Francisco, CA
6. Nazli Turin, 2022 – Research Fellow, University of Southampton, England

7. Hernan Delgado de la Garza (Department of Chemical and Biomolecular Engineering), 2021 – Postdoctoral Scholar, Argonne National Laboratory
 - Current: Energy Systems Analyst, Argonne National Laboratory
8. Francisco Herrera, 2019 – Intel Corporation, Hillsboro, OR
9. Xi Tan, 2019 – RadiaSoft LLC, Boulder, CO
 - Current: Research Associate, Pacific Northwest National Laboratory
10. John Haase, 2018 – Raytheon, Tucson, AZ
 - Current: Big Data Analytics Engineer, General Motors, Warren, MI
11. Xin Mu (Co-advisor Prof. Tengfei Luo, Department of Aerospace and Mechanical Engineering), 2018 – BMO Harris Bank, Chicago, IL
12. Michael Johnson, 2016 – Postdoctoral Scholar, Department of Aerospace and Mechanical Engineering, University of Notre Dame
 - Current: Research Associate, Naval Research Laboratory, Washington DC
13. Paul Rumbach, 2016 – Postdoctoral Scholar and Instructor, Department of Aerospace and Mechanical Engineering, University of Notre Dame
 - Current: Associate Teaching Professor, Department of Aerospace and Mechanical Engineering, University of Notre Dame
14. Daniel Taller (Co-advisor Prof. Hsueh-Chia Chang, Department of Chemical and Biomolecular Engineering), 2015 – Space Exploration Technologies Corporation (SpaceX), Hawthorne, CA
 - Current: Scientific Software Developer, Lawrence Livermore National Laboratory, Livermore, CA
15. Yingjie Li, 2014 – Prism Computational Sciences, Madison, WI
16. Rakshit Tirumala, 2013 – Postdoctoral Scholar, Institute Pprime, University of Poitiers, France
 - Current: Design Engineer, G.E. Aviation, Bangalore, India
17. Alejandro Guajardo-Cuellar (Co-advisor Prof. Mihir Sen, Department of Aerospace and Mechanical Engineering), 2011 – Philips Lighting, Eindhoven, The Netherlands
 - Current: Profesor Mecánica, Tecnológico de Monterrey, Guadalajara, Mexico

M.S. (graduated, first position after graduation)

1. Jenny Baranker, M.S. Mechanical Engineering, 2021 – Philosophy Ph.D. student, University of Oklahoma
2. Ankur Saxena, M.S. Aerospace Engineering, 2021 – Veolia Water Technologies, Plainfield, IL
3. Katherine Isbell, M.S. Chemistry (Co-advisor Prof. Amanda Hummon, Department of Chemistry and Biochemistry), 2011 – Center for Disease Control, Atlanta, GA
4. Sajanish Balagopal, M.S. Aerospace Engineering, 2011 – Cummins Inc., Columbus, IN

ESTEEM Advisor (*Master's Program in Entrepreneurship, Technology, & Innovation*)

1. Flora Zieger, ESTEEM program, 2016 – Pazmany Peter Catholic University, Budapest, Hungary
2. Helga Feiszthuber, ESTEEM program, 2015 – UltraDerm Diagnostics, Budapest, Hungary
3. S. Kiel Hockett, ESTEEM program, 2011 – PTC, Minneapolis, MN, United States.

Undergraduate Research Students

Mentored the research projects of over 40 Notre Dame and 17 non-Notre Dame undergraduate students majoring in aerospace engineering, mechanical engineering, civil engineering, chemical engineering, electrical engineering, chemistry, and physics. Non-Notre Dame students include students from an all-women's college, two HBCUs, and a Hispanic-serving institution (HSI), as well as from India, China, and Ireland. Full list available upon request.

Doctoral Committee Member

Served as a member of 25 Ph.D. doctoral committees, including in aerospace, mechanical, and chemical engineering and as an external member for Boise State University. Full list available upon request.

SERVICE, PROFESSIONAL DEVELOPMENT, & OUTREACH

College and University Service

- Member, Faculty Affairs, Research, and Scholarship Committee (2023-present)
- Member, Academic Council (2023-present)
 - Executive Committee (2023-2024, 2025-2026)
- Member, Provost's Advisory Committee (2023-present)
- Member, Institutional Risk and Compliance Committee (2023-present)
- Member, Enterprise Risk Committee (2023-present)
- Member, New Program Committee (2023-present)
- Member, Undue Foreign Influence Committee (2023-present)
- Member, Information Technology Executive Committee (2023-present)
- Member, *ad hoc* Committee on Promoting the Success of Students from Lower-Resource Backgrounds (2022-2023)
- Member, Laetare Medal Recommendation Committee (2022-2024)
- Member, President's Cabinet (2022-2023)
- Member, Subcommittee on Theology Courses in Core Curriculum (2022)
- Member, College of Engineering Research Committee (2022-2023)
- Member, Strategic Framework, Opportunities for Excellence/Distinction in Key Research and Scholarship Areas Theme Advisory Committee (2022)
- Member, New Science and Engineering Building Programming Committee (2021-2022)
- Member, Vice President for Research Search Committee (2021-2022)
- Member, Department Chairs Advisory Group (2021-2023)
- Faculty Affiliate, iNDustry Labs (2020-present)
- Member, IDEA Center Faculty Advisory Board (2020-2022)
- Member, Faculty Advisory Committee on COVID-19 Pandemic (2020-2022)
- Member, Engineering Innovation Hub Managing Director Search Committee (2020-21)
- Member, Provost's Taskforce on Academic Bullying (2019-2020)
- Member, Notre Dame Research *ad hoc* Research Misconduct Committee (2019)
- Member, College of Science Dean Review Committee (2019)
- Member, *ad hoc* Faculty Senate Resolution Committee (2018-2019)
- Member, College of Engineering Dean Search Committee (2018-2019)
- Faculty Speaker, Science & Religion Seminar, Institute for Church Life (2018)
- Faculty Speaker, Future Faculty Workshop (2018)
- Executive Committee, Harper Cancer Research Institute (2016-2019)
- Faculty Speaker, Faculty Orientation (2015)
- Faculty Speaker, Office of Research NSF CAREER workshop (2014)
- Faculty Mentor, Building Bridges program, Multicultural Student Programs and Services (2011-present)
- Member, Valedictorian Selection Committee, Provost's Office (2011)
- Faculty Advisor, American Red Cross Club (2009-2016)
- Faculty Facilitator, Center for Social Concerns Urban Plunge small group discussion leader (2009-2014)
- Faculty Session Chair, Undergraduate Scholars Conference (2010, 2011)
- Faculty Participant, Provost Discernment Dinner (2009, 2011)
- Lector, Freshman Orientation Mass (2010)

- Marshall, University of Notre Dame Commencement (2010)
- Keynote Speaker, Minority Engineering Program Honors Dinner (2009); Invited Guest (2008-2011)
- Faculty Speaker, Aerospace and Mechanical Engineering Meeting for Engineering Honors Program students (2009)
- Faculty Speaker, Aerospace and Mechanical Engineering Meeting for Undergraduates Considering Graduate School (2008, 2009)
- Faculty Speaker, Kaneb Center for Teaching and Learning Workshop Series for Graduate Students Interested in Academic Careers (2008)

Departmental Service

- Member, *ad hoc* Committee on Strategic Planning (2018-2019)
- Chair, *ad hoc* Design Curricular Stem Committee (2017-2020)
 - *duties include helping develop and institute Design Tools 1 and 2 courses, launching and helping direct Student Fabrication Lab (2018), and planning & launching Engineering Innovation Hub (2020)*
- Member, Undergraduate Curriculum Committee, Mechanical Engineering Degree Program (2009-2012, 2016-2019)
- Member, Graduate Studies Committee (2015-2018)
- Chair, *ad hoc* General Search Committee (2015-2016)
- Member, Department Executive Committee (2013-2015)
- Member, Department Chair Search Committee (2011)
- Member, Dorini Family Endowed Chair in Energy Studies Search Committee (2009-2011)

Professional Development

- Fellow, Atlantic Coast Conference (ACC) Academic Leaders Network (2022)
- Faculty Fellow, Collegium Annual Colloquy (2021)
- Participant, ND Lead (2019-2022) – *disrupted by COVID-19 pandemic*
- Participant, Seeking Educational Equity & Diversity (SEED) seminar (2017-2018)

Outreach (select)

- Board of Directors, Indiana State Museum and Historical Sites, 2022-2025
- Exhibitor at St. Joseph County Public Library *Science Alive!* (South Bend, IN), 2014-present
 - hosted table on plasma science and technology at local science and technology expo targeting K-8 students with more than 2000 visitors annually
- High School Research: Coordinated research for students from Trinity School at Greenlawn, South Bend and faculty at the University of Notre Dame (2017-2022), including mentoring seven student research projects (2012-present), with recognitions including several *1st place award* in Northern Indiana Regional Science and Engineering Fair, a *2nd place (11th grade)* in the Hoosier Science and Engineering Fair, a *participant* in the Intel International Science and Engineering Fair, and the *State of Indiana winner* for the Stockholm Junior Water Prize. Full list available upon request.
- Lead Coordinator, MATHCOUNTS middle school mathematics competition (2009-2013)