

MITCHELL L. R. WALKER II
JOHN YOUNG CHAIR AND PROFESSOR
GEORGIA INSTITUTE OF TECHNOLOGY
SCHOOL OF AEROSPACE ENGINEERING
 LETTIE PATE WHITEHEAD EVANS ADMINISTRATION BUILDING
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 MITCHELL.WALKER@AE.GATECH.EDU

I. EARNED DEGREES

University of Michigan	Aerospace Engineering	Ph.D., 2005
University of Michigan	Aerospace Engineering	MSE, 2000
University of Michigan	Aerospace Engineering	BSE, 1999

II. EMPLOYMENT HISTORY

Georgia Institute of Technology	Full Professor	8/2017 – Present
	John Young Chair	8/2022 – Present
	Assoc. Dean, Academic Affairs	4/2022 – Present
	Assoc. Chair, Graduate Programs	7/2019 – 4/2022
Georgia Institute of Technology	Associate Professor	8/2011 – 7/2017
Georgia Institute of Technology	Assistant Professor	1/2005 – 7/2011
University of Michigan	Graduate Research Assistant	8/2000 – 12/2004

III. HONORS AND AWARDS

A. International or National Awards

10. Fellow – American Institute of Aeronautics and Astronautics, 2023
9. American Institute of Aeronautics and Astronautics Sustained Service Award, 2020
8. Selected to participate in the National Academy of Engineering Symposium on Exploring a New Vision for Center-Based, Multidisciplinary Engineering Research, 2016
7. Served on the National Academy of Engineering Frontiers of Engineering Symposium Organizing Committee, Co-organizer for the session “Engineering the Search for Earth-like Exoplanets,” 2015
 The Frontiers of Engineering program brings together a select group of emerging engineering leaders from industry, academia, and government labs to discuss pioneering technical work and leading-edge research in various engineering fields and industry sectors. The goal of the meeting is to introduce these outstanding engineers (ages 30-45) to each other, and through this interaction, facilitate collaboration in engineering, the transfer of new techniques and approaches across fields, and the establishment of contacts among the next generation of engineering leaders.
6. Selected to participate in the National Academy of Engineering US Frontiers of Engineering Symposium, 2014

5. NASA Marshall Space Flight Center – Reverse Mentoring Program, 2013
Reverse mentoring refers to an initiative where senior executives are paired with and mentored by younger employees on topics such as technology and current trends. Dr. Walker was selected to mentor the Deputy Manager of Space Flight Systems for NASA Marshall Space Flight Center.
4. AIAA Associate Fellow, 2011
Associate Fellows are individuals who have accomplished or been in charge of important engineering or scientific work, or have done original work of outstanding merit, or have otherwise made outstanding contributions to the arts, sciences, or technology of aeronautics or astronautics.
3. AIAA Lawrence Sperry Award, 2010
Each year, AIAA presents the Lawrence Sperry Award for a notable contribution made by a young person, age 35 or under, to the advancement of aeronautics and astronautics.
2. Air Force Office of Scientific Research Young Investigator Program Award, 2006
The Air Force Young Investigator Program supports scientists and engineers who have received Ph.D. or equivalent degrees in the last five years and show exceptional ability and promise for conducting basic research. The objective of this program is to foster creative basic research in science and engineering; enhance the early career development of outstanding young investigators; and increase opportunities for the young investigator to recognize the Air Force mission and related challenges in science and engineering.
1. NASA Faculty Fellow, 2005

Finalist

2. NASA PECASE, 2011
 1. Air Force of Scientific Research PECASE, 2010
Presidential Early Career Award for Scientists and Engineers (PECASE)

B. Institute or School Awards

5. John W. Young Chair, Aerospace Engineering, Georgia Institute of Technology, 2022
4. Georgia Power Professor of Excellence Award, Georgia Institute of Technology, 2017
3. Provost’s Emerging Leaders Program, Georgia Institute of Technology, 2017
2. Thank a Teacher Program, Georgia Institute of Technology Center for the Enhancement of Teaching and Learning
 - a. In appreciation of your teaching style and dedication to helping students learn in Aerospace Engineering 6451,” Fall 2021.
 - b. In appreciation of your teaching style and dedication to helping students learn in Aerospace Engineering 6450,” Spring 2021.
 - c. “In appreciation of your teaching style and dedication to helping students learn in Aerospace Engineering 2610,” Spring 2018.
 - d. “In appreciation of your teaching style and dedication to helping students learn in Aerospace Engineering 4451 and 3051,” February 2015.
 - e. “In appreciation of your teaching style and dedication to helping students learn in Aerospace Engineering 3051,” February 2015
 - f. “In appreciation of your teaching style and dedication to helping students learn in Low-Speed Aerodynamics and Thermodynamics,” March 2009
 - g. “In appreciation of your teaching style and dedication to helping students learn in Jet and Rocket Propulsion,” March 2008
1. Georgia Institute of Technology Class of 1969 Teaching Fellow, 2005

IV. RESEARCH, SCHOLARSHIP, AND CREATIVE ACTIVITIES

An asterisk indicates those that resulted from work done at Georgia Tech, and a **boldface** identifies the names of graduate students and undergraduate student advisees.

A. PUBLISHED BOOKS, BOOK CHAPTERS, AND EDITED VOLUMES

No Data

B. REFEREED PUBLICATIONS AND SUBMITTED ARTICLES

B1. Published and Accepted Journal Articles

82% of the peer-reviewed publications from work done at Georgia Tech are co-authored with a graduate or undergraduate student.

74. *Levchenko, I., Goebel, D., Pedrini, D., Albertoni, R., Baranov, O., Kronhaus, I., Lev, D., Walker, M. L. R., Xu, S., Bazaka, K., "Recent Innovations to Advance Space Propulsion Technologies," Progress in Aerospace Sciences, Accepted - March 2023.
73. *Bak, J., **Suazo Betancourt, J. L.**, Rekhy, A., Abbasszadehrad, A, Miles, R. B., Limbach C., Walker, M. L. R., "High-Resolution Spatially Extended 1D Laser Scattering Diagnostics using Volume Bragg Grating Notch Filters," Review of Scientific Instruments, Volume 94, February 2023, pp. 023003.
72. *Walker, J., Lev, D., Walker, M. L. R., "Electrical Characteristics of a Hall Effect Thruster Body in a Vacuum Facility Testing Environment," Journal of Electric Propulsion, Volume 1, Article 18, October 2022.
71. *Lopez-Uricoechea, J., Lev, D., Walker, M. L. R., "0-D Composition and Performance Analysis of an Air-Breathing RF Ion Thruster," Journal of Electric Propulsion, Volume 1, Article 11, September 2022.
70. *Jovel, D., Herman, D., Walker, M. L. R., "Review of High-Power Electrostatic and Electrothermal Electric Propulsion," Journal of Propulsion and Power, Volume 30, Number 6, November-December 2022.
69. *Brown, N. P., Eladl, M., Steinberg, A., Deibel, J., Walker, M. L. R., "Noninvasive THz-TDS Measurements of Plasma Bounded and Optically Shielded by Hall Thruster Wall Material," Plasma Sources Science and Technology, Vol. 30, July 2021, pp. 075027.
68. *Brown, N. P., Grauer, S. J., Steinberg, A. M., Deibel, J. A., Walker, M. L. R., "Bayesian Framework for THz-TDS Plasma Diagnostics," Optics Express, Vol. 29, No. 4, February 2021, pp. 4887-4901.
67. *Miller, S., Walker, M. L. R., Agolli, J., Dankanich, J., "Survey and Performance Evaluation of Small Satellite Propulsion Technologies," Journal of Spacecraft and Rockets, Vol. 58, No. 1, January-February 2021, pp. 222-231.
66. *Brown, N. P., Whittaker, C. B., Rimoli, J. J., Ready, W. J., Walker, M. L. R., "Formation and Impact of Microcracks in Plasma Erosion of M26 Boron Nitride," Journal of Propulsion and Power, Vol. 37, No. 1, January-February, 2021, pp. 59-67.
65. *Brown, N., Walker, M. L. R., "Review of Plasma-Induced Hall Thruster Erosion," Applied Sciences, Applied Sciences, Vol. 10, doi:10.3390/app1013775, May 2020.
64. *Frieman, J. D., Liu, T. M., Walker, M. L. R., "Background Flow Model Validation with a 6-kW Hall Effect Thruster," Journal of Propulsion of Power, Vol. 36, No. 2, March-April, 2020, pp. 308-311.

63. ***Liu, C.**, Walker, M. L. R., Cohen, M., “Time-resolved Measurements of Plasma Parameters for Nanosecond-pulsed Argon Plasmas,” IEEE Transactions on Plasma Science, Vol. 48, No. 4, April 2020, pp. 1060-1075.
62. ***Singletary, P.**, Cohen, M., Walker, M. L. R., **Liu, C.**, **Chan, C.**, “Optical Analysis of Nanosecond-lifetime Plasma Parameters,” IEEE Transactions on Plasma Science, Vol. 48, Issue 1, January 2020, pp. 179-188.
61. ***Sanborn, G. P.**, **Singh, L. A.**, Turano, S. P., **Selvamurugan, S.**, Walker, M. L. R., Ready, W. J., “Field Emission Damage Modes of Carbon Nanotube Spindt Cathode Arrays,” The Journal of The Minerals, Metals & Materials Society, Volume 72, Issue 1, January 2020, pp. 544-551.
60. Schweigert, I.; Walker, M. L. R.; Keidar, M., “Genesis of Non-Uniformity of Plasma Fluxes Over Emissive Wall in Low-Temperature Plasmas,” Plasma Research Express, Volume 1, Number 4, December 2019.
59. ***Caruso, N. R. S.**, Walker, M. L. R., “Effects of Ingested versus Injected Propellant on Radio-Frequency Discharge Plasma Properties,” Frontiers in Physics, Volume 6, Article 161, January 2019.
58. Kim, H., Golkowski, M., Golkowski, C., Stoltz, P., Cohen, M., Walker, M. L. R., “PIC Simulations of Post-pulse Field Reversal and Secondary Ionization in Nanosecond Pulsed Argon Discharges,” Plasma Sources Science and Technology Volume 27, Number 5, April 2018, pp. 055011 1-10.
57. ***Frieman, J.**, **Brown, N.**, **Liu, C.**, **Liu, T.**, Walker, M. L. R., Khayms, V., King, D., “Impact of Propellant Species on Hall Effect Thruster Electrical Facility Effects,” Journal of Propulsion and Power, Volume 34, Number 3, May-June 2018, pp. 600-613.
56. *Schweigert, I., Burton, T., Thompson, G., **Langendorf, S.**, Walker, M. L. R., Keidar, M., “Plasma Interaction with Emissive Surface with Debye-Scale Grooves,” Plasma Sources Science and Technology, Volume 27, Number 4, April 2018, pp. 045004 1-7.
55. Averett, R., **Scogin, T.**, Walker, M. L. R., “Electromagnetically Induced Distortion of a Fibrin Matrix with Embedded Microparticles,” Journal of Mechanics in Medicine and Biology, Volume 18, Number 2, March 2018.
54. Levchenko, I., Xu, S., Walker, M. L. R., Keidar, M., “Nano in Space: Big Expectations from Advanced Nanoscaled Materials,” Nature Communications, Volume 9, 879, 2018.
53. ***Frieman, J. D.**, **Brown, N. P.**, **Liu, C. Y.**, Liu, T. M., Walker, M. L. R., Khayms, V., King, D. Q., “Electrical Facility Effects on Faraday Probe Measurements,” Journal of Propulsion and Power, Volume 34, Number 1, January-February 2018, pp. 267-269.
52. ***Caruso, N. R. S.**, Walker, M. L. R., “Neutral Ingestion Effects on Plume Properties of a Low-Power RF Plasma Discharge,” Journal of Propulsion and Power, Volume 34, Number 1, January-February 2018, pp. 58-65.
51. ***Frieman, J. D.**, Liu, T. M., Walker, M. L. R., “Background Flow Model of Hall Thruster Neutral Ingestion,” Journal of Propulsion and Power, Volume 33, Number 5, September-October 2017, pp. 1087-1101.
50. *Saleh, S. H., **Geng, F.**, **Ku, M.**, Walker, M. L. R., “Electric Propulsion Reliability: Statistical Analysis of On-orbit Anomalies and Comparative Analysis of Electric versus Chemical Propulsion Failure Rates,” Acta Astronautica, (139) June 2017, pp. 141-156.

49. Brown, D. L., Walker, M. L. R., Szabo, J., Huang, W., "Recommended Practice for Use of Faraday Probes in Electric Propulsion Testing," *Journal of Propulsion and Power*, Volume 33, Number 3, May-June 2017, pp. 582-613.
48. *Polk, J., Pancotti, A., Haag, T., **King, S.**, Walker, M. L. R., Blakely, J., Ziemer, J., "Recommended Practices for Thrust Measurement in Electric Propulsion Testing," *Journal of Propulsion and Power*, Volume 33, Number 3, May-June 2017, pp. 539-555.
47. *Dankanich, J. W., Walker, M. L. R., Swiatek, M. W., Yim, J. T., "Recommended Practice for Pressure Measurements and Calculation of Effective Pumping Speeds in Electric Propulsion Testing," *Journal of Propulsion and Power*, Volume 33, Number 3, May-June 2017, pp. 668-680.
46. *Snyder, S., **Frieman, J. D.**, Walker, M. L. R., "Recommended Practice for Flow Control and Measurement in Electric Propulsion Testing," *Journal of Propulsion and Power*, Volume 33, Number 3, May-June 2017, pp. 556-565.
45. ***Schinder, A. M.**, Rimoli, J., Walker, M. L. R., "Investigation of Plasma Material Erosion Under Mechanical Stress," *Journal of Propulsion and Power*, Volume 33, Number 2, March-April 2017, pp. 433-447.
44. ***Walker, J. A., Langendorf, S. J.**, Walker, M. L. R., "Electrical Facility Effects on Hall Current Thrusters: Electron Termination Pathway Manipulation," *Journal of Propulsion and Power*, Volume 32, Number 6, November-December 2016, pp. 1365-1377.
43. ***Walker, J. A., Frieman, J. D.**, Khayms, V., Peterson, P. Y., King, D., Walker, M. L. R. "Electrical Facility Effects on Hall Effect Thruster Cathode Coupling: Discharge Oscillations and Facility Coupling," *Journal of Propulsion and Power*, Volume 32, Number 4, July-August 2016, pp. 844-855.
42. ***Langendorf, S. J.**, Walker, M. L. R., "Hysteresis and mode transitions in plasma sheath collapse due to secondary electron emission," *Journal of Applied Physics*, Volume 119, March 2016, pp. 113305 1-5.
41. ***Frieman, J. D., Walker, J. A.**, Khayms, V., King, D. Q., Walker, M. L. R., "Electrical Facility Effects on Hall Effect Thruster Cathode Coupling – Performance and Plume Properties," *Journal of Propulsion and Power*, Volume 32, Number 1, January-February 2016, pp. 251-264.
40. ***Walker, J. A., Langendorf, S. J.**, Walker, M. L. R., Polzin, K., Kimberlin, A., "Velocimetry of Cathode Particles in a Magnetoplasmadynamic Thruster Discharge Plasma," *Review of Scientific Instruments*, Volume 86, Number 7, July 2015, pp. 073513 1-10.
39. ***Williams, L. T.**, Walker, M. L. R., "Plume Structure and Ion Acceleration of a Helicon Plasma Source," *IEEE Transactions on Plasma Science*, Volume 43, Number 5, May 2015, pp. 1694-1705.
38. ***Singh, L. A.**, Walker, M. L. R., "A Review of Research in Low Earth Orbit Propellant Collection," *Progress in Aerospace Sciences*, Volume 75, April 2015, pp. 15-25.
37. ***Langendorf, S.**, Walker, M. L. R., "Effect of Secondary Electron Emission on the Plasma Sheath," *Physics of Plasma*, Volume 22, March 2015, 033515 1-8.
36. ***Langendorf, L.**, Xu, K., Walker, M. L. R., "Effects of Wall Electrodes on Hall Effect Thruster Plasma," *Physics of Plasmas*, Volume 22, February 2015, 023508.
35. *Schweigert, I., **Langendorf, S.**, Walker, M. L. R., Keidar, M., "Sheath structure transition controlled by secondary electron emission," *Plasma Sources Science and Technology*, Volume 24, Issue 2, February 2015, pp. 025012 1-9.

34. ***Singh, L. A.**, Sanborn, G., Turano, S., Walker, M. L. R., Ready, W. J., "Operation of a Carbon Nanotube Field Emitter Array in a Hall Effect Thruster Plume Environment," IEEE Transactions on Plasma Science Special Issue - Plasma Propulsion, Volume 43, Issue 1, January 2015, pp. 95-102.
33. ***Frieman, J. D., King, S. C.**, Walker, M. L. R., Khayms, V., King, D., "Role of a Conducting Chamber in the Hall Effect Thruster Electrical Circuit," Journal of Propulsion and Power, Volume 30, Number 6, November-December 2014, pp. 1471-1479.
32. ***Kwon, K.**, Walker, M. L. R., Mavris, D. N., "Study on Anomalous Electron Diffusion in the Hall Effect Thruster," International Journal of Aeronautical & Space Sciences, Volume 15, Number 3, September 2014, pp. 320-334.
31. ***Schinder, A.**, Walker, M. L. R., Rimoli, J., "3D Model for Erosion of a Hall Effect Thruster Discharge Channel Wall," Journal of Propulsion and Power, Volume 30, Number 5, September-October 2014, pp. 1373-1382.
30. ***King, S. T.**, Walker, M. L. R., Chianese, S. G., "Atmospheric Electric Propulsion Mission Performance Tool," Journal of Spacecraft and Rockets, Volume 51, Issue 3, May-June 2014, pp. 931-937.
29. ***Williams, L. T.**, Walker, M. L. R., "Initial Performance Evaluation of a Gridded RF Ion Thruster," Journal of Propulsion and Power, Volume 30, Number 3, May-June 2014, pp. 645-655.
28. *Burton, T., **Schinder, A. M.**, Capuano, G., Rimoli, J., Walker, M. L. R., Thompson, G. B., "Plasma Induced Erosion Microstructures in Boron Nitride-Silica Composites," Journal of Propulsion and Power, Volume 30, Number 3, May-June 2014, pp. 690-695.
27. ***Xu, K.**, Walker, M. L. R., "Effect of External Cathode Azimuthal Position on Hall Effect Thruster Plume," Journal of Propulsion and Power, Volume 30, Number 2, March-April 2014, pp. 506-513.
26. ***Martinez, R.**, Walker, M. L. R., "Power Deposition into the Discharge Channel of a Hall Effect Thruster," Journal of Propulsion and Power, Volume 30, Number 1, January-February 2014, pp. 209-220.
25. ***Williams, L. T.**, Walker, M. L. R., "Ion Production Cost of a Gridded Helicon Ion Thruster," Plasma Sources Science and Technology, Volume 22, Number 5, October 2013, pp. 055019 1-10.
24. ***Singh, L.**, Walker, M. L. R., "Charge Exchange Interactions on Near-Earth Proton Radiation for Orbit Perturbation of High Area-to-Mass Ratio Objects," Advances in Space Research, Volume 52, Issue 3, June 2013, pp. 496-504.
23. ***Giannelli, S., Kieckhafer, A. W.**, Walker, M. L. R., "Neutral Gas Expansion in a Cylindrical Helicon Discharge Chamber," Journal of Propulsion and Power, Volume 29, Number 3, May-June 2013, pp. 540-546.
22. ***Williams, L. T.**, Walker, M. L. R., "Thrust Measurements of a Helicon Plasma Source," Journal of Propulsion and Power, Volume 29, Number 3, May-June 2013, pp. 520-527.
21. ***Martinez, R. A.**, Walker, M. L. R., "Effect of Propellant Thermal Management on Neutral Residence Time in Hall Thrusters," Journal of Propulsion and Power, Volume 29, Number 3, May-June 2013, pp. 540-546.
20. ***Langendorf, S. J.**, Walker, M. L. R., "Characterization of Hall Effect thruster Propellant Distributors with Flame Visualization," Review of Scientific Instruments, Volume 84, Number 1, January 2013, pp. 013302 1-7.

19. ***Xu, K., Dao, H.**, Walker, M. L. R., "Potential Contour Shaping and Sheath Behavior with Wall Electrodes and Near-Wall Magnetic Fields in a Hall Thruster," *Physics of Plasma*, Volume 19, Number 10, October 2012, pp. 103502 1-6.
18. *Walker, M. L. R., Russell, R., **Singh, L.**, "Utilization of Residual Helium to Extend Satellite Lifetimes and Mitigate Space Debris," *Journal of Propulsion and Power*, Volume 28, Number 6, November 2012, pp. 1406-1412.
17. ***Xu, K.**, Walker, M. L. R., "Plume Characterization of an Ion Focusing Hall Thruster," *Journal of Propulsion and Power*, Volume 28, Number 5, September-October 2012, pp. 1105-1115.
16. ***Kwon, K.**, Walker, M. L. R., Mavris, D. N., "Self-Consistent, One-dimensional Analysis of the Hall Effect Thruster," *Plasma Sources Science & Technology*, Volume 20, Number 4, 2011, pp. 045021 1-15.
15. ***Xu, K.**, Walker, M. L. R., "Technique to Collimate Ions in a Hall Effect Thruster Discharge Chamber," *Journal of Propulsion and Power*, Volume 27, Number 3, May-June 2011, pp. 564-572.
14. ***Williams, L. T.**, Walker, M. L. R., Kumsomboone, V. S., Ready, W. J., "Lifetime and Failure Mechanisms of an Arrayed Carbon Nanotube Field Emission Cathode," *IEEE Transactions on Electron Devices*, Volume 57, Number 11, August 2010, pp. 3163-3168.
13. ***Book, C.**, Walker, M. L. R., "Effect of Anode Temperature on Hall Effect Thruster Performance," *Journal of Propulsion and Power*, September-October 2010, pp. 1036-1040.
12. ***Kieckhafer, A. W.**, Walker, M. L. R., "RF Power System for Thrust Measurements of a Helicon Plasma Source," *Review of Scientific Instruments*, Volume 81, Issue 7, July 2010, pp. 075106 1-8.
11. ***Palmer, D. D.**, Walker, M. L. R., "Operation of an Annular Helicon Plasma Source," *Journal of Propulsion and Power*, Volume 25, Number 5, September-October 2009, pp. 1013-1019.
10. ***Xu, K.**, Walker, M. L. R., "High-Power, Null-Type, Inverted Pendulum Thrust Stand," *Review of Scientific Instruments*, Volume 80, Number 5, May 2009, pp. 055103 1-6.
9. Walker, M. L. R., Gallimore, A. D., "Hall Thruster Cluster Operation with a Shared Cathode," *Journal of Propulsion and Power*, Volume 23, Number 3, May 2007, pp. 528-536.
8. ***Yano, M.**, Walker, M. L. R., "Generalized Theory of Annularly-Bounded Helicon Waves," *Physics of Plasmas*, Volume 14, Number 3, March 2007, pp. 033510 1-7.
7. Walker, M. L. R., Gallimore, A. D., "Performance Characteristics of a Cluster of 5-kW Laboratory Hall Thrusters," *Journal of Propulsion and Power*, Volume 23, Number 1, January 2007, pp. 35-43.
6. ***Yano, M.**, Walker, M. L. R., "Plasma Ionization by Annularly-Bounded Helicon Waves," *Physics of Plasmas*, Volume 13, Number 6, June 2006, pp. 063501 1-5.
5. Rovey, J. L., Walker, M. L. R., Peterson, P. Y., Gallimore, A. D., "A Magnetically-Filtered Faraday Probe for Measuring the Ion Current Density Profile of a Hall Thruster," *Review of Scientific Instruments*, Volume 77, Number 1, January 2006, pp. 013503 1-8.
4. Walker, M. L. R., Hofer, R. R., Gallimore, A. D., "Ion Collection in Hall Thruster Plumes," *Journal of Propulsion and Power*, Volume 22, Number 1, January-February 2006, pp. 205-209.
3. Walker, M. L. R., Victor, A. L., Hofer, R. R., Gallimore, A. D., "Effect of Backpressure on Ion Current Density Measurements in Hall Thruster," *Journal of Propulsion and Power*, Volume 21, Number 3, May-June 2005, pp. 408-415.

2. Walker, M. L. R., Gallimore, A. D., “Neutral Density Map of Hall Thruster Plume Expansion in a Vacuum Chamber,” *Review of Scientific Instruments*, Volume 76, Number 5, May 2005, pp. 053509 1-10.
1. Walker, M. L. R., Gallimore, A. D., Cai, C., Body, I. D., “Vacuum Chamber Pressure Maps of a Hall Thruster Cold Flow Expansion,” *Journal of Propulsion and Power*, Volume 20, Number 6, Nov.–Dec. 2004, pp. 1127-1131.

B2. Conference Presentation with Proceedings (Refereed)

1. Boyd, I. D., Cai, C., Walker, M. L. R., and Gallimore, A. D., “Computation of Neutral Gas Flow from a Hall Thruster into a Vacuum Chamber,” *Peer-reviewed Proceedings of the 23rd International Conference on Rarefied Gas Dynamics*, Whistler, BC, Canada, Aug. 2002, 123-133.

B3. Other Refereed Material

2. B. Jorns, A. Yalin, M. L. R. Walker, J. Little, K. Hara, Y. Raitzes, A. Smolyakov, I. Kaganovich, and M. Cappelli, “Plasma Propulsion Research in Academia,” *National Academy of Sciences, 2020 Decadal Assessment of Plasma Science*, 2019.
1. *National Research Council. *Reusable Booster System: Review and Assessment*. Washington, DC: The National Academies Press, 2012.
 Authors: D. M. Van Wie, E. H. Bock, Y. C. Brill, A. V. Burman, D. C. Byers, L. H. Caveny, R. S. Dickman, M. K. Jacobs, T. J. Lee, C. K. N. Patel, D. Roussel-Dupre, R. L. Sackheim, P. D. Spanos, M. L. R. Walker, B. T. Zinn
<http://www.nap.edu/catalog/13534/reusable-booster-system-review-and-assessment>

B4. Submitted Journal Articles (with the date of submission)

3. **Suazo Betancourt, J. L.**, Grauer, S., Bak, J., Steinberg, Walker, M. L. R., “Bayesian Model Selection for Thomson Scattering,” *Review of Scientific Instruments*, May 2023. – In Review.
2. **Jovel, D.**, Walker, M. L. R., “Current Pathways Model for Hall Thruster Plumes in Ground-based Vacuum Test Facilities,” *Journal of Propulsion and Power*, March 2023. – In Review.
1. Lee, D., **Suazo Betancourt, J. L.**, Lev, D., Walker, M. L. R., “Nitrogen Admixture-driven Electron Cooling and Streamer Dynamics in Atmospheric DC Nanosecond-pulsed Argon Plasmas,” *Plasma Sources Science and Technology*, March 2023. – In Review.

C. OTHER PUBLICATIONS AND CREATIVE PRODUCTS

C1. Non-refereed Conference Presentations with Proceedings

64. Walker, M. L. R., Lev, D., Jorns, B., Foster, J., Gallimore, A. D., Gorodetsky, A., Rovey, J. L., Chew, H. B., Levin, D., Williams, J. D., Yalin, A., Wirz, R. E., Marian, J., Boyd, I. D., Hara, K., Lemmer, K., “Overview of the Joint Advanced Propulsion Institute (JANUS),” *IEPC-2022-156*, 37th International Electric Propulsion Conference, Boston, MA, June 19-23, 2022.
63. Wirz, R., Walker, M. L. R., et al., “Predictive Engineering Modeling for Life and Performance Assessment of Electric Propulsion Systems,” *IEPC-2022-410*, 37th International Electric Propulsion Conference, Boston, MA, June 19-23, 2022.

62. **Brown, N. P.**, Steinberg, A. M., Deibel, J. A., Walker, M. L. R., “Assessment of the Capability of Terahertz Time-Domain Spectroscopy as a Plasma Diagnostic,” AIAA Propulsion and Energy Forum, Virtual Event, August 24-28, 2020.
61. **Brown, N. P.**, Walker, M. L. R., “Terahertz Time-Domain Spectroscopy as an Electric Propulsion Plasma Diagnostic,” IEPC-2019-408, 36th International Electric Propulsion Conference, Vienna, Austria, September 15-20, 2019.
60. Schweigert, I., Burton, T. S., Thompson, G. B., **Langendorf, S.**, Walker, M. L. R., Keidar, M., “Transition in Sheath Structure Near Emissive Grooved Surface in Discharge Plasma Controlled by Electron Beam,” 70th Annual Gaseous Electronics Conference, Pittsburgh, Pennsylvania, November 6-10, 2017.
59. Bogorad, A. L., August, K., Lichtin, D., Pytel, J., Payne, K., Herschitz, R., Chad, S., Capots, L., Noakes, B., Dubisher, R., Walker, M. L. R., **Mendez Ramos, E. D.**, **Walker, J.**, **Prestridge, N.**, “Interaction of Spacecraft Arcjet Power Subsystem with Combined On-orbit Environments and Electric Propulsion Plume: Ground Test Results,” IEPC-2017-225, 35th International Electric Propulsion Conference, Atlanta, Georgia, October 8-12, 2017.
58. **Frieman, J. D.**, Liu, T. M., Walker, M. L. R., “Development of Background Flow Model of Hall Thruster Neutral Ingestion,” IEPC-2017-008, 35th International Electric Propulsion Conference, Atlanta, Georgia, October 8-12, 2017.
57. **Jovel, D. R.**, **Sforzo, B. A.**, Manion, K. L., **Brown, N. P.**, Wang, X., Wu, D. J., Walker, M. L. R., Yang, V., “Research Capabilities in Propulsion and Combustion Science at the Georgia Institute of Technology,” AIAA/SAE/ASEE 53rd Joint Propulsion Conference, Atlanta, GA, July 10-12, 2017.
56. Cohen, M. B., Thompson, L., Opalinski, N., Singletary, P., Walker, M. L. R., **Chan, C.**, Golkowski, M., “Broadband Electrically Short Transmitters via Hi-Speed Time-Varying Antenna Properties,” 2017 IEEE AP-S Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting, San Diego, CA, July 9-14, 2017.
55. **Frieman, J. D.**, **Brown, N. P.**, **Liu, C. Y.**, Liu, T. M., Walker, M. L. R., Khayms, V., King, D. Q., “Electrical Facility Effects on the Operation of a Low-Power Hall Effect Thruster,” JANNAF Propulsion Meeting, Phoenix, AZ, December 5-8, 2016.
54. **Frieman, J. D.**, **Brown, N. P.**, **Liu, C. Y.**, Liu, T. M., Walker, M. L. R., Khayms, V., King, D. Q., “Impact of Propellant Selection on Hall Effect Thruster Electrical Facility Effects,” JANNAF Propulsion Meeting, Phoenix, AZ, December 5-8, 2016.
53. **Frieman, J. D.**, Liu, T.M., Walker, M. L. R., Makela, J., Maters, A., Peterson, P. Y., “Performance Evaluation of the T-40 Low-Power Hall Current Thruster,” AIAA/SAE/ASEE 52nd Joint Propulsion Conference and Exhibit, Salt Lake City, Utah, July 25-27, 2016.
52. **Schinder, A. M.**, Rimoli, J. J., Walker, M. L. R., “Plasma Erosion of Stressed Fused Silica and M26 Borosil,” AIAA/SAE/ASEE 52nd Joint Propulsion Conference and Exhibit, Salt Lake City, Utah, July 25-27, 2016.
51. ***Scogin, T.**, Liu, T. M., Walker, M. L. R., Polzin, K., Dankanich, J., “Initial Thrust Measurements of Marshall’s Ion-Ion Thruster,” 51st Joint Propulsion Conference and Exhibit, Orlando, FL, July 27-29, 2015.
50. ***Schweigert, I.**, **Langendorf, S.**, Walker, M. L. R., Keidar, M., “Plasma-Wall Interaction Controlled by Secondary Electron Emission,” IEPC-2015-343, 34th International Electric Propulsion Conference, Kobe-Hyogo, Japan, July 4-10, 2015.

49. *Walker, J. A., Langendorf, S., Walker, M. L. R., Khayms, V., “Electrical Facility Effects on Hall Effect Thrusters: Electron Termination Pathway Manipulation through the Bias of a Downstream Electrode,” 62nd Joint Army Navy NASA Air Force (JANNAF) Propulsion Meeting, Nashville, TN, June 1-15, 2015.
48. *Park, C-S., Walker, M. L. R., Kim, S-O., “Flexible microplasma thrusters using jet-to-jet coupling effect,” The 8th International Workshop on Microplasmas (IWM 2015), Seton Hall University, Newark, NJ, May 11–15, 2015.
47. *Schweigert, I., Langendorf, S. J., Keidar, M., Walker, M. L. R., “Sheath Structure Transition Controlled by Secondary Electron Emission at Low Gas Pressure,” 67th Annual Gaseous Electronics Conference, Raleigh, NC, November 2-7, 2014.
46. *Schloeder, N., Liu, T. M., Polzin, K., Dankanich, J., Aanesland, A., Walker, M. L. R., “Design and Preliminary Performance Testing of Electronegative Gas Plasma Thruster,” AIAA-2014-3452, 50th Joint Propulsion Conference and Exhibit, Cleveland, OH, July 28-30, 2014.
45. *Schloeder, N., Frieman, J., Walker, M. L. R., “Facility Effects on Helicon Plasma Source Operation,” AIAA-2014-3713, 50th Joint Propulsion Conference and Exhibit, Cleveland, OH, July 28-30, 2014.
44. *Langendorf, S., Walker, M. L. R., “Effects of Wall Material, Wall Temperature, and Surface Roughness on Plasma Sheath,” AIAA-2014-4031, 50th Joint Propulsion Conference and Exhibit, Cleveland, OH, July 28-30, 2014.
43. *Walker, J., Frieman, J., Khayms, V., Walker, M. L. R., “Hall Effect Thruster Electrical Interaction with a Conductive Vacuum Chamber,” AIAA-2014-3711, 50th Joint Propulsion Conference and Exhibit, Cleveland, OH, July 28-30, 2014.
42. *Frieman, J., King, S., Khayms, V., Walker, M. L. R., “Preliminary Assessment of the Role of a Conducting Chamber in Hall Effect Thruster Electrical Circuit,” AIAA-2014-3712, 50th Joint Propulsion Conference and Exhibit, Cleveland, OH, July 28-30, 2014.
41. *Burton, T., Thompson, G. B., Walker, M. L. R., Rimoli, J., Schinder, A. M., Capuano, G., “Microstructural Characterization of Eroded M26 HET Thruster Wall,” The Minerals, Metals and Materials Society 2014 143rd Annual Meeting & Exhibition; San Diego, CA February 16-20, 2013.
40. *Liu, T. M., Walker, M. L. R., “Integration of Electric Propulsion Systems with Spacecraft – An Overview,” IEPC-2013-355, 33rd International Electric Propulsion Conference, Washington, D.C., October 6-10, 2013.
39. *Singh, L. A., Walker, M. L. R., Sanborn, G. P., Turano, S. P., Ready, W. J., “Operation of Spindt-Type Carbon Nanotube Cold Cathodes in a Hall Effect Thruster Environment,” IEPC-2013-348, 33rd International Electric Propulsion Conference, Washington, D.C., October 6-10, 2013.
38. *Dankanich, J. W., Walker, M. L. R., Swiatek, M. W., Yim, J. T., “Recommended Practice for Pressure Measurements and Calculation of Effective Pumping Speeds during Electric Propulsion Testing,” IEPC-2013-358, 33rd International Electric Propulsion Conference, Washington, D.C., October 6-10, 2013.
37. *Frieman, J. D., Walker, M. L. R., Snyder, S., “Guide to Flow Measurement for Electric Propulsion Systems,” IEPC-2013-425, 33rd International Electric Propulsion Conference, Washington, D.C., October 6-10, 2013.
36. *Polk, J., Pancotti, A., King, S. T., Walker, M. L. R., Haag, T., Blakely, J., Ziemer, J., “Recommended Practices in Thrust Measurements,” IEPC-2013-440, 33rd International Electric Propulsion Conference, Washington, D.C., October 6-10, 2013.

35. ***Langendorf, S.**, Walker, M. L. R., Rose, L., Brieda, L., Keidar, M., "Effect of ion-neutral collisions on sheath potential profile," IEPC-2013-346, 33rd International Electric Propulsion Conference, Washington, D.C., October 6-10, 2013.
34. ***Walker, J. A., Langendorf, S.**, Walker, M. L. R., Polzin, K., Kimberlin, A., "High-Speed Imaging of the First Kink Mode Instability in a Magnetoplasma Dynamic Thruster," IEPC-2013-384, 33rd International Electric Propulsion Conference, Washington, D.C., October 6-10, 2013.
33. ***Schinder, A. M.**, Walker, M. L. R., Rimoli, J., "3D Atomic Sputtering of Composite Material," AIAA-2013-4127, 49th Joint Propulsion Conference and Exhibit, San Jose, CA, July 15-17, 2013.
32. ***Langendorf, S.**, Walker, M. L. R., Rose, L., Keidar, M., Brieda, L., "Wall Material Effects on Sheath Potential Profile," AIAA-2013-4128, 49th Joint Propulsion Conference and Exhibit, San Jose, CA, July 15-17, 2013.
31. *Burton, T., **Schinder, A. M.**, Capuano, G., Rimoli, J., Walker, M. L. R., Thompson, G. B., "Erosion Characteristics in a Composite BN-SiO₂ Hall Effect Thruster Chamber Wall," 37th Annual Conference on Composites, Materials, and Structures, Cocoa Beach, FL, January 28-31, 2013.
30. ***Xu, K.**, Walker, M. L. R., "Potential Contours in Ion Focusing Thruster," AIAA-2012-3790, 48th Joint Propulsion Conference & Exhibit, Atlanta, GA, July 29-August 2, 2012.
29. ***Singh, L.**, Walker, M. L. R., "Orbit Perturbation of High Area-to-Mass Objects with High-Energy Neutrals from Charge Exchange Collisions with Near-Earth Protons," 39th COSPAR Scientific Assembly, Mysore, India, July 2012.
28. *Hoyt, R. P., Wrobel, J. S., **Walker, J. A., Langendorf, S.**, Walker, M. L. R., "Thrust Performance of an MPD Thruster with a Ring-Cusp Magnetic Nozzle," Joint Army Navy NASA Air Force (JANNAF) Propulsion Meeting, Huntsville, AL, December 5-8, 2011.
27. ***Kieckhafer, A. W.**, Walker, M. L. R., "Recirculating Liquid Nitrogen System for Operation of Cryogenic Pumps," IEPC-2011-217, 32nd International Electric Propulsion Conference, Hamburg, Germany, September 2011.
26. ***Williams, L.**, Walker, M. L. R., "Thrust Measurements of a Helicon Plasma Source," AIAA-2011-5893, 47th Joint Propulsion Conference & Exhibit, San Diego CA, August 2011.
25. ***Xu, K. G.**, Walker, M. L. R., "Plume Characterization of an Ion Focusing Hall Thruster," AIAA-2011-5588, 47th Joint Propulsion Conference & Exhibit, San Diego, CA, August 2011.
24. ***King, S. T.**, Walker, M. L. R., "Ambient Atmosphere Ion Thruster Proof-of-concept Modeling," AIAA-2011-6000, 47th Joint Propulsion Conference & Exhibit, San Diego, CA, August 2011.
23. ***Kwon, K.**, Mavris, D. N., Walker, M. L. R., "New Approach to Numerical Analysis of the Hall Thruster," AIAA-2010-6523, 46th Joint Propulsion Conference, Nashville, TN, July 25-28, 2010.
22. ***Xu, K.**, Walker, M. L. R., "Evaluation of Technique to Focus Ions in Hall Effect Thruster Discharge Chamber," 57th Joint Army Navy NASA Air Force (JANNAF) Propulsion Meeting, Colorado Springs, CO, May 3-7, 2010.
21. *Jones, C., Masse, D., Glass, C., Wilhite, A., Walker, M. L. R., "PHARO-Propellant Harvesting of Atmospheric Resources in Orbit," IEEEAC-1089, IEEE Aerospace Conference, Big Sky, MT, March 6-13, 2010.
20. ***Williams, L.**, Walker, M. L. R., Kumsomboone, V. S., Ready, W. J., "Experimental Characterization of Carbon Nanotube Cold Cathode Lifetime Operation," AIAA-2009-5003, 45th Joint Propulsion Conference, Denver, CO, August 2-5, 2009.

19. *Carlsson, J., Pavarin, D., Walker, M., “Analytic Wave Solution with Helicon and Trivelpiece-Gould Modes in an Annular Plasma,” B61, 18th Topical Conference on Radio Frequency Power in Plasmas, Gent, Belgium, June 24-26, 2009.
18. *Williams, L., Walker, M. L. R., “Experimental Characterization of a Carbon Nanotube Field Emission Cathode,” AIAA-2008-5015, 44th Joint Propulsion Conference, Hartford, CT, July 20-23, 2008.
17. *Palmer, D., Walker, M. L. R., “Performance of an Annular Helicon Plasma Source,” AIAA-2008-4926, 44th Joint Propulsion Conference, Hartford, CT, July 20-23, 2008.
16. *Palmer, D., Walker, M. L. R., Manente, M., Carlsson, J., Bramanti, C., Pavarin, D., “Experimental Analysis of a Low-Power Helicon Thruster,” AIAA-2008-4925, 44th Joint Propulsion Conference, Hartford, CT, July 20-23, 2008.
15. *Pavarin, D., Manente, M., Walker, M. L. R., Carlsson, J., Bramanti, C., Saggin, B., “Feasibility Study of a Medium-Power Helicon Thruster,” AIAA-2008-4927, 44th Joint Propulsion Conference, Hartford, CT, July 20-23, 2008.
14. *King, S., Kluever, C. A., Walker, M. L. R., “Small Satellite LEO Maneuvers with Low-Power Electric Propulsion,” AIAA-2008-4516, 44th Joint Propulsion Conference, Hartford, CT, July 20-23, 2008.
13. *Palmer, D., Walker, M. L. R., Manente, M., Carlsson, J., Bramanti, C., Pavarin, D., “Experimental Analysis of Low-Power Helicon Thruster,” 5th International Spacecraft Propulsion Conference, Crete, Greece, May 5-9, 2008.
12. *Manente, M., Walker, M. L. R., Carlsson, J., Bramanti, C., Pavarin, D., “Feasibility Study of Low-Power Helicon Thruster,” 5th International Spacecraft Propulsion Conference, Crete, Greece, May 5-9, 2008.
11. *Palmer, D., Akinli, C., Walker, M. L. R., “Characterization of an Annular Helicon Plasma Source,” IEPC-2007-202, 30th International Electric Propulsion Conference, Florence, Italy, September 17-20, 2007.
10. *Akinli, C., Palmer, D., Walker, M. L. R., “Comparison of the Theoretical and Experimental Performance of an Annular Helicon Plasma Source,” IEPC-2007-0236, 30th International Electric Propulsion Conference, Florence, Italy, September 17-20, 2007.
9. *Stubbers, R., Jurczyk, B. E., Rovey, J. L., Walker, M. L. R., Alman, D. A., Coventry, M. D., “Compact Toroid Formation Using an Annular Helicon Preionization Source,” AIAA-2007-5307, 43rd Joint Propulsion Conference, Cincinnati, OH, July 8-11, 2007.
8. *Yano, M., Williams, L., Walker, M. L. R. “Design and Operation of an Annular Helicon Plasma Source,” AIAA-2007-5309, 43rd Joint Propulsion Conference, Cincinnati, OH, July 8-11, 2007.
7. Gilland, J. H., Walker, M. L. R., Pencil, E. J., “Thrust Stand for Applied Field MPD Thrusters,” IEPC-2005-215, 29th International Electric Propulsion Conference, Princeton, NJ, Oct. 31-Nov. 4, 2005.
6. Walker, M. L. R., Gallimore, A. D., “Performance Characteristics of a Cluster of 5 kW Laboratory Hall Thrusters,” AIAA-2004-3767, 40th Joint Propulsion Conference, Fort Lauderdale, FL, July 11-14, 2004.
5. Rovey, J. L., Walker, M. L. R., Gallimore, A. D., Peterson, P. Y., “Evaluation of a Magnetically-Filtered Faraday Probe for measuring the ion current density profile of a Hall Thruster,” AIAA-2004-3948, 40th Joint Propulsion Conference, Fort Lauderdale, FL, July 11-14, 2004.

4. Walker, M. L. R., Gallimore, A. D., “Hot Flow Pressure Map of a Vacuum Facility as a Function of Flow Rate to Study Facility Effects,” IEPC-0077-03, 28th International Electric Propulsion Conference, Toulouse, France, March 17-21, 2003.
3. Walker, M. L. R., Gallimore, A. D., Cai, C., Body, I. D., “Pressure Map of a Facility as a Function of Flow Rate to Study Facility Effects,” AIAA-2002-3815, 38th Joint Propulsion Conference, Indianapolis, IN, July 7-10, 2002.
2. Walker, M. L. R., Hofer, R. R., Gallimore, A. D., “The Effects of Nude Faraday Probe Design and Vacuum Facility Backpressure on the Measured Ion Current Density Profile of Hall Thruster Plumes,” AIAA-2002-4253, 38th Joint Propulsion Conference, Indianapolis, IN, July 7-10, 2002.
1. Hofer, R. R., Walker, M. L. R., Gallimore, A. D., “A Comparison of Nude and Collimated Faraday Probes for Use with Hall Thrusters,” IEPC-01-020, 27th International Electric Propulsion Conference, Pasadena, CA, October 15-19, 2001.

C2. Patents

Boldface identifies the names of graduate student advisees.

8. *US Patent No. 10,823,158, “Deployable Gridded Ion Thruster,” Authors: Walker, M. L. R., **Cheong, C.**, Filed February 19, 2019, Issued: November 3, 2020.
7. *“Slotted Channel Distributor for Low-Pressure Propellant Injection,” Authors: **J. Walker**, T. Liu M. L. R. Walker, Provisional Patent Filed July 19, 2016, SN 62/364,003.
6. *“Method and Pump Design for in-well Hydraulic Fracture Pumping,” Authors: B. Sforzo, M. L. R. Walker, Provisional Patent Filed April 29, 2015, SN 62/154,443
5. “Improved Magnetics for Hall Effect Thrusters,” Authors: E. J. Britt, K. Koester, M. L. R. Walker, R. H. Clark, Provisional Patent Filed April 2014.
4. U.S. Patent No. 8,604,681, “Cold Cathodes and Ion Thrusters and Methods of Making and Using Same,” Authors: M. L. R. Walker, W. J. Ready, Filed March 2009, Issued: December 10, 2013.
3. “Ion Engine using Residual Helium Pressurant Gas in GEO Satellites to extend Lifetimes and Mitigate Debris,” Authors: M. L. R. Walker, R. Russell, Provisional Patent Filed October 2013, SN 61/897,497.
2. *“Low-Voltage Operation of Hall Effect Thrusters,” Authors: M. L. R. Walker, **S. King**, Provisional Patent Filed October 2013, SN 61/898,111.
1. *“Dual-Use Hydrazine Propulsion Thruster System,” Authors: M. L. R. Walker, **L. T. Williams**, C. L. Liotta, P. Pollet, H. Huttenhower, U.S. Patent Application No. 13/494,851, filed June 2012.

C3. Other Creative Products

10. “Georgia Tech Shares \$15M From NASA to Advance Deep Space Exploration,” Georgia Tech Research Horizons, April 2021.
<https://rh.gatech.edu/news/646735/georgia-tech-shares-15m-nasa-advance-deep-space-exploration>
9. “Plasma Propulsion – Extrapolating to Space,” MIPSE International Low-Temperature Plasma Community Newsletter 19, December 2021
https://mipse.umich.edu/iltpc_newsletter19.php
8. “Warp Speed Ahead,” We are Engineers Magazine, May 8, 2020
<https://coe.gatech.edu/news/2020/05/warp-speed-ahead>

7. Georgia Tech Alumni Magazine, “Dynamic Duos”
<https://www.gtalumni.org/s/1481/alumni/17/magazine.aspx?sid=1481&gid=21&pgid=5717>
6. “The Future is Small,” Defense Systems News Digest, December 6, 2016
<https://www.dsiac.org/sites/default/files/digest/ds-news-digest-6-dec-2016.pdf>
5. *Schloeder, N., Liu, T. M., Walker, M. L. R., “RF Source Modifications to Improve Performance of an Electronegative Plasma Thruster,” NASA Tech Brief Magazine, Vol. 40, No. 5, MFS-33195-1, May 2016, pp. 20.
4. Georgia Tech Research Horizons: <http://www.rh.gatech.edu/features/future-small>
Link to Video: <https://www.youtube.com/watch?v=Y2tUrqtRess>
3. Speaker in the Georgia Institute of Technology Video Series
“TECH + knowledge + Y: What is electric propulsion?”
Link to Video: <https://www.youtube.com/watch?v=jivy6SWdosw>
2. Speaker in the College of Engineering Video for Aerospace Engineering
Link to Video: <https://www.youtube.com/watch?v=X9Jaxt6flt4>
1. Walker, M. L. R., "Electric Propulsion," Aerospace America, No. 12, December 15, 2005, pp. 54-55.

D. PRESENTATIONS

D1. Keynote Addresses and Plenary Lectures

3. “In-Space Propulsion: Strategic Choices and Options,” Space Subcommittee Hearing, House of Representatives, Washington, D.C., June 29, 2017. – Invited.
<https://science.house.gov/hearings/in-space-propulsion-strategic-choices-and-options>
2. “Unique Applications of Electric Propulsion,” 18th Brazilian Colloquium of Orbital Dynamics, Aguas de Lindoia, Brazil, December 1, 2016. – Invited.
1. “Enjoy the Journey,” National Youth Leadership Forum: Engineering & Technology, Atlanta, GA, July 19, 2015. – Invited.
 - Also presented at National Youth Leadership Forum: Engineering & Technology, Atlanta, GA, June 28, 2015. – Invited.
 - Also presented at National Youth Leadership Forum: Engineering & Technology, Atlanta, GA, July 7, 2016. – Invited.
 - Also presented at National Youth Leadership Forum: Engineering & Technology, Atlanta, GA, July 16, 2017. – Invited.

D2. Invited Conference and Workshop Presentations

15. Invited Lecture: “Electric Propulsion,” 1st US Low-temperature Plasma Summer School, University of Minnesota, June 16, 2022.
14. Panel Member: “Space Propulsion,” 2nd Annual John H. Glenn Memorial Symposium, Cleveland, Ohio, July 16, 2020. – Invited
Link to Video: <https://www.youtube.com/watch?v=XIqDHsmsbPc&t=22s>
13. Panel Member: “Space Propulsion,” Inaugural John H. Glenn Memorial Symposium, Cleveland, Ohio, July 11, 2019. – Invited.
Links to Video:
<https://www.youtube.com/watch?v=S-43vo1jpf0>
<https://www.youtube.com/watch?v=De0ExjIDXQE&t=1012s>

12. "Influence of Thermally Induced Cracking on Hall Thruster Wall Erosion," Micropropulsion Workshop, Washington, D.C., July 31-August 1, 2018.
11. "A Path to Predicting Facility Effects," Joint Army Navy NASA Air Force (JANNAF) Conference, Tucson, AZ, December 5, 2016. – Invited.
10. Panel Member - Electric Propulsion Technology Specialist: "Space Propulsion," 66th International Astronautics Congress, Jerusalem, Israel, October 14, 2015. – Invited.
Link to Video: https://www.youtube.com/watch?v=pbNK682xh_I
9. "Next Steps in the AFOSR Far from Equilibrium Plasma Program" UCLA, Los Angeles, CA, August 28, 2014. – Invited.
8. "Center of Excellence for Space Propulsion," Mr. Scott Correll, Program Executive Officer of Air Force Space Launch, Chantilly, VA, May 21, 2012. – Invited.
7. "Center of Excellence for Space Propulsion," Air Force Space and Missile Command, Los Angeles, CA, March 20, 2012. – Invited.
6. "Center of Excellence for Space Propulsion," Air Force Space and Missile Command, Los Angeles, CA, January 27, 2012. – Invited.
5. "Overview of Electric Propulsion Activities in Academia," JANNAF Meeting, Huntsville, AL, December 5, 2011. – Invited.
4. "Comprehensive Study of Plasma-Wall Sheath Transport Phenomena" Air Force Office of Scientific Research, Cleveland, OH, November 29, 2011. – Invited.
3. "Georgia Tech Research Activities," National Institute for Rocket Propulsion Systems, University of Alabama-Huntsville/NASA Marshall Space Flight Center, October 14, 2011 – Invited.
2. "Electric Propulsion Activities at GA Tech," NASA Glenn Research Center – Cleveland, OH, May 25, 2010.
1. "Proof of Principle Research on Advanced Helicon Thruster Performance," Air Force Office of Scientific Research Electric Propulsion Program Strategic Review – Ann Arbor, MI, September 25, 2009.

D3. Conference and Workshop Presentations

4. ***Langendorf, S.**, Walker, M. L. R., "Effects of Wall Material, Wall Temperature, and Surface Roughness on the Plasma Sheath," 41st IEEE International Conference on Plasma Science (ICOPS), Washington DC, May 25-29, 2014.
3. ***Palmer, D., Yano, M.**, Beal, B., Walker, M. L. R., "Characterization of Annular and Cylindrical Helicon Sources," 9th International Workshop on the Interrelationship between Plasma Experiments in Laboratory and Space, Cairns, Australia, August 5-8, 2007.
2. ***Sharma, J.**, Walker, M. L. R., "START: Utilizing Near-Earth Asteroids with Tether Technologies," NASA Institute of Advanced Concepts, Atlanta, GA, March 7, 2007.
1. ***Stubbers, R.**, Walker, M. L. R., "High-Efficiency Compact Toroidal Plasma Acceleration Using Annular Helicon Pre-Ionization for High Power, High Specific Impulse Electric Space Propulsion," Air Force Office of Scientific Research Space Propulsion Power Contractors Review – Annapolis, Maryland, September 28, 2006.

D4. Invited Seminar Presentations

Dr. Walker has delivered invited seminars ranging from audiences at DLR of Germany to the California Institute of Technology.

29. “Challenges Predicting the Lifetime of Hall Effect Thrusters,” Princeton Plasma Physics Laboratory Colloquium, February 2, 2022. – Invited (virtual).
28. “Status of Electric Propulsion,” NASA Engineering & Safety Center (NESC) Propulsion Technical Discipline Team (TDT), June 9, 2021. – Invited (virtual).
27. “Challenges Predicting the Lifetime of Hall Effect Thrusters,” Chair’s Distinguished Seminar, University of Michigan, Ann Arbor, MI, March 18, 2021. – Invited (virtual).
26. “Challenges Predicting the Lifetime of Hall Effect Thrusters,” University of Illinois, Urbana-Champaign, IL, October 28, 2019. – Invited.
25. “Challenges Predicting the Lifetime of Hall Effect Thrusters,” University of Maryland, College Park, MD, April 18, 2019. – Invited.
24. “Erosion Mechanisms in the Hall Effect Thruster,” Pennsylvania State University, State College, PA, September 19, 2018. – Invited.
23. “Discharge Channel Erosion in the Hall Effect Thruster,” Atlanta IEEE Chapter: Aerospace and Electronic Systems Society and Geoscience and Remote Sensing Society, Atlanta, GA, April 19, 2018. – Invited.
22. “Discharge Channel Erosion in the Hall Effect Thruster,” Duke University, Durham, NC, November 20, 2017. – Invited.
21. “Material Erosion in the Hall Effect Thruster,” University of Giessen, Germany, March 2, 2017. – Invited.
20. “Activities in Electric Propulsion,” DLR, Gottingen, Germany, February 28, 2017. – Invited.
Also delivered at Airbus Safran Launchers, Lampoldshausen, Germany, February 27, 2017. – Invited.
19. “US Space Flight,” NSBE Aerospace Sciences Conference, Washington, D.C., August 27, 2016. – Panelist.
18. “Writing Proposals/Engaging Funding Agencies,” Academic and Research Leadership Network, Boston, MA, March 26, 2016. – Invited.
17. “Material Erosion in the Hall Effect Thruster,” California Institute of Technology, Pasadena, CA, December 4, 2015. – Invited.
16. “Discharge Channel Erosion in the Hall Effect Thruster,” Los Alamos National Laboratory, Los Alamos, NM, May 26, 2015. – Invited.
15. “Life in Academia: The First Five Years,” NextProf Workshop, University of Michigan, Ann Arbor, MI, May 12, 2015. – Panelist.
14. “Branding, Marketing, and Selling Your Research,” Academic and Research Leadership Network, Anaheim, CA, March 27, 2015. – Invited.
13. “Material Erosion in the Hall Effect Thruster” Georgia Institute of Technology School of Earth and Atmospheric Science Planetary Seminar Series, January 27, 2015. – Invited.
12. “Material Erosion in the Hall Effect Thruster,” Exponent, Menlo Park, CA, December 9, 2014. – Invited.

11. “Aerospace Applications of Carbon Nanotube-based Electron Emitters,” Boeing, El Segundo, CA, April 30, 2014. – Invited with William Ready and Glenn Hopkins of the Georgia Tech Research Institute.
10. “Electric Propulsion Facility Design,” SpaceX, Hawthorne, CA, January 2013. – Invited.
9. “Review of VASIMR,” American Pacific Corporation, Las Vegas, NV, April 23, 2009. – Invited.
8. “Application of Propellantless Cathodes to ORS Missions,” Operationally Responsive Space – Kirtland, AFB, November 5, 2008.
7. “Hall Effect Thruster Applications for Commercial Satellites,” Space Systems Loral, Palo Alto, CA, August 19, 2008. – Invited.
6. “Optimization of the Internal Magnetic Field of an 8-cm Ion Engine,” L-3 ETI, El Segundo, CA, August 1, 2008. – Invited.
5. “High Thrust-to-Power Hall Thrusters,” Purdue University, West Lafayette, IN April 7, 2008. – Invited.
4. “High Thrust-to-Power Hall Thrusters,” Virginia Tech, Blacksburg, VA February 25, 2008. – Invited.
3. “Research Activities in High-Power Electric Propulsion,” American Pacific Corporation, Las Vegas, NV, March 14, 2007. – Invited.
2. “Electric Propulsion Activities at the Georgia Institute of Technology,” American Pacific Corporation, Las Vegas, NV, September 8, 2006. – Invited.
1. “Electric Propulsion Research Activities at the University of Michigan,” University of Pisa, Sept. 2003. – Invited.

D5. Other Presentations

1. “Solar Electric Propulsion Demonstration Mission Concept Studies,” NASA Glenn Research Center, Cleveland, OH, May 10, 2012. – Invited.

E. GRANTS AND CONTRACTS

Dr. Walker has served as PI on 92 research efforts with a total value of \$42.2M, with more than \$24.5M of the total value awarded within the last five years.

E1. As Principal Investigator

92. Title of Project: Hall Thruster Characterization Test with Xenon and/or Krypton
Agency/Company: Busek
Total Dollar Amount: \$224,906
Role: PI
Collaborators: -
Period of Contract: 6/2023 – 9/2024 (4 months)
Candidate's Share: 100% (3 person months/year)
91. Title of Project: Understanding Wave Generation and Energetic Electron Beam Propagation Using a Space-Based Accelerator System
Agency/Company: Verus
Total Dollar Amount: \$52,861.45
Role: PI
Collaborators: -
Period of Contract: 10/2022 – 9/2023 (12 months)
Candidate's Share: 100% (0.5 person months/year)
90. Title of Project: Faraday Rotation Imaging of Low-Density Plasmas on Z-Machine
Agency/Company: Sandia National Laboratories
Total Dollar Amount: \$52,000.00
Role: PI
Collaborators: N/A
Period of Contract: 12/2022 – 9/2023 (10 months)
Candidate's Share: 100% (0.5 person months/year)
89. Title of Project: Ford Fellowship – Understanding Wave Generation and Energetic Electron Beam Propagation
Agency/Company: The National Academies
Total Dollar Amount: \$81,000.00
Role: PI
Collaborators: Graduate Student Fellowship – Christopher Roper
Period of Contract: 11/2022 – 5/2025
Candidate's Share: 100%
88. Title of Project: Characterization of Propulsion Device with a Torsional System
Agency/Company: Quantum Dynamics Enterprises, Inc.
Total Dollar Amount: \$23,443.95
Role: PI
Collaborators: N/A
Period of Contract: 10/2022 – 1/2023
Candidate's Share: 100%

87. Title of Project: Study on DC-DC Conversion Architectures for PPU Technology
 Agency/Company: Lockheed Martin
 Total Dollar Amount: \$300,000.00
 Role: PI
 Collaborators: Maryam Saedifard (Co-I, Georgia Tech)
 Period of Contract: 10/2022 – 7/2023 (12 months)
 Candidate's Share: 50% (\$150,000.00)
86. Title of Project: ASCENT Gas Generator Feed System
 Agency/Company: Air Force Research Laboratory
 Total Dollar Amount: \$877,964.79
 Role: PI
 Collaborators: Moog
 Period of Contract: 3/2022 – 7/2023 (15 months)
 Candidate's Share: 26% (\$226,964.79)
85. Title of Project: Sub-kilowatt RF Thruster using ASCENT
 Agency/Company: Phase Four, AFRL
 Total Dollar Amount: \$295,633.95
 Role: PI
 Collaborators: N/A
 Period of Contract: 1/2022 – 3/2023
 Candidate's Share: 100% (\$295,633.95)
84. Title of Project: Air-Breathing RF Thruster for VLEO Missions
 Agency/Company: Phase Four, DARPA
 Total Dollar Amount: \$246,531.95
 Role: PI
 Collaborators: N/A
 Period of Contract: 1/2022 – 3/2023
 Candidate's Share: 100% (\$246,531.95)
83. Title of Project: Georgia Institute of Technology – Support for Women and URM Graduate Students
 Agency/Company: William Randolph Hearst Foundation
 Total Dollar Amount: \$100,000
 Role: PI
 Collaborators: N/A
 Period of Contract: 1/2022 – 12/2026
 Candidate's Share: 100% for College of Engineering
82. Title of Project: Deployable Electric Propulsion for CubeSats
 Agency/Company: Georgia Tech Research Institute Graduate Fellowship
 Total Dollar Amount: \$325,000
 Role: PI
 Collaborators: W. Jud Ready, GTRI
 Period of Contract: 8/2021 – 7/2026
 Candidate's Share: 50%

81. Title of Project: Performance Characterization of the T-140 Hall Effect Thruster using ASCENT Green Propellant
 Agency/Company: Air Force Research Laboratory
 Total Dollar Amount: \$120,768.00
 Role: PI
 Collaborators: N/A
 Period of Contract: 7/2021 – 3/2022
 Candidate's Share: 100%
80. Title of Project: Beams for VLF Wave Generation
 Agency/Company: ENIG – AFWERX STTR Phase I
 Total Dollar Amount: \$46,491.25
 Role: PI
 Collaborators: M. Cohen (Co-I, Georgia Tech)
 Period of Contract: 2/2021 – 7/2021
 Candidate's Share: 76.6% (\$35,602.96)
79. Title of Project: Joint Advanced Propulsion Institute
 Agency/Company: NASA
 Total Dollar Amount: \$15,000,000
 Role: PI
 Collaborators: M. Saedifard, B. Jorns, J. Foster, A. Gallimore, A. Gorodetsky, R. Wirz, J. Marian, J. Rovey, D. Levin, H. Chew, J. Williams, A. Yalin, S. Cusson, I. Boyd, K. Hara, K. Lemmer
 Period of Contract: 10/2021 – 9/2026
 Candidate's Share: 10.3%
78. Title of Project: UAE Space Propulsion Curriculum
 Agency/Company: United Arab Emirates Space Agency
 Total Dollar Amount: \$4,778,892
 Role: PI
 Collaborators: L. Jacobs (Co-PI, Georgia Tech)
 Period of Contract: 1/2021 – 5/2024
 Candidate's Share: 55% (\$4,035,316.34)
77. Title of Project: Characterization of a Low-power Electric Propulsion Device
 Agency/Company: Amazon
 Total Dollar Amount: \$343,125.16
 Role: PI
 Collaborators: N/A
 Period of Contract: 1/2021 – 5/2021
 Candidate's Share: 100%
76. Title of Project: NASA Space Technology Graduate Research Fellowship – Naia Butler-Craig – Characterization of Inner Front Pole Cover Erosion in Center Mounted Cathode Hall Thrusters using Thompson Scattering
 Agency/Company: NASA
 Total Dollar Amount: \$388,260.00
 Role: PI
 Collaborators: N/A
 Period of Contract: 10/2020 – 4/2025
 Candidate's Share: 100%

75. Title of Project: Ionization and Acceleration of N₂/O₂ Mixtures for Air-Breathing Electric Propulsion
Agency/Company: Air Force Office of Scientific Research
Total Dollar Amount: \$750,000
Role: PI (Co-PI Julian Rimoli)
Collaborators: N/A
Period of Contract: 6/2020 – 6/2023
Candidate's Share: 54%
74. Title of Project: Characterization of Low-Power Hall Thruster Operation with Alternative Propellants
Agency/Company: Amazon Inc.
Total Dollar Amount: \$67,222.05
Role: PI
Collaborators: N/A
Period of Contract: 4/2020 – 8/2020
Candidate's Share: 100%
73. Title of Project: Characterization of the ConstantQ Plasma Thruster – Part 2
Agency/Company: Miles Space Inc.
Total Dollar Amount: \$8,845.71
Role: PI
Collaborators: N/A
Period of Contract: 11/2019 – 1/2020
Candidate's Share: 100%
72. Title of Project: Characterization of the ConstantQ Plasma Thruster
Agency/Company: Miles Space Inc.
Total Dollar Amount: \$12,175.70
Role: PI
Collaborators: N/A
Period of Contract: 10/2019 – 4/2020
Candidate's Share: 100%
71. Title of Project: Leidos Student Fellowship - Hypersonics
Agency/Company: Leidos
Total Dollar Amount: \$70,000.00
Role: PI
Collaborators:
Period of Contract: 12/2019 – 8/2020
Candidate's Share: 100%
70. Title of Project: Characterization of Propulsion Device with a Torsional System
Agency/Company: Quantum Dynamics Enterprises, Inc.
Total Dollar Amount: \$11,911.99
Role: PI
Collaborators: N/A
Period of Contract: 10/2019 – 1/2020
Candidate's Share: 100%

69. Title of Project: NASA Space Technology Research Fellowship – Ethan Hopping – Laser Thomson Scattering Investigation of Plasma Oscillations in Hall Effect Thrusters
 Agency/Company: NASA
 Total Dollar Amount: \$388,260.00
 Role: PI
 Collaborators: N/A
 Period of Contract: 10/2019 – 4/2024
 Candidate’s Share: 100%
68. Title of Project: NASA Space Technology Research Fellowship – David Gomez – Development of a highly throttleable bipropellant (Xe-Kr) Hall thruster and investigations into the newly discovered oscillation modes in magnetically shielded thrusters
 Agency/Company: NASA
 Total Dollar Amount: \$388,260.00
 Role: PI
 Collaborators: N/A
 Period of Contract: 10/2019 – 9/2020
 Candidate’s Share: 100%
67. Title of Project: Meta-material Solutions for Reduced Fuselage Structural Vibrations and Reduced Propagation of Vibratory Loads
 Agency/Company: Sikorsky
 Total Dollar Amount: \$90,000.00
 Role: PI
 Collaborators: L. Sankar (Co-PI, Georgia Institute of Technology)
 Period of Contract: 9/2019 – 4/2020
 Candidate’s Share: 0%
66. Title of Project: Intelsat Research Gift
 Agency/Company: Intelsat
 Total Dollar Amount: \$10,000.00
 Role: PI
 Collaborators: N/A
 Period of Contract: 10/2018 – 5/2019
 Candidate’s Share: 100% (\$10,000.00)
65. Title of Project: Magnetohydrodynamic Energy Generation and Flow Control for Planetary Entry Systems
 Agency/Company: NASA
 Total Dollar Amount: \$191,779.00
 Role: PI
 Collaborators: Dr. Hisham Ali (Co-PI) – post-doctoral student
 Period of Contract: 11/2018 – 9/2020
 Candidate’s Share: 100% (\$191,779.00)
64. Title of Project: Operation of a Portable Hall Effect Thruster Facility – IEPC2017
 Agency/Company: Space Systems Engineering, Inc.
 Total Dollar Amount: \$10,000.00
 Role: PI
 Collaborators: N/A
 Period of Contract: 9/2017 – 12/2017
 Candidate’s Share: 100% (\$10,000.00)

63. Title of Project: Characterization of the Performance of a High-Power Hall Effect Thruster – GIT #9
 Agency/Company: IHI
 Total Dollar Amount: \$194,998.99
 Role: PI
 Collaborators: N/A
 Period of Contract: 6/2017 – 12/2017
 Candidate's Share: 100% (\$194,998.99)
62. Title of Project: Characterization of the Performance of a High-Power Hall Effect Thruster – GIT #8
 Agency/Company: IHI
 Total Dollar Amount: \$148,442.77
 Role: PI
 Collaborators: N/A
 Period of Contract: 5/2017 – 9/2017
 Candidate's Share: 100% (\$148,442.77)
61. Title of Project: Characterization of the Performance of a High-Power Hall Effect Thruster – Prep for GIT #8 and GIT #9
 Agency/Company: IHI
 Total Dollar Amount: \$50,643.27
 Role: PI
 Collaborators: N/A
 Period of Contract: 5/2017 – 9/2017
 Candidate's Share: 100% (\$50,643.27)
60. Title of Project: Solar Array Exposure to an Arcjet Plume - 2
 Agency/Company: Lockheed Martin
 Total Dollar Amount: \$609,449.11
 Role: PI
 Collaborators: N/A
 Period of Contract: 1/2017 – 8/2017
 Candidate's Share: 100% (\$609,449.11)
59. Title of Project: Understanding the Impact of Gas Ingestion of ExB Plasma Sources
 Agency/Company: IHI - Japan
 Total Dollar Amount: \$12,850.44
 Role: PI
 Collaborators: N/A
 Period of Contract: 1/2017 – 4/2017
 Candidate's Share: 100% (\$12,850.44)
58. Title of Project: Characterization of the Performance of a High Power Hall Effect Thruster – GIT #7
 Agency/Company: IHI - Japan
 Total Dollar Amount: \$35,825.16
 Role: PI
 Collaborators: N/A
 Period of Contract: 1/2017 – 10/2017
 Candidate's Share: 100% (35,825.16)

57. 500-hr Characterization of the performance of a high-power Hall Effect Thruster
 Agency/Company: IHI - Japan
 Total Dollar Amount: \$499,127.44
 Role: PI
 Collaborators: None
 Period of Contract: 4/2016 – 1/2017
 Candidate's Share: 100% (\$499,127.44)
56. Title of Project: Solar Array Exposure to an Arcjet Plume
 Agency/Company: Lockheed Martin
 Total Dollar Amount: \$684,091.48
 Role: PI
 Collaborators: N/A
 Period of Contract: 3/2016 – 11/2016
 Candidate's Share: 100% (\$684,091.48)
55. Characterization of the Performance of a High Power Hall Effect Thruster – GIT#6
 Agency/Company: IHI - Japan
 Total Dollar Amount: \$118,735.31
 Role: PI
 Collaborators: None
 Period of Contract: 3/2016 – 11/2016
 Candidate's Share: 100% (\$118,735.31)
54. Title of Project: Magnetohydrodynamic Power Generation for Upper-Stage Rockets
 Agency/Company: DARPA
 Total Dollar Amount: \$512,272.19
 Role: PI
 Collaborators: T. M. Liu (Co-PI, Research Engineer of PI, Georgia Institute of Technology)
 Period of Contract: 3/2016 – 11/2017
 Candidate's Share: 58.2% (\$297,898.15)
53. Title of Project: High-Fidelity Coupling of Predictive Plasma-Wall Models
 Agency/Company: Air Force Office of Scientific Research
 Total Dollar Amount: \$1,050,000
 Role: PI
 Collaborators: J. Rimoli (Co-PI, Georgia Institute of Technology), Michael Keidar (Co-PI, George Washington University)
 Period of Contract: 6/2016 – 5/2019
 Candidate's Share: 33% (\$348,500)
52. Title of Project: Characterization of a Cubesat Propulsion System
 Agency/Company: Fluid & Reason, LLC
 Total Dollar Amount: \$37,233.42
 Role: PI
 Collaborators: None
 Period of Contract: 12/2015 – 5/2016
 Candidate's Share: 100% (\$37,233.42)

51. Title of Project: Characterization and Development of a Space Propulsion Device
 Agency/Company: Quantum Dynamics Enterprises
 Total Dollar Amount: \$69,980.35
 Role: PI
 Collaborators: None
 Period of Contract: 1/2016 – 12/2018
 Candidate's Share: 100% (\$69,980.35)
50. Title of Project: Characterization of the Performance of a High Power Hall Effect Thruster – GIT#5
 Agency/Company: IHI - Japan
 Total Dollar Amount: \$132,602.22
 Role: PI
 Collaborators: None
 Period of Contract: 11/2015 – 3/2016
 Candidate's Share: 100% (\$132,602.22)
49. Title of Project: Characterization of the Performance of High Power Hall Effect Thrusters – GIT #4
 Agency/Company: IHI - Japan
 Total Dollar Amount: \$84,982.68
 Role: PI
 Collaborators: None
 Period of Contract: 10/2015 – 1/2016
 Candidate's Share: 100% (\$84,982.68)
48. Title of Project: L3/Georgia Tech Hardware Development
 Agency/Company: L-3 ETI
 Total Dollar Amount: \$10,000
 Role: PI
 Collaborators: None
 Period of Contract: 10/2015 – 6/2016
 Candidate's Share: 100% (\$10,000)
47. Title of Project: GTRI State of Georgia Direct-to-Discovery Activity
 Agency/Company: Georgia Tech Research Institute
 Total Dollar Amount: \$10,000
 Role: PI
 Collaborators: None
 Period of Contract: 10/2015 – 5/2016
 Candidate's Share: 100% (\$10,000)
46. Title of Project: Small-Satellite Propulsion Trade Study
 Agency/Company: Boeing
 Total Dollar Amount: \$25,000.76
 Role: PI
 Collaborators: None
 Period of Contract: 7/2015 – 12/2015
 Candidate's Share: 100% (\$25,000.76)

45. Title of Project: Characterization of the Performance of High Power Hall Effect Thrusters
Agency/Company: IHI - Japan
Total Dollar Amount: \$79,889.77
Role: PI
Collaborators: None
Period of Contract: 6/2015 – 9/2015
Candidate's Share: 100% (\$79,889.77)
44. Title of Project: Diagnostics and Equipment for the Characterization of a 6-kW Hall Effect Thruster
Agency/Company: IHI - Japan
Total Dollar Amount: \$12,004.18
Role: PI
Collaborators: None
Period of Contract: 5/2015 – 9/2015
Candidate's Share: 100% (\$12,004.18)
43. Title of Project: Characterization of the Performance of Low and High Power Hall Effect Thruster
Agency/Company: IHI - Japan
Total Dollar Amount: \$60,810
Role: PI
Collaborators: None
Period of Contract: 2/2015 – 5/2015
Candidate's Share: 100% (\$60,810)
42. Title of Project: L3/Georgia Tech Hardware Development
Agency/Company: L-3 ETI
Total Dollar Amount: \$10,000
Role: PI
Collaborators: None
Period of Contract: 7/2014 – 5/2015
Candidate's Share: 100% (\$10,000)
41. Title of Project: Characterization of the Performance of a Low-Power Hall Effect Thruster
Agency/Company: Aerojet-Rocketdyne
Total Dollar Amount: \$51,559
Role: PI
Collaborators: None
Period of Contract: 5/2014 – 9/2014
Candidate's Share: 100% (\$51,559)
40. Title of Project: Characterization of the Performance of a 6-kW Hall Effect Thruster
Agency/Company: IHI - Japan
Total Dollar Amount: \$35,478
Role: PI
Collaborators: None
Period of Contract: 8/2014 – 12/2014
Candidate's Share: 100% (\$35,478)

39. Title of Project: Characterization of the Impact of Hall Effect Thrust Plume Plasma on rf Wave Propagation
Agency/Company: Georgia Tech Research Institute
Total Dollar Amount: \$6,831
Role: PI
Collaborators: None
Period of Contract: 3/2014 – 6/2014
Candidate's Share: 100% (\$6,831)
38. Title of Project: Academic Partner for Electric Propulsion and Advanced Technology
Agency/Company: NASA Marshall Space Flight Center
Total Dollar Amount: \$68,500
Role: PI
Collaborators: None
Period of Contract: 2/2014 – 9/2014
Candidate's Share: 100% (\$68,500)
37. Title of Project: Power Processing Unit (PPU) Testing at the Georgia Institute of Technology
Agency/Company: Pratt & Whitney Rocketdyne
Total Dollar Amount: \$50,000
Role: PI
Collaborators: None
Period of Contract: 11/2013 – 2/2014
Candidate's Share: 100% (\$50,000)
36. Title of Project: Electric Propulsion Research FY13
Agency/Company: Pratt & Whitney Rocketdyne
Total Dollar Amount: \$7,500
Role: PI
Collaborators: None
Period of Contract: 6/2013 – 12/2013
Candidate's Share: 100% (\$7,500)
35. Title of Project: High-Power Electric Propulsion Laboratory
Agency/Company: SAIC
Total Dollar Amount: \$2,500
Role: PI
Collaborators: None
Period of Contract: 8/2013 – 12/2013
Candidate's Share: 100% (\$2,500)
34. Title of Project: Hall Effect Thruster Facility Effects
Agency/Company: Lockheed Martin
Total Dollar Amount: \$90,000
Role: PI
Collaborators: None
Period of Contract: 7/2013 – 10/2013
Candidate's Share: 100% (\$90,000)

33. Title of Project: Hybrid Chemical/Electric Propulsion Technology FY 2013
Agency/Company: Moog
Total Dollar Amount: \$141,285.80
Role: PI
Collaborators: None
Period of Contract: 8/2012 – 2/2013
Candidate's Share: 100% (\$141,285.80)
32. Title of Project: Impact of Vacuum Facility Pumping on Hall Effect Thruster Performance
Agency/Company: Lockheed Martin
Total Dollar Amount: \$64,000
Role: PI
Collaborators: None
Period of Contract: 11/2012 – 1/2013
Candidate's Share: 100% (\$64,000)
31. Title of Project: Performance Characterization of 5-kW Concentric Channel Hall Effect Thruster
Agency/Company: American Pacific In-Space Propulsion
Total Dollar Amount: \$20,725
Role: PI
Collaborators: None
Period of Contract: 6/2012 – 12/2012
Candidate's Share: 100% (\$20,725)
30. Title of Project: Two-Fluid Satellite Propulsion System
Agency/Company: Lockheed Martin
Total Dollar Amount: \$48,000
Role: PI
Collaborators: None
Period of Contract: 3/2012 – 12/2012
Candidate's Share: 100% (\$48,000)
29. Title of Project: High-Performance Chemical Thrusters for Cubesat Applications
Agency/Company: Orbital Sciences
Total Dollar Amount: \$10,000
Role: PI
Collaborators: None
Period of Contract: 1/2012 – 5/2012
Candidate's Share: 100% (\$10,000)
28. Title of Project: Comprehensive Study of Plasma-Wall Sheath
Agency/Company: Air Force Office of Scientific Research
Total Dollar Amount: \$2,500,000
Role: PI
Collaborators: W. J. Ready (Co-PI, Georgia Tech Research Institute), J. Rimoli (Co-PI, Georgia Institute of Technology), Gregory Thompson (Co-PI, University of Alabama), Michael Keidar (Co-PI, George Washington University)
Period of Contract: 6/2011 – 5/2016
Candidate's Share: 35% (\$875,000)

27. Title of Project: Electric Propulsion Research, Task Order 03 Fiscal Year 2012
Agency/Company: American Pacific
Total Dollar Amount: \$253,905
Role: PI
Collaborators: None
Period of Contract: 9/2011 – 9/2012
Candidate's Share: 100% (\$253,905)
26. Title of Project: Development of Technologies Utilizing Hydrazine in Both Chemical & Electric
Agency/Company: American Pacific
Total Dollar Amount: \$132,002
Role: PI
Collaborators: None
Period of Contract: 9/2011 – 9/2012
Candidate's Share: 100% (\$132,002)
25. Title of Project: Electric Propulsion Research, AMPAC Task Order 03 Fiscal Year 2011
Agency/Company: American Pacific
Total Dollar Amount: \$269,182
Role: PI
Collaborators: None
Period of Contract: 9/2010 – 9/2011
Candidate's Share: 100% (\$269,182)
24. Title of Project: Development of Technologies Utilizing Hydrazine in both Chemical & Electric, AMPAC Task Order 02 Fiscal Year 2011
Agency/Company: American Pacific
Total Dollar Amount: \$90,704
Role: PI
Collaborators: None
Period of Contract: 9/2010 – 9/2011
Candidate's Share: 100% (\$90,704)
23. Title of Project: Lean HET Manufacturing
Agency/Company: Lockheed Martin
Total Dollar Amount: \$76,051
Role: PI
Collaborators: None
Period of Contract: 1/2011 – 12/2011
Candidate's Share: 100% (\$76,051)
22. Title of Project: Fundamental Study on Modeling the Ambient Atmosphere Ion Thruster
Agency/Company: Northrop Grumman Space Systems
Total Dollar Amount: \$40,000
Role: PI
Collaborators: None
Period of Contract: 1/2010 – 12/2010
Candidate's Share: 100% (\$40,000)

21. Title of Project: Thermal Model of a 5-kW Hall Effect Thruster
Agency/Company: Lockheed Martin
Total Dollar Amount: \$80,000
Role: PI
Collaborators: None
Period of Contract: 1/2010 – 12/2010
Candidate's Share: 100% (\$80,000)
20. Title of Project: Electric Propulsion Research, Task Order 03 Fiscal Year 2010
Agency/Company: American Pacific
Total Dollar Amount: \$229,123
Role: PI
Collaborators: None
Period of Contract: 9/2009 – 9/2010
Candidate's Share: 100% (\$229,123)
19. Title of Project: Carbon Nanotube Field Emission for Electric Propulsion – Phase 2
Agency/Company: DARPA
Total Dollar Amount: \$6,500,000
Role: PI
Collaborators: W. J. Ready (Co-PI, Georgia Tech Research Institute)
Period of Contract: 9/2009 – 3/2011
Candidate's Share: 60% (\$3,900,000)
18. Title of Project: Advanced In-Situ Propulsion Concepts for Affordable Space Exploration
Agency/Company: National Institute of Aerospace
Total Dollar Amount: \$12,500
Role: PI
Collaborators: None
Period of Contract: 8/2009 – 12/2009
Candidate's Share: 100% (\$12,500)
17. Title of Project: Ion Engine Beam Dump Design
Agency/Company: Electron Technologies Incorporated L-3
Total Dollar Amount: \$8,000
Role: PI
Collaborators: None
Period of Contract: 4/2009 – 3/2010
Candidate's Share: 100% (\$8,000)
16. Title of Project: Fundamental Study on Modeling the Ambient Atmosphere Ion Thruster
Agency/Company: Northrop Grumman Space Technology
Total Dollar Amount: \$50,000
Role: PI
Collaborators: None
Period of Contract: 1/2009 – 12/2009
Candidate's Share: 100% (\$50,000)

15. Title of Project: An Overview of Propulsion Needs and Requirements for Small Sat Applications Compared to the XIPS[®] 8 cm Ion Thruster Capability – Continuation
Agency/Company: Electron Technologies Incorporated L-3
Total Dollar Amount: \$5,000
Role: PI
Collaborators: None
Period of Contract: 11/2008 –2/2009
Candidate's Share: 100% (\$5,000)
14. Title of Project: Electric Propulsion Research, Task Order 03 Fiscal Year 2009
Agency/Company: American Pacific
Total Dollar Amount: \$169,379
Role: PI
Collaborators: None
Period of Contract: 9/2008 –9/2009
Candidate's Share: 100% (\$169,379)
13. Title of Project: AAIT Performance Justification
Agency/Company: Northrop Grumman Space Technology
Total Dollar Amount: \$73,717
Role: PI
Collaborators: None
Period of Contract: 7/2008 –12/2008
Candidate's Share: 100% (\$73,717)
12. Title of Project: AMPAC Roundtable Support – Electric Propulsion Activities
Agency/Company: American Pacific
Total Dollar Amount: \$10,000
Role: PI
Collaborators: None
Period of Contract: 5/2008 – 8/2008
Candidate's Share: 100% (\$10,000)
11. Title of Project: High-Speed Linear Actuator for High Thrust-to-Power Hall Thruster Investigation
Agency/Company: Air Force Office of Scientific Research – DURIP
Total Dollar Amount: \$50,000
Role: PI
Collaborators: None
Period of Contract: 5/2008 – 4/2009
Candidate's Share: 100% (\$50,000)
10. Title of Project: Design and Specification of an 8-kW Concentric Channel Hall Thruster for Bimodal Operation
Agency/Company: American Pacific In-Space Propulsion
Total Dollar Amount: \$10,000
Role: PI
Collaborators: None
Period of Contract: 7/2008 – 12/2008
Candidate's Share: 100% (\$10,000)

9. Title of Project: An Overview of Propulsion Needs and Requirements for Small Sat Applications Compared to the XIPS[®] 8 cm Ion Thruster Capability – Continuation
 Agency/Company: Electron Technologies Incorporated L-3
 Total Dollar Amount: \$10,000
 Role: PI
 Collaborators: None
 Period of Contract: 11/2007 – 4/2008
 Candidate's Share: 100% (\$10,000)

8. Title of Project: Dual-Mode Propellants, AMPAC Task Order 02 Fiscal Year 2008
 Agency/Company: American Pacific Inc.
 Total Dollar Amount: \$136,314
 Role: PI
 Collaborators: None
 Period of Contract: 9/2007 – 9/2008
 Candidate's Share: 100% (\$136,314)

7. Title of Project: An Overview of Propulsion Needs and Requirements for Small Sat Applications compared to the XIPS[®] 8 cm Ion Thruster Capability
 Agency/Company: Electron Technologies Incorporated L-3
 Total Dollar Amount: \$5,000
 Role: PI
 Collaborators: None
 Period of Contract: 7/2007 – 10/2007
 Candidate's Share: 100% (\$5,000)

6. Title of Project: Carbon Nanotube Field Emission for Electric Propulsion
 Agency/Company: Defense Advanced Research Projects Agency (DARPA)
 Total Dollar Amount: \$1,178,000
 Role: PI
 Collaborators: W. J. Ready (Co-PI)
 Period of Contract: 7/2007 – 10/2007
 Candidate's Share: 60% (\$706,800)

5. Title of Project: Annular Helicon Plasma Source for High Thrust-to-Power Hall Thrusters
 Agency/Company: Air Force Office of Scientific Research, Young Investigator Program Award
 Total Dollar Amount: \$379,508
 Role: PI
 Collaborators: None.
 Period of Contract: 1/2007 – 12/2009
 Candidate's Share: 100% (\$379,508)

4. Title of Project: Design and Specification of Electric Propulsion and Chemical/Electric Propulsion Systems
 Agency/Company: American Pacific In-Space Propulsion
 Total Dollar Amount: \$50,000
 Role: PI
 Collaborators: None.
 Period of Contract: 3/2006 – 7/2007
 Candidate's Share: 100% (\$50,000)

3. Title of Project: Electromagnetics Tutorial
 Agency/Company: Georgia Institute of Technology Class of 1969 Teaching Program
 Total Dollar Amount: \$1,000
 Role: PI
 Collaborators: None.
 Period of Contract: 12/2005 – 5/2006
 Candidate's Share: 100% (\$1,000)

2. Title of Project: Development of Ion Loss Reduction Technology for a High Thrust-to-Power Hall Thruster
 Agency/Company: Air Force Research Laboratory/ERC
 Total Dollar Amount: \$45,000
 Role: PI
 Collaborators: None.
 Period of Contract: 12/2005 – 12/2006
 Candidate's Share: 100% (\$45,000)

1. Title of Project: Electrostatic Propulsion Investigation
 Agency/Company: Pratt & Whitney
 Total Dollar Amount: \$13,230
 Role: PI
 Collaborators: None.
 Period of Contract: 6/2005 – 8/2006
 Candidate's Share: 100% (\$13,230)

E2. As Co-Principal Investigator

Dr. Walker has served as Co-PI on 20 research efforts with a total value of \$5.57M. Dr. Walker's share of the total value is \$1.94M. The collaborators include three different schools within Georgia Tech and four companies.

20. Title of Project: Ultrafast Laser System for the Study of Combustion, High-speed Flow, Plasma
 Agency/Company: Air Force Office of Scientific Research
 Total Dollar Amount: \$520,000
 Role: Co-PI
 Collaborators: PI: Ellen Mazumdar, Co-PIs: Mitchell Walker, Adam Steinberg, Timothy Lieuwen
 Period of Contract: 10/2022 – 9/2023 (12 months)
 Candidate's Share: N/A

19. Title of Project: Army SBIR PHASE II: Small Form Factor VLF TX/RX Antenna for Underground Communications
 Agency/Company: ENIG and Associates Inc.
 Total Dollar Amount: \$375,000.00
 Role: Co-PI
 Collaborators: PI: Morris Cohen (ECE)
 Period of Contract: 12/2021 – 6/2023
 Candidate's Share: 50% (\$187,500)

18. Title of Project: Air Force Nuclear Weapons SBIR: Small Form Factor VLF TX/RX Antenna for Airborne Communications
 Agency/Company: ENIG and Associates Inc.
 Total Dollar Amount: \$425,724.00
 Role: Co-PI
 Collaborators: PI: Morris Cohen (ECE)
 Period of Contract: 12/2021 – 6/2023
 Candidate's Share: 50% (\$212,862)
17. Title of Project: Air Force SBIR: Small Form Factor VLF TX/RX Antenna for Airborne Communications
 Agency/Company: ENIG and Associates Inc.
 Total Dollar Amount: \$224,341.00
 Role: Co-PI
 Collaborators: PI: Morris Cohen (ECE)
 Period of Contract: 11/2021 – 7/2022
 Candidate's Share: 50% (\$112,171)
16. Title of Project: Bridging the Gap: Increasing Representation at the Graduate, Postdoc, and Faculty Levels
 Agency/Company: Georgia Institute of Technology – Forming Teams and Establishing Collaborative Expertise
 Total Dollar Amount: \$45,000.00
 Role: Co-PI
 Collaborators: PI: S. A. France (CHEM and BioCHEM); Co-PI's: P. Peralta-Yahya (CHEM), M. Grover (ChBE), C. Tyson (CoS, CHEM), F. Benton-Johnson (CoE, CEED), C. Conwell (SEI), J. Curtis (PHY), J. Glass (EAS), L. Wheaton (BIO), C. Meredith (RBI, ChBE), R. Lieberman (CHEM), J. Stone (GEFD), H. Lu (ChBE)
 Period of Contract: 7/2021 – 12/2021
 Candidate's Share: 0%
15. Title of Project: Center for Space Hardware Assembly, Fabrication and Testing (C-SHAFT)
 Agency/Company: Georgia Institute of Technology, Institute for Electronics and Nanotechnology
 Total Dollar Amount: \$225,000.00
 Role: Co-PI
 Collaborators: PI - Jud Ready (GTRI/MSE), John Cressler (ECE), Amanda Stockton (CHEM), Wyman Williams (GTRI), Brian Gunter (AE), Glenn Lightsey (AE)
 Period of Contract: 7/2020 – 6/2023
 Candidate's Share: N/A
14. Title of Project: Broadband Low-frequency Imaging with Novel Generation (BLING) – Phase II
 Agency/Company: DARPA
 Total Dollar Amount: \$419,888.00
 Role: Co-PI
 Collaborators: V. Harid (PI, University of Colorado-Denver), M. Cohen (Georgia Tech Electrical Engineering), M Golkowski (University of Colorado -Denver, Electrical Engineering), P. Stoltz (Tech-X Corporation)
 Period of Contract: 7/2018 – 8/2019
 Candidate's Share: 20.2% (\$85,500.00)

13. Title of Project: Outer Space Propulsion Research Institute
 Agency/Company: GT-FIRE Mini: Small Funding Requests for Big Ideas
 Total Dollar Amount: \$1,250.00
 Role: Co-PI
 Collaborators: W. J. Ready (PI, Georgia Tech Research Institute)
 Period of Contract: 1/2018 – 12/2018
 Candidate's Share: 50% (\$625.00)

12. Title of Project: Hi-speed Plasma Science (HiPS) to Enable Advanced Radiation Devices
 Agency/Company: DARPA
 Total Dollar Amount: \$499,498.00
 Role: Co-PI
 Collaborators: M. Cohen (PI, Georgia Tech Electrical Engineering), M Golkowski (University of Colorado -Denver, Electrical Engineering), P. Stoltz (Tech-X Corporation)
 Period of Contract: 4/2016 – 5/2017
 Candidate's Share: 32.5% (\$162,642.50)

11. Title of Project: YIP: Very-short Antennas via Ionized Plasmas for Efficient Radiation (VAIPER)
 Agency/Company: Office of Naval Research
 Total Dollar Amount: \$534,158
 Role: Co-PI
 Collaborators: M. Cohen (PI, School of Electrical Engineering)
 Period of Contract: 6/2015 – 5/2018
 Candidate's Share: 48% (\$257,954.70)

10. Title of Project: Technology Development of Oxygen Rich Combustion Cycle Engines
 Agency/Company: Jacobs
 Total Dollar Amount: \$890,000
 Role: Co-PI
 Collaborators: V. Yang (PI, School of Aerospace Engineering)
 Period of Contract: 2/2013 – 10/2013
 Candidate's Share: 50% (\$445,000)

9. Title of Project: Carbon Nanotube Cathode for Hall Effect Thrusters
 Agency/Company: Air Force Space and Missile Command
 Total Dollar Amount: \$373,786
 Role: Co-PI
 Collaborators: W. J. Ready (PI, Georgia Tech Research Institute)
 Period of Contract: 8/2012 – 2/2013
 Candidate's Share: 30% (\$84,856)

8. Title of Project: Solar Electric Propulsion Demonstration Mission Concept Studies
 Agency/Company: NASA (Subcontract from Analytical Mechanics Associates)
 Total Dollar Amount: \$75,000
 Role: Co-PI
 Collaborators: A. Wilhite (PI, Georgia Tech School of Aerospace Engineering)
 Period of Contract: 1/2012 – 5/2012
 Candidate's Share: 80% (\$60,000)

7. Title of Project: Magnetic Nozzle for MPD Thrusters
 Agency/Company: NASA Phase I STTR, Tether Unlimited, Inc.
 Total Dollar Amount: \$100,000
 Role: Co-PI
 Collaborators: R. Hoyt (PI, Tether Unlimited, Inc.)
 Period of Contract: 1/2011 – 9/2011
 Candidate's Share: 30% (\$30,000)

6. Title of Project: The PROX-1 Mission: Proximity Operations for Space Situational Awareness
 Agency/Company: Air Force Office of Scientific Research
 Total Dollar Amount: \$100,000
 Role: Co-PI
 Collaborators: D. Spencer (PI, Georgia Tech School of Aerospace Engineering)
 Period of Contract: 1/2011 – 12/2011
 Candidate's Share: 10% (\$10,000)

5. Title of Project: Proof of Principle Research on Advanced Helicon Thruster Performance
 Agency/Company: Air Force Office of Scientific Research
 Total Dollar Amount: \$242,717
 Role: J. Scharer (PI, University of Wisconsin)
 Collaborators: None.
 Period of Contract: 1/2011 – 12/2011
 Candidate's Share: 40% (\$97,086.80)

4. Title of Project: Development of Technologies Utilizing Hydrazine in Both Chemical & Electric," AMPAC Task Order 02 Fiscal Year 2010
 Agency/Company: American Pacific
 Total Dollar Amount: \$164,395
 Role: Co-PI
 Collaborators: C. Liotta (PI, Georgia Tech, Chemistry)
 Period of Contract: 9/2009 – 9/2010
 Candidate's Share: 47% (\$77,265.65)

3. Title of Project: Development of Technologies Utilizing Hydrazine in Both Chemical & Electric, AMPAC Task Order 02 Fiscal Year 2009
 Agency/Company: American Pacific
 Total Dollar Amount: \$153,549
 Role: Co-PI
 Collaborators: C. Liotta (PI, Georgia Tech, Chemistry)
 Period of Contract: 9/2008 – 9/2009
 Candidate's Share: 50% (\$77,229)

2. Title of Project: High-Efficiency Annular Helicon with Compact Toroidal-Plasma Acceleration for High-Power, High-Specific Impulse Electric Space Propulsion
Agency/Company: Phase I Air Force Office of Scientific Research STTR, Starfire Industries, Inc.
Total Dollar Amount: \$100,000
Role: Co-PI
Collaborators: R. Stubbers (PI, Starfire Industries, Inc.)
Period of Contract: 10/2006 – 6/2007
Candidate's Share: 30% (\$30,000)

1. Title of Project: Optimized Magnetic Nozzles for High-Power MPD Thrusters
Agency/Company: Phase I NASA STTR – Tethers Unlimited, Inc.
Total Dollar Amount: \$100,000
Role: Co-PI
Collaborators: R. Hoyt (PI, Tethers Unlimited, Inc.)
Period of Contract: 1/2005 – 7/2005
Candidate's Share: 10% (\$10,000)

E3. As Senior Personnel or Contributor

1. Title of Project: Broadband Low-frequency Imaging with Novel Generation (BLING) – Phase I
Agency/Company: DARPA
Total Dollar Amount: \$580,112.00
Role: Co-PI
Collaborators: V. Harid (PI, University of Colorado - Denver), M Golkowski (Co-PI, University of Colorado - Denver), M. Cohen (Co-PI, Georgia Tech), S. Patch (Co-PI, University of Wisconsin – Madison)
Period of Contract: 10/2017 – 4/2019
Candidate's Share: 6.9% (\$39,906.00)

E4. Pending Proposals

4. Title of Project: DURIP - GHz-Rate Imaging System for Study of High-Speed Combustion, Detonations, Explosions, Flows, and Plasmas
Agency/Company: Air Force Office of Scientific Research
Total Dollar Amount: \$520,385
Role: Co-I
Collaborators: PI: Adam Steinberg, Co-PIs: Mitchell Walker, Ellen Mazumdar, Timothy Lieuwen
Period of Contract: 2/2024 – 2/2025 (12 months)
Candidate's Share: 0%
3. Title of Project: BHT-600 12-Month Test with Krypton
Agency/Company: Busek
Total Dollar Amount: \$973,156
Role: PI
Collaborators: -
Period of Contract: 9/2023 – 8/2024 (12 months)
Candidate's Share: 100% (3 person months/year)
2. Title of Project: Hall Thruster Characterization Test with ASCENT
Agency/Company: Busek
Total Dollar Amount: \$906,266
Role: PI
Collaborators: -
Period of Contract: 9/2023 – 8/2024 (12 months)
Candidate's Share: 100% (3 person months/year)
1. Title of Project: 7-kW HET on Krypton
Agency/Company: Busek
Total Dollar Amount: \$224,906
Role: PI
Collaborators: -
Period of Contract: 6/2023 – 9/2024 (4 months)
Candidate's Share: 100% (3 person months/year)

F. OTHER SCHOLARLY AND CREATIVE ACCOMPLISHMENTS

Boldface identifies the names of graduate student advisees.

16. *"Optical Thrust Measurement Technique," Authors: **D. R. Jovel**, **A. Margousian**, M. L. R. Walker, Invention Disclosure, GTRC ID 8232, filed June 2019.
15. *"Obliquely-Rotating, Magnet based Plasma Generator," Authors: J. P. Clarke, M. L. R. Walker, **C. Whittaker**, Invention Disclosure, GTRC ID 8018, filed October 2018.
14. *"Deployable Gridded Ion Thruster," Authors: M. L. R. Walker, **C. Chan**, Invention Disclosure, GTRC ID 7241, filed March 2016.
13. *"Multistage Hall Thruster," Authors: M. L. R. Walker, T. M. Liu, **J. D. Frieman**, Invention Disclosure, GTRC ID 7056, filed August 2015.
12. *"Multistage Hall Thruster," Authors: J. D. Dankanich, M. L. R. Walker, T. M. Liu, **J. D. Frieman**, Invention Disclosure, NASA Marshall Space Flight Center e-NTR Number 1422548135, filed April 2015.
11. *"RF Source Approach to Improve the Performance of an Electronegative Plasma Thruster," Authors: **N. Schloeder**, T. M. Liu, M. L.R. Walker, Invention Disclosure, NASA Marshall Space Flight Center e-NTR Number: 1404330404, filed July 2014.
10. *"Gas Distribution Approach to Improve the Performance of an Electronegative Plasma Thruster," Authors: **N. Schloeder**, T. M. Liu, M. L.R. Walker, Invention Disclosure, NASA Marshall Space Flight Center e-NTR Number: 1404328926, filed July 2014.
9. *"A Method to Mechanically Dissolve Fibrin (Blood) Clots," Authors: R. D. Averett, M. L. R. Walker, Invention Disclosure, GTRC ID 6699, filed May 2014.
8. *"Method and Pump Design for in-well Hydraulic Fracture Pumping," Authors: B. Sforzo, M. L. R. Walker, Invention Disclosure, GTRC ID 6687, filed April 2014.
7. *"Reduced Discharge Chamber Wall Temperature to Enhance High Thrust-to-Power Ratio Operation of Hall Effect Thrusters," Authors: M. L. R. Walker, T. M. Liu, **S. King**, Invention Disclosure, filed October 2013.
6. *"Low-Voltage Operation of Hall Effect Thrusters," Authors: M. L. R. Walker, **S. King**, Invention Disclosure, GTRC ID 6249, filed January 2013.
5. *"Dual-Use Hydrazine Propulsion Thruster System," Authors: M. L. R. Walker, **L. T. Williams**, C. L. Liotta, P. Pollet, H. Huttenhower, Invention Disclosure, filed June 2012.
4. *"Method to Increase the Thrust-to-Power Ratio of Hall Effect Thrusters," Authors: M. L. R. Walker, **K. Xu**, Invention Disclosure, filed December 2011.
3. *"Ion Engine using Residual Helium Pressurant Gas in GEO Satellites to Extend Lifetimes and Mitigate Debris," Authors: M. L. R. Walker, R. Russell, Invention Disclosure, GTRC ID 5682, filed June 2011.
2. *"Method and Apparatus for Passive Removal of Space Debris Utilizing In-Situ Resources," Authors: M. L. R. Walker, Invention Disclosure, GTRC ID 5696, filed June 2011.
1. *"High-Current Cathode for Magnetoplasmadynamic Thrusters," Author: M. L. R. Walker, Invention Disclosure, filed May 2005.

G. SOCIETAL AND POLICY IMPACTS

3. Dr. Walker has worked with the spacecraft propulsion community to *define* the first-ever U.S. standards for testing of electric propulsion devices. Dr. Walker and his students have co-authored more than 30% of the AIAA Electric Propulsion Test Standards documents.
2. Dr. Walker's research team *leads* the electric propulsion community in the understanding of electrical facility effects on Hall effect thruster operation. They have published the *first* peer-reviewed articles dedicated to this topic. This work shapes the international design, development, and qualification test plans of Hall effect thrusters.
1. Dr. Walker's integration of the *first-ever* liquid nitrogen recirculation system into a cryopumped vacuum facility *reduced the hourly operating cost* of vacuum facilities dedicated to electric propulsion by *two orders of magnitude*. After inspecting Dr. Walker's system, SpaceX and Virgin Galactic purchased duplicates of the liquid nitrogen recirculation system to support their launch vehicle operations. NASA Langley Research Center has purchased a duplicate of the liquid nitrogen recirculation system to upgrade its existing vacuum facilities. NASA Glenn Research Center is evaluating the integration of the liquid nitrogen recirculation system into their large EP vacuum facilities.

H. Other Professional Activities

Consulting

17. Analysis Group, Inc., 2022 – Present
16. CREAN/Globalstar, 2021 – Present
15. Kairos Ventures, 2019 – 2020
14. Phase Four Inc., 2019 – Present
13. And One Technologies for Aerospace Corporation, El Segundo, CA, 2018 – 2019
12. Aerojet-Rocketdyne, 2017, 2018
11. Sierra Lobo, Milan, Ohio, 2016 – 2018
10. Exponent, Menlo Park, California, 2015 – 2016
9. Newell Rubbermaid, Atlanta, Georgia, 2013 – 2014
8. Cameron Group, San Jose, California, 2014 – Present
7. Analytical Mechanics Associates, Hampton, Virginia, 2013
6. Moog, Aurora, New York, 2012 – 2013
5. Lockheed Martin, Denver, Colorado, 2011
4. Jackson & Tull, Lancaster, California, 2010
3. Sprain Enterprises, LLC, Atlanta, Georgia, 2009
2. American Pacific Corporation, Las Vegas, Nevada, 2006 – 2012
1. ElectroDynamic Applications, Inc., Ann Arbor, Michigan, 2008

V. TEACHING

A. COURSES TAUGHT

Undergraduate Courses

Term/Year	Course No./Course Title	Number of Students
Spring 2020	AE 4451 Jet and Rocket Propulsion	61
Spring 2019	AE 1601 Introduction to Aerospace Engineering	48
Spring 2019	AE 2611 Technical Writing - Aerospace	114
Summer 2018	AE 2010/2802 Thermodynamics and Fluids Fundamentals	29
Spring 2018	AE 2611 Technical Writing - Aerospace	110
Spring 2018	AE 1601 Introduction to Aerospace Engineering	43
Spring 2018	AE 4803 Team Design - Space	6
Spring 2017	AE 2610 Introduction to Experimental Methods in Aerospace Lab	100
Spring 2017	AE 2611 Technical Writing - Aerospace	96
Spring 2017	AE 3610 Experiments in Fluid and Solid Mechanics	85
Spring 2016	AE 2610 Introduction to Experimental Methods in Aerospace Lab	90
Spring 2016	AE 2611 Technical Writing - Aerospace	88
Spring 2016	AE 3051 Experimental Fluid Dynamics Lab	160
Spring 2016	AE 3801 Technical Writing	78
Spring 2015	AE 3801 Technical Writing	45
Spring 2015	AE 3051 Experimental Fluid Dynamics Lab	83
Fall 2014	AE 4451 Jet and Rocket Propulsion	50
Spring 2014	AE 3801 Technical Writing	41
Spring 2014	AE 3051 Experimental Fluid Dynamics Lab	78
Spring 2013	AE 3801 Technical Writing	44
Spring 2013	AE 3051 Experimental Fluid Dynamics Lab	86
Fall 2012	AE 4451 Jet and Rocket Propulsion	56
Spring 2012	AE 3801 Technical Writing	23
Spring 2012	AE 3051 Experimental Fluid Dynamics Lab	62
Fall 2011	AE 4451 Jet and Rocket Propulsion	52
Spring 2011	AE 3801 Technical Writing	9
Spring 2011	AE 3051 Experimental Fluid Dynamics Lab	66
Fall 2010	AE 4451 Jet and Rocket Propulsion	50
Spring 2010	AE 3450 Thermodynamics & Compressible Flow	44
Fall 2009	AE 4451 Jet and Rocket Propulsion	57
Fall 2008	AE 3450 Thermodynamics & Compressible Flow	46
Fall 2008	AE 2020 Low-Speed Aerodynamics	42
Summer 2008	AE 2020 Low-Speed Aerodynamics	25
Spring 2008	AE 3450 Thermodynamics & Compressible Flow	44
Fall 2007	AE 4451 Jet and Rocket Propulsion	55
Fall 2007	AE 3450 Thermodynamics & Compressible Flow	44
Spring 2007	AE 4803 Electric Propulsion	7
Spring 2007	AE 4451 Jet and Rocket Propulsion	61
Fall 2006	AE 3450 Thermodynamics & Compressible Flow	56
Spring 2006	AE 4803 Electric Propulsion	5

Spring 2006	AE 4451 Jet and Rocket Propulsion	60
Spring 2005	AE 4451 Jet and Rocket Propulsion	53

Graduate Courses

Term/Year	Course No./Course Title	Number of Students
Spring 2022	AE 8002 – Graduate Seminar	94
Fall 2021	AE 6451 – A Electric Propulsion	30
Fall 2021	AE 6451 – Q Electric Propulsion	13
Spring 2021	AE 6450 – Q Rocket Propulsion	27
Spring 2021	AE 6450 – A Rocket Propulsion	44
Fall 2020	AE 8801 – Graduate Seminar	60
Fall 2019	AE 6451 – A Electric Propulsion	20
Fall 2019	AE 6451 – Q Electric Propulsion	5
Fall 2017	AE 6451 Electric Propulsion	29
Summer 2017	AE 6050 – A Gasdynamics	23
Fall 2015	AE 6451 Electric Propulsion	10
Summer 2014	AE 6050 – Q Gasdynamics	3
Summer 2014	AE 6050 – A Gasdynamics	20
Fall 2013	AE 6451 Electric Propulsion	20
Fall 2011	AE 6450 Rocket Propulsion	26
Spring 2011	AE 6451 Electric Propulsion	9
Fall 2009	AE 6450 Rocket Propulsion	20
Spring 2009	AE 6451 Electric Propulsion	9
Summer 2007	AE 6050 Gasdynamics	29
Spring 2007	AE 8803 Electric Propulsion	12
Fall 2006	AE 8803 Electric Propulsion	1
Summer 2006	AE 8803 Electric Propulsion	1
Spring 2006	AE 8803 Electric Propulsion	10
Fall 2005	AE 6450 – A Rocket Propulsion	29
Fall 2005	AE 6450 – Q Rocket Propulsion	2

B. INDIVIDUAL STUDENT GUIDANCE

Dr. Walker has graduated 13 Ph.D. students. He will graduate an additional two Ph.D. students by the end of the calendar year 2023.

B1. Ph.D. Students

B.1.a. Graduated

13. Student: Mr. Nathan Brown

Start: Fall 2016

Graduation: December 2020

Title: Development and Evaluation of Terahertz Time-Domain Spectroscopy for Electric Propulsion Plasma Diagnostics

Award: **NSF Fellowship, 2019 Scholar Award from the Achievement Rewards for Academic Scientists (ARCS) program, Georgia Tech Institute for Materials Graduate Student Fellowship**

Position: Scientist – Sandia National Laboratories

12. Student: Ms. Connie Liu
 Start: Fall 2015
 Graduation: June 2019
 Title: Investigating Physics of Nanosecond Pulsed Argon Plasma Discharges for VLF Plasma Antenna
 Award: **NSF Fellowship, 2016 AIAA Armstrong Scholarship, 2017 Scholar Award from the Achievement Rewards for Academic Scientists (ARCS) program, 2018 Asian Deans' Forum – The Rising Stars Women in Engineering Workshop**
 Position: Lead Propulsion Engineer at SpaceX
11. Student: Mr. Hisham Ali
 Start: Fall 2012
 Graduation: April 2019
 Title: Magnetohydrodynamic Energy Generation and Flow Control for Planetary Entry Vehicles
 Award: **NASA Space Technology Research Fellowship, Pries Fellowship Award**
 Position: Assistant Professor, University of Colorado - Boulder
10. Student: Mr. Jason Frieman
 Graduation: April 2017
 Title: Characterization of Background Neutral Flows in Vacuum Test Facilities and Impacts on Hall Effect Thruster Operation
 Award: **NSF Fellowship, ARCS Scholar Award**
 Position: Research Scientist, NASA Glenn Research Center
9. Student: Mr. Jonathan Walker
 Graduation: October 2016
 Title: Electrical Facility Effect on Hall Effect Thruster Operation
 Award: **NSF Fellowship, Winner of Three-Minute Thesis Presentation for Aerospace Engineering - 2015**
 Position: Principal R&D Engineer at Radiance Technologies
8. Student: Mr. Aaron Schinder
 Graduation: August 2016
 Title: Investigation of Hall Effect Thruster Discharge Channel Wall Erosion Mechanisms
 Award: **NDSEG Fellowship**, (co-advised with Dr. Julian Rimoli – secondary advisor, Georgia Tech)
 Position: Research Engineer and Scientist, Lockheed Martin
7. Student: Mrs. Natalie Schloeder Caruso
 Graduation: February 2016
 Title: Effects of Electron Emission on Plasma Sheaths
 Award: **First Place in 2014 Atlanta Tech Talks Competition**
 Title: Facility Effects on Helicon Thruster Operation
 Position: Principal Engineer, Space Systems Sector, Northrop Grumman Corporation
6. Student: Mr. Samuel Langendorf
 Graduation: August 2015
 Title: Effects of Electron Emission on Plasma Sheaths
 Position: Scientist, Los Alamos National Laboratory
5. Student: Mr. Lake Singh
 Graduation: September 2014
 Title: Very Low Earth Orbit Propellant Collection Feasibility Assessment
 Current Position: Principal Director at The Aerospace Corporation

4. Student: Mr. Sebastiano Giannelli
 Graduation: December 2013
 Title: Plasma Generation and Stability in High-Power Electric Thrusters,” (co-advised with Dr. Mariano Andrenucci – primary advisor, University of Pisa, Italy)
 Current Position: Head of R&D Application Engineering at FAULHABER Drive Systems
3. Student: Mr. Logan Williams
 Graduation: March 2013
 Title: Ion Acceleration Mechanisms of Helicon Thrusters
 Current Position: Propulsion Engineer at Praxis, Contractor to Naval Research Laboratory
2. Student: Mr. Kunning Xu
 Graduation: June 2012
 Title: Ion Collimation and In-Channel Potential Shaping using In-Channel Electrodes for Hall Effect Thrusters
 Award: **NDSEG Fellowship**
 Current Position: Associate Professor at the University of Alabama - Huntsville
1. Student: Mr. Kybeom Kwon
 Graduation: June 2010
 Title: A New Approach of Numerical Analysis of Hall Effect Thruster and Its Application to Simultaneous Design of Hall Effect Thruster and Associated Optimal Low-Thrust Trajectory” (co-advised with Dr. Dimitri Mavris – primary advisor, Georgia Tech)
 Current Position: Professor at the Republic of Korea Air Force Academy

B.1.b. In Process

12. Student: Mr. David Jovel
 Start: Fall 2016
 Graduation: Anticipated graduation date of Fall 2023
 Title: Impact of Charge-exchange Ions on Hall Effect Thruster Plume Recombination Pathways in a Vacuum Chamber
 Award: **Aerospace Corporation Fellowship, GEM Fellowship, CRIDC 2020 Executive VP for Research Best in-person Poster Presentation, 2020 Hispanic Scholarship Fund Scholarship, SREB-State Doctoral Scholars Program award recipient for 2020-2021**
 Current Status: Passed Ph.D. Qualifying Exams in Spring 2019, Passed Ph.D. Proposal in Spring 2023
11. Student: Mr. Jean Luis Souza Betancourt
 Start: Fall 2017
 Graduation: Anticipated graduation date of Fall 2023
 Title: Quantification of Variations in Electron Energy Distribution Function with Thomson Scattering
 Award: **2017 GEM Fellow, 2018 NextProf Pathways Workshop, 2019 School of Aerospace Engineering Research Fellowship, 2021 Institute of International Education – Graduate International Research Experiences Program Scholarship**
 Current Status: Passed Ph.D. Qualifying Exams in Spring 2020, Passed Ph.D. Proposal in Fall 2022
10. Student: Ms. Chhavi
 Start: Fall 2018
 Graduation: Anticipated graduation date of Spring 2024
 Title: Impact of Channel Geometry on the Hall Effect Current
 Current Status: Passed Ph.D. Qualifying Exams in Spring 2020

9. Student: Mr. Muhannad Eladl
 Start: Fall 2019
 Graduation: Anticipated graduation date of Fall 2023
 Title: Efficient Ionization of Time-Varying Air Compositions for Electric Propulsion
 Current Status: Passed Ph.D. Qualifying Exams in Spring 2020
8. Student: Ms. Naia Butler-Craig
 Start: Fall 2019
 Graduation: Anticipated graduation date of Fall 2023
 Title: TBD
 Award: **GEM Fellowship, NASA Space Technology Graduate Research Opportunities Fellowship, 2020 Forbes 30 Under 30 Science list, Outreach Award from the Royal Astronomical Society**
 Current Status: Scheduled to take Ph.D. Qualifying Exams in Fall 2023
7. Student: Ms. Janice Cabrera
 Start: Fall 2020
 Graduation: Anticipated graduation date of Fall 2023
 Title: TBD
 Award: **GEM Fellowship, 2021 NSF Fellowship**
 Current Status: Scheduled to take Ph.D. Qualifying Exams in Fall 2023
6. Student: Mr. Adrian Vicente La Lande
 Start: Fall 2020
 Graduation: Anticipated graduation date of Fall 2024
 Title: TBD
 Award: **Jack Kent Cooke Foundation Graduate Scholarship**
 Current Status: Passed Ph.D. Qualifying Exams in Spring 2023
5. Student: Mr. William Brabston
 Start: Fall 2020
 Graduation: Anticipated graduation date of Fall 2024
 Title: TBD
 Award: **2021 NSF Fellowship**
 Current Status: Passed Ph.D. Qualifying Exams in Spring 2023
4. Student: Ms. Arega Margousian
 Start: Fall 2021
 Graduation: Anticipated graduation date of Fall 2025
 Title: TBD
 Award: **2021 GTRI Fellowship**
 Current Status: Scheduled to take Ph.D. Qualifying Exams in Spring 2023
3. Student: Mr. Ajay Krishnan
 Start: Fall 2021
 Graduation: Anticipated graduation date of Fall 2025
 Title: TBD
 Award: -
 Current Status: Scheduled to take Ph.D. Qualifying Exams in Fall 2023

2. Student: Mr. Julian Lopez-Uricoechea
 Start: Fall 2021
 Graduation: Anticipated graduation date of Fall 2025
 Title: TBD
 Award: **GEM Fellowship, NASA Space Technology Graduate Research Opportunities Fellowship**
 Current Status: Passed Ph.D. Qualifying Exams in Spring 2023
1. Student: Mr. Jacob Knott
 Start: Fall 2022
 Graduation: Anticipated graduation date of Fall 2026
 Title: TBD
 Award: -
 Current Status: Scheduled to take Ph.D. Qualifying Exams in Fall 2024

B2. M.S. Students

B2.a. Graduated M.S. Thesis

1. Student: Mr. Cheong Chan
 Start: Fall 2014
 Graduation: Fall 2017
 Title: Experimental Investigation of Fast Plasma Production for the VAIPER Antenna
 Current Position: Propulsion Engineer, Orbital-ATK

B2.b. Graduated M.S. Non-thesis

25. Student: Mr. Alexander Sergio Pontecorvi
 Graduation: Summer 2023
 Title: Torque Inducing Mechanisms in DC Ion Thruster
 Current Status: TBD
24. Student: Mr. Julian Finlaw
 Graduation: Spring 2023
 Title: An Analysis of “Green” LMP-103S Propellant Performance in Relation to “Hypergolic” Hydrazine
 Current Status: Propellant Engineer at Astrotech Space Operations
23. Student: Ms. Kristine Sherman
 Graduation: Spring 2022
 Title: Additive Manufacturing Heat Sinks with Phase Change Material for Thermal Management in Electric Propulsion
 Current Status: Mechanical Design Engineer
22. Student: Mr. Evan Bloom
 Start: Spring 2022
 Graduation: Spring 2023
 Title: Review of Plasma Simulation for Electric Propulsion
 Current Status: Turbomachinery Team, Blue Origin

21. Student: Mr. Chris Roper
 Start: Fall 2018
 Graduation: Fall 2022
 Title: System Analysis of Air-Breathing Electric Propulsion
 Award: **GEM Fellow, SREB-State Doctoral Scholars Program award recipient for 2020-2021, Haley Fellowship 2021, ARCS Fellowship, FOCUS Fellowship Award, Ford Foundation Fellowship Award, DOE NNSA Laboratory Residency Graduate Fellowship, Graduate Fellowship for STEM Diversity**
 Current Status: Ph.D. student at Georgia Tech - Physics
20. Student: Ms. Sara Miller
 Start: Fall 2018
 Graduation: Spring 2020
 Title: Survey of Small Satellite Propulsion Systems
 Award: **2019 NSF Fellow, 2018 Mary Jones Berry Scholarship** from the Society of Women Engineers for graduate students, **2018 AIAA Aerospace Power Systems Best Student Paper**
 Current Status: Ph.D. student at Cornell University
19. Student: Mr. David Gomez
 Start: Fall 2018
 Graduation: Summer 2020
 Title: Development of a highly throttleable, bipropellant (Xe-Kr) Hall thruster and investigations into the newly discovered oscillation modes in magnetically shielded thrusters
 Award: **NASA Space Technology Research Fellowship**
 Current Position: Electric Propulsion Engineer, Busek
18. Student: Mr. Nicholas Branch
 Graduation: Spring 2019
 Title: Performance Analysis of a Commercial Radio Frequency Generator on the μ N-RIT-4
 Current Position: Propulsion Engineer, Aerojet Rocketdyne
17. Student: Mr. Nils Gerrit Kottke
 Start: Fall 2016
 Graduation: Fall 2017
 Title: Ionization of Inert Gas with Spatial Density Gradients Caused by Acoustic Waves
 Current Position: MS Student at TU Braunschweig, Germany
16. Student: Mr. Nathaniel Prestridge
 Graduation: Fall 2016
 Title: Solar Array Material Exposure to an Arcjet Plume
 Current Position: Test Engineer, Lockheed Martin
15. Student: Mr. Tyler Scogin
 Graduation: Spring 2016
 Title: Mechanical Property Effects on a Fibrin Clot Matrix from Magnetic Microparticle Induced Strain due to the Influence of an Adjustable Magnetic Field
 Current Position: Propulsion Vibroacoustics Engineer, NASA Marshall Space Flight Center
14. Student: Mr. Mason Freeman
 Graduation: Spring 2015
 Title: Analysis of the Operation of the BPT-4000 Hall Effect Thruster
 Current Position: Electric Propulsion Engineer at SpaceX

13. Student: Mr. Hoang Dao
 Graduation: Spring 2015
 Title: Effect of Facility Gas Ingestion on Hall Effect Performance as a Function of Magnetic Field Profile
 Current Position: Propulsion Engineer, Aerojet Rocketdyne
12. Student: Mr. Cristian Salgueiro
 Graduation: Fall 2014
 Title: THz Time-Domain Spectroscopy for use in Plasma Density Measurements
 Current Position: Associate Design Engineer, Rolls Royce
11. Student: Mr. Rafael Martinez
 Graduation: Fall 2012
 Title: Effect of Passive Thermal Management of Propellant on Neutral Velocity and Residence Time in Hall thrusters
 Current Position: Director of Propulsion Engineering at Apollo Fusion
10. Student: Ms. Sherrie Hall
 Graduation: Summer 2012
 Title: Motion of Magnetized Ions as a Model for Cross-Field Electron Mobility in Hall-Effect Devices
 Award: **NSF Fellow**
 Current Position: Senior Member of Technical Staff, Draper
9. Student: Ms. Gabriela Possa
 Graduation: Spring 2012
 Title: A Study on the Gas Adsorption on Cryogenic Solid Surfaces for Drag Generation for Space Debris Removal
 Award: **Fulbright Scholar**
 Current Position: Assistant Professor, University of Brasilia
8. Student: Mr. Howell Hsieh
 Graduation: Spring 2010
 Title: Design and Construction of a High Thrust-to-Power Concentric Channel Hall Effect Thruster
 Current Position: Captain in United States Air Force
7. Student: Mr. Carl Book
 Graduation: Fall 2009
 Title: Hall Effect Thruster with Cooled Anode
 Current Position: Manufacturing Manager, Lam Research
6. Student: Mr. Fabian Mak
 Graduation: Fall 2009
 Title: Construction of a High-Speed Reciprocating Probe for Internal Measurements of the Hall Effect Thruster
 Current Position: High School Math Teacher
5. Student: Mr. Doug Palmer
 Graduation: Fall 2008
 Title: Annular Helicon Plasma Source for High Thrust-to-Power Hall Effect Thruster
 Current Position: Strategy Consultant – Booz Allen Hamilton

4. Student: Mr. William Gregory McCormick
 Graduation: Spring 2008
 Title: Ion Focusing for High Thrust-to-Power Hall Thrusters
 Current Position: Research Engineer II, Georgia Tech Research Institute
3. Student: Mr. Sean Barnes
 Graduation: Spring 2007
 Title: An Overview of Propulsion Needs and Requirements for Small Sat Applications compared to the XIPS[®] 8 cm Ion Thruster Capability
 Current Position: Data Science & Engineering Leader at Netflix
2. Student: Mr. Brian Fein
 Graduation: Fall 2006
 Title: Preionization in a Field-Reversed Configuration (FRC) Plasma Source
 Current Position: Independent Consultant
1. Student: Mr. Chenhoe Bae
 Graduation: Fall 2006
 Title: Theory of ECR Ion Sources and Its Applications to Electric Propulsion
 Current Position: Sr. Researcher at National Fusion Research Institute, Daejeon, South Korea

B2.c. In Process M.S. Non-thesis

3. Student: Ms. Maedini Jayaprakash
 Graduation: Anticipated graduation date of Fall 2023
2. Student: Mr. Luke Marino
 Graduation: Anticipated graduation date of Fall 2023
1. Student: Mr. Reid Ruggles
 Graduation: Anticipated graduation date of Summer 2023

B3. Undergraduate Students

Dr. Walker has mentored 182 undergraduate research students in his laboratory. To date, over 50% of these undergraduate research students have pursued graduate-level training. Many of these students have earned prestigious graduate fellowships from NSF, DoD, and NASA.

PURA – Presidential Undergraduate Research Award, Georgia Institute of Technology

Aerospace Honors Program – The student has an overall GPA of 3.5 or higher.

182. Joshua Moore, 1/2023 – Present, “In Progress” **AE Honors Program**
181. Aaron Trinh, 1/2023 – Present, “In Progress” **AE Honors Program**
180. Elijah Cloutre, 1/2023 – Present, “In Progress” **AE Honors Program**
179. Alejandro Garcia, 1/2023 – Present, “In Progress” **AE Honors Program**
178. Cameron Eure, 1/2023 – Present, “In Progress” **AE Honors Program**
177. Ms. Sabrina Mayor, 1/2023 – Present, “In Progress” **AE Honors Program**
176. Robert Martelli, 1/2023 – Present, “In Progress” **AE Honors Program**
175. John Stafford, 8/2022 – Present, “Automation of Thruster Calibration” **AE Honors Program**

174. Matthew Blackburn, 8/2022 – Present, “LabVIEW VI for High-speed Acquisition of Plasma-Wall Boundary Conditions in VTF-2” **AE Honors Program**
173. Ms. Madison Floyd, 8/2022 – Present, “Support of Cryogenic and Diffusion Pump Operation” **AE Honors Program**
172. Jeffrey Pan, 8/2022 – Present, “Testing a Hall Effect Thruster on Ionic Liquid” **AE Honors Program**
171. Ms. Adele Payman, 8/2022 – Present, “Inert Gas/Propellant Recovery System” **AE Honors Program, Hertz Fellowship**
Current Position: Graduate Student at the California Institute of Technology – Applied Physics
170. Ms. Kendall Seedfried, 8/2022 – Present, “Vacuum Facility for Electron Extraction from Carbon Nanotubes” **AE Honors Program**
Current Position: Graduate Student at Stanford University – Aerospace Engineering
169. Taylor Hampson, 08/2022 – Present, “Tabletop Plasma Cell for Thomson Scattering Calibration” **AE Honors Program, Matthew Isakowitz Fellowship**
168. Mr. Joshua Moore, 05/2022 – Present, “Performance Characterization of HETX” **AE Honors Program**
167. Mr. Josiah Dahlstrom, 05/2022 – Present, “Propellant Feed System for Vaporization of Ionic Liquid” **AE Honors Program**
166. Mr. Kevin Zhang, 05/2022 – Present, “Alternative Propellant Feed System for a Hall Effect Thruster” **AE Honors Program**
165. Mr. Bilal Hassan, 05/2022 – 08/2022, “Rotational Raman Scattering in Low Number Density Nitrogen Gas” **SURE** (Summer Undergraduate Research in Engineering Science Program), University of Florida, Gainesville, FL
Current Position: Graduate Student at the University of Florida – Aerospace Engineering
164. Mr. Simeon Salia, 05/2021 – Present, “Vaporization of Ionic Liquids for Electric Propulsion” **AE Honors Program**
Current Position: Princeton Plasma Physics Laboratory
163. Mr. Evan Bloom, 01/2021 – 05/2022, “Simulation of a Hall Effect Thruster Discharge using VSimPD Software” **AE Honors Program**
Current Position: MS at the Georgia Institute of Technology – Aerospace Engineering, Propulsion Engineer – Blue Origin
162. Ms. Ivanska Baez, 05/2021 – 12/2022, “Tabletop Plasma Cell for Thomson Scattering Calibration” **AE Honors Program**
Current Position: Graduate Student at the Georgia Institute of Technology – Aerospace Engineering
161. Ms. Emily Ku, 08/2021 – 05/2022, “Material Selection for Deployable Hall Effect Thruster Channels”
Current Position: Graduate Student at Colorado State University – Mechanical Engineering
160. Mr. Alex Mealey, 01/2021 – 05/2022, “Propellant Heating Systems for Vaporization of Liquid Propellants” **AE Honors Program**
Current Position: Graduate Student at the Georgia Institute of Technology – Aerospace Engineering
159. Jeffrey Pan, 08/2021 – Present, “Testing a Hall Effect Thruster on Ionic Liquid” **AE Honors Program**

158. Mr. Markus Perkins, 08/2021 – Present, “Installation of a PID Controller in the Null-type Inverted Pendulum Thrust Stand” **AE Honors Program**
157. Ms. Rachel Thomas, 08/2021 – 5/2022, “Fabrication of the T-140 Hall Effect Magnet Solenoids” **AE Honors Program**,
Current Position: Propulsion Engineer for Raptor Chamber and Nozzle – SpaceX
156. Mr. Maurice Boone, 05/2021 – 07/2021 “A Cooling System to Enhance the Pumping Rate for Cryogenically-maintained Vacuum Systems” **SURE** (Summer Undergraduate Research in Engineering Science Program), **Second Place Oral Presentation**, Kennesaw State University, Kennesaw, GA
Current Position: Graduate student at the Georgia Institute of Technology – Aerospace Engineering
155. Mr. Gregory McDonald, 08/2020 – 12/2020, “Fabrication of a 60-A LaB₆ Cathode” **AE Honors Program** Current Position: Undergraduate student at the Georgia Institute of Technology – Aerospace Engineering
Current Position: Associate Engineer in Mission Architecture and Analysis – Aerojet Rocketdyne
154. Mr. Svanik Tandon, 08/2020 – 12/2020, “Redesign and Fabrication of a Retarding Potential Analyzer” **AE Honors Program**
Current Position: Undergraduate student at the Georgia Institute of Technology – Aerospace Engineering
Current Position: Graduate Student at Columbia University – Physics
153. Mr. Jason Smith, 08/2020 – Present, “Development of LabView VI’s for the Thermal Characterization of VTF-2” **AE Honors Program**
Current Position: Integration & Test Engineer – SpaceX
152. Ms. Varnita Prakash, 08/2020 – 12/2020, “Fabrication of a 60-A LaB₆ Cathode” **AE Honors Program**
Current Position: Systems Engineer, Ball Aerospace
151. Mr. Joseph Conroy, 08/2020 – 12/2020, “Installation and Verification of Water-cooled Beam Dump Data Acquisition System” **AE Honors Program**
Current Position: Graduate Student at the University of Florida – Mechanical Engineering
150. Ms. Brenda Valdez, 08/2020 – 5/2022, “Thermal Analysis of a Water-cooled Beam Dump” **AE Honors Program**
Current Position: Graduate Student at Purdue University – Aerospace Engineering
149. Ms. Saba Shaik, 01/2020 – 5/2021, “Fabrication of a Retarding Potential Analyzer” **AE Honors Program**
Current Position: Graduate Student at the Massachusetts Institute of Technology – Aeronautics & Astronautics
148. Ms. Maggie Stewart, 01/2020 – 12/2021, “Integration of a CNT Emitter into a Bell Jar Vacuum System” **AE Honors Program**
Current Position: Undergraduate student at the Georgia Institute of Technology – Aerospace Engineering

147. Mr. Luke Marino, 01/2021 – 08/2021, “Operation of a Hall Effect Thruster on Ionic Liquid Propellant” **AE Honors Program**
Current Position: Graduate Student at the Georgia Institute of Technology – Aerospace Engineering
146. Mr. Chandler Thompson, 01/2020 – 8/2020, “Plasma Actuators and Flow Separation on Airfoils,” **funded by PURA Award, AE Honors Program**
Current Position: Aerospace Engineer – US Army Technology Applications Program Office
145. Mr. Shanmurugan Selvamurugan, 08/2019 – 12/2020, “Fabrication of a Field Emitting CNT-based Cathode as a Charge Neutralization Mechanism for EP Spacecraft in a Plasma Environment,” **funded by PURA Award, AE Honors Program**
Current Position: Graduate Student at the Georgia Institute of Technology – Aerospace Engineering
144. Mr. Ryan Bowers, 08/2019 – 12/2019, “Cathode Test Facility”
Current Position: Flight Test Engineer – United States Air Force
143. Ms. Janice Cabrera, 05/2019-08/2019 “Microcracks in Hall Thrusters” **SURE** (Summer Undergraduate Research in Engineering Science Program), Embry-Riddle University, Daytona Beach, FL
Current Position: Graduate Student at the Georgia Institute of Technology – Aerospace Engineering, **National Science Foundation Graduate Research Fellow**
142. Mr. Adrian Vicente La Lande, 08/2018 – 05/2020, “Optics-based Tracking for Non-intrusive Thrust Measurements,” **2020 Jack Kent Cooke Foundation Graduate Scholarship**
Current Position: Graduate Student at the Georgia Institute of Technology – Aerospace Engineering
141. Mr. Jordan Marshall, 08/2018 – 12/2018, “Redesign and Manufacturing Methods for Ceramic Models for use in Experimentation”
Current Position: Manufacturing and Development Engineer, Blue Origin
140. Mr. Wyatt Amacker, 08/2018 – 12/2019, “Characterization of Thermally-Induced Microcracking in Boron Nitride”
Current Position: MS at the Georgia Institute of Technology – Aerospace Engineer, Naval Air Systems Command
139. Ms. Abigail Kimber, 05/2018 - 08/2018, “Plasma Probe Characterization”
Current Position: Associate Mechanical Engineer – L3Harris Technologies
138. Mr. Mitchell Hastings, “05/2018 – 08/2018 “Diffusion Pump Vacuum Facility Performance Verification” **AE Honors Program**
Current Position: Lead Test Development Engineer, Ursa Major
137. Ms. Naomi Ingram, 05/2018 – 08/2018 “Laser Thomson Scattering Diagnostic – Optical Baffles” **SURE** (Summer Undergraduate Research in Engineering Science Program), University of Florida, Niceville, FL
Current Position: Graduate Student at the University of Texas-El Paso –Mechanical Engineering.
136. Mr. Muhannad Eladl, 01/2018 – 5/2019, “Cooling and Coupling of a Radio Frequency Generator to an RF Ion Thruster,” **Aerospace Honors Program**
Current Position: Graduate Student at the Georgia Institute of Technology – Aerospace Engineering

135. Mr. Vishnu Rajendran, 01/2018 – 05/2018, “Wiring of an Inverted Pendulum Thrust Stand to Reduce Thermal Hysteresis,” **Aerospace Honors Program**
Current Position: Systems Engineer, Uber ATG
134. Mr. Jacob Knott, 01/2018 – 8/2019, “Development of a LabVIEW VI for Diffusion Pump Monitoring,” **Aerospace Honors Program**
Current Position: Propulsion Engineer, Busek
133. Ms. Kelsey Pepper, 01/2018 – 5/2019, “Flame Visualization of Hall Thruster Propellant Distributors,” “Characterization of the Bell Jar Vacuum Chamber,” **Aerospace Honors’ Program, 2019 Georgia Tech College of Engineering Outstanding Undergraduate Research Award**
Current Position: Graduate Student at the Georgia Institute of Technology – Aerospace Engineering
132. Mr. Cameron Miller, 01/2018 – 5/2018, “Design of a Thomson Scattering Diagnostic,” **Aerospace Honors Program**
Current Position: Not available
131. Mr. Utkarsh Pandey, 01/2018 – 08/2018, “Plasma-Assisted Peroxide Rocket,” **Aerospace Honors Program**
Current Position: Graduate Student at the Purdue University – Department of Aerospace Engineering, **NDSEG Fellow**
130. Mr. Robert Ashcom, 08/2017 – 12/2018, “Electrode Design for a Small Plasma Cell”
Current Position: Systems Engineer, Northrup Grumman
129. Mr. Shawn (Zixuan) Huang, 08/2017 – 12/2017, “Design of an LN2 Safety Ventilation System”, **Aerospace Honors Program**, Current Position: MS at the Georgia Institute of Technology – Loads and Dynamics Associate Engineer, SpaceX
128. Ms. Sara Miller, 08/2017 – 12/2017, “Validation of the LN2 Pump – Vacuum System”
Current Position: Graduate Student at Cornell University – Aerospace Engineering, **NASA Space Technology Research Fellowship**
127. Mr. Collin Whittaker, 08/2017 – 7/2019, “Invention Disclosure, GTRC ID 801,” **Aerospace Honors Program**
Current Position: Graduate Student at the University of Michigan – Aerospace Engineering, **NASA Space Technology Graduate Research Fellowship**
126. Ms. Emily Grover, 08/2017 – 05/2019, “Optical characterization of anode flow uniformity” **Aerospace Honors’ Program**
Current Position: Graduate Student at the Georgia Institute of Technology – Aerospace Engineering
125. Ms. Zoe Sieling, 08/2017 – 5/2018, “Mass Flow System for Vacuum Facility 1,” **Aerospace Honors Program**
Current Position: Undergraduate student at the Georgia Institute of Technology – Aerospace Engineering
124. Mr. Norman Harris, 08/2017 – 12/2017, “Installation of an Inverted-Pendulum Thrust Stand” **Aerospace Honors Program, STAMPS Scholar**
Current Position: Engineering Career Foundation Program - Boeing

123. Mr. Matthew N. Corrado, 08/2017 – 12/2018, “Fluid System Design,” **Aerospace Honors Program, AIAA Undergraduate Scholarship**
Current Position: Graduate Student at the Massachusetts Institute of Technology – Aerospace Engineering
122. Ms. Sophia Bergmann, 05/2017 – 08/2017, “Magnetohydrodynamic Power Generation for Rocket Engines,” **SURE** (Summer Undergraduate Research in Engineering Science Program), University of Florida, Niceville, FL
Current Position: Graduate Student at the University of Michigan – Aerospace Engineering
121. Mr. Jorge Garcia, 05/2017 – 5/2018, “Support of LN2 Cryogenerator System Maintenance”, **Aerospace Honors Program**
Current Position: HVAC Service Technician
120. Mr. Taylor Fields, 05/2017 – Present
Current Position: Graduate Student at the Georgia Institute of Technology – Aerospace Engineering
119. Ms. Arega Margousian, 05/2017 – 12/2019, “LabVIEW Programming for Automated Mass Flow System”
Current Position: Graduate Student at the Georgia Institute of Technology – Aerospace Engineering
118. Mr. Carson Fletcher, 05/2017 – 12/2017, “Characterization of Plasma Properties in an Arcjet Plume”
Current Position: MS at the Georgia Institute of Technology – Quantitative and Computational Finance, Merrill Lynch Summer Analyst
117. Mr. Steven Ragland, 03/2017 – 12/2017, “Operation of a Hydrazine Arcjet”
Current Position: Engineer at Raytheon
116. Ms. Abigail McClain, 02/2017 – 05/2018, “Fabrication of an MHD-enabled Rocket for a Chemical Rocket Engine” **Aerospace Honors Program, Selected as the Georgia Tech representative for the Georgia Capitol Academic Recognition Day**
Current Position: Graduate Student at Harvard – Physics
115. Mr. Ali Talaski, 02/2017 – 05/2017, **Aerospace Honors Program**
Current Position: MS at the Georgia Institute of Technology – Aerospace Engineering, Launch Engineer II-Fairing Refurb Integration & Test – SpaceX
114. Mr. Jared Delrose, 02/2017 – 12/2017, **Aerospace Honors Program**
Current Position: MBA at the University of Florida, Sr. Business Management Analyst – NextEra Energy, Inc.
113. Mr. Adrian Marrero, 02/2017 – 05/2017, **Aerospace Honors Program**
Current Position: Launch Engineer Intern - SpaceX
112. Mr. Stefan Kranenburg, 02/2017 – 7/2017
Current Position: Systems Engineer – Linquest
111. Ms. Jacquelyn Williams, 02/2017 – 5/2017, “Operation of a Hydrazine Arcjet”
Current Position: Flight Test Engineer, Sikorsky
110. Mr. Thomas Wilson, 02/2017 – 05/2018, “Serial Control of Power Supplies for Hall Thruster Testing,” **Aerospace Honors Program**
Current Position: Microsoft

109. Ms. Charbornay Johnson, 02/2017 – 12/2017, “Operation of a Hydrazine Arcjet”
Current Position: Logistics Flow Team, Target
108. Hugh Devine, 01/2017 – 5/2017, “Arcjet Propellant Feed System,” **Aerospace Honors Program**
Current Position: Application Software Developer Associate, Lockheed Martin
107. Mr. Adam Thomas, 01/2017 – 05/2017 “MHD Extraction of Electrical Energy from a Chemical Rocket Engine”
Current Position: MS at the Georgia Institute of Technology – Computer Science, Software Engineer – Northrop Grumman
106. Mr. Cameron Miller, 01/2017 – 5/2018 “Thomson Scattering Diagnostic for Characterization of the Plasma-Material Interaction,” **Aerospace Honors Program**
Current Position: MS at the Georgia Institute of Technology – Aerospace Engineering, Principal Systems Engineer – Northrop Grumman
105. Ms. Divya Sunkara, 01/2017 – 5/2018 “Characterization of Secondary Electron Emission from Insulators,” **Aerospace Honors Program**
Current Position: Engineer at Raytheon
104. Mr. Andrés Blanco, 01/2017 – 12/2017, “Pressure Measurement in Vacuum Test Facility”
Current Position: Structural Test Engineer at Bell Helicopter
103. Mr. David Blaney, 01/2017 – 5/2019 “Measurement of the Plasma Potential in a Hall Effect Thruster Plume,” **Aerospace Honors Program**
Current Position: Undergraduate student at the Georgia Institute of Technology – Aerospace Engineering
102. Mr. Samuel Rapoport, 01/2017 – 05/2018, “Characterization of the Ion Current Density in a Hall Effect Thruster Plume,” **Aerospace Honors Program**
Current Position: MS at the Georgia Institute of Technology – Aerospace Engineering, Electric Propulsion Project Engineer II – Aerojet Rocketdyne
101. Ms. Myra Lattimore, 01/2017 – 5/2018, “Enhancing Rocket-Based Magnetohydrodynamic Power Generation with Plasma Discharges,” **Aerospace Honors Program**
Current Position: MS at the Georgia Institute of Technology – Aerospace Engineering, Software Systems Engineer NASA Jet Propulsion Laboratory
100. Mr. Mitchell Mazzoni, 01/2017 – 05/2017 “Operation of a Hydrazine Arcjet”
Current Position: Aerospace Software Engineer – Lockheed Martin
99. Mr. Camilo Duarte, 01/2017 – 05/2017 **Aerospace Honors Program**
Current Position: MS Georgia Institute of Technology – Aerospace Engineering, Software Engineer/Robotics – Lockheed Martin
98. Mr. David Gomez, 01/2017 – 05/2018, “Design and Implementation of LabVIEW VIs for Plasma Diagnostics” **Aerospace Honors Program, 2018 Georgia Tech College of Engineering Outstanding Undergraduate Research Award, NASA Space Technology Research Fellowship**
Current Position: Graduate Student at the Georgia Institute of Technology – Aerospace Engineering

97. Mr. Justin Johnson, 09/2016 – 5/2017, “Automated Measurement of the Magnetic Field Topology in a Hall Effect Thruster,” Morehouse Visiting Undergraduate Researcher **SURE** (Summer Undergraduate Research in Engineering Science Program), Morehouse College, Atlanta, GA
Current Position: Undergraduate student at Georgia Institute of Technology - Aerospace Engineering, **funded by PURA Award**
96. Ms. Caroline Martin, 05/2016 – 07/2016,” **SURE** (Summer Undergraduate Research in Engineering Science Program), Wellesley College, Wellesley, MA
Current Position: BS Physics and English, Wellesley College
95. Mr. Joshua Siniard, 04/16 – 12/2017, “LabVIEW Enable Vacuum Facility Data Acquisition System,” **Aerospace Honors Program, Donnell W. Dutton Outstanding Senior in Aerospace Engineering**
Current Position: Associate Systems Engineer, Lockheed Martin
94. Mr. Andrew Feliz, 04/2016 – 8/2016, “Fabrication and Characterization of a Water-Cooled Ion Beam Dump,” **Aerospace Honors Program**
Current Position: Not available
93. Mr. Michael Van Akin, 01/2016 – 5/2018, “Design of an Ion Beam Dump,” **Aerospace Honors Program, 2017 Astronaut Scholarship, 2X funded by PURA Award**
Current Position: MS at University of Colorado - Boulder – Aerospace Engineering, **National Science Foundation Graduate Research Fellow**, New Shepard Thermal Engineer – Blue Origin
92. Mr. Nicholas Branch, 01/2016 – 12/2017, “Development of a THz-Time Domain Spectroscopy System,” **Aerospace Honors Program, 2017 Georgia Tech College of Engineering Outstanding Undergraduate Research Award – Aerospace, AIAA 20 under 20 Award**
Current Position: Propulsion Engineer, Aerojet Rocketdyne
91. Mr. Liam Smith, 01/2016 – 12/2016, “Thrust Measurements of a Pulsed Device,” **Aerospace Honors Program**
Current Position: Ph.D. Graduate Student at Georgia Tech – Machine Learning, **NDSEG Fellow**
90. Mr. Joshua Peterson, 08/2015 – 5/2016, “Ion Beam Dump Characterization,” **Aerospace Honors Program**
Current Position: SpaceX Manufacturing Engineer
89. Mr. Aaron Blacker, 08/2015 – 12/2016, “Thermal Characterization of a Beam Dump to Upgrade Vacuum Test Facility,” **funded by PURA Award x2, Aerospace Honors’ Program, Aerospace Honors Program**
Current Position: MSE Purdue University – Aerospace Engineering, MBA Stanford, **NSF Fellow**, Co-Founder – Teleo
88. Mr. Geoffrey Rairigh, 08/2015 – 05/2017, “Diagnostic Development for the Study of Electrical Facility Effects,” **Aerospace Honors Program**
Current Position: MS at Georgia Institute of Technology – Aerospace Engineering
87. Mr. Daniel Silva, 08/2015 – 12/2015, “DAQ System for Electric Propulsion,” **Aerospace Honors Program**
Current Position: Design Engineer at Pratt & Whitney
86. Mr. Shadrack Hepner, 01/2015 – 5/2015, “Design of a Retarding Potential Analyzer Mounting System”
Current Position: Ph.D. University of Michigan – Aerospace Engineering, **NSF Fellow**, Plasma Engineer – Avalanche Energy

85. Mr. Lloyd Maza, 01/2015 – 12/2015, “Integration of Electrostatic and Electromagnetic Acceleration Mechanisms,” **Aerospace Honors Program**
Current Position: MS at Stanford University – Aerospace Engineering, Localization Engineer, Swift Navigation
84. Mr. Nathan Brown, 09/2014 – 5/2016, “LabView VI Development for Automated Plasma Probe Data Analysis,” **funded by PURA Award, Aerospace Honors Program**
Current Position: Ph.D. Georgia Institute of Technology – Aerospace Engineering, **NSF Fellow**, Scientist – Sandia National Laboratories
83. Ms. Phoebe Zhang, 09/2014 – 12/2014, “Characterization of a Helicon Plasma with a Hidden RF-Compensated Langmuir Probe”
Current Position: Graduate Student at the Georgia Institute of Technology – Aerospace Engineering
82. Mr. Jack Ridderhof, 09/2014 – 12/2014, “Design of a Storage System for Electric Propulsion Devices,” **Aerospace Honors Program**
Current Position: Propulsion Engineering Co-op, Delta Airlines
81. Mr. Matthew Montavon, 06/2014 – 12/2014, “Design of an Internal Linear Positioner for an Inverted-Pendulum Thrust Stand”
Current Position: Peace Corps Volunteer
80. Mr. Andrew Coffey, 01/2014 – 5/2014, “Simulation of a 300-W Hall Effect Thruster with COMSOL,” **Aerospace Honors Program**
Current Position: MS at the Georgia Institute of Technology – Aerospace Engineering, Systems Engineering, JPL
79. Mr. Carlos Calixtro, 08/2013 – 12/2014, “Helium Leak Detector Repair,” **Aerospace Honors Program.**
Current Position: Associate Engineer at Pratt & Whitney
78. Mr. Martin Disla, 06/2013 – 08/2013, “Characterization of a Hall Thruster Plasma Plume using Langmuir Probes,” **SURE** (Summer Undergraduate Research in Engineering Science Program), Adelphi University, Garden City, NY
Current Position: M.S. at the University of Connecticut – Physics, Process Engineering, Sheumann Laser
77. Jan Kiviaho, 01/2013 – 12/2014 “Automation of Mass Flow Calibration System”
Current Position: Graduate Student at the Mississippi State University, MS Georgia Institute of Technology – Aerospace Engineering
76. Adam Whalen, 08/2012 – 12/2014 “Design of Surface Magnetic Field for Plasma Sheath Studies,” **Aerospace Honors Program**
Current Position: Associate Systems Engineer, Lockheed Martin
75. Nicholas Picon, 08/2012 – 12/2012 “Matching Network Tracking,” **Aerospace Honors Program, Marshall Scholar 2014**
Current Position: MSc University of Oxford, Mission Integration Engineer at SpaceX
74. Johnson Henderson, 08/2012-12/2012 – “Storage Cases for Plasma Probes”
Current Position: Graduate Student at the Georgia Institute of Technology – Aerospace Engineering, **National Science Foundation Graduate Research Fellow**
73. Mike Trimberger, 08/2012 – 12/2012 “Rail System for Linear Motion Tables”
Current Position: MS Florida Institute of Technology – Space Systems, Systems Engineer at Northrop Grumman

72. Mr. Ethan Dale, 08/2011 – 05/2013 “Comparing the performance of plasma impedance probes and Langmuir probes for RF plasma diagnostics,” **funded by PURA Award, Aerospace Honors Program**
Current Position: Ph.D. University of Michigan – Aerospace Engineering, Technical Staff – The Aerospace Corporation
71. Mr. Christopher Richardson, 08/2011 – 05/2012 “Open FOAM Simulations,” **Aerospace Honors Program**
Current Position: MS Georgia Institute of Technology – Aerospace Engineering, Research Engineer at Georgia Tech Research Institute
70. Ms. Nicole Tyman, 08/2011 – 05/2013 “Impact of Facility Pressure on Hall Effect Thruster Performance,” **Aerospace Honors Program**
Current Position: Graduate Student at the Georgia Institute of Technology – Aerospace Engineering
69. Mr. Louis Dressel, 08/2011 – 05/2012 “FLUENT Simulations of Gas Distributor Flow,” **Aerospace Honors Program**
Current Position: Ph.D. Stanford University – Aerospace Engineering, **NSF Fellow**
68. Mr. Chase Brown, 08/2011 – 05/2012 “Flame Visualization of Hall Effect Thruster Anode Flow,” **Aerospace Honors Program**
Current Position: Nuclear Power Submarine Officer, US Navy
67. Mr. John Shivanandan, 08/2011 – 05/2012 “Thermal Model of Concentric Channel Hall Effect Thruster,” **Aerospace Honors Program**
Current Position: MS Stanford University – Aerospace Engineering, Senior Propulsion Engineer at SpaceX
66. Mr. Joshua Mann, 08/2011 – 05/2013 “Kink-mode Instabilities in the Magnetoplasmadynamic Thruster,” Morehouse Visiting Undergraduate Researcher
Current Position: Graduate Student at Purdue University – Aerospace Engineering
65. Mr. Joshua Goldstein, 08/2011 – 12/2013 “High-Current Lanthanum Hexaboride Cathode and Investigation of Oxygen-Rich Staged-Combustion Hardware,” **Aerospace Honors Program**
Current Position: MS at Stanford University – Computational and Mathematical Engineering, Remote Sensing Specialist at Redcastle Resources
64. Mr. Cristian A. Salgueiro, 08/2011 – 05/2013 “High Energy Density UAV Power System,” funded by **PURA Award, Aerospace Honors Program**
Current Position: MS Georgia Tech, Controls System Engineer, Rolls-Royce Marine North America
63. Mr. Matthew Miller, 10/2010 – 05/2011 “Visualization of Ion Trajectories in a Hall Effect Thruster,” **Aerospace Honors Program.**
Current Position: Ph.D. Georgia Institute of Technology – Aerospace Engineering, **NASA Space Technology and Research Fellow**, Exploration Research Engineer, Jacobs Engineering
62. Mr. Azariah Cornish, 08/2010 – 05/2011 “Design and Fabrication of a Multichannel Breakout Box for Current Measurements”
Current Position: Engineer at ATA Engineering
61. Mr. Diego Hoyos, 08/2010 – 12/2012 “Vacuum Facility Ion Beam Dump Design and Installation,” **Aerospace Honors Program**
Current Position: Systems Engineer at Boeing

60. Mr. Stephen Rooks, 08/2010 – 12/2010
Current Position: Systems Engineer at Honeywell
59. Mr. Jason Frieman, 05/2010 – 05/2012 “A Terahertz Interferometer for the Performance of Real-Time, Non-Intrusive Electron Number Density Measurements on Plasmas Enclosed in Insulators,” – funded by **PURA Award, Aerospace Honors Program, NSF Fellow**
Current Position: Ph.D. Georgia Institute of Technology – Aerospace Engineering, Research Electrical Engineer: Electric Propulsion Systems at NASA Glenn Research Center
58. Mr. Sang Hwang, 05/2010 – 5/2011
Current Position: Not available
57. Mr. Michael Miles, 05/2010 – 5/2011 “Simulation of an Annular Helicon Plasma Source”
Current Position: Technical Project Manager – 777X Propulsion, Engines at Boeing
56. Mr. Kiichiro DeLuca, 05/2010 – 5/2010, **Aerospace Honors Program**
Current Position: MS University of Colorado-Boulder, **NSF Fellow**, Principal at WERU Investments
55. Mr. Nicholas Magina, 01/2009 – 05/2011 “Magnetic Field Modeling of the T-140 Hall Effect Thruster,” **Aerospace Honors Program**
Current Position: Georgia Tech Ph.D. – Aerospace Engineering, GE Global Research
54. Ms. Mallory Lefland, 08/2009 – 5/2011 “Chemical Ionization,” **Aerospace Honors Program**
Current Position: Systems Engineer at the Jet Propulsion Laboratory
53. Mr. Eric Zuniga, 08/2009 – 5/2011 “Automation of Mass Flow Controller Calibration System”
Current Position: Test & Analysis Engineer at Chromalloy Engineering Center of Excellence
52. Mr. Michael Hodgson, 08/2009 – 05/2010 “Electric Field Modeling of CNT Field Emission Cathodes”
Current Position: MS Purdue University, Simulation and Software Engineer at Gulfstream Aerospace
51. Ms. Lianne Lewis, 08/2009 – 05/2010 “Assembly and Verification a CNT Field Emission Cathode Life Test Facility”
Current Position: High School Science Teacher, North Springs High School, Sandy Springs, GA
50. Ms. Sherrie Hall, 08/2009 – 05/2010 “RF Shielding of an Inverted-Pendulum Thrust Stand Electronics,” **Aerospace Honors Program**
Current Position: Ph.D. Massachusetts Institute of Technology – Aerospace Engineering, **NSF Fellow**, Human Systems Integration at Draper
49. Mr. Andrew Willis, 01/2009 – 12/2009 “Performance of Arcjet Thrusters with Relation to Multi-mode Mission Analysis”
Current Position: MS Georgia Tech, International Space Station PRA Analyst at Ares Technical Services
48. Ms. Ashley Flick, 01/2009 – 8/2009 “Modeling of AAIT performance” – funded by **Northrop-Grumman Aerospace Systems**
Current Position: MS Georgia Tech, Systems Engineer at Lockheed Martin
47. Mr. Jonathan Walker, 01/2009 – 5/2010 “Modeling a Hall effect thruster discharge chamber with Ion Focusing Electrodes,” **Aerospace Honors Program** – funded by **PURA Award, United Technologies Award, Astronaut Scholarship (5/2009)**
Current Position: Ph.D. Georgia Tech Aerospace Engineering, **NSF Fellow**, Senior Aeronautical Engineer at Lockheed Martin

46. Mr. Michael Nucci, 08/2008 – 12/2008, **Aerospace Honors Program**
Current Position: Aerospace Engineer at ATA Engineering
45. Mr. Stephen Jackson, 08/2008 – 12/2009 “Silver plating of helicon antennas,” **Aerospace Honors Program**
Current Position: Operations Analyst – Lockheed Martin
44. Mr. Stephen Pinkerton, 08/2008 – 08/2009 “Plasma Double Layer Thruster and Ion Engine/DL Hybridization Feasibility,” – funded by **PURA Award** (declined).
Current Position: Graduate student at the University of Southern California
43. Mr. Brandon Smith, 08/2008 – 5/2010 “ORS Analysis, 8-cm Ion Engine,” **Aerospace Honors Program**
Current Position: Postdoctoral Fellow, University of Michigan – Aerospace Engineering, **NASA Space Technology Research Fellow**
42. Mr. David Simons, 08/2008 – 05/2009, “Carbon Nanotube Cold Cathode Testing,” **Aerospace Honors Program**
Current Position: Not available
41. Mr. Jason Joiner, 08/2008 – 08/2009, “Analyzing Helicon Waves in a Plasma Propellant” – funded by **PURA Award**
Current Position: MS George Washington University, Aerospace Engineer, Naval Surface Warfare Center
40. Mr. Hoang Dao, 08/2008 – 08/2009, “LabView Code for Carbon Nanotube Cold Cathode Life Tests”
Current Position: MS Georgia Institute of Technology, Propulsion Engineer at Aerojet Rocketdyne
39. Ms. Anne Marsha Joseph, 05/2008 – 07/2008, “Charge State Measurement in a Hall thruster Plume,” **SURE** (Summer Undergraduate Research in Engineering Science Program), SUNY, Buffalo, NY
Current Position: MS Mechanical Engineering SUNY
38. Mr. Shen Ge, 05/2008 – 12/2018
Current Position: MS Aerospace Engineering, Texas A&M, Payload Integration Manager, GeoControl Systems
37. Mr. Abhshiek Arguwal, 05/2008 – 06/2008
Current Position: MS Data Science – Berkeley, Lead Data Scientist – Fannie Mae
36. Mr. Johnnie Hughes, 05/2008 – 12/2008
Current Position: MBA Georgia Tech, MBA Associate/ Delta Tech Ops/Operations Analysis and Performance
35. Mr. Lloyd M. Huang, 01/2008 – 05/2009
Current Position: Senior Nuclear Engineer at Naval Nuclear Laboratory
34. Mr. Scott King, 08/2007 – 05/2008 “ExB Probe Measurements”
Current Position: Graduate student at the Georgia Institute of Technology – Aerospace Engineering, Department of Defense
33. Mr. Ethan Maretich, 08/2007 – 05/2008 “Faraday Probe Measurements”
Current Position: MBA University of Colorado-Denver, Product Compliance Manager – Industrial Sector

32. Mr. William Bailey, 08/2007 – 12/2007
Current Position: Not available
31. Mr. Jon Coquico, 08/2007 – 12/2007 “Construction of a 20-channel Data Acquisition Breakout Box”
Current Position: Primary Instruction Assistant, Kumon North America, Inc.
30. Mr. Howell Hsieh, 08/2007 – 05/2008, “Measurement of Current Density in an RF Plasma Source,” **Aerospace Honors Program – 2008 Air Force Cadet Research Award**
Current Position: MS Aerospace Engineering Georgia Tech, Captain in United States Air Force
29. Ms. Lisa Stuber, 08/2007 – 05/2008, “Emission Spectroscopy of a Helicon Plasma,” – funded by **PURA, Aerospace Honors Program, Northrop-Grumman Scholar**
Current Position: Not available
28. Mr. William Bell, 05/2007 – 12/2007, “Characterization of a 10-A Cathode,” **Aerospace Honors Program**
Current Position: Not available
27. Mr. Wilson Cruz, 05/2007 – 08/2007, 05/2008 – 8/2008
Current Position: Lead Systems Engineer at GE Aviation
26. Ms. Amanda Pietruszewski, 01/2007 – 5/2007, “Construction of a Discharge Filter for a 10-kW Hall Effect Thruster,” **Northrop-Grumman Scholar**
Current Position: Principal Systems Engineer of University Nanosat Program at Jackson and Tull
25. Mr. Jonathan Kosh, 01/2007 – 12/2007, “ExB Measurements in a Hall Thruster Plume,” **Aerospace Honors Program**
Current Position: Applications Engineer at Pololu Robotics & Electronics
24. Mr. Jonathan Lovegren, 01/2007 – 05/2008, “Fabrication and Testing of a Cathode for a Laboratory Model Hall Thruster,” **Aerospace Honors Program** – funded by **PURA**
Current Position: MS MIT, Flight Controls and Software at Vahana, A³ by Airbus
23. Mr. Jesse Miers, 01/2007 – 12/2009, *Undergraduate Research Thesis Title: “Ionization Cost of Helicon Plasma Sources,”* **Aerospace Honors Program** – fund by **Don Richardson Endowed PURA for AE students**
Current Position: Performance Engineer at Delta Airlines
22. Mr. Adam Maser, 01/2007 – 05/2007
Current Position: Ph.D. Georgia Tech, Sr. Engineer, Sensor Systems Integration, Tesla Motors
21. Ms. Christine Dreas, 01/2007 – 05/2007, “Assembly and Test Preparation for a Laboratory T-140 Hall Thruster,” – funded by **PURA** (declined for internship), **Aerospace Honors Program**
Current Position: MBA University of Virginia, Manager in Technology Strategy & Architecture, Deloitte Consulting
20. Mr. Kyle Hott, 08/2006 – 5/2008 “Assembly and Installation of a vacuum-rated Motion Control System”
Current Position: Space Systems Engineer/Functional Manager at Northrop Grumman Aerospace Systems
19. Mr. David Perner, 08/2006 – 05/2007, “MPDT Design Methodologies,” – funded by **PURA, Aerospace Honors Program**
Current Position: MS Georgia Tech, Product Design Engineer, Apple
18. Mr. Nicholas Daily, 08/2006 – 12/2006
Current Position: Systems Integration and Test Engineer, Harris Corporation

17. Mr. Yoonsuk Chang, 08/2006 – 12/2006
Current Position: Not available
16. Mr. Sun Hsieh, 01/2006 – 05/2007, “Design of an Autonomous Air Bearing Platform Using Modulated Hall Thrusters,” **Aerospace Honors Program**
Current Position: MD College of Georgia, Plastic Surgery Resident at Brown University/Rhode Island Hospital
15. Mr. Fabian Mak, 01/2006 – 05/2007, “Building a High-Speed Axial Reciprocating Probe,” **Aerospace Honors Program**
Current Position: High School Math Teacher
14. Mr. Daniel Angelosanto, 01/2006 – 05/2006, “Hall Thruster Efficiency Investigation”
Current Position: MS University of Southern California, Offsite Deputy Site Manager at Northrop Grumman
13. Mr. Sean Barnes, 01/2006- 12/2006, “Simulating Orbit Transfers Using Pollard’s Low Thrust Equations,” **Aerospace Honors Program**
Current Position: Ph.D., The University of Maryland, Data Science & Engineering Leader at Netflix
12. Mr. Frank Marrs, 01/2006 – 05/2006
Current Position: MS University of California – Davis, Ph.D. Colorado State University, Scientist – Los Alamos National Laboratory
11. Mr. William McCormick, 01/2006 – 05/2006, “Magnet Field Analysis of a Hall Thruster,” **Aerospace Honors’ Program, 1st Place 2006 Place College of Engineering, Georgia Institute of Technology Undergraduate Research Competition**
Current Position: MS Aerospace Engineering Georgia Tech, Research Engineer II, Georgia Tech Research Institute
10. Mr. Ellis Moser, 01/2006 – 05/2006, “Construction of an Inverted Pendulum Thrust Stand”
Current Position: A-10 Test Engineer at Eglin Air Force Base
9. Mr. Brandon Luders, 01/2006 – 05/2006, “The Pulsed Inductive Thruster: Experimentation and Scaling,” **Aerospace Honors Program**
Current Position: MIT Ph.D., Software Engineer at Waymo
8. Mr. Doug Palmer, 01/2006 – 08/2006, “PCB Board and Control Box Research”
Current Position: MS Aerospace Engineering Georgia Tech, Strategy Consultant – Booz Allen Hamilton
7. Mr. Paul Specht, 01/2006 – 05/2007 “State of Affairs and Future Concepts for the Pulsed Inductive Thruster,” **Aerospace Honors Program**
Current Position: Georgia Tech Ph.D.
6. Mr. Renzo Higa, “08/2005 – 12/2006, “Construction of a Null-type Inverted Pendulum Thrust Stand for a Hall Effect Thruster”
Current Position: Project Engineer at USSOCOM HQ
5. Mr. Brandon Tomlinson, 08/2005 – 05/2006, “Translational Field-Reversed Configuration”
Current Position: Engineer at the Boeing Company
4. Ms. Camille Sauer, 08/2005 – 05/2006, “Hall Thruster Power System”
Current Position: JD University of Connecticut, Attorney at Banner & Witcoff, Intellectual Property Law

3. Mr. Stephen Medley, 08/2005 – 05/2006, “Simulation of a 5-kW Class Hall Effect Thruster Using MagNet,” **Aerospace Honors Program**
Current Position: Senior Software Engineer at Integrity Applications, Inc.
2. Mr. Kunning Xu, 08/2005 – 12/2006, “Development of an Applied-Field Magnetoplasmadynamic Thruster,” funded by **PURA, Aerospace Honors Program**
Current Position: Associate Professor, University of Alabama-Huntsville – Mechanical Engineering
1. Mr. Masayuki Yano, 08/2005 – 05/2007, “Study of Helicon Plasma Sources for Electric Propulsion,” funded by **PURA, Aerospace Honors Program, 1st Place 2007 College of Engineering, Georgia Institute of Technology Undergraduate Research Competition**
Current Position: Associate Professor, University of Toronto – Institute for Aerospace Studies

High School Student

1. Mr. Elijah Sheffield, “Student Intern” June 2021
2. Mr. Abdoulie Ndow, “Student Intern” June 2021
3. Mr. Eldridge Harris, “Student Intern” Roswell, Georgia, June 2019 – December 2019.
4. Ms. Tykerria Fowler, “Student Intern” ENGAGES, Coretta Scott King Young Women's Leadership Academy, Atlanta, Georgia, June 2019 – June 2020.
5. Mr. Wunya Palmer, “Student Intern” ENGAGES, Kipp Atlanta High School, Atlanta, Georgia, May 2017 – May 2019.
6. Ms. Hannah Crittendon, “Student Intern” ENGAGES, South Atlanta High School, Atlanta, Georgia, May 2017 – May 2019., **2nd Place Technical Presentation, 2018 ENGAGES Poster Competition**
7. Mr. Joseph Holbrook, “Student Intern” Fulton County Schools Gifted Internship Program, Johns Creek High School, Johns Creek, Georgia, Spring 2016.
8. Mr. Daniel McNaboe, “Student Intern”
Brookwood High School, Snellville, Georgia, Fall 2015-Spring 2016.
9. Mr. Eugene Joseph, “Increase in Hall Effect Thruster Efficiency through a Reduction in Beam Divergence,” Saint Francis Preparatory School, Fresh Meadows, New York, Summer 2006.

Awards:

1. Stony Brook Presidential Scholarship
 2. New York Science and Engineering Fair Presenter
 3. Saint Francis Prep Symposium Presenter
- Current Position, BS Economics and Finance, Project Manager at Recombine

B4. Service on thesis or dissertation committees**B4.a. Internal**

	Student	University	Advisor	Ph.D. Defense Date	Title
15	Hernan Logarzo	Georgia Institute of Technology, School of Aerospace Engineering	J. Rimoli	ETA: May 2022	A Plasma-wall Interaction Model for the Erosion of Materials Under Ion Bombardment
14	Natasha Schatzman	Georgia Institute of Technology, School of Aerospace Engineering	N. Komerath	March 2018	Aerodynamics and Aeroacoustic Sources of a Coaxial Rotor
13	Nandeesh Hiremath	Georgia Institute of Technology, School of Aerospace Engineering	N. Komerath	October 2017	Vortex Aerodynamics of Rotors at High Advance Ratio
12	Christopher Jones	Georgia Institute of Technology, School of Aerospace Engineering	A. Wilhite	May 2016	Risk-Value Optimization of Performance and Cost for Propellant Production on Mars
11	Joseph Schulz	Georgia Institute of Technology, School of Aerospace Engineering	S. Menon	May 2015	A Study of Magneto hydrodynamic Effects in Turbulent Supersonic Flows with Application to Detonation and Explosion
10	Patrick Cai	Georgia Institute of Technology, School of Aerospace Engineering	A. Wilhite	October 2014	Stochastic Feasibility Assessments of Orbital Propellant Depot and Commercial Launch Enabled Space Exploration Architectures
9	Kartik Iyer	Georgia Institute of Technology, School of Aerospace Engineering	P. K. Yeung	May 2014	Studies of Turbulence Structure and Turbulent Mixing Using Petascale Computing
8	Susheel K. Sekhar	Georgia Institute of Technology, School of Aerospace Engineering	Stephen Ruffin	October 2012	Viscous Hypersonic Flow Physics Prediction Using Unstructured Cartesian Grid Techniques

7	Jason F. Hackl	Georgia Institute of Technology, School of Aerospace Engineering	P. K. Yeung	May 2011	Fixed-scale Statistics and the Geometry of Turbulent Dispersion at High Reynolds Number via Numerical Simulation
6	Kaushik Balakrishnan	Georgia Institute of Technology, School of Aerospace Engineering	Suresh Menon	May 2010	Computational Modeling of Multi-phase Blast Explosives
5	Baris A. Sen	Georgia Institute of Technology, School of Aerospace Engineering	Suresh Menon	July 2009	Artificial Neural Networks Based Subgrid Chemistry Model for Turbulent Reactive Flow Simulations
4	Kenji Miki	Georgia Institute of Technology, School of Aerospace Engineering	Suresh Menon	September 2008	Simulation of Magnetohydrodynamics Turbulence with Application to Plasma-assisted Supersonic Combustion
3	Jin Wook Lee	Georgia Institute of Technology, School of Aerospace Engineering	Steve Ruffin	July 2007	Parallelized Cartesian Grid Methodology for Non-Equilibrium Hypersonic Flow Analysis of Ballutes
2	David Young	Georgia Institute of Technology, School of Aerospace Engineering	Alan Wilhite	March 2007	An Innovated Methodology For Allocating Reliability And Cost In A Lunar Exploration Architecture
1	Timothy Kokan	Georgia Institute of Technology, School of Aerospace Engineering	John Olds	February 2007	Characterizing High-Energy-Density Propellants for Space Propulsion Applications

B4.b. External

	Student	University	Advisor	Ph.D. Defense Date	Title
14	Joshua Roper	Georgia Institute of Technology, School of Electrical Engineering	Andrew F. Peterson	April 2023	Novel Hybrid Methods for Reflectarrays and Non-timed Arrays in Satellite Communications
13	Ali Ghavami	Georgia Institute of Technology, School of Mechanical Engineering	S. Mostafa Ghiaasiaan	June 2022	Thermo-fluid Aspects of Miniature Stirling Cryocoolers for Small Satellites

12	Tao Fang	Georgia Institute of Technology, School of Mechanical Engineering	S. Mostafa Ghiaasiaan	April 2020	Convective and Thermodynamic Analysis of Oscillatory Flow in Pulse Tube Cryocoolers
11	Parker Singletary	Georgia Institute of Technology, School of Electrical Engineering	Morris Cohen	February 2020	Using a high-Speed Plasma as a Conducting Channel to Enable a Novel Antenna Approach
10	Veera Manek	Georgia Institute of Technology, School of Mechanical Engineering	S. Mostafa Ghiaasiaan	December 2019	Distillation Assisted Purification, Transport, and Delivery of Liquefied Natural Gas
9	Xin Cao	Georgia Institute of Technology	Carol Paty	October 2018	Diurnal and Seasonal Variability of Uranus' Magnetosphere under different IMF
8	Ashley Chadwick	The University of Adelaide	Bassam Dally	February 2018	Performance of Alternative Propellants in an Inductive Electric Propulsion System
7	Chanyeop Park	Georgia Institute of Technology, School of Electrical Engineering	Lukas Graber	November 2017	Dielectric Properties of Cryogenic Gases
6	Matthew D. Perrella	Georgia Institute of Technology, School of Mechanical Engineering	S. Mostafa Ghiaasiaan	August 2017	Periodic Flow Hydrodynamic Resistance Parameters for Various Regenerator Filler Materials at Cryogenic Temperatures
5	Thomas S. Burton	The University of Alabama, Department of Metallurgical & Materials Engineering	Gregory B. Thompson	October 2016	Links between Microstructure, Erosion, and Electron Emission Behavior in Polycrystalline Boron-based Materials
4	Ashok Rajendar	Georgia Institute of Technology, School of Earth and Atmospheric Sciences	Carol S. Paty	November 2015	"Multifluid Magnetohydrodynamic Investigation of the Global Dynamics of Saturn's Magnetosphere"
3	Thomas I. Mulcahey	Georgia Institute of Technology, School of Mechanical Engineering	S. Mostafa Ghiaasiaan	January 2014	Convective Instability of Oscillatory Flow in Pulse Tube Cryocoolers Due to Asymmetric Gravitational Body Force

2	Graham Sanborn	Georgia Institute of Technology, School of Materials Science and Engineering	W. J. Ready	October 2013	Towards a Thin Film Triode Based Carbon Nanotube Field Emitter for Electric Propulsion
1	Mihir G. Pathak	Georgia Institute of Technology, School of Mechanical Engineering	S. Mostafa Ghiaasiaan	May 2013	Periodic Flow Physics in Porous Media of Regenerative Cryocoolers

B5. Mentorship of postdoctoral fellows or visiting scholars

Post-Doctoral Fellows

5. Dr. Dongho Lee
 Period: 08/2022 – Present
 Ph.D. Institution: Korea Advanced Institute of Science and Technology

5. Dr. Hisham Ali
 Award: 1st place in the student oral presentation competition at the 16th International Planetary Probe Workshop in Oxford, UK, July 8-12, 2019
 Period: 06/2019 – 7/2020
 Current Position: Assistant Professor, University of Colorado - Boulder
 Ph.D. Institution: Georgia Institute of Technology

4. Dr. Kristof Holste
 Awarded Competitive Travel Grant - DAAD Academic Exchange Program: University of Giessen, Germany
 Period: Summer 2018
 Current Position: Postdoctoral Fellow, Justus-Liebig-Universität Giessen
 Ph.D. Institution: Justus-Liebig-Universität Giessen

3. Dr. Brandon Sforzo
 Period: 01/2017 – 07/2017
 Current Position: Postdoctoral Fellow, Argonne National Laboratory
 Ph.D. Institution: Georgia Institute of Technology

2. Dr. Logan Williams
 Period: 04/2013 – 09/2013
 Current Position: Propulsion Engineer at Praxis, Contractor to Naval Research Laboratory
 Ph.D. Institution: Georgia Institute of Technology

1. Dr. Alexander Kieckhafer
 Period: 02/2009 – 04/2012
 Current Position: Staff Engineer, GE Aviation
 Ph.D. Institution: Michigan Technological University

Visiting Scholars

1. Mr. Tensai Kawakami
Osaka Institute of Technology, Japan
Period: 08/2017 – 01/2018
Current Position: Graduate Student, Osaka Institute of Technology, Japan
2. Mr. Tomohiro Sasaki
Tokyo Metropolitan University
Period: 04/2018 – 08/2018
Current Position: Graduate Student, Georgia Institute of Technology

Research Engineer

3. Dr. Dan Lev
Period: 12/2021 – Present
Ph.D. Institution: Princeton University
2. Dr. Hisham Ali
Period: 06/2019 – 07/2020
Ph.D. Institution: Georgia Institute of Technology
Current Position: Assistant Professor, University of Colorado - Boulder
1. Dr. Thomas Liu
Period: 04/2013 – 02/2015, 4/2016 – 11/2017
Ph.D. Institution: University of Michigan
Current Position: NASA Glenn Research Center

C. OTHER TEACHING ACTIVITIES

C1. Course Development

New Course Developed and Taught:

AE 4803: Team Design - Space

Course Description: This is a learning-by-doing class. In the course, a team of students develops a detailed space mission concept in response to a Request for Proposals (RFP) from industry. The students lead and manage the team, perform all design activities, from the requirements generation to the design trade-offs and concept selection, and fully document and present their system concepts. The industry provides financial resources (~\$10,000) to enable students to purchase software and other training experiences.

The class is designed to develop the skills necessary as a foundation for space system engineering within the aerospace community. Expanding beyond the spacecraft and system design approaches covered in AE 4342, the course includes topics such as project management, complex system trade studies, and effective proposal writing. The team receives informal feedback from the instructors during the weekly breakout sessions. The team presents its work during informal progress reviews and formal design reviews. External industry reviewers are involved in the formal reviews and provide their feedback and assessment to the team.

AE 6451: Electric Propulsion

Course Description: This course begins with an overview of electricity and magnetism, atomic physics, and non-equilibrium flows. It provides a solid background of the operating principles, performance characteristics, and design features of state-of-the-art systems from each of the three classes of electric thrusters (electrothermal, electromagnetic, and electrostatic). Furthermore, the course allows students to understand the capabilities and limitations of electric propulsion on current missions, as well as the tremendous promise of electric propulsion for future missions.

C2. Professional Development/Continuing Education

Georgia Tech Distance Learning and Professional Education Courses Taught

AE 6050: Gasdynamics
AE 6450: Rocket Propulsion
AE 6451: Electric Propulsion

New Course Developed:

Comprehensive Training – Hall Effect Thrusters
<http://mwalker.gatech.edu/hpepl/ep-course/>

Course Description: The Georgia Institute of Technology 1-Week Intensive Course on Hall Effect Thrusters is an intense immersion into the physics, operation, plasma diagnostics, and vacuum facilities required to operate Hall effect thrusters (HETs). This program provides the participant with two days of private instruction followed by five days of hands-on training with a laboratory-model, 5-kW HET. All experimental work is performed in Vacuum Test Facility 2 in the High-Power Electric Propulsion Laboratory (HPEPL). The contents of the course are ITAR-free.

This course is the first of its kind in the world. Dr. Walker has received inquiries to participate in the course from Turkey, Asia, and multiple U.S. employees in the space sector.

Certification: All students that successfully complete the course receive an Official Certificate from the Georgia Institute of Technology in collaboration with the Global Learning Center.

C3. Other Teaching Activities

6. 2021: UAE Space Propulsion Curriculum – Three-year effort funded by Contract 78, PI: Walker
The Georgia Tech School of Aerospace Engineering has developed a curriculum for space propulsion education activities conducted by UAEU. The effort is composed of the following activities.

- Refreshing the core Georgia Tech Aerospace Engineering graduate-level propulsion and combustion courses:
 - AE6050 – High-Temperature Gasdynamics
 - AE6450 – Rocket Propulsion
 - AE6451 – Electric Propulsion
 - AE6765 – Kinetics and Thermodynamics of Gases
 - AE6766 – Combustion I
- Development of a new state-of-the-art Experimental Techniques Teaching Laboratory Course – This includes the Laboratory Manual and the installation of the laboratory equipment. The course will be offered in Spring 2022.
- Training of three postdoctoral research associates that will deliver the space propulsion curriculum at UAE University
- Coordination with UAE University and faculty to define a space propulsion curriculum that integrates with the existing programs and capabilities
- Development in support of space propulsion education programs at UAEU

5. Georgia Tech Lead for the NASA Marshall Space Flight Center “Proposal Writing and Evaluation Experience”
The course is taught by Mr. John Dankanich, Chief Technologist of NASA Marshall Space Flight Center. A group of 8-10 graduate students is trained to respond to a NASA solicitation during a 10-week course delivered online coupled with on-site team reviews. The winning team receives \$10,000. – Spring 2019
4. Co-lead (with Professor Karen Feigh) of “Specialties” Development for the School of Aerospace Engineering, 2018 – 2019
The AE School has created a set of 10 AE specialty areas to help tailor the undergraduate educational experience. Each of the 10 specialty areas offers suggestions for specific options and elective courses that will complement the ultimate career and educational goals of the student. Working with their advisor, students can use these suggested frameworks to design the educational experience that works best for them. The Specialties are suggestions developed by AE faculty, employers, and the Aerospace Engineering School Advisory Council (AESAC) to guide course choice or to begin a conversation with the advisor about which courses are right for them.
3. Short Course Title: Vacuum Science
Company: Newell-Rubbermaid
Location: Sandy Springs, Georgia
Date: October 4, 2013
2. Short Course Title: Electric Propulsion
Company: Moog
Location: East Aurora, New York
Date: December 13, 2012
1. Short Course Title: Hall Effect Thrusters
Company: Lockheed Martin
Location: Denver, Colorado, and Sunnyvale, California (live video conference)
Date: April 14, 2011

VI. SERVICE

A. PROFESSIONAL CONTRIBUTIONS

A1. Editorial Board Memberships

Editorial Board – Journal of Electric Propulsion – 2021 - Present

Editorial Advisor – *BMC Mechanical Engineering* (part of Springer Nature) – 2018 - Present

Editorial Board – *Frontiers in Physics and Astronomy and Space Sciences – Plasma Physics* since 2015.

Associate Editor – *AIAA Journal of Spacecraft and Rockets* since 2015.

A2. Society Offices, Activities, and Membership

Professional Society Membership

5. American Physical Society (APS), Member since 2015.

4. American Institute Aeronautics and Astronautics (AIAA), Associate Fellow since 2011.

3. American Society of Mechanical Engineering (ASME), Member since 2009.

2. American Society for Engineering Education (ASEE), Member since 2002.

1. Electric Rocket Propulsion Society (ERPS), Member since 2001.

Professional Society Leadership

6. Hydraulic Institute

2015 – Rotordynamic Design & Application Committee

5. AIAA Young Professional Committee

2010 – Subcommittee for Honors and Awards

4. Electric Rocket Propulsion Society

2020 – Secretary of the Board (2020 – Present)

2017 – Member of the Board (2017 – Present)

2017 – General Chair, 35th International Electric Propulsion Conference, Atlanta, GA, Oct. 2017.

Website: <http://www.iepc2017.org>

Operating budget: \$661,543.95, Sponsorship (\$185,445.00)

3. AIAA Electric Propulsion Technical Committee, Member since 2005

2020 – Deputy Director for Space Rockets and Advanced Propulsion, since 2019

2020, 2021, 2022 – Chair - Wyld Award Selection Committee

2019 – Associate Fellow Nomination Peer-review Committee

2018 – Associate Fellow Nomination Peer-review Committee

2017 – Chair – Electric Propulsion Technical Committee (2018 – 2020)

2016 – Wyld Award Selection Committee

2015 – Vice-Chair – Electric Propulsion Technical Committee (2015-2018)

2015 – Best Paper Award Committee in Electric Propulsion for the 2014 Joint Propulsion Conference

2012 – AIAA Education Series Book Submission Review

2012 – Present: Electric Propulsion Test and Measurement Standards Committee

(Walker and his students are co-authors of ~30% of the Electric Propulsion Test Standards published by AIAA.)

2010 – Chair of Subcommittee for Technical Achievement Award

2010 – Subcommittee for Best Paper in Electric Propulsion Award

2009 – Selected as AIAA Electric Propulsion Short Course Instructor

2009 – Subcommittee for Technical Achievement Award

2009 – Subcommittee for Best Paper in Electric Propulsion Award

2008 – Subcommittee for Best Paper in Electric Propulsion Award

2005 – Wrote Review of Electric Propulsion Activity for *Aerospace America*

2. American Physical Society (APS)
 - 2022 – 2023, – Sub-Committee Chair for Low Temperature and Dusty Plasmas, 65th Annual Meeting of the APS Division of Plasma Physics, Denver, CO, October 30 – November 3, 2023.
 - 2019 – 2022 – Ethics Committee, Subcommittee Chair for Ethics Website
 - 2018 – 2021 – Committee on Scientific Publications
 - 2018 – 2019 – Strategic Planning Subcommittee, “Ensuring a Role in Scientific Research Dissemination”
 - 2018 – Division of Plasma Physics Nominating Committee
 - 2016 – Program Committee, Chair of Subcommittee for Low Temperature and Dusty Plasmas, 58th Annual Meeting of the APS Division of Plasma Physics, San Jose, CA, October 31 – November 4, 2016.
 - 2015 – Local Coordinator, 57th Annual Meeting of the APS Division of Plasma Physics, Savannah, GA, November 16-20, 2015.
1. ASME
 - 2014 – Track Co-chair: Heat Transfer and Thermal Engineering International Mechanical Engineering Congress & Exposition

National Technical Committees

10. Air Force Scientific Advisory Board – Consultant, 2020 – 2021
9. NASA Advisory Council – Technology, Innovation, and Engineering Committee, 2020 – Present
8. Department of Energy Fusion Energy Sciences Advisory Committee, 2017 – 2023
 - Subcommittee: – Subcommittee on International Benchmarking – 2022-2023
 - Subcommittee: Fusion Energy Sciences Committee of Visitors – 2018
7. Electric Propulsion Operation in the Space Environment (EPOSE) Working Group, 2015 – Present
Invited academic member (1 of 3)
6. NASA Blue Ribbon Panel for External Review of Quantum Propulsion – 2014.
5. NASA Asteroid Retrieval Mission Solar Electric Propulsion Analysis of Alternatives – 2013
4. NASA Edison Small Satellite Flight Demonstration Missions Panel Review – 2012
3. National Research Council Aeronautics and Space Engineering Board for the Air Force Reusable Booster System Study – 2011-2012
2. NASA International Space Station Electric Propulsion Testbed Study Committee – 2011
1. National Institute for Rocket Propulsion Systems – Solutions Provider Committee, 2011 – Present

International Technical Committees

8. 2022 International Electric Propulsion Conference – Abstract Reviewer
7. 2018 George C. Marshall visit to Austria Program “Aerospace Industries,” U.S. Delegate
6. 2017 30th International Symposium on Space Technology and Science – Program Subcommittee for Electric and Advanced Propulsion
5. 2017 International Electric Propulsion Conference – Technical Committee
4. 2015 International Electric Propulsion Conference – Technical Committee
3. 2013 International Electric Propulsion Conference – Technical Committee
2. 2013 International Electric Propulsion Conference – Best Paper Award Reviewer
1. 2011 International Electric Propulsion Conference – Best Paper Award Reviewer

A3. Organization and Chairmanship of Technical Sessions, Workshops, and Conferences

Session Chairman

20. “Hall Thrusters: Alternative Propellant 2,” 37th International Electric Propulsion Conference, Massachusetts Institute of Technology, Boston, MA, June 19-23, 2022.
19. “Hall Thrusters: Facility Effects,” 37th International Electric Propulsion Conference, Massachusetts Institute of Technology, Boston, MA, June 19-23, 2022.

18. "Electrical Propulsion Flight Systems and Diagnostics," 13th MSS / 11th LPS / 10th SPS Joint Subcommittee Meeting and PIB Meeting, Tampa, FL, December 9-13, 2019.
17. "Hall Thruster Flight Development," Propulsion and Energy Forum, Indianapolis, IN, August 19-22, 2019.
16. "NASA's HERMeS and AEPS SEP I," 54th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Cincinnati, OH, July 9-11, 2018.
15. "Helicons," 53rd AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Atlanta, GA, July 10-12, 2017.
14. "Ground Facility Effects on Hall Thruster Operation," 63rd JANNAF Propulsion, Phoenix, AZ, December 5-9, 2016.
13. "HERMeS Hall Thruster I," 52nd AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Salt Lake City, UT, July 25-27, 2016.
12. "Hall Thruster Electron Transport 1, 2" 34th International Electric Propulsion Conference, Kobe City, Japan, July 4-11, 2015.
11. "NASA Hall Thruster Development," 62nd JANNAF Propulsion Meeting, Nashville, TN, June 1-5, 2015.
10. "Hall Thrusters – Modeling," 50th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Cleveland, OH, July 28-30, 2014.
9. "Hall Thrusters – III," 33rd International Electric Propulsion Conference, George Washington University, Washington D. C., October 6-10, 2013.
8. "Helicon Thrusters," 49th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, San Jose, CA, July 14-17, 2013.
7. "Gun Propellant Characterization and Formulation," 60th JANNAF Propulsion Meeting, Colorado Springs, CO, April 29-May 2, 2013.
6. "Modeling and Kinetics," 60th JANNAF Propulsion Meeting, Colorado Springs, CO, April 29-May 2, 2013.
5. "Advanced Concepts II," 48th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Atlanta, GA, July 30-August 2, 2012.
4. "Cylindrical Hall Thrusters," 31st International Electric Propulsion Conference, Ann Arbor, MI, September 20-24, 2009.
3. "Electric Propulsion Advanced Concepts II," 44th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Hartford, CT, July 20-24, 2008.
2. "Sputtering," 43rd AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Cincinnati, OH, July 8-11, 2007.
1. "Electric Propulsion Advanced Concepts II," 42nd AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Sacramento, CA, July 9-12, 2006.

A4. Technical Journal or Conference Referee Activities

Journal Reviewer:

25. *Acta Astronautica*
24. *Vacuum*
23. *Applied Physics Letters*
22. *Journal of Applied Physics*
21. *Journal of Propulsion and Power*
20. *Journal of Spacecraft and Rockets*
19. *Journal of Physics D, Applied Physics*
18. *Plasma Physics and Controlled Fusion*
17. *Physics of Plasmas*
16. *Physica Scripta*
15. *New Journal of Physics*
14. *Journal of Plasma Sources and Science Technology*

13. *Review of Scientific Instruments*
12. *Journal of Thermophysics and Heat Transfer*
11. *IEEE Transactions on Plasma Science*
10. *Mechanics Research Communications*
9. *Measurement Science and Technology*
8. *Nature Communications*
7. *Proceedings of the IMechE, Part G: Journal of Aerospace Engineering*
6. *The Aeronautical Journal – The Royal Aeronautical Society*
5. *Journal of Vacuum Science and Technology*
4. *Journal of Aerospace Engineering*
3. *Journal of Aerospace Information Systems*
2. *European Journal of Physics D*
1. *Journal of Microelectromechanical Systems*

Conference Abstract Reviewer:

13. 2023 AIAA SciTech Forum Abstracts – EP Sessions
12. 2022 37th International Electric Propulsion Conference Abstracts
11. 2021 AIAA SciTech Forum Abstracts – EP Sessions
10. 2019 AIAA Propulsion and Energy Forum Abstracts – EP Sessions
9. 2018 AIAA Joint Propulsion Conference Abstracts – EP Sessions
8. 2017 AIAA Joint Propulsion Conference Abstracts – EP Sessions
7. 2016 AIAA Joint Propulsion Conference Abstracts – EP Sessions
6. 2015 34th International Electric Propulsion Conference Abstracts
5. 2015 AIAA Joint Propulsion Conference Abstracts – EP Sessions
4. 2013 AIAA Joint Propulsion Conference Abstracts – EP Sessions
3. 2010 AIAA Joint Propulsion Conference Abstracts – EP Sessions
2. 2009 AIAA Joint Propulsion Conference Abstracts – EP Sessions
1. 2008 AIAA Joint Propulsion Conference Abstracts – EP Sessions

A5. Proposal Panels and Reviews

38. Review of National Academies of Sciences, Engineering, and Medicine report, “Review of the Small Business Innovation Research and Small Business Technology Transfer Programs at the National Science Foundation,” (2023)
37. Israel Science Foundation Proposal Review – March 2022
36. Ford Fellowship Review Panel Member – February 2022
35. Georgia Tech FY21 Seed Grant Program – Building Teams/Moving Teams Forward (Cycle 2) – December 2021
34. NASA EPSCorR CAN Program Review – West Virginia University – November 2021
33. Georgia Tech FY21 Seed Grant Program – Building Teams/Moving Teams Forward (Cycle 1) – June 2021
32. NASA Review Panel – December 2020
31. Review for European Research Council Starting Grant 2020
30. NASA SmallSat Technology Partnership Panel Review, 2020
29. NASA Translational Research Institute for Space Health Proposal Review – May 2019
28. NSF/DoE Proposal Review – February 2019
27. Department of Energy Office of Science Early Career Research Program Proposal Review – May 2018
26. Austrian Academy of Sciences Doctoral Fellowship Review – March 2018
25. NSF/DoE Proposal Review – February 2018
24. NASA STMD Small Spacecraft Technology Program – SmallSat Technology Partnerships Proposal Review Panel – October 2017

23. NSF/DoE Proposal Review Panel – February 2017
22. Israel Ministry of Science Technology and Space Proposal Review– September 2016
21. Israel Science Foundation Proposal Review – March 2016
20. Air Force Research Laboratory Proposal Review – July 2016
19. NASA Small Spacecraft Technology Review Panel Member – July 2016
18. ASEE SMART Scholarship Evaluation Panel – January 2016
17. NASA Tipping Point Small Spacecraft Propulsion – September 2015.
16. National Science Foundation Fellowship Program Review Panel Member – 2015
15. NASA Postdoctoral Program Review Panel Member – December 2014
14. University of Missouri Research Board – November 2014
13. NASA Space Technology Research Fellowship Application Reviewer – February 2014
12. ASEE Air Force Summer Faculty Fellowship Program – 2014
11. NSF-EPSCoR Missouri Research Infrastructure Development Competition Reviewer – October 2013
10. NASA SmallSat Technology Partnerships FY13 Reviewer – July 2013
9. NASA Space Technology Research Fellowship Application Reviewer – February 2013
8. Department of Energy – October 2012
7. ARPA-E – April 2012
6. Maryland Technology Development Corporation – October 2011
5. U.S. Army Corps of Engineers Engineer Research and Development Center – April 2010
4. NSF Review Panel I/UCRC – December 2009
3. NSF Review Panel I/UCRC – November 2008
2. NSF Review Panel I/UCRC – June 2008
1. Kentucky Science and Engineering Foundation – 2005, 2013

A6. Other Involvement

Service to the Profession

11. Host of Workshop: “What’s Next in EP,” Air Force Office of Scientific Research, Georgia Tech Hotel and Conference Center, Atlanta, GA, February 22, 2022.
10. Presenter: “Status of Electric Propulsion,” NASA Engineering & Safety Center – Propulsion TDT Meeting, Virtual, June 9, 2021. – Invited.
9. Presenter: “Status of Electric Propulsion,” National Academies of Sciences, Engineering, and Medicine Space Nuclear Propulsion Technologies Committee Meeting, Virtual, July 13, 2020. – Invited.
8. Panel Moderator: “The Role of EP in LEO,” 36th International Electric Propulsion Conference, Vienna, Austria, September 18, 2019. – Invited.
7. Panel Member of Universities Space Research Association (USRA) review of the Air Force Research Laboratory – Sponsored by the Secretary of the Air Force, May 5-6, 2018
6. Panel Moderator: “Electric Propulsion: The Next Step,” 35th International Electric Propulsion Conference, Atlanta, GA, October 10, 2017. – Invited.
5. Witness, House of Representatives Committee on Science, Space, & Technology, Subcommittee on Space: Hearing, “In-Space Propulsion: Strategic Choices and Options,” Washington, DC, June 29, 2017.
Video: <https://www.youtube.com/watch?v=vF1o4TtYcmw&t=4038s>
4. Panel Member - Electric Propulsion Technology Specialist: “Space Propulsion,” 66th International Astronautics Congress, Jerusalem, Israel, October 12-16, 2015.
Video: https://www.youtube.com/watch?v=pbNK682xh_I&index=15&list=PL-mSQLPEXwusLQe6JnWe7wQM_Oj072S_d

3. Panel Moderator of Forum 360 Session, “Government Investments Enabling Advancement of In-Space Propulsion,” 51st AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Orlando, FL, July 27, 2015.
Video: http://www.aiaa-propulsionenergy.org/GovtInvestments_PE2015/
2. Panel Moderator: “Satellite Insurance Providers Discuss – Risk Management for Electric Propulsion,” 34th International Electric Propulsion Conference, Kobe City, Japan, July 9, 2015. – Invited.
1. Panel Moderator: “Satellite Operators Discuss – Why is EP Game Changing?,” 33rd International Electric Propulsion Conference, George Washington University, Washington D. C., October 8, 2013. – Invited.

B. PUBLIC AND COMMUNITY SERVICE

20. Virtual Panelist – UNC Chapel Hill Society of Physics Students – Visibility in Physics (10/2020)
19. Virtual Panelist – Drew Charter Middle School Career Day Panelist, Atlanta, GA (10/2020)
18. Provided Lab Tour for Westminster High School Physics class of Atlanta, GA (12/2019)
17. Provided Lab Tour for Westminster High School Physics class of Atlanta, GA (11/2018)
16. Provided Lab Tour for CEISMIC's Project Change Outreach Event – Tour (10/2019)
15. Leadership Atlanta (Class of 2020)
14. Guest expert (Skype) for Fernbank Elementary School Atlanta, GA, 2018/2019 FIRST Lego League Challenge (11/2018))
13. Provided Lab Tour for Westminster High School Physics class of Atlanta, GA (11/2018)
12. Guest expert (Skype) for Hillsdale Middle School San Diego, CA, 2018/2019 FIRST Lego League Challenge (10/2018)
11. Moderator for the “Administrators Panel,” NSF 2018 Symposium: Engineering a World of Difference: Convergence in Manufacturing, September 27-29, 2018, Ann Arbor, MI
10. Provided Lab Tour for North Springs High School of Sandy Springs, GA (4/2015)
9. Provided Lab Tour for Westminster High School Physics class of Atlanta, GA (1/2015)
8. Provided Presentation, “Exponential Functions in the Real World,” for Coretta Scott King Young Women’s Leadership Academy High School and KIPP Atlanta as a virtual interaction (12/2014)
7. Provided Lab Tour ASTRO (Aerospace Summer Training & Research Opportunity) of SpaceWorks Enterprises. ASTRO is a free summer program specifically geared for high school students. ASTRO is a project-oriented experience during which participants work in teams to solve an Aerospace Engineering design problem. SpaceWorks Enterprises, <http://sei.aero/astro.shtml> (6/2014, 2017, 2018)
6. Exhibitor at the GTRI “Take Our Daughters and Sons to Work Program” (6/2014)
5. Exhibitor at the Sandy Springs, Georgia Educational Force 4th Annual STEM Event (2/2014)
4. Hosted Direct-to-Discovery Summer Teacher from Barrow County, GA (2013)
3. Acquired internal delivery of Etiquette class for the School of Aerospace Engineering Graduate Students (Etiquette Atlanta) – July 2013
2. Hosted CEISMIC GIFT Teacher from Barrow County, GA, (2012)
1. Hosted McNair High School (Atlanta, GA) Exploratory Visit (11/2006)

C. INSTITUTE CONTRIBUTIONS

Training for Institute-Level Service and Leadership

6. Executive Coaching Program, Illustra Business Coaching, Atlanta, GA, 2022 – 2023
5. Leadership Atlanta, Class of 2020
4. Provost’s Emerging Leaders Program, Georgia Institute of Technology, 2017 – 2018
3. “Implicit Bias Workshop,” Georgia Institute of Technology, Atlanta, GA, September 15, 2017
2. “Maximizing Your Leadership Potential,” Center for Creative Leadership, Greensboro, NC, July 26-28, 2017
1. Executive Coaching Program, Illustra Business Coaching, Atlanta, GA, February 2013 - March 2015

C1. Institute Committee Service

Institute Committees

49. Member of Search Committee, Assistant Vice Provost for Graduate Education and Executive Director of Graduate Admissions, (5/2023 – Present)
48. Member, Stamps Scholars Interviewer (3/2023)
47. Reviewer, Astronaut Scholarship Review Committee (3/2023)
46. Reviewer, Georgia Tech EVPR Seed Grant Program: Building Teams and Moving Teams Forward, (2/2023)
45. Member, Georgia Tech Advisory Board for Student Well-Being, (2/2023 – Present)
44. Georgia Tech Representative, Tri-University Engineering Study Kickoff, “Initial Insights” (1/2023)
43. Member of Search Committee, Professional Education Associate Dean of Learning Systems, (1/2023 – Present)
42. Member of Search Committee, Scheller College of Business Dean, (1/2023 – 6/2023)
41. Member of Search Committee, Executive Director, Academic Success & Advising, (9/2022 – 3/2023)
40. Provost’s Quality Enhancement Plan (QEP) Topic Selection Committee, Southern Association of College and Schools Commission on Colleges (SACSCOC), (9/2022 – Present)
39. Panelist, New Faculty Academy Orientation, (8/2022)
38. Gardner Institute Curricular Analytics Community, Team Member, (6/2022 – 8/2022)
37. Institute Strategic Planning – Transformative Teaching and Learning Initiative Committee (3/2022 – Present)
36. Institute Strategic Planning – Graduate Student Enrollment Strategy Committee (3/2022 – Present)
35. Institute Strategic Planning – Undergraduate Student Enrollment Strategy Committee (3/2022 – Present)
34. Institute Critical Review Committee – College of Engineering Representative, (3/2022)
33. Reviewer, NSF Innovations in Graduate Education, GT internal application selection (2/2022)
32. Chair of Search Committee, Vice Provost for Undergraduate Education, (10/2021 – 2/2022)
31. Chair of Search Committee, Senior Vice Provost for Education and Learning, (10/2021 – 2/2022)
30. Panelist, Faculty Professional Development New Faculty Leaders Onboarding – “Building Inclusive Cultures: Retaining and Supporting Diverse Faculty, Staff, and Students” (10/2021)
29. Member of the Koki Ho Area Review Committee (7/2021)
28. Search Committee, Eugene C. Gwaltney, Jr. School Chair, George W. Woodruff School of Mechanical Engineering, (6/2021 – 11/2021)
27. Member of Provost’s Working Group, “Strategic Approaches to Instruction for Spring 2022 and Beyond,” (3/2021-7/2021)
 1. Develop recommendations for actions that will leverage the lessons and innovations of the past year to make recommendations about the future of instruction at Georgia Tech.

2. Develop an implementation plan and timeline for the group's recommendations. Ideally, these would begin to be implemented in Spring 2022.
26. Panelist, "Ready, Set, Restart" - Virtual, College of Engineering (2/2021)
25. Search Committee, Strategic Energy Institute, EPICenter Director (1/2021 – 6/2021)
24. Research Next Phase II, Co-lead for Amplify Impact (1/2021 – Present)
23. Goldwater Fellowship Application Selection Committee (12/2020)
22. Diversity Equity and Inclusion Committee (11/2020 – Present)
21. Response Team to Executive Order on Combating Race and Sex Stereotyping (10/2020 – Present)
20. College of Engineering Diversity, Equity, and Inclusion Council (8/2019 – Present)
Chair (10/2020 – Present)
19. Institute Strategic Planning Committee – Co-Lead for Amplify Impact Working Group (3/2020 – 6/2020) 10-15 hrs per week
18. Prestigious Fellowships Advisor Search Committee (2019)
17. Member of the Dean of Libraries Search Committee (8/2019 – 5/2020)
16. Institute Retention, Promotion, and Tenure Committee – College of Engineering Representative, (2019-2021)
15. Provost's Faculty Council for Accreditation, (2018-Present)
"The purpose of the Faculty Council on Accreditation is to advise and facilitate the Institute's application of multiple accreditation standards, and, especially, to promote outstanding educational practices within a culture of continuous improvement."
14. Strategic Energy Institute Faculty Advisory Council, (July 2018 – Present)
13. College of Engineering Strategic Planning Committee (May 2018-March 2019)
12. Panel Member - Office of the Executive Vice President for Research - Strategic Energy Institute Review, May 2018.
11. Panel Member for Rhodes Scholar Mock Interviews, Center for Career Discovery and Development, November 2017
10. Panel Member, "Georgia Tech and ISAE-SUPAERO: A Strategic Partnership," Georgia Tech & Toulouse: Partners in Research, Innovation & Academics Roundtable, October 27th, 2017
9. Member of College of Engineering Retention, Promotion, and Tenure Committee (2017-2018)
8. Georgia Tech Athletic Association Board of Trustees – 3-year term – (6/2017 – Present)
Administration and Finance Committee (6/2017 – 8/2019)
Compliance and Equity Committee (8/2019 – Present)
Secretary of the Board (6/2019 – Present)
7. Member of DFARS/NIST 800-171 Steering Committee (3/2017 – 12/2017)
NIST Special Publication 800-171 Protecting Covered Defense Information in Nonfederal Systems and Organizations, otherwise known as DFARS (Defense Federal Acquisition Regulation Supplement), details the fourteen families of security requirements (including basic and derived requirements) for protecting the confidentiality of Covered Defense Information (CDI). Contribution: Perspectives on the impact of this publication on the faculty research activity, especially in the case where data acquisition/experimentation is involved.
6. Executive Vice President for Research/Provost GT-Fire Review Panelist, March 2017
5. Member of the Center for the Integration of Research, Teaching and Learning Steering Committee (1/2017 – Present)
CIRTL is a network of 43 research universities with the goal of shaping the future of STEM undergraduate education by preparing future faculty with a commitment to implement and improve teaching practices for the learning of all students.
4. Member of Bobby Noble Promotion Review Committee to the position of Senior Research Scientist in Strategic Energy Institute – (9/2014)

3. Presented with Georgia Institute of Technology Vice President of Research to Newell-Rubbermaid, Resulted in Master Research Agreement (5/2014)
2. Member of General Faculty Senate (9/2010 – 5/2013)
1. Member of Aerospace Engineering Chair Search Committee (1/2008 – 8/2008)

C2. School Committee Service

Aerospace Engineering (AE) Committees

38. Member of Search Committee – Purchasing Associate (2022)
37. Member of Search Committee – Academic Advisor II (2022)
36. Member of Search Committee – Communications Officer (2022)
35. Member of Search Committee – Events Coordination (2022)
34. Chair of the AE Strategic Planning Committee (6/2021 – Present)
33. Member of AE Diversity, Equity, and Inclusion Committee (8/2020 – 4/2022)
Subcommittee Chair – Graduate Student Recruiting
32. Chair of Search Committee – Graduate Program Academic Coordinator (2020)
31. Chair of Search Committee – Graduate Program Academic Manager (2020)
30. AE Mentor-in-Residence, (2020 – Present)
29. Chair of Search Committee – Lab Manager II (10/2019 – 12/2019)
28. Member of the AE Engulfing Educational Experience (2019 – 4/2022)
27. Chair of the AE Graduate Curriculum Committee (7/2019 – 4/2022)
26. Member of the AE Space Systems Faculty Search Committee (8/2018 – 3/2020)
25. Member of AE Retention, Promotion, and Tenure Committee (2018)
24. Member of AE Grants Administrator Search (2018)
23. Member of AE Communications Officer Search (2018)
22. Member of AE Sikorsky Chair Search (2017)
21. Member of AE Graduate School Committee (9/2016 – Present)
20. Member of AE Senior Policy Search Vetting Committee (1/2016 – 2018)
19. Member of the AE Space Systems Faculty Search Committee (1/2016 – 5/2018)
18. Member of the AE Combustion & Propulsion Faculty Search Committee (6/2016 – 2017)
17. Member of AE Website Redesign Taskforce (3/2015 – 8/2016)
16. Member of Search for Aerospace Assistant Director, Administrative Operations (8/2014 – 04/2015)
15. Implemented Annual AE Pumpkin Carving Competition (10/2013 – 10/2015)
14. David S. Lewis Endowed Chair in Propulsion and Combustion Search Committee (10/2013 – 12/2015)
13. GRA Eminent Scholar and Georgia Power Endowed Chair Search Committee (1/2013 – 3/2016)
12. Member of AE Strategic Planning Committee (2/2013 – 2015)
11. Member of AE Communications Committee (9/2012 – 2019)
 - a. Committee Chair (1/2017 – Present)
 - b. Faculty lead of Aerospace Website Refresh (2016)
 - c. Developed and released iPhone/iPad App for School of Aerospace Engineering news (2012-2013)
(Available via iTunes “GT AE News”)
 - d. Led installation of flat-screen monitor display near the entrance (2012)
10. Member of AE Chair’s Advisory Committee – elected position (2/2012 – 8/2016).
9. Member of Space Shuttle Symposium Organizing Committee (1/2011 – 7/2011)
8. Member of the AE Clean Combustion Faculty Search Committee (1/2011 – 5/2013)
7. Member of AE Laboratory Facilities Committee (3/2010 – Present)
6. Chair of the AE Distinguished Lecture Series Committee (7/2009 – 5/2012)
5. Member of AE Space Systems Search Committee (4/2005 – 12/2014)
4. Member of the AE System Design & Optimization Discipline Committee (1/2006 – 4/2022)

3. Member of the AE Propulsion and Combustion Discipline Committee (1/2005 – 4/2022)
2. Member of AE Laboratory Facilities Committee (8/2005 – 4/2022)
1. Member of the AE Undergraduate Enrollment Enhancement Committee (8/2005 – 4/2022)

C3. Program Development: Research

4. Member of the Georgia Institute of Technology Institute for Materials
3. Member of the Georgia Institute of Technology Institute for Energy and Sustainable Infrastructure
2. Member of the Georgia Institute of Technology School of Mechanical Engineering Cryolab
1. Member of the Georgia Institute of Technology Center for Space Technology and Research (CSTAR)

C4. Program Development: Academic

1. Research participant in the Georgia Direct-to-Discovery for the State of Georgia via a Teaching Grant Award with Barrow County Middle School: (5/2011 – 6/2016)
<http://www.d2d.gatech.edu/prod/>
 Walker’s laboratory was selected as one of the Top 3 educational interactions at Georgia Tech under the Direct-to-Discovery Teaching Grant. The Barrow County Public School System added the Walker laboratory interaction as a permanent line item in the 2015 budget.

C5. Other Institute Service Contributions

Diversity and Inclusion

29. Scripps News Interview “The US is facing a critical shortage of high tech engineers”
<https://scrippsnews.com/stories/us-facing-critical-shortage-of-high-tech-engineers/>
28. Invited Panelist, “Voices of Academia,” FOCUS Program (1/2023)
Georgia Tech launched the FOCUS recruiting program in 1991 with the goal of increasing the number of master’s and doctoral degrees awarded to underrepresented minorities not only at Georgia Tech but nationwide.
27. Invited Speaker, “The Journey,” US is facing a critical shortage of high for Summer Undergraduate Research in Engineering and Sciences (SURE): *10-week summer research program designed to attract qualified under-represented minority students into graduate school in all STEM fields* (6/2022)
26. Panelist, Faculty Professional Development New Faculty Leaders Onboarding – “Building Inclusive Cultures: Retaining and Supporting Diverse Faculty, Staff, and Students,” (10/2021)
25. Invited Panelist, “Alumni,” FOCUS Program (1/2021)
Georgia Tech launched the FOCUS recruiting program in 1991 with the goal of increasing the number of master’s and doctoral degrees awarded to underrepresented minorities not only at Georgia Tech but nationwide.
24. Invited Presentation – NextProf Nexus, “How to Set Up & Run a Research Group,” (9/2020)
23. Georgia Tech Diversity Equity and Inclusion Committee (11/2020 – Present)
22. Member of the College of Engineering Diversity, Equity, and Inclusion Council (2019 – 2022)
 Chair: 10/2020 – 5/2022
21. Faculty Advisor for Georgia Tech’s Black Graduate Student Association (2019 – 2020)
<http://www.bgsa.gtorg.gatech.edu/>
20. Director of the Georgia Institute of Technology SURE program. (2019 – Present)
The Summer Undergraduate Research in Engineering/Sciences (S.U.R.E.) program is committed to increasing the number of qualified students who are traditionally underrepresented in STEM fields. These include but are not limited to students from racial/ethnic minority groups, women, or first-generation college students.
www.sure.gatech.edu

19. Invited Speaker, “The Journey,” for Summer Undergraduate Research in Engineering and Sciences (SURE): *10-week summer research program designed to attract qualified under-represented minority students into graduate school in all STEM fields (6/2018)*
18. Panelist at the Black Male Faculty Seminar & Dinner at the 2018 Academic Empowerment Fair, Sponsored by the Georgia Institute of Technology Center for Student Diversity and Inclusion (2/2018)
17. Provided Lab Tour and Science Demonstrations for the Georgia Institute of Technology Women in Engineering Program “Students Exploring Engineering Event (1/2018)
16. Panelist, “Navigating the Academic Career Path,” FOCUS Program (1/2018)
Georgia Tech launched the FOCUS recruiting program in 1991 with the goal of increasing the number of master’s and doctoral degrees awarded to underrepresented minorities not only at Georgia Tech but nationwide.
15. Provided Lab Tour for Engaging New Generations at Georgia Tech through Engineering & Science” (ENGAGES). *Project ENGAGES is a high school science education program developed at Georgia Tech in partnership with Coretta Scott King Young Women's Leadership Academy, B.E.S.T Academy, KIPP Atlanta Collegiate, Benjamin E. Mays High School, Charles R. Drew Charter High School and South Atlanta High School, six minority-serving public high schools in the City of Atlanta. (5/2017)*
16. Provided Lab Tour and Science Demonstrations for the Georgia Institute of Technology Women in Engineering Program “Students Exploring Engineering Event (1/2017)
15. Panel Moderator, “Georgia Tech Alumni Panel – Graduate Degrees,” FOCUS Program (1/2017)
Georgia Tech launched the FOCUS recruiting program in 1991 with the goal of increasing the number of master’s and doctoral degrees awarded to underrepresented minorities not only at Georgia Tech but nationwide.
14. Panel Member, “Voices of Academia,” FOCUS Program (1/2017)
Georgia Tech launched the FOCUS recruiting program in 1991 with the goal of increasing the number of master’s and doctoral degrees awarded to underrepresented minorities not only at Georgia Tech but nationwide.
13. Invited Speaker, “Engaging New Generations at Georgia Tech through Engineering & Science” (ENGAGES). *Project ENGAGES is a high school science education program developed at Georgia Tech in partnership with Coretta Scott King Young Women's Leadership Academy, B.E.S.T Academy, KIPP Atlanta Collegiate, Benjamin E. Mays High School, Charles R. Drew Charter High School and South Atlanta High School, six minority-serving public high schools in the City of Atlanta. (10/2016)*
12. Panel Member, on Georgia Tech Office of Minority Education Development (OMED) Transitions Faculty Panel, *OMED Transitions is a half-day program designed to help acclimate incoming underrepresented transfer and Graduate students to the academic and social environments at Georgia Tech., (8/2016)*
11. Provided Lab Tour and Science Demonstrations for the Georgia Institute of Technology Women in Engineering Program “Students Exploring Engineering Event (1/2016)
10. Panel Member, “Navigating the Academic Career Path,” FOCUS Program (1/2016)
Georgia Tech launched the FOCUS recruiting program in 1991 with the goal of increasing the number of master’s and doctoral degrees awarded to underrepresented minorities not only at Georgia Tech but nationwide.
9. Provided Lab Tour for Summer Engineering Institute (SEI): a three-week residential program that focuses on underrepresented minority rising 11th and 12th graders from across the nation (7/2016)
8. Invited Speaker, “The Journey,” for Summer Undergraduate Research in Engineering and Sciences (SURE): *10-week summer research program designed to attract qualified under-represented minority students into graduate school in all STEM fields (7/2016)*
7. Provided Lab Tour and Science Demonstrations for the Georgia Institute of Technology Women in Engineering Program “Students Exploring Engineering Event (1/2015)

6. Panel Member “If I had it to do all over again...” Georgia Tech University Center of Exemplary Mentoring – Sloan Foundation (10/2014)
5. Panel Member “Don’t Get Stuck as a ‘Tenured’ Student: Making timely progress toward a Ph.D. after Exams,” Sloan-UCEM Seminar Luncheon, Georgia Tech (2/2014)
4. Served as Aerospace Engineering host for FOCUS Program – January 2014
Georgia Tech launched the FOCUS recruiting program in 1991 with the goal of increasing the number of master’s and doctoral degrees awarded to underrepresented minorities not only at Georgia Tech but nationwide.
3. Panel Member “Faculty Panel,” GT Black Graduate Student Association (BGSA) and GT National Society of Black Engineers (GTSBE), Georgia Tech (11/2013)
2. Panel Member, “Juniors having Juniors,” Facilitating Academic Careers in Engineering and Science (FACES), Georgia Tech (11/2012)
1. Panel Member, NSF Minority Faculty Development Workshop: Engineering Enterprise and Innovation Panel: “Translational Research, From Bench to Patent” (3/2012)

Faculty Development

3. Panel Member, “Research Leadership,” Provost’s Emerging Leaders Program, Georgia Institute of Technology. (11/2022)
3. Mentor for College of Engineering ADVANCE Resume “Speed Dating” *The event sessions provide valuable feedback to candidates going up (within 1-3 years) for reappointment, promotion, or tenure.* (3/2019)
2. Exemplar Panelist “Celebrating Tenure at Georgia Tech” Enhancing Meaningful Creative Challenges: EMC2, Office of the Provost, November 2-4, 2018
1. Mentor for College of Engineering ADVANCE Resume “Speed Dating” *The event sessions provide valuable feedback to candidates going up (within 1-3 years) for reappointment, promotion, or tenure.* (3/2018)

Education

17. Panelist, SAEOPP McNair/SSS Scholars (as part of the Federal TRIO Programs) visit hosted by Georgia Tech Graduate Studies, (6/2019)
16. Faculty Guide – Stamps President’s Scholarship Program: The Stamps President’s Scholars Program (SPS) continues to attract the nation’s most promising high school students. These students combine outstanding scholarship and leadership for the enhancement of “Progress and Service,” the Institute’s longstanding motto. (10/2018- 5/2022)
15. Provided Lab Tour for 8th-grade and 9th-grade students from Clayton, Cobb, and Walton counties of Georgia (5/2017)
14. Review of Final Report Videos for Presidential Undergraduate Research Award participants (1/2017)
13. Provided Lab Tour and Science Demonstrations for Houston County, GA middle school Honors student (11/2015)
12. Provided Lab Tour for the National Student Leadership Conference on behalf of the Georgia Institute of Technology College of Engineering (7/2014)
11. Panel Member “Center for the of Teaching and Learning Graduate Career Symposium,” Georgia Tech (8/2013)
10. Judge - Georgia Tech Graduate Technical Symposium (3/2013)
9. “Academic Jobs” Panel Member, Georgia Tech Career Symposium (3/2012)
8. Facilitating Academic Careers in Engineering and Science (FACES) Georgia Tech, “Effective Selection of Research Advisees for Young Faculty” (1/2010)
7. Lab Tour for Georgia Tech Presidential Scholars (3/2009)
6. Presentation for the Astronaut Scholarship Foundation (09/2007)
5. Presentation at the Georgia Tech New Faculty Orientation (8/2006, 8/2011)

4. Presentation on Undergraduate Research to First-year Students and Parents (10/2006)
3. Georgia Tech Graduation Ceremony (12/2006)
2. Connect with Tech (1/2005 – Present)
1. Rocket Engine Display for AE entrance – from the Smithsonian National Air & Space Museum (11/2005)

VII. ADMINISTRATIVE LEADERSHIP

1. Associate Dean for Academic Affairs – College of Engineering, (2022 – Present)

Responsibilities:

- The Associate Dean for Academic Affairs is responsible for all undergraduate, graduate, and international programs within the College of Engineering. Working with the School Chairs and Associate Chairs in the Schools, the position focuses on opportunities in curriculum reform, multidisciplinary design, professional masters, and interdisciplinary minors. The position is also responsible for ABET, unit-level academic program reviews, and interfacing with academic units outside of COE (student services, admissions, etc.).

Direct Reports

- Assistant Dean, Faculty Affair & Accreditation: Terri Lee
- Program director for the Clark Scholars Program: David Torello
- UG Advising Consultant: Kaitlyn Luppino
- Business Intel Developer: Na Ding
- Transfer Student Manager: Cedric Trice

2. Associate Chair for Graduate Studies – School of Aerospace Engineering, (2019 – 2022)

Responsibilities:

- Recruiting, Admissions, Ph.D. Qualification Exams, Approval of all M.S. and Ph.D. proposals and defense committees
- Funding: Assign 70-80 Graduate Teaching Assistantships for the Fall and Spring semesters
- AE Graduate Fellowship: Administer the solicitation, selection, and reporting of eight one-year GRAs
- Chair the Graduate Curriculum Committee
- Main point of contact about Graduate School requirements, requests for an exception, department policy, fellowships, conflicts with faculty or advisors, or other general advising questions
- General and confidential advisor for all graduate students and welcomes emails, scheduled appointments, and visits during office hours
- Annual assessment of the AE Ph.D., MS, and AE-INTA graduate programs

Direct Reports

- Academic Program Manager
- Academic Manager for ASDL
- IT Support Program Manager
- Lab Manager
- Communications Manager

3. Director of the NASA Joint Advanced Propulsion Institute, (2021 – Present)
 - Vision Statement: Enable the flight of high-power electric propulsion (EP) by creating physics-based limits, mitigation techniques, and extrapolation procedures to predict the in-space performance, operation, and lifetime of high-power EP devices from ground tests
 - Team: Georgia Institute of Technology (Walker, Saeedifard), U. of Michigan (Jorns, Foster, Gallimore, Gorodetsky), U. of California, Los Angeles (Wirz, Marian), U. of Illinois (Rovey, Levin, Chew), Colorado State U. (Williams, Yalin), U. of Colorado (Boyd), Stanford U. (Hara), and Western Michigan U. (Lemmer)

Responsibilities

- Works with the four leads to oversee the planning and execution of all research and technology development tasks
- Co-lead of the Facility Effects thrust area
- Assembly and guidance of the Institute Advisory Board

Direct Reports

- Program Director: Tanya Krawiec
- Research Engineer: Dr. Dan Lev

4. Director of the Georgia Institute of Technology SURE program. (2019 – Present)
 - The Summer Undergraduate Research in Engineering/Sciences (S.U.R.E.) program is committed to increasing the number of qualified students who are traditionally under-represented in STEM fields. These include but are not limited to students from racial/ethnic minority groups, women, or first-generation college students.
www.sure.gatech.edu

Responsibilities

- Collaboration with Veda Chandler, Director of the Center for Engineering Education and Diversity, on planning, funding, marketing, and execution of the program
- Collaboration with Lakeita Severance, Educational Outreach Program Manager II