

CURRICULUM VITAE

THE WILLIAM STATES LEE COLLEGE OF ENGINEERING

NAME: WESLEY WILLIAMS **DATE:** MAR-2020

RANK OR TITLE: ASSOCIATE PROFESSOR

DEPARTMENT: Department of Engineering Technology and Construction Management
9201 University City Blvd. | Charlotte, NC 28223
Phone: 704-687-5064
Wesley.Williams@uncc.edu
<https://coefs.uncc.edu/wbillia/>

DATE OF FIRST EMPLOYMENT IN COE: AUGUST 2011

DATE OF TENURE: (Year or Untenured) 2017

1. EDUCATION

- PhD, **University of North Carolina at Charlotte**, Mechanical Engineering,
Charlotte, NC, December 2009
- MS, **Georgia Institute of Technology**, Mechanical Engineering
Atlanta, GA, May 2005
- coursework, **Durham Technical Community College**, Machining Technology
Durham, NC, Aug 2000 – Dec 2002
- BS, **North Carolina State University**, Mechanical Engineering
Raleigh, NC, May 2000

Professional Engineer Licensed in NC (#030012)

2. PROFESSIONAL EXPERIENCE

- UNC Charlotte William States Lee College of Engineering
Associate Professor, Mechanical Engineering Technology Jul 2017 - Present
- Taught courses in the areas of instrumentation and controls, technical programming, experimental stress analysis, and thermodynamics laboratory
 - Conducted research in additive manufacturing, lapping, and engineering education
 - Managed undergraduate and graduate student researchers
- Assistant Professor**, Mechanical Engineering Technology Aug 2011 – Jun 2017
- Taught courses in the areas of instrumentation and controls, technical programming, experimental stress analysis, and thermodynamics laboratory
 - Conducted research in additive manufacturing, lapping, and engineering education
 - Managed undergraduate and graduate student researchers
- North Carolina A&T State University: Aug 2010 – Apr 2011
NASA Center for Aviation Safety
Research Associate
- evaluated and improved designs for Acoustic Emission sensors used in Structural Health Monitoring (SHM)
- Northrop Grumman SYNOPTICS May 2007 – Aug 2007
Engineering Intern
- designed and conducted process improvement experiments for the finishing of laser crystals
- Nanolytics Oct 2004 – Mar 2005
Consultant
- designed fluid handling for a lab on a chip instrument developed under a NIH grant
- GlaxoSmithKline (GlaxoWellcome) Jan 1997 – Aug 2003
Prototype Design Engineer May 2000 – Aug 2003
- designed prototype instrumentation for research scientists involved in drug discovery with ProEngineer
- Engineering Intern / CoOp Student** Jan 1997 – Apr 2000
- worked alternating semesters in the Pilot Plant Engineering and Validation, Facilities Engineering, and Advanced Design and Automation

3. TEACHING ACCOMPLISHMENTS

Table 1. Courses Taught

ETGR 2122	Technical Programming	Fall 2011
ETME 3123L	Experimental Stress Analysis	Fall 2011
ETME 3150	Applied CAD Modeling and Simulation	Spring and Fall 2017, 2018, 2019
ETME 3163(4163) ELET 2241	Instrumentation and Controls	Spring 2012, 2013, 2014, 2015, 2016, 2017, 2019, 2020
ETME 3251 (4163L) ELET 2241L	Instrumentation and Controls Lab	Spring 2012, 2013, 2014, 2015, 2016
CMET 6155	Facilities Instrumentation and Controls	Fall 2012
ETME 3252	Thermodynamics and Heat Transfer Lab	Fall 2012
ENER 6120	Energy Generation and Conversion	Fall 2013, 2014, 2015
ENER 6150	System Dynamics	Spring 2018, Fall 2019
ETME 3113	Dynamics	Fall 2013
PE Exam Review	General Engineering Review (2 sessions)	Spring 2013, Spring 2014

Table 2. Senior Design Project Mentoring

Date	Topic	Lead or Co-Mentor
2015-2016	Magnetically Geared Vertical Axis Wind Turbine	Lead Mentor
2014-2015	NASA Robotic Mining Competition	Co-Mentor
2013-2014	NASA Robotic Mining Competition	Co-Mentor
	Reflective Response Training Center	Lead Mentor
	ISP Race Seat Redesign	Lead Mentor
2012-2013	NASA Robotic Mining Competition	Co-Mentor
	Discovery Place Hand Crank Generator	Lead Mentor
	Schaeffler Torque Sensing Bearing	Lead Mentor
2011-2012	Schaeffler Multiaxis Cartesian Robot	Lead Mentor
	Fiber Reinforced Concrete Beams with CFR	Co-Mentor

4. RESEARCH ACCOMPLISHMENTS

Journal Publications

- [1] H. Y. Wong, J. Z. Bird, D. Barnett, and **W. Williams**, “A High Torque Density Halbach Rotor Coaxial Magnetic Gear,” in *2019 IEEE International Electric Machines Drives Conference (IEMDC)*, 2019, pp. 233–239, doi: [10.1109/IEMDC.2019.8785188](https://doi.org/10.1109/IEMDC.2019.8785188).
- [2] K. Li, S. Modaresahmadi, **W. Williams**, and J. Z. Bird, “Electromagnetic analysis of a wind turbine magnetic gearbox,” *The Journal of Engineering*, 2019.
- [3] M. B. Kouhshahi *et al.*, “An Axial Flux Focusing Magnetically Geared Generator for Low Input Speed Applications,” *IEEE Transactions on Industry Applications*, 2019.
- [4] K. Li, S. Modaresahmadi, **W. Williams**, J. Z. Bird, J. Wright, and D. Barnett, “Electromagnetic analysis and experimental testing of a flux focusing wind turbine magnetic gearbox,” *IEEE Transactions on Energy Conversion*, 2019.
- [5] K. Li, S. Modaresahmadi, **W. Williams**, J. Wright, J. Bird, and D. Som, “Designing and Experimentally Testing a Magnetic Gearbox for a Wind Turbine Demonstrator,” *IEEE Transactions on Industry Applications*, 2019.
- [6] M. B. Kouhshahi, V. Acharya, M. Calvin, J. Bird, and **W. Williams**, “Designing and Experimentally Testing a Flux Focusing Axial Magnetic Gear for an Ocean Generator Application,” *IET Electric Power Applications*, 2019.
- [7] H. Y. Wong, J. Z. Bird, S. Modaresahmadi, and **W. Williams**, “Comparative analysis of a coaxial magnetic gear with a flux concentration rotor and consequent pole rotor typology,” *IEEE Transactions on Magnetics*, no. 99, pp. 1–5, 2018.
- [8] M. A. Noras, A. Rolle, and **W. B. Williams**, “Manipulation of Electrosprayed Dielectric Fluids in a High-Pressure Environment Using External Electric Fields,” *IEEE Transactions on Industry Applications*, vol. 54, no. 6, pp. 6408–6413, 2018.
- [9] M. B. Kouhshahi, J. Z. Bird, J. D. Kadel, and **W. B. Williams**, “Designing and experimentally testing a magnetically geared lead screw,” *IEEE Transactions on Industry Applications*, vol. 54, no. 6, pp. 5736–5747, 2018.
- [10] A. F. Browne, S. Watson, and **W. B. Williams**, “Development of an Architecture for a Cyber-Physical Emulation Test Range for Network Security Testing,” *IEEE Access*, vol. 6, pp. 73273–73279, 2018.
- [11] P. Schmidt, R. Handy, T. Anderson, T. Rees, J. Morrell, **W. Williams** & M. Jackson (2016): Residual surface stress: comparing traditional and modulated tool path machining processes, *Materials Science and Technology*, DOI:10.1080/02670836.2016.1198113

- [12] B. Mullany, M. Mainuddin, **W. Williams**, and R. Keanini, “An experimental and analytical investigation into the effects of process vibrations on material removal rates during polishing,” *Journal of Applied Physics*, vol. 113, no. 22, p. 224902, 2013.
- [13] **W. Williams**, B. Mullany, W. Parker, P. Moyer, and M. Randles, “Using quantum dots to evaluate subsurface damage depths and formation mechanisms in glass,” *CIRP annals*, vol. 59, no. 1, pp. 569–572, 2010.
- [14] **W. B. Williams**, B. A. Mullany, W. C. Parker, P. J. Moyer, and M. H. Randles, “Using quantum dots to tag subsurface damage in lapped and polished glass samples,” *Applied optics*, vol. 48, no. 27, pp. 5155–5163, 2009.

Conference Publications

- [1] S. Modaresahmadi, A. Hosseinpour, and **W. B. Williams**, “Fatigue Life Prediction of a Coaxial Multi-Stage Magnetic Gear,” in *2019 IEEE Texas Power and Energy Conference (TPEC)*, 2019, pp. 1–6.
- [2] N. Goudarzi, M. H. Mohafez, and **W. Williams**, “Fluid Structure Interaction Analyses of Wind Turbines: The North Carolina Jennette’s Pier Turbines Case Study,” presented at the ASME 2019 Power Conference, 2019.
- [3] D. Wong, S. Modaresahmadi, J. Z. Bird, and **W. Williams**, “Comparative Analysis of a Coaxial Magnetic Gearbox with a Flux Concentration Halbach Rotor and Consequent Pole Rotor Typology.,” in *2018 IEEE International Magnetic Conference (INTERMAG)*, 2018, pp. 1–2.
- [4] S. Modaresahmadi, C. Nichols, and **W. Williams**, “Mechanical Design of Magnetic Gearboxes Optimized for Assembly,” in *ASME 2018 International Mechanical Engineering Congress and Exposition*, 2018, p. V06AT08A012–V06AT08A012.
- [5] S. Modaresahmadi, K. Li, **W. B. Williams**, and J. Z. Bird, “Vibration Analysis of the First Stage of a Multi-stage Coaxial Magnetic Gearbox,” in *SoutheastCon 2018*, 2018, pp. 1–8.
- [6] S. Modaresahmadi, J. Khalesi, J. Kadel, and **W. Williams**, “Thermal Analysis of a Subscale Flux Focusing Magnetic Gearbox,” in *ASME 2018 International Mechanical Engineering Congress and Exposition*, 2018, p. V08AT10A047–V08AT10A047.
- [7] M. B. Kouhshahi, J. Z. Bird, A. Janssen, J. Kadel, and **W. Williams**, “A Magnetically Geared Lead Screw Without Translator Skewing,” in *2018 IEEE Energy Conversion Congress and Exposition (ECCE)*, 2018, pp. 4994–4999.

- [8] H. Baninajar, J. Z. Bird, S. Modaresahmadi, and **W. Williams**, “Electromagnetic and Mechanical Design of a Hermetically Sealed Magnetic Gear for a Marine Hydrokinetic Generator,” in 2018 IEEE Energy Conversion Congress and Exposition (ECCE), 2018, pp. 4987–4993.
- [9] M. A. Noras, A. Rolle, and **W. B. Williams**, “Electrospraying of dielectric fluids in a high-pressure environment,” in 2017 IEEE Industry Applications Society Annual Meeting, 2017, pp. 1–4.
- [10] K. Li, J. Wright, S. Modaresahmadi, D. Som, **W. Williams**, and J. Z. Bird, “Designing the first stage of a series connected multistage coaxial magnetic gearbox for a wind turbine demonstrator,” in 2017 IEEE Energy Conversion Congress and Exposition (ECCE), 2017, pp. 1247–1254.
- [11] M. B. Kouhshahi, J. Z. Bird, V. Acharya, K. Li, M. Calvin, and **W. Williams**, “An axial flux-focusing magnetically geared motor,” in 2017 IEEE Energy Conversion Congress and Exposition (ECCE), 2017, pp. 307–313.
- [12] J. Bird, K. Li, J. Kadel, J. Wright, D. Som, and **W. Williams**, “Analysis and testing of a hybrid Halbach magnetic gearbox,” in 2017 IEEE International Magnetics Conference (INTERMAG), 2017, pp. 1–2.
- [13] **W. B. Williams** and A. F. Browne, “Development of a remote laboratory architecture for Mission Critical Operations instruction,” in SoutheastCon 2016, 2016, pp. 1–4.
- [14] W. Wang, **W. Williams**, and A. Browne, “An Experiment Platform for Security Education in Advanced Manufacturing Systems: Infrastructure and Materials.”, The Colloquium for Information Systems Security Education (CISSE), 2016
- [15] **W. B. Williams**, J. Kadel, J. Warne, and J. Z. Bird, “Additive Manufacture of a Flux Focusing Magnetic Gear,” presented at the ASEE-SE Annual Meeting, Tuscalossa, AL, 2016.
- [16] K. Uppalapati, J. Kadel, J. Wright, K. Li, **W. Williams**, and J. Z. Bird, “A low assembly cost coaxial magnetic gearbox,” in 2016 IEEE 2nd Annual Southern Power Electronics Conference (SPEC), 2016, pp. 1–6.
- [17] A. F. Browne, **W. B. Williams**, K. Loftus, and C. Nye, “Implementation of a Cartesian robot for remote Mission Critical Operator training,” in SoutheastCon 2016, 2016, pp. 1–4.
- [18] **W. Williams**, J. Bird, M. Calvin, and P. Nguyen, “A Comparison of FMEA for Mechanical and Magnetic Gearboxes,” presented at the Marine Energy Technology Symposium, Washington, DC, 2015.

- [19] **W. B. Williams**, “The impact of layer thickness on the performance of additively manufactured lapping tools,” in *Optifab 2015*, 2015, vol. 9633, p. 963304.
- [20] **W. B. Williams** and E. J. Schaus, “Additive Manufacturing of Robot Components for a Capstone Senior Design Experience,” presented at the 2015 ASEE Annual Conference & Exposition, 2015, pp. 26.157.1-26.157.15.
- [21] **W. B. Williams** and E. J. Schaus, “Design and Implementation of a Rocker-Bogie Suspension for a Mining Robot,” p. 10, 2015.
- [22] **W. B. Williams**, “The impact of layer thickness on the performance of additively manufactured lapping tools,” in *Optifab 2015*, 2015, vol. 9633, p. 963304.
- [23] K. Li, J. Bird, J. Kadel, and **W. Williams**, “A flux-focusing cycloidal magnetic gearbox,” *IEEE Transactions on Magnetics*, vol. 51, no. 11, pp. 1–4, 2015.
- [24] W. Wang, Y. Wang, **W. Williams**, and A. Browne, “Secure Cloud Manufacturing: Research Challenges and a Case Study.”, *Proceedings of 2nd International IFIP Workshop on Emerging Ideas and Trends in Engineering of Cyber-Physical Systems (EITEC 15)*, Seattle, Washington, April 2015.
- [25] A. F. Browne, **W. B. Williams**, K. Loftus, and C. Benfield, “Development of a Low-cost Electromechanical Elevator for Programmable Logic and Embedded Controls Training,” presented at the 2015 ASEE Annual Conference & Exposition, 2015, pp. 26.521.1-26.521.10.
- [26] J. Bird, K. Li, **W. Williams**, and J. Kadel, “A flux focusing cycloidal magnetic gearbox,” in *2015 IEEE International Magnetics Conference (INTERMAG)*, 2015, pp. 1–1.
- [27] **W. Williams**, “Rapid Tooling for Loose Abrasive Finishing of Metal Workpieces,” presented at the RAPID, Detroit, MI, 2014.
- [28] K. K. Uppalapati, J. Z. Bird, J. Wright, J. Pitchard, M. Calvin, and **W. Williams**, “A magnetic gearbox with an active region torque density of 239Nm/L,” in *2014 IEEE Energy Conversion Congress and Exposition (ECCE)*, 2014, pp. 1422–1428.
- [29] C. J. Benfield, **W. B. Williams**, and M. Noras, “Application of novel quasi-electrostatic sensor arrays for time based data collection and processing of supersonic, subsonic, and transonic revolving projectiles,” in *Wireless Sensing, Localization, and Processing IX*, 2014, vol. 9103, p. 91030H.
- [30] **W. B. Williams**, “Additive manufacturing of tools for lapping glass,” in *Optifab 2013*, 2013, vol. 8884, p. 88840M.
- [31] **W. B. Williams**, “LabVIEW and Arduino as a gateway to PLC programming,” presented at the 2013 ASEE Annual Conference & Exposition, 2013, pp. 23.846.1-23.846.12.

- [32] M. J. Sundaresan and **W. B. Williams**, “Structural health monitoring of shear waves in aluminum plates,” in Smart Sensor Phenomena, Technology, Networks, and Systems 2011, 2011, vol. 7982, p. 79820Z.
- [33] K. Asamene, **W. Williams**, and M. Sundaresan, “Experimental analysis of fretting related acoustic emission signals,” in Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems 2011, 2011, vol. 7981, p. 79813V.
- [34] **W. Williams**, B. Mullany, W. Parker, and P. Moyer, “Evaluating subsurface damage with quantum dots,” in Optical Fabrication and Testing, 2010, p. OWA3.
- [35] **W. B. Williams**, “A novel fluorescence based method of assessing subsurface damage in optical materials,” PhD Thesis, The University of North Carolina at Charlotte, 2009.
- [36] **W. Williams**, B. Mullany, P. Moyer, W. Parker, M. Randles, Testing Quantum Dots as a Means of Assessing Subsurface Damage in Polished Glass, ASPE General Meeting, Oct, 2009.
- [37] **W. B. Williams**, B. A. Mullany, M. H. Randles, P. Moyer, and W. C. Parker, “Characterizing Quantum Dots for use in Detecting Subsurface Damage,” in Proceedings of the 23rd Annual Meeting of the American Society for Precision Engineering, (American Society for Precision Engineering, 2008), 2008, pp. 440–443.
- [38] B. Mullany, A. Landis, **W. Williams**, P. Murray, and I. Roberts, “Pitch polishing of silica: correlation between material removal rates and obtainable surface finishes,” in Optifab 2007: Technical Digest, 2007, vol. 10316, p. 103161H.
- [39] **W. B. Williams** and B. A. Mullany, “Real time measurement of axial force and torque during polishing,” in Proceedings of the American Society for Precision Engineering, 2006, vol. 21, p. 603.

Technical Reports

- [1] Tara Cavalline and **Wesley Williams**, “Petrographic Examination and Laboratory Testing of Concrete Core Samples”, 2014 Pavement Management Program, Hartsfield-Jackson Atlanta International Airport, Atlanta, GA, 2015

Addition Presentations

- [1] C. Nichols and W. Williams, “The Design of a Seal-Free Magnetic Transmission in a Reaction Turbine Micro Hydropower Plant,” presented at the Hydrovision 2019, Portland, OR, 24-Jul-2019.

- [2] C. Nichols, D. Barnett, and W. Williams, “The Design of an In-Conduit Hydropower Plant with a Seal-Free Magnetic Transmission,” presented at the Appalachian Energy Summit, Boone, NC, 30-Jul-2019.
- [3] W. Williams, “Updates on the Hermetically Sealed Magnetically Geared Generator, year 2,” presented at the North Carolina Renewable Ocean Energy Program Symposium, Wanchese, NC, Apr-2019.
- [4] W. Williams, “Updates on Evaluating Magnetic Gearboxes Under Loading Leading to Coastal Wind Turbine Failures,” presented at the North Carolina Renewable Ocean Energy Program Symposium, Wanchese, NC, Apr-2019.
- [5] W. Williams, “Updates on an investigation into the effects of manufacturing processes on the performance of laminated steels in magnetic gears,” presented at the North Carolina Renewable Ocean Energy Program Symposium, Wanchese, NC, Apr-2019.
- [6] W. Williams, “Development of a hermetically sealed magnetically geared generator for marine hydrokinetic energy applications,” presented at the Waterpower Week, Washington, DC, Apr-2019.
- [7] W. Williams, “Updates on the Hermetically Sealed Magnetically Geared Generator,” presented at the North Carolina Renewable Ocean Energy Program Symposium, Wanchese, NC, Apr-2018.
- [8] W. Williams, “Updates on a Multistage Magnetic Gearbox for Wind Turbine Applications, Yr 2,” presented at the North Carolina Renewable Ocean Energy Program Symposium, Wanchese, NC, Apr-2017.
- [9] W. Williams, “Updates on the integration of a magnetic gear into a vertical axis wind turbine,” presented at the North Carolina Renewable Ocean Energy Program Symposium, Wanchese, NC, Apr-2016.
- [10] W. Williams, “Updates on a Multistage Magnetic Gearbox for Wind Turbine Applications,” presented at the North Carolina Renewable Ocean Energy Program Symposium, Wanchese, NC, Apr-2016.

GRANTS AND CONTRACTS AWARDED

Table 3. Grants and Contracts Awarded

Project	Lead PI	Sponsor	Funding Amount	Start Date	End Date
Performance Testing of an Integrated Magnetic Power Takeoff	Wesley Williams	Department of Energy (subcontract through Portland State University)	\$187,518	6/1/2019	5/31/2022

Evaluating Magnetic Gearboxes Under Failure Conditions at the NC Coast	Wesley Williams	UNC Coastal Studies Institute (UNC-CSI)	\$40,000	7/1/2018	6/30/2019
Lamination Manufacturing Study for Magnetic Gearing Applications	Wesley Williams	UNC Coastal Studies Institute (UNC-CSI)	\$30,000	7/1/2018	6/30/2019
Cost Share for the Hermetically Sealed Magnetically Geared Generator	Wesley Williams	UNC Coastal Studies Institute (UNC-CSI)	\$18,333	7/1/2018	6/30/2019
Basic Ordering Agreement: Securing American Manufacturing (SAM)	Aidan Browne	Consolidated Nuclear Security , LLC (CNS)	\$660,840	1/23/2017	9/15/2018
A Hermetically Sealed Magnetically Geared Marine Hydrokinetic Generator	Wesley Williams	Department of Energy (subcontract through Portland State University)	\$265,093	6/1/2017	5/31/2019
Basic Ordering Agreement: Securing American Manufacturing (SAM)	Aidan Browne	Consolidated Nuclear Security , LLC (CNS)	\$202,542	1/23/2017	9/15/2018
A Hermetically Sealed Magnetically Geared Marine Hydrokinetic Generator	Wesley Williams	UNC Coastal Studies Institute (UNC-CSI)	\$18,333	7/1/2017	6/30/2018
Advancing the Technology Readiness Level of Magnetic Gears Through Modular Design and Endurance Testing	Wesley Williams	UNC Coastal Studies Institute (UNC-CSI)	\$64,197	7/1/2017	6/30/2018
Basic Ordering Agreement: Securing American Manufacturing (SAM)	Aidan Browne	Consolidated Nuclear Security , LLC (CNS)	\$50,047	1/23/2017	9/15/2018
Basic Ordering Agreement: Securing American Manufacturing (SAM)	Aidan Browne	Consolidated Nuclear Security , LLC (CNS)	\$210,000	1/23/2017	9/15/2018
Petrographic Examination and Laboratory Testing of Concrete Airfield Pavements	Tara Cavalline	Aviation Infrastructure Solutions	\$66,334	10/1/2016	11/30/2017
Design, Analysis, Manufacture, and Testing of a Multistage Magnetic Gearbox	Wesley Williams	UNC Coastal Studies Institute (UNC-CSI)	\$50,000	7/1/2016	6/30/2017
3D Printed Lightweight Optics for Directed Energy Applications	Wesley Williams	Optimax Systems, Inc.	\$300,000	3/1/2015	2/28/2017
EDU: Developing Security Education Materials for Future Advanced Manufacturing Engineering Workforce	Weichao Wang	National Science Foundation (NSF)	\$299,977	7/15/2015	6/30/2019

MAGNETICALLY GEARED MARINE HYDROKINETIC POWER GENERATION	Jonathan Bird	UNC Coastal Studies Institute (UNC-CSI)	\$245,000	7/1/2015	6/30/2016
Advanced High Torque Density Magnetically Geared Generator	Jonathan Bird	Department of Energy (DOE)	\$500,000	12/15/2014	3/15/2018
6th Annual NASA Robotic Mining Competition - Team Grant	Aidan Browne	North Carolina Space Grant Consortium (NC Space Grant)	\$7,000	11/1/2014	4/1/2015
Ocean Energy Power Take-off Using Magnetic Gears - Year 4	Jonathan Bird	UNC Coastal Studies Institute (UNC-CSI)	\$305,000	7/1/2014	6/30/2015
3D Printed Lightweight Optics for Directed Energy Systems	Wesley Williams	Optimax Systems, Inc.	\$41,035	5/1/2014	10/19/2014
Petrographic Examination and Laboratory Testing of Concrete Core Samples - 2013 Pavement Management Program, Hartsfield-Jackson Atlanta International Airport, Atlanta, Georgia	Tara Cavalline	Boudreau Engineering, Inc.	\$62,933	4/16/2014	6/30/2015
5th Annual NASA Robotic Mining Competition - Team Grant	Wesley Williams	North Carolina Space Grant Consortium (NC Space Grant)	\$5,000	1/1/2014	6/30/2014
5th Annual NASA Robotic Mining Competition - Senior Design Grant	Wesley Williams	North Carolina Space Grant Consortium (NC Space Grant)	\$2,000	1/1/2014	6/30/2014
Curriculum Development and Articulation Agreements for Mission Critical Operator Training at Local Community College	Wesley Williams	Department of Labor (DOL)	\$1,566,788	10/1/2013	9/30/2017
Ocean energy power take off using magnetic gears and power conversion architectures for wave energy converters	Jonathan Bird	UNC Coastal Studies Institute (UNC-CSI)	\$250,850	7/1/2013	6/30/2014
Development of an Open Source Selective Laser Sintering Testbed	Wesley Williams	UNC Charlotte Faculty Research Grant	\$5,334	Mar 2013	June 2014

5. SERVICE

Graduate Student Committees

- Luke Berglind, PhD Mechanical Engineering
Graduation Summer 2015
- Zhiguang Cui, PhD Mechanical Engineering
Graduation Summer 2016
- Ali Khayat Baheri Irani, PhD Mechanical Engineering
Graduation Summer 2018
- **Kang Li**, PhD Electrical Engineering
Graduation Summer 2018
- Moin Mainuddin, PhD Mechanical Engineering,
Graduation December 2014
- Bhaskar Mitra, PhD Electrical Engineering,
Graduation December 2019
- **Sina Modaresahmadi**, PhD Mechanical Engineering (chair)
Expected Graduation Spring 2020
- Hossein Shanian, PhD Mechanical Engineering
Graduation December 2016
- Kathryn Smith, PhD Electrical Engineering,
Graduation Spring 2018
- Debarupa Som, PhD Electrical Engineering,
Expected Graduation Spring 2020
- Krishna Kiran Uppalapati, PhD Electrical Engineering,
Graduation Summer 2015
- Lucas Valdez, PhD Mechanical Engineering,
Graduation Summer 2015
- Mario Valdez, PhD Mechanical Engineering,
Graduation Summer 2015
- Travis Anderson, MS Applied Energy and Electromechanical Systems,
Graduation Summer 2015
- **Chris Benfield**, MS Applied Energy and Electromechanical Systems,
Graduation December 2015 (chair)

- Bart Biggs, MS Applied Energy and Electromechanical Systems,
Expected Graduation December 2019
- **Matthew Calvin**, MS Applied Energy and Electromechanical Systems,
Graduation May 2015 (chair)
- Ashley Ciero, MS Applied Energy and Electromechanical Systems,
Graduation May 2019
- Robert Garris, MS Applied Energy and Electromechanical Systems,
Graduation May 2016
- **Cameron Nye**, MS Applied Energy and Electromechanical Systems,
Graduation May 2017 (chair)
- Casey Nichols, MS Applied Energy and Electromechanical Systems,
Graduation December 2019 (chair)
- Andrew Paustian, MS Applied Energy and Electromechanical Systems,
Graduation Summer 2017
- Alzarrio Rolle, MS Applied Energy and Electromechanical Systems,
Graduation Summer 2017
- Bishan Thapa, MS Applied Energy and Electromechanical Systems,
Graduation May 2019
- Misa Vo, MS Applied Energy and Electromechanical Systems,
Graduation December 2015
- Kohl Whitlow, MS Applied Energy and Electromechanical Systems,
Graduation December 2019

Major Committee Assignments & Service

UNC Charlotte

- Faculty Research Grant Committee 2017-2018
- Competitive Grants Committee 2018-2019, 2019-2020
- Summer Research for Undergraduates Presentation Judge: Summer 2018
- Summer Research for Undergraduates Presentation Judge: Summer 2017

UNC Charlotte College of Engineering

- Duke Distinguished Professor Selection Committee 2019
- Curriculum Committee Chair (2012-2014)

- By-Laws Committee (2013-2014)
- Search Committee for the College of Engineering Alumni Coordinator

UNCC Charlotte College of Engineering, Department of Engineering Technology

- Department Review Committee Chair 2018-2019, 2019-2020
- Department Review Committee 2017-2018
- Search Committee Chair: Mechanical Engineering Technology/Applied Energy, Fall 2018
- Search Committee: Mechanical Engineering Technology/Applied Energy, Fall 2015
- Search Committee: Mechanical Engineering Technology/Fire Safety, Fall 2015
- Search Committee: Mechanical Engineering Technology, Spring 2013
- Electrical Lab Relocation Project, Spring Break, 2013
- Search Committee: Electrical Engineering Technology, Fall 2012

Professional and Scholarly Organizations

- ASME – Member
- IEEE –Member
- SME –Member
 - SME Student Chapter Faculty Advisor
- Marine Energy Council (2018-2019)
- Reviewer for
 - ASME
 - IEEE

Outreach and Community Service

- Marine Energy Council (2018-present)
- Appalachian Energy Summit, student poster competition judge (2019)
- Engineering Mentor: Barringer Academic Center Makerspace (2018-2019)
- FIRST Robotics Competition, NC Regional Competition
 - Lead Robot Inspector (2013-2019)
 - Robot Inspector (2012)
- UNC Charlotte Science and Technology Expo Participant (2014, 2015)
- Junior First Lego League (FLL) Mentor to Barringer Academic Center (2015)

- Project Lead the Way, Design Challenge Judge
- Discovery Place Engineering Takeover (2019)
- Cub Scouts
 - Den Leader Cub Scout Pack 163 (2016-present)
 - Pack Committee Chair (2018-present)
 - Webmaster 2017-present

6. PROFESSIONAL DEVELOPMENT / WORKSHOPS

- UNC Charlotte Teaching Seminar w/ Jerry Sharp (Summer 2011)
- UNC Charlotte Diversity Institute (Spring 2013)
- NSF Cyber Physical Systems Aspiring PIs Workshop (Feb 2014)
- 4th Annual North Carolina Renewable Ocean Energy Symposium (Nov 2014)
- 5th Annual North Carolina Renewable Ocean Energy Symposium (Apr 2016)
- 6th Annual North Carolina Renewable Ocean Energy Symposium (Apr 2017)
- 7th Annual North Carolina Renewable Ocean Energy Symposium (Apr 2018)
- 8th Annual North Carolina Renewable Ocean Energy Symposium (Apr 2019)
- Appalachian Energy Summit (Jul 2018)
- Appalachian Energy Summit (Jul 2019)
- Appalachian Energy Center Microhydropower Workshop (Jun 2019)