

CLEMSON UNIVERSITY

Doctoral Hooding Ceremony

DECEMBER 16, 2020



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DOCTORAL HOODING CEREMONY

WEDNESDAY, DECEMBER 16, 2020

1:00 P.M.

BON SECOURS WELLNESS ARENA

GREENVILLE, SOUTH CAROLINA

HONORING THE DOCTORAL GRADUATES
OF DECEMBER 2020

ORDER OF CEREMONIES

PROCESSIONAL

Stage Party

NATIONAL ANTHEM

(Please stand as you are able)

REFLECTION

John J. Porter, III

Vice President, Graduate Student Government

WELCOME AND INTRODUCTIONS

Associate Provost and Dean of the Graduate School

John Lopes

and

Executive Vice President for Academic Affairs and Provost

Robert H. Jones

CONFERRING OF DEGREES

President James P. Clements

ALMA MATER

Today's ceremony is being streamed live with captioning at tv.clemson.edu.

The recording will be posted at tv.clemson.edu/live/archive when available.

Sign language interpretation available on the arena floor near the stage.

Captioning displayed on center-hung scoreboard and screens beside the stage.

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Associate Provost and
Dean of the Graduate School

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and Health Sciences

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ADMINISTRATIVE OFFICERS

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Deputy Chief of Staff

THE GRADUATE SCHOOL

John Lopes
Associate Provost and Dean of the Graduate School
David S. Fleming
Associate Dean
William G. Ferrell
Associate Dean
Brian N. Dominy
Associate Dean
Tia N. Dumas
Assistant Dean for Professional Development and
Inclusive Excellence

GRADUATE STUDENT GOVERNMENT

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John J. Porter, III, Vice President
Naga Venkata Sai Teja, Greenville Council Vice President

ASSOCIATE DEANS AND DEPARTMENT CHAIRS

COLLEGE OF AGRICULTURE, FORESTRY AND LIFE SCIENCES

Paula Agudelo
Associate Dean of Research
Jean Bertrand
Associate Dean of Undergraduate Studies
Thomas Dobbins
Associate Dean of Outreach and Engagement

Charles V. Privette, III Agricultural Sciences
Charles F. Rosenkrans, Jr..... Animal and Veterinary Sciences
J. Keith Bertrand, interim..... Food, Nutrition, and Packaging Sciences
Todd Petty..... Forestry and Environmental Conservation
Carlyle C. Brewster Plant and Environmental Sciences

COLLEGE OF ARCHITECTURE, ARTS AND HUMANITIES

James M. Burns
Associate Dean for Undergraduate and Graduate Studies
Winifred E. Newman
Associate Dean for Research and Academic Affairs

James C. Stevens School of Architecture
Valerie A. Zimany..... Art
John A. Gaber..... City Planning and Real Estate Development
N. Mike Jackson..... Nieri Family Department of Construction
Science and Management
Susanna M. Ashton English
Amit Bein..... History
Salvador A. Oropesa Languages
Linda Dzuris Performing Arts
Kelly C. Smith..... Philosophy and Religion

COLLEGE OF BEHAVIORAL, SOCIAL AND HEALTH SCIENCES

Rachel M. Mayo
Interim Associate Dean for Research and Graduate Studies
Denise M. Anderson
Associate Dean for Undergraduate Studies and Faculty Affairs

Kathleen L. Valentine School of Nursing
Joseph P. Mazer, Jr..... Communication
Jeffrey Hallo, interim..... Parks, Recreation and Tourism Management
Jeffrey S. Peake Political Science
Patrick H. Raymark..... Psychology
Ronald W. Gimbel..... Public Health Sciences
Katherine E. Weisensee Sociology, Anthropology and
Criminal Justice

WILBUR O. AND ANN POWERS COLLEGE OF BUSINESS

Gregory M. Pickett
Associate Dean, Director of M.B.A. Programs and Greenville ONE
Carl W. Hollingsworth
Associate Dean for Academic Affairs

Sally K. Widener School of Accountancy
Scott L. Baier Economics
Angela G. Morgan..... Finance
Charles “Chip” Tonkin..... Graphic Communications

Craig Wallace Management
Jennifer D. Siemens, interim Marketing

COLLEGE OF EDUCATION

Jeff C. Marshall
Associate Dean for Research and Graduate Studies
Michelle P. Cook
Associate Dean for Undergraduate Studies
and Faculty Engagement

Debi M. Switzer Education and Human Development
Jane Clark Lindle..... Educational and Organizational
Leadership Development
Cynthia Deaton Teaching and Learning

COLLEGE OF ENGINEERING, COMPUTING AND APPLIED SCIENCES

Douglas E. Hirt
Associate Dean for Faculty Achievement and Strategic Initiatives
Daniel L. Noneaker
Associate Dean for Research
Bradley J. Putman
Associate Dean for Undergraduate Studies
Oliver J. Myers
Associate Dean for Inclusive Excellence – Undergraduate
Melissa C. Smith
Associate Dean for Inclusive Excellence – Graduate

Zoran S. Filipi Automotive Engineering
Martine LaBerge Bioengineering
David A. Bruce Chemical and Biomolecular Engineering
Jesus M. de la Garza..... Civil Engineering
Amy W. Apon School of Computing
Hai Xiao, interim..... Electrical and Computer Engineering
Cindy M. Lee Engineering and Science Education
David L. Freedman Environmental Engineering and
Earth Sciences
R. Joe Watkins General Engineering
Jeffrey P. Kharoufeh Industrial Engineering
Kyle S. Brinkman Materials Science and Engineering
Atul Kelkar..... Mechanical Engineering

COLLEGE OF SCIENCE

Stephen E. Creager
Associate Dean for Discovery, Graduate Education,
Space Optimization and Faculty Affairs
Calvin L. Williams
Associate Dean for Undergraduate Excellence, Global Engagement,
Community Engagement and Inclusive Excellence

Saara DeWalt Biological Sciences
William T. Pennington Chemistry
David F. Clayton..... Genetics and Biochemistry
Kevin L. James School of Mathematical and Statistical Sciences
Sean D. Brittain..... Physics and Astronomy

Special Thanks to Graduate Program Directors and Staff

Although there are too many to list, the graduate program coordinators, graduate faculty, administrative contacts, and student services coordinators for each graduate degree program are essential to the success of graduate education at Clemson University. We thank each and every one of you.

DOCTORAL PIN NEW FOR 2020

Earning a doctoral degree is never easy. Finishing a program in the midst of a global pandemic is truly remarkable. To honor the extraordinary dedication and achievement of our 2020 doctoral graduates, each one will receive a lapel pin designed just for this year's doctoral graduates. Those here today will receive their pins on stage. Pins will be mailed to those who could not attend.

The pin features a block "C" logo that was in use in 1955 when Clemson offered its first doctoral degree program. Across the C are three stripes like the ones graduates are wearing on their sleeves today.

The pin will serve as a reminder to the graduate and a signal to all that the wearer was one of fewer than 300 students who earned the title of "Doctor" at Clemson University in 2020.

DOCTORAL HOODING

The doctoral hood is a symbolic honor of distinction bestowed upon scholars who have attained the highest level of formal education available in the world, representing a typical range of five to seven years of study beyond the bachelor's degree. Clemson's 46-inch-long doctoral hood is usually draped over the shoulders by the faculty member who, as chair of the advisory committee, has formally mentored and guided the student's research and education. Because of the COVID-19 precautions being taken for today's ceremony, graduates will be wearing their hoods when they enter the arena.

You will note that faculty members are wearing gowns, caps and hoods of many colors and designs. These academic costumes of medieval origin are, for faculty with degrees from U.S. institutions, specified by a uniform code maintained by the American Council on Education. Caps are black and are usually mortar boards or tams with tassels. Doctors of philosophy wear gold tassels usually of metallic thread; those with other degrees wear black or discipline colors. Those who have received their degrees from institutions outside the United States wear regalia specified by the awarding institutions.

Doctors' gowns are full, with bell-like sleeves. The front is bordered with velvet panels and the sleeves are marked by three velvet bars. While some gowns are black with black velvet, one variation is to replace black velvet with velvet in the discipline color. A second variation is a colored gown usually of the university's colors.

All hoods specify the level of degree, the type of discipline studied and the awarding institution. The width of the velvet trim conveys the degree. In addition, the degree is indicated by the color of the trim edging the hood to form the throat over the gown. The most frequently seen color is dark blue, which designates the Doctor of Philosophy (Ph.D.) degree. Finally, the color of the hood's lining is specific to the awarding institution. The colors are displayed in combinations that are drawn from heraldry. Notice that the Clemson University hood is lined with purple through which is an orange chevron (a "V"). Although many combinations are duplicated by dozens of institutions, Clemson is presently the only institution with that registered combination of purple and orange.

The officers, trustees and honored guests wear academic, ecclesiastical or military regalia as set forth by their professions. The president of Clemson University wears a purple gown with four velvet bars piped in orange and the University seal embroidered on the panels. Each trustee wears a similar gown with three velvet bars piped in orange for doctorates and an embroidered palmetto tree on each sleeve for those who do not hold doctorates. Trustee hoods are either from Clemson or from the awarding school.

A BRIEF HISTORY OF GRADUATE EDUCATION AND THE GRADUATE SCHOOL AT CLEMSON UNIVERSITY

[Clemson's faculty] would engage in original and important research, by which knowledge would be increased, whilst the immediate objects... would be the diffusion of facts on all scientific subjects. It would be vain to attempt to fix a limit to the benefits that would thus be conferred upon mankind and their effects upon society...
— THOMAS GREEN CLEMSON¹

In conceptualizing a “high seminary of learning” for South Carolina, Thomas Green Clemson knowingly set the stage for graduate education to emerge as an engine of economic development in the state. Graduate education quickly became synonymous with the application of theory to improving the practices of education and agriculture. The analysis of fertilizer, a contracted activity of the chemistry department that began in the late 1930s, would help restore depleted South Carolina soils, increase agricultural production, and spur a rapid development in opportunities for students at Clemson College to study beyond the baccalaureate degree.

Graduate coursework initially responded to the needs of veterans and to the interests of teachers wanting to improve their classroom skills, but also — from its inception — attracted international students' attention. On June 3, 1924, Patrick Hobson of Sandy Springs, South Carolina, earned the first master's degree awarded at Clemson. He used his degree in vocational education to serve as a high school principal and later as superintendent of schools in York County, South Carolina and Mitchell County, North Carolina. The third graduate degree, a master's in textile industrial education awarded to Ko-Chia Li from Mukden, China, on June 1, 1926, initiated an enrollment trend that has catapulted China to its present status as the number-one sending country for international graduate students at Clemson. Mr. Li returned to China and taught as a professor of textile engineering at Peking University, and served as head of the construction department in LiaoBei Province.

From 1938 until 1945, all aspects of graduate education (courses, programs, policies, procedures, admission, and graduation) developed under the auspices of the Committee on Graduate Instruction, chaired by F.H.H. Calhoun, Dean of the School of Chemistry and Geology. Twice during these years the University's attempts to formalize graduate education were thwarted because of the challenges to the Committee to maintain the necessary standards of quality. Clemson faculty recognized early that to establish a graduate program that enabled Clemson alumni to enroll would require strengthening the undergraduate curriculum and courses to prevent knowledge gaps “between the two.”²

On March 14, 1945, President Poole received the Committee's resolution requesting the appointment of a Dean of the Graduate School. It had been ascertained by that time that 19 courses could be offered immediately by the schools of agriculture, chemistry, engineering, textiles, and arts and sciences. On July 27, 1946, the Board of Trustees approved the Committee's proposed graduate program of study and, that fall, formally admitted the first class of students into “the Graduate School.” However, it would not be until June 15, 1951, that Herbert J. Webb, Chair of the Department of Chemistry and Toxicology, was appointed as the first Dean of the Graduate School.

Masterfully stewarded by President Poole himself and modeled initially after several prestigious southern institutions, Clemson's graduate programs grew cautiously but steadily, introducing the first doctoral degree, in plant pathology, in 1955. Today, the Graduate School proudly enrolls more than 5,000 graduate students and is committed to continued growth at both the master's and doctoral levels.

1. Holmes, A. and G. R. Sherrill. *Thomas Green Clemson: His Life and Work*. 1937, p. 129.

2. Clemson University Library System archives. *Minutes of the Committee on Graduate Instruction, 1945-1953*, p. 7.

CANDIDATES FOR THE DOCTORAL DEGREE

John Lopes, Dean of the Graduate School

COLLEGE OF AGRICULTURE, FORESTRY AND LIFE SCIENCES

DOCTOR OF PHILOSOPHY

Animal and Veterinary Sciences

Saad Ali M. HusseinKirkuk, Iraq

B.S., University of Anbar; M.S., Mustansiriyah University

Dissertation: Simulated and Applied Precision Feeding System of High and Low Forage

Diets with Different Fat Sources and Sequences of Dietary Fat Concentration in
In-Vitro and *In-Vivo* Studies

Advisor: Dr. Gustavo Lascano

Food, Nutrition, and Packaging Sciences

Samuel James KesslerKatonah, NY

B.A., Skidmore College

Dissertation: Shelf Life Extension of Fresh Strawberries Packaged in Clamshells with
Chlorine Dioxide Generating Sachet

Advisors: Dr. Kay Cooksey and Dr. R. Andrew Hurley

Hongye WangJiamusi, China

B.S., Dalian Ocean University; B.S., Far East National Fisheries University of Science and
Technology; M.S., Clemson University

Dissertation: Validation of Physically Heat-Treated Process for Poultry Litter and Analysis
of Microbial Community of Animal Waste-Based Soil Amendments Using Sequencing
Approach

Advisor: Dr. Xiuping Jiang

Yueyuan ZhangClemson, SC

B.E., Sichuan University; M.S., Clemson University

Dissertation: Polydiacetylene Biosensors in Food Microbiology Applications

Advisor: Dr. Paul Dawson

Plant and Environmental Sciences

Misbakhul MunirSemarang, Indonesia

B.S., Universitas Sebelas Maret; M.S., University of Kentucky

Dissertation: Evaluation of Disease Control and Pathogen Dynamics to Improve
Management of Late Leaf Spot and Southern Stem Rot in South Carolina Peanut

Advisor: Dr. Daniel Anco

Misbakhul has two peer-reviewed publications and was involved in 10 plant disease management reports. He won second place in research poster competitions held by American Peanut Research and Education Society in 2019 and by Southern Division American Phytopathological Society in 2020.

Aswathy Shailaja Trivandrum, India
B.S., M.S., University of Kerala
Dissertation: Fluorescent Probes and Stains for Quantification of Cell Viability and
Extracellular Polymeric Substances in *Aspergillus niger* Biofilms
Advisor: Dr. Julia Kerrigan
Aswathy has a peer-reviewed publication and numerous conference contributions. She held various
positions in Microscopy Society of America, Mycological Society of America (MSA) and American
Society of Microbiology. She received the MSA Special Topic Research Award in 2020.

Juliet Elizabeth Fultz Wilkes Navasota, TX
B.S., Texas A&M University; M.S., University of Arkansas
Dissertation: Genetic Resistance to Reniform Nematode (*Rotylenchulus reniformis*) in
Soybean
Advisors: Dr. Paula Agudelo and Dr. Christopher Saski
Juliet has one peer-reviewed publication and is a founding member of the Clemson Translational
Genomics Association.

COLLEGE OF BEHAVIORAL, SOCIAL AND HEALTH SCIENCES

DOCTOR OF PHILOSOPHY

Applied Health Research and Evaluation

Christopher Lee Hopkins.....Anderson, SC
B.S., M. S., Clemson University; D.P.T., Emory University
Dissertation: Investigating the Extent of the Problem: Injury Epidemiology in Cross-
Country and Track & Field
Advisor: Dr. Joel Williams
Chris serves as an assistant professor in the Department of Health Sciences at Furman University.

Healthcare Genetics

Maithraeyi Annamalai Cary, NC
B.S., M.S., University of Madras; M.S., Eastern Virginia Medical School
Dissertation: Global Women's Perspectives of Non-Invasive Prenatal Screening (NIPS)
Advisor: Dr. Jane DeLuca

Adam CoovadiaAtlanta, GA
B.S., Trent University; M.S., University of Florida; M.B.A., University of South Florida
Dissertation: Investigations of Errors in Clinical Genetic Analysis Resources: Creating a
Taxonomy of Variant Discrepancies Based on Real-World Evidence
Advisor: Dr. Jane DeLuca

Elizabeth Cameron Hassen.....Inman, SC
B.S., Clemson University; M.S.N., Medical University of South Carolina
Dissertation: Application of Genomics in Nursing Practice
Advisor: Dr. M. Ann Wetsel
Elizabeth was named Jonas Nurse Leader Scholar (2014-2016), 2016 HEHD; received the
Graduate Student Excellence Award; and won 2019 & 2020 Reviewer's Choice Abstract from the
International Society of Nurses in Genetics. She is the Precision Medicine Manager at Spartanburg
Regional Healthcare System.

Melissa Ann Paquin..... Hampton, GA
B.S., Eastern Connecticut State University; M.S., University of Nebraska
Dissertation: Comparison of Papillary Renal Cell Carcinoma Type 1 and Type 2:
A Secondary Data Analysis Using the Cancer Genome Atlas
Advisor: Dr. Tracy Fasolino
Melissa has three peer reviewed publications and was inducted into Phi Kappa Phi and Omicron
Delta Kappa.

Industrial–Organizational Psychology

Zachary Paul Klinefelter..... Flagstaff, AZ
B.A., M.A., Northern Arizona University
Dissertation: The Appraisal of Stressors as an Outcome: Novel Directions on the
Conceptualization and Measurement of Work Stress
Advisor: Dr. Thomas Britt

John Morgan..... Highlands Ranch, CO
B.S., Colorado State University; M.S., Clemson University
Dissertation: Inquiry Complete: Experiences and Positive Career Outcomes Among
Creative Inquiry Participants
Advisor: Dr. Robert Sinclair
John has accepted a Human Resources Data Scientist position at BMW Manufacturing.

International Family and Community Studies

Linda Abazi-Morina..... Prishtina, Kosovo
B.S., University of Prishtina
Dissertation: Psychological, Social and Political Correlates of Youth Civic Engagement in
Kosovo
Advisor: Dr. Martie Thompson

Merita Hysen Meçe..... Tirana, Albania
B.S., Tirana University; M.A., Erasmus University Rotterdam; M.Sc., University of
Birmingham
Dissertation: Internal Migration, Social Capital and Subjective Wellbeing in Albania: The
Case of Kamza Town
Advisor: Dr. Susan Limber

COLLEGE OF EDUCATION

DOCTOR OF PHILOSOPHY

Educational Leadership

Madeline Harlan Jurek.....Duncan, SC

B.M., Converse College; M.M., Boston University

Dissertation: Value Creation Stories: Professional Development Experiences of Arts Educators

Advisor: Dr. Kristin Frady

Maddie is an assistant principal at Gable Middle School in Roebuck, South Carolina. She plans to continue to serve as secondary administrator in the years to come.

Jessica Rose Pelfrey..... Mountain Rest, SC

B.S., University of South Carolina; M.Ed., Clemson University

Dissertation: Women Student Veterans' Help-Seeking Behaviors with Faculty, Outside the Classroom: A Descriptive Phenomenological Study

Advisor: Dr. Rachel Wagner

Literacy, Language and Culture

Julia Kate Bentley.....Bristol, FL

B.S., M.S., Florida State University

Dissertation: Reading with Daddy: Parent Gender, Joint Book-Reading, and Emergent Literacy Growth

Advisor: Dr. C.C. Bates

COLLEGE OF ENGINEERING, COMPUTING AND APPLIED SCIENCES

DOCTOR OF PHILOSOPHY

Automotive Engineering

Brian Gainey..... Staten Island, NY

B.E., M.S., Stony Brook University

Dissertation: The Role of Low Carbon Alcohol Fuels in Advanced Combustion

Advisor: Dr. Benjamin Lawler

Dennis Robertson..... Taylors, SC

B.S., M.S., The Cooper Union

Dissertation: Combustion Phasing Modeling for Control of Spark-Assisted Compression Ignition Engines

Advisor: Dr. Robert Prucka

Dennis has four peer-reviewed publications and has started a position as a Senior Research Scientist in the Dayton, OH, area.

Breno Schwambach Costa Recife, Brazil
B.S., Universidade Federal de Pernambuco; M.S., Clemson University
Dissertation: Evaluating Drivers' Understanding of Automotive Symbols Related to
Powertrain and Advanced Driver Assistant Systems
Advisor: Dr. Johnell Brooks
Breno has seven peer-reviewed publications, was named SAGE Automotive Fellow, and is now
working in the automotive industry.

Bioengineering

Peng Chen.....Xiangtan, China
B.S., Huazhong University of Science and Technology
Dissertation: Light-Sheet Imaging-Based FRAP: A Noninvasive Platform Measures 3D
Anisotropic Extracellular Diffusion
Advisor: Dr. Hai Yao

Robert Cleo Coyle Vinton, LA
B.S., Louisiana State University
Dissertation: Strategies for the Delivery of hiPSC-CM Cardiac Microtissues to Improve the
Recovery of Heart Function Post-Ischemic Injury
Advisor: Dr. Ying Mei

Yang Li Shandong, China
B.S., M.S., Tianjin University
Dissertation: Functional Imaging with Nonlinear Optical Microscopy
Advisor: Dr. Tong Ye

Eugene Mah Moncks Corner, SC
B.Sc., M.Sc., University of Alberta
Dissertation: Dental Cone Beam Computed Tomography Dose Coefficients and Dual
Energy CT for Temporomandibular Joint Imaging
Advisor: Dr. Hai Yao

Aarti Anil Shenoy Mumbai, India
B.E., Mumbai University; M.S., Syracuse University
Dissertation: Understanding Corrosion in Modular Acetabular Tapers: Retrieval Analysis,
In Vitro Testing and Cell-Material Interactions
Advisor: Dr. Jeremy Gilbert
Aarti has three peer-reviewed publications and has presented her work at more than five
international conferences. She plans to work as a researcher in the medical device industry.

Tyler J. Slonecki Mt. Pleasant, SC
B.A., B.S., Wofford College; M.S., Clemson University
Dissertation: Development of Extracellular Vesicle Isolation and Model Systems Toward
Early Ovarian Cancer Diagnostics
Advisor: Dr. Terri Bruce

Chemical Engineering

William Cabell Lamie.....Powhatan, VA

B.S., Virginia Commonwealth University

Dissertation: Synthesis, Supercritical Fractionation, and Kinetic Modeling of Pyrene Pitch Oligomers

Advisor: Dr. Mark Thies

Allison Lee Yaguchi Seattle, WA

B.S., Virginia Commonwealth University

Dissertation: Development of *Cutaneotrichosporon oleaginosus* to Convert Lignin-Derived Phenolics to Oleochemicals

Advisor: Dr. Mark Blenner

Allison was awarded two fellowships from the US Department of Education GAANN program and the US Department of Energy SCGSR program. She has eight peer-reviewed publications and has accepted a postdoctoral research position at a national laboratory.

Civil Engineering

Ali Omar Alnahit..... Riyadh, Saudi Arabia

B.S., King Saud University; M.S., Oregon State University

Dissertation: Quantifying the Role of Climate and Watershed Characteristics on Surface Water Quality Across Southeast Atlantic Region of the US

Advisors: Dr. Ashok Mishra and Dr. Abdul Khan

Omar Alsanusi Amer Misrata, Libya

B.S., Misurata University; M.S., San Diego State University

Dissertation: Development and Application of Sustainable Binders Comprising of Fly Ash and Ground Glass Fibers in Portland Cement and Geopolymer Concrete

Advisor: Dr. Prasad Rangaraju

Omar's research developed into a proposal submitted to and accepted by the South Carolina Department of Transportation (SCDOT). He has accepted a postdoctoral position to work on this funded project.

Harshit Shukla Dandgaon, India

B.E., Chhattisgarh Swami Vivekanand Technical University; M.Tech., National Institute of Technology Patna

Dissertation: Development of a Smart and Sustainable Leakage Detection System Based on Flow-Induced Pipeline Vibration Analysis

Advisor: Dr. Kalyan Piratla

Harshit has three peer-reviewed journal publications and five peer-reviewed conference proceedings. He received the Rozendale Emerging Leaders Award in Fall 2019, an ASCE UESI student scholarship in 2018, and plans to pursue a career in academia.

Weiwei Zhan Anqing, China

B.S., Chengdu University of Technology; M.S., Clemson University

Dissertation: Data-Driven Assessment of Site Responses at Liquefiable Sites

Advisor: Dr. Qiushi Chen

Computer Engineering

Afshin Ahmadi Tehran, Iran

M.S., University of the Philippines Diliman; M.B.A., Silliman University
Dissertation: Accelerating Power Flow Studies Through Parallel Computing
Advisor: Dr. Melissa Smith

Afshin has 13 peer-reviewed publications, was named the department's Outstanding Graduate Laboratory Teaching Assistant in 2018, and currently works for the Electric Reliability Council of Texas.

Randeniya Vidanage Iroshani Jayawardene..... Galpaya, Sri Lanka

B.Sc., University of Peradeniya
Dissertation: Artificial Intelligence for Resilience in Smart Grid Operations
Advisor: Dr. G. Kumar Venayagamoorthy

Electrical Engineering

Roghieh Abdollahi Biroon Greenville, SC

B.S., AmirKabir University
Dissertation: Battery Integration to the Power Grid and Frequency Regulation
Advisors: Dr. Ramtin Hadidi and Dr. Pierluigi Pisu

Huan GaoJining, China

B.S., M.S., Northwestern Polytechnical University
Dissertation: Coordination and Privacy Preservation in Multi-Agent System
Advisor: Dr. Yongqiang Wang

Duye Ye Fuzhou, China

B.S., M.S., Beijing University of Posts and Telecommunications
Dissertation: Radio-Frequency Sensors for High Performance Liquid Chromatography Applications
Advisor: Dr. Pingshan Wang

Environmental Engineering and Earth Sciences

Dawn Angel MontgomeryCandler, NC

B.S., North Carolina State University; M.S., Clemson University
Dissertation: An Integrative Approach Concerning Radiological Protection of the Environment: Plant Influence on Biogeochemistry and Transport, Plant Uptake, and Non-Human Biota Dosimetry for Select Radionuclides
Advisor: Dr. Nicole Martinez

Angel Alejandro Ramos GarciaNavojoa, Mexico

B.S., Instituto Tecnológico Superior de Cajeme
Dissertation: Evaluation of *in Situ* Bioremediation of 1,4-Dioxane Under Aerobic and Anaerobic Conditions
Advisor: Dr. David Freedman

Angel has one peer-reviewed publication with five pending, was acknowledged for the department's outstanding performance and lasting contributions to Environmental Engineering and Earth Sciences, and plans to work in the environmental consulting field.

Human-Centered Computing

Marie Allyson JarrellShrewsbury, MA
B.A., Hampton University; M.A., M.S., Clemson University
Dissertation: The Importance of Play: Identification with Video Game Characters'
Intersectional Effects on Bias
Advisor: Dr. Bart Knijnenburg

Industrial Engineering

Juliana Arango Calderon Bogotá, Colombia
B.S., B.E., M.S., Universidad de Los Andes
Dissertation: Optimization Approaches for Scheduling and Railway Applications
Advisor: Dr. Jonathan Smith

Hunter Katherine Rogers Kalaheo, HI
B.S., M.S., Clemson University
Dissertation: Human Factors Considerations in a Telemedicine-Integrated Ambulance-
Based Caregiving Environment for Stroke Care
Advisors: Dr. Kapil Chalil Madathil and Dr. Anand Gramopadhye
Hunter is a SMART Scholarship awardee with four journal publications and seven conference
proceedings. She has accepted an offer to work for the 711th Human Performance Wing at the Air
Force Research Lab.

Shasha Wang.....Tianjin, China
B.S., M.S., East China University of Science and Technology; M.S., Clemson University
Dissertation: Modeling and Analysis of Scheduling Problems Containing Renewable
Energy Decisions
Advisor: Dr. Scott Mason

Materials Science and Engineering

Dmitriy V. DavydovichHolland, PA
B.S., University of the Sciences
Dissertation: Van der Waals Interactions in Self-Healing Acrylic Commodity Copolymers
Advisor: Dr. Marek Urban

Nathaniel Christian Huygen..... Taylors, SC
B.S., Clemson University
Dissertation: Investigation of the Thermal Performance of Wall Systems with Significant
Thermal Mass
Advisors: Dr. Rajendra Bordia and Dr. John Sanders
Nate has five peer-reviewed publications, received the Yorkdale award for best masonry paper in
2018, and has accepted a research associate position with the National Brick Research Center.

Shenglong Mu..... Liaoyang, China
B.S., Beijing University of Chemical Technology; M.S., University of Akron
Dissertation: Manufacturing of Protonic Ceramic Energy Devices by a Novel Integrated
Additive Manufacturing and Laser Processing
Advisor: Dr. Jianhua Tong

Mechanical Engineering

Malena Ataa Durowaah Agyemang Windsor, CT

B.S., Norfolk State University; M.S., Arizona State University

Dissertation: Investigating the Presence of Culture in Engineering Design: A Case Study
on Culture in Design Methods, Perceptions, and Outcomes

Advisor: Dr. Cameron Turner

Xiao Jia Puyang, China

B.E., Nanjing University of Aeronautics and Astronautics; M.E., Tongji University

Dissertation: Ultrafast Laser Pulse Interaction with Dielectric Materials: Numerical and
Experimental Investigations on Ablation and Micromachining

Advisor: Dr. Xin Zhao

Xiao has four peer-reviewed publications. He was awarded the department's Eastman Award
for Excellent Graduate in 2017 and has accepted a postdoctoral position at the Swiss Federal
Laboratories for Materials Science and Technology.

Mitra Shabanisamghabady Tehran, Iran

B.Sc., University of Tehran; M.Sc., Western Carolina University; M.Sc., Clemson
University

Dissertation: Dislocation Slip and Deformation Twinning in Face Centered Cubic Low
Stacking Fault Energy High Entropy Alloys

Advisors: Dr. Garrett Pataky and Dr. Huijuan Jane Zhao

Mitra has three peer-reviewed publications and was named outstanding graduate teaching assistant
in her department and the College of Engineering, Computing and Applied Sciences in 2020. She
plans to remain in academia after a postdoctoral position at the University of Pittsburgh.

Chengshi Wang Baotou, China

B.S., Georgia Institute of Technology

Dissertation: Nonlinear Modeling and Control of Driving Interfaces and Continuum
Robots for System Performance Gains

Advisor: Dr. John Wagner

Photonic Science and Technology

Turghun Matniyaz Central, SC

B.Eng., Harbin Institute of Technology; M.S., Kansas State University

Dissertation: Power Scaling of Single-Mode Ytterbium and Erbium High-Power Fiber Lasers

Advisor: Dr. Liang Dong

Turghun has four peer-reviewed journal publications and one patent. He was awarded three travel
grants respectively from the Optical Society of America, American Physical Society, and Clemson
University. He plans to work in the high-power fiber laser industry.

COLLEGE OF SCIENCE

DOCTOR OF PHILOSOPHY

Biochemistry and Molecular Biology

Jordan L. Wesel..... Myrtle Beach, SC

B.S., Coastal Carolina University

Dissertation: Encystation and Glycogen Metabolism in *Entamoeba histolytica*

Advisor: Dr. Cheryl Ingram-Smith

Jordan has accepted a position with the Clemson University Research Foundation.

Biological Sciences

Shuzhen Kuang..... Henan, China

B.E., M.E., Huazhong University of Science and Technology

Dissertation: Deep Learning Models for Understanding Human Gene Function and
Genome Organization

Advisors: Dr. Liangjiang Wang and Dr. Yanzhang Wei

Shuzhen has six peer-reviewed publications.

Chemistry

Beau R. Brummel Kansas City, MO

B.S., Missouri State University

Dissertation: Guanidinium Sulfation Crystallization: Strategy for Enantiomeric
Identification and Diastereomeric Resolution

Advisor: Dr. Daniel Whitehead

Zhuomin Lu..... Qingyuan, China

B.S., Shantou University

Dissertation: Preparation and Characterization of a Catalase-Mimic Organoruthenium-
Chloride Complex

Advisor: Dr. Andrew Tennyson

Chandima Jeewantha Narangoda..... Hokandara, Sri Lanka

B.Sc., University of Sri Jayewardenepura

Dissertation: Electron-Rich Alkynes and Azodicarboxylates Chemistry Towards Vicinal
Diamine Motif Containing Small Molecules and *N*-Heterocycles

Advisor: Dr. Daniel Whitehead

Chandima has two peer-reviewed publications and two patents. He was named the department's
Outstanding Graduate Researcher in 2019 and plans to work as a faculty member at a government
university.

Manjula P. Senanayake..... Boraluweva, Sri Lanka
B.S., University of Kelaniya
Dissertation: Solvent as a Tool to Tune the Association of Structured Ionic Block
Co-Polymers: Neutron Scattering and Computational Study
Advisor: Dr. Dvora Perahia

Megan Marie Sibley Fort Mill, SC
B.S., Clemson University
Dissertation: Conformational Studies Pertaining to Richman-Atkins Cyclization of
Azamacrocyclic Ligands and Developing Routes for Efficient Synthesis of 3:1 Cyclens
Advisors: Dr. Dvora Perahia and Dr. Modi Wetzler

Ashlyn Dennis Smith Easley, SC
B.S., Clemson University; M.S., University of Florida
Dissertation: High Sulfur-Content Materials from Free Fatty Acids
Advisor: Dr. Andrew Tennyson

Genetics

Diptee Chaulagain..... Kavrepalanchok, Nepal
B.S., M.S., Tribhuvan University
Dissertation: Genetic and miRNA Transcriptomic Analysis of Autoregulation of
Nodulation Signaling in *Medicago truncatula*
Advisor: Dr. Julia Frugoli

Mathematical Sciences

Carl Ehrett Vestavia Hills, AL
B.A., Furman University; M.A., University of Kentucky; Ph.D., Northwestern University;
M.S., Clemson University
Dissertation: Calibration-Based Design
Advisor: Dr. Andrew Brown

Haodong Li Clemson, SC
B.S., Shandong University of Finance and Economics
Dissertation: Uncertainty Principles in Framed Hilbert Spaces
Advisor: Dr. Mishko Mitkovski

Stefani Carol Mokalled..... Greenville, SC
B.A., M.S., Clemson University
Dissertation: Statistical Models for the Analysis of Complex Data
Advisor: Dr. Christopher McMahan
Stefani has two peer-reviewed publications and five in process. She was awarded the ENAR
Distinguished Student Paper Award and has accepted a position at Bank of America in Charlotte,
NC, as a quantitative financial analyst.

Physics

Andrew W. GarmonCentreville, VA

B.S., Christopher Newport University

Dissertation: Accelerated Molecular Dynamics for the Exascale

Advisor: Dr. Murray Daw

Wren Elizabeth Ammons Gregory Missoula, MT

B.S., University of North Carolina

Dissertation: Spectroscopic Insights into the Nano-Bio Interface: Implications and Applications

Advisor: Dr. Ramakrishna Podila

Adithya Pudukkudi Kandhadai..... Chennai, India

B.Tech., Indian Institute of Technology Madras

Dissertation: Quantum Nonequilibrium in De Broglie-Bohm Theory and its Effects in Black Holes and the Early Universe

Advisor: Dr. Murray Daw

Bipin Sharma Birpara, India

B.S., Sri Sathya Sai Institute

Dissertation: Novel Low Dimensional Sensors for Rapid Disease Diagnosis and Efficient Biomolecular Detection

Advisor: Dr. Ramakrishna Podila

CLEMSON ALMA MATER

Farmer and McGarity/arr. Freeman

Where the Blue Ridge yawns its greatness,
Where the Tigers play;

Here the sons of dear Old Clemson
Reign supreme always.

Chorus

Dear Old Clemson, we will triumph
And with all our might,

That the Tiger's roar may echo
O'er the mountain height.

We will dream of greater conquests,
For our past is grand,

And her sons have fought and conquered
Every foreign land.

Where the mountains smile in grandeur
O'er the hill and dale,

Here the Tiger lair is nestling
Swept by storm and gale.

We are brothers strong in manhood,
For we work and strive;

And our alma mater reigneth
Ever in our lives.

Candidates appearing in this program may not be certified graduates. Likewise, academic honors designations are based upon performance prior to final grades. Both certification of graduation and honors designations must come from the Registrar of the University.

