

ECE ILLINOIS
Department of Electrical
and Computer Engineering

26th

Grainger
Power Engineering
Awards



April 21, 2022 (virtual)

The University of Illinois at
Urbana-Champaign
expresses its sincere thanks
to
The Grainger Foundation
for making
these awards possible.

The Grainger Power Engineering Awards were established through the generous support of The Grainger Foundation. Electric power and energy systems are of fundamental importance to the economic well-being and global competitiveness of the United States. The University of Illinois at Urbana-Champaign (UIUC) has one of the leading undergraduate and graduate programs in the nation, with extensive education and research activities in many power areas.

These awards were created to recognize both the importance of this field and the fine academic performance of the graduates who specialize in it. The sixteen recipients of the 2022 awards have distinguished themselves in their overall academic achievements and project activities in earning their engineering degrees at UIUC.

The Grainger Foundation of Lake Forest, Illinois, established in 1949 by Mr. & Mrs. William Wallace Grainger, has provided substantive support over the years to a broad range of organizations including museums and educational, healthcare, and human services institutions.

William Wallace Grainger graduated from the University of Illinois in June 1919 with a Bachelor of Science degree in Electrical Engineering. 2019 marked the 100th year anniversary.

2022 GRAINGER POWER ENGINEERING AWARDEES

Zachary J. Deardorff

Chester B. Hall

William J. Heniades

Mackenzie S. Johanesen

Elisa P. Krause

Isaac I. Lawanson

Maxwell A. Lewis

Avinash N. Madavan

Christian E. Morales

Jarad H. Prill

T.G. Roberts

Colin E. Tarkowski

Samira A. Tungare

Tiffany Wang

Brian A. Wolhaupter

Jonathan D. Young

2022 Grainger Power Engineering Virtual Awards Ceremony

Hosted by Prof. Peter Sauer

Agenda

- 2:00 – 2:15 p.m. Introduction by Prof. Peter Sauer
and Virtual Tour of Power Labs
- 2:15 – 2:25 p.m. *Methodology for Installation Energy
Renovations* Chester Hall
- 2:25 – 2:35 p.m. *Exercise Bike Generator with Grid
Synchronization* Elisa Krause
- 2:35 – 2:45 p.m. *Urban Air Taxi Reliability*
Maxwell Lewis
- 2:45 – 2:55 p.m. *Risk-sensitive Optimization for Power
Systems* Avinash Madavan
- 3:00 – 3:30 p.m. *Congratulations and Comments*
President Tim Killeen
Chancellor Robert Jones
Provost Andreas Cangelaris
- 3:30 – 3:50 p.m. *Individual Awards*
Department Head Bruce Hajek and
Prof. Peter Sauer
- 3:50 – 4:00 p.m. *Concluding Remarks*
Dean Rashid Bashir



Zachary J. Deardorff

Degree: BSEE, May 2022

Age: 22

Hometown: Itasca, IL

Parents: Ann and Jim Deardorff

Personal Data:

Interned (remotely) at ComEd (Lombard, IL) Summers 2020 and 2021 - Helped prepare new integrated Tools for Operations Application system for other operation companies under the Exelon Corporation; at Rollins Aquatic Solutions (West Chicago, IL) Summer 2019 - Monitored chemical and oxygen levels in ponds; and at Cambium Network (Rolling Meadows, IL) Summer 2018 - Responsible for programming software onto microcontrollers. Zach was on the Dean's List in 2018 and 2019, and in 2018 was selected for the National Honor Society and won the President's Award for Academic Excellence. He was on the Highest Honor Roll from 2014–2018. Zach serves as captain of Illinois Men's Club Volleyball team (2018–present). He has accepted a position with Texas Instruments in Austin.



Chester B. Hall

Degree: BSEE, December 2021

Age: 22

Hometown: Bartlett, IL

Parents: Sheri and Michael Hall

Personal Data:

Trainee for the USACE Construction Engineering Research Laboratory (CERL) (Champaign, IL) May–December 2021 - Developed comprehensive electrical model of hypothetical military installation; and Research Assistant at CERL September–December 2020 - Aided primary researchers in reading, reviewing and publishing processes; Camp counselor for Worldwide Youth in Science and Engineering (Champaign) Summer 2020 - Assisted high school students in engineering-based lab activities designed to stimulate interest in STEM; and CAD intern at Avondale Electric (Elk Grove Village, IL) May–October 2019. Chester plays bass in the Funk Band Metrofern and for Illini Life Christian Fellowship. He enjoys yoga. Chester is a research electrical engineer at CERL, Champaign, IL.



William J. Heniades

Degree: BSEE, May 2022

Age: 22

Hometown: Naperville, IL

Parents: Connie and Bill Heniades

Personal Data:

Interned at Panduit (Tinley Park, IL) Summer 2021 - Researched electric vehicle charging and the charging infrastructure; at Good Athlete Project (Naperville, IL) Summer 2020 - Marketing intern; at The Study Huddle (Naperville, IL) Summers 2019 and 2020 - Taught high school students pre-algebra, chemistry, and calculus; at Swarm Robotix (Naperville, IL) Summer 2018 - Researched and developed drive motor for a moving hydraulic lift. Bill has been a Lead CARE tutor in the Grainger College of Engineering since April 2019 and an ECE Pulse member since September 2019. He is a James Scholar and on the Dean's list. Bill enjoys playing soccer, basket ball, and running. He will be working as an Assistant Electrical Engineer in Distribution Modernization at Burns & McDonnell, Chicago.



Mackenzie S. Johansen

Degrees: MSEE, May 2022
BSEE, May 2018 (*Summa Cum Laude*)
Oregon State University, Corvallis

Hometown: Eugene, OR

Parents: Annette and Steven Johannesen

Personal Data:

Electrical Engineer at Hinetics Engineering (Champaign, IL) Summer 2021 - Responsible for inverter integration and co-design with motor and thermal management; Part-time Electrical Engineering Associate at Jacobs Engineering (Corvallis, OR) September 2020–present - Designed PLC, relay and communication control panels for the Trail Bridge Hydroelectric project (10 MW); Electrical Engineering Associate I at EWEB (Eugene, OR) Full time, 2018–2020 and summer 2018 - Upgraded, configured, and tested control system for the Carmen-Smith Hydroelectric project (110 MW). Macks served on the Power Engineering Conference at Illinois (PECI) 2021 organizing committee in Speaker Relations and in 2022 in Publications. He has taken a position with Google in Seattle.



Elisa P. Krause

Degree: BSEE, May 2022

Age: 21

Hometown: Lake Zurich, IL

Parents: Bill and Marilen Krause

Personal Data:

Elisa has been an undergraduate researcher with the Banerjee group from May 2020–present - Created a Simulink model to provide open-loop control for a variable-pole induction machine; Interned at Texas Instruments (Phoenix, AZ) Summer 2021 - Implemented deadtime, soft start, and direction pin functionality to the functional model of a bi-directional buck-boost controller; and at Eaton Corporation (Glendale Heights, IL) Summer 2020 - Conducted short-circuit, coordination, and arc-flash studies using SKM power tools. She is a Grainger CEME Undergraduate Leadership and Research Awardee, in Women in ECE from 2018–present, and a Solar Decathlon team member 2018–2020. Elisa served PECI 2022 in Registration/Logistics. She will pursue her MSEE at University of California, Berkeley.



Isaac I. Lawanson

Degrees: MSEE, May 2022
BSME, May 2020 (*Summa cum laude*)
Northwestern University, Evanston, IL

Age: 23

Parents: Mr. and Mrs. Lawanson

Personal Data:

Interned at ExxonMobil Pipeline Company (Houston, TX - Summers 2018–2019 and Chicago 2020) - Led dike drainage improvements in refined product terminal interfacing with operations and contractors; performed pre-assessment work and created procedures for a hydrotest on an LPG line; and created a database of maximum operating pressure of over 150 downstream pipeline segments across America. At Northwestern, Isaac was Finance Committee Chair of the McCormick Student Advisory Board and Compass Mentor Fall 2018–June 2020 and Business Networking and Finance Co-Chair of the National Society of Black Engineers March 2017–February 2018. He served PECI 2022 in Publicity and in 2021 in Corporate Relations. Isaac has taken a position with Burns & McDonnell in Chicago.



Maxwell A. Lewis

Degrees: MSEE, August 2022
BSEE, May 2020 (with Honors)
Oklahoma State University, Stillwater

Age: 23

Hometown: Altus, OK

Parents: Megan Lewis and Eric Lewis

Personal Data:

Interned at NASA-Glenn Research Center (Cleveland, OH) Summer 2021 - Designed power system architecture for novel single-engine turboelectric distributed propulsion aircraft; and at ASRC Federal, Vance Air Force Base (Enid, OK) Summer 2019 - Met Department of Defense deadlines for base assessment securing \$400,000 for additional civil engineering projects. Max served PECCI 2022 as Co-Director and in Speaker Relations in 2021. Spring 2019–Spring 2020, was President, Vice-President, and Treasurer of Tau Beta Pi - Gamma Chapter, and President, Vice-President, and Pledge Committee Head of Eta Kap Nu - Omega Chapter. He enjoys guitar, ice skating and working out. Max is seeking an industry position after grad school.



Avinash N. Madavan

Degrees: PhD, August 2022
MSEE May 2018
BSME May 2016 University of
California at San Diego
(*Cum laude* - Phi Beta Kappa)

Age: 27

Hometown: Cupertino, CA

Parents: Kausalya and Nateri Madavan

Personal Data:

Interned at NASA Ames Research Center (Mountain View, CA) Summers 2014 and 2015 - Worked on a team to develop technology to improve pilot awareness and commercial aviation safety via future state prediction and alerts, and performed verification and validation studies in the Advanced Concepts Simulator. Avinash served as PECI 2020 Co-Director and was UIUC IEEE PES/PELS/IAS Chapter President May 2019–August 2020. He has traveled through 16 countries and flown a plane, sky dived and scuba dived. He is seeking an industry position, focusing on California.



Christian E. Morales

Degree: BSEE, December 2021
Certificate in Technical Communications,
April, 2018

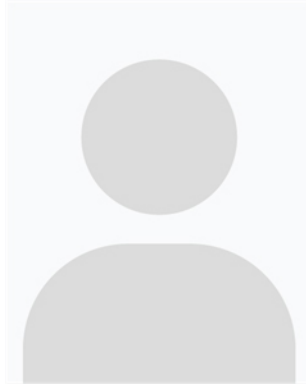
Age: 24

Hometown: Mundelein, IL

Parents: Eduardo Morales and Maritza Salazar

Personal Data:

Society of Hispanic Professional Engineers, Spring 2019–December 2021 - As Workshop Committee head, communicated with Google and Microsoft to set up four workshops/semester around important engineering skills and managed weekly deadlines for 12-member robotics team to complete robot a week before the competition; Engineering Ambassadors, Fall 2018–December 2021 - Was role model for classically under-represented students in science and engineering; and Eta Kappa Nu, Fall 2018–December 2021 - Helped with review questions for 80 students. Christian is employed at Schlumberger Technology in Sugar Land, TX, designing and testing sensors that detect nuclear radiation, with an emphasis on the power supply.



Jaiden Ha-eun Prill

Degree: BSEE, December 2021

Age: 22

Hometown: Schaumburg, IL

Parents: David Prill and Jane Prill

Personal Data:

Kiewit (Lenexa, KS) Summers 2021 and 2020 - As an Estimating Electrical Engineering Intern, responsible for developing complex cost-estimation models for designing and building customized power solutions for prospective customers. Led an initiative to build a customized estimation model to outline, design, and deploy new data set in Power BI, a tool now used daily for design and costing. As an Instrument and Controls Electrical Engineering intern, worked with I&C team on Venture Global, Calcasieu Pass liquefied natural gas export facility and on the power island, a 750 MW 5-on-2 combined-cycle gas turbine power plant. Undergraduate research (September 2019–January 2021) - Assisted Professor Xiuling Li in her Self-Rolled Up Membrane research group. Jaiden enjoys geopolitics and exercise and is employed at Burns & McDonnell in Denver, CO.



T.G. Roberts

Degrees: MSEE, May 2022
BSEE, May 2020
University of California, Berkley

Age: 24

Hometown: Stockton, CA

Parents: Joann and Glenn Roberts

Personal Data:

Undergraduate researcher for Prof. Sascha von Meier (California Institute for Energy and Environment) Summer 2019 - Researched feasibility of phasor-based control to actuate grid power demands; Interned at Power Standards Lab (Alameda, CA) Summer 2018 - Worked on DARPA-funded project to test, measure and characterize grid stability on the Western interconnection using uPMU's and the Grid Resonance Probe. Co-President of Engineers for a Sustainable World (January 2019–May 2021) - T.G. led team of over 40 members in projects and community-building events involving sustainability. She served PECE 2022 as Treasurer and 2021 in Registration. T.G. enjoys reading and sewing. She will pursue a PhD at UIUC.



Colin E. Tarkowski

Degree: BSEE, May 2022

Age: 21

Hometown: Urbana, IL

Mother: Sarah Edge

Personal Data:

Interned at Engineering Ministries International (Colorado Springs, CO) Summer 2021 - Worked remotely alongside a team on-site in Niger to analyze and model the power distribution system of a rural hospital, and conducted a comprehensive load study to correct large voltage drops. Colin was a course grader for ECE 330 Power Circuits and Electromechanics, December 2020–May 2021, and member of the Marching Illini, August 2018–December 2020. With Engineers Without Borders, January 2020–Present, he is discussing the feasibility of designing and building restroom facilities for a Guatemalan school, and with Illini Navigator, he leads a small Bible study group, fostering a safe space for others. Colin is engaged to be married in early 2023 and has accepted a position with CROFT, a national architecture and engineering firm in Kennesaw, GA.



Samira A. Tungare

Degrees: MSEE, May 2022
BSEE, May 2020
Previous Grainger Awardee

Age: 23

Hometown: Winfield, IL

Parents: Rita and Aroon Tungare

Personal Data:

Interned at Progress Rail, a Caterpillar Co. (LaGrange, IL) Summer 2021 - Developed a Simulink model that emulates dynamic behavior of the 64V lead acid battery used on locomotives to feed control circuits to improve existing control algorithms performance, and Burns & McDonnell (Chicago, IL) Summers 2018 and 2019 - Improved electrical infrastructure of utility clients throughout North America. Samira served as PECI 2022 Co-Director and in Publicity for PECI 2021. She received the Stanley M. Helm Award (2020), Peter W. Sauer and Barbara H. and Brian L. Renwick Electrical Engineering Scholarships (2019–2020), and was an Engineering Visionary Scholar (2016–2020). She will work at Millennium Space Systems in El Segundo, CA.



Tiffany Wang

Degrees: BSEE, December 2021
AES, May 2019
College of Dupage, Glen Ellyn, IL

Age: 23

Hometown: Downers Grove, IL

Parents: Jean and Joe Wang

Personal Data:

Interned at Exelon Nuclear (Bryon, IL) Summer 2021 - Designed computer-program estimating algorithm used to evaluate nuclear power plants; and (Cordova, IL) Summer 2020 - Developed wattage range for safe motor space-heater operation; and at LTD Commodities (Aurora, IL) Summer 2019. Tiffany won 2nd place in the 2020 UIUC Pulse Hardware Hackathon and received the Engineering Visionary Scholarship for Academic Excellence and the Barbara H. and Brian Renwick Electrical Engineering Scholarship. At College of Dupage, she received a Presidential Scholars scholarship for academic excellence (full tuition). Tiffany enjoys playing percussion. She is employed at the Exelon nuclear power plant in the Quad Cities.



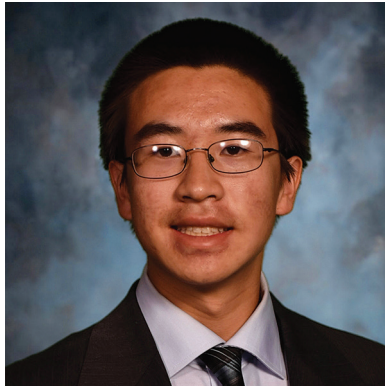
Brian A. Wolhaupter

Degree: BSEE, May 2022

Parents: Martin and Carolyn Eberhard

Personal Data:

Interned at Tiveni GmbH (Bietigheim-Bissingen, Germany) Summer 2019 - Responsible for designing and building a battery-cell storage system flexible enough to work with small-scale prototype production, along with ensuring safe and efficient storage and transport of lithium-iron cells; and at Fees GmbH (Bietigheim-Bissingen, Germany) Summer 2018 - Responsible for designing and testing a fixture for a laser welder used in assembling automotive battery modules. Brian is working on an independent project to develop a multi-speed transmission for application in electric vehicles, thereby improving performance and efficiency. This could lower the environmental impact by both reducing the quantity of lithium-ion cells required, and allowing longer time periods between charging. He has been accepted into grad school at ECE UIUC and plans on earning a PhD to prepare for a career in the automotive industry designing electric vehicle powertrains.



Jonathan D. Young

Degree: BSEE, May 2022

Age: 21

Hometown: Saratoga, CA

Mother: David and Vivien Young

Personal Data:

Interned at Renesas Electronics (Milpitas, CA) Summer 2021 - Worked with design, test, product, and marketing teams to test a customer board that included a Renesas power management IC. Jonathan was an Electrical Team member of the Eco Illini Supermileage team in Urbana from August 2019–May 2021. In Fall 2021, he did an independent study class with Prof. Kyekyoon Kim's research group on high-performance GaN diodes, focusing on measuring and monitoring the plasma-assisted molecular-beam epitaxy machine with LabVIEW. Spring 2020 - Jonathan recreated a 2D character-based game, Pokémon Mystery Dungeon, and Spring 2019 - Introduction to Computing Honors Lab, programmed an electronic door lock. Jonathan enjoys hiking with friends. He has accepted a position with Samsung in Austin.

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