

**THE FELLOWSHIP BOARD** has announced the selection of 30 engineering students from 408 applicants for graduate fellowships in 2020-21. All of this year's recipients will receive cash stipends of \$10,000 for advanced study.

More than \$7,600,000 in stipends will have been given by the Society when this 87<sup>th</sup> group of fellows completes its graduate work. All Tau Beta Pi Fellowships are awarded on the competitive criteria of high scholarship, campus leadership and service, and promise of future contributions to the engineering profession.

All fellows are members of Tau Beta Pi and may do their graduate work at any institution they choose. These awards bring the total to 1,706 fellowships granted since the program was inaugurated in 1929.

This year's recipients will study various fields of engineering, including five biomedical, four each in chemical and mechanical, three materials science and engineering, two each in bioengineering, electrical, and environmental.

The others have chosen to study aeronautics & astronautics engineering, aerospace engineering, civil engineering, computational neuroscience, electrical and computer engineering, electrochemical engineering, electromagnetics, and operations research.

The **Anderson Fellowships** are named for Mabel E. and Marshall Anderson, *MI Γ '32*, who was TBP Fellow No. 19 and left a bequest to the Society in 2005.

Given for the 35<sup>th</sup> time, the **Centennial Fellowship** honors the Society's most outstanding fellow and commemorates Tau Beta Pi's 100<sup>th</sup> anniversary.

The **Dodson Fellowship** is sponsored by the late Charles R. Dodson, *MD B '30*, who made a gift to the Association in 1998.

The five **James Fife Fellowships** are presented in memory of the father of the late member William Fife, *CA A 1921*.

The **Forge Fellowship** is named for Charles O. Forge, *CA Γ '56*, who left a bequest in 2010.

The **Hennis Fellowship** is awarded for the first time thanks to a generous gift from Lee A. Hennis, *CA Δ '65*, to continue mentoring young engineers.

The **Harold M. King Fellowship**, awarded for the 59<sup>th</sup> time, honors the 1954-58 president of TBP, Harold M. King, *MA A 1910*, and is given to that recipient whose participation in his/her technical society is judged worthy of special mention.

The **Matthews Fellowship** is awarded in honor of R.C. "Red" Matthews, *IL A 1902*, who served as Secretary and Secretary-Treasurer from 1905-47 and as Secretary-Treasurer Emeritus in 1947-78.

The **Nagel Fellowship** is given in honor of Robert H. Nagel, P.E., *NY Δ '39*, for his service as Editor and Secretary-Treasurer from 1942-82, and as Secretary-Treasurer Emeritus in 1982-97.

The **Record Fellowships** are awarded commemorating Leroy E. Record, *KS A '29*, whose generous bequest will provide earnings to support awards in perpetuity.

The **Sigma Tau Fellowship**, given for the 46<sup>th</sup> time, perpetuates the name of Sigma Tau, a national engineering honor society founded at the University of Nebraska in 1904 and merged with Tau Beta Pi in 1974. It also commemorates Sigma Tau's former national president and secretary-treasurer, Clarel B. Mapes.

The **Charles H. Spencer Fellowship** is given for the 65<sup>th</sup> time. Named for Tau Beta Pi's national president from 1936-47, Charles H. Spencer, *IL B 1913*, it is awarded to that recipient whose contributions to his/her collegiate chapter are judged worthy of commendation.

The **Donald A. Stark Fellowship** is supported by a gift from a charitable trust named for the man who contributed much to progress in the fluid-power industry.

The **Swalin Fellowship** is named in honor of Helen M. and Richard A. Swalin, Ph.D., *MN A '52*. Dr. Swalin and his wife left a bequest in 2015 to support TBP scholarships and fellowships.

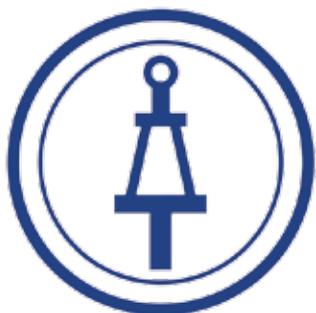
The **Tau Beta Pi Fellowship** is supported by matching gifts from companies as part of the annual alumni giving.

The **Edward H. Williams Jr. Fellowship**, awarded for the 41<sup>st</sup> time, honors the founder of Tau Beta Pi. It is given to a recipient who plans to earn a doctoral degree and become a professional engineering teacher, as was Dr. Williams, *PA A 1875*.

The **Zimmerman Fellowship** is named for Marlin U. Zimmerman Jr., *MD A '44*, who left a bequest in 2010.

The **GEICO Fellowship** is supported through a partnership with GEICO Insurance.

*With the large number of applicants, the Fellowship Board engages the services of additional members to review and rank applicants. The Board used this information to make the final Fellow selections in April. The Association is grateful to these members for their role in the selection process. Reviewers and volunteers are listed at [www.tbp.org/fellowships.cfm](http://www.tbp.org/fellowships.cfm).*



# Tau Beta Pi

## The Engineering Honor Society

Record Fellow No. 26

### Mariia (Masha) Alibekova



Masha is an M.D./Ph.D. student at the University of Pennsylvania. She conducts research in bioengineering focusing on a novel single-cell proteomics tool to study cell decisions in development and

disease. Masha hopes to stay in academia alongside practicing by starting her own tissue and organ regeneration lab; she aims to advance science and use that knowledge to help her patients in dire need of innovative research. Masha, a Jack Kent Cooke Scholar, graduated *magna cum laude* in chemical and biochemical engineering from Colorado School of Mines where she served as CO Alpha Chapter service chair. She engaged in research in her sophomore year in analytical chemistry. Later, she found her passion at the intersection of medicine and engineering and spent most of her free time working in a hematology lab studying a promising novel therapy for strokes. Prior to Mines, Masha graduated with an A.S. in engineering science from Bergen Community College and was involved as VP of STEM club, VP of fellowship of her PTK society chapter, and a STEM tutor.

Record Fellow No. 23

### Lauren V. Bartels



Lauren graduated *summa cum laude* from Tulane University in 2018 with a B.S. in chemical engineering. She competed on the NCAA Div. I cross country and track & field teams as one of the top long distance runners in Louisiana, and was named the 2017-18 AAC Cross Country Female Scholar-Athlete of the Year. She also served as LA Beta Chapter secretary and chemical engineering chair of Theta Tau, while actively volunteering with Tulane's Food Recovery Network. After graduating, she accepted a competitive two-year fellowship with the Science and Technology Policy Institute, where she conducts rigorous critical infrastructure and community resilience policy analyses for the White House Office of Science and Technology Policy. As an NSF Graduate Research Fellow, Lauren will pursue her M.S. in environmental engineering and hydrology at the Univ. of Nevada, Reno, researching sustainable water systems and practices in a policy-relevant context. Her professional goal is to analyze and inform water management policies at a local or regional level to promote resilient water systems.

Tau Beta Pi Fellow No. 830

### Subash Bhandari



Subash is majoring in biomedical engineering with a minor in chemistry at Wichita State University. He is from Nepal and is the first in his family to attend college. Subash works as an undergrad research assistant in the WSU

BioME Lab and tutors biomedical classes at GEEKS. He has been a part of many research papers and conferences starting his freshmen year. He is a recipient of the \$7,000 semester and summer NIH KINBRE (Kansas Idea Network for Biomedical Research Excellence) and \$5,500 NIH-KINBRE STAR TRAINEE Award. He is working to develop a non-invasive and wearable biosensor for the diagnosis of melanoma cancer. He was recognized with the 2020 College of Engineering Outstanding Graduating Senior Award. He serves as an executive member for the KS Beta Chapter, Biomedical Engineering Society, Nepalese Student Association, and Wichita State table-tennis team. Subash is a varsity table-tennis athlete and a proud Shocker fan. His career interests include obtaining a Ph.D. in biomedical engineering and contributing towards the field of academia.

Centennial Fellow No. 35

### Kevin M. Blum



Kevin graduated with honors from Purdue University with a B.S. and M.S. in biomedical engineering and a minor in psychology. Kevin performed research in microfluidics under Dr. Bumssoo Han, and graduate research on collagen-based biomaterials with tunable mechanical properties under Dr. Sherry Voytik-Harbin. He also worked as a product discovery intern at COOK Medical's MED Institute developing medical devices. Kevin has held leadership roles with the Biomedical Engineering Society, University Dance Marathon, and the American Physician Scientist Association. Kevin is an M.D./Ph.D. candidate at The Ohio State University, studying biomedical engineering under Dr. Christopher Breuer at the Center for Regenerative Medicine at Nationwide Children's Hospital. His research focuses on the creation of regenerative medicine strategies for the treatment of congenital heart disease and how tissue engineering products can develop into functional tissues within the body. Kevin will pursue a career as a physician-engineer with the goal of bridging the gap between research, industry, and the patient's bedside.

Anderson Fellow No. 16

### Christian R. Bolander



Christian is pursuing a doctoral degree in mechanical engineering at Utah State University, where his research focuses include supersonic aircraft sonic boom mitigation and bio-inspired aircraft design and analysis.

He has worked with individuals from groups such as NASA, Boeing, Texas A&M, and the Air Force Research Lab. He looks forward to graduating in 2022 and pursuing a position as a research faculty member before entering academia in hopes of continuing his research and acting as a mentor to future engineers. He was initiated into the UT Gamma Chapter in 2016 and served as president during the 2017-18 school year. He has enjoyed his TBPI experience immensely and it has offered him numerous opportunities for growth and development as an engineer. He wishes to thank his family, including his wife, Beth, and two children, Emma and James, for their constant support of his educational pursuits.

Swalin Fellow No. 4

### Prerak Chapagain



Prerak, a native of Nepal, graduated from the University of New Orleans (UNO) with a major in electrical engineering and a minor in actuarial mathematics in May 2019 with university high honors. He was

the only person in his class to graduate with a perfect 4.0 GPA in the college of engineering making him top of the engineering class at UNO. He is a 2018 TBPI Scholar, Phi Kappa Phi Fellow, and was also named royalty after winning the Homecoming King title at UNO. He was president of IEEE, LA Epsilon Chapter vice president, and of Toastmasters at UNO. He was also involved in the student government, honors council, Nepalese student association, and as an Ambassador at UNO. He is pursuing graduate studies at the University of Illinois at Urbana-Champaign (UIUC) with a focus in power systems. As a research assistant at UIUC, his duties involve researching the integration of renewables in the power system to assess the stability, reliability, and cybersecurity implications.

**Emily K. Chase**

Emily graduated *summa cum laude* from the University of Tennessee at Chattanooga with a B.S. in chemical engineering. She was a William E. Brock Scholar in the UTC honors college. In addition, she has held leadership positions in the UTC chapter of American Institute of Chemical Engineers and the ChemE Car team. For the past two years, she has been working to complete her departmental honors thesis, which focused on the synthesis and characterization of graphene foam as a thermal additive. She has completed an NSF Research Experiences for Undergraduates (REU) at the University of Kentucky, where she studied the interactions of lignin dimer grafted particles with lipid bilayers. She also completed an REU at the Georgia Institute of Technology, where she studied the growth modes of FCC metals nanoparticles on palladium seeds. Emily will be pursuing a Ph.D. in chemical engineering at Northwestern University.

**Erika M. Chelales**

Erika graduated *summa cum laude* with a B.S.E. in biomedical engineering and a minor in Spanish from Tulane University. In addition to her academic pursuits, Erika was named student athlete of the year when she was on the cross country and track teams at Tulane. She is an NSF Graduate Research Fellow pursuing a doctoral degree in biomedical engineering at Duke University. Her research focuses on the development of a low-cost ablation method as a drug delivery mechanism for use in low resource settings. Also, Erika is passionate about teaching. She is completing the Certificate in College Teaching and plans to pursue a career in academia and research as a professor. Erika is an executive member of the TBP Research Triangle Alumni Chapter and serves as vice president and events coordination officer. She organizes social networking, student advising, and alumni outreach events. Erika is also an active member of her community and advocates for children petitioned into the NC court system as a Guardian ad Litem volunteer.

**Francisco D. Chitty Gozalo**

Francisco graduated from the Universidad Catolica Andres Bello in Venezuela with a B.S. in civil engineering in 2014. He graduated from Florida International University with an M.S. in civil engineering in 2016 and is currently pursuing a Ph.D. in civil engineering structures. During his master's studies, Francisco worked with collected data about people's behavior during evacuation environments, and studied evacuations applying multi-scale methods for agent-based simulations. As a Ph.D. candidate, he is working on the development of a modified design detail for a standardized slab-beam bridge superstructure, which utilizes ultra-high-performance concrete joints between beams to accelerate construction times. He is the ACI student chapter president, chair of the ASCE-SEI graduate student chapter, and secretary of Chi Epsilon at FIU. In 2018, Francisco and colleagues founded an NGO called American Association of Venezuelan Engineers, which offers a networking hub for Venezuelan and other Latin American engineers in the U.S. Ultimately, he plans to make a significant knowledge contribution in bridge infrastructure.

**Arielle Marie Gamboa**

Arielle earned her B.S. (2019) and M.S. (2020) in mechanical engineering at Rutgers University, where she was elected the NJ Beta Chapter president for 2017-18. She was committed to improving her chapter's service efforts

by increasing community involvement and strengthening the MindSET K-12 program. Arielle also served as secretary of ASME and vice president of the Rutgers mechanical and aerospace engineering student association, where she led the peer mentoring, outreach, and social media programs. She conducted research in the hybrid micro/nanomanufacturing lab, working on projects focused on thermocapillary dewetting and electrospray deposition for rapid fabrication and materials processing. Her thesis combined these techniques to develop a method to direct electrospray using dewetted insulating templates. She then shifted her focus to using electrospray deposition to control the morphology and chemical structure of hybrid sol-gel films. Arielle will begin her Ph.D. in mechanical engineering at UIUC, where she will study interfacial fluid mechanics and heat transfer in the energy transport research lab. She plans to pursue a career in academia.

**Kevin P. Greenman**

Kevin graduated *summa cum laude* from the University of Michigan with a B.S.E. in chemical engineering, minor in mathematics, and concentration in materials science and engineering. As an undergraduate,

he conducted computational research on the properties of nitride semiconductors that resulted in a first-author publication. He also developed a new tool for computational research and education on catalysis while working at Purdue University. Kevin served as an instructional aide in fluid mechanics for two years. As a senior, he led the development of the computational curriculum for a new undergraduate chemical engineering class and co-authored a publication discussing a novel approach for integrating research into undergraduate curricula. His involvement in TBP included terms as professional development officer and president of the MI Gamma Chapter, and was a 2018 TBP Scholar. Kevin is pursuing a Ph.D. in chemical engineering and computation at MIT. He ultimately aspires to a career in academia to make a positive impact through teaching, mentorship, and research.

**B. Volkan Gurses**

Volkan graduated from the Georgia Institute of Technology with a B.S. in electrical engineering. In the low-frequency (LF) radio group at Georgia Tech, he developed an unprecedented sensitive remote sensing instrument, which

has formed the basis of a global LF receiver network. In the Georgia Tech electronics and micro-system lab, he devised novel approaches to design integrated mm-Wave ultra-compact passive structures and mm-Wave/sub-THz frequency-reconfigurable hybrid couplers, for which he was awarded the 2020 IEEE MTT-S undergraduate-pregraduate scholarship. He also served as editor-in-chief of *The Tower Undergraduate Research Journal* and held leadership positions on the board of student publications and student activities board for undergraduate research. Volkan was the recipient of the 2020 Georgia Tech ECE Undergraduate Research Award, 2020 IEEE-HKN Innovation Scholarship, 2020 Radio Club of America Scholarship, and 2017, 2019 Georgia Tech President's Undergraduate Research Awards. Volkan will pursue a Ph.D. at the California Institute of Technology as an EAS Division Fellow and will pursue a career in academia.

**Eleanor G. Henson**

Eleanor graduated with honors distinction from the University of Arkansas with a B.S. in biological engineering, an environmental engineering concentration, and a minor in sustainability. As an undergraduate, Eleanor

worked at the Arkansas Water Resources Center as a research assistant, which led to publishing an article in the *Journal of Agrosystems, Geosciences & the Environment* (August 2019) on phosphorus cycling in streambed sediments. She simultaneously conducted research as an Arkansas Department of Higher Education Student Undergraduate Research Fellow evaluating the hydrologic impact of an on-campus green roof. She was selected as the College of Engineering Outstanding Senior and one of the top 10 female graduates from the Univ. of Arkansas. She was awarded a nationally competitive Fulbright Research Award in Canada and will begin her master's degree in environmental engineering at Colorado State University in the fall. Eleanor is passionate about sustainable practices concerning hydrologic resources and envisions herself finding a career in research and academia.

**Jesse J. Hinricher**

Jesse graduated from the Massachusetts Institute of Technology in 2019 with a B.S. in chemical engineering and a minor in chemistry. As an undergraduate, he worked in Professor Fikile Brushett's lab researching novel

chemistries for redox flow batteries, a promising grid-scale energy storage technology. Inducted into TBI at the South Dakota School of Mines and Technology before he transferred to MIT, Jesse serves as MA Beta Chapter student advisor, xFair co-director, and volunteer co-chair. He completed an NSF Research Experiences for Undergraduates at Princeton University and internships at the NASA Kennedy Space Center and PLANT PV, a solar technology startup. He is pursuing a Ph.D. in materials science and engineering at MIT where he joined Professor Jennifer Rupp's group and is researching solid-state electrolytes for next-generation batteries. Based on his life changing experiences at PLANT PV, Jesse has hopes of founding his own startup focused on advanced battery technology industry.

**Nicholas A.G. Johnson**

Nicholas will graduate from Princeton University with a B.S.E. in operations research and financial engineering in June as the Valedictorian of Princeton's Class of 2020. He served as NJ Delta Chapter president in 2019. Johnson's

research has focused on sequential decision making under uncertainty, optimization, and the ethics of algorithmic decision making systems. His thesis focused on developing high performance, efficient algorithms to solve a network based optimization problem that models a community based preventative health intervention. As a junior, Nicholas developed a machine learning system to more robustly anonymize datasets than existing alternatives. He previously interned at Oxford University's integrative computational biology & machine learning group, developing a novel optimization technique, worked as a machine learning engineer at Google in summer 2019, and has previously interned at the Montreal Institute for Learning Algorithms. He will intern as a quantitative developer at the D. E. Shaw Group during summer 2020 before beginning Ph.D. studies in operations research at MIT.

**Maria Kelly**

Maria graduated *summa cum laude* from the University of New Mexico with a B.S. in chemical engineering and concentration in materials processing and served as NM Beta Chapter corresponding secretary.

Maria is motivated by research in renewable energy technology and spent three years at Sandia National Labs developing new catalysts for fuel cells and studying alkaline rechargeable batteries. This work resulted in five co-authored publications, and she plans to pursue similar research in electrochemistry as an NSF Graduate Research Fellow. Outside of the lab, Maria is passionate about supporting women in engineering and encouraging girls to pursue STEM careers. She served as the treasurer and president of UNM's SWE section and has helped plan several STEM outreach activities with local Girl Scout troops. Maria will pursue a Ph.D. in chemical engineering at the University of Colorado at Boulder, where she plans to continue volunteering in her community through TBI and SWE. After her Ph.D., she hopes to join the research staff at a national lab.

**Ryan E. Kelly**

Ryan graduated *summa cum laude* from the University of Tennessee Knoxville with a B.S. in aerospace engineering and a minor in mathematics. He worked as an undergraduate teaching assistant for three

years and has participated in undergraduate research studying graphene quantum dot technology, fracture mechanics, and synthetic turbulence modeling. His senior year, Ryan served as TN Alpha Chapter vice president and welcomed 50 new members to the chapter. He will be pursuing a Ph.D. at the University of Texas at Austin using computational fluid dynamics to study how to delay turbulence in low-speed incompressible flows. Ryan has a passion for teaching and research, so his career goal is to be a professor at a prominent university. In 2019, he was also a TBI Scholar and AIAA Scholarship Award recipient. In his free time, Ryan likes to relax by playing video games and guitar.

**Shreedevis Kumar**

Shreedevis graduated from Cornell University with a B.S. in chemical engineering and a business minor. As a researcher in the Putnam lab, she investigated lipid microparticles for encapsulation of a

hydrophobic dye. Following graduation, she worked as a strategy and operations consultant at Deloitte Consulting, primarily in the healthcare and biopharmaceuticals sectors. She returned for her Ph.D. in biomedical engineering, specializing in biomaterials and regenerative medicine, at University of Florida. Shreedevis's doctoral research focuses on drug delivery vehicles with therapeutic payloads that are site-specific and targeted at different inflammatory pathways in osteoarthritis. She is the recipient of a UF Graduate School Preeminence Award, a Pittman Institute Fellowship, and is a co-inventor on a patent. She served as FL Alpha Chapter vice president and vice president of electees. Shreedevis plans to continue focusing on the use of biomaterial properties and cell-material interactions for delivery of drugs being translated into in vivo mechanistic studies and therapeutic evaluation.

Dodson Fellow No. 7

### Kevin H.Y. Leung



Kevin graduated with highest honors from the University of California, Davis, with a B.S. in biomedical engineering (BME). Kevin performed research in developing nanoparticle imaging probes resulting in two

co-authorship publications. He developed a point-of-care medical device to measure blood coagulation in trauma patients for his senior design project which received the Sandia Engineering Design Award from Sandia National Labs and the UC Davis BME Dept. Distinguished Achievement & Highest Innovation Award. He was a 2014 TBI Scholar. Kevin is pursuing a Ph.D. in BME at Johns Hopkins University, where his research focuses on medical image analysis. His works include developing machine learning (ML) methods for tumor localization, segmentation, and classification in cancer patients, and for prediction of outcome and disease detection in Parkinson's disease patients. These works were presented at international academic conferences and resulted in a first-author journal publication. Kevin plans to pursue a career as a scientific researcher to develop ML algorithms for clinical applications.

Record Fellow No. 24

### Luke D. Neise



Luke is graduating from Vanderbilt University with a perfect GPA and a double major in mechanical engineering and classical civilizations. During his senior year, he served as TN Beta Chapter president. The major-

ity of his work as an undergraduate has been with the Vanderbilt Aerospace Design Laboratory (VADL); as the payload lead for VADL, he worked with a small team to investigate and demonstrate how air-based drone sampling missions could allow for more challenging, inaccessible extraterrestrial environments to be better accessed and studied. This coming fall, he will begin his pursuit of both M.S. and Ph.D. degrees from Stanford University in the aeronautics & astronautics program. Supported by an NSF Graduate Research Fellowship, he plans to study dynamics/controls for spacecraft or space robotics and go on to work on the next generation of in-space engineering challenges.

GEICO Fellow No. 5

### Alexander T. Nguyen



Alex graduated from the University of Kentucky with a B.S. in computer engineering and minors in mathematics and computer science. He was elected as KY Alpha Chapter vice president and selected as a 2019 TBI

Scholar. Throughout undergrad, he held various leadership positions with Alpha Phi Omega AZ chapter and UK Alternative Service Breaks on top of summer internships with Lexmark International, Inc. Alex will attend the University of Texas at Austin as an M.S./Ph.D. student in integrated circuits and systems with broad interests in circuit design for energy efficiency, machine learning, and security. His future aspirations are to work in industry research and development and later bring industry connections with him to the academic setting.

Fife Fellow No. 226

### Denislav P. Nikolov



Denislav will graduate from Cal Poly Pomona with a B.S. in mechanical engineering and a minor in mathematics. He was a 2019 TBI Scholar and served as CA Nu Chapter vice president and student council representative. He

has been involved with various campus organizations, including the engineering student council, martial arts sports club, and the National Association of Engineering Student Councils. He performs research at Cal Poly Pomona exploring the mechanics and materials science of vertebral fractures to better understand the effects of bone disease. Additionally, he has performed summer research at the University of California, Santa Cruz, studying bioelectronics, and at the University of Michigan, studying the biochemical composition of mineralized tissue and its mechanical properties. He has also worked on engineering projects with NASA JPL and Safran. Denislav will begin pursuing a Ph.D. in mechanical engineering at the University of Michigan. After graduation, he hopes to make a meaningful impact in the field of tissue mechanics.

Spencer Fellow No. 65

### Kendra K. Noneman



Kendra graduated from Boise State University with a B.S. in materials science & engineering and an applied mathematics minor. She participated in a wide array of internships and research endeavors with the

NASA Ames Research Center, Applied Materials, Carnegie Mellon Univ., and the computational materials engineering lab at Boise State. Her research interests include data science, modeling, statistical mechanics, and self-assembly. Kendra served as ID Gamma Chapter president, chaired a committee at the 2019 TBI Convention, and was honored as a TBI Laureate for her dedication towards engineering and athletics. Kendra is also an NCAA Div. I track & field athlete where she competes in the hammer throw. Next up, she will move to Pittsburgh, PA, to pursue a Ph.D. in neural computation and machine learning from Carnegie Mellon. She hopes to eventually work as a project manager in the private research industry, using quantitative models to understand the great complexities of neurobiological systems.

Zimmerman Fellow No. 9

### James Obute



James graduated *summa cum laude* with a B.S. in chemical engineering from the University of Kentucky (UK), where he served as KY Alpha Chapter president. He also re-established the UK energy club and

was an active member of the American Institute of Chemical Engineers, the National Society of Black Engineers, and the student government association. James was a dedicated researcher and received fellowships to work at Washington Univ. in St. Louis and MIT. At these schools, he worked on developing and understanding advanced materials for energy storage devices such as supercapacitors and redox flow batteries. For his scholastic achievements and service to the University of Kentucky, James was given the Outstanding Junior in Chemical Engineering Award and the Joseph P. Kennedy Philanthropy Award. In the fall, he will attend the University of Texas at Austin to pursue a Ph.D. in chemical engineering. James plans to continue working on material science & energy research, pursue a career in academia, or become an entrepreneur.

Anderson Fellow No. 15

## Abimbola E. Oluwade



Abimbola was born in Lagos, Nigeria. He graduated *summa cum laude* with a B.S. in mechanical engineering from Howard University, where he served as DC Alpha Chapter recording secretary. He also served as a men-

tor for the chapter's MindSET program, mentoring K-12 students in preparation for the 2019 First Lego League Robotics Competition. At Howard, Abimbola studied the effects of Re and Ri numbers on flow reversal and heat transfer in heated rectangular ducts with an aim to improve the design of solar collectors for developing countries, co-authoring a conference paper in the process. Abimbola has had research internships at SLAC and Fermi National Accelerator Laboratories. At SLAC lab, he won the best poster award for developing a novel X-ray reconstruction algorithm for the LCLS XTCAV diagnostic system. Abimbola is passionate about employing computational tools in modeling and designing components such as solar collectors, airfoils, and heat exchangers, and will obtain a Ph.D. in fluid mechanics and thermal processes. He intends to remain in academia as a researcher and educator.

Fife Fellow No. 230

## Jesse Schimpf



Jesse graduated *summa cum laude* from Boise State University with a B.S. in materials science & engineering and minors in physics and computer science. He served as ID Gamma Chapter treasurer and conducted research

all four years of his degree in surface characterization. He became a co-author his sophomore year for work characterizing electropolished titanium and niobium. Jesse has contributed to a wide range of research, including corrosion-resistant coatings, DNA cross-tile and triangular nanostructures, solid electrolyte interfaces in batteries, pore-forming proteins for targeted drug delivery, and mechanical responses of mesenchymal stem cells. Through the lab, he participates in STEM outreach activities for local schools and STEM clubs. Jesse plans to attend the University of California, Berkeley, for a Ph.D. in materials science and engineering. There, he will research materials for sustainable, efficient energy production, because they are essential in enabling future technological advancement. After school, he hopes to continue this research at a national lab or university.

Record Fellow No. 22

## Kirk P. Smith



Kirk, a Ph.D. candidate in Professor Charles Monroe's group at the University of Oxford, works on nonaqueous redox flow batteries. His thesis work aims to clarify the performance tradeoffs inherent in electrochemical reactors that use porous separators instead of ion-exchange membranes and demonstrate the utility of this design choice in benchtop-scale flow batteries with novel electrolyte formulations. A Rhodes Scholar, University of Tulsa graduate (B.S., mechanical eng'g '17), and captain of Tulsa's NCAA Div. I cross country team, he is broadly interested in (photo)electrochemical and mechanical engineering as they apply to grid-scale energy storage and power-to-X technologies, he strives to accelerate the transition to a clean energy economy through his technical research while advocating for policies that enable fair competition between energy technologies. Kirk plans to help establish an academic/industrial research consortium that focuses on replacing petrochemical processes with their electrochemical counterparts and is actively seeking collaborators for this effort.

Sigma Tau Fellow No. 46

## Robert W. Streeter



Rob graduated from the University of Wyoming with B.S. degrees in electrical and computer engineering and an M.S. in electrical engineering. His research at UW focused on analog signal processing and biomimetic vision

sensor design. Following graduation in 2013, Rob spent time as a research engineer at the U.S. Air Force Academy, where he helped develop a decentralized, distributed, and robust decision-making algorithm for small UAS task allocation. He then returned to Wyoming to join a small technology firm focusing on land-mobile radio systems. Rob worked to expand the business to include commercial UAS operations. He also joined the volunteer fire department and rural ambulance service. In 2017, Rob was selected to join the winter-over team at the Amundsen-Scott South Pole Station as a science support engineer. After nearly 13 months at the South Pole, Rob returned to academia at the Univ. of Colorado at Boulder to pursue Ph.D. studies in RF and electromagnetics. Teaching and inspiring young engineers is his passion, and he looks forward to joining academia as faculty.

Fife Fellow No. 229

## Erica K. Wagner



Erica graduated *summa cum laude* from Northeastern University with a B.S. in bioengineering and a minor in entrepreneurial engineering. Starting freshman year, Erica became heavily involved in research resulting in

numerous publications and presentations. She received grants to research biomaterials for drug delivery to target low back pain and she developed a chemical conjugation technique that can be used to crosslink collagen for tendon and ligament repair for her capstone project. She also completed two co-ops where she discovered antibodies targeting the complement component 3 pathway at Visterra Inc. and differentiated human induced pluripotent stem cells into muscle tissue in the Pourquie Lab at Brigham and Women's Hospital. For excellence in research, she was awarded a 2019 Goldwater Scholarship. She is also a member of SWE, the Biomedical Engineering Society, and was a teaching assistant for the college of engineering for two years. Erica will pursue her Ph.D. in bioengineering at Cornell University. She plans to pursue a career conducting research in the field of biomaterials and tissue engineering.

Record Fellow No. 27

## Reed M. Yalisove



Reed graduated from the University of Michigan with a B.S.E. in materials science & engineering with minors in math and physics. Since joining the MI Gamma Chapter in 2017, he has served in several leadership

roles, including president and vice president. Reed's undergraduate research at Michigan focused on creating an analytic model of information collection in electron tomography to characterize materials in 3D at the atomic scale. In the summer of 2018, Reed worked in the chemical and biomolecular engineering department at Cornell University as an NSF REU participant. Reed will continue his electron microscopy research as he pursues a Ph.D. in materials science and engineering at the University of California, Berkeley, as an NSF graduate research fellow. After completing his Ph.D., Reed hopes to pursue a career in research at a university or a national lab so that he may continue the STEM outreach that he enjoyed as an undergraduate. Reed also enjoys hiking, backpacking, and running with the Michigan running club in his free time.