The Fellowship Board has announced the selection of 37 engineering students from 339 applicants for graduate fellowships in 2019-20. Thirty-five of this year's recipients will receive cash stipends of $10,000 for advanced study.

More than $7,300,000 in stipends will have been given by the Society when this 86th 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 1,676 fellowships granted since the program was inaugurated in 1929.

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

The others have chosen to study aeronautics & astronautics, biological engineering, chemical & biomolecular engineering, civil engineering, computer science, construction engineering & management, electrical engineering, geotechnical engineering, medicine, nuclear engineering, operations research, robotics, & space systems engineering.

The **Anderson Fellowship** is named for Mabel E. and Marshall Anderson, *MI Γ '32*, who was ΤΒΠ Fellow No. 20 and left a bequest to the Society in 2005. Given for the 34th time, the **Centennial Fellowship** honors the Society's most outstanding fellow and commemorates Tau Beta Pi's 100th anniversary.

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

The seven **James Fife Fellowships** are presented in memory of the father of the late member William Fife, *CA A '21*.

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

The **Harold M. King Fellowship,** awarded for the 58th time, honors the 1954-58 president of ΤΒΠ, 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 45th time, perpetuates the name of Sigma Tau, a national engineering honor society founded at the University of Nebraska in 1904 and merged into 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 64th 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 **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 seven **Tau Beta Pi Fellowships** are supported by matching gifts from firms as part of the annual alumni giving.

The **Edward H. Williams Jr. Fellowship,** awarded for the 40th 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 sponsored by GEICO Insurance.

The **Bower Fellowship** is named for Robert B. Bower, *TX A '49*, who left a bequest in 2019 to fund one fellowship.

With the large number of applicants, the Fellowship Board engages the services of additional members to read and rank applicants. The Fellowship Board used this information to make the final Fellow selections in March. 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.

Fife Fellow No. 226

Robert J. Beem

Robert graduated with a B.S. in mechanical engineering from the University of Oklahoma (OU) where he served as OK Alpha Chapter president. He is a 2018-19 Scholar and spent his sophomore year as an exchange student and undergraduate researcher at the National Taiwan University and the Ruhr-University in Germany. While in Germany, he presented his research findings on the use of steel fiber reinforced concrete in tunnel design at the annual Research Internships in Science and Engineering Conference in Heidelberg. Junior year, he characterized blast overpressure-induced progressive hearing damage in 3D-printed ear models while working in the biomedical engineering lab. His senior capstone project centered on 3D printing shape memory polymers to produce patient-specific aneurysm treatment devices. Robert will stay at OU to complete an M.S. in mechanical engineering with a research focus in 3D printing for bio-engineering applications. He plans to start a medical device company.

Williams Fellow No. 40

Margaret M. Billingsley

Maggie graduated with honors in biomedical engineering from the University of Delaware where she served as DE Alpha Chapter conference chair. She was also an active member of Biomedical Engineering Society and the biomedical engineering ambassador program, where she participated in community outreach projects focusing on STEM education in middle schools. On campus, she served as a peer mentor for engineering students, the BME student representative for the COE educational activities committee, and the Rubber Chickens Improv Comedy Troupe president. Maggie was a dedicated researcher, working to explore the application of gold-silica nanoparticles in cancer detection. Her work resulted in a first author publication and two co-authored papers. She is working toward a Ph.D. in bioengineering at University of Pennsylvania. Maggie conducts research at the intersection of biomaterials, drug delivery, and immunology and hopes to pursue a career in academia.

Fife Fellow No. 223

Lucia G. Brunel

Lucia graduated from Northwestern University with BS and M.S. degrees in chemical engineering and a minor in Italian. As an undergraduate, she received grants to research into polymers and biomaterials at Northwestern for two years, the Polytechnic University of Milan for a summer, and MIT as an REU student. For her excellence in research, she was awarded a Goldwater Scholarship. Lucia also held leadership positions in campus chapters of the Society of Women Engineers (secretary, treasurer, VP) and the American Institute of Chemical Engineers (chair of alumni relations, treasurer, president). Last year, she was awarded a Marshall Scholarship to attend the University of Cambridge to pursue a M.Phil. in materials science. Her project focuses on the design of collagen scaffolds for endometrial organoids. Lucia was recently awarded an NSF Graduate Research Fellowship and will pursue her Ph.D. in chemical engineering at Stanford. She intends to pursue a career in academia.

Fife Fellow No. 225

Daniel B.K. Chu

Daniel will graduate from the University of California, Santa Barbara (UCSB) in June of 2019 with a B.S. in chemical engineering and a minor in physics. He is a member of the Shell group and works on bridging length scales in molecular simulations. He previously worked in the Peters group at UCSB and the Martin Head-Gordon group at UC Berkeley. Aside from research, tutoring has been a significant part of Daniel's undergraduate career. He has worked with the university's tutoring services for three years, helping students learn mathematics and physics. As an undergraduate, he was awarded the Regents, UC LEADS, ESTEEM, and ΤΒΠ scholarships. Daniel will pursue his Ph.D. in chemical engineering at the Massachusetts Institute of Technology as a NSF Graduate Research Fellow. There, he plans to research methods to improve quantum chemical calculations. After graduate school, Daniel hopes to become a professor to continue as a researcher and educator.

Anderson Fellow No. 13

Joanna L. Ciatti

In 2018, Joanna graduated summa cum laude from the University of Michigan with a B.S.E. in chemical engineering and minors in environmental engineering and chemistry. As an undergraduate, she worked in multiple research labs through fellowships with the U-M Energy Inst. and the National Science Foundation. Joanna was also involved with community service, mentoring, and volunteering in STEM outreach with ΤΒΠ, peer advising in the engineering honors program, and founding a mentorship program for her chapter. She was also active in ΤΒΠ leadership, serving as secretary, president, and an Advisor for the past year. Joanna was awarded a 2017 ΤΒΠ Scholarship and her department's highest academic honor, the Distinguished Academic Achievement Award. She will matriculate to Northwestern University to pursue a Ph.D. in materials science and engineering as an NSF Graduate Research Fellow. She aspires to develop the next generation of wearable medical devices.

Record No. 13

Charles B. Dawson

Charles is an engineering graduate of Harvey Mudd College in Claremont, CA. He aims to develop safe, reliable, and collaborative control systems for robots with a particular focus on collaborative automation in manufacturing. Next year, he will undertake graduate study in aeronautics and astronautics at MIT, where he will pursue his goals through research at the intersection of robotics and control theory. Beyond graduate school, Charles hopes to work on bridging the gap between industry and the research sphere, bringing advanced concepts and innovations out of the lab and into real-world environments where they can have a positive impact.

Forge Fellow No. 8

John L. Dean

John is an undergraduate in the class of 2019 at Stanford University studying electrical engineering, with a focus in control and optimization of distributed systems. He joined CA Gamma as a junior and served as academic chair during his senior year. Before starting his college career, John published a paper in applied optics on liquid lenses for use in microscopy. During his freshman year, he joined the Stanford student space initiative, becoming co-president of the organization as a sophomore. He competed as a member of the Stanford team in the 2017 Intercollegiate Rocket Engineering Competition, winning first in their category. John has been working on a world-record breaking high altitude balloon platform, designing autonomous control algorithms to fly low-cost latex balloons for up to 5 days. He has been a TA for convex optimization and signal processing. John plans to pursue a master's and continue developing the balloon platform to drastically reduce the cost of global weather data collection.

Swalin Fellow No. 3

Anna C. Deleray

Anna graduated cum laude from the Colorado School of Mines with a B.S. in chemical and biochemical engineering. She was an active member of the Society of Women Engineers, American Institute of Chemical Engineers, and student athletic advisory committee. In addition to her academic pursuits, Anna played on the varsity women's soccer team and was captain for several years. After graduation, she conducted protein engineering and biosensor design research at the Los Alamos National Laboratory. She is pursuing a doctoral degree in biomedical engineering at the University of Utah. Her research involves the synthesis and characterization of antifreeze glycopolypeptides. At the University of Utah, Anna is a member of the Nano Institute of Utah's Nanotechnology Training Program and is an ARCS Scholar. After completing her Ph.D., she plans to pursue a career in academia and continue conducting research in the field of biomaterials and therapeutics.

Record Fellow No. 18

Michael R. Doane

Michael graduated as a Commonwealth Honors Scholar from the University of Massachusetts, Lowell with B.S. degrees in chemical engineering and biology and minors in mathematics and biomedical engineering. His honors thesis research involved optimization of lignocellulose deconstruction using enzymes and ionic liquids. He researched pharmaceutical process engineering, enzyme inhibition, and cancer cell culture at UMass Lowell. Michael also completed summer research programs at the University of Alabama as an Amgen Scholar at Caltech, as well as six-month research internships at Pfizer and Lawrence Berkeley National Labs. His work in mammalian cancer cell culture hypoxia earned a Goldwater Scholarship in 2017. In 2015, Michael co-founded an NGO called BASH that worked to develop biodigester technology for use in Southern Haiti. His work as a peer mentor and tutor helped earn him the Chancellor's Medal for student service. Michael is to begin Ph.D. studies at Stanford.

Centennial Fellow No. 34

Kaitlyn E. Gee

Kaitlyn graduated from Stanford University with a bachelor's degree in mechanical engineering and a minor in French. She served as California Gamma president from 2017-18, during which time she spearheaded the introduction of several new chapter initiatives, including an undergraduate mentorship program, a peer-to-peer discussion series, and a pre-officer leadership program. She has conducted research in soil biogeochemistry and educational haptics and has interned at the Northrop Grumman Corporation and The Boeing Company. She is currently pursuing a master's degree in mechanical engineering at MIT where she develops computational design tools for additive manufacturing. She is an MIT Presidential Fellow, Sloan University Center for Exemplary Mentoring Scholar, and NSF Graduate Research Fellow.

Fife Fellow No. 221

Olivia George

Olivia graduated from the University of Tennessee at Chattanooga with a bachelor's in chemical engineering. Next, she will be attending the Georgia Institute of Technology to earn her Ph.D. in materials science. Olivia plans to do research on the material properties of fibrous thin films in the context of expanding the capabilities of recyclable materials. After finishing graduate school, she would like to one day become a professor, though she is open to spending time in industry first. Ultimately, she plans to make a significant positive impact in everything she does.

Anderson Fellow No. 14

Ayush Giri

Ayush was born in Kathmandu, Nepal. He completed his undergraduate studies in mechanical engineering at Howard University, where he served as the DC Alpha public relations officer. A co-author of a published scientific paper, Ayush has worked as a summer research intern at Purdue University and the University of California, San Diego (UCSD). He will be pursuing his doctorate studies in UCSD starting the fall of 2019. His research interests include fabrication of soft robots that would aid in search and rescue operations and medical/surgical applications. Ayush was awarded a ΤΒΠ Scholarship for 2018 and was also selected as a finalist for the prestigious Global Rhodes Scholarship in 2019.

Bower Fellow No. 1

Christopher A. Hampel

Chris was named the valedictorian of the University of Portland Class of 2018. In addition, he received the highest scholastic achievement award for the school of engineering. Chris served as the OR Gamma president and conducted undergraduate research in heat transfer while majoring in mechanical engineering and minoring in mathematics. He studied in Salzburg, Austria, participated in intramural sports year-round, and worked as a climbing instructor. Chris is pursuing a master's at Colorado School of Mines in mechanical engineering with a focus in thermal-fluids sciences. He is partnering with the National Renewable Energy Lab in researching techno-economic modeling and optimization of combined cooling, heating, and power systems for distributed generation. Chris has also become an avid skier and climber. In the future, he hopes to contribute to global energy transition by modeling and optimizing renewable and sustainable power and energy technologies for a decentralized and decarbonized grid.

Record Fellow No. 17

Rachel A. Hegab

Rachel graduated as an honors Grand Challenge Scholar with a B.S. in biomedical engineering from Louisiana Tech University. She served as LA Gamma vice president as well as Engineering and Science Association freshmen outreach, and social and service chairs. Funded by LaSPACE Undergraduate Research Assistantship for the last four years, she investigated tailorable hydrogels for drug delivery and tissue regeneration. She also spent past summers conducting research through Research Experiences for Undergraduates at the University of Texas at Austin and Cornell, and as an intern at Medtronic. From her research, she made significant contributions to several journals. Rachel will work full-time in the research and exploratory development department at Johns Hopkins University Applied Physics Lab conducting research with a direct impact on national health. She will pursue her master's in applied biomedical engineering through the APL engineering for professionals program and afterwards plans a Ph.D.

Tau Beta Pi Fellow No. 827

Ashley N. Hersey

Ashley graduated summa cum laude with a B.S. in chemical engineering from Rensselaer Polytechnic Institute where she served as the New York Gamma Chapter activities chair. She made it a priority to give back to her student community by mentoring dozens of first-year students in calculus over three years and acting as a teaching assistant for the chemical engineering department. Ashley committed time during the school year and through the summer to undergraduate research in multiple biotechnology areas, including antibody engineering and peptide nanotechnology with antimicrobial applications. She plans to continue research of therapeutic biomolecules while she pursues her Ph.D. in chemical engineering at the Georgia Institute of Technology. She would like to use her graduate degree for research and development in industry.

Tau Beta Pi Fellow No. 824

Amanda C. Hornick

Amanda graduated from the University of Rochester with a B.S. in biomedical engineering, a concentration in cell and tissue engineering, and a minor in computational biology. She held leadership roles as NY Kappa president, vice president, social chair of the Biomedical Engineering Society, finance coordinator of the Newman Catholic Community, and technique coordinator of Ballet Performance Group. Passionate about mentoring other students, she served as a first-year fellow for three years, a live-in role model who connects first year students to campus resources. She has performed research on gene therapy, CRISPR, and base editing, spending a summer at the University of Rochester Medical Center, and two summers at Harvard Medical School, including one as a Harvard-Amgen Scholar. Amanda will join the Harvard-MIT Health Sciences and Technical medical engineering and medical physics Ph.D. program. She plans to become a professor and principal investigator, creating gene therapies for autoimmune conditions and allergies.

King Fellow No. 58

Trevian Jenkins

Trevian graduated cum laude from the University of Alabama in Huntsville with a B.S. in electrical engineering and a B.S. in physics. He is a software developer at Intuitive Research and Technology Corp., specializing in virtual reality applications and unmanned aerial systems. As part of the honors college at UAH, Trevian conducted research using computer vision techniques to locate coronal mass ejections in images from the LASCO instrument aboard the SOHO spacecraft. He is a member of Eta Kappa Nu and the officer board of the AL Delta Chapter, maintaining the website. Trevian was a Louis Stokes Alliance for Minority Participation program scholar. As a sprinter on the varsity track and field team, he achieved NCAA All-American honors, set multiple school records, and received the President's Award. After graduation, Trevian will pursue a master's in computer science to study artificial intelligence and computer vision and subsequently work in the aerospace and defense industry.

Sigma Tau Fellow No. 45

Tyler A. Kleinsasser

Tyler graduated from the South Dakota School of Mines and Technology with an undergraduate degree in civil engineering. He is staying at SD Mines to pursue a master's in construction engineering and management. Tyler's professional aspiration after graduate school is to find a challenging and rewarding career in the construction industry. He would like to use his education to help benefit society by designing and building critical infrastructure around the nation and world. Tyler's involvement on campus includes activities such as Residence Life, the SD Mines Professional Development Institute, Engineers and Scientists Abroad, and Student Association Senate. He also enjoys playing intramural sports and Ultimate Frisbee. Off-campus, Tyler has volunteered extensively in his local community and abroad through organizations like Big Brothers Big Sisters and at a local summer camp. In his free time, Tyler enjoys playing piano, solving Rubik's Cubes, cliff-jumping, and hanging out with friends.

Fife Fellow No. 222

Jared I. Klimek

Jared will graduate from Cedarville University with a B.S. in mechanical engineering with minors in Bible and honors engineering. He was a 2018 ΤΒΠ Scholar and served as Ohio Nu president. As an undergraduate, he competed in the Shell Ecomarathon Americas competition and the SAE Aero Design East competition. He participated in an engineering mission trip to Bolivia, providing clean water technology to rural communities and churches. Jared received a NASA research grant through the Ohio Space Grant Consortium, conducting biomechanical research into 3D printed PLA bone scaffolds for healing bone defects. Additionally, he worked at Air Force Research Lab, using finite element analysis and material modeling to research the reduction of fuze vulnerability in projectiles. Jared's research experience led him to pursue graduate education. He will pursue an M.S. in mechanical engineering while completing graduate research. He hopes to work on cutting-edge aerospace research.

Fife Fellow No. 220

Aswini R. Krishnan

Aswini graduated summa cum laude from the University of California, San Diego with a B.S. in bioengineering. As an undergraduate, she was eager to apply her engineering background to explore fundamental questions in medical science. Pursuing cancer research in a computational genomics lab, she progressed from learning basic bioinformatics techniques to publishing three first-author papers on the roles of non-coding RNAs in cancer. At UCSD, Aswini served as an editor of the *Undergraduate Research Journal*, volunteered at the Veterans' Affairs hospital, and captained her competitive collegiate a cappella team Sitaare. Aswini is pursuing an M.Phil. in biological science at the Univ. of Cambridge as a Churchill Scholar. She studies the mechanisms by which cells regulate protein synthesis to shed novel insight into disease mechanisms. Next year, she will begin medical school at Stanford University. She plans a research career at the interface of medicine and computational bioengineering to advance human health.

Record Fellow No. 19

Andrew C. Lee

Andrew graduated from Villanova University (VU) with a B.S. in mechanical engineering and minors in mathematics and chemistry. At Villanova, he worked on research to synthesize and characterize novel nanomaterials for thermal energy storage. In the summers, he interned with the U.S. Navy, working on corrosion mechanisms, and traveled to Grenoble, France, to understand how patterned materials could be used to passively collect water from the atmosphere. Andrew also traveled to Nicaragua and Panama as part of VU's service learning trips, working on analysis and design of gravity-driven water systems in rural communities. He also implemented his senior design project to create affordable 6" PVC connections there. Andrew coached a high school wrestling team for four years and led an on-campus advocacy organization focused on critical issues such as climate change and migration. Andrew will pursue a Ph.D. at Stanford as a Knight-Hennessy Scholar and NSF graduate research fellow.

Fife Fellow No. 224

Chantelle Y.Y. Lim

Chantelle will be graduating from the University of Rochester with a B.S. in biomedical engineering and a minor in electrical engineering. She has served as BMES chapter president, NY Kappa Chapter vice president, BME peer advisor, and teaching assistant for BME courses. Chantelle is also a 2018 ΤΒΠ Scholar, Charles L. Newton Prize recipient, and ΤΒΠ senior prize institutional awardee. Chantelle has performed research on decoding EEG signals in multi-sensory cocktail party scenarios, analyzing a marker of resting-state fMRI in temporal lobe epilepsy patients, and employing a dynamic model to investigate brain connectivity. Her work has culminated in a second-author paper and three conference abstracts. In addition, she plays the piano and violin, and is an avid long-distance runner, having completed numerous half-marathons and a marathon. Chantelle will be pursuing a Ph.D. in biomedical engineering at Johns Hopkins and plans to conduct MRI research on neurological disorders.

Matthews Fellow No. 22

Tres Litten

Tres graduated summa cum laude with a B.S. in civil engineering from The Citadel. As an undergraduate, he was named a Tommy Baker Veteran Fellow in recognition of his military service and academic accomplishment and presented the Thomas C. Evans Award by The Citadel faculty for outstanding academic achievement. He has been active in clubs and organizations and was instrumental in organizing school participation in community events such as the Buddy Walk for the Down Syndrome Association. Tres is completing his M.S. in civil engineering from The Citadel Graduate College with a focus on structures and project management. While in graduate school, he was awarded the ADSC Long Family Scholarship for academic excellence in a field of study. He took part in research into the depth of plastic hinge development in prestressed concrete piles to help establish minimum pile confinement reinforcing in areas of low to high seismic activity. He hopes to make a meaningful impact to sustainable bridge design.

Tau Beta Pi Fellow No. 829

Cristina Lorenzo Velázquez

Cristina completed her bachelor's degree in civil engineering from the University of Puerto Rico at Mayagüez with honors. She was involved in the ASCE student chapter as document manager, president, and as leader of competitions teams representing Puerto Rico, winning first place overall two consecutive times. As an undergrad researcher, she studied the application of mortar designs with fly ash and nano-silica for structural patchments, presenting at ERN and PRISM conferences. Cristina completed interships at CPM and U.S. Army ERDC. She will start a Ph.D. in geotechnical engineering at North Carolina State University with a merit-based NC-LSAMP Bridge to Doctorate fellowship. After earning her Ph.D., she wants to become a professor and encourage young students to pursue their dreams. Cristina hopes to return to her beloved Puerto Rico to contribute to the resurgence of the island and reciprocate everything she learned at her alma mater.

GEICO No. 4

Celeste B. Marsan

Celeste graduated with high distinction from Worcester Polytechnic Institute in central Massachusetts where she received a B.S. in chemical engineering with a minor in biochemistry. At WPI, she served as the MA Alpha vice president, among other leadership positions in professional and honor societies, and as a peer tutor for the Academic Resources Center. Celeste worked on research projects focused on bacterial and fungal synthetic biology and optogenetics. She participated in the 2018 Amgen Scholars Program at UC Berkeley where she investigated the use of non-model hosts for industrial production of bacterial secondary metabolites. Celeste will begin pursuing a Ph.D. in chemical engineering at the University of Texas at Austin with the support of the NSF Graduate Research Fellowship. After graduate school, she plans to perform cutting-edge biopharmaceutical discovery and development research to improve the efficacy and accessibility of global medicine.

Dodson Fellow No. 6

Ryan G. Mason

Ryan graduated summa cum laude from Montana State University with a B.S. in chemical engineering and a minor in mathematics. He is a Goldwater Scholar and has conducted research in the high temperature materials lab during his time at Montana State. He held two process engineering internships, one in semiconductor manufacturing with Applied Materials and the other in petroleum refining with CHS Inc. Ryan will pursue an M.S. in chemical engineering practice at MIT beginning in the fall of 2019. His goal is to gain the skills necessary to aid the nation in its transition to a more sustainable energy portfolio. Outside of the classroom, Ryan is passionate about a variety of outdoor activities and enjoys competing in triathlons.

Record Fellow No. 15

Julia D. Mihaylov

Julia is an aerospace engineering major focusing in astronautics at Embry-Riddle Aeronautical University's Prescott campus. She is a first-generation Bulgarian-American. Julia has worked with NASA's Jet Propulsion Lab on a Julia Language Ephemeris Reader, a tool used in space mission planning and trajectory design, co-publishing two conference papers on the project. She has held leadership positions in on-campus organizations including telemetry project manager for Eagle Works Advanced Vehicle Lab, editor-in-chief of Embry-Riddle's newspaper, and Alpha Xi Delta Fraternity chapter president. Julia was a 2018 Brooke Owens Fellow and worked at The Aerospace Corp. in the modeling and simulation department during the summer. Post-graduation, Julia will work at JPL on spacecraft events for the Psyche Mission, followed by attending Johns Hopkins Univ. for an M.S. in space systems engineering with a goal to lead prominent space missions.

Zimmerman Fellow No. 8

Victoria G. Muir

Victoria graduated with distinction from the University of Delaware (UD) with a bachelor's degree in chemical and biomolecular engineering, completing her studies summa cum laude. At UD, she researched polymer nanocarriers for RNA delivery. Victoria published a co-first author article on her work in *Acta Biomaterialia* in 2017. Outside of research, Victoria was active as AIChE student chapter president. She also taught Zumba fitness, being named group exercise Instructor of the Year in 2018. During her summers, Victoria interned as researcher in Professor Langer's group at MIT as well as in the vaccine drug product development department at Merck. Victoria is pursuing her Ph.D. at the Univ. of Pennsylvania in bioengineering. She is conducting her thesis research under the direction of Professor Burdick, studying polymeric biomaterials for musculoskeletal tissue engineering. Victoria hopes to become a professor at a prominent U.S. research university.

Record Fellow No. 16

Isabel B. Navarro

Isabel graduated from the University of Delaware with a B.S. in chemical engineering with distinction and honors. During her time at UD, she served as the DE Alpha president. Her senior thesis at UD used microfluidics to create droplet-based tools to study virus-host interactions and ecology. While at UD, she was supported by the Eugene DuPont Memorial Scholarship, as well as the Myrick Family Scholarship. She won the Innovation Prize in UD's First Step Grand Challenge for her team's design and distribution model of low-cost, 3-D printed robotic feeding arms to give independence to people with upper body handicaps. She will attend the University of Pennsylvania in the fall as an NSF Graduate Research Fellow to pursue a Ph.D. in bioengineering. She hopes to use her microfluidics background to research sensors for improved infectious disease diagnosis and personalized treatment plans.

Tau Beta Pi Fellow No. 823

Michael P. Nitzsche

Michael graduated summa cum laude with a double major in mechanical engineering and computer science, and a minor in mathematics from the honors college at Rutgers University. He conducted research in the hybrid micro/nanomanufacturing lab, co-authoring two journal publications, presenting at an APS national meeting, and writing an honors thesis on focused laser spike dewetting. Michael also served in roles such as senior peer instructor for the Aresty Research Center, co-editor-in-chief of the *Rutgers Research Review*, external vice president of the Engineering Governing Council, and committee chair for NJ Beta. He completed an NSF REU with the Center for Compact and Efficient Fluid Power at the University of Minnesota, and an internship at NASA Glenn Research Center. Michael will begin his Ph.D. in mechanical engineering at MIT, studying ultra-high temperature liquid metal heat transfer to prepare for a career in energy and sustainability research.

Record Fellow No. 20

Alexander D. O'Brien

Alex graduated from the University of Arkansas with majors in chemical engineering and physics, and minors in Spanish and mathematics. He was an honors college fellow and served in leadership roles in Tau Beta Pi and the Razorback Marching Band. Throughout his undergraduate career, Alex performed research on nanomaterial catalysts for improving production of hydrogen fuel. This research resulted in several publications, as well as presentations at AIChE and ACS regional conferences. Alex has also performed research as an intern at Argonne National Laboratory and has spent summers studying renewable energy in Pamplona, Spain, and nuclear chemistry at San Jose State University. Beginning in September, Alex will be pursuing a Ph.D. in nuclear engineering from MIT. He plans to perform research focused on improving materials for nuclear fusion reactors, which he hopes to continue in a national laboratory setting after graduate school.

Spencer Fellow No. 64

Rachel K. O'Sullivan

Rachel graduated with an honors bachelor of biomedical engineering and a neuroscience minor from the University of Delaware. As an undergraduate, Rachel primarily researched light-activated treatments for cancer using nanoparticles. Outside of the lab, she has a vested interest in integrating engineering and society. She helped plan workshops to create custom devices for children with mobility impairments and later used her knowledge of workshop planning to lead a public health project in rural Mexico with a Peace Corps volunteer. She served as DE Alpha secretary in addition to her post as a UD Global Engineering Fellow and the editor-in-chief of the literary magazine *Main Street Journal*. Rachel is pursuing a JD-Ph.D. program between Pritzker School of Law and the interdepartmental neuroscience program at Northwestern University. She hopes to investigate how innovations in cell and genetic engineering will be implemented in society.

Tau Beta Pi Fellow No. 825

Peder C. Solberg

Peder graduated summa cum laude with honors college distinction from South Dakota State University with a B.S. in mechanical engineering. He earned a minor in biomedical engineering and did exoskeleton device design and gait biomechanics research at the Mayo Clinic as a Summer Undergraduate Research Fellow. Peder was the president of SDSU's college of engineering student government and a founding member of SDSU's Biomedical Engineering Society. He served in multiple leadership roles on Formula SAE team and was an officer and competitor for the SDSU Nordic Ski Club. Peder is doing nonprofit engineering work for a rural mango drying facility in Indonesia for seven weeks. After that, he will begin his engineering and entrepreneurial studies in the Ph.D. innovation program of the school of engineering at Dartmouth. Peder intends to work in R&D for the medical device industry while continuing to engage in international service work.

Tau Beta Pi Fellow No. 828

Valentino Sudaryo

Valentino graduated with a perfect GPA in biological engineering from MIT. He is a 2018 ΤΒΠ Scholar and was the Massachusetts Beta corresponding secretary. As an undergraduate, he worked on a joint project between the Lodish lab at Whitehead Institute and Ploegh lab at Boston Children's Hospital to engineer red blood cell and nanobody based therapeutics. Valentino also spent a summer doing research at Imperial College, London, in electro-mechanotransduction in muscle cells. He served as a teaching assistant and tutor for the biology and biological engineering department, and also as an executive member of the biological engineering undergraduate board, and the Association of Indonesian Students at MIT. Outside of class, he enjoys drawing, basketball, dance, and photography. Valentino will begin his Ph.D. in immunology at Stanford University, with a strong interest in cytokine engineering to treat autoimmune diseases. He aspires to pursue a career in academia.

Record Fellow No. 14

Fransisca Susan

Fransisca graduated from MIT with a perfect GPA, double majoring in mathematics and computer science and minoring in economics. She is pursuing her Ph.D. in operations research and financial engineering. As an undergraduate, Fransisca investigated how well a neural machine translation model disambiguates different senses of homonyms in a sentence. She was a member of the Indonesian Student Association, SealNet, Eta Kappa Nu, and Phi Beta Kappa. She was also a teaching assistant and tutor for undergraduate and graduate-level classes. During the summer, she interned at Twitter and Goldman Sachs. Fransisca is building a privacy-preserving platform for sharing cyber risk. She uses a homomorphic encryption scheme based on the ring learning with errors problem to aggregate risk exposures while protecting the individual risk of all parties involved. She is also passionate about exploring the financial vehicles for raising and deploying funds to support biomedical innovation.

Tau Beta Pi Fellow No. 826

Noreen A. Wauford

Noreen studied bioengineering at University of California, Berkeley, focusing on genetic engineering of bacteria and plants for biofuels production, and then on developing tools for medical diagnostics, taking advantage of the genetic engineering technology CRISPR. Tau Beta Pi was an influential part of Noreen's undergraduate experience and she met many great friends in her chapter. She is completing her second year of Ph.D. studies in biological engineering at MIT, where she focuses on applying synthetic biology to attack cancer.

Nagel Fellow No. 22

Rose Yin

Rose graduated Cornell University with a B.S. in chemical engineering and a business minor. She begins her Ph.D. in chemical engineering at MIT this fall. As an undergraduate researcher in the Paszek Lab, Rose focused on developing particle tracking techniques for microrheological measurements. Her research resulted in a co-authored paper and three poster presentations. She was also a TA for six semesters and seven classes, including mass and energy balances, fluid mechanics, and process dynamics and control. Rose was an R&D intern for two summers at P&G and was the inventor for a patent. Her other positions included NY Delta treasurer, AIChE vice president, and ChemE Car project subteam leader. She was a 2017 Goldwater Scholarship H.M., 2018 ΤΒΠ Scholar, and will be an NSF Graduate Research Fellow. Rose's research interests include applying computational techniques for chemical and biological applications. Rose plans to become a researcher in computational chemical engineering.