TBP FELLOWS
Fellowships have been awarded to 31 members for a year of graduate study in 2022-23.

Adedoyin A. Abe AR A ’18
Anderson No. 19 | Mechanical eng’g

Suzanna R. Barna FL A ’22
Matthews No. 25 | Structural eng’g

Harsh G. Bhundiya CA B ’20
Spencer No. 67 | Aero & Astro eng’g

Maison R. Clouâtré GA B ’22
Centennial No. 37 | Aerospace eng’g

Andrew C. Cochran OH I ’22
Brandt No. 1 | Elec & comp eng’g

Luciana M. Custer NH A ’21
Fife No. 234 | Biomedical eng’g

Malley A. Gautreaux MS A ’22
Fife No. 236 | Biomedical eng’g

Shinjini Ghosh MA B ’22
Hanley No. 12 | Comp. Sci. & eng’g

Eric J. Greenlee NH B ’18
Fife No. 237 | Elec & comp eng’g

Meghan R. Griffin MA H ’21
Fife No. 238 | Biomedical eng’g

Samantha J. Guldan MN A ’22
Swalin No. 6 | Orthotics & Prosthetics

Ailon Haileyesus AR A ’16
GEICO No. 7 | Engineering

Adam J. Hall NY M ’21
Anderson No. 20 | Mechanical eng’g

Maya I. Hamka MI I ’22
Williams No. 43 | Systems eng’g & design

Daniella R. Hébert NY O ’21
Record No. 33 | Mechanical eng’g

Amanda K. Hertel KS A ’22
Dodson No. 9 | Medicine

Lindsey Jacobson NC A ’22
Record No. 34 | Mechanical eng’g

Valerie E. Kay SC B ’19
Zimmerman No. 11 | Bioengineering

Yashica Khatri AZ Δ ’18
Hennis No. 3 | Aero eng’g Sciences

Martin P. Kilbane OH Θ ’21
Record No. 35 | Mechanical eng’g

Ashley Kuhnley CA K ’22
Forge No. 10 | Biomedical eng’g

Ashwin Kumar TN B ’22
King No. 61 | Elec eng’g & Comp Sci

Brandon F. Lee MO A ’22
Tau Beta Pi No. 835 | Plasma Physics

Tristan K. Marchena SC B ’22
Tau Beta Pi No. 836 | Bioengineering

Sabrina C. Mierswa WI Δ ’20
Tau Beta Pi No. 837 | Biomedical eng’g

Audrey C. Parker ID Γ ’22
Stark No. 43 | Environmental eng’g

Ashutosh P. Raman NC Γ ’20
Tau Beta Pi No. 838 | Biomedical eng’g

Gabrielle A. Rogie GA B ’21
Fife No. 235 | General eng’g

Julianne N. Rolf CA AB ’16
Nagel No. 25 | Chem & environ eng’g

Raymond L. Turrisi RI B ’22
Tau Beta Pi No. 839 | Robotics

J. Elvis Umana KS A ’21
Sigma Tau No. 48 | Chemical eng’g

The Anderson Fellowships are named for Mabel E. and Marshall Anderson, MI Φ ’32, who was TBP Fellow No. 19 and left a bequest to the Society in 2005.
The first Brandt Fellowship is made possible thanks to a gift by Larry D. Brandt, OR A ’67, which will permanently endow a fund in support of TBP member graduate studies.

The J. Elvis Umana KS A ’21
Sigma Tau No. 48 | Chemical eng’g

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 12th Hanley Fellowship is awarded in honor of Mary A. and Edward P. Hanley, IL B ’42, TBP Fellow No. 84, who left a bequest to TBP in 1991 and 2021.
The Hennis Fellowship is awarded for the 3rd time thanks to a generous gift from Lee A. Hennis, CA A Δ ’65, to continue mentoring young engineers.
The Harold M. King Fellowship, awarded for the 61st 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 magazine Editor and Secretary-Treasurer from 1942-82 and as Secretary-Treasurer Emeritus in 1982-97.

The Centennial Fellowship honors the Society’s most outstanding fellow and commemorate Tau Beta Pi’s 100th anniversary.

The Dodson Fellowship is named for the late Charles R. Dodson, MD B ’30, who made a gift to the Association in 1998 and 1999.

The 12th Halley Fellowship is awarded in honor of Mary A. and Edward P. Hanley, IL B ’42, TBP Fellow No. 84, who left a bequest to TBP in 1991 and 2021.
The Hennis Fellowship is awarded for the 3rd time thanks to a generous gift from Lee A. Hennis, CA A Δ ’65, to continue mentoring young engineers.
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The Fellowship Board has announced the selection of 31 engineering students from 278 applicants for graduate fellowships. More than $8,300,000 in stipends will have been given by the Society when this 89th group of fellows completes its graduate work. These awards bring the total to 1,767 fellowships since the program began in 1929. The Association is grateful to volunteer members for their role in the selection process; reviewers are listed at www.tbp.org/?Fellows.

The Record Fellowships commemorate Leroy E. Record, KS A ’29, whose generous bequest will provide earnings to support awards in perpetuity. The Sigma Tau Fellowship, given for the 48th 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 67th time. Named for Tau Beta Pi’s president from 1936-47, Charles H. Spencer, IL B 1913, it is awarded to a 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, who left a bequest in 2015 to support TBPi scholarships and fellowships.

The Tau Beta Pi Fellowship Program is supported by matching gifts from companies as part of the annual alumni giving program.
Maison R. Clouâtre
*Centennial Fellow No. 37*

Maison received B.S. degrees in electrical engineering and mathematics from Mercer University where he served as both Georgia Beta Chapter president and treasurer. He is pursuing a Ph.D. degree in aerospace eng’g at Texas A&M University. Throughout his undergraduate career, Maison worked in the lab of Prof. Makhin Thitsa. During 2019, he worked as a research intern at the Georgia Tech Research Institute and the Vehicle Systems & Control Lab at Texas A&M. During summer 2021, he was a visiting researcher at the Wireless Communication and Network Sciences Lab as part of the MIT Summer Research Program. His research interests include control, optimization, and machine learning and their applications in aerospace engineering and quantum information science. Maison is also a 2022 NSF Graduate Research Fellowship Program awardee, a 2020 Barry Goldwater Scholar, and a 2018 Stamps Scholar. He hopes to pursue a career as a researcher and professor.

Malley A. Gautreaux
*Fife Fellow No. 236*

Malley is graduating from Mississippi State University in May with a bachelor of science in biomedical engineering. She serves as MS Alpha Chapter tutoring officer and volunteers weekly at the Bagley College of Engineering Study Hall. As an undergraduate, she participated in multiple outreach organizations, including Global Medical Brigades and Project ENSpire. Additionally, Malley joined Dr. Lauren Priddy’s Lab in January 2020. As a member of the Priddy Lab, she has co-authored a publication on novel drug-delivery systems for bone infections and authored a review article on biomarkers for longitudinal tracking of inflammation. In September, Malley will begin a Ph.D. in bioengineering at the University of Oregon, where she will focus on biofabrication and tissue engineering. Malley has aspirations to become a professor, researching novel topics in bioengineering and encouraging the next generation of scientists.

Andrew C. Cochran
*Brandt Fellow No. 1*

Andrew is graduating summa cum laude from Ohio Northern University with a B.S. in electrical engineering and a minor in Spanish. He was a 2021 TBII Scholar and served as OH Iota Chapter president. As an undergraduate, Andrew competed on the varsity tennis team, served as the IEEE chapter president, a campus tour guide, and an electromagnetics TA. He completed seven internships working at Schaeffler Automotive, Marathon Petroleum Corporation, Artiflex Manufacturing, Idaho National Laboratory, and Consolidated Cooperative where much of his work involved sensors, testing, and automating data analysis. His research included work on anti-reflective coatings and oscillators. In fall 2022, Andrew will start his Ph.D. in electrical & computer eng’g at Carnegie Mellon University with a focus in Micro-electromechanical systems. His research will focus on developing frequency multiplexed neuron probes using optoelectronics for brain machine interfaces.

Shinjini Ghosh
*Hanley Fellow No. 12*

Shinjini is a senior at Massachusetts Institute of Technology, double majoring in computer science & engineering and linguistics, with a minor in mathematics. She plans to continue a master’s in engineering at MIT EECS with an Artificial Intelligence concentration. Shinjini is interested in research in machine learning, especially health-care-focused, as well as in both pure and computational linguistics and natural language processing. Much of Shinjini’s research has been focused on using her skills to bring around a positive change in the world — such as being able to predict the possibility of cancer for patients in rural areas or being able to diagnose sepsis early in patients before it has the chance to turn fatal. She wishes to continue contributing to similar impactful research throughout and after graduate school.

Luciana M. Custer
*Fife Fellow No. 234*

Luciana (he/she/they) graduated summa cum laude from Great Bay Community College with A.S. degrees in biotechnology and bioengineering, and then magna cum laude from the Univ. of New Hampshire with a B.S. in bioengineering. They are now a biomedical eng’g Ph.D. student at the Univ. of Southern California. As an undergrad, they pursued diverse research and internship opportunities with projects in protein characterization, animal models of addiction, and advanced manufacturing. As a Ph.D. student in the Armani Research Lab, Luciana plans to use their extensive interdisciplinary experience to unite engineering and neuropsychological research. As a nonbinary, mixed race, learning disabled, and first generation student, they are committed to promoting diversity and accessibility in STEM and will continue to serve as a tutor, mentor, and friend to these populations. Luciana hopes to join a National Institute of Mental Health affiliated lab to apply their skills to mood, psychotic spectrum, and neurodevelopmental disorders they are passionate about.

Eric J. Greenlee
*Fife Fellow No. 237*

Eric is an incoming computer science Ph.D. student at Georgia Institute of Technology, where he plans to conduct research in the field of information and communication technology for development. In 2018, he graduated magna cum laude from Dartmouth College with electrical eng’g B.A. and B.E. degrees and has been working since then as a radio frequency engineer for the U.S. Dept. of Defense in Washington, DC, through the Stokes Scholarship Program. Eric plans to study under Dr. Ellen Zegura, where he will conduct research at the intersection of networking and human centered computing to revolutionize environmental data collection and bridge the digital divide in remote Internet access. He enjoys volunteering with mentorship and mutual aid organizations and developing environmental sensor networks. Eric intends to focus his career on applying engineering and computer science to pressing issues in social and environmental equity through academia or industry.
Meghan R. Griffin  
*Fife Fellow No. 238*

Meghan graduated summa cum laude from Boston University with a B.S. in biomedical engineering and a concentration in technology innovation. She served as MA Eta Chapter president her senior year. During her undergraduate career, she designed a medical device intended to treat apnea of prematurity in premature infants. This device was presented at the Biomedical Engineering Society Meeting in 2021 and won the BMES-Medtronic design competition that same year. She has also worked with microfluidics, studying the pulmonary microvascular response to altered blood flow. As a Ph.D. student at the University of Minnesota-Twin Cities, Meghan is interested in tissue engineering and regenerative medicine. Her research focuses on using 3D bioprinting techniques in cardiac tissue engineering and her long range goal is to contribute to advancements in clinically available treatments.

Adam J. Hall  
*Anderson Fellow No. 20*

Adam graduated summa cum laude from Union College in 2021 with a B.S. in mechanical engineering and minor in mathematics. He served as New York Mu Chapter president from 2020-21 and concurrently was president of the Alpha Alpha chapter of Pi Tau Sigma. He has helped plan several STEM outreach activities with other chapters and ran the departmental mechanical engineering help desk. He was awarded a TBII Scholarship (2020), the Mortimore F. Sayre Prize (ASME), and the Ethel Kirchenbaum Memorial Prize for his scholarship and potential for furthering the ideals of the engineering profession. During his undergraduate studies, he researched efficiency improvements of a unified photovoltaic and thermoelectric module and the effects of fluid injection on a turbulent boundary layer. He is pursuing a Ph.D. at the University of California, San Diego, and will use computational fluid dynamics to model turbulence in stratified environments.

Samantha J. Guldan  
*Swalin Fellow No. 6*

Samantha is graduating summa cum laude with high distinction from the University of Minnesota-Twin Cities, with a bachelor’s in biomedical engineering and an emphasis in biomechanics. During her studies, she participated in prosthetics research with the Minneapolis Adaptive Engineering and Design program in the Veterans Affairs Health Care System, served as a TA for the U of M department of biomedical engineering, and acted as a STEM tutor for student athletes. Her undergraduate research with the VA focused on the development of more breathable and comfortable prosthetic products. She served as MN Alpha Chapter communications officer and vice president and was a 2021 TBII Scholar. Outside of academics, Sam is an avid musician and enjoys volunteering with FIRST Robotics and local science fair programs. She plans to pursue an M.S. in orthotics and prosthetics from Concordia Univ., with the intent of combining clinical and eng’g expertise to more effectively contribute to the field.

Maya I. Hamka  
*Williams Fellow No. 43*

Maya is graduating with high distinction from the University of Michigan-Dearborn with a dual B.S. in electrical engineering and engineering mathematics with a concentration in modern and classical applied mathematics. She served the MI Iota Chapter through various officer roles including treasurer, media coordinator, vice president, and president. As an undergraduate, Maya conducted research under Dr. Aditya Viswanathan and Dr. Yulia Hristova, developing a fast and robust algorithm to solve the infamous Phase Retrieval Problem. She also worked at Toyota R&D as a design engineering intern working in autonomous driving systems. In her free time, Maya is passionate about introducing young women to STEM through outreach. She has helped lead initiatives such as CoderGals Detroit, Maize and Blue Math Circle, and GirlsGetMath@Dearborn. She will begin pursuing her master’s in systems engineering and design at the University of Michigan in fall 2022 and plans to work in the automotive industry to help bring fatal accidents to zero.

Daniella R. Hébert  
*Record Fellow No. 33*

Daniella graduated summa cum laude from Stony Brook University with a mechanical engineering B.E. and part of the Women in Science and Engineering honors program. As an undergrad, she conducted research on heat transfer in residential hydronic heating systems at the Advanced Energy Research & Tech. Center and on medical technologies to assist physicians through the Medical Device Innovation Clinic. She also participated in two NSF-funded summer research programs studying water-responsive cellulose materials and laser processing of metal foams. Combining her interests in transport phenomena and functional materials, Daniella is pursuing a Ph.D. in ME at Columbia Univ. as an NSF Fellow researching laser processing of shape-memory alloys. As a grad student, she is co-chair of Girls’ Science Day helping organize experiments to engage middle school girls in STEM. She ultimately hopes to work at a National Lab or other research institute developing advanced materials and manufacturing techniques for medical and clean energy applications.
Amanda K. Hertel
Dodson Fellow No. 9
Amanda graduated with highest distinction from the University of Kansas (KU) with a B.S. in chemical engineering. She is a TBPI Scholar and served as KS Alpha Chapter vice president. Amanda started research in Dr. Dhar’s Lab the summer after her freshman year through an NSF-funded research experience for undergraduates. That summer, Amanda studied the impact of nanoparticles on lipid monolayers modeling lung surfactants, of which she is the second author in a peer-reviewed publication. In Dhar’s Lab, she recently studied the role of tau protein and lipid dysregulation in the progression of Alzheimer’s Disease. Last summer, she was a MERRIT Fellow at Mount Sinai Hospital and worked in Dr. Kaufman’s Lab studying biologically active compounds that drive DACH1 expression. Outside of research, Amanda was an undergrad TA, volunteered at Lawrence Memorial Hospital, and has served as a FIRST Robotics mentor for Team 1810, since 2018. In July, Amanda will start medical school at the KU School of Medicine.

Yashica Khatri
Hennis Fellow No. 3
Yashica is a Ph.D. student at the University of Colorado at Boulder in the Celestial and Spaceflight Mechanics Laboratory, working with Dr. Daniel J. Scheeres. Her research involves nonlinear propagation of uncertainty in space and its applications in collision analysis. She grew up in India and graduated summa cum laude with a B.S. in aerospace engineering from Embry-Riddle Aeronautical University (Prescott, AZ) in 2018. As an undergraduate, Yashica was a part of various diversity and educational organizations and was initiated into the TBPI AZ Delta Chapter in 2016. She completed her M.S. at CU Boulder in 2020, started her Ph.D. immediately after, and was named a 2021 Amelia Earhart Fellow. At CU, she has been involved with the Aerospace Graduate Student Organization, WoAA India, Space Generation Advisory Council, and the TBPI Front Range Alumni Chapter. During her studies, Yashica has interned at Merit Engineering, Collins Aerospace, OneWeb, and SpaceNav. After her Ph.D., Yashica hopes to continue working on engineering solutions for the domain of Space Situational Awareness.

Lindsey Jacobson
Record Fellow No. 34
Lindsey is graduating summa cum laude from North Carolina State University with a B.S. in aerospace engineering and industrial eng’g minor. At NC State, Lindsey served as Engineers’ Council treasurer, a University Honors and Scholars Program ambassador, an Alternative Service Break team leader, and as NC Alpha Chapter vice president for the past two years. In addition, Lindsey was an undergraduate research assistant in the system design optimization lab with research focused on system evolvability. She published her work at the 2021 International Design Engineering Technical Conference. Outside of school, she worked as a risk management intern for the James Webb Space Telescope Program at NASA HQ. While at NASA, Lindsey supported many STEM outreach events, presented at Webb’s virtual STEM day, and served as a subject matter expert for the NASA SpaceApps Challenge. After graduation, Lindsey will pursue her Ph.D. in ME at NC State while working as a pathways intern within the Space Mission Analysis Branch at NASA Langley Research Center.

Martin P. Kilbane
Record Fellow No. 35
Martin graduated summa cum laude from the University of Dayton (UD) with a B.S. in mechanical engineering. He previously served as OH Theta Chapter vice president. Martin was the Kinesiology Lab instructor of record and conducted research in the Engineering Wellness Through Biomechanics Lab. He has led biomechanics studies in the clinical, sports, and occupational fields. Martin focuses on rehabilitation engineering emphasizing assistive devices and technologies. At UD, he founded an American Society of Biomechanics student chapter. Additionally, Martin completed four co-op rotations at Heapy Engineering and is involved in outreach activities such as making adaptable toys for children with disabilities, creating STEM kits for K-12 students, volunteering as a middle school science fair judge, and working with the United Rehabilitation Services. Martin will pursue his Ph.D. in mechanical eng’g as a Schmitt Leadership Fellow at the University of Notre Dame with a focus in biomechanics and robotics. Upon completion of his studies, Martin plans on remaining in academia as a postdoctoral fellow and later tenure-track faculty member.

Valerie E. Kay
Zimmerman Fellow No. 11
Valerie graduated summa cum laude in 2019, with a B.S. in chemical engineering and minors in biology and chemistry from the University of South Carolina Honors College. She is a TBPI Scholar and a member of Phi Beta Kappa honor society. As an undergraduate, Valerie conducted research at the UofSC McNair Center developing continuous nylon–carbon fiber filament for additive manufacturing to strengthen 3D-printed prosthetic sockets. She is pursuing a Ph.D. in bioengineering with an M.S. in chemical eng’g from Georgia Tech, where she was awarded the President’s Fellowship. Valerie is performing synthetic biology research in Dr. Corey Wilson’s Lab where her projects focus on programming living cells by constructing genetic circuits in S. cerevisiae and mapping allosteric communication in variations of LacI. Passionate about teaching, Valerie was an undergrad TA and won the Outstanding Graduate Teaching Assistant in ChBE award. Additionally, Valerie volunteers teaching classes, showcasing experiments to middle schoolers, and plans to pursue a career in bioengineering research.

Ashley Kuhnley
Forge Fellow No. 10
Ash is graduating with honors from California State University, Northridge (CSUN), with a B.S. in electrical engineering. At CSUN, she served as the CA Kappa Chapter vice president in the spring of 2021 and president for this academic year. Passionate about helping students, she is a peer mentor for over 15 students across the Badge Project and AIM52 programs at CSUN, which support students in STEM to reach their academic goals. For her undergraduate research, she worked on creating code to model cardiac action potentials for determining electromagnetic phenomena in excitable cardiac tissue. The model will be used to develop sensitive biomagnetic sensors that are easily accessible. She is pursuing her Ph.D. in biomedical engineering at the University of Minnesota where she can continue research with cardiac electrophysiology and devices. After completion of her Ph.D., she plans to work in industry developing new and improved implantable cardiac devices.
Ashwin Kumar
*King Fellow No. 61*

Ashwin graduated with honors from Vanderbilt University, with a B.S. in computer science & neuroscience, and an M.S. in CompSci. Since his freshman year, he has been interested in applying image processing techniques to understand individual anatomy and improve quantitative MRI techniques. As an undergrad, he worked to understand and characterize the pediatric spinal cord under the guidance of Drs. Seth Smith and Bennett Landman. He also conducted research to better characterize osteoarthritis bone and cartilage progression as part of the Amgen Scholars Program with Dr. Eduard Guo at Columbia Univ. He has received numerous awards including the 2020 Goldwater Scholarship and Vanderbilt Top 10 Outstanding Senior. Ashwin will attend Stanford Univ. this fall as a Ph.D. student in biomedical physics and is excited about investigating the intersection among biomedical imaging, programming, nervous system anatomy, and disorders. After his doctoral studies, he intends to pursue a career in academia.

Sabrina C. Mierswa
*Tau Beta Pi Fellow No. 837*

Sabrina graduated as valedictorian from Milwaukee School of Engineering (MSOE) with a B.S. in biomolecular engineering and minors in chemistry, mathematics, and physics. She served as the WI Delta Chapter president and corresponding secretary. At MSOE, Sabrina was also VP of the American Society for Biochemistry and Molecular Biology and a national representative of the Society of Biological Engineers. She is a TBI Scholar (2019) and received an NSF GRFP Honorable Mention in 2021. She is pursuing her Ph.D. in biomedical engineering at the University of California, Davis, in the Leach Lab. Her research focuses on orthopedic tissue engineering approaches with an emphasis on clinical translational applications. Sabrina is also a recipient of the Floyd and Mary Schwall Fellowship in Medical Research at UC Davis (2020). After her Ph.D., she plans to pursue a career in industry or at a national lab and also hopes to continue working and mentoring women in STEM.

Brandon F. Lee
*Tau Beta Pi Fellow No. 835*

Brandon graduated in May 2022 from the University of Missouri with dual degrees in chemical engineering and physics. He served as president of the MO Alpha Chapter and the local chapter of Engineers Without Borders while he was a student. He also worked in Prof. Karl Hammond’s Computational Materials Lab for about three years, resulting in two co-authored publications, and interned at the Princeton Plasma Physics Lab from January to August 2021. He is a recipient of the TBI Scholar- ship and the Barry Goldwater Scholarship. Brandon received a Fulbright grant to work on a research project relevant to nuclear fusion at the Max Planck Institute for Plasma Physics during the 2022-23 academic year. After completing this project, he hopes to earn a Ph.D. in plasma physics and conduct research that will help enable the use of fusion as a power source.

Audrey C. Parker
*Stark Fellow No. 43*

Audrey graduated with highest distinction from Boise State University (BSU) as a Top Ten Scholar with a B.S. in materials science and engineering with an emphasis in chemistry and sustainability. At BSU, she served as Idaho Gamma Chapter vice president, directed several STEM outreach programs, and has participated in numerous research positions. Under the guidance of Dr. Paul Davis, she has used advanced methods of Atomic Force Microscopy to characterize various materials as a surface science lab technician over the last three years. Additionally, she participated in the MIT summer research program in 2021 investigating methods of atmospheric methane abatement and polymer degradation. Beginning fall 2022, Audrey will pursue a Ph.D. at the Massachusetts Institute of Technology in the department of civil & environmental eng’g under the supervision of Dr. Desireé Plata. She aspires to research pathways for greenhouse gas mitigation to alleviate immense issues associated with climate change and will remain an advocate for inclusion and representation in STEM fields.

Ashutosh P. Raman
*Tau Beta Pi Fellow No. 838*

Ashu is an M.S. student in biomedical engineering at Duke University, with plans to pursue a Ph.D. after graduating in 2023. After a battle with leukemia while at Duke, he went on to graduate summa cum laude and received the NSF Graduate Research Fellowship. His current research, under the direction of Dr. Patrick Codd, focuses on the use of machine learning and sensor fusion for intraoperative surgical planning during minimally invasive neurosurgical procedures. Specifically, he has utilized classification algorithms and a portable device capable of highlighting fluorescence spectroscopy signatures to assist surgeons in tumor identification. Ashu intends to pursue a career in translational medicine, to make healthcare more accessible in low resource areas. Outside of research, he served as NC Gamma Chapter vice president, as a peer coach to teens and young adults navigating school while battling cancer, and also runs a program dedicated to empowering the immigrant senior citizen populace.

Tristan K. Marchena
*Tau Beta Pi Fellow No. 836*

Tristan, a native of Aruba, graduated magna cum laude from the University of South Carolina Honors College with a B.S. in biomedical engineering and minors in chemistry, leadership distinction in research, and global learning. As a member of the Gower Lab, he conducted research under the guidance of Dr. R.M. Gower and led an independent project investigating the impact of retinoids on muscle atrophy using in vitro models that he developed. Tristan is the recipient of several undergrad research awards, including the Magellan Scholar Award, McNair Junior Fellows Award, and Honors College Undergraduate Research Fellowship. With a passion for helping others, he served as a Student Success Center peer leader, BMES peer mentor, and is the founder of UofSC Aruba, an organization that strives to help first-year students better transition into college life. Tristan will pursue his master’s degree in bioeng’g at the Univ. of Pennsylvania where he will conduct research in cancer immunotherapies. Next, he aspires to pursue an MD/Ph.D. in biomedical engineering.
Gabrielle A. Rogie
File Fellow No. 235

Gabrielle graduated summa cum laude from Mercer University in May 2021, with a B.S. in biomedical engineering and minors in chemistry and biology. As an undergraduate, Gabrielle participated in numerous research projects that include modifying TSLOs for treatment of Adolescent Idiopathic Scoliosis (AIS), biomechanical analysis of genu recurvatum, and non-rigid bracing options for AIS. She was an Undergraduate Biomedical Scholar, studying roles of diet on cognition in mice under Dr. Abdelsaid at Mercer University College of Medicine. Having dealt with scoliosis, Gabrielle is passionate about research in the field of AIS and has spent almost a decade advocating for young girls with scoliosis through Curvy Girls Scoliosis support groups. She is pursuing an M.D. and M.S. of engineering at Texas A&M College of Medicine as a part of the EnMed program. With her fellowship funding, she will pursue her passion of investigating bracing options for AIS patients to increase patient compliance in brace wear. She hopes to become a pediatric orthopedic surgeon.

J. Elvis Umana
Sigma Tau Fellow No. 48

Elvis is a chemical engineering Ph.D. student at the University of Wisconsin-Madison where he utilizes neural networks to investigate the dominant properties of ion transport in ionic liquid solutions. He graduated in 2021 with a B.S. in chemical engineering from the Univ. of Kansas with university and departmental honors. Initiated into TBP in 2019, he served as KS Alpha Chapter professional development chair and initiation chair his junior and senior years, respectively. He was also active as a member of Theta Tau, peer tutor, engineering ambassador, TA for undergraduate heat and mass transfer, and Engineering Undergraduate Research Fellow. His research on the stabilization of antigen via adsorption onto metal oxides resulted in a department award and co-author paper in ACS Langmuir. Outside of research, Elvis is an active community volunteer and promotes diversity and inclusion in STEM. Upon graduation, he plans to pursue a career in academia as a professor.

Julianne N. Rolf
Nagel Fellow No. 25

Julianne is an environmental engineering, summa cum laude, and honors graduate of the University of California, Riverside (UCR). She served as CA Alpha Beta Chapter community service co-captain and treasurer and was also a Goldwater and UC LEADS Scholar, conducting research for four years at UCR and publishing three articles before moving to Germany as a Fulbright Scholar. In 2017, she joined Yale’s dept. of chemical & environmental eng’g to pursue a Ph.D. in water treatment research with Prof. Elimelech. Her dissertation is focused on understanding pre-treatment chemicals used in desalination processes to mitigate inorganic scaling. Julianne was an NSF GRFP Fellow and is an Advanced Graduate Leadership Fellow at Yale preparing for an environment think tank research career. Dedicated to diversity, equity, and inclusion service, she was the co-chair for Yale’s Equity in the Job Search Symposium for three years and is DEI co-chair of NEWT, an NSF-funded eng’g research center dedicated to increasing water access globally.

Raymond L. Turrisi
Tau Beta Pi Fellow No. 839

Ray is graduating from the University of Rhode Island with degrees in mechanical engineering and computer science with minors in robotics and mathematics. In the 2020-21 academic year, he served as RI Beta Chapter vice president, was a TBP Scholar, and received a Barry Goldwater Scholarship. As a sophomore, he began working in two research labs focusing on mechatronics and automation and dynamic photomechanics. He later joined a new research lab at URI’s Graduate School of Oceanography, where he has conducted research for three years in underwater robotics and autonomous systems. He has led a variety of student organizations promoting entrepreneurship and engineering for sustainability. As a captain of URI Hydrobotics, he has rebuilt a robotics club that fosters interdisciplinary research opportunities for undergrads. Ray will be pursuing a Ph.D. in oceanography and applied ocean science and eng’g at the Massachusetts Institute of Technology - Woods Hole Oceanographic Institute joint program, in the ME & applied ocean physics & eng’g departments.

MEMBERSHIP FRAME

Proudly display your TBP membership certificate in this frame by Churchill Classics. These official frames feature the Association’s name and seal in a gold emboss, on a high-quality wood molding. Each frame includes instructions to hang your frame to professional standards. Produced in the USA. $150.00

Place your order at www.tbp.org/?sto for this and other TBP items such as hats, t-shirts, mugs, and more.