Tau Beta Pi Fellows - 2004 - 2005

Centennial No. 19 Victoria M. Lopez

Victoria is the top December graduate in engineering at California State University, Sacramento. A civil engineering major, she will attend the University of California, Berkeley, where she plans to study structural dynamics and earthquake engineering. She became interested in structural engineering while a summer intern; she was responsible for modeling and analyzing a truss bridge using the computer program LARSA. Victoria plans to be involved in research to develop a program that can collect information from existing databases that monitor earthquake activity and develop a computer program to determine more accurately the probability of an earthquake in any given area. Upon completing her advanced degree and licensures, she will seek a position in project management and eventually establish her own engineering consulting firm. On campus, she was involved as a student grader, a lab assistant, and joined SHPE, SWE, and ASCE student chapters. For her outstanding academic achievement, she was elected to both Tau Beta Pi and Phi Kappa Phi.

Fife No. 61 Irene D. Chow

The top-ranking student in an engineering class of 2,100 students at the Georgia Institute of Technology, Irene graduated with a B.S.E.E. and plans to continue her education at her alma mater toward an advanced degree in semiconductor fabrication. After attaining a non-thesis master's degree she plans to work for a major company that designs and manufactures semiconductor products. Because she has enjoyed her internships, she has chosen not to pursue a Ph.D. Her secondary interest in MEMS, combining mechanical systems and integrated-circuit electronics, presents challenging production opportunities. Irene chaired the IEEE student branch and helped other members improve their technical knowledge through weekly corporate presentations and various workshops. For her outstanding academic performance, she was elected to Tau Beta Pi and Eta Kappa Nu and served as secretary to the residents' hall association and as a departmental representative to the student government association. She played the clarinet in the Yellow Jacket Marching Band.

Fife No. 62 Megan M. Folkmann

Number one in her engineering class at the Illinois Institute of Technology in Chicago, Megan majored in civil engineering and graduated in May with a 4.0 grade-point average. Her summer internships with a city engineering department, her experience working for the Federal Energy Regulatory Commission last summer, and her work on a research team investigating the World Trade Center collapse impressed upon her the importance of understanding building structures. She became aware of the effect that adverse circumstances can have on humanity and the economy, as well. Her own unique education—she earned a B.A. in liberal arts from Wheaton College simultaneously with her B.S. in engineering—will hold promise for her advanced work in structural engineering at Stanford University in the fall. Megan has been active in Tau Beta Pi, her young-adult church group, and the ASCE student chapter, which she served as secretary and participated in the steel-bridge competition for the Great Lakes region.

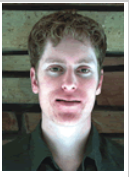
Fife No. 63 Michele L. Holder, E.I.

A graduate of Southern Illinois University at Carbondale, Michele majored in civil engineering and received two minors—in Japanese and East Asian studies. She is comfortable in Asian cultures and has learned languages to serve as a link between her future employer and firms in the East. She studied for a semester at Kansai Gaidai University in Osaka. Her goal is to earn dual master's degrees—in architectural design and structural engineering with a focus in seismic design and analysis. She will study at the University of Washington under a research assistantship. Michele held an NSF assistantship, an internship with construction projects in Cape Town, South Africa, and Guantanomo Bay, Cuba, and worked as a supplemental instructor in calculus and algebra. A summa cum laude graduate and a participant in the honors college, she was elected to Phi Kappa Phi, Gamma Beta Pi, and Tau Beta Pi, which she served as President. She joined SWE and the ASCE and volunteered in the community, helping to build homes, deliver food, and coordinating FE review sessions.

Fife No. 64 James D. Martin

The top engineering graduate from the University of the Pacific, Jim hopes to establish his own engineering consulting firm in a few years and has decided to pursue an M.B.A. at his alma mater. Through his experience and undergraduate research in knowledge management, he has mastered engineering skills that will enable him to implement new organizational technologies and digital-workflow concepts into large organizations. Jim hopes to create a real-life model beginning within an academic environment. He has already been recognized with several

undergraduate research grants and has made presentations at national conferences. As a co-op student, he managed capital projects at General Mills. He served as Vice President of TBP's California Phi Chapter, president of the ASEM chapter, and engineering senator to the school's Associated Students of the Pacific. He held the Robert Heyborne engineering leadership scholarship during 2002-04 and was elected to Phi Kappa Phi.



Fife No. 65 Dale H. Martz

Dale is an electrical engineering graduate of Colorado State University, where he plans to continue his graduate studies, taking a two-course sequence in quantum physics and in advanced electromagnetic theory to understand the nature of light. His capstone senior-design project involved work in the X-ray laser laboratory, where he learned about tabletop soft X-ray lasers and developing compact devices that can produce laser light at short wavelengths using average powers. These have important applications in developing next-generation computer chips and studying the electronic structure of materials. For his M.S. thesis, he plans to develop a desktop-size, soft X-ray laser "to be used in the chemistry department to study the electronic structure of metal-oxide nanoclusters that play a role in the catalysis of economically important chemicals." Dale enjoyed intramural soccer, played trumpet in the concert band, and tutored. He was Treasurer of the Tau Beta Pi Chapter, and was elected to Eta Kappa Nu and Gamma Beta Phi. An eagle scout, he also served as a scout leader.

Fife No. 66 Kenneth B. Reese

Kenneth completed his B.S.E.E. at Utah State University, where he plans to continue his graduate research in the area of communications. He hopes to broaden his knowledge in digital communication systems and will take classes in real-time processor and VLSI design. He has worked as an engineering assistant at the university's space dynamics laboratory, where his duties included testing and debugging image-compression hardware. His internship last year for a power plant allowed him to design hardware and software for a programmable logic controller. His undergraduate education was funded through governmental grants and a presidential scholarship. In addition to his academic accomplishments, Kenneth has undertaken volunteer responsibilities, including heading the IEEE's student section and serving as Recording Secretary for Tau Beta Pi's Utah Gamma Chapter. From 1999-2001, he volunteered as a missionary in Sao Paulo, Brazil. He learned to speak the Portuguese language, which he tutored in the linguistic lab upon his return to campus.

Fife No. 67 Charles A. Smithers

The top engineering student in his class of 139 at the University of Mississippi, Chas will begin working toward graduate degrees in civil engineering at Georgia Institute of Technology this fall. Particularly interested in materials, he hopes to improve the design of structures and the performance of buildings during earthquakes. With the aim of being a professional engineer, he has already been involved in the research experiences for undergraduates program at the University of Alabama at Birmingham and with additional research on campus. Chas played intramural football and basketball, while on the chancellor's honor roll and leadership class and holding an ASCE scholarship and being named a space-grant scholar. He was elected to Alpha Lambda Delta and Phi Kappa Phi and served as President of his Tau Beta Pi Mississippi Beta PChapter and of the Institute of Transportation Engineers, vice president of the engineering student body, treasurer of the ASCE chapter and co-chair of its 2004 regional conference, and editor for Chi Epsilon.

Fife No. 68 Simin Zhou

In 2000, Simin earned a bachelor's degree in computer engineering from the University of Minnesota-Twin Cities. She is now in the M.B.A. program at Harvard University, which she plans to complete next June. Her goal is to integrate the research field of data analysis with software and the medical industry. Simin's long-term goal is to build a medical-analysis firm using advanced computing and software technology. In 2002-03, she was manager of software technology at ADC Telecommunications, where she: created, developed, and transitioned programs; completed technology, business, and engineering reviews; and analyzed market development and technology progress. She completed leadership development courses at the firm and served as a volunteer with its foundation. At UM, she held internships—technical marketing, software engineer, hardware engineer—and worked as a teaching and research assistant. She was elected to Phi Kappa Phi and served as President of Tau Beta Pi's Minnesota Alpha Chapter and treasurer of the SWE chapter.

Spencer No. 49 Lesley A. Weitz

Lesley is working toward her master's degree in aerospace engineering at Texas A&M University. She graduated from SUNY at Buffalo in 2002, first in her class of 341 students. She worked for one year at Moog Inc. as a product/project engineer and oversaw aspects of both the F/A-18 E/F "Super Hornet" and the F-35 "Joint Strike Fighter" programs. Modeling and simulating systems are critical to design changes, and it is these areas that she plans to explore as a doctoral candidate. She is particularly interested in new aerospace control concepts and dynamic-system modeling, algorithm development, and simulation of a cooperative control system. She plans to address the issues involved in "formation-flying sensorcraft capable of providing three-dimensional imaging of space objects." Lesley has received an NSF grant to pursue this research. She was President of TBP's New York Nu Chapter, mentor to technical communications students, New York State co-op student-of-the-

year 2001, and featured student in 2002 in Diversity/Careers Magazine.

King No. 43 Scott A. Roberts

Scott is a chemical engineering graduate of the University of Kansas. He has received a fellowship from the University of Minnesota-Twin Cities, where he will study this fall. He is interested in process-systems engineering. He was president of the AIChE student chapter for two years and was regional conference vice chair and a primary organizer of the 2003 Mid-America regional student conference — raising $19,000 from corporations and alumni. He also attended the national conferences for the past three years. A 2003 Tau Beta Pi Scholar, he served as Vice President of the Kansas Alpha Chapter and was a member of Mortar Board and Lambda Sigma. He read at an elementary school and was a student ambassador. An eagle scout, Scott was active in the Order of the Arrow as lodge chief and organizer of all ceremonial events for a conclave of 200 scouts. His “free time” was spent as a paid webmaster for both his engineering department and the student senate, as well as volunteering for his church, the off-campus living resource center, and the student book exchange.

Sigma Tau No. 31 George F. Wells

In January, George earned two degrees from Rice University—a B.S.Ch.E. and a B.A. in environmental engineering. He won a three-year NSF fellowship, including tuition and an annual stipend of $30,000. He will work toward his doctorate at Stanford University. He plans to research ways that environmental bio-technology can mitigate environmental problems and methods “by which environmental policy and technologies can be effectively implemented on both local and global scales based on new research findings.” His work may involve the development and characterization of non-fouling membrane bioreactors that combine biofilm-treatment systems with advanced-membrane separation technology to convert organic waste products into fuels. George studied abroad in Aix en Provence, participated in the school’s ambassadors program, and was a founder of Rice Engineers Without Borders. He was president of the environmental club and treasurer of the AIChE chapter and was active in the jazz band, marching Owl Band, and in drama productions.

Stark No. 27 Paul J. Rossetti

Paul holds two bachelor’s degrees from the University of California, Irvine —one in mechanical and the other in aerospace engineering. He had previously earned an A.A. degree from San Diego Community College. Because of his outstanding early performance, he was invited to work in the combustion lab, which also embodies the national fuel-cell research center. One project at the facility was determining the viability of using micro-turbine generators as distributed energy-production devices, and Paul designed and tested a small emissions monitoring system to measure the concentration of oxygen, carbon monoxide, and nitric oxide. He is working on the design of a high-temperature, solid-oxide, fuel-cell test stand. He will pursue doctoral studies at his alma mater in fluid and thermal dynamics, particularly high-speed fluids research, and plans to teach in a university. Elected to both Tau Beta Pi and Pi Tau Sigma, he is a student member of the ASME and held the office of treasurer of the lacrosse club for two years.

Williams No. 25 Jerry F. Fuschetto, E.I.

The top engineering student in a five-year B.S./M.S. program at the University of Miami, Jerry plans to enter the University of Michigan to work toward a doctorate in mechanical engineering and specializing in the internal- combustion engine. The focus of his research has been on alternate-fuel, internal-combustion (ICE) engines, specifically, hydrogen. He spent two summer internships in the university’s ICE lab, where he worked on projects involving engine build-ups, cylinder-head development, and race-car design. During the summer of 2003, he worked for NIST at the center for neutron research in Washington, DC; his knowledge of camshafts helped solve a bearing-maintenance problem. Jerry is enthusiastic about the future of alternate-fuel engines, particularly hydrogen, and looks forward to a career performing research and teaching full time after receiving his doctorate. He received his college’s highest accolade —the Norman G. Einspruch scholar award, to the senior with the highest GPA. Jerry joined the ASME and the Society of Automotive Engineers.

Deuchler No. 25 Marc A. Jeuland

After graduating from Swarthmore College in 2001, Marc joined the Peace Corps, working as a water-resource-management engineer in Mali, West Africa, helping a private firm create a sewage disposal system for the city of Bamako. He plans to add to his undergraduate focus in environmental engineering through courses in watershed hydrology and flow modeling, coupled with studies in law and business management. He has received a fellowship to continue his studies at UNC-Chapel Hill. Marc holds four campus records in track & field—indoor 3,000 and 5,000, and outdoor 5,000 and 10,000; he was 2001 team captain and Verizon Academic All-American and five-time Centennial Conference champion (5,000 m and 10,000 m). In cross-country, he was a three-time All-Centennial Conference runner and All-Mideast-region runner and one-time qualifier for NCAA Division III national championships. He was elected to Sigma Xi, Phi Beta Kappa, and Tau Beta Pi honor societies, and his papers on treatment plants have been published in both English and French.

Matthews No. 7 Scott W. Schmucker

Scott recently completed his master’s degree in a B.S./M.S. program at Case Western Reserve

University and will be continuing his advanced work toward a doctorate at the University of Illinois at Urbana-Champaign . He has been awarded NSF and NDSEG fellowships to continue his work in circuit design, verification, and testing. His current research focuses on the development of efficient evolutionary algorithms for the generation of digital-circuit test patterns, which is one of the most critical phases of reliable circuit production. He held a position at NASA Glenn Research Center as an undergraduate, where he developed an interface for anaylsis software, and later as a team member, addressing the optimization of fuel-cell power systems with genetic algorithms. Active in campus and community activities and an eagle scout, Scott is an assistant scoutmaster and a high-school mentor and Science Olympiad coach. A member of the IEEE computer society, he was President of Tau Beta Pi's Ohio Alpha Chapter last year.

Nagel No. 7 David L. McCollum

A chemical engineering graduate of the University of Tennessee, David is postponing his entry into the University of California, Davis. He will participate in the Japan exchange and teaching program, and he plans to teach English in a Japanese junior-high or high school, study language and culture, and travel throughout Asia. In 2002, he was an international exchange student in Seoul, South Korea. Interested in public policy, he learned how legislation is created during an internship with the U.S. Senate governmental affairs committee in Washington, DC. David will resume his advanced education in September 2005 in sustainable development of transportation. At the U.S. DoE national renewable energy laboratory in Oak Ridge, he studied the effects of implementing advanced engine operating strategies. He was a presenter and participant in the 2004 Tennessee conference for international leadership. A participant in the university's honors program, he was elected to Tau Beta Pi, Phi Eta Sigma, and Mu Alpha Theta, was a student member of the AIChE, and played on the soccer team.

Powell No. 1 Eamonn J. Gardner

The top graduating engineering student in his class of 535 at Colorado School of Mines in May 2003, Eamonn has been enrolled at Harvard Law School where he is working towards his juris doctorate, which he plans to complete in June 2006. He is focusing in the areas of intellectual property law—patents, copyrights, trademarks—and litigation and alternative dispute resolution. He has been an active member of the Journal of Law and Technology—reviewing submitted articles and assisting in publishing decisions. His concentration in both litigation and dispute resolution serves two purposes for engineering—protecting the field and the public. He plans to write his thesis on dispute resolution and litigation in an engineering context. Carrying a perfect GPA as an undergraduate, Eamonn lettered in indoor and outdoor track and field and was 2002 All-American indoor and team captain in 2002-03. He played football in the 2001-02 and 2002-03 seasons, submitted articles to the school paper, the Oredigger, and served as a resident assistant for two years.

Tau Beta Pi No. 705 Bradley C. Bundy

The top chemical engineering graduate at Brigham Young University, Bradley plans to study at Stanford in the fall, working toward his doctorate in micro- and nano-mechanical systems. While a summer researcher at Sandia National Laboratory, he became intrigued by the intricacy and chemistry involved while controlling a "microgear" by means of a joystick. He hopes to continue researching the relationships between structure, reactivity, friction, and adhesion on performance while exploring the possibilities of base materials for NEMS/MEMS. On campus, he created high-aspect-ratio copper nanostructures, and explored the characterization of ultraviolet/visible spectroscopy for a fluorocarbon RF plasma. His experience at a pharmaceutical company assembling a production facility to create a new vitamin has helped prepare him for his goal as a researcher in industry. Active in intramural sports and as a marathon runner, he has served his church and is an eagle scout. He was Secretary of TBP's Utah Beta Chapter and a student member of the AIChE and other technical societies.

Tau Beta Pi No. 706 Qi Qi Cheng

A May graduate of Columbia University who majored in biology and biomedical engineering, QiQi will attend the University of Pennsylvania to obtain a Ph.D. in biomedical engineering. Her interest was sparked on a summer internship working as an editorial assistant in the science section of the New York Times, conducting research and writing articles on how physical traumas might be reduced through better-engineered product designs. Her initial exposure in her field was as a research fellow in tissue engineering; she designed a set of experimental protocols that proved useful in her independent research, analyzing the effect of biochemical factors on the differentiation of human stem cells into cartilage cells. The work of her team was presented at an ASME conference. QiQi will use an analytical and quantitative approach to problem solving in her graduate work in cellular engineering. She was vice president of the Society of Biomedical Engineers at Columbia and launched a popular-culture radio program that serves a Mandarin audience in a tri-state region.

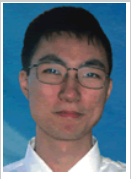
Tau Beta Pi No. 707 Robert N. Davis

An aerospace engineering graduate of the University of Alabama, Rob participated in the computer-based honors program. He spent two years working for the Air Force Research Lab

on the problem of high-speed penetrators and nose erosion. His research focused on sensor-failure discrimination and propulsion control, and he has developed an interest in vehicle-health monitoring and developing technologies to prevent disasters. He has authored or co-authored six journal and conference papers in the area of penetration mechanics and enjoyed a summer at the NASA Marshall Space Flight Center, where he investigated soft-computing technologies for propulsion control, including fuzzy-logic applications. He has received a research council fellowship to continue his research at his alma mater. Rob was selected the AIAA outstanding senior, was named a NASA research fellow, a McWane Foundation undergraduate research fellow, and a National Collegiate Honors Council Portz scholar. He was elected to Phi Kappa Phi and Tau Beta Pi, serving as President this past year.

Tau Beta Pi No. 708 Joseph M. Grogan

A graduate of the Stevens Institute of Technology, Joe majored in mechanical engineering with an interest in product development as it applies to biomedical engineering. Involved in the scholars research program, he has conducted research as a summer intern since his first year. One of his teams submitted an invention disclosure for a childproof adaptor for use with electrical plugs. Another summer, he investigated current surgical procedures used to treat abdominal aortic aneurysms; that project received funding from the National Inventors and Innovators Alliance, and after these efforts a device is in development. Joe has been awarded full tuition and stipend to attend the University of Pennsylvania in the fall. He plans to enter industry after his graduate work, but before academe. He was Treasurer of TBP's New Jersey Alpha Chapter, active in Sigma Nu Fraternity, served as vice president of the Ambassadors Club, and was founder and president of the Five Elements Club, president of Pi Tau Sigma, and active in the ASME.



Tau Beta Pi No. 709 Ying-zong Huang

An electrical engineering graduate of Stanford University, Ying-zong will attend MIT this fall to study signal processing and communications. He has held four summer internships and has become involved in areas of electrical engineering from image processing to VLSI. He and a partner created a digital-sound processor and were awarded first place in the "Agilent & HP project award" competition. Ying-zong has worked with the programmable-digital-camera group. He redesigned the software and improved efficiency, applied some theoretical results to the group's image-processing literature, and assisted in setting up a multiple-camera laboratory. He received an undergraduate research grant for his work in communication theory, specifically the connection between image classification and coding. A 2002-03 presidential scholar, he investigated the Chinese Wu dialect documenting changes in the phonological system in a report. He volunteered as a manuscript translator for the Institute of Qigong and Internal Alternative Medicine and enjoys MIDI music composition, translating Chinese literature, astronomy, and Chess/Go/.

Tau Beta Pi No. 710 Arpit Malaviya

First in his engineering class of 450 students at the University of California, Santa Barbara, Arpit has been awarded an NSF fellowship to attend Stanford University in the fall. An electrical engineering major, he plans to study nanometer-scale circuit design. He is particularly interested in solving energy-delay problems caused by sub-threshold leakage in sub-100mm CMOS circuits—a significant fraction of the total power dissipation of an IC. He hopes to create a dynamic optimization circuit for an on-chip sensor to optimize performance for error-free operation. As an intern at Caltech in 2001, Arpit studied solid acid fuel cells, analyzing the composition of the electrode to improve performance. The results will appear in the fall issue of California Engineer. He volunteered for fund-raising, tutoring, campus clean up, graduation, food and book drives, and for college workshops. He was presented outstanding service awards by Alpha Gamma Sigma professional society, President Bush, and the Coca-Cola Company.

Tau Beta Pi No. 711 Christina Mester

A Princeton graduate with a B.S. in mechanical and aerospace engineering, Christina has been awarded a Stanford graduate fellowship to study spacecraft dynamics and control and space-systems design. From Schwalbach, Germany, she matriculated to campus in 2000. Although her main interest has always been in astronautics, she has taken numerous classes in various engineering fields in order to broaden her background. She holds minor degrees in the applications of computing, robotics, intelligent systems, and Russian language and culture. Christina can speak five languages and has held summer internships on campus in the electric propulsion and plasma dynamics laboratory and in Darmstadt, Germany, at the European Space Agency's space operations center. Her senior thesis topic involved spacecraft dynamics and control—how GPS can be used for orbit estimation for satellites in elliptic orbits. Christina was principal flute player for the wind ensemble, a peer advisor, and a computing consultant.

Tau Beta Pi No. 712 G. Ayorkor Mills-Tettey

Ayorkor earned three degrees from Dartmouth College—a B.A. in 2001 and a B.E. and master's degree in computer engineering from the Thayer School of Engineering in 2003. Since

then, she has returned to her homeland, teaching computer science at Ashesi University in Accra, Ghana. Her doctoral goal is to develop skills in research and teaching so that she can contribute to developing countries to help them “join the ranks of the producers and developers, not just consumers, of technology.” She was awarded a fellowship to attend Carnegie Mellon University and will “explore questions of sustainability and appropriate robotics technology.” Her interests lay in distributed systems, pervasive computing, and robotics, and she has completed independent projects in these areas. Her thesis on voice-over-internet protocol won the best undergraduate paper award. Her research on a portable noise-monitoring system for an airport won a national conference award. Ayorkor was elected to Tau Beta Pi and Phi Beta Kappa, and is an IEEE member.

Tau Beta Pi No. 713 Robert W. Parkinson

Rob completed his B.S.I.E. at Rutgers University in January 2003 and has worked at Accenture Consulting. His previous internship for a drug company and work for the port authorities of New York and New Jersey were instrumental in his development. He will pursue a master’s degree in financial engineering at Columbia University’s school of engineering. This branch of operations research applies engineering techniques and methodologies to the areas of finance and investment science. Rob will take advanced work in stochastic processes, optimization, simulation, data analyses, and financial engineering. He will then have options either in finance or in a doctoral program. As an undergraduate, he received the Edward J. Bloustein and New Jersey outstanding scholar awards that provided funds for his education. He was a member of Theta Chi Fraternity, served as president of Alpha Pi Mu industrial engineering honor society, and was a representative to the engineering council. He enjoys Kenpo Karate and golf.

Tau Beta Pi No. 714 Shani E. Ross

Shani, whose home is in Jamaica, attended Howard University and graduated first in her engineering class. An electrical engineering major, she has been awarded full support to continue her studies at the University of Michigan. She plans to enter the doctoral program in bio/biomedical/bioelectrical engineering; her research interest is in the nervous system, studying how electrical signals are transmitted and received. She hopes to mimic these signals using electronic devices, eventually enabling the brain to transmit signals to limbs while bypassing damaged nerves so that a disabled person might have their use restored. A current project is the creation of an African-American breast-cancer mammography database, and she has developed image-viewing software. Last summer she participated in the Harvard research experience for undergraduates. Shani served as vice president of a robotics team and as Treasurer of Tau Beta Pi’s District of Columbia Alpha Chapter. She received outstanding freshman and sophomore awards and was named the outstanding E.E. junior.

Tau Beta Pi No. 715 Danilo Scepanovic

Danilo nearly completed his necessary credits for the B.S. degree in December at the Johns Hopkins University and is continuing his studies there in a five-year M.S. program in biomedical engineering. Having finished half of his coursework, he has chosen to take his remaining 12 credits in computer science, mathematics, and statistics/applied mathematics—leaving only an original thesis. He hopes to improve hearing-aid design by reducing the phenomenon of “loudness recruitment” experienced by the hearing-impaired. Upon completing a doctorate and studying under well known psychoacoustics experts, he hopes to make a significant contribution to the scientific community. As a recipient of an undergraduate research award, his team contribution resulted in a citation on a publication. He plans to obtain professional licensure and eventually start a biotech company of his own. Danilo was President of Tau Beta Pi’s Maryland Alpha Chapter, active in the biomedical engineering society, and was elected to that field’s honor society.

Tau Beta Pi No. 716 Ryan M. Turner

A May graduate in chemical engineering from Clarkson University and a top student in his class, Ryan has received full tuition and a stipend to attend Cal Tech in the fall. Through tutoring, he discovered how much he enjoys teaching, working through complicated problems on the white board and seeing looks of understanding appear on students’ faces. He enjoyed working on his undergraduate thesis, solving problems with no well-defined solutions, but the area of fluid flow created challenges. He has also learned that he is interested in theoretical research and mathematical modeling of phenomenon. He plans to work toward his doctorate and later teach and perform research at a university. Ryan held a Goldwater scholarship and has completed three years of research in an honors program. Each honors course is built around an emerging problem in science, technology, or society, and the charge for his class was to further the university’s sustainability initiative by sav ing energy. Ryan was elected to TBP and Chi Epsilon, which he served as vice president.

Tau Beta Pi No. 717 Heather A. Wake

A May graduate in computer engineering at the University of South Carolina, Heather was involved in research as the only undergraduate on a team studying supercomputing applications on re-configurable platforms. She won a travel grant to present a paper on sieve

implementation at the Field-Programmable Custom Computing Machines Conference in Napa, CA. Heather will enter Duke University to work on her doctorate in computer engineering with the goal of obtaining a position in a governmental or industry research laboratory. She plans to learn more about designing computers and optimizing their architecture. She believes that embedded systems, systems on a chip, and the performance of these systems are foremost in the future of computer engineering. She chaired the residence hall association in 2003 and participated in the association for African-American students and the IEEE student chapter. She was elected to TBP, Eta Kappa Nu, Alpha Lambda Delta, Phi Eta Sigma, and Phi Beta Kappa.

Tau Beta Pi No. 718 Carolyn A. Yeago

Carolyn graduated at the top of her class of 2,200 students at North Carolina State University. She majored in biomedical engineering and has received a teaching assistantship from Georgia Tech to begin working toward her doctorate. Her research involves tissue engineering, and her goal is to create “the most viable and natural tissue-replacement therapy for bones and cartilage to restore mobility to those with orthopaedic injuries or diseases.” She gained laboratory experience under an engineering grant last summer, when she learned about the cellular aspects of tissue engineering, as opposed to mechanical loading effects on major tissues and joints, which she had studied earlier. Carolyn helped to set up the new cellular mechanics lab and studied the effects of growing adult mesenchymal stem cells under tensile strain. She presented two abstracts at the southeast conference on tissue engineering and biomaterials, was a teaching assistant in biomedical engineering applications, and was elected to Tau Beta Pi, Alpha Epsilon, and Phi Kappa Phi.

Tau Beta Pi No. 719 Kai Yu

Kai recently completed both his B.S. and master's degrees in electrical engineering at Stanford University and has received a departmental stipend to continue graduate work at Carnegie Mellon University. His undergraduate work in computer architecture and VLSI design has prepared him for studies in low-power computer architecture, which has applications in reducing operating costs of servers, extending battery life of mobile devices, and decreasing the number of surgeries for patients relying on electrical components. His successes culminated in an industrial award for the best final project in a digital-design class. He has held summer internships on campus and at Los Alamos National Laboratory and presented a paper he helped produce on “Shaker Control in the Presence of Nonlinearities.” He designed a circuit board to image RF current densities and is conducting feasibility studies on the wireless transmission of MRI data. Kai has served as Secretary to the California Gamma Chapter of TBP and as a math and physics tutor.

Tau Beta Pi No. 720 Nikolay Zaborenko

Through his studies in chemical engineering at Rutgers University, Nick found catalysis to be most intriguing. As a summer intern, he researched thermal degradation of ethylene terephthalate to uncover its kinetics, providing him with a strong background in reaction engineering, kinetics, and the use of analytical equipment. Two summers later, he interned at Merck Research Laboratories, where he studied heavy-metal scavengers' efficacy in removing palladium from process streams and palladium-catalyzed coupling reactions. His academic experience involved project work developing heterogeneous enantio-selective catalytic systems for asymmetric imine reduction. At MIT, Nick will research heterogeneous catalysis to improve it for industrial use, later applying his knowledge to facilitate reactor and process designs to reduce the need for experimentation in such designs. Upon earning his doctorate in chemical engineering, he will pursue a career in academe, continuing his research interests and interfacing with industry to develop practical projects.