Tau Beta Pi Fellows - 2003 - 2004

Eric J. Clopper, Centennial # 18

Through presidential and Fleet Scholarships at Georgia Tech, Eric has been able to complete his undergraduate education in three years, augmented by part-time work and summer internships. An electrical engineering major, he will pursue mastery in telecommunications and complete a secondary specialization in computer engineering with a minor in applied mathematics this fall at his alma mater. He has chosen to complete his senior-design project in telecommunications at the Institute's Metz campus in France. Off campus, Eric has worked for Internet-related corporations, developing leading network technologies for the United States Department of Defense. On campus as an undergraduate, he served the student government as vice president and was the IEEE branch treasurer. He is the top student in his class and was elected to Eta Kappa Nu, Tau Beta Pi, and the Order of the Engineer. He is a member of Theta Xi social fraternity, a participant in Hands on Atlanta service organization, a member of the saxophone quartet, and a part-time employee of the Defense Information Systems Agency.

Rory W. McDonald, Fife # 57

Rory is completing his B.S. degree in civil engineering in July at the University of South Florida in Tampa, where he will remain to work on a master's degree in geotechnical engineering. His research in the environmental field centered around water resources, particularly water purification through ion-exchange resins/membranes and determining if rain water could be made potable. He is also a research assistant, currently working on developing new geosynthetic fabrics to prevent landfill seepage and to increase soil stabilization. Rory is 24 years old and spent two years in France as his voluntary service for his church. He hopes to increase his French-language fluency and may seek to introduce geotechnical/materials research to French-speaking developing countries. He was president of his church's student association and served as an officer for the American Water Works Association. A provost scholar, he was elected to Tau Beta Pi and Chi Omega honor societies and is a student member of the ASCE. Recently married, both he and his wife are in graduate school.

Jennifer S. Miller, Fife # 58

The first elected president of one of Tau Beta Pi's newest chapters, Oregon Gamma, Jennifer has led the chapter through the critical and challenging first year. Under her leadership, the members provided mentoring programs for freshman engineering students, offered free tutoring in mathematics, physics, and general engineering courses, and provided volunteer service opportunities for students to work in the university community and in the North Portland area. An E.E. major, she will be attending graduate school at Duke University, focusing her studies in microprocessor design. During several internships as an undergraduate, she learned about Pentium 3 and 4 processors, and while a summer researcher she worked on a new microprocessor fault-isolation technique. Following a course on computer organization and operating systems, she became interested in memory management and caches. After her master's program, she anticipates working in the microprocessor industry in quality and reliability and later in microprocessor architecture design. Jennifer studied abroad for more than a year at Sophia University in Tokyo.

Eric L. Pollard, EI, Fife # 59

Eric plans to continue his studies at South Dakota School of Mines and Technology after graduating with a B.S. degree in May 2003. He is a top engineering student there. As a scholar at the Air Force Research Lab last summer, he studied gossamer structures. Under the guidance of his thesis advisor, he will continue advanced study in mechanical engineering, researching laser-depositing backing structures for thin-shelled, curved mirrors. These are comprised of metallic, multi-layered electroactive nanolaminate substrates to serve as space-deployed, scientific imaging systems. Eric has gained other invaluable research experience as a field technician, gathering empirical data, and as a product-line intern studying platform safety design for an offshore oil company. Active in campus life, Eric served as vice president of the ASME chapter, on the aero design composites manufacturing and mini-Baja teams, and as a member of Tau Beta Pi, Phi Eta Sigma, the ASM, and the Minerals, Metals, & Materials Society. He is an Eagle Scout and was also selected as a TBP Scholar last year.

Steven G. Smith, Fife # 60

A top graduate in computer science at the South Dakota School of Mines and Technology, Steven is entering Stanford University in the fall to continue his studies. He is particularly interested in topics such as algorithm analysis, A.I., database design, operating systems, and real-world computing. He hopes to work for a successful computer company as a programmer

or systems analyst, eventually becoming a project manager, after completing his master's degree. On campus, he has been active in the soccer club, serving as team captain and club president while a lower-division student. He continues to volunteer as a soccer coach during the summers. Steven was elected to several honor societies, including Phi Eta Sigma, Tau Beta Pi's South Dakota Alpha Chapter (Treasurer), and Upsilon Pi Epsilon (vice president). He was also chair of the Association for Computing Machinery his senior year. This past year he was a volunteer disc jockey for a local radio station.

Deborah A. Jaye, Spencer # 48

Deborah is majoring in biomedical engineering at Marquette University and will complete her B.S. degree in January 2004 and remain as a graduate student. She arrived at Marquette after 10 years as a court reporter, earning an A.A. degree at a technical school and receiving substantial scholarships. She has been an REU, NSF researcher as an undergraduate, and her paper on skull imaging was published in the 2002 REU proceedings of the national conference. During a research internship at Medtronic, Inc., in Minneapolis last summer, she conducted and analyzed multiple animal lab studies of heart failure and therapies. After these experiences, she decided to pursue post-graduate work to acquire a broad-based competency in biomedical engineering and specialize in cardiovascular function. President of Tau Beta Pi's Wisconsin Beta Chapter, she energized the group to complete 22 projects last year, including building a concrete bridge for residents in rural Guatemala. She is a member of SWE, the Biomedical Engineering Society, National Court Reporters Association, and Business Professionals of America.

Yung-Hsiang J. Hsu, King # 42

A May graduate of Harvey Mudd College in Claremont, CA, Judy has received NSF and Tau Beta Pi King Fellowships to continue her studies in mechanical engineering at Stanford University. Systems engineering and nonlinear simulation and control are areas of advanced study she will apply to improvements in the automotive industry. She hopes to improve the model of predicted motion of vehicles ahead in order to reduce the number of rear-end accidents. Judy's on-campus leadership is impressive. As chapter co-president of SWE for three years, she has increased participation and developed new activities, including an annual outreach conference to bring high-school girls and their parents to campus to introduce them to the physical sciences and engineering fields. She has served as President of Tau Beta Pi's California Omega Chapter, designer and constructor of the college's first subsonic wind tunnel for the fluid mechanics laboratory, team leader for design and prototyping of a portable water filtration device to be used on the battlefield, and as a presenter at numerous on-campus conferences. She is an author of a paper, "Modeling the Existing Loran-C Radio-Navigation System."

Daniel J. Palecek, Sigma Tau # 30

Dan is number one in an engineering class of 455 students at the South Dakota School of Mines and Technology, where he will be pursuing his master's degree. An electrical engineering major, he will pursue graduate study in the area of communications and involve radio frequency and microwave engineering. His involvement in the National Science Foundation's summer undergraduate research experience program at Clemson University last year prompted him to pursue graduate work. In South Carolina, he performed graduate-level research in the area of wireless communications, specifically projects on broadband antennas. Dan was elected to Tau Beta Pi, Phi Eta Sigma, and Eta Kappa Nu honor societies and was named the most outstanding junior electrical engineering student last year. He has been a member of the IEEE student chapter, a participant on the solar-motion team, and an intramural basketball player.

Jonathan L. Morse, Stark # 26

In August, Jonathan will complete his bachelor's degree in biological systems at the University of Nebraska–Lincoln, where he will continue his studies in the fall. He has received an assistantship to pursue an advanced degree in mechanical engineering. During previous research projects, he learned the basics of using a standard machine shop, learned AutoCAD drafting, created a computer interface for a piece of custom-built lab equipment, and redesigned a laparoscopic surgical tool. He would like to work on projects to equip military forces with safe and practical non-lethal weaponry or make helicopters or hovercrafts affordable for the average American. Jonathan has contributed to the campus community, elected to leadership in Tau Beta Pi's Nebraska Alpha Chapter—new-member educator, Vice President, and President. He is a member of the Biomedical Engineering Society, SWE, and ASAE and he was initiated into Phi Eta Sigma, Alpha Lambda Delta, and Tau Beta Pi honor societies. He received several named undergraduate scholarships and participated in the honors program.

Zachary M. Thomas, Williams # 24

Tau Beta Pi Record Scholar No. 27 and President of Tau Beta Pi's New York Beta Chapter at

Syracuse University, Zach will be attending MIT in the fall under an NSF graduate research fellowship. His goal is to conduct research in electrical engineering and to teach. He has had some formal experience coaching college students in introductory physics. The focus of his studies as an undergraduate has been in communications/dynamic spectrum allocation and electromagnetics/theoretical research. He took an active leadership role on campus, having served as president of the IEEE student branch, president of Phi Kappa Psi fraternity, and vice president of both the Alibrandi Catholic Center Newman Association and the Haven Residents Hall Council. A teaching assistant he found time to "coach" physics courses in mechanics and electricity and magnetism, play in the marching band, and be an event coordinator for the IEEE chapter. As an assistant on a research partnership, he developed MATLAB code for sensor management.

James E. Greer, EI, Deuchler # 24

James graduated from Brigham Young University this spring with a major in civil engineering. He has received a full-time research assistantship and will also be provided with an all-tuition scholarship and a salary to continue his studies in Provo. For the past two years he has been a research assistant with the environmental modeling research laboratory developing the groundwater modeling system. As a graduate, he will continue his work this summer in hydrology, hydraulics, and hydrogeology at the U.S. Army Engineer Research and Development Center in Vicksburg, MS, where he will be learning advanced water-modeling techniques. For his R&D work, he hopes to develop an improved mesh-generation algorithm to enable researchers to quickly model complex geology with increased accuracy. He plans to work in industry before pursuing a doctorate. James is 24 years old and has completed his two-year ecclesiastical mission. He is a student member of the ASCE and the Institute of Transportation Engineers and has traveled to China on an international technical exchange program.

Justin C. Tobias, EI, Maddox # 8

One of only four battalion commanders on the campus of the Citadel, Justin was in charge of more than 500 cadets, while continuing to maintain top academic status in the engineering class and within the department of civil and environmental engineering. He was also president of the Citadel Round Table, a scholarly discussion group that examines social issues and current events. He was elected to TBP and Phi Kappa Phi and was secretary of the ASCE student chapter. His summer internship with contractors in Australia on the redevelopment of a major air force base solidified his desire for further study in construction and project management and to obtain his P.E. credential. Another summer internship enabled him to complement his engineering interests; he completed the Bryce Harlow Institute on Business and Government Affairs program at Georgetown University. Combining engineering, business, and leadership training, Justin looks forward to entering the construction industry upon completing an M.S. in civil engineering at MIT.

Paul E. McGovern, Matthews # 6

Graduating at the top of his class at Valparaiso University in Indiana, Paul has received his bachelor's degree in electrical and computer engineering and has also received both a Tau Beta Pi Matthews Fellowship and a Delphi Delco Electronics fellowship to continue his advanced studies at the University of Illinois, Urbana-Champaign. After a summer internship at Delphi where he was introduced to experimental collision-avoidance automotive technology, he will be pursuing a career in artificial intelligence R&D and robotics. He is particularly interested in safety-oriented, cutting-edge A.I. systems and hopes to develop a robot that can think and apply knowledge that can be employed in fire-fighting and security. At Valparaiso, Paul has been treasurer for the Tau Beta Pi Indiana Delta Chapter and a member of Alpha Lambda Delta, the IEEE, and the IEEE Computer Society. He has been a lab assistant and grader and an engineering-peer tutor at the learning-resource-and-assessment center.

Donnamary Plante, Nagel # 6

Donnamary recently completed a B.S. in civil engineering at the Cooper Union for the Advancement of Science and Art as the top student in the engineering class. She is 35 years of age and holds degrees from both Fordham University (B.A. in mathematics/economics, 1989) and from the University of San Francisco (M.A. in counseling, 1992). This fall she will continue her studies toward an M.E. at her alma mater, where she has worked in geotechnical engineering while minoring and working in water resources engineering. She has been examining the tidal and flow patterns of the East River in New York City to determine if current flow rates are sufficient to generate hydroelectric power, ultimately creating environmentally friendly power-generation plants. For seven years, Donnamary was in secondary education. She currently works part time as an engineering intern for the department of public works for the town of North Hempstead and tutors mathematics. On campus, she served as TBP Cataloguer, Chi Epsilon president, and was active in ASCE and SWE.

Sadie K. Michael, Astronauts # 5

Sadie graduated from the University of Maryland–College Park as the top student in aerospace engineering. She will continue with her master's degree there; she has received a fully paid

named fellowship and will delay her Tau Beta Pi stipend for a year until she begins work on her doctorate. She expects to engage in rigorous coursework over the coming year, taking courses in space systems, composite materials, and mathematics, culminating in a research thesis. Her own research project, funded by the Women in Engineering research program, resulted in two conference papers. She was a semifinalist to present at the national conference for the Society for the Advancement of Material and Process Engineering in May. Her skills have been enhanced working at the composites research lab at UM and on summer internships through the unique NASA academy program at Goddard Space Flight Center and at MIT. Elected to TBP and Sigma Gamma Tau, she has received scholarships from SWE, AIAA, and SAMPE.

Omolabake A. Adenle, TBP # 685

Abake earned her undergraduate degree in electrical engineering from Morgan State University in Baltimore in May. A 4.0 student from Nigeria, she has received an NSF fellowship to study at the University of Cambridge. In pursuing her doctoral degree, she intends to focus on seismic-signal processing with applications in geophysics. Research opportunities involve applications in sub-surface water and oil-field drilling; she later hopes to work for an oil-services company. She has already participated in the NSF undergraduate research program. At Johns Hopkins, she worked on applying mutual-information algorithm and wavelet decomposition to retinal-image registration and was hired as a full-time researcher to continue the project work. A campus leader, Abake has been vice president of SAME, secretary to the Engineering Student Organization Council, and active in NSBE and the IEEE. She is president of Engineers Without Frontiers and last summer attended the International Institute of Women in Engineering conference in Paris.

Elizabeth A. Basha, TBP # 686

A leader at the University of the Pacific, Elizabeth served as President of Tau Beta Pi's California Phi Chapter and the IEEE student chapter. First in her engineering class, she was elected to Alpha Lambda Delta, Eta Kappa Nu, and Phi Kappa Phi honor societies. She is a member of SWE and the service group, Circle K. In graduate school at MIT, she hopes to design digital circuits that can be used to decrease human risk in situations such as: driving, exploring hazardous areas, and performing rescue operations; decreasing the time required for menial tasks; and increasing productivity through better planning. During summers and co-op assignments throughout her five-year program, she contributed to the creation of several test scripts, identifying numerous chip defects for a manufacturing firm, which provided the necessary equipment to set up a satellite lab on campus. Elizabeth spent a semester in Costa Rica; she is interested in examining the impact technology has on the environment and society and the reasons that most technology is not available to developing countries.

Paolo Batoni, TBP # 687

Emigrating to the United States from Italy just three years ago, Paolo followed his dream to obtain advanced degrees in a country he had seen only on television. In a short time, he has learned English and achieved top ranking at the University of North Carolina at Charlotte. Now 35 years of age, he is completing his B.S. degree in computer engineering in December with a concentration in micro- electronics. He will remain at his alma mater to pursue his master's degree and to focus on devices applied in the medical field that allow miniaturization of prostheses and the development of enhanced human/machine surgical interfaces. He then plans to pursue his doctorate. On campus, Paolo served as secretary of the IEEE chapter and as webmaster for Phi Theta Kappa. Articulate, well organized, and witty, he is enthusiastic about helping others. He tutored network theory I-II, digital design I-II, and the Italian language.

Stephanie J. Culler, TBP # 688

Stephanie completed her undergraduate education at the University of California, San Diego, and will continue her graduate work in chemical engineering at the California Institute of Technology under a special institute fellowship. She hopes to become a leading pharmaceutical researcher in the biotechnology field and in preparation has focused on bioinformatics and minored in biochemistry. Her recent project in the laboratory has dealt with the statistical analysis of the amino-acid usage in the CDR regions of antibodies. Some tools she has learned through research include: data-basing, perl scripting, cluster analysis, and experience with computational biology programs. For the past year she has been a Stein institute fellow doing research on aging. Stephanie has been President of TBP's California Psi Chapter and is a member of SWE and the AIChE. A professional violinist, she teaches elementary and high-school students weekly and is the principal violinist with the university string quartet.

Margaret M. Darrow, TBP # 689

A college intern with the Alaska Department of Transportation and Public Facilities, Margaret is the top-ranking senior in a class of 1,207 at the University of Alaska Fairbanks. The 31-year-old mother of two young children completed her B.S. in geological engineering last December and began work on her doctorate this spring. She already holds two degrees in geology—a B.S. from the University of Washington in 1993 and an M.S. in 1995 from UAF. She is in a unique position to study frost heaving, a ubiquitous concern throughout the region and not

completely understood. She proposes to create a frost-heave model, targeting the mechanisms of thermodynamics and hydraulics, as well as surface and colloidal chemistry, and has been awarded an NSF fellowship. The model could be applied to pre-construction work in the field. Margaret will continue to teach undergraduate courses while working toward her Ph.D. She is a member of SWE, the Society of Mining Engineers, the Association of Engineering Geologists, and TBP.

Brian C. DiPaolo, TBP # 690

First in his class in biomedical engineering at Drexel University, Brian completed both his bachelor's and master's degrees in June before entering the doctoral program at the University of Pennsylvania. This year he headed the microgravity flight team to research the effects of reduced gravity on electrospun nanofiber formation. This project involved the use of NASA's KC-135 reduced-gravity simulator aircraft; it is the second time his team was chosen. For his master's thesis project, he is working in the area of neural-electrode-surface engineering—using biodegradable-polymer scaffolding to control the release of a bioactive drug at the implantation site—both engineered to decrease the amount of glial scarring around the electrode in order to record and analyze chronic, long-term pathology states of the brain. Studying nanobiological and cell engineering in graduate school, he hopes to engineer blood so it can be produced synthetically in a laboratory. Brian is a student pilot with solo certification in single-engine aircraft, an AF Reserve officer cadet, amateur-radio operator, and vp of the Engineering in Medicine and Biology Society.

Danielle N. Drury, TBP # 691

Danielle graduated from Mercer University in Macon, GA, with a degree in biomedical engineering. The top engineering student in a class of 122 seniors, she was awarded TBP and Whitaker Foundation fellowships to attend Georgia Tech. She has already been involved there during a summer internship at the Emory Center for the Engineering of Living Tissues. She studied the morphological effects of axial stretch on arteries in organ culture and made a poster presentation of the work at a symposium on campus. After her first year of classes, she plans to begin work on a thesis project in the tissue engineering of cardiovascular substitutes. Upon completing her doctorate, she plans to work in R&D for a medical-devices company. Danielle was Vice President of both Tau Beta Pi and Phi Kappa Phi honor societies and treasurer of both SWE and the Biomedical Engineering Club. She was elected to Gamma Sigma Epsilon and joined the National Tutors Association, Habitat for Humanity, and the premed and karate clubs. She played in the school's wind ensemble and flute choir.

Tanna R. Gilbert, BP # 692

Anna has received an NSF fellowship to continue her studies in mechanical engineering at Purdue University. Tied for the top in a department of 202 seniors, she intends to use her advanced degree to perform research to further technology in material applications, in particular to enhance the performance of high-temperature devices. The ability of metals to tolerate high temperature and extreme temperature gradients is enhanced by bonding a thin-ceramic thermal-barrier coating to the metallic substrate. The goal is to reduce the cracking of the coating and increase the life of the product. Applications include use in diesel and aircraft engines and gas turbines. Anna is a contributor on a patent pending for an innovative coupler for a positive-displacement pump. On the dean's list each semester, she held four named scholarships her junior year and was elected to Alpha Pi Mu, TBP, and Pi Tau Sigma honor societies. She is a student member of SWE and ASME and enjoys skiing and snowboarding.

Yedidya Hilewitz, TBP # 693

Yedidya is the recipient of fellowships from both the NSF and Hertz Foundations to attend Princeton University in the fall. He is number one in his engineering class at the Cooper Union where he majored in electrical engineering. On campus, he was a MATLAB instructor and director of the electronics materials lab, as well as co-vice president of the Association for Computing Machinery. He was elected to Eta Kappa Nu, served as Recording Secretary to the Tau Beta Pi New York Iota Chapter, and was active in the IEEE, Hillel, and LEAP. Interested in the computer since an early age, Yedidya has enjoyed his courses in digital-logic design and advanced-computer architecture, and he looks forward to taking courses in micro and asynchronous architecture. He hopes to implement new innovative techniques to improve the performance of critical circuits of microprocessors. Then, he will perform simulations and benchmark performance to identify poor design decisions and refine the circuits.

Steven G. Kuntz, TBP # 694

Steven completed his undergraduate education at the University of California, San Diego, and will be continuing his studies in bioengineering at the California Institute of Technology under an NSF fellowship and with an institute assistantship and stipend. He is the top-ranked student in an engineering class of nearly 1,500 students. He is continuing his studies in cell and tissue engineering and has research experience in two laboratories, having volunteered in the bioengineering lab calibrating glucose biosensors and undertaken a special project to determine the effects of minor pH and osmolar changes on sensor output. Another project was to study the effects of anti-oxidants on age-related sexual dysfunction in test rats. He is especially interested in the interrelation between cell signaling and the tissue structuring. He envisions a future in academe, teaching in conjunction with his research. Steven has been involved in several outreach programs sponsored through Tau Beta Pi's California Psi Chapter and the

ASCE. He was elected to Phi Beta Kappa and volunteered in the community.

Arda Kutlu, TBP # 695

Academically a star, Arda competed with 1.5 million students from his homeland Turkey and is at the top of the 200 offered the opportunity to study at any ranked university in the world. Now finishing at Texas A&M University, he is a 4.0 student in the industrial engineering program and the top student in an engineering class of 2,593. His interests are in planning and optimization of production systems, mathematics, and probability. He will be entering the doctoral program at Northwestern University in the fall to continue courses and research in operations management, logistics, and simulation. His career goal is to be a faculty member at one of the country's prestigious colleges. A student leader, Arda is president of Alpha Pi Mu, co-founder and president of the Association for Language Learning, webmaster for the IIE chapter, captain of the champion egg-launcher design team at the Texas Regional Engineering Conference, captain of the champion soccer team, and active in the Turkish Student Association. He is an Aggie school volunteer and a contributor to Habitat for Humanity.

Chyi Hwang Lim, TBP # 696

Chyi Hwang recently enrolled in the solid mechanics group in the mechanical engineering department at Arizona State University. He graduated in December, the top student in a class of 1,697. He has received a research assistantship and stipend to continue work under the direction of his major professor on a project funded by the Los Alamos National Laboratory. Chyi Hwang is exploring the problem of local microstructure of a material and the damage nucleation sites that result when that material is subjected to external loading. He is using electron microscopy and laser interferometry to detect large strains and is also involving statistical analysis. His honors thesis was based on research in fatigue-crack growth. As an undergraduate, he was active in the ASME and the SAE and served as president of Pi Tau Sigma honor society and the Malaysian Student Association.

Chance D. Meek, TBP # 697

Chance is a May graduate of Oklahoma State University in Stillwater; he majored in mechanical engineering. He has received a tuition fellowship and an assistantship to continue his studies at the University of Texas at Austin, where he plans to focus on dynamic and automatic-control systems performing mathematical modeling and control-systems design. He enjoyed studying vehicular dynamics and control; he modeled various automobile shocks and, based on vehicle response, selected the best system. He would look for further research opportunities in the area of shock absorption. He is also interested in the modeling and control of a computer disk drive, designing the read-write system to block out disturbances, such as shock and noise. During his undergraduate years, he was floor president and hall secretary for his dorm and a coordinator and tutor in the mathematics learning resource center. He was a student member of the ASME and the Association for Computing Machinery.

Timothy L. Morse, TBP # 698

A mechanical engineering graduate of the Cooper Union for the Advancement of Science and Art in New York, Tim has been awarded a Cornell University graduate fellowship which includes both tuition and an annual stipend. A 4.0 student and at the top of his class, he has enjoyed his research experiences, particularly the opportunity he had last summer at Columbia University as a participant in the REU program. He designed, constructed, and ran two experiments for plastically deforming single crystals of copper and aluminum under plane-strain conditions. The experience increased his knowledge of materials science and gave him the experience of using an electron microscope, a machine shop, and using X-ray diffraction techniques. Tim prefers experimental research to computational or theoretical research and in his doctoral program is particularly interested in the field of thermo-fluids. He was elected to Pi Tau Sigma and was active in the ASME. Tim was TBP's NY Iota Chapter President and participated on campus as a tutor, network administrator, and choir member.

Bradley D. Olsen, TBP # 699

Bradley has received generous support from the Hertz Foundation and U.C., Berkeley, to pursue graduate studies in chemical engineering. A 5.0 graduate of MIT, he has worked in four different labs developing applied polymers during the past two years. One summer he conducted research on pressure-sensitive adhesives and polymer gels for use in waterproofing membranes; another summer he held an internship developing polypropylene foams on a pilot-plant scale for automotive safety and wall insulation; in one lab, he worked on the chemical vapor deposition of biomaterials which resulted in a published paper; and for a local consulting firm, he worked on a project to measure the properties of polyethylene used in hip implants. A contributor to campus life, Brad served as a research mentor, a chemical engineering tutor, and an instructor in kitchen chemistry. He was captain of the intramural soccer team for two years, served as treasurer for the AIChE chapter, and enjoyed judging projects for the science fair.

James N. Reck, TBP # 700

James has received an NDSEG fellowship to continue his studies in metallurgical engineering at the University of Missouri–Rolla, where he recently completed his B.S. He was first in an engineering class of 1,429 students. He has accepted a proposal to start performing research on the development of novel techniques for micro-forming metallic glass and nanostructured metallic alloys. He will be investigating the use of superplastic nanostructured aluminum and

lanthanum metallic glass to create a high-aspect-ratio wrench spring. Fabricating components such as these may lead to the production of stronger and cheaper micro-components for industries using MEMS to create cell phones, personal electronics, and biomedical implants. Elected to Tau Beta Pi, Phi Kappa Phi, and Alpha Sigma Mu, James was a student member of ASM/TMMS and FEF. He enjoys the martial arts, serving as president of the Aikido club and treasurer of the fencing club, and participating in Shaolin Lohan Kung Fu. Juggling is a hobby, and he was historian and president of the campus club.

Swatee Singh, TBP # 701

A top-ranking engineering student at the New Jersey Institute of Technology, Swatee was a TBP Scholar last year. She majored in electrical engineering and also maintained a 4.0 average. An honors college student, she was elected to Tau Beta Pi and Eta Kappa Nu and held the office of president for the IEEE chapter last year. She was also secretary of the women's advisory board within the electrical and computer engineering department and helped to organize events. Last summer she participated in research on metal-oxide-semiconductor field-effect transistors (MOSFETs). She measured transistor characteristics, recorded results, gave frequent presentations, and wrote a final report. Her work on the project garnered her an NJI-TOWER award and she was invited to continue work on the project again this summer. Swatee discovered during her undergraduate years that she enjoys teaching and doing research. She has been offered a teaching assistantship at Purdue University in the fall where she plans to continue her research into digital-signal processing.

Nattavut Trivisvavet, TBP # 702

Nattavut holds a 4.0 grade point average from Brown University where he has majored in electrical engineering and has also satisfied all requirements for an A.B. degree in the visual arts. A member of the university's cum laude society, he was elected to both Phi Beta Kappa and Tau Beta Pi. On campus, Nattavut has been engaged as a research assistant, designing and remodeling a laser system for a multi-beam optical stress sensor and designing and fabricating microelectronic electrode arrays for neural recording. A resident of Bangkok, he returned to Thailand last summer to intern with an investment banking firm; he researched the country's telecommunications industry and worked with a team to update and revise the debt capital market. He will be combining his academic and business experiences to continue advanced studies in industrial engineering and operations research in graduate school and has received a fellowship to Stanford University in the fall.

Vernella V. Vickerman, TBP # 703

A research assistant in the chemistry department at Howard University, 21-year-old Vernella is at the top of her engineering class and within the next several years plans to complete her advanced degrees in biochemical engineering. She has received a graduate fellowship to attend MIT in the fall. Eventually, she hopes to join the teaching staff of a college or university. Her interest in drug-delivery systems was sparked after several of her colleagues gave a presentation during a class in bioprocessing. She is especially intrigued by the use of polymers in the controlled delivery of genetically engineered proteins and DNA. For her undergraduate research, she has investigated ion optics for a cross-beam apparatus, worked on a NASA solar-sail propulsion project, and explored biocompatibility of polymer surfaces and surface energy. She is a member of Tau Beta Pi, the AIChE, the National Society of Black Engineers, and the American Institute of Chemical Engineers, which she served as vice president last year.

Yew Kong Wan, EI, TBP # 704

Mark will be continuing his studies at the University of California, Berkeley, next year, pursuing a master's degree in structural engineering with the aid of a defense science & technology fellowship through an agency in Singapore with the expectation that he will return to his homeland to work for six years upon graduating. He was the lead structural engineer on the concrete-canoe team, pushing the limits of concrete technology by introducing discontinuous polymeric fiber reinforcement to replace some of the conventional wire. Mark also participated in the earthquake engineering scholars course organized by the Pacific Earthquake Engineering Research Center. In graduate school, he hopes to further his knowledge of earthquake-resistant structural design and materials. His long-term goal is "to advance the practice of civil engineering in Southeast Asia, building safer buildings at an economical price." Mark has served as a research assistant in CE and a department reader in mathematics. He is a member of TBP, Chi Epsilon, the ASCE and the Singapore-Malaysia Student Association.