

Tau Beta Pi Fellows - 2002 - 2003



Centennial Fellow No. 17 - Ziga Ivanic, E.I.

After leaving Slovenia at 16 to play sports, Ziga was recruited for the Canadian Junior Hockey League and then for Norwich University's ice-hockey team. He helped that team win the 2000 NCAA National Championship. For the past two years he was also the captain and MVP of the university men's varsity tennis team. The 2002 class valedictorian, he is a 2001 Tau Beta Pi Nagel Scholar and was honored as a 1999, 2000, and 2001 university scholar, as well as the recipient of the ASME "Biechy" scholarship for 2001. Ziga exhibits not only high academic achievement, but also leadership skills. Since the summer of 1998, he has returned to Ljubljana, Slovenia, to head and direct the Ivanic Goalie School; he is in charge of marketing and finances, as well as training instructors and organizing practices. For the past three summers, he has served as a sports activities coordinator at a campsite for 5,000 in Vrsar, Croatia. A mechanical engineering major, Ziga plans to attend MIT in the fall to further research automotive engines, exploring efficiency levels, hybrids, and fuel-cell technologies.



Fife Fellow No. 53 - Jason M. Aughenbaugh

Control theory and dynamic systems are areas of mechanical engineering which Jason plans to explore this fall at the Georgia Institute of Technology. Jason graduated with a 4.0 from Princeton University in June 2001, while majoring in operations research and financial engineering. He has been working for the Mitre Corporation this past year. He had already worked in a commercial engineering environment while an undergraduate-in the design and control of systems and machines-and had additional experience in financial engineering with another company. It was then that he realized an advanced degree in engineering would be beneficial. While an undergraduate, he served as Vice President of the New Jersey Delta Chapter, was a member of Phi Beta Kappa, and an associate member of Sigma Xi. He continued his participation in the university band this past year as an alumnus, traveling to numerous cities throughout the East and practicing for 6-12 hours a week. He also enjoys sports and played intramural volleyball and broomball.



Fife Fellow No. 54 - Mark C. Fersdahl

A leader on the campus of South Dakota School of Mines and Technology, Mark was President of Tau Beta Pi's South Dakota Alpha Chapter, recording secretary for Eta Kappa Nu, and treasurer of the IEEE chapter. The top electrical and computer engineering student, Mark will complete his undergraduate education in December before entering graduate school at his alma mater next January for further studies in remote sensing. He was introduced to this field following two summer internships at the U.S. Geological Survey's earth resources observation system data center, where satellite data is received, processed, and stored. He worked in the Landsat 7 program within the image assessment system, which is responsible for monitoring incoming data and studying anomalies that affect the satellite's reliability. Rather than taking a research approach, Mark plans to take as much coursework as he can-from signal processing to science applications. He will learn about remote sensing as an engineer cooperating with scientists on satellite sensing components.



Fife Fellow No. 55 - Juliana L. Fortune, E.I.

Embarking on her second career, Julie already holds a B.S. in biochemistry, has worked for 11 years in the pharmaceutical industry, and is now completing a master's degree in engineering management at the University of Alabama in Huntsville. Last May, she earned a B.S. in industrial engineering at UAH, where she was selected the outstanding senior in her field. Throughout school, she worked as a junior engineer for a major engineering company in the theater-missile-defense arena. A current NASA project is to determine metrics for meeting system requirements on new software. As a graduate student, she had the opportunity to also teach a course in engineering economy. In graduate school at her alma mater, Julie plans to earn a doctorate in either quality engineering or engineering management, along with licensure. She is a member of Tau Beta Pi and Alpha Pi Mu, and has been active in the IIE and ASEM student chapters. She is an author on several papers relating to biopharmacy and has published in the Journal of Industrial Engineering Design.

Fife Fellow No. 56 - Andrew R. Schnell

Andrew completed his undergraduate education at Tennessee Technological University in Cookeville and will continue his graduate work in mechanical engineering at the Georgia Institute of Technology. He is pursuing a doctorate in micro-electromechanical systems (MEMS). He has taken interdisciplinary, introductory coursework in the field and plans to become a practicing engineer and seek licensure after his formal studies. Andrew is broadly



educated, having served as a peer mentor to a survey course in British literature and a contributor to campus publications-as a reporter, cartoonist, and honors handbook author. He has chaired the honors council and served as president of the Associated Scholars Guild, making presentations about the honors experience at national, regional, and state conferences. He has been an AIAA and ASME representative and was elected to these honor societies-Tau Beta Pi, Alpha Lambda Delta, Kappa Mu Epsilon, Phi Kappa Phi, Mortar Board, Omicron Delta Kappa (president) and Pi Tau Sigma (president).



Spencer Fellow No. 47 - Noel M. Ziebarth

A graduate in biomedical engineering from the University of Miami, Noel plans to continue her ophthalmic research at her alma mater. Her goal is to apply biomedical engineering concepts and principles to the eye through the development of new ophthalmic instruments. Eventually, she hopes to continue working at an academic institution as both a researcher and an educator. During the tenure of her fellowship, she will participate in research relating to the "Restore Accommodation" project-a new procedure in cataract surgery whereby the lens is removed and replaced with a flexible polymer that maintains connections to the ciliary muscles and zonules, allowing a person's eyes to accommodate. Her goal is to develop a microsurgical tool to make this mini-capsulorhexis procedure possible. Elected to Omicron Delta Kappa leadership honor society, Noel has served as Tau Beta Pi's Florida Beta Chapter President. She is an organist/pianist for the Trinity Lutheran Church.



King Fellow No. 41 - David J. Quinn

President of Tau Beta Pi's Pennsylvania Theta Chapter this past year, David was appointed by the dean to membership in the Academic Council for Information Technologies, elected to Pi Tau Sigma, and was ASME Region III student representative. The top graduating senior in the department of mechanical engineering at Villanova University, he plans to continue academic studies in the doctoral program at the University of Cambridge. Several summer internships-one in an industrial setting and the other at MIT-enhanced his interest in materials, particularly their behavior and design at the microscopic level. He enjoys working in a team environment and would be challenged by cross-disciplinary research in materials behavior modeling, MEMS, and nano-technology, particularly as they pertain to power generation, such as micro-scale turbines and development of small-scale devices used in surgical procedures. Dave uses his computer-related capabilities as a website developer and lighting and sound designer. He is president of a music activities stage crew.



Sigma Tau Fellow No. 29 - Brandy S. Wieggers

Graduating at the top of her class at the University of Idaho, Brandy majored in both biological systems engineering and mathematics. She plans to continue her graduate work in the doctoral program at UC, Davis, in the fall, working within the applied-mathematics graduate group and looking forward to a period of medical applied-mathematics research. An NSF-sponsored undergraduate researcher, she has experienced: one summer at Penn State, exploring topics in mathematical biology modeling scientific data; the completion of an individual research project at the Bermuda Biological Station both collecting and analyzing data; and this past summer at OSU's biostatistics REU, where she used math and statistics to describe the shape and size properties of cancerous versus normal prostate cells. On campus, Brandy was President of Tau Beta Pi's Idaho Alpha Chapter and active in the residence hall association. A participant in Americorps higher-education learning partners, she exceeded 500 hours of community service.



Williams Fellow No. 23 - Joan K. Tisdale

A May graduate of Auburn University in Alabama, Joan has won an NSF fellowship for advanced studies in energy conservation at MIT. She is the top graduating senior in aerospace engineering and has held a summer internship with Lockheed Martin Astronautics as a test engineer. This year, she served as president of Sigma Gamma Tau, aerospace engineering honor society, and was active in Tau Beta Pi and Phi Eta Sigma. As a summer intern for the National Renewable Energy Laboratory, she worked on projects that integrated renewable-energy technology with specific energy needs of U.S. federal buildings. Joan was able to observe how the work directly helped the environment by reducing greenhouse-gas emissions. That internship, coupled with her experiences as a tutor and counselor, have inspired her to pursue a career in academe. Her ambition as a professor and researcher is to help create products that conserve and renew energy and to help reduce our country's dependence on foreign fossil fuels.

Deuchler Fellow No. 23 - Irene C. Pau, E.I.

A May graduate in environmental engineering from the University of California, Irvine, Irene will begin work towards her master's degree this fall at Stanford University. Her research interests lie in the area of sustainable water supply, particularly the process of desalination and its



environmental effects. On a large-scale basis, cost, efficiency, diversion of seawater, and waste disposal need to be considered, as well as the effects on marine life. As an undergraduate researcher, she has had some experience evaluating water quality for one of Southern California's beach cities. This year, Irene is conducting an experiment involving the dynamics of interfacial waves. A participant in the campus-wide honors program, she has held leadership positions as Vice President of Tau Beta Pi's California Tau Chapter, as treasurer of Chi Epsilon, and as a member of the ASCE's concrete-canoe team. Ever-present interests include studying piano and ballet, attending Chinese School, and learning Kung-Fu. She is a member of the Environmental Defense Group and has joined community efforts to improve the beaches.



Maddox Fellow No. 7 - Devin L. Shaffer

President of the Engineering Student Council and senator in the Student Government Association at Oklahoma State University in Stillwater, Devin has been heavily involved in campus and community activities. He has served as ASCE secretary and delegate to a spring district conference on leadership, editor for Mortar Board, and as the college ambassador to an international industry study in Japan and Singapore. The top civil engineering student, Devin was elected to Tau Beta Pi, Chi Epsilon, and Phi Kappa Phi honor societies. He will attend MIT this fall to begin his master's degree studies in environmental and water-quality engineering. His interests lie in environmental protection, and he hopes to address the following issues: discovery and assessment of environmental risks; strategies of preventing environmental pollution; treatment processes and technologies to remedy pollution sites; and management of environmental risk in the context of complex economic and legal constraints. Summer internships have offered a variety of project experiences.



Matthews Fellow No. 5 - Allan B. Wollaber, E.I.

The top engineering graduate in a class of more than 700 students at the University of Tennessee, Allan will continue his studies in nuclear engineering at his alma mater under a graduate research assistantship. His thesis work on core design for IRIS (International Reactor Innovative and Secure) will involve about 20 hours weekly at the Oak Ridge National Laboratory, where he will be working on computer code design. IRIS is a next-generation nuclear reactor currently in the preliminary design phase; design work is being performed in many sites around the world. Allan's ambition is to develop an IRIS core that will not need soluble boron. During previous summers, he worked in systems and design engineering at project-design headquarters in Pittsburgh. He was elected to Tau Beta Pi and Phi Eta Sigma honor societies and is active in the American Nuclear Society. During his sophomore year abroad, he played on the lacrosse team at the University of Wales, Swansea. He participates in the UT climbing club and is an Eagle Scout.



Nagel Fellow No. 5 - Emily D. Sterzin, E.I.

The President of Tau Beta Pi's Massachusetts Beta Chapter last year, and the 2000-01 vice president of Chi Epsilon, Emily graduated at the top of her class in February from the University of Massachusetts Amherst. She held other leadership positions- secretary/webmaster for the Society of Women Engineers and secretary of the ASCE student chapter-and remains active in the Institute of Transportation Engineers. She has received a teaching assistantship to carry on advanced studies in civil engineering/transportation at MIT this fall. Always annoyed by traffic jams, she decided after her intro course in traffic engineering and intelligent transportation systems that she had discovered her career path. As a research assistant, she participated in a project evaluating a travel-time system, and for her departmental honors project took on a human-factors study in horizontally redundant signing in the I-93 Central Artery Tunnel in Boston. Emily is working on a project to design and implement an ITS system at Yosemite National Park.



Tau Beta Pi Fellow No. 664 - Sharmin Basher

Number one in an engineering class of 470, Sharmin is a May graduate in electrical engineering from the University of South Carolina in Columbia. She is enamored with the elegance of control systems, which are used throughout society and can be found in medical, mechanical, electrical, and other physical systems, particularly in medicine. Control systems are used to deliver drugs to patients suffering from diabetes, heart disease, and kidney failure, and they regulate blood sugar, cholesterol, and protein output. Drawn to the field of biomedical engineering, Sharmin has entered the doctoral program at her alma mater, where she plans to apply control technology to cardiology. Throughout her undergraduate career, she took additional courses in the biological sciences and chemistry. She received numerous scholarships and was elected to Tau Beta Pi, Eta Kappa Nu, and Phi Beta Kappa honor societies. She presented a paper entitled "Interactive Online Course Delivery" at a conference on distance education. During summers, she works as a web designer and developer.

Tau Beta Pi Fellow No. 665 - Aron K. Bellorado

The top graduate of the University of Massachusetts Lowell with a degree in electrical



engineering, Aron will continue his studies in communication theory and signal processing at Harvard University in the fall. His interest became focused as he worked on a voice-activated environmental control system to aid the disabled in their daily activities. He has also been involved in research at the center for advanced computation and telecommunications on campus. There, he has been studying effects on queuing behavior in conjunction with system performance under various traffic distributions. He is a peer tutor at the learning center and has served on the engineering council. First in his class, he was elected to Tau Beta Pi and Eta Kappa Nu and is an Alpha Lambda Delta scholar, a Hoff scholar, a technology fellows scholar, and a dean's scholar. His co-op assignments presented challenges. For two years, Aron worked on a testing team for an area network firm, analyzing the root causes of network product malfunctions on bridges and routers.



Tau Beta Pi Fellow No. 666 - Alan S. Brannon

An electrical engineering graduate of Clemson University, Alan plans to continue his studies at the University of Colorado at Boulder in the fall to study electromagnetics. His co-op education experience in R&D with a major company designing circuits for wireless communication systems has excited him about the future of RF microelectronics and micro-machining. He is particularly interested in organic-material micro-machining and, integral to this work, polymer chemistry. He is completing honors research in microwave resonators. He has already finished one honors project in a quite different field, robotics, while on exchange at the University of Newcastle in Australia. That work resulted in a paper which he co-authored and which was presented to the IEEE International Conference on Robotics and Automation. The project was to implement a "robot ballboy" to find, track, and collect tennis balls on a court. Alan is a student member of both the NSPE and IEEE and was elected to Tau Beta Pi, which he served as Cataloger, and Eta Kappa Nu. He was a Calhoun honors scholar.



Tau Beta Pi Fellow No. 667 - Peter B. Brende

Digital signal processing and the two related fields of communications and digital logic systems are areas that Peter proposes to study while working towards a doctorate in electrical engineering at Stanford University in the fall. He ranked number one in his engineering class at Duke University and performed independent study in speech coding. Realizing that theoretical signal-coding algorithms are worthless without an understanding of hardware implementation, he plans further studies in computer architecture. Coupling his involvement in teaching and research to industry, Peter hopes to act as an advisor or consultant to burgeoning communication-technology companies. He has enjoyed his employment at a small internet start-up company, where he worked independently to adapt different programming languages and protocols. He was team captain and manager for several intramural sports and contributed to the community through participation as a resident of Maxwell House. A teaching assistant, he was elected to Tau Beta Pi and Phi Beta Kappa.



Tau Beta Pi Fellow No. 668 - Alice Cao

Alice majored in industrial engineering, graduating first in her engineering class of 320 at Columbia University and is remaining at her alma mater to study financial engineering. She is attracted to the diversity of the field-from the design of unit operations to the control of production and systems. She developed a passion for stochastic modeling, optimization, simulation, and economic theory behind finance markets and applications. Alice is fluent in four languages, which should help her make comparative studies-to determine how foreign businesses function on a global level and to try to interpret modern economic events. Understanding the American model is strategic. She hopes to bring value-based solutions to clients and businesses to assist them in the decision-making process. She has worked for brokerage firms in New York, using engineering principles in conjunction with economic theory to solve complex strategic problems and to deliver innovative solutions. A devoted community activist, she has worked in health awareness and area restoration.



Tau Beta Pi Fellow No. 669 - Amy Y. Chen

A May graduate in biomedical engineering from Washington University in St. Louis, Amy has been a Howard Hughes and an NIH undergraduate research fellow. She hopes to become a lab director in a burgeoning tissue-engineering company after completing her Ph.D. at MIT. Her research objective includes studying biopolymers, controlled drug release, and scaffolding techniques that are biologically feasible. Her undergraduate research on cardiac development and spinal-cord injuries has led her to explore cell transplantation and tissue modeling and to study biomechanics and materials engineering. Tissue engineering could be used to remediate skin, liver, and cardiac injuries. Amy has served as a teaching assistant in senior-level chemical engineering laboratory and as a teaching assistant in junior-level biomedical engineering course, supervising labs and running student help sessions. She published a CD-ROM biochemical experiment that was presented during an ASEE annual conference.

Tau Beta Pi Fellow No. 670 - Richard T. Colvin

The top-ranking student and computer-science graduate of Washington University in St. Louis, Richard is excited about his continuing studies in graphics, artificial intelligence, and robotics. During introductory courses, he created a "learning" tic-tac-toe player. That project reinforced



his interest in human-computer interaction(HCI). Video games are a ubiquitous example of learning as fun. As a graduate student, he would like to help develop new ways of creating interactive learning, and he plans to attend Carnegie Mellon University to study entertainment technology because of the school's advanced HCI research. An excellent programmer, he has had hands-on experience as a lab assistant working on a statistical model of the performance of sonar-range-finder sensors. A campus leader, Richard is president of his fraternity and served as a staff intern for Beta Theta Pi's 162nd general convention last summer. He enjoys intramural sports-football, softball, bowling, and basketball.



Tau Beta Pi Fellow No. 671 - Gilberto Contreras

The top-ranking electrical engineering graduate of the University of Texas at El Paso, Gilberto has participated in the university's NSF- sponsored neuro-fuzzy systems research group during summer-research projects at Princeton University and the IBM Watson Research Center. His work in digital design and simulation has enabled him to become proficient in VHDL and FPGA technology as well as general neural-network operations. He will attend Princeton in the fall to work towards a Ph.D.; he hopes to work for a privately owned research venture before returning to his home country Mexico. There, he would like to form his own research group to provide training and an environment for individuals to perform top-quality engineering research and development. Gilberto organized the computer society's first annual international design competition and was a team leader. Elected to Tau Beta Pi and Alpha Chi, he was an IEEE student member and served as a member of the electrical and computer engineering student advisory board.



Tau Beta Pi Fellow No. 672 - Benjamin J. Fasenfest

An electrical engineering graduate of the University of Houston, Ben has participated in the NSF-funded research program for undergraduates. Because of his keen interest in applied electromagnetics and his coursework in antenna design, he was assigned to a project on dielectric resonator antennas. During the summer, he learned how to use an HP 8510 network analyzer and an anechoic chamber to measure impedance and radiation patterns. His summer success led to two research scholarships, and he continued to take experimental data and learned how to use Ansoft HFSS and Ensemble to simulate antennas, work that enables a researcher to experimentally test antennas that would be difficult to fabricate. Ben will complete advanced work in computational electro-magnetics at his alma mater. Because of the difficulty in finding closed-form solutions to problems of electromagnetic compatibility and on-chip interconnects, electromagnetics is the most viable alternative. He hopes to design in higher and higher frequencies for wireless communication and computing.



Tau Beta Pi Fellow No. 673 - Ariel M. Herrmann

A May graduate in mechanical engineering from Stanford University, Ariel has won an NDSEG fellowship to continue his studies at MIT. His independent research work has been recognized in professional journals, and he has studied medical robotics at the Fraunhofer Institute for Production Systems and Design Technology in Berlin. Since June 1997, Ariel has been evaluating cervical spine biomechanics through the Chicago Institute for Neurosurgery and Neuro-research. He analyzed the clinical performance of implanted hardware in spinal surgery and developed a novel method for measuring lateral cervical X-ray films, even overseeing a study of its validity. His co-authored and poster presentations were presented at the annual meetings of neurological surgeons. His goal in graduate school is to explore biomedical instrumentation and medical-device design more fully. He was elected to Tau Beta Pi and Phi Beta Kappa and served as a sponsoring officer for the cycling team.



Tau Beta Pi Fellow No. 674 - Nathaniel D. Kirkpatrick

The top graduating senior in the college of 366 engineering majors at the University of Wyoming, Ned plans to continue his studies in biomedical engineering this fall at the University of Arizona. He is interested in developing new medical devices and systems to advance medical treatment. His summer research on a project sponsored by the DOE was in photovoltaics, and during the year he worked on blue-light dermal imaging design for his digital-image-processing class. He and his partner presented their results at the Rocky Mountain Biomedical Symposium this past spring, and they designed a personal heart-rate monitor for their senior project. The monitor will be portable and exercise based. After receiving an M.S. degree, he plans to work for a medical-research company developing advanced medical systems and devices. On campus, Ned was elected to Tau Beta Pi and Phi Kappa Phi honor societies and was a founding member and historian for the biomedical engineering society. He also participated in intramural sports.

Tau Beta Pi Fellow No. 675 - Jeffrey R. McCutcheon

Jeff is eager to begin advanced studies in chemical engineering at Yale University in the fall and already has substantial professional experience as a co-op student at the University of Dayton. He has been involved in three different areas of research. The first project took place at Wright Patterson AFB, where he worked in the tribology R&D department examining and

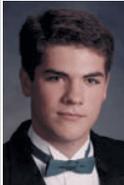


testing composite thin films and their ability to reduce friction in moving parts. Two other projects for a sensor design and manufacturing company involved working with micro-fluidic enzymatic sensors used to detect blood glucose and with optical turbidity probes to test water quality. Environmental or energy engineering might be topics for graduate research, and he eventually might work in a laboratory environment testing new technologies. On the Dayton campus, Jeff was Vice President of ???, president of the Society for the Advancement of Materials and Process Engineering, and treasurer of the AIChE. He is a member of the ACS and was elected to Omicron Delta Kappa.



Tau Beta Pi Fellow No. 676 - Matthew J. Panzer

The top engineering graduate at the University of Delaware, Matt was the recipient of an all-tuition Eugene DuPont memorial distinguished scholarship during his undergraduate years. He has won an NDSEG fellowship and will enter the doctoral program in chemical engineering at the University of Minnesota-Twin Cities. He is particularly interested in nano-technology and surface science. During his second summer he was a research assistant in the protein technology group at the University of Agricultural Science in Vienna, Austria. There, he measured the flow characterization of CIM monolith disks and extended the two-film model to quantify the mass-transfer processes in this system. An associated paper was accepted for publication. Last summer for a pharmaceutical process technology group, he converted semi-automated clean-in-place cycles to automated cycles for a new product. Matt was president of the AIChE student chapter, vice president of Alpha Lambda Delta, and a teaching assistant. He was elected to Tau Beta Pi, Phi Kappa Phi, and Omega Chi Epsilon.



Tau Beta Pi Fellow No. 677 - Norbert H. Rawert Jr.

Graduating at the top of his class of more than 740 students at the University of Kentucky, Bert will attend the University of Massachusetts at Amherst in the fall to continue graduate work in software engineering. A computer science engineering major, Bert's long-term goal is to become a professor at a research university. After several summer IT internships, he observed the complexities of software development and resolved to contribute to improving the requirements analysis, software maintainability, and reliability. He also enjoys teaching, and he wrote an 11-lesson curriculum for teaching computer skills to underprivileged youth at a local Kids' Cafe. He has made presentations to the Kentucky Board of Education's student technology leadership program, which aims to educate high-school students about careers in technology. A member of TBP's Kentucky Alpha Chapter, he was a student system administrator for the UK laboratory for advanced networking, was active in the Association for Computing Machinery, and was vice president of Upsilon Pi Epsilon.



Tau Beta Pi Fellow No. 678 - Adegbemiga I. Taylor

Gbenga entered Howard University's systems and computer-science program in the spring of 1999 after completing his secondary-school education in Nigeria. A research assistantship at the university's future aerospace technology center exposed him to many aspects of the computer-science field. The following summer he assisted in processing NASA satellite binary data to ASCII using C and placing it into a defined database format using Java. During his junior year, he gained an interest in distributed computing, and last summer he worked as a member of a systems security group for a national laboratory. For two years, he has been a teaching assistant in introductory classes in programming, data structures, and engineering. This fall he begins advanced work in distributed computing at Pennsylvania State University. On campus Gbenga was: Treasurer of the Tau Beta Pi Chapter; senior-class vice president of the college of engineering, architecture, and computer sciences; and a member of the AIAA, American Computing Machinery Society, and the NSBE.



Tau Beta Pi Fellow No. 679 - April R. Tumej

An Alaska resident, April attended Montana State University in Bozeman and graduated last December with a major in chemical engineering. She has received a GAANN fellowship and will continue her studies in environmental engineering at the University of Colorado at Boulder. Her interest in bio-remediation was sparked by her summer research with the center for biofilm engineering, where she became fascinated with the interaction between microbiology and engineering. A potential thesis project might involve: using strains of bacteria to bind harmful metals or chemicals; optimizing a bio-remediation process; or developing testing methods when bio-remediation is moved from in vitro to in situ conditions. She plans to join an engineering consulting firm or industrial company after obtaining her master's degree. On campus, April served as vice president of both Alpha Lambda Delta and the AIChE student chapter and was elected to Tau Beta Pi and Phi Kappa Phi honor societies. She attended Budapest University as an international exchange student.

Tau Beta Pi Fellow No. 680 - Chester D. Vaughan IV

Chip is from Fairbanks and is one of six children, all of whom were home-schooled. He funded his undergraduate education at the University of Alaska Fairbanks with income earned



from his family's bicycle retail and service store, where he worked full time and supervised maintenance and purchasing. The top M.E. graduate, Chip has designed and constructed several tools, one for fabricating mountain-bike fenders and another to assist in reinforcing roof structures. Now 24 years old, he has completed about 1/3 of the coursework towards an M.B.A. His goal while at MIT is to address the lack of building products and materials truly suited for arctic conditions with temperature differentials of 145°F (-55°F winter and 90°F summer). He hopes to design and manufacture proper arctic-grade building components-cold-temperature sealants, foams, insulators, and composites-and to complete his M.B.A. He served as Tau Beta Pi Alaska Alpha President and was a member of the ASME and Associated Students of Business chapters. He was his city's soccer referee assigner and cycles 1,250 miles annually.



Tau Beta Pi Fellow No. 681 - Robert J. Webster III

Graduating in electrical engineering at the top of his class of more than 650 students at Clemson University, Bob has won an NSDEG fellowship to the Johns Hopkins University. Primarily interested in designing and constructing next-generation robots, he draws his inspiration from nature-biological systems that appear exceptionally good at challenging tasks. Emulating the flexible snake, elephant trunk, and octopus tentacle might lead to a better understanding of robot arms. Thin, flexible robots might better maneuver in dangerous, hostile, and cluttered environments. He has already led a project on a biologically inspired inchworm robot for pipe inspection and performed undergraduate research in Australia on mobile robotics. Elected to Tau Beta Pi and Eta Kappa Nu, Bob is a student member of the IEEE and has a paper under peer review for the International Conference on Robotics and Automation. The NSF has supported his attendance to IEEE conferences in New York City and Singapore. He enjoys intramural sports and played intercollegiate soccer.

Tau Beta Pi Fellow No. 682 - Mark R. Wimer

The top engineering student and civil engineering major at Ohio Northern University, Mark has always appreciated both the engineering function and beauty of bridges. After completing a master's-degree program in structural engineering at Lehigh University, he plans to join a consulting firm designing and building bridges. He has chosen to concentrate his advanced work in the design of reinforced concrete bridges, rather than structural steel. He already has experience through the university's co-op program-he designed a four-span reinforced concrete-box-beam bridge and all associated roadways for a consulting firm. Additionally, he took courses in business administration. Mark was the President of Tau Beta Pi's Ohio Iota Chapter, was 1998-99 president of Phi Eta Sigma, and participated in the chapter activities of Phi Kappa Phi and Kappa Mu Epsilon (mathematics honor society). He is a student member of the ASME and participated in ASCE's steel bridge competition this past spring. For the past four years, he has played intramural basketball and church softball.



Tau Beta Pi Fellow No. 683 - Serena H. Wong

Even while an undergraduate, Serena has been able to contribute as a researcher at the pre-polarized MRI laboratory at Stanford University in an effort to develop a cost-effective MRI system. Patients would have improved accessibility and more accurate and efficient diagnosis through success in reducing costs of imaging technology and developing new non-invasive diagnostic tools. During the next three years, Serena plans to develop non-invasive methods to detect arterial blockages, allowing early detection of restenosis, which occurs in 30-40% of patients within six months of angioplasty. A magnetostriuctive stent inserted during angioplasty would aid in measuring arterial blood velocity. Continuing her graduate work at Stanford as an NSF fellow, she will study RF circuit design, material science, and medical imaging. A Tau Bate and recipient of a president's award for academic excellence, she is a research assistant at both the pre-polarized MRI laboratory and the biocomputation center.



Tau Beta Pi Fellow No. 684 - G. Michael Youngblood, E.I.

Michael has eight years of practical naval engineering experience and several years of software engineering work in industry. Now 32 years of age, he earned his associate degree in nuclear engineering technology from Thomas Edison State College in 1995, and in 1999 he graduated with an honors B.S. in computer science engineering from the University of Texas at Arlington, where he is now working towards his doctorate. His goal is to leverage the work he has done in autonomous agents and spatial learning as an undergraduate and the work in cognitive architectures as a master's student to create A.I. architectures and systems to control objects within "smart buildings." He has joined the "MavHome" project, conducting research in the smart-home lab to create buildings for the future. While in the U.S. Navy from 1988-96, Michael served as a first-class machinist mate for nuclear-powered submarines and received medals for conduct, achievement, and defense during the Persian Gulf War. He is a member of ACM, the IEEE and its affiliated computer society, and the National Archery Association.