Hurricanes, earthquakes, and high winds all intrigue Nick Jones. Now as dean of the Engineering school to which he devoted 16 years, he takes the measure of other challenges on the horizon.

By Diana Whitman

Arriving in Baltimore on the heels of Hurricane Charlie, Nicholas P. Jones, an expert in structural dynamics and wind engineering, returned last August to the Johns Hopkins University. A long-time faculty member and former chair of Civil Engineering at the Whiting School of Engineering, he came back to Hopkins after two years of heading the University of Illinois at Urbana-Champaign’s Department of Civil and Environmental Engineering, a large and distinguished department. This time at Hopkins, Jones takes on his greatest challenge yet: serving as dean of the Whiting School.

Originally from New Zealand, Jones came to the United States after receiving a Bachelor of Engineering (civil, with honors) from The University of Auckland. He earned his master’s degree (1981) and his PhD in Civil Engineering (1986) at Caltech. He then joined the Hopkins faculty as an assistant professor of Civil Engineering, and rose through the ranks to chair his department.

At Hopkins, Jones worked with Robert H. Scanlan, who was his mentor and frequent collaborator, to conduct wind engineering research on long-span bridges in sites ranging from St. Petersburg, Florida, to Houston’s Fred Hartman Bridge, and as far away as Japan. Jones also has been involved in the structural analysis of earthquake damage. He has collaborated with colleagues in the Bloomberg School of Public Health on the epidemiology of injuries in connection with the 1989 Loma Prieta earthquake in California. Another area of his interests is how wind affects low-rise buildings. In one of the few research projects of this type, Jones has been studying the effects of high winds on low-rise structures, such as the average two-story home, at a test house on North Carolina’s Outer Banks.

Commenting on his research, Jones observes, “I’m driven by solving real problems, and I always like to measure or observe what actual structures are doing...this often means getting out in the field and making measurements on full-scale bridges and buildings.”

Engineers are known for their love of detail, and so here are a few more tidbits about Nick Jones. Along the way in his career at Hopkins, he earned tenure as a full professor, served as an adviser for nearly 40 master’s and PhD students, and published dozens of research papers. Two years after arriving on campus, he was named the 1988 Maryland Young Engineer of the Year; the following year, the National Science Foundation chose him as a Presidential Young Investigator. He served on the Board of Directors for the American Association for Wind Engineering and on the Seismic Effects Committee of the American Society of Civil Engineers’ Structural Engineering Institute. Among other honors, he still edits the Journal of Wind Engineering and Industrial Aerodynamics.

Somewhere in between his research, teaching, and professional activities, Jones also found the time to take on leadership roles at Hopkins, including as a member of the Homewood Academic Council and as chair of the C21 Strategic Study Group on The Undergraduate Program.

In commenting on Jones’ return to Hopkins, President William R. Brody said, “Nick has outlined a compelling vision of engineering education, and particularly of the Whiting School’s role in educating citizens and future technology leaders. He has the values, skills, and experience to help the Whiting School build on its considerable strengths and achieve the next level of national prominence.”

Refining Hopkins Engineering: a Look Ahead

The Whiting School has a reputation as one of the nation’s top-ranked engineering schools, especially remarkable considering
its relatively small size. This high regard is reflected in the most recent U.S. News & World Report rankings, which placed four of the School’s graduate departments in the top 20 nationally and ranked its undergraduate programs at 13th overall. Although this is one highly visible measure of the success of Hopkins Engineering, it is by no means the only measure, as Jones discusses in the following paragraphs. In looking ahead at how the School can build its reputation, he shares his ideas on improving the undergraduate education experience, strengthening interdisciplinary research, encouraging diversity, involving alumni and friends, and the concept of leadership.

A Signature Experience for Undergraduates

“One of our key strengths in the Engineering school is the integration of an undergraduate education program into the context of a research university,” says Jones. Hopkins encourages students to pursue research early by involving them in initiatives such as the Provost’s Undergraduate Research Awards, as well as other less formal programs. “I would like to see us build on this undergraduate research experience in the future and fully integrate this type of experience into the fabric of our undergraduate education,” the dean adds. “Research experiences are a good opportunity for exposing the students to types of thinking and approaching problems in ways that aren’t necessarily taught in the classroom.” To further this effort, he has convened a committee to look at changes to the undergraduate curriculum and to report its recommendations by this spring.

Building on Strengths through Diversity

Addressing the issue of diversity at the Whiting School remains a priority. Of its full-time students, only 25 percent are females and an even smaller percentage are minorities. Though these percentages are somewhat better than at other engineering schools across the nation, according to Jones, “Approaching the challenging problems that face us as engineers, and as a society, with a diverse group of individuals—where diversity is defined very broadly—is critically important.” Plans are under way at the School to reinforce efforts to attract a more diverse student body. These include targeted recruitment, additional outreach programs and visibility with pre-college-level students, and mentoring plus other initiatives to retain undergraduates once they arrive on campus.

Continuing Interdisciplinary Connections

As many of its graduates know, Hopkins Engineering is an interesting mix of expertise, disciplines, and cross-disciplines. Although there are nine departments and more than a dozen research centers, the School’s faculty and students often cross boundaries and work collaboratively to approach and solve engineering problems in new ways. Examples abound in areas such as the emerging field of bio-

nano engineering and computational sciences, to name just two. “Our faculty are terrific at leading in research by recognizing the important opportunities that exist at the boundaries between disciplines,” says Jones. “That’s why our programs, for example, in biomedical engineering, environmental engineering, robotics, and our newest concentrations in biomolecular engineering and biomaterials are flourishing.”

Another important aspect to these interdisciplinary collaborations is the relationship of the Whiting School with other Hopkins divisions. “We have diverse and excellent partners at Hopkins, including the schools of Medicine, Public Health, Nursing, Peabody, and even SAIS, that enable our students and faculty to look beyond the traditional boundaries of engineering,” the dean points out. In addition there’s the Applied Physics Laboratory (APL), with which the School partners in a number of ways. “There’s tremendous potential for us to develop even closer ties based on the complementary talents and missions that exist at the Engineering school and APL,” Jones adds.

The continued success of this approach to research relates directly to the Whiting School’s plans to construct a building on the Homewood campus dedicated to Computational Sciences and Engineering. Jones believes this new facility represents a concrete commitment to the School’s key role in multidisciplinary, collaborative research that continues the School’s trend of cutting across traditional boundaries. He explains, “We need to have what I would
call ‘academic venture capital’ that we can use to invest in these programs and invest in the ideas of our gifted faculty and highly talented students, to give them the opportunity to be at, and in front of, the cutting edge of technology."

The Vital Community of Alumni and Friends

For any institution, alumni and friends play an essential role in sustaining and fostering a thriving environment for teaching and research. Undertaking any large commitment, especially constructing facilities such as the Computational Sciences and Engineering building, requires alumni involvement. “Many of the related programs or projects we’ll be establishing in connection with this new building will be not only state-of-the-art but beyond the state-of-the-art,” Jones emphasizes. “The ability to get out front and stay out front in key areas is critically important for us to build and enhance the reputation of the School.” From mentoring and internship programs for students, to the outreach activities of the Society of Engineering Alumni (SEA), to establishing professorships and contributing gifts for new labs and buildings, the alumni community remains critical to the School’s ability to continue to raise the level of excellence in Engineering.

Leadership Though Innovation

In offering some thoughts on the Whiting School’s new vision statement, “Leadership Through Innovation,” Jones notes that “Leadership is about the impact that you have on your profession and on society. For our School, that translates into doing research that is along collaborative multidisciplinary lines, and in approaching problems in ways that people have never thought of before. In terms of educating our undergraduates, the mechanisms we have in place continue to be distinctive—different from other institutions—and we need to build on that. It means thinking about what the students today need to prepare themselves for a career and a life in the 21st century. As a faculty, it means contributing to our professions and society through service activities in new and unique ways—perhaps through additional outreach efforts. And finally, for alumni, it means continued involvement and support of the next generation of engineers.”

“I’m driven by solving real problems, and I always like to measure or observe what actual structures are doing...”

—Dean Nicholas P. Jones