DEAR FRIENDS,

While we may not have had a particularly warm summer in Boston, we were busy delivering new professional courses and initiatives in Cambridge and warmer destinations elsewhere.

As part of our 60th season of Short Programs, we introduced several new courses, among them Assistant Professor of Engineering Systems Mort Webster’s course on “Energy in the Context of Climate Policy,” which drew an enthusiastic international audience, an indicator of the growing global interest in the topic.

Addressing another area of global interest, fighting disease, we introduced an inaugural course in Singapore titled “New Technologies for the Diagnosis and Treatment of Disease.” For the first time, five MIT professors, including the dean of the School of Engineering, came together to teach a professional course in a location outside of Cambridge. The course drew from research being conducted at MIT and in Singapore under the auspices of the Singapore-MIT Alliance for Research and Technology, and it attracted professionals from Singapore, Japan, and Thailand.

The MIT/Accenture training program for Accenture IT professionals globally crossed the impressive 20,000 enrollees mark.

In Cambridge, we held a custom course on innovation for visiting Chinese government officials. We expanded enrollment in the two academies we run in conjunction with the Sloan School of Management for BP’s senior project and operations leaders from around the globe. We also graduated our third class of enrollees in the 10-month Career Reengineering Program, with one of the alumni, Mark Spencer, quoted prominently in an article in the New York Times. He described what he gained from the program, which is designed to prepare professionals to re-enter or re-direct their careers, particularly in economically challenging times.

I invite you now to read further details on these stories and more in this newsletter. As always, we look forward to your feedback, interest, and/or participation in our programs.

Best Regards,

Bhaskar Pant, Executive Director
MIT Professional Education
bpan@mit.edu
A pilot MIT Professional Education Short Program in July drew some two dozen researchers and other professionals from across Asia to Singapore to learn about the development of new technologies for diagnosis and treatment of disease. The course was a first for Asia because of the number of MIT faculty involved—five—and because it shared specialized Institute-led research with a broad audience.

The course capitalized on the presence of MIT faculty conducting research at the Singapore-MIT Alliance for Research and Technology (SMART) Centre. More than 30 MIT faculty members are engaged in projects at the SMART Centre, where they largely focus on applications of their research. The MIT Professional Education course, attended by students from as far away as Japan and Thailand, was taught on the National University of Singapore (NUS) campus.

Singapore General Hospital Senior Consultant David Ng said that beyond an excellent faculty and direct exposure to new research, the course had practical benefits. The experience “gives me a much better idea of how new techniques and technologies can be applied in a clinical setting,” he says.

Samantha Yip, a research student at NUS, appreciated exposure to state-of-the-art technologies and meeting so many people focused in the field. “I love the lab demonstrations,” she says, ‘it gives you a better idea of the principles of the many technologies and machines that we have been exposed to during the lecture. Really learnt a lot from this short course.”

The students also had ample opportunities for informal discussions with faculty, says Haris Mirza, an NUS PhD candidate. “Faculty was very approachable and my personal interactions with the faculty helped me to look into my own field of work in a new and exciting way.”

Roger Kamm SM ’73, PhD ’77, the Germeshausen Professor of Mechanical and Biological Engineering, led the course on advanced technologies that are transforming drug screening, toxicity testing, diagnosing disease, and optimizing patient-specific therapies. Kamm is the lead principal investigator in SMART’s BioSystems and Micromechanics interdisciplinary research group, so he usually spends four-six weeks in Singapore each year working on translating his research into potential clinical tools.

“The course we taught was at the intersection of fundamental science and industry applications so it appealed to both academic and industry audiences,” Kamm says. Through lectures and laboratory demonstrations, he presented work on using microfluidic systems as a means to test new drug treatments and Jianzhu Chen, the Ivan R Cottrell Professor of Immunology, presented a humanized mouse model he is developing as lead investigator of SMART’s infectious disease research group. “Both technologies could eventually be adopted by the pharmaceutical industry so we showed the pros and cons of both,” Kamm says.

The course also tapped the expertise of Subra Suresh ScD ’81, dean of the School of Engineering and Vannevar Bush Professor of Engineering at MIT. Suresh, whose span of research interests matches his appointments in four academic departments, discussed his work on the mechanobiology of red blood cells invaded by malaria parasites and the ways disease diagnostics and therapeutics could be enhanced by this work.

“The work we do at MIT, and especially within the School of Engineering, needs to be connected with the places, people, and institutions where it can have the greatest impact,” says Suresh. “The school’s outreach to working professionals through MIT Professional Education is a key component in this effort.”

The Singapore course was part of an international outreach initiative of MIT Professional Education, to supplement the group’s 40+ Short Programs typically delivered on campus in the summer. The group’s first international venture was a one-day course on solar energy held in conjunction with the MIT Industrial Liaison Program’s Japan Conference in January 2009. According to Bhaskar Pant, executive director of MIT Professional Education, discussions are underway for additional courses, supporting the Institute’s priority areas, in Singapore and in India.
As of October 1, more than 20,000 employees of Accenture, the global management and technology consulting company, will be engaged in a unique worldwide training program designed in collaboration with MIT’s Professional Education office. The program—one of the largest corporate training collaborations ever undertaken by MIT—boosts employee skills, retention, and job satisfaction. And Accenture has the numbers to prove it.

Employees who participate in the program, the Accenture Solutions Delivery Academy (ASDA), are 11 percent less likely to leave the company than non-participants, according to a recent firmwide employee satisfaction survey. Participants were 12 percent more likely to be rated in the top performance bands and 97 percent felt their productivity would increase because of the program.

ASDA began in 2007 as an information technology training and certification program created with MIT Professional Education. Through the program, MIT faculty work with Accenture staff on developing curriculum and exams for topics such as software engineering fundamentals, application design, and application testing. Accenture staff administers the courses and examinations in 40 countries. Participants are working towards certification as application developers, application designers, testing developers, or testing designers. To date, they have completed more than two million hours of training, and 2,300 have completed at least one of the program tracks, which involve courses, exams, and workplace projects.

“Accenture has a long and storied history of continuously educating employees as a way to attract and retain the best staff and to sharpen their skills,” says Eric Buhrfeind, ASDA senior executive sponsor. “This program helps our customers by up-skilling employees so, when there is improvement in the market, we and our clients will be ready to ramp up work. And our collaboration with one of the world’s top science and technology universities differentiates us from our competition.”

Another element of the collaboration is a series of MIT faculty lectures delivered at Accenture sites around the globe. MIT faculty traveled to India, Argentina, Brazil, China, and Chicago in the past year. Lecturers included professors John R. Williams, Abel Sanchez, Stuart Madnick, Srin Devadas, and Daniel Jackson who spoke on topics ranging from the importance of software testing to the latest advances in RFID technology. More than 10,000 Accenture employees have heard the lectures either live or via video.

“This kind of large-scale training collaboration between a major university and a major global corporation is unique, and we are very proud of what it has achieved,” says Bhaskar Pant, executive director of MIT Professional Education. “While the ASDA program accelerates technical knowledge and skills of thousands of Accenture employees worldwide, we at MIT gain too by furthering our knowledge of the evolving needs and demands of the marketplace. We look forward to continue supporting Accenture in their quest to sharpen the value of many more employees across the globe.”

If you would like more information about this program or if you would like to discuss developing a custom program for your organization, please contact Dawna Levenson at 617-258-5624.

COMING UP

Advanced Study Program
- Information Session—Dec. 8, 2009
- Details / RSVP at http://advancedstudy.mit.edu

Short Programs
- The 2010 course schedule will be available for download in late December at http://shortprograms.mit.edu
MORT WEBSTER EXPLORES
CLIMATE POLICY AS AN
ENGINEERING SYSTEM

One of the first students to earn a PhD in MIT’s Engineering Systems is now exploring uncertainty as an influence on energy and environmental policy decisions, both as an MIT faculty member and through Professional Education courses. Understanding this type of decision-making is critical since it involves complex factors and can have enormous costs or benefits to the planet.

Mort Webster, an assistant professor of Engineering Systems, earned an SM in Technology and Policy in 1996 and a PhD in 2000. As the first junior faculty member appointed to a 100% tenure-track in ESD in 2008, he says the division’s comprehensive approach matches the scale of the problems he addresses.

Webster is the lead author of a new study that shows even moderate carbon-reduction policies now can substantially lower the risk of future climate change.

How does Engineering Systems approach problem solving? “We have been definitely in the Engineering School but we study problems that cannot be solved by traditional disciplines through a single technology,” Webster says. “So many of today's economic, social, environmental, and technical challenges are large scale—the energy system, health care, manufacturing. They involve large groups of people. We have to understand not only the science and technology but also the social sciences.”

Examining how uncertainty can impact energy and environmental policy decisions is at the heart of his research. Using mathematical models, he looks at how variations of climate policy decisions, for example, could affect the planet, then predicts the risk associated with such decisions. He says the impact of these decisions is cumulative, so it is important to mitigate risk and be prepared to learn from the results for the next round of decisions.

He taught a Professional Education Short Program, “Energy in the Context of Climate Policy: Strategic Challenges and Opportunities,” for the first time last summer. His students were international professionals from governments, NGOs, and large technical companies. The course included an overview of key concepts, climate change, emerging energy technologies, current legislative efforts, and uncertainty principles.

Webster, who has also lectured to students in the Career Reengineering Program about the Institute’s energy and environmental offerings, says his faculty colleagues encouraged him to teach in Professional Education programs.

“There are huge benefits to me;” he says. “In the short term, there were times when I was more facilitator than teacher. How does an electric utility think about this? How does the EU environmental ministry think about this? People in the room were experts on these perspectives. I learned a lot about how different organizations view the challenges that are going to happen in the next few years.”

The long-term benefits are also significant. “We want to be in constant contact with people in industry and government to understand their perspectives and challenges to make sure that we are working on the real problems,” Webster says. “Building up contacts over the long term is invaluable. I think each year I’m going to learn a lot.”

When Mark Spencer PhD ’83 arrived at MIT for the second time around, he was looking for an entry back into science. He already had an MIT degree and a serious professional track record. He had also started his own photography business. But he wanted to make a change and the Professional Education’s Career Reengineering Program sounded like the right catalyst.

“I worked for over a decade as a research scientist at the NASA Ames Research Center,” Spencer says. In the Career Reengineering Program, he chose to take a course in Experimental Atmospheric Chemistry and target a career choice that would involve both science and management.

At NASA, he had specialized in high-resolution gas phase spectroscopy from infrared through ultraviolet wavelengths. He had also launched Carriage House Photography, in Andover, MA, a business offering large, high-end photographic portraits. Now he wanted to combine the two worlds.

Even before the 10-month program was complete, Spencer had landed a job that offered a blend of management and technical responsibilities at Agiltron, a communications and sensing solutions firm. “I’ve been managing projects and doing a couple of my own, mixing the two is my perfect niche.”

“What was it like to sit in an MIT classroom again? “It was like Rip Van Winkle waking up and now doing coursework requiring Google, Math Lab, and Excel – tools we did not have when I was in graduate school. That really helped me update my skill set.” He also found that he could use his time efficiently based on years of work experience.

Spencer, who is eager to return to the role of business owner, credits the Career Reengineering Program with helping him return to a scientific field.

“The program forces you to make the changes people think of doing, but can’t do,” Spencer says. “You can’t believe how many people told me that they wished they could change their jobs. There are so many people who are unhappy but never do anything about it. And this program gives you the tools.”

For more information on our programs, visit
http://professionaleducation.mit.edu

MIT Professional Education
Massachusetts Institute of Technology
77 Massachusetts Avenue, 35-433
Cambridge, MA 02139