

# Asia Extra

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## Emergency Stroke Care, Toyota Style

*Taking cues from the Japanese manufacturer, emergency room physicians dramatically improve care for stroke patients.*

by Michael C. Purdy

A process developed to increase efficiency and productivity in Japanese car factories has helped improve stroke treatment at Barnes-Jewish Hospital, report researchers at Washington University School of Medicine.

By applying the principles of Toyota's lean manufacturing process, doctors sharply reduced the average time between patient arrival and treatment, known as door-to-needle time, from 58 to 37 minutes.

Beginning stroke treatment earlier can help prevent the brain damage that causes paralysis and loss of speech after a stroke. The researchers say the drop in treatment time results from applying a key component of lean manufacturing to patient care: getting input from all members of the team to identify inefficient steps involved in the process.

Toyota's lean manufacturing process is known for its focus on eliminating seven types of waste, or *muda*: transportation, inventory, motion, waiting, overprocessing, overproduction and defects. The philosophy has been adapted to make improvements in many industries, including health care.

"Identifying steps that are wasteful and do not add value is a primary goal of lean manufacturing," says David Jaques, MD, vice president of Surgical Services at Barnes-Jewish Hospital and a professor at the School of Medicine. "Lean has made it possible to speed the delivery of medication or blood, improve teamwork and communication, and ensure that those caring for patients always have easy access to supplies and equipment."

In an average year, the medical school's physicians treat 1,300 stroke

patients at Barnes-Jewish. The hospital has a dedicated stroke team capable of quickly evaluating and treating patients with a drug called tPA, which breaks up blood clots in the brain that cause strokes. The earlier it is given, the more effective tPA is at preventing permanent brain damage caused by stroke.

Because tPA can cause dangerous bleeding in the brain and throughout the body, it cannot be given if too much time elapses after a stroke begins. Ideally, it must be given within 60 minutes after a stroke begins, a period known as the "golden hour."

Using the principles of lean manufacturing, experts at Barnes-Jewish changed the hospital's processes so that more people would be treated within that critical timeframe.

"We sought suggestions from everyone involved, from the paramedics who bring in patients, to admitting clerks, radiology technologists, nurses and physicians," says senior author Jin-Moo Lee, MD, PhD, associate professor of neurology at the School of Medicine and director of the cerebrovascular disease section in the Department of Neurology. "Once the



Jin-Moo Lee (front, right) led a team of top stroke-care specialists at Barnes-Jewish Hospital, one of the best hospitals in the United States, to improve emergency care for stroke patients using principles of Toyota's lean manufacturing process.

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# BSBA Abroad: Global Lessons for Business Students

by Kathleen Fields

Pursuing a career in business today means preparing for an ever-changing world and reaching new markets. To that end, the Olin Business School encourages students enrolled in its Bachelor of Science in Business Administration (BSBA) program to study or complete an internship overseas. “Employers today expect graduates to be globally competent, to have a passport, to have navigated an international flight and customs,” says Tammy Orahood, Olin’s director of International Programs and Global Initiatives. “Students who have this experience have the advantage.”

Approximately one-third of BSBA students — who are pursuing majors in marketing, international business, and supply chain management to name a few — study abroad at some point during the course of their undergraduate careers.

Top destinations for international internship programs include London; Paris; Sydney; and Koblenz, Germany, where Washington University has partnered with an elite group of institutions. There, students earn 15 hours of credit while completing a demanding full-time internship — work typically assigned to junior-level employees — with an institution such as Citigroup.

Olin also sponsors semester-long exchange programs at partner schools including Hong Kong University of Science and Technology (HKUST), Chinese University Hong Kong, Singapore Management University, and the University of Melbourne. At HKUST, for example, Washington University students join its 5,000 undergraduates every fall and spring, sharing a housing assignment with Chinese roommates who have volunteered to share rooms with international students.

All students participating in Olin semester-abroad programs are required to enroll and participate in pre-departure and post-departure course work. “Planning for International Learning” is designed to prepare students for their experience overseas the semester before they actually travel, focusing on cross-cultural communication, conducting and writing research papers, and international travel logistics. When they return, students take the course “Applying International Experiences,” in which students discuss what they learned while abroad and help students articulate those lessons for future potential employers



WUSTL business students studying abroad at the Hong Kong University of Science and Technology (above) live on campus with Chinese roommates. Increasingly, employers expect this kind of international experience from new graduates. (Courtesy photo)

and graduate school admissions representatives.

“Students studying abroad have transformative experiences, and the course helps them think critically about the hard and soft skills they’ve developed and translate that in a way that makes sense to employers,” Orahood says.

There are hundreds of other study-abroad opportunities for all undergraduates with the Office of Study Abroad’s elite global network of partner institutions. The office’s system of study-abroad advisers in each department — the first of its kind at a private research institution — ensures a high level of faculty involvement and oversight of the programs. 

## Toyota, cont’d from page 1

inefficient steps were identified, we developed a completely new protocol that eliminated them. This new treatment protocol helped us achieve one of the fastest door-to-needle times in the country.”

One problem identified by the group was repeatedly moving patients from one location to another and back again. The staff decided it would be more efficient for paramedics to bring patients directly to the emergency department’s CT scanner for evaluation rather than to a patient examination room.

The group also noted that some aspects of patient care performed in sequence instead could be carried out simultaneously with the addition of extra staff. With two treatment nurses per patient, for example, one nurse can put in an IV while another gets medications. A neurologist and an emergency department physician also were assigned tasks

that could be performed at the same time to speed patient care.

“We also added new specialties to the treatment team,” Lee says. “We asked social workers to help identify people who were with the patient when the suspected stroke began. While they are talking with family members or co-workers, we can begin the initial assessment.”

Finally, more efficient lab work was put into place, instituting tests that could be performed bedside in minutes instead of sending blood to the lab and waiting 30 minutes or more for results.

The new treatment procedures were implemented in February 2011. The changes not only lowered average door-to-needle times by nearly 40 percent, but they also increased the percent of patients treated within the golden hour from 52 to 78 percent.

After the new procedures were put in place, the researchers monitored patients

for side effects of treatment, including hemorrhages, and to make sure the accelerated process did not result in more patients getting the clot-busting drug when they were later determined to be stroke free. Neither of these negative outcomes increased.

Accelerating door-to-needle times for stroke treatment is only one example of how lean principles can be applied to improve patient care. Barnes-Jewish has already used lean principles to improve the delivery of blood products to patients, enhance patient access to radiological procedures, create more efficient operating room procedures, and shorten hospital stays, according to Jaques.

“Lean principles used in manufacturing can be applied to patient care to create a higher quality, safer and more efficient hospital,” Jaques says.

The findings were reported Oct. 18, 2012, in the journal *Stroke*. 

# Young Links Commerce and the World by Lisa Cary

Peter Young, BSChE '80, is celebrating the 30th anniversary of the Chemcentral Group, the business he founded in 1983 with a friend in his native Hong Kong.

Although the company began as a supplier/distributor to the technical industry, Young and his partner soon decided to focus their sales efforts on the underdeveloped paper industry in mainland China. "At that time, China's per capita paper consumption was the lowest in the world," Young says. "They needed to modernize, and we could see that it was a growing market."

Success didn't come quickly. When his partner opted out of the business after just two years, Young was able to keep it going with investments from members of his family. Over time, his persistence and business acumen paid off.

Today, Chemcentral Group is an international trade and investment organization with Young serving as its CEO. It was the first major supplier of high-quality minerals, chemicals, machinery and equipment to the top Chinese paper mills and has been the largest supplier of kaolin clay (used for paper coating) in China since 1984.

The paper and pulp industry in China experienced rapid growth beginning in 2000, and Chemcentral Group strengthened its

position further by opening an office in Shanghai. In 2008, as part of a long-term strategic decision to diversify its portfolio, Chemcentral Group established two subsidiary companies to help it extend into the business-to-consumer market.

The first subsidiary, Scapa Scandia, was located in Warsaw, Poland, to promote business and trade in central Eastern Europe. The second subsidiary, China G, consists of two companies, China G Investments and China G Hotels, aimed at business development in the Jilin province in northeastern China. These sister subsidiaries provide consulting and financing for small- to medium-sized businesses in manufacturing, distribution, retail, leisure, hospitality, green "eco" products, fast-moving consumer goods (food and other consumables), and more.

Young credits much of Chemcentral Group's success to its location in the Hong Kong Special Administrative Region (HKSAR), a global hub of free-market finance, business and trade. "It's important to understand the business cultures, regulations and economies of the various countries we deal with," he says. "Our Hong Kong location places us in a

dynamic, international destination that facilitates commerce around the world."

Young takes time from his busy schedule to serve on the University Scholarship Initiative Committee, helping secure funds to support undergraduate and graduate students with scholarships for tuition, internships, research and study-abroad programs. He also serves on the engineering school's national council, providing external review of the school's programs and advising the dean and senior administrators.

Young gladly helps the university because he believes that he graduated with a winning combination: a strong technical foundation in engineering and an ability to work with people from many backgrounds. "One reason I chose Washington University was its location at a crossroads within the United States, which allowed me to meet students and faculty from across the nation and around the world," he says. "Even now, I attend gatherings of alumni in Hong Kong that continue to help build networks and friendships." 🌐



Global entrepreneur Peter Young, BSChE '80, (pictured here with his wife, Lin Shi, in London) credits Washington University with developing his strong technical foundation in engineering and his ability to work with people from many backgrounds. (Courtesy photo)

## Volunteer Spotlight

### Punita Singh, MA '84, PhD '90

For Punita Singh, MA '84, PhD '90, volunteering on behalf of Washington University is a family affair. "My father, brother and I are all alumni," she says. "We have helped host several university events in India, including the 2001 International Advisory Council for Asia (IACA) meeting in New Delhi."

Singh excels at helping people connect. Her graduate studies in communication science focused on speech, hearing, language and perception. "In the '80s, Washington University was very progressive in allowing blending of courses and research work across departments," she says. "I was very fortunate to find the right mix there."

Today, Singh offers training, research and consulting services in language, acoustics and music through Sound Sense, the company she founded in New Delhi.

As a member of the IACA, she promotes the council's mission to strengthen the university's outreach in Asia. "I enjoy reaching out to alumni, recruiting students, and brainstorming about potential alliances," she says. 🌐

## News Briefs

### Online LLM for International Attorneys Launches

Washington University School of Law will begin offering its Master of Laws in U.S. Law for Foreign Lawyers (LLM) in a new and innovative online format. Called @WashULaw, the program is the first and only top-tier online LLM in U.S. law.

The online LLM builds on the law school's internationally recognized postgraduate law degree program, which is designed for foreign attorneys who have already earned a law degree from their home jurisdiction and who are interested in increasing their knowledge of U.S. law to more effectively practice in today's global legal environment.

@WashULaw will allow foreign lawyers to complete an LLM degree in U.S. law without leaving their law practices or relocating to the United States.

Students will receive an excellent grounding in U.S. law, with a focus on business issues, without dramatic disruption to their professional and personal lives, or the relocation costs associated with a prolonged stay overseas.

@WashULaw provides foreign lawyers with a flexible option to earn their degree from a world leader in legal education and research.

"We aim to produce extraordinary graduates who benefit from the highest caliber online education available — and to ensure that the quality equals or exceeds the quality of the best LLM programs in the world," says Kent Syverud, dean of the School of Law and the Ethan A.H. Shepley Distinguished University Professor.

Delivered through state-of-the-art online technologies, @WashULaw courses will integrate live classroom sessions with streaming video and self-paced content. In live classroom sessions, WUSTL law faculty and @WashULaw students will "meet" at pre-arranged times for course-work discussions, study groups and face-to-face office hour meetings.

### WUSTL– Henan Provincial Institute Partnership

From left: T.R. Kidder, PhD, professor and chair of anthropology in Arts & Sciences, shakes hands with Sun Xinmin, director of the Henan Provincial Institute of Cultural Relics and Archaeology of China, during a ceremony Aug. 8, 2012, in the provincial capital Zhengzhou announcing WUSTL's new partnership with the institute. Henan is one of China's most populous provinces and one of the most archaeologically rich areas of the world, Kidder says. The institute, among other tasks, oversees all archaeological research in Henan and supervises foreign archaeologists. Institute support of WUSTL research in Henan is "absolutely vital" to the research's success, Kidder says. "This agreement provides a structure for continuing our ongoing research in this area and also will make it easier for graduate students to do research in this province," Kidder says. Kidder is working on two projects in Henan — including the excavation of the village of Sanyangzhuang — along with two WUSTL graduate students.



### New Leadership for Shanghai EMBA Program

Larenda Mielke was named managing director and associate dean of the Washington University-Fudan University Executive MBA program, effective Oct. 1, 2012.

Familiar with the language and culture of both business and academia, Mielke has worked with corporations as diverse as Intel, Hewlett-Packard, Sun Microsystems, National Semiconductor and Peabody Coal. She has been with Washington University since 2004, first as assistant director of the English Language programs, then as communications coach for the Executive MBA programs.

"Larenda is uniquely qualified to connect various players for the enhancement of curriculum development and training in the program," says Panos Kouvelis, senior associate dean and director of Executive Programs in the Olin

Business School. "Her experience in teaching and working with over 2,500 Chinese and international students and executives has prepared her well for this exciting challenge."

Mielke earned a master of arts from Wheaton Graduate School and completed Olin's Executive MBA program in May 2012.

### Chinese Diplomats Visit St. Louis Campus

Diplomats from the Consulate-General of the People's Republic of China in Chicago visited Washington University on Sept. 10, 2012. Counselor Weijia Chen, Consular Changhua Li and Consular Xuzhong Lu met with Chancellor Mark S. Wrighton, Vice Chancellor for International Relations James Wertsch, and Director of International Student Services Kathy Steiner-Lang to discuss collaboration with educational institutions in China. 🌐



The Whitney R. Harris World Law Institute hosted the major international symposium "The International Criminal Court at Ten," marking the first decade of the court's existence. Participants from around the world — including Stephen Rapp, U.S. ambassador-at-large, Office of Global Justice; and Hans Corell, former under-secretary-general for legal affairs and the legal counsel of the United Nations; and International Criminal Court Judges Hans-Peter Kaul and Joyce Aluoch — joined the hundred-plus attendees on campus Nov. 11–12. The symposium began with the public performance of *Sustenazo (Lament IV)*, a work choreographed by Monika Weiss, assistant professor of art in the Sam Fox School of Design & Visual Arts, that commemorates the victims of war crimes and other atrocities (shown at left).

# Glimpses

*The first campus Mid-Autumn Celebration Show, sponsored jointly by the Chinese Students & Scholars Association and the Taiwanese Graduate Students Association, was held Sept. 30, 2012, in Graham Chapel. The celebration included music, singing, folk dances, Shaolin kung fu and a magic show, and it was preceded by a dinner for 700 people in the Gargoyle. The theme of this year's celebration was "Gathering." The event was organized to bring together students from mainland China and Taiwan. (Kevin Lowder)*



# Help Recruit Talented Students Through the Alumni and Parents Admission Program

Throughout the world, many university alumni (undergraduate) and parents of current undergraduate students are ambassadors for the university as they help recruit, interview and enroll talented students from their areas.

Working as part of the Alumni and Parents Admission Program (APAP), they offer interviews to applicants (students), help staff college fairs, refer prospective students to the Office of Undergraduate Admissions, and contact and respond to questions from parents of admitted/enrolling students. Some

volunteers also host Summer Send-off parties for incoming freshmen in their areas prior to the start of the fall semester at the university.

In addition to APAP volunteers in Hong Kong, Singapore and Tokyo, volunteers can also be found in the Asian nations of South Korea, Taiwan, India, Malaysia, People's Republic of China and Thailand.

**If you are interested in becoming involved in APAP efforts, please contact the APAP office at [apap@wustl.edu](mailto:apap@wustl.edu) or 1-314-935-4826.**

**In Asia, the committee chairs are:**

## Hong Kong

Jamie Lee, BU05  
[wuapap.hk@gmail.com](mailto:wuapap.hk@gmail.com)

## Singapore

Lizhi Tan, BU08  
[tanlizhi@gmail.com](mailto:tanlizhi@gmail.com)

## Tokyo

Michelle Gravel, Director of APAP  
[apap@wustl.edu](mailto:apap@wustl.edu)

## Washington U.'s December in India

Top leaders and scholars from Washington University and colleagues from around the world met in India during a pair of December 2012 meetings.

First was the fourth McDonnell Academy Global Energy and Environment Partnership (MAGEEP) Symposium, held Dec. 6–12 in Mumbai. With leaders and faculty from symposium co-organizers Indian Institute of Technology Bombay and Tata Institute of Social Sciences (Bombay), Washington University representatives facilitated discussions by global leaders from government, corporations, academia and other sectors. This year's symposium theme was

"Abundant, Clean, Cost-effective Energy Systems for Sustainability (ACCESS)," and included discussion on clean coal technology, solar energy, the energy–environment nexus and water issues.

Many in the group then traveled to the biennial meeting of the International Advisory Council for Asia (IACA), held Dec. 12–15 in New Delhi. Approximately 70 council members and top Washington University administrators (including the



chancellor and all of the schools' deans) met with leaders from leading Indian universities and corporations to discuss initiatives in India and across Asia. Donald Lu, deputy chief of mission from the U.S. Embassy in India, also presented to the group.

Look for more coverage of the meetings in the June 2012 issue of *Asia Extra*.

## Contacts

### Your Washington University Contacts

Washington University **Alumni Clubs** offer alumni and parents of current and former students a way to stay connected with the university. For more information on the clubs in Asia, visit <http://aisweb.wustl.edu/alumni/internationalrelations.nsf> or contact:

#### Tamlynn Holder

Director, International Alumni and Development Programs  
Washington University in St. Louis  
Campus Box 1060  
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The **Alumni and Parents Admission Program (APAP)** involves alumni and parents of undergraduates in recruiting, selecting and enrolling students at Washington University. APAP members interview applicants, staff college fairs and host receptions for admitted students. For information, contact:

#### Michelle Gravel

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Alumni, parents and friends of the university often help identify students who would benefit from a Washington University education. Refer names and addresses of talented prospective students to:

#### Scott Crawford

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