

Asia Extra

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Freshman Improves Orphans' Lives in the Philippines

by Lisa Cary

Most college freshmen worry about things like getting good grades, making new friends, and choosing the right major. Julien Levy, Engineering Class of '15, has an extra to-do on his list: raise the remainder of the \$75,000 for the Salesian Tuloy Foundation Orphanage in Manila, Philippines.

Raising that much money is a lofty goal for an 18-year-old, but Levy is determined to help the children he met while volunteering at the orphanage and school during summer 2010.

"I was taught from a very early age to help people in less fortunate circumstances," he says. "My dad and I worked at a shelter for battered women and children in Oakland, Calif., when I was 12. During my high school spring breaks, I helped build homes in Mexico. But nothing prepared me for the poverty I saw in Manila."

Levy, whose maternal grandparents were from the Philippines, wanted to see the country himself. An uncle who lives there gave him a list of available volunteer opportunities, which included assistant teaching at the Salesian Tuloy Foundation Orphanage.

The Tuloy orphanage is operated by brothers and sisters of the Salesians of Don Bosco (S.D.B.), the second largest order in the Roman Catholic Church. Its dedicated staff rescues kids from poverty by providing them with schooling and practical vocational training in automotive repair, air-conditioning repair, computer repair and the culinary

arts. In addition, Tuloy tries to instill good moral values and a solid work ethic in the kids, aged 8 to mid-20s.

As a result of its success, Tuloy receives the most difficult cases. "I met kids as young as 8 years old who had already done drugs and had been involved in gangs or the sex trade," Levy says. During his four weeks at the orphanage, Levy taught computer skills, English and mathematics. He also played soccer and basketball with the kids and sang in their choir.

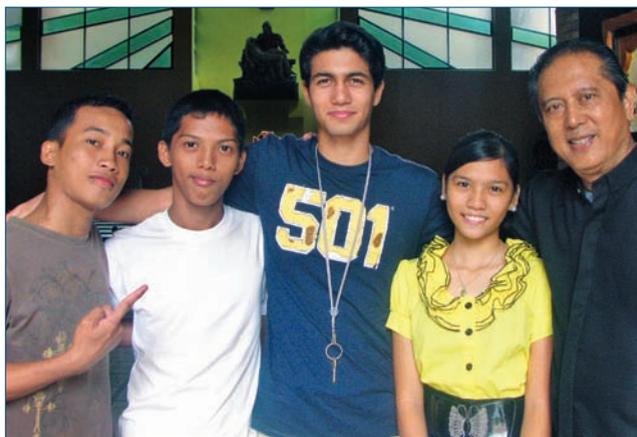
Once a week, an adult from his extended family would check on him to make sure he was okay, since the orphanage is located in a dangerous area. "Across the street, there's a squatter village made of plywood lean-to shacks built on top of an old dump," Levy says. "Some kids living there carry guns."

Founded in 1993, Tuloy is the only residential care institution in the Philippines that has its own school and facilities for vocational training. It provides services to 200 children who reside in its dormitories, plus an additional 300 children who come for schooling and other services during daytime hours.

Unfortunately, Tuloy has three new dormitories that sit empty because it doesn't have enough money to operate them. "This means that 90 children, 30 per dormitory, are left on the street, having to fend for themselves," Levy says.

"When I returned home from the Philippines, all four of my parents — my mom and stepdad, and my dad and stepmom — got caught up in the story of these kids in need," he says. "They encouraged me to raise enough money to make one dormitory operational. It costs \$150,000 to maintain a dorm for five years. My parents generously offered to match any money, up to \$75,000, that I could raise."

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Freshman Julien Levy (center) and Salesian Father Rocky (right) work with students at the Salesian Tuloy Foundation Orphanage in the Philippines. (Courtesy photo)

Wireless Network in Hospital Monitors Vital Signs

by Diana Lutz

A clinical warning system that uses wireless sensors to track the vital signs of patients is undergoing a feasibility study at Barnes-Jewish Hospital.

When the full system is operational, sensors will take blood oxygenation and heart-rate readings from at-risk patients once or twice a minute. The data will be transmitted to a base station and combined with other data in the patient's electronic medical record, such as lab test results.

The incoming vital signs and data in the medical record will be continually scrutinized by a machine-learning algorithm. If any signs of clinical deterioration are found, the system will call a nurse to check on the patient.

The idea is to create a virtual intensive care unit (ICU) where the patients aren't wired to beeping machines and instead are free to move about as they please, says Chenyang Lu, PhD, professor of computer science and engineering in the School of Engineering & Applied Science and principal investigator for the prototype-network trial.

The clinical warning system is part of a burgeoning new field variously called body sensor networks or wireless health that will change the future of medicine, Lu says.

He and other computer scientists installed a prototype network in a cardiac step-down unit at Barnes-Jewish.

A step-down unit provides an intermediate level of care for patients who no longer require critical care but still need more care than is available on the general medical units.

During the trial, consenting patients in the step-down unit wore a telemetry pouch around their necks and a pulse oximeter that measured heart rate and

blood oxygenation. The sensor nodes transmitted the oximeter data through relay nodes to a base station, where it was saved in a database.

The prototype network was not integrated with clinical-warning algorithms. The data it reported was examined only after the fact to see whether it could have been used to correctly identify patients whose condition was deteriorating.

Clinical deterioration is a major concern in every hospital unit, says Thomas C. Bailey, MD, professor of medicine (infectious diseases) in the School of Medicine, who is working with Lu on the system. Of hospitalized patients, between 4 and 17 percent suffer an adverse event, such as a heart attack or respiratory arrest.

Most patients exhibit changes in their vital signs hours before an adverse event, sometimes as many as six hours before.

In ICUs, vital signs are continuously monitored by wired devices, but in the step-down units, they are often measured intermittently by the unit's clinical staff. A wireless sensor network could monitor vital signs tens or hundreds of times more frequently.

At the end of the trial, the computer scientists found that the network was rock solid. Data was reliably received more than 99 percent of the time.

Sensing reliability was lower, only 81 percent. Patient movement, such as getting up, caused short bursts of failures, and some oximeters fell off or were removed, which led to long outages.

The best way to deal with disconnections, the researchers decided, was to send an alarm if data failed to arrive for 10 or 15 minutes, a threshold that



Chenyang Lu wears a wireless pulse oximeter like the ones used in the study. (David Kilper)

would result in an alarm rate low enough not to burden the nursing staff.

During the prototype trial, the condition of two patients deteriorated, and a third patient was diagnosed with life-threatening sleep apnea.

Physicians looked at the vital-sign traces from the mesh network after the fact and confirmed that in all three cases the clinical deterioration could have been picked up from the traces.

According to Lu, it won't be long before any patient with a serious medical condition will wear a wireless medical device. This will allow them to monitor their own vital signs on a smartphone; it will also call relatives or doctors if serious problems arise.

The possibilities are endless and promise better, more consistent care at lower cost, the primary objective of health care these days, Lu says. 🌐

Levy, cont'd from page 1

So far, thanks to television and newspaper interviews in the San Francisco Bay Area, Levy has raised \$50,000 for the orphanage.

Since coming to Washington University, Levy hasn't had as much time for fundraising, but he hopes to get some of his classmates involved. He is studying biomedical engineering in the School of Engineering & Applied Science, with an eye toward the medical field.

"I love it here!" he says. "I can't picture myself anywhere else. My dad, who's a professor at the University of California at Berkeley, kept pointing out Washington University's reputation for providing individual attention to students to help them succeed. I'm already receiving that attention in my first semester."

Levy hopes to return to Manila next summer. "Raising \$75,000 seemed like an impossible goal at first, but my

parents have encouraged me to reach for it," he says. "If I can get 30 more kids off the streets of Manila, it will really make a difference."

For more information on Levy's work with the Salesian Tuloy Foundation Orphanage, visit tuloy30more.com. 🌐

Educator Helps Hong Kong Students 'Bloom'

by Blaire Leible Garwitz

Alice Lui, AB '89, believes that education is the key to the future. As co-founder of Bloom Academy in Hong Kong, she is committed to helping students develop both academic and life skills.

"We've designed our courses in an attempt to fill the gaps in the education system — developing skills in students that we believe are important to a child's future as a person, not just academically," Lui says. "We want to prepare them for all kinds of unpredictable challenges in life."

The idea for Bloom Academy blossomed in 2001 after Lui left her position at Goldman Sachs in Hong Kong and Singapore, where she had worked as a fund manager for more than 10 years.

Feeling unfulfilled in the financial industry, Lui "wanted to do something that could make a difference — be it big or small — to society," she says.

She credits her time at Washington University for helping her realize the importance of service to society.

"The generosity of the university in providing me with a scholarship made me realize how important it is to give back to society," Lui says, "so that others can have the same opportunities I was lucky enough to have."

When discussing her aspirations with her sister and a classmate from high school, the trio formed the idea for Bloom Academy.

"We felt lucky to have benefited from a good education that had opened doors for us," Lui says. "We had respect for certain aspects of the education sector in Hong Kong, but we saw flaws in the system where we hoped to make a difference."

Today, Bloom Academy has been operating for 10 years and has the capacity to serve approximately 100 to 120 students. The academy's courses focus on creative writing, critical thinking and communications skills. After-school workshops in writing, current affairs, speech training and math also are offered. Students, who range from age 5 to 17, are assigned to different workshops based on the assessment of their skill level, not their age or grade.

"Since Bloom Academy opened, we've learned a lot," Lui says. "We've had our share of miscalculations and mistakes — and these experiences have helped us improve."

Bloom Academy's teaching methods are proving to be successful. For instance, its students have performed very well in the Hong Kong Schools Speech Festival — on average, more than 60 percent of the students trained at Bloom Academy win a first-, second- or third-place prize each year.

"Our goal is to help students overcome their fear of public speaking," Lui says. "We hope to build confidence and self-esteem through good presentation skills — attributes that will be invaluable to them no matter what career path they may take."



Alumna Alice Lui is the co-founder of Bloom Academy in Hong Kong. The academy's courses focus on creative writing, critical thinking and communications skills. (Courtesy photo)

Grateful for the skills Washington University instilled in her, Lui volunteers extensively for the university. After graduation, she was involved with the Alumni and Parents Admission Program (APAP), helping interview candidates and coordinating the process as a chair and co-chair. Lui also chaired the Alumni Club in Hong Kong, and she co-chaired the 10th Reunion for her class in 1999. Two years ago, she became involved with the scholarship program in Arts & Sciences by creating an endowed scholarship for students.

"Education is what I am truly committed to," Lui says. 🌐

Volunteer Spotlight

Rebecca Chang, BSBA '97, MBA '03, JD '03

Although Rebecca Chang, BSBA '97, MBA '03, JD '03, was not even sure where St. Louis was before she came to Washington University, the city and the university soon felt like a second home to her.

"I met many of my friends here, and some of my family members ended up attending, as well," she says. "So, after returning to Taiwan, I decided that I wanted to stay in touch with the university."

Chang joined APAP (Alumni and Parents Admission Program) and began interviewing undergraduate applicants. She also worked

with other alumni to set up the current Washington University Alumni Club in Taiwan.

In addition, Chang uses her experience as a senior associate at Chien Yeh Law Offices in Taipei to assist WUSTL law school alumni in their job search in Taiwan.

"I really enjoy staying connected with Washington University," she says. 🌐



Rebecca Chang helped found the university's current Alumni Club in Taiwan. (Courtesy photo)

News Briefs

Chinese Scholarship, Career Program Established

Washington University partnered with Fleishman-Hillard, one of the world's leading strategic communications firms, to provide a scholarship and a unique career opportunity to an undergraduate senior interested in pursuing a career in public relations in both the United States and China. In addition to the scholarship, the China Masters Exchange Program also entails a year of paid employment at Fleishman-Hillard's St. Louis headquarters office, followed by a transfer to one of the firm's offices in China for continued paid employment.

New Departments Formed in Arts & Sciences

In the culmination of a two-year planning process, the Department of Asian and Near Eastern Languages and Literatures and the programs in East Asian Studies and Jewish and Islamic and Near Eastern Studies have been reorganized into two full-fledged departments. The new Department of Jewish, Islamic and Near Eastern Languages and Cultures will focus on Arabic, Hindi, Hebrew and Persian, as well as Jewish and Islamic Studies, while the new Department of East Asian Languages and Cultures will focus on Chinese, Japanese and Korean. The shift is intended to establish more cohesive communities in each concentration where specialists in language, literature, history and culture can interact more easily and explore common interests.

Yang Wins Prestigious Presidential Early Career Award

Lan Yang, PhD, assistant professor of electrical and systems engineering in the School of Engineering & Applied Science, received the 2011 Presidential Early Career Award for Scientists and Engineers. It is the highest honor bestowed by the U.S. government on science and engineering professionals in the early stages of their independent research careers. Yang was recognized "for innovative research in microlasers on a silicon wafer and development of photonic devices with applications from optical/communications to ultra-sensitive biochemical sensing; and for pioneering studies of real-time, in-situ detection and sizing of nanoparticles using low-power on-chip devices." The tiny ring lasers her laboratory makes have many applications, including characterizing nanoparticle products, detecting impurities such as soot in the air, and detecting viruses or proteins found in the bloodstream.

Film Series Focuses on Young Starlets of Japanese Cinema

Frustration, friendship, struggle, joy, anguish and love are among the emotions explored by some of Japan's most talented young actresses as the Young Starlets in Japanese Cinema Film Festival debuted at Washington University in fall 2011. The films included *Harmful Insect*; *Yunagi City*, *Sakura Country*; *Kamikaze Girls*; and *One Million Yen Girl*. The Department of East Asian Languages and Cultures and the Program in Film & Media Studies, both in Arts & Sciences, and the Japan Foundation Film Series sponsored the festival.



One Million Yen Girl was screened at the Young Starlets in Japanese Cinema Film Festival. (Copyright 2008 One Million Yen Girl Film Partners)

WUSTL Students Return from International Experience in China, Hong Kong

The International Experience in Energy, Environmental & Chemical Engineering allows undergraduates to study energy science at top universities in another country. The 2011 trip included visits to five universities, all members of the McDonnell Academy Global Energy and Environment Partnership (MAGEEP): Shenzhen Institute of Advanced Technology of the Chinese Academy of Science, Chinese University of Hong Kong, Hong Kong University of Science and Technology, Hong Kong University, and City University of Hong Kong. The students studied solar energy, biofuels, wind energy, air pollution and health, green building codes, and green energy practices in the financial sector. Ruth Chen, PhD, professor of practice in chemical engineering, and Cynthia Lo, PhD, assistant professor in the Department of Energy, Environmental & Chemical Engineering, led the trip. After the group returned to Washington University, the students produced a joint video, prepared presentations, wrote research papers, and participated in a project to teach middle-school students how to make solar cells.

Xiaolong's Novels to Be Adapted Into Films

Qiu Xiaolong, a lecturer in Chinese literature, has written several English-language detective novels based on the character of Chief Inspector Chen. These books are being turned into seven feature films. The Chief Inspector Chen series is set in Shanghai and has been translated into more than 20 languages.

2011 International Graduate Scholarship Conference Held in Beijing

The annual International Graduate Scholarship Conference convened in Beijing in 2011. A group of leading U.S. research universities including Washington University — the Responsive PhD Group — attended the conference to explore opportunities of mutual benefit to Chinese and U.S. universities. The Responsive PhD Group provides more than \$100 million annually in scholarships and fellowships to graduates of China's most prestigious institutions of higher education for post-graduate study in the United States. The group works to encourage Chinese students to apply for the many advanced scholarships and fellowships currently available in the United States and for fellowship support from the China Scholarship Council. Washington University and the China Scholarship Council have organized the International Graduate Scholarship Conference every year since it began in 2005.

Pakrasi Named to Mentor Committee

Himadri B. Pakrasi, PhD, the George William and Irene Koechig Freiberg Professor of Biology in Arts & Sciences and director of the International Center for Advanced Renewable Energy and Sustainability (I-CARES), was named to a 10-member mentor committee set up by West Bengal Chief Minister Mamata Banerjee. The group is tasked with reviving Presidency University in Kolkata, India. 



Professor Himadri Pakrasi works with a student in the Goldfarb Plant Growth Facility. (Joe Angeles)

Glimpses

Diwali, a major Hindu holiday known as the "Festival of Lights," is one of the most widely celebrated and largest student-run productions at Washington University. (Whitney Curtis)



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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:

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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:

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