The Surrounding Game

Grad student films documentary about the game of Go

By Mia Kweskin

At age 6, Cole Pruitt received a book full of mind games, one of which was a version of the strategic board game Go. Fifteen years later as an undergraduate at Brown University, Pruitt was reintroduced to the game when he began playing it online. Shortly after, he joined his university's Go club.

“That was it. I was in the flow,” Pruitt says. “The more I learned, the harder it got, and that was the opposite of every other game I’d ever played.” Though simple to learn, Go, a game played with black and white stones on a 19-by-19-inch grid, takes years to master. Two players take turns placing stones on the intersections of the grid, trying to enclose the most space on the board.

“These rules are just as abstract as you can get, so there’s an immense degree of depth that comes with it,” Pruitt says. “It’s one of the last remaining strategy games that computers cannot beat.”

Today, Pruitt, a graduate student in chemistry in Arts & Sciences at Washington University, is turning the game he describes as “endlessly engaging” into a documentary. The Surrounding Game will give both trained Go players and viewers who are unfamiliar with Go access to the game’s rich history. It’s been popular in China, Japan and South Korea for thousands of years but has not caught on outside of East Asia.

“It’s taken people physically moving outside of borders for the game to spread,” Pruitt says. He cites cultural barriers including language and conventional knowledge as reasons the spread of Go to the United States has been limited. He says he hopes The Surrounding Game will help tell “a 3,000-year-old story that needs to be told.”

Pruitt’s co-director, Will Lockhart, whom Pruitt met through the Brown University Go club, first approached him with the idea of creating a Go documentary around the time that the United States launched its first professional Go system, the American Go Association. Despite having little knowledge of documentary filmmaking, Pruitt knew this was the perfect time to tell the story of Go.

The pair received funding through the Ing Chang-Ki Wei-Chi Education Foundation, which supports the growth of Go, to film a three-minute trailer that sparked interest in the documentary. Lockhart and Pruitt later launched a Kickstarter campaign to fund the project.

The film took Pruitt across the United States and to China, South Korea, Japan and Canada. While filming in Japan, the crew gained access to the Yugen-no-ma, “the room of mysteries and depth.” The room, floored in tatami mats and decorated with traditional Japanese calligraphy, was constructed in the Nihon Ki-in, the national Japanese Go center, for special top-level title match play. It is widely considered to be the most respected room in the world of Go.

Pruitt believes he and his crew were able to gain access to places normally off-limits “because very rarely would
Soil Bacteria May Provide Clues to Curbing Antibiotic Resistance

By Michael C. Purdy

In India, the fight against tuberculosis and other antibiotic-resistant bacteria has led to a dubious distinction. The country is the No. 1 consumer of carabepems, a “last resort drug” for the treatment of multi-drug resistant bacteria. But India’s not alone — around the world, millions of people are sickened or killed by such bacteria. A driving force behind this growing public health threat is bacteria’s ability to share antibiotic-resistance genes.

Bacteria that naturally live in the soil have a vast collection of genes to fight off antibiotics, but they are much less likely to share these genes, a new study by researchers at Washington University School of Medicine has revealed. The findings suggest that most genes from soil bacteria are not poised to contribute to antibiotic resistance in infectious bacteria.

The researchers hope that what they are learning from soil bacteria will help identify ways to reduce gene sharing among infectious bacteria, slowing the spread of drug-resistant superbugs, says senior author Gautam Dantas, PhD, assistant professor of pathology and immunology.

The results appeared in a 2014 issue of Nature.

“Soil bacteria have strategies for fighting antibiotics that we’re only just starting to learn about,” Dantas says. “We need to make sure the genes that make these strategies possible aren’t shared with infectious bacteria, because they could make the problem of drug-resistant infections much worse.”

Most of the antibiotics used to fight illness today were devised from soil microbes, which employ them as weapons in the competition for resources and survival. Penicillin, the first successful antibiotic, came from the soil fungus Penicillium.

But widespread use of penicillin and other newer antibiotics has prompted bacteria to evolve strategies for blocking, evading or otherwise resisting these drugs. Antibiotic-resistant disease has been especially problematic in India, China and the United States, the three top consumers of antibiotics.

For the new study, the scientists analyzed bacterial DNA in 18 soil samples from agricultural and grassland sites. Using a technique they helped develop, the researchers isolated small fragments of bacterial DNA from the soils and screened those pieces for genes that confer antibiotic resistance.

Other scientists have identified sections of genetic code that make it possible for bacteria to share genes. A gene must be close to these “mobility elements” to be shared. The approximately 3,000 antibiotic-resistance genes the researchers identified in soil bacteria typically were not close to such elements.

The researchers also found that the antibiotic-resistance genes in soil are linked tightly to specific bacteria, suggesting little sharing between species. In infectious bacteria, though, more frequent sharing of genes creates antibiotic-resistance portfolios that differ greatly among related bacteria.

“We suspect that one of the primary factors that drives the sharing of antibiotic-resistance genes is exposure to new antibiotics,” Dantas says. “The bacteria in [soil] don’t encounter these threats anywhere near as often as disease-causing bacteria, which we regularly treat with different antibiotics.”

Dantas and his colleagues continue to study factors that affect the spread of antibiotic resistance.

“We want to do everything we can whether it’s changing how we treat infections in medical clinics or altering the way we manage the environments where bacteria grow — to keep the odds stacked against sharing of these genes,” Dantas says.
International Student Helps Design a Viral Music Video

Alumni connections lead to exciting summer internship

By Varsha Sridhar

Thanks to the university’s alumni network, Justin Au, a senior in the Sam Fox School of Design & Visual Arts and the College of Arts & Sciences, landed a summer internship at 1stAveMachine, a New York City advertising and production agency, where he helped create a viral music video for a popular band.

Au met alumnus Aaron Duffy, BFA ’06, creative director at 1stAveMachine, through a fellow student at the Sam Fox School and former company intern. Duffy hired Au as a summer intern and placed him on the company’s creative development team.

“I’m looking toward a career in advertising, and the experience has been very educational and so much fun,” Au says. “In every project you’re working with such creative individuals.”

One of the company’s biggest projects over the summer was to design a music video for alternative rock band OK Go’s song, The Writing’s on the Wall. The group is known for its quirky videos, such as I Won’t Let You Down, its fall 2014 video, which included a choreographed dance routine with hundreds of extras.

A team of experts, including Au, worked for nearly two months on ideas for the video. The winning concept used illusions, such as an upside down bike ride, to underscore the song’s message about difficulties communicating in romantic relationships.

The team needed three weeks to build the set and two days to shoot the video. Au worked on some illusion designs, including recreating a band member’s face out of a beret, tires, a stapler, mannequin parts and other everyday items. He also helped during filming and came out from behind a wall with the rest of the crew at the end of the video.

“It was a great experience being on set,” Au says. “There were some 30 people running around behind the camera all the time. It was pretty ridiculous.” The effort paid off; the video, released in June 2014, has more than 13 million views.

Au chose Washington University for the prestigious communication design program at the Sam Fox School and the university’s flexibility, which allows him to double major in economics in Arts & Sciences. He also will complete a minor in marketing in the Olin Business School.

Originally from Hong Kong, Au hopes to spend a few years working in the United States after graduation, perhaps even returning to New York for more design work, before returning home.

“It’s been a great experience,” Au says. “I’m really happy about how I got more into design through the Sam Fox School.”

Student Spotlight

Kenneth Sng, Arts & Sciences Class of 2017

Unlike many undergraduates, Kenneth Sng, a sophomore majoring in economics in Arts & Sciences, knows what he’ll be doing after graduation — working in public service in Singapore.

“I will be assigned to a ministry based on my preference,” Sng says. He’s interested in many fields including education.

Sng is one of Singapore’s prestigious Public Service Commission (PSC) scholars. The scholarship is typically awarded to fewer than 100 students per year (out of a pool of more than 2,000) and covers four years of undergraduate education and a master’s program anywhere in the world.

Singapore’s current prime minister and other high-ranking public officials have received the PSC scholarship, which requires six years of public service after college.

“Knowing that I will be working in the public sector after graduation has made me a lot more focused and deliberate when it comes to choosing my classes,” says Sng, who is president of the Singapore Student’s Association and budget committee chair for the Student Union Treasury.

Sng is grateful for the scholarship for another reason. “I come from a less well-off family,” he says. “It would not be possible for me to even be at WashU without the scholarship.”
Bangladesh study finds lingering problem in gut microbes of malnourished children

New research from the Washington University School of Medicine shows that long-term effects of malnourishment originate from underfunctioning microbe communities residing in the guts of children who are unable to harness the energy from food. Researchers studied gut microbe bacteria in healthy and malnourished children in Bangladesh.

The study, led by Jeffrey I. Gordon, MD, director of Washington University’s Center for Genome Sciences & Systems Biology, found that the microbe communities in the malnourished children were inconsistent with their chronological age. They collected data and studied the changes while feeding the children therapeutic foods, but they noticed improvement was not permanent, and the microbes regressed once treatment was halted. Scientists are currently attempting to identify a way to overcome the underdevelopment of the microbes and to counteract the long-term consequences of malnourishment.

Awards, fellowships bring two professors new opportunities

Darren Dochuk, PhD, associate professor of history and a faculty member of the John C. Danforth Center on Religion & Politics, received a 2014 China residency, an award to teach a weeklong seminar at the American Studies Center at Beijing Foreign Studies University.

Guy Genin, PhD, professor of mechanical engineering in the School of Engineering & Applied Science, was named a Global Scholars Fellow at the Tsinghua University in Beijing; he will be conducting research in conjunction with Changqing Chen, PhD, professor of engineering and director of Tsinghua’s Institute for Solid Mechanics. Genin, who conducts research on orthopedic surgery at Washington University School of Medicine, will be joining a team focused on deciphering how engineers can help patients make informed decisions about orthopedic surgeries involving rotator cuff repair.

WUSTL students shine in math competitions

The Department of Mathematics in Arts & Sciences sent 19 students, including international students from Asia, to the esteemed Putnam Mathematics Competition. One university team comprising three students placed 10th out of 430 teams. The overall competition featured more than 4,000 students from 557 universities across the United States and Canada.

WUSTL students also performed well at the Missouri Collegiate Mathematics Competition, where the university’s teams took first and third place, and earned the first perfect score of 100 in the competition’s history. The competition featured 47 teams from across Missouri.

First U.S.–India joint EMBA program announced

Building on a strong partnership forged through years of cooperation on issues including global energy, sustainability, leadership and academics, Washington University and the Indian Institute of Technology Bombay (IIT Bombay) have announced a joint Executive MBA program aimed at the international executive.

The new program is the first of its kind to confer an MBA degree from both an Indian and an American university, and it will be modeled after WUSTL’s highly ranked Executive MBA program in China and the United States. The Financial Times recently ranked the WUSTL–Fudan University Executive MBA program No. 6 in the world.

In classes taught by world-class faculty from WUSTL’s Olin Business School and IIT Bombay’s Shailesh J. Mehta School of Management, executives will be given the knowledge and tools to immediately apply lessons learned to contemporary and emerging business challenges. The curriculum is rooted in leadership development and innovation, including theoretical and practical training, and it integrates local and cultural perspectives.

Ancient nomads spread earliest domestic grains along Silk Road, study finds

Michael Frachetti, associate professor of archaeology in Arts & Sciences, has conducted new research showing that nomadic trading played a key role in the distribution of domesticated crops in early times along the historic Silk Road. The study, which collected data through on-site excavations in Kazakhstan, points to evidence that the trading of crops along the Silk Road had been occurring thousands of years earlier than previously estimated.

Wash. U. tops Princeton Review rankings for student living

The Princeton Review ranked Washington University No. 1 in the country for its college dorms only a few weeks after College Magazine selected Washington University as the country’s best university to make a home-away-from-home. Other aspects of student life got high praise from the Princeton Review. Washington University was ranked No. 7 for Best Campus Food, No. 18 for Happiest Students, and No. 10 for Best-Run Colleges. We also scored top marks for Best Lab Facilities (No. 10) and Best Quality of Life (No. 11).
Each spring, hundreds of students, staff and faculty celebrate Holi in the Swamp area of the South 40. Put on by Ashoka, Washington University’s South Asian Student Association, the festival celebrates love and color. Participants throw colored powder and clean off by running through a water slide.
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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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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:

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