Nanotechnology enables low-dose treatment of atherosclerotic plaques

By Ginni Erickson

In laboratory tests, one very low dose of a drug was enough to have an effect on notoriously tenacious artery-clogging plaques. What kind of drug is that potent? It’s not so much the drug itself as how it was delivered. Fumagillin—a drug that can inhibit the growth of new blood vessels that feed atherosclerotic plaques—was sent directly to the base of plaques by microscopic, uniquely small spheres called nanoparticles developed by School of Medicine researchers. "Previously we reported that we can visualize plaques using our nanoparticle technology, but this is the first time we’ve demonstrated that the nanoparticles also can deliver a drug to a disease site in a living organism,” said Patrick Winter, Ph.D., research assistant professor of medicine. "After a single dose in laboratory rabbits, fumagillin nanoparticles markedly reduced the growth of new blood vessels that feed plaques.” The researchers report their findings in the September issue of the Journal of Atherosclerosis, Thrombosis, and Vascular Biology. The article is now available online.

An atherosclerotic plaque results when a buildup of cholesterol, inflammatory cells and fibrous tissue forms inside an artery. If a plaque ruptures, it can block blood flow to the heart or brain, causing a heart attack or stroke. While growing, plaques require an influx of nutrients, fats and cells, so they develop their own blood supply—tiny blood vessels that grow within the walls of arteries and penetrate the plaque. Many believe that cutting off this blood supply could stabilize or reduce plaques. In previous studies, fumagillin proved to be an effective agent for stopping the process that creates new blood vessels.

Riding on the nanoparticles, fumagillin is carried to the site of new blood vessel formation and stays there thanks to a fellow nanoparticle passenger—a component that fastens the nanoparticles to cells found in newly developing blood vessels. Stuck in this position, the nanoparticle drops off its load of fumagillin, concentrating it at the site of the atherosclerotic plaque.

In this study, the single dosage of fumagillin each rabbit received was 50,000 times lower than the total fumagillin dose used in previous experiments using closed systems. Many previous microbial experiments used closed systems with a single batch of nutrient solution, but because this system is continuously fed from a fresh supply of wastewater, Angenent’s UMFC has more applications for industry since wastewater is continually outputted during industrial production.

The organic matter in the wastewater provides food for a diverse group of bacteria that has developed a biofilm (a thick-layered colony of bacteria) in a simple electrode in the anode chamber. An impermeable U-shaped ion-exchange membrane inside the anode chamber separates the anode from the cathode. The electricity generated from the bacteria is used to power the anode and create gas in the cathode chamber.UMFC has been shown to develop better and faster with a stable wastewater feed than a system fed with synthetic nutrients.

The researchers report their findings in the September issue of the Journal of Atherosclerosis, Thrombosis, and Vascular Biology. The article is now available online.

Engineer designs system to put wastewater to work

By Jason Lute

In the midst of the worldwide energy crisis, WUSTL researchers have continued their work on a microbial fuel cell that generates electricity from wastewater. Advances in the design of this fuel cell in the past year have increased the power output by a factor of 10 and future designs already in the minds of the researchers, hope to multiply that power output by 10 times. If that goal can be achieved, the fuel cell could be scaled up for use in food and agricultural industries to generate electrical power—all with the wastewater that today goes right down the drain.

Lars Angenstein, Ph.D., assistant professor of chemical engineering and a member of the University’s Environmental Engineering Science Program, has devised a continuously fed upflow microbial fuel cell (UMFC). In a paper published in the online version of Environmental Science Technology, Angenstein describes how wastewater enters from the bottom of a system and is continuously pumped up through a cylinder filled with granules of activated carbon. Many previous microbial experiments used closed systems with a single batch of nutrient solution, but because this system is continuously fed from a fresh supply of wastewater, Angenstein’s UMFC has more applications for industry since wastewater is continually outputted during industrial production.

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Tumor wizardry wards off attacks from immune system

By GODDARD

Like the fictional wizard Harry Potter, some cancer-taming spells could come from an invisibility cloak.

School of Medicine researchers have found that pancreatic tumors hide from the body's immune surveillance by surrounding themselves with cells that make it hard for the immune system to detect them.

The tumor-protecting cells are white blood cells called T-reg cells, short for T-regulatory cells. Under ordinary circumstances, T-reg cells inhibit immune components responsible for killing unwanted cells — this allows T-reg cells to help protect as well as attack.

Scientists discovered that cancerous cells take advantage of T-reg cell suppressor ability, enabling them to keep the immune system at bay. Their report appears in the July 13 issue of the *Journal of Immunotherapy*.

"In mice implanted with pancreatic cancer, we noted that tumor growth increased in T-reg cells in both the bloodstream and in lymph nodes leading from the tumors," said Mark Linehan, M.D., associate professor of surgery and a researcher with the Siteman Cancer Center. "The new findings show that tumors are directly responsible for the increase of T-reg cells and can attract more T-reg cells to their vicinity. This could be one way for tumors to evade immune surveil-

ance." Linehan said he believes this could expand the fields of many experi-

ments on cancer vaccines. "Such vaccines are designed to rev up the immune response to cancer cells so that the immune system can attack tumors. But a tumor shielded with T-reg cells could potentially circumvent the immune system's attack and remain safe."

In mice implanted with pancreatic cancer, the researchers demonstrated that tumor growth increased in T-reg cells in both the bloodstream and in lymph nodes leading from the tumors. When the research team blocked a signaling molecule that pancreatic tumors secrete in abundance, T-reg cells were no longer present in the tumor-draining lymph nodes, suggesting that this signaling molecule, referred to as TGF-beta, has an important role in weaning the T-reg cell's invisibility cloak.

Such information could lead to a method for blocking tumors from using T-reg cells for protection. Other research by Linehan and colleagues showed that mice with pancreatic cancer simply depleting T-reg cells slowed tumor growth and increased sur-

vival time. "We're looking at several potential ways to interfere with this tumor recruitment of T-reg cells," Linehan said. "We'd like to see these findings advance cancer immunotherapy. We want to find a way to actively suppress T-reg cells and at the same time activate an immune response to tumor-specific attacks." In collaboration with other researchers at the School of Medicine, Linehan has just announced a clinical trial that pairs T-reg depletion with anti-cancer vacci-

nations as a therapy for pancreatic cancer patients.

Linehan cited the problem from different angles hoping to translate these findings to our patients and their families. "Right now, no effective treatment exists for pancreatic cancer."
With cochlear implants, earlier use leads to better speech pattern

By Gwend Erickson

With cochlear implants, children with normal hearing. The researchers’ further studies — not yet published — argue that by age 4.5 children who had cochlear implants very early often have normal speech and potentially can enter kindergartens with their hearing peers.

"Kids with residual hearing can get some help from hearing aids, but cochlear implants give a tremendous hearing advantage over hearing aids — the implants provide more sound information," Nicholas said. "For example, high-frequency sounds are magnified more with cochlear implants, so kids can hear ‘s’s and ‘sh’ sounds and ‘ed’ endings better. So they need to work on other consonants and verb tenses faster."

While studies like this and others favor earlier implantation, the decision for or against cochlear implantation is frequently put off, Nicholas said. Hearing parents often find they need time to learn about deafness and potential treatments. Implantation also may be delayed to make certain an infant’s deafness has not been misdiagnosed.

Even when deafness is confirmed, the idea of head surgery for their baby makes many parents hesitant. They may be daunted by the fact that a cochlear implant is forever — the device destroys any residual hearing so that hearing aids are no longer an option.

"Studies like ours are meant to answer parents’ questions about cochlear implants," Nicholas said. "Our overall goal is to focus on the best age for implantation. If the window of time for the best outcome is small, we want parents to know that. With the results we’ve seen so far, we believe that it is best to implant when the child is younger than 24 months if parents want their child to use spoken language at the same level as their hearing peers.”

By BEITH MILLER

The spring, Adam Tinnin, a normally healthy, active 16-year-old, experienced a gastrointestinal infection that caused mouth ulcers and lost 75 pounds of his normal 220 pounds in just three months.

"I felt like giving up," Adam said. "I felt like it was over for me."

"I felt like giving up," Adam said. "I felt like it was over for me." Nicholas said. "I thought there was no hope and that I would probably die with this unless somebody knew what was going on." Susan Mackinnon, M.D., the Sydney M. Jr. and Robert H. Shoenberg Professor of Surgery and chief of the Division of Plastic and Reconstructive Surgery, happened to be having lunch in the doctor's lounge at the hospital on a day when Adam's case was being discussed. Mackinnon's interest was piqued, and she asked if she could examine Adam. After the examination, Mackinnon was confident she knew what Adam's trouble was — a viral neuropathy with tarsal tunnel syndrome, similar to carpel tunnel syndrome, that could be surgically repaired.

"While tarsal tunnel syndrome is not a rare condition, it is very rare that it becomes so severe that a patient can’t walk, especially in someone so young," Mackinnon said.

Tarsal tunnel syndrome, which can be difficult to diagnose, is caused by pressure on the tibial nerve, which follows a long route beneath the back of the leg to the ankle, where it turns and curves below the inside of the ankle. Sometimes ligaments and other tissues that surround the nerve press on it, causing burning sensation and tingling on the sole of the foot. In Adam's case, it also prevented him from walking.

Mackinnon performed tarsal tunnel release surgery on Adam's left foot May 1. During the one-hour procedure, she cut the covering over the tibial nerve to relieve the pressure. Everyone has some covering over the nerve, but in Adam's case, when he had the surgery on his right foot June 9, he had feeling back in his left foot and was able to drive and walk with crutches. The severe pain in his left foot was gone.

By Feburary, Adam had feeling back in his toes and could walk without assistance. About a month after the second surgery, he returned to his job at UPS and was back to being a normal, healthy teenager.

Adam is now looking forward to starting his junior year of high school and using the experience to fuel his drive to become a physician — with strong leanings toward anesthesiology or plastic surgery. He would also like to attend Washington University as an undergraduate.

"I look for granted what I had before, but when everything was swept out from under me I knew then that anything can be taken away from us," Adam said. "I believe Dr. Mackinnon was sent by God into my room that day and I know I will never forget her."

In 2004, Virgin's group became the first to successfully grow noroviruses in the laboratory. Norovirus disease is characterized by frequent vomiting and diarrhea over the course of 1-2 days. The accomplishment is helping scientists seek ways to weaken norovirus for use as a vaccine.

By MICHAEL C. PURDY

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Jonathan Turner awarded Cox professorship

BY BARBARA RUX

Jonathan S. Turner, Ph.D., has been named the Barbara J. Winter Professor of Computer Science in the School of Engineering and Applied Science. The professorship was established by Jerome Cox, S.J., and his wife, Barbara, to advance the relationship between theory and practice in the design of digital systems. Jerome Cox is a senior faculty member and former chair in the same department. For over 50 years, Jerry Cox has contributed significantly to teaching and pioneering research in computer science. Chancellor Mark S. Wrighton said: "Now these contributions include providing critical support as a benefactor of the school." The gift will help ensure that the Barbara J. Winter Professorship will be a lasting legacy for generations.

Lectures


Friday, Aug. 15 6:30 a.m.-5:45 p.m. Undergraduate Civil/Environmental Design Competition. The competition will be held at Francis Field. 935-4705.

Sports

Friday, Sept. 1 3:30 p.m. Volleyball vs. Dominican U. Washington University Classic. Athletic Complex. 935-4705.

Saturday, Sept. 2 10 a.m. Cross Country. Francis Field. 935-4705.


University Events

WASHINGTON UNIVERSITY IN ST. LOUIS

Plaques

"Fumagillin can have neuroprotective effects, causing injury to the brain at high doses," Wilcox said. "The ability of the nanoparticles to concentrate the drug at lower doses is a desired effect." It might pay to look at these drugs again and ask if placing them on these nanoparticles can help them be effective at a lower dose and clinically useful.

new blood vessels in plaques by 60 to 80 percent.

In conclusion, these nanoparticles may benefit cancer therapy.

The microscopic spheres are capable of carrying a variety of components at the same time and can be detected with standard MRI scans, making them useful for imaging disease sites while simultaneously treating them. The nanoparticles are, a physician can confirm a drug has reached the desired location, measure the amount of drug at the site, and later check to see if the drug has affected the disease.

In the current study, the researchers fed rabbits a high-cholesterol diet for 80 days before treatment with fumagillin nanoparticles. The diet caused numerous small plaques in the rabbits' aortas, but the plaques were considered to be at an early stage of growth. By demonstrating the ability of nanoparticles for early intervention of atherosclerosis, the research group would like to alleviate the need for more invasive treatment of late-stage atherosclerosis.

"We wanted to go after the early stages of the disease when patients don't yet need immediate intervention to prevent serious cardiac problems," Winter said. "We think fumagillin nanoparticles potentially could be used as a protocol that includes lipid-lowering statin drugs or dietary changes.

Next, the research group plans to study the effect of nanoparticles in the treatment of cancer.

Winter said the use of in vivo imaging of vessel growth is a well-accepted therapy for cancer, suggesting that nanotechnology may prove beneficial in cancer therapy.
Researchers find new learning strategy: A size of a mistake makes no difference

BY TOM FETZER

Central to being human is the ability to adapt to the environments we live in. Previous theories of learning have assumed that the size and nature of the mistake determines the course of learning. However, a study by WUSTL biomedical engineers has shown that people can learn in different ways and that a mistake does not necessarily scale proportionally with error.

In a recent study, Kurt Thoroughman, Ph.D., and an intern from biomed engineering, and graduate student Michael Fine have discovered a learning strategy that cells categorize adaptation in, which steps of learning are sensitive to the direction of error, but do not scale proportionally with the size of the error. Eventually, their findings could have an impact on the rehabilitations of people with neuromotor ailments — such as strokes — by making use of different approaches to learning.

If you make a movement error in one direction, the size of your movement error will not be the same size as your previous movements. The size of your next movement error will be different depending on the size of the error in the previous movement. The size of your next movement error will be different, depending on the size of the error in the previous movement.

Thoroughman said, "I think we have uncovered a part of human adaptation that certainly doesn't do that. We are not claiming that all previous theories are wrong, but we have found that there are other ways that people can learn.

"The size of the error in a single movement can inform the generation of the next movement. He and Fine asked volunteers to make reaching movements while holding the end of a robotic arm. Volunteers were trained for about 40 minutes a day for two days. On each day, subjects were asked to make half-second, 10-centimeter reaching movements, directed away from their bodies.

"If we can learn the error in a specific way and by not noticing the movement error all of the time, we can learn to correct it. The purpose of this study was to see how people correct the movement after the error and also how they correct the movement after the error.

"If we can learn the error in a specific way and by not noticing the movement error all of the time, we can learn to correct it. The purpose of this study was to see how people correct the movement after the error and also how they correct the movement after the error.

This research can be important for the University of Missouri-Kansas City, WUSTL biomedical engineers and the St. Louis Rams. The Rams could use a learning strategy that could improve their performance in different environments.
University Libraries detail changes for fall semester

The University Libraries are making several technical and service changes to expand service, improve security and address environmental and budgetary issues. These changes affect all libraries except for those serving the School of Law, Cortex and the Brown School of Social Work and the School of Medicine.

The most immediately noticeable change is that individuals must log in to the libraries to reserve reading, which will provide for hands-on experience. The first time a student, faculty or staff member uses a library computer, he or she must go through a setup process that may take a few minutes. 

Requiring a login helps protect the computer net- work and is a necessary part of giving individuals an immediate and necessary benefit: usage of the library servers.

To increase the security for the individuals’ identities, the Libraries no longer use Social Security numbers as identifiers for access to library resources, and are instead using student and employee ID numbers.

In response to requests by library users, the Mi- crosoft Office software suite — Word, PowerPoint, Excel and Access — has been installed on all public computers for reserve reading, which has been a great convenience. Librarians believed students would read materials online instead of printing them in their rooms, so instead many students chose to print their re- serve materials free at the Libraries.

In addition, the number of electronic journals and books provided online has exploded. Libraries have reserves and other e-resources, printing in the Librar- ies no longer is done. Instead, students have the option of downloading the material directly to their personal computers.

"To continue to support free printing would re- quire the Libraries to purchase additional equipment and allocate more staff time," said Shirley K. Raker, vice chancellor for information technology and dean of University Libraries.

"It is particularly important that we give uf students and faculty the ability to reserve prior to obtaining an item, which is a time-consuming process.

A survey of Libraries at peer institutions showed none of them offer free printing. The Libraries’ new charging will partially offset the paper, toner, equip- ment and service costs. The Libraries hope that this will make to make it a break even but to bring costs to a manageable level.

The Libraries expect the new policy to have a wel- come, environmental benefit. Other academic li- braries that report that on-site printing dropped 50 per- cent or more when they began charging for printing. Some people may still print library materials on their own printers, but others will read materials on- line.

Libraries are now available for communicat- ing with library staff.

After Oct. 20, printing in campus libraries will cost $0.40 per page for reserve reading, which is the same price for other printing, for people who pay by Campus Card.

Excess fees in cash or by credit card will pay the same rate for printing as for photocopying: 12 cents per page. These fees are similar to what other academic libraries charge.

The 2001 introduction of e-reserves gave students the opportunity to reserve reading, which is now a great convenience. Librarians believed students would read materials online instead of printing them in their rooms. Instead many students chose to print their re- serve materials free at the Libraries.

Wastewater

Scalable system could provide for 900 homes

As the bacteria feed on the or- ganic material in the wastewater, they release electrons to the anod- ic electrode. These electrons then move to the cathodic electrode via a copper wire. The formed protons are trans- formed to water at the cathode while the electrons are received by a copper wire.

This is the second design of the UMFC. Last year, Anghent’s group design used a cathode on top of the anode. This time, using the U-shaped design, the surface area was increased. He reduced the distance between the anode and the cathode, which helped reduce power loss due to resistance.

These two changes are largely responsible for the boost in power by a magnitude of 10 times from a maximum of 2 watts per cubic meter of solution last year to a maximum of 29 watts today. Sustained power in the system can average 20 watts per cubic meter — enough to run a small light bulb.

Anghent and his doctoral student Han He are exploring other anode-cathode shapes, surface areas, and distances to both in- crease power and reduce the re- sistance in the system so that less power is lost as it runs through the system. Anghent says that for the UMFC to be eco- nomic he needs “two breakthroughs,” but he doesn’t know what they are.

The economic viability level for this microbial fuel cell is around 160 watts per cubic meter of solution and the goal of in- creasing the power output by 10 times would double that level to around 1600 watts. If that can happen, this microbial fuel cell system would be a proof of concept with far-reaching applications in the food and agricultural industries.

Because this experiment uses common and inexpensive materi- als, and wastewater is plentiful in industry, a scalable version of this system at one food producer could one day generate enough power for 900 American single-family households.

A clean and renewable energy source — all with what’s already just going down the drain.

MetroLink

Preview for people with disabilities is Aug. 15

people can get a taste of the new attractions reachable by riding MetroLink.

The MetroLink trains on the Cross County alignment will be free from 12:15-10 p.m. Aug. 26 and from 4-10 p.m. Aug. 27, with full fare service beginning Aug. 28.

Metro will also host “Every- One Can Ride” day from 1-6 p.m. on Aug. 15. That will be the orientation day for members of the ADA community. People with disabilities and organiza- tions who serve them are invited to visit the new MetroLink stations along the Cross County alignment.

Metro personnel will be available to identify the acceler- able entrances and explain how to use the system from these new locations.

The MetroLink trains on the Cross County alignment will be free from 12:15-10 p.m. Aug. 26 and from 4-10 p.m. Aug. 27, with full-fare service beginning Aug. 28.
Of note

Laura Rosenberg, J.D., associate professor of law, was named by the student body as the 2006 Professor of the Year in recognition of her outstanding teaching and service.

J. William Harbour, M.D., associate professor of ophthalmology and senior vice dean for academic affairs, has received a four-year, $1,252,291 grant from the National Institute of Health for research titled "The Role of BB in the Retina & Other Tissues."

Edward A. Greenman, Ph.D., professor and chair of the department of dermatology, has been named by the Board of Education to lead the five-member panel to discuss and consider opportunities for less emotional closure of theier schools.

Henson promoted to associate VC for alumni & development

Amelia A. Henson, director of alumni engagement with Washington University, has been promoted to vice chancellor for alumni & development programs.

Henson has been at the University for 30 years, serving as an instructor in medicine, has been named a fellow of the American Gastroenterological Association in 1990, a Distinguished Educator from the American Gastroenterological Association in 2005, an instructor in medicine, and has received a six-year, $779,000 grant from the Crohn's and Colitis Foundations of America for research titled "Genetic and Molecular Factors of the Epithelial Stem Cell in Crohn's Disease and the Colonic Inflammatory Injury Response."

William F. Stenson, M.D., professor of medicine, has received a three-year, $479,000 grant from the Crohn's and Colitis Foundation of America for research titled "Increased Expression of Interferon-2-Induced Diminishes the Severity of TNBS Colitis."

Marc Colome, M.D., professor of pathology and immunology, has received a four-year, $415,198 grant from the National Institute of Allergy and Infectious Diseases for research titled "Nectins in Tumor Immune Surveillance."

David M. Holtzman, M.D., the Andrew W. and Gretchen P. Jones Professor of Neurology, has received a three-year, $375,000 grant from the Howard Hughes Medical Institute for Alzheimer's Disease research.

Kathleen Gearwood, J.D., professor of law and associate professor of law at the University of Missouri, has been named a fellow of the American College of Physicians in 1996, a fellow of the American Academy of Family Physicians in 1986, and a fellow of the American Society of Clinical Oncology in 2001.

The book, "Zen Sanctuary Japan's Tokeiji Convent Since 1285" (Albany: State University of New York Press, July 2006), is a translation of the Mirai Eisai's biography of the nun and poetess Ichien.

In support of this contention, the authors include a complete translation of the Mirai, a feminist (Tsunka kagami) by Kakunin's wife and student, Michie. In this engaged scholarship," says Edwin Cranston, Ph.D., a professor of Japanese literature at Harvard University.

"This cultural history of the famous Zen nun as it functions as a lens on current social and cultural contexts of the English-speaking world is methodically argued and is a useful addition to the genre," says Geoffrey E. Steinberg, a professor of history at the University of California, Santa Barbara.

Campus Authors

Robert E. Morrell, Ph.D., professor emeritus of Asian and Near Eastern Languages and Literatures and an emeritus professor of humanities in Arts & Sciences

"Sanctuary of Purple Robes: Japan's Tokaiji Convent Since 1285"


"The authors' research examines the affairs of the Rinzai Zen convent founded in 1285 by nun Kunon Shida after death of her husband, Hojo Tokumune, the Kamakura regent's 30th wife, with her daughters and granddaughters. The book explores the nun's Zen practice; Abyss Todoh's imperial relations; 18th-century master monk ski Koya; and the first period and a favorite topic of senryu satiri-

Obituaries

Oswar, 93, well-known painter

Aurie Oswar, an internationally recognized painter and a leader in stained glass, died Monday, July 24, 2006, at Barnes Jewish Extended Care in Clayton, Mo. He was 93.

Born in Chicago, Oswar attended the Metropolitan School of Art and the Art Institute of Chicago, and his work has been exhibited in galleries around the world. He was married to Erna, the painter Ernestine Betsberg. The couple lived in Paris, Rome and New York before arriving at Washington University in 1964.

Though retired since 1981, Oswar remained a fixture on the University's arts scene, known for colorful, rhythmic abstractions that combined intricate structures with gestural spontaneity. His work is included in many prestigious collections, including the "I am an Extravagant Museum of Art, the Museum of Modern Art and the Whitney Museum of American Art, all in New York. Oswar was survived by his wife and three sons, and the business managers and IT organizations of the various schools and the CPU.
For L. Lewis Wall, M.D., D.Phil., professor of obstetrics and gynecology, understanding the origin and nature of human beings is essential to placing his own life and work in a greater social context.

As a boy, he dreamed of unearthing long-lost pharaohs in the land of Tutankhamun, and this love of discovery initially led him to the field of anthropology. After completing a bachelor's degree in anthropology and history from the University of Kansas in 1972, Wall earned a doctoral degree in social anthropology as a Rhodes Scholar at Oxford University.

But he began to rethink his path in life while living and working as an anthropologist in a rural hospital in northern Nigeria on a Fulbright Fellowship. He decided that the world needed doctors more than it needed anthropologists.

The medical field was a familiar one. His father worked as a physician while Wall was growing up in a suburb of Kansas City, Kan., in the 1950s. Back then, Wall was certain of two things: He definitely didn’t want to become a physician, and he certainly didn’t want to have anything to do with obstetrics/gynecology, his father’s specialty.

But his experience in Africa changed that.

He returned to the United States and graduated from the University of Kansas School of Medicine in 1983.

While completing pre-med studies at the University of Kansas, he met Helen Prost, an exchange student from England, who would become his wife.

When it came time to choose a specialty, Wall liked obstetrics and gynecology best.

“My father was very gracious about my decision,” Wall says, with a laugh. “He didn’t make me sweat the chore before I ate it.”

Wall then completed a residency at Duke University School of Medicine and became fascinated by urogynecology, the subspecialty that treats women who have urinary or fecal incontinence and prolapse (bulging) of the vagina, bladder and/or rectum.

“I was interested in urogynecology because it was a specialty,” he says. “There was a pioneering aspect to it, and the diagnostic technologies were kind of mysterious and fascinating.”

He also knew that surgical repair of these problems could have a huge impact on women’s lives.

After fellowships in female urology andandrology at St. George’s Hospital Medical School in London and St. Mary’s Hospital for Women and Children in Manchester, England, Wall served for several years on the faculties of Duke University Medical Center and Emory University School of Medicine.

In 1994, Tom Elkins, M.D., head of the Department of Obstetrics and Gynecology at Louisiana State University (LSU) Medical Center, recruited Wall because of his African expertise. Elkins and Wall shared an interest in helping women in Africa who are unable to deliver their babies safely because their birth canals are not fully developed. During obstructed labor they may develop a fistula, an abnormal opening between the bladder and vagina that develops because their pelvic tissue has been crushed. Wall has traveled to Africa many times to perform surgery to repair the fistulas.

“Whether you realize it or not, you have, in Dr. Wall, a real treasure. His imposing academic credentials have given us entry into the highest levels of international policy, yet he is completely willing to work in hospitals where there is occasional electricity and where we re-use paper surgical gowns until they fall to pieces,” Steven Arrowsmith, M.D., vice president for international program development for the WFF, has said. Steven Arrowsmith, M.D., vice president for international program development for the WFF, has said he has great admiration for Wall, citing his combined expertise in urogynecology and anthropology and his tireless work on behalf of poor women in the developing world.

“While the faculty and staff at Washington University know Dr. Wall from hospital rounds or from lecture halls, I know him from cramped bush taxis and smelly hospital wards in some of Africa’s worst hospitals,” Arrowsmith says.

“Whether you realize it or not, you have, in Dr. Wall, a real treasure. His imposing academic credentials have given us entry into the highest levels of international policy, yet he is completely willing to work in hospitals where there is occasional electricity and where we re-use paper surgical gowns until they fall to pieces.”

Wall also has a joint appointment in the Department of Anthropology and teaches Anthropological Perspectives on Medicine.

Wall says he has to combine medicine with anthropology. “I think I realized a long time ago that medicine only exists and only works in a worthwhile fashion if you take into account the historical and social context,” he says, “you’ve got to see the bigger picture.”

James Schreiber, M.D., professor of obstetrics and gynecology and the former head of the Department of Obstetrics and Gynecology who recruited Wall to WUSTL, says Wall is a true academician. “He has studied the difficulties that women’s health faces in Africa, and most importantly, he has done something about it. He brings honor to himself, to the medical profession and to the University.”

L. Lewis Wall

Education: Master’s degree in anthropology, Monash University, Victoria, Australia, 2001; medical degree, University of Kansas School of Medicine, 1983; doctorate in social anthropology, Oxford University, 1985; bachelor’s degree in anthropology and history, University of Kansas, Lawrence, 1972.

Family: Wife, Helen; community volunteer and award-winning seamstress; son, Jimmy, junior at California Lutheran University; son, Tom, freshman at Washington University and president of the WUSTL Juggling Club.

Hobbies: Reading, traveling, fine wine. D.Phil., professor of obstetrics and gynecology, understanding the origin and nature of human beings is essential to placing his own life and work in a greater social context.

As a boy, he dreamed of unearthing long-lost pharaohs in the land of Tutankhamun, and this love of discovery initially led him to the field of anthropology. After completing a bachelor's degree in anthropology and history from the University of Kansas in 1972, Wall earned a doctoral degree in social anthropology as a Rhodes Scholar at Oxford University.

But he began to rethink his path in life while living and working as an anthropologist in a rural hospital in northern Nigeria on a Fulbright Fellowship. He decided that the world needed doctors more than it needed anthropologists.

The medical field was a familiar one. His father worked as a physician while Wall was growing up in a suburb of Kansas City, Kan., in the 1950s. Back then, Wall was certain of two things: He definitely didn’t want to become a physician, and he certainly didn’t want to have anything to do with obstetrics/gynecology, his father’s specialty.

But his experience in Africa changed that.

He returned to the United States and graduated from the University of Kansas School of Medicine in 1983.

While completing pre-med studies at the University of Kansas, he met Helen Prost, an exchange student from England, who would become his wife.

When it came time to choose a specialty, Wall liked obstetrics and gynecology best.

“My father was very gracious about my decision,” Wall says, with a laugh. “He didn’t make me sweat the chore before I ate it.”

Wall then completed a residency at Duke University School of Medicine and became fascinated by urogynecology, the subspecialty that treats women who have urinary or fecal incontinence and prolapse (bulging) of the vagina, bladder and/or rectum.

“I was interested in urogynecology because it was a specialty,” he says. “There was a pioneering aspect to it, and the diagnostic technologies were kind of mysterious and fascinating.”

He also knew that surgical repair of these problems could have a huge impact on women’s lives.

After fellowships in female urology and andrology at St. George’s Hospital Medical School in London and St. Mary’s Hospital for Women and Children in Manchester, England, Wall served for several years on the faculties of Duke University Medical Center and Emory University School of Medicine.

In 1994, Tom Elkins, M.D., head of the Department of Obstetrics and Gynecology at Louisiana State University (LSU) Medical Center, recruited Wall because of his African expertise. Elkins and Wall shared an interest in helping women in Africa who are unable to deliver their babies safely because their birth canals are not fully developed. During obstructed labor they may develop a fistula, an abnormal opening between the bladder and vagina that develops because their pelvic tissue has been crushed. Wall has traveled to Africa many times to perform surgery to repair the fistulas.

“Whether you realize it or not, you have, in Dr. Wall, a real treasure. His imposing academic credentials have given us entry into the highest levels of international policy, yet he is completely willing to work in hospitals where there is occasional electricity and where we re-use paper surgical gowns until they fall to pieces,” Steven Arrowsmith, M.D., vice president for international program development for the WFF, has said. Steven Arrowsmith, M.D., vice president for international program development for the WFF, has said he has great admiration for Wall, citing his combined expertise in urogynecology and anthropology and his tireless work on behalf of poor women in the developing world.

“While the faculty and staff at Washington University know Dr. Wall from hospital rounds or from lecture halls, I know him from cramped bush taxis and smelly hospital wards in some of Africa’s worst hospitals,” Arrowsmith says. “Whether you realize it or not, you have, in Dr. Wall, a real treasure. His imposing academic credentials have given us entry into the highest levels of international policy, yet he is completely willing to work in hospitals where there is occasional electricity and where we re-use paper surgical gowns until they fall to pieces.”

Wall also has a joint appointment in the Department of Anthropology and teaches Anthropological Perspectives on Medicine.

Wall says he has to combine medicine with anthropology. “I think I realized a long time ago that medicine only exists and only works in a worthwhile fashion if you take into account the historical and social context,” he says, “you’ve got to see the bigger picture.”

James Schreiber, M.D., professor of obstetrics and gynecology and the former head of the Department of Obstetrics and Gynecology who recruited Wall to WUSTL, says Wall is a true academician. “He has studied the difficulties that women’s health faces in Africa, and most importantly, he has done something about it. He brings honor to himself, to the medical profession and to the University.”

L. Lewis Wall

Education: Master’s degree in anthropology, Monash University, Victoria, Australia, 2001; medical degree, University of Kansas School of Medicine, 1983; doctorate in social anthropology, Oxford University, 1985; bachelor’s degree in anthropology and history, University of Kansas, Lawrence, 1972.

Family: Wife, Helen; community volunteer and award-winning seamstress; son, Jimmy, junior at California Lutheran University; son, Tom, freshman at Washington University and president of the WUSTL Juggling Club.

Hobbies: Reading, traveling, fine wine.