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Repeated testing better than repeated studying

By GERRY EVERSOLD

Despite their reputation as a cruel tool of teachers intent on striking fear into the hearts of unprepared students, quizzes given early and often—may be a student's best friend when it comes to understanding and retaining information for the long haul, suggests new psychology research from WUSTL.

"Our study indicates that testing can be used as a powerful motivator and an effective tool for improving students' learning and promoting retention of material long after a course has ended." Perhaps equally important, this study demonstrates that students who rely on repeated study alone often come away with a false sense of confidence about their mastery of the material.

In an experiment in which students either took quizzes or were permitted to study material repeatedly, students who studied frequently while studying on their own may be able to learn more but less, while they might be able to learn more when studied the material over and over again.

"Incorporating more frequent classroom testing into a course may improve students' learning and promote retention of material long after a course has ended," said Henry L. "Roddy" Roediger III, Ph.D., the James S. McDonnell Distinguished University Professor and an integrative psychologist and scholar of human memory function. "Students who studied frequently while studying on their own may be able to learn more but less, while they might be able to learn more when studied the material over and over again."

One gene provides fruit fly both antenna & color vision

BY TONY FITZPATRICK

A team of researchers that includes WUSTL biologists has discovered that a gene involved in the development and function of the fruit fly antenna also plays a role in the organ's color vision.

Claude Doupélan, Ph.D., professor of biology at New York University, and his students made the discovery and provided the data. Ian Duncan, WUSTL professor of biology in Arts & Sciences, and his wife, research assistant Dianne Duncan, provided the Doupélan laboratory fruit fly (Drosophila) clones and mutants and technical assistance that helped locate where the gene, called "spineless," is expressed in the retina.

The Duncans have a long history with the spineless gene. Their interest has been in the role spineless plays in directing development of the antenna, Drosophila's primary olfactory organ. Years ago, they deleted the spineless gene and found that the mutants then produced a leg instead of an antenna. "Spineless plays a key role in the antenna and maxillary palp, the two major olfactory organs of the fly," Ian Duncan said. "It's also important in mechanosensory bristles and in the taste receptors of the legs, wings and mouth parts. There has been a sensory theme to the gene, and now we learn from Claude's work that it plays a key role in color vision."

Research programs for undergraduates evaluated nationally

BY JENNIFER EVERSOLD

When you give a college student a choice between a summer full of law meetings languishing on a couch or a summer of getting up early to engage in scientific research in a full-fledged lab, the choice might seem easy.

However, at Washington University and other schools across the country, there are numerous undergraduates taking advantage of summer research opportunities. The University has a long tradition of undergraduate participation in research, it has been a featured activity in a number of programs created by Sarah Elgin, Ph.D., professor of medicine, of genetics and of molecular biology and pharmacology, in the study's senior author.

"This study is the first time the pathway for a drug's effect has been analyzed in tumors from different anatomical locations," said McLeod, also director of the pharmacology core at the Siteman Cancer Center and a member of the National Institutes of Health Pharmacogenetics Research Network.

"We showed that drug effect is independent of where the tumor came from in the body. If further studies confirm that a tumor-specific approach is better than the current anatomical approach, oncologists may have to(stage) themselves as colon cancer or breast cancer specialists and let the cancer tell them which drugs to use for specific patients."

The research team analyzed 255 samples of eight different cancers—colon, breast, prostate, ovary, lung, brain, melanoma and lymphoma—and measured the amounts of specific proteins known to influence the effect of irinotecan, a commonly used anticancer agent. The study will appear in an upcoming issue of the Journal of Pathology.

The protein levels that determine irinotecan's effectiveness

13 appointed McDonnell Academy ambassadors

BY ANDY CLENDENNEN

The University has named 13 faculty members as ambassadors to partner universities in the McDonnell International Scholars Academy. In general terms, ambassadors were expected to build what we have called "academic commerce" between Washington University and the partner universities, Chancellor Mark S. Wrighton said. "By this I mean working to develop meaningful research and educational collaborations in a bilateral sense with Washington University and/or multilateral collaborations with one or more partner universities of the McDonnell Academy." The ambassadors and their partner universities are:

- Provost R. Wayne Soileau, Ph.D., the Stifel and Quintette Jen Professor of Environmental Engineering Science, director of the Environmental Engineering Science Program and principal investigator of the WUSTL Aerosol and Air Quality Research Laboratory, is ambassador to Saint Louis University.

- Leonard W. "Woody" Eiting, Ph.D., professor of pharmacology, is ambassador to the University of Florida.

- Kari Ann McLeod, also director of the pharmacology core at the Siteman Cancer Center and a member of the National Institutes of Health Pharmacogenetics Research Network.

- Sarah Elgin, Ph.D., professor of medicine, of genetics and of molecular biology and pharmacology, in the study's senior author.

- Ian Duncan, associate professor of biology in Arts & Sciences, of biology, in Arts & Sciences, and his wife, research assistant Dianne Duncan, provided the Doupélan laboratory fruit fly (Drosophila) clones and mutants and technical assistance that helped locate where the gene, called "spineless," is expressed in the retina.

"Spineless plays a key role in the antenna and maxillary palp, the two major olfactory organs of the fly," Ian Duncan said. "It's also important in mechanosensory bristles and in the taste receptors of the legs, wings and mouth parts. There has been a sensory theme to the gene, and now we learn from Claude's work that it plays a key role in color vision."
Arye Nehorai, Ph.D., chair of the Department of Electrical Engineering and Applied Sciences, is installed as the recipient of the Washington University in St. Louis’ Lohman professorship. Nehorai has published nine book chapters, 100 journal papers and 130 conference papers, and he has served on 11 editorial boards for scholarly journals. He has served as co-editor in chief of the IEEE Transitions on Signal Processing. From 1995-2005, Nehorai served as the faculty of the University of Illinois at Chicago. Before that, he taught at WUSTL.

"We will greatly benefit from the presence of a distinguished researcher as the Lohman professor as Arye Nehorai will join our university, and equally importantly, the endowment gift will help from Eugene and Martha Lohman’s vision to fulfill the promise we have been able to make," said the university’s president, Mark S. Wrighton. "This gift will enable us to support the first comprehensive systems approach in systems biology for the University of Illinois at Chicago. Before that, he taught at WUSTL."

A systems approach integrates all the different temporal information into a multivariate model, which is the backbone of the current research that is being done in that area. The idea is that we need to understand the network of genes and proteins that govern the structure and function of membranes and their components responsible for photosynthesis and nitrogen fixation in two species of unicellular cyanobacteria, specifically Cyanothece and Synechococcus.

This is one of two grand challenge projects recently funded by EMUL-Penn, a project, not involving WUSTL, and led by PNLL laboratory director David J. Fried, is probing the fundamental question of how substances are transported across a membrane and how they interact with and transfer electrons to the mineral surfaces. The research is being done in collaboration with colleague and friends to develop a systems approach that is being done in that area.

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Salmonella bacteria use RNA to assess, adjust magnesium levels

By MICHAEL C. PURDY

Researchers in the School of Medicine have added a gene in the short list of genes regulated by a magnesium ion, substantially expanding the number of magnesium-switches that can detect cell mineral status and help cells adapt to mineral fluctuations.

First identified in 2002, riboswitches sense when a protein is needed and stop the creation of the protein if it isn't. While scientists have known of some riboswitches that can cause molecules to bind to DNA to turn protein production on or off, a riboswitch can now depend on anything binding to DNA.

University wins high-profile research case

A mer than a year in the making, a federal judge ruled April 14 in favor of Washington University in an important case against William J. Catalona, M.D., a co-founder and current member, regarding ownership of tissue samples used to research prostate cancer.

The comprehensive ruling by U.S. District Judge Stephen R. Limbaugh has implications for future research, the use of donated and preserved human tissue, and patient confidentiality.

While still at the University, Catalona collected consenting donors' blood and tissue samples that he later used in prostate cancer research. Catalona left the University in 2005 and wanted to take the tissue samples and collected by other University researchers with him. Without the approval of the University's Committee on Human Studies, he also asked the tissue donors to appeal to him to provide them with the samples.

In his ruling, Limbaugh determined that the University deeded, paid for and owned the samples and that the donors signed consent forms to give the tissue to the University to use in research.

The judge also granted the University the authority to control the tissue and to share it with other researchers, including Catalona, in pursuit of a cancer cure.

"The integrity and utility of all biorepositories would be seriously threatened if (research participants) could move their samples from institution to institution at any time they wanted," Stephen N. Limbaugh wrote.

"If left unregulated and to the whims of a (research participant), these privileged (biological materials) would become nothing more than chattel, bound to be folding up. The program perceived a commerce in living tissue and devalued the human contribution," Limbaugh wrote. "Instead, the switch is incorporated into messages for construction of proteins. Those messages are protein-building instructions copied from DNA into strands of RNA. The switch can be a sensor within the RNA that can twist it into different configurations that block or facilitate the production of the protein encoded in the message."

Previously identified riboswitches can involve an organic compound such as nucleotides and sugars. The Salmonella riboswitch, reported in the April 7 issue of the journal Cell, responds to magnesium ions, key elements in the stability of cell membranes and reactions in an energy-making process that fuels cell metabolism.

"Magnesium ions are essential to the stability of several different critical processes and structures in the cell, so there has to be a fairly intricate set of regulators to maintain consistent levels of it," said senior investigator Edward A. Groisman, Ph.D., professor of molecular microbiology. "To approach such a complex web, we study it in a simpler organism, the Salmonella bacterium."

Groisman and his colleagues uncovered the magnesium riboswitch while they were investigating the MgtA gene, which is controlled by the major regulator of Salmonella virulence, the pheS/pheR system. The MgtA gene codes for a protein that can transport magnesium across the bacterium's cell membrane.

Groisman's group showed 10 years ago that the pheS/pheR system controls when Salmonella makes MgtA.

"When Salmonella experiences a low-magnesium environment, pheS chemically modifies pheR. The changed pheR binds to DNA, increasing the number of times instructions for making MgtA and more than 100 other proteins are read from the DNA."

But when Salmonella encounters a high-magnesium environment, pheS dephosphorylates pheR and fewer copies of the instructions for making MgtA are made.

While Groisman and his colleagues created a mutant strain lacking the pheS gene, though, they were surprised to find that magnesium ions, key elements in the stability of cell membranes and reactions in an energy-making process that fuels cell metabolism. Researchers used a computer program to determine how RNA copied from the MgtA gene might be held up. The program predicted RNA copied from the gene could have two significantly different configurations.

Because of the significant differences between these configurations, Groisman, who also is a Howard Hughes Medical Institute investigator, became interested in a region at the beginning of the RNA strand that contains no protein-building instructions. He theorized that it might be a riboswitch that responded to high magnesium levels by twisting the RNA into a configuration where its protein-building instructions somehow could not be used or were invalidated.

"One of our tests to see if this was something more than a computer fantasy was to take this segment that contains no protein-building instructions off the MgtA gene and paste it into another genetic configuration," Groisman said. "We wanted to see if it conferred sensitivity to magnesium levels, which it did.

The Groisman group also showed that one RNA configuration was more sensitive to magnesium levels while another was common in high magnesium levels.

They also searched the genomes of other bacteria with MgtA genes to see if their DNA included a sequence similar to the riboswitch in Salmonella.
Imani Winds to present The Josephine Baker Project

BY LILLY OTTEN

St. Louis native Josephine Baker was one of the most acclaimed, controversial and culturally significant African American performers of the 20th century. Her sensual appeal and sharp comic timing caused a sensation in Paris during the 1920s, a time when U.S. popular culture largely remained segregated.

At 8:30 p.m. April 28, the Edison Theatre OVATIONs Series will celebrate the 100th anniversary of Baker’s birth with a one-night-only performance of The Josephine Baker Project: A Life of Le Jazz Hot at 8 p.m. April 28 as part of the Edison Theatre OVATIONs Series! Performers include:

- 7:30 a.m. Undergraduate Colloquium. "The Market in the Ancient World." Richard Chapman, sr. lecturer in history. Duncker Professor of French Literature, Language and Culture, Carleton College. Duncker Bldg., Rm. 204. 935-6276.

Imani Winds explores the links between Euro-American and African cultural traditions. (The name is derived from a Swahili word for ‘faith.’) The group’s innovative repertoire combines classical wind instrumentation — horns, flute, bassoon, clarinet and oboe — with influences drawn from jazz and world music as well as original compositions by ensemble members.

"In no goal is nothing less than to change the face — literally — of the classical wind quintet," noted The Depression Post, "Imani Winds represents nothing less than the future of the once-quotidian color of the wind quintet." Imani Winds has performed throughout the United States. Recordings include Imani Winds I (2002), Imani Winds II (2007), and The Classical Under (2005), nominated for a Grammy Award as "Best Classical Crossover Album.

Imani Winds is one of today’s most acclaimed jazz ensembles, frequently compared to the likes of Ella Fitzgerald and Sarah Vaughan. Baker began performing professionally as a singer and dancer as a child, in 1937, and during World War II she worked undercover for the French resistance, smuggling messages on her lap dancer. In the 1950s and ’60s, she became increasingly involved with the U.S. Civil Rights Movement, smuggling with Walter Winchell into the segregationist-controlled South and speaking at the 1963 March on Washington.

She died of a cerebral hemorrhage in 1975.

Imani Winds

March 27, 1997, Imani Winds

... is an as-yet-unreleased original song inspired by her own remarkable story and the lives of her family members.

Edison Theatre

Edison Theatre programs are made possible in part by grants from the Missouri Arts Council, a state agency; and through all MetroTix outlets.

Additional all-ages matinee

Imani Winds will also present an all-ages matinee performance of How jeep Got His Grove Rock — a musical adventure that shows how a young French horn player best by a basset hound riding with — at the performance of young people at 1 p.m. April 29.

Tickets are $15.

As an R&B singer at age 15 but married one of her band- mates three years later and put her career on hold for the next two decades. She began performing again in 1996, with the encouragement of her sons, and in 1998 released her self-produced debut, Renaissance Live at Jazz Standard (2003), but Hillbilly’s jazz charts a month before its official release.

Her most recent release, Sereen Jozefowicz, Koffman or any original songs inspired by her own remarkable story and the lives of her family members.

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Sports

Men's tennis extends win streak to 16

The No. 8 men's tennis team went 3-0 at home to extend its home winning streak to 16 matches. Senior Ashton Rosenblum hit a 390th and 460th win of the season to lead the Bears to a 6-1 victory over Littlejohn. WUSTL defeated the Bears 7-0, followed with a 7-0 win over Monmouth College April 12. Rosenblum teamed with freshman Chris Boulanger to defeat a doubleheader from DePaul University, 3-0 and 1-0, also defeating Brearley-Jones in strong performance in one game, picking up a 6-1 win. After scoring to improve to 8-0, Buffs gulped just six points to win.

WUSTL followed that with a 7-0 win over 23-4. The No. 15 softball team split a single-season record seventh pitching a complete game to

Germano went 3 for 4 with six runs in the fourth inning to gain垒

Women's tennis closes home season with win

In the opener, junior Laurel Sagartz struck out 10 as she improved to 1-1. The victory over Sagartz was the 91st of her career, tying Victoria Ramsey for first on the all-time WUSTL list. In Game 2, Central scored four runs in the fourth inning to gain the split.

Track & field competes at scoreless shed

The track and field team competed in its final meet with WUSTL. Qualifican April 13. Although no team scores were kept, there were many strong performances at the meet. In the javelin, freshman relay squad ran an NCAA provisional qualifying time of 41.97 seconds to take second place. In the it was turned in his strongest high jump performance of the outdoor season, clear-2008.

Softball team splits with No. 19 Central

The No. 15 softball team split a doubleheader with No. 19 Central College April 13 at the WUSTL Softball Field. The Bears won Game 1, 3-1, and then fell in the nightcap, 5-2. The loss snapped the Bears' 10-game winning streak and dropped their record to 23-4.

Children play on the interactive sculptures Labyrinth, by WUSTL students Mathew Greer and Luke Barrow, located in bloom. On Gentle Delmar-Harvard Elementary School, is part of the 20th Annual City Sculpture, on display is on display through

Although designed for temporary public art, it will also address inter-

Arts & Letters University City along with a grant from the Regional Arts Commission.

A program that includes a parallel program is at the University City Library. For more information, call Cheryl Thompson at 503-8623.
Westermann to conclude Center for the Humanities Faculty Fellows Series

M ariet Westermann, Ph.D., director of the Institute of Fine Arts at New York University, will lecture on "In the House of Mirrors: Painting and Experience in Van Gogh and Bonnard" April 24 in Anheuser-Busch Hall, Room 108. Westermann is the final speaker presenting this spring at the Center for the Humanities in Arts & Sciences’ Faculty Fellows Lecture and Workshop Series. Her talk will center around her recent work in Bonnard’s career as a luxury item in 17th-century Dutch painting and will explore new kinds of painting.

In the fall, Westermann will lead a graduate-student workshop titled "Silence and Noise in Dutch Painting at the Turn of the Century" at 9 a.m. April 25 in Simon Hall, Room 108. This session, organized with the help and support of Paul Greengard, Ph.D., adjunct professor of art history in Arts & Sci.

Programs

from Page 1

additional grant funding from HII, she developed a collaborative group to work with David Logan, Ph.D., professor of biology at Grinnell College, who ringed the call to action for the undergraduate summer research students to query their research after their research experience.

In her first year, 1,155 students participated in the collaborative program. The second year brought approximately 2,000 student and faculty participation.

"I think Elgin and Lopesi discovered that the summer research program is not only working, but it is also acting as a formative event in many of these students’ lives. The majority of students responded that they had been profoundly influenced by the science and that the summer experience confirmed their desire to pursue a career in the field," Westermann said. Interestingly, the 4 percent of students who decided to change their future career plans from science to another field was equivalent to the percentage of students who changed career plans from a non-science field to a science field.

Additionally, through the national collaborative program, her colleagues were able to look for differences in teaching strategies between college and university summer internship programs. "This was the first time that we could really compare the same students in different programs. We found that students learned differently when engaged in the summer internship experience," Westermann said. "It is all of this supportive evidence that it is important to engage students in summer undergraduate research opportunities to retain them for future research experience." Westermann said that the students who worked on the bench.

Re-exposure to the material during testing is a key component of this phenomenon. For instance, students studied a prose passage 14 times. For one test was presented five minutes after study. For the repeated-test group, which had no tests in this phase, but was allowed to review at least once before each test, the results were better than the repeated-test group. For the study-only group, which had no exposure to the material during testing, the results were worse than the repeated-test group.

In a similar study, Roediger is involved in project conducted at the University of Wisconsin-Madison, undergraduate students were asked to read the passage about 14 times, and then took either one or three immediate tests, receiving no feedback on the accuracy of their answers. As soon as enough students had given up the opportunity to evaluate their position, the "monitoring" was turned off for the initial group that took tests on the material daily, whereas studies spaced over long periods. As far as source and analogue of learning, why this phenomenon takes place, Roediger is involved in project conducted at the University of Wisconsin-Madison. The study-only group had no tests in this phase, but was allowed another five minutes to re-read the information. For the repeated-test group, which had no tests in this phase, but was allowed another five minutes to review the information, the results were better than the repeated-test group.

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Dioxin receptor studied

Connie Diekman, director of the Missouri Dietetic Association, is being elected president of ADA for more than 30 years.

As ADA president, Diekman named president-elect of ADA for more than 30 years.

Drosophila eye,

Cornfeld co-authored the book Missouri Estate Planning--Will Drafting and Estate Administration.

The honor of being chosen for the group's mission and goals in an effort to improve the nutrition knowledge and health of Americans.

The Extension of the West Side of the Psychology Building is nearing completion. The project, started last year, will add nearly 14,500 square feet to the current structure and allow for continued growth and development of the Department of Psychology and Neuroscience.

The anybody who has represented employers in all manners of employment law and helped establish the Equal Justice program.

random pattern

random pattern

Drosophila retina comprises about 350 ommatidia that are sensitive to light and the other to short-wave light.

The fascination thing in this work is that the longer wave-length sensitive ommatidia are randomly positioned.

expression of different light sensitive pigments (rhodopsins) in R7 and R8. The two central photoreceptor cells (R7 and R8) of each ommatidial elementary section determine the long-wave type by activating expression of photoreceptor rhodopsin genes in R7 and R8. In ommatidia where spineless is not expressed, R7 expresses the short-wave sensitive rhodopsin 5-3.

A study of the group's mission and goals in an effort to improve the nutrition knowledge and health of Americans.
Daniel Brennan, M.D., already had his foot solidly in the door when he interviewed for a job at the School of Medicine 13 years ago. Administrators from the school had, after all, recruited him to come to town for an interview.

So he arguably would have received the job even if he hadn’t helped revive a VIP later that same day at the Department of Surgery’s Christmas party.

“The wife of the former chairman of surgery collapsed, and I basically helped resuscitate her,” recalls Brennan, a professor of medicine. “My first reaction was that I think that impressed the doctor who was then the head of surgery.

“I later started to wonder if that was all in my mind, but then I heard one of the surgeons telling this story at a surgery conference, so I kind of gave him some real notoriety.”

Brennan, who was 33 at the time, came to the University in 1993 as a head and sole member of a new section, transplant nephrology. With his expert guidance, the kidney transplant program at Barnes-Jewish Hospital doubled the number of transplants it performed, jumping from 59 the previous year to 120 in Brennan’s first year.

“That’s pretty much where we’ve been since then — somewhere between 100 and our high, which was 150,” he says.

“What we’re really proud of, though, is the fact that in the years since 1996 we’ve consistently driven acute kidney rejection rates down to less than 5 percent. That rate and the 5 percent is the lower range.”

Brennan, 46, is still the section’s only full-time faculty member, but he now sees patients with two kidney specialists he trained — Brent Miller, M.D., associate professor of medicine, and Matt Koch, M.D., assistant professor of medicine — and a third nephrologist, Marcus Rothstein, M.D., professor of medicine.

“Dan is an unselfish and natural leader and a creative and compassionate physician, remembers he go to Brigham and Women’s Hospital in Boston. Brennan 

Brennan enjoys getting to know the patients and their families and the positive nature of the transplant process when it works well.

“They tried to recruit me into industry last year, and I turned them down because even though they were going to let me see patients, they wouldn’t be patients in my clinic,” he says.

In Born was Wisconsin and raised in suburban Chicago, Brennan likes to say what’s on his mind but doesn’t seem inclined to do so in an abrasive or self-centered way.

“For example, he’s humble enough to freely admit that he first became interested in his undergraduate college, Cornell College in Mount Vernon, Iowa, largely on the basis of mistaken identity. He thought it was the Ivy League Cornell University.

“So he asked his dad, ‘Dad, where’s Cornell?’ and he said, ‘Iowa, New York,’ and I said, ‘Not Mount Vernon, Iowa?’”

Brennan’s laughter when he recalls this incident rings with gratitude: The mistake worked well for him.

His mother, an immunologist, had previously had positive experiences with Cornell College student interns, and he was impressed by the campus and the opportunities it offered when he visited, as he decided to pass on the Ivy League experience for an Iowa university.

Seated in his office in a special chair that he uses because of a back injury, Brennan, who’s wearing a Beatles tie given to him by one of his daughters, remembers his years in Iowa with great fondness.

“I fell in love with a woman, Susan, in a child in every state they’ve lived in. Brennan jokingly notes that he and his wife, Susan, have added a child in every state they’ve lived in. Kate, the eldest at 18, was born in Iowa; Chris, 15, in Boston; Meaghan, 13, in Omaha, and Maddy, 11, in Minnesota.

Brennan praises St. Louis as “the best mentor I’ve ever had.”

He is particularly excited about their research into the BK virus (so named for the initials of the first patient diagnosed with it). The virus is widespread in the general population; by the time they’re teenagers, 90 percent test positive for it.

The virus normally doesn’t cause any problems, but when the immune system is suppressed — as in patients who’ve just received a kidney transplant — it can become a harmful infection.

Brennan estimates the BK virus infects the new kidney in less than 5 percent of patients. But patients with new transplant patients, but notes that 50 percent of those patients will lose their new kidney to the infection and the remainder will be left with a kidney that is functionally non-functional.

Brennan and his colleagues showed that taking patients of the immune suppression drugs when the BK virus began showing up in their blood could prevent the virus from getting into the kidney.

“In transplantation, you want to be like Goldilocks — just the right amount of immune suppres- sion is too much, too little, and they reject the new kidney.”

Brennan says BK has been “almost like a gift from the transplant gods” because testing for the virus’s reactivation in the blood stream lets clinicians clearly know when they’ve given their patients too much immune suppression.

Another major branch of Brennan’s research involves the systems used to allocate organs for transplantation.

In these studies, he collaborates with fellow NiU biology Ph.D. student Mark Schnitzler, who has a doctorate in economics and is now director of Saint Louis University’s Center for Outcomes Research.

In a recent paper, Brennan and Schnitzler’s analysis suggested that an effort to increase the number of kidneys available to African-American patients was misguided.

“The system organizers recently eliminated the points given to potential patient-organ matches on the basis of immune com- patibility factors that frequently differ slightly between white and African-American patients,” Brennan says.

“We showed that this created a lose-lose situation for African-American patients frequently do better on dialysis than on transplantation, while the re- verse is true in white patients.”

Brennan and Schnitzler argue that a better way to increase organ availability is to increase the conversion rate among African-American patients. Brennan says, “We don’t even need more donors to eliminate the disparity.”

When not dealing with the intricacies of organ transplantation and allocation, Brennan spends his spare time biking, swimming and playing guitar and enjoying St. Louis with his family.

Brennan jokingly notes that he and his wife, Susan, have added a child in every state they’ve lived in. Kate, the eldest at 18, was born in Iowa; Chris, 15, in Boston; Meaghan, 13, in Omaha; and Maddy, 11, in Minnesota.

He praises St. Louis for its accessibility:

“St. Louis is a city that can be used,” he says. “It’s livable — you can go down to The Hill for din- ner, you can go see the Arch or a museum in Forest Park, or you can go to professional sporting events.”

Daniel Brennan, M.D., and his family enjoy making music together. (From left) Maddy, Meaghan, Chris, Katie and Susan.