Skin cells could diagnose, forecast Alzheimer’s

By Gila Z. Reckess

Skin may someday be possible to diagnose and forecast risk for Alzheimer’s disease using skin cells, thanks to a small protein, or peptide, that few scientists previously associated with the disease.

School of Medicine researchers have discovered that skin cells from individuals with inherited forms of Alzheimer’s disease respond to the peptide bradykinin by triggering Alzheimer-like changes, whereas skin cells from healthy individuals do not. They found the same affect in skin cells from two young adults at high risk for developing the disease but who were too young to have clinical symptoms.

The study was recently published in The FASEB Journal and cited in the Internet-based Alzheimer’s Research Forum.

"No one has looked into depth at the potential role of bradykinin in Alzheimer’s disease," said principal investigator Nancy Baenziger, Ph.D., associate professor of anatomy and neurobiology. "Our findings need to be explored further in cases of non-inherited Alzheimer’s disease, but this preliminary evidence is very encouraging.

"It’s possible that these results could eventually lead to a way of determining if an individual’s risk of developing the disease before clinical symptoms arise, and that the bradykinin cascade could serve as an eventual new drug target," Baenziger’s researchers previously identified several forms of bradykinin receptors that they termed H, I and L. They then developed probes that specifically detect the I and L forms.

The team used these probes to calculate the relative number of these receptors in samples from a National Institute on Aging database of skin cells from healthy individuals and those with genetic forms of the disease.

In one experiment, the cells were treated with a chemical that activates protein kinase C (PKC). The team found the number of I and L receptors increased by up to 450 percent in cells from the Alzheimer’s patients but there was almost no change in cells from healthy people.

See Alzheimer’s, Page 6

Oil & water mixing captured in ‘movie’

By Tony Fitzpatrick

Seven Spielberg, eat your heart out.

A University team consisting of an art student and mechanical engineers has made an award-winning “movie” that captures for the first time the fluid-mechanical phenomenon of two things that classically don’t mix, doing just that.

Amy Shen, Ph.D., assistant professor of mechanical engineering, her graduate student William Alexander and School of Art and Design senior Sarah Roland have photographed three different oils in a layer of water and the consequence of what happens when water and oil are forced to react through the spin of a magnetic stir bar.

Guess what? It looks just like a tornado.

The three-minute video, set to the rock music of Soundgarden, catches canola oil, a fuel treatment and an oil and treatment and what they don’t confide. The work is in visually appealing that it won the Fluid Motion Award at the American Physical Society’s (APS) annual meeting in November in East Rutherford, N.J.

Submissions for APS’s annual competition can be either a poster or a video. Shen and her colleagues were among the 11 teams out of 88 total that won an event.

The results will be published later this year in the journal Physics of Fluids.

Shen recruited Roland to the project when she and another University faculty members purchased a photon PCI 128 digital high-speed camera that shoots 1,000 frames per second (at 1,024 dpi by 3,488 dpi resolution) — compared with the 30 frames per second of a typical digital camera.

"I wanted to have someone with us who really problem with a camera and would value the beauty of the action," Shen said. "Sarah was invaluable." Shen’s specialty is fluid dynamics of the heart but she’s an interdisciplinary area involved in many natural and synthetic processes from hand-held sensing devices to the study of tumors.

See Video, Page 6

Medical News: Two proteins offer window for new cancer treatment

Sports: Women’s basketball team to host NCAA tourney game March 6

Washington People: John Cernansky examines the anatomy of mental illness

March 5, 2004

Treasuring the Past

Washington University in St. Louis

Celebrating 150 Years

By Lam Otten

Graphic design can be a matter of life and death.

According to the Journal of the American Medical Association, more than 40 percent of Americans age 65 and over use five or more different medications each week, making unintended drug interactions a major contributor to an estimated annual 180,000 fatal or life-threatening adverse drug reactions.

Yet drug labelling is, information-sounding, a kind of typographical Wild West, said Ken Botnick, professor of visual communication in the School of Art. Drug companies are required to divulge certain types of information, but there are no requirements in terms of how accessible that information is made," Botnick said. "Typically, decisions about the way information is organized — the hierarchy of presentation, the size and clarity of type — are simply afterthoughts."

Medical information design is one of the issues to be explored as part of "Visual Design for an Aging Population," a national symposium March 19 at the Eric P. Newman Education Center on the Medical Campus. Botnick organized the conference, which is co-sponsored by the School of Art and the Center for Aging.

The symposium will examine the often-underappreciated impact of ageing on visual perception and the related implications for designers, advertisers and Web-based publishers and other caterers to older populations.

Participants include noted graphic and information designers as well as architects, gerontologists and psychologists from around the country.

By the time one reaches age 60, shrinking of the pupil reduces the amount of light reaching photoreceptors by as much as three-quarters. This causes colors — particularly "cool" colors, such as blues, greens and purples — to appear dimmer and less distinct.

At the same time, hardening of the lens hampers one’s ability to adjust to differing levels of light, dark-on-dark).

Moreover, the eye’s ability to focus on fine details, such as small letters, decreases, making print, or darkness in the ocula...
Morrow-Howell named Pumphrey professor

By Jessica Martin

Nancy Morrow-Howell, Ph.D., professor in the George Warren Brown School of Social Work, has been appointed the inaugural Ralph and Muriel Pumphrey Professor of Social Work, announced Shanti K. Khinduka, Ph.D., dean and the George Warren Brown Distinguished University Professor. Morrow-Howell’s formal installation will take place March 9 in Brown Hall Lounge.

The Pumphreys were prominent figures in the field of aging. “Her own numerous research studies, focusing broadly on service to needy elders and on productivity in later life, have been funded by the National Institute on Aging, the National Institute on Mental Health, the Agency for Healthcare Policy and Research, the Robert Woods Johnson Foundation, and other public and private agencies,” Khinduka said. “She’s an ideal person to hold the inaugural Pumphrey chair.”

Morrow-Howell has studied productive aging research focuses on social work programs designed specifically for older volunteers. Morrow-Howell has received a Leadership Award from the Association on Gerontology in Social Work Education, a Distinguished Faculty Award from the University and a Distinguished Faculty Award from GWB.

She’s a fellow of the Gerontological Society of America, a member of the National Advisory Board for the Institute for Geriatric Social Work at Boston University, a member of the advisory committee for the Hartford Doctoral Fellowship Program in Geriatric Social Work, and on the editorial boards of The Gerontologist and the Journal of Social Service Research. Morrow-Howell earned bachelor’s and master’s degrees in social work from the University of California, Berkeley.

“Dr. Morrow-Howell is one of the top social gerontologists in the profession of social work,” Khinduka said. “She’s a national leader in setting the social work research agenda in the field of aging. Her own numerous research studies, focusing broadly on service to needy elders and on productivity in later life, have been funded by the National Institute on Aging, the National Institute on Mental Health, the Agency for Healthcare Policy and Research, the Robert Woods Johnson Foundation, and other public and private agencies.”

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“The award, established in 1999 by Whitney and the late Jane Harris, recognizes a St. Louis husband-and-wife duo which is dedicated to improving the St. Louis region. The $25,000 prize that accompanies the award is designed specifically for older volunteers.”

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The 1983-84 school year marked the 10th anniversary of Edison Theatre. To mark the occasion, the management with older adults. Morrow-Howell has studied productive aging research focuses on social work programs designed specifically for older volunteers. Morrow-Howell has received a Leadership Award from the Association on Gerontology in Social Work Education, a Distinguished Faculty Award from the University and a Distinguished Faculty Award from GWB. She’s a fellow of the Gerontological Society of America, a member of the National Advisory Board for the Institute for Geriatric Social Work at Boston University, a member of the advisory committee for the Hartford Doctoral Fellowship Program in Geriatric Social Work, and on the editorial boards of The Gerontologist and the Journal of Social Service Research. Morrow-Howell earned bachelor’s and master’s degrees in social work from the University of California, Berkeley.

The University is charged with administering the award. Lou Fusz, president and chief executive officer of Lou Fusz Automotive Network, chairs the award committee.

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Genome of chicken is sequenced, made public

BY KIMBERLY LETHIG

A team led by Richard K. Wilson, Ph.D., director of the Genome Sequencing Centre has successfully assembled the genome of a chicken and has deposited it into free, public databases for use by biomedical and agricultural researchers around the world.

The chicken sequenced is the white leghorn, a common chicken breed kept around the globe for its economic value as a source of eggs, meat and bone. However, it represents only about 1 billion DNA base pairs, or a fraction of the chicken's 3 billion base pairs.

Wilson's team has done a remarkable job of putting the pieces together, said Wilson.

This will be a great resource for biomedical and agricultural researchers. It will provide an important link to provide an intermediate perspective between viruses and some types of cancer. It is a model for the study of embryology, genetics and development, as well as for research into the connection between viruses and some types of cancer.

The chicken also is well positioned from an evolutionary standpoint to provide an intermediate perspective between mammals, such as humans, and lower vertebrates, such as fish. By comparing the human genome sequence with that of other organisms, researchers can identify regions of similarity and difference. This information can help scientists better understand the structure and function of genes and thereby develop new strategies to combat human diseases.

To facilitate comparative genomic analysis, the researchers have also aligned the draft version of the chicken genome sequence with the mammalian sequence.

The researchers, through their own studies, have revealed that the chicken could act as a chaperonin for telomerase.

Cox receives heart award

BY MICHAEL C. PURDY

University scientists have found that the absence of two proteins, which cells use to make heartbeats, can make it easier for cells to become cancerous. The same genes that make cancer cells vulnerable to treatment also make it harder for cancerous cells to survive exposure to heat and radiation.

The findings mark the second genetic factor to be sequenced, made public

Loved-hate relationship

Proteins offer window for new cancer treatment

"Understanding the pathobiology of the genes that make these proteins — how they function in normal circumstances and how they work in an unusual context like the cancer cell — will help radiation oncologists design gene therapy protocols that enhance cell kill from radiation treatments."

"Chaperone proteins interact with other proteins, helping to fold or unfold them, which helps activate their function; in other cases, they help deactivate and degrade the proteins they interact with," said Wilson. "To see what effect the heat shock proteins have on telomerase, we created a line of mice in which the genes for the proteins were knocked out."

Cells lacking the proteins were close to becoming cancerous. Ends of chromosomes in the modified cells were more likely to become associated with each other, indicating the chromosome's telomeres probably were degraded. Telomerase normally contributes to the repair of this degrada- tion and the merging of other genetic instability.

To get a more detailed sense of how vulnerable the cells had become, Pandita's team exposed them to radiation and then to heat followed by radiation. In test-tube studies and in the genetically engineered mice, the heat followed by radiation killed more cancer cells. According to Pandita, the methods can be used to develop methods for the creation of the heat shock pro- teins or for blocking their effects. On telomerase, this result suggests that heat treatment followed by radiation treatment might produce the greater benefit for cancer patients.

Magnetic treatment studied for depression

BY JIM DRYDEN

Depressed patients who have not been helped by antidepressant medications may be interested in a research study of repetitive transcranial magnetic stimulation (rTMS), an investigational treatment for depression.

For those patients, complex and often called the Cox-Maze procedure, to cure atrial fibrillation. The operation was first performed in 1987 at Barnes Hospital. In the Maze procedure, sponges make small, strategically placed incisions in the heart's two upper chambers, the atria.

The atria generate scar tissue that serves as bar- riers to normal contractions, trapping abnormal electric signals in a "maze" of hiccups. Only one path remains intact, guiding impulses to their corre- sponding destination.

In addition to its tremendous economic value as a source of eggs, meat and bone, the chicken also is well positioned for research into the connection between viruses and some types of cancer. It is a model for the study of embryology, genetics and development, as well as for research into the connection between viruses and some types of cancer.

Cox is the 10th African surgeon to receive the award.

Cox recently rejoined the School of Medicine as a re- search professor of surgery. From 1987 to 1997, he served as professor of surgery at the University of the East as the Evarts A. Graham Professor and Chief of the Division of Cardio- thoracic Surgery and vice chair- man of the Department of Surgery.

In 1985, Cox's team first performed the Maze procedure, often called the Cox-Maze pro- cedure, to cure atrial fibrillation. The operation was first performed in 1987 at Barnes Hospital. In the Maze procedure, sponges make small, strategically placed incisions in the heart's two upper chambers, the atria.

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In addition to his role at the University of the East, Cox is the chairman and chief executive officer of the World Heart Foundation and serves on the board of directors for three medical device corporations.

Cox and radiation oncologist Tej Pandita, Ph.D., assistant professor of radiation Oncology and lead investigator of the study, 'Understanding the pathobiology of the genes that make these proteins — how they function in normal circumstances and how they work in an unusual context like the cancer cell — will help radiation oncologists design gene therapy protocols that enhance cell kill from radiation treatments.'
**Law school to host forum on mental health**

**BY JESSICA MARTIN**

*January 20, 2004*  The 13th annual University of Chicago Law School Forum on Mental Health Law, titled "Mental Health and the Law," will be held at the University Club, 401 East 58th Street, Deer Grove Courtroom of Anheuser-Busch Hall.

The goal of the conference is to build connections between the University and the community by bringing together University faculty and students, legal professionals, community leaders and government officials to improve the delivery of legal services and justice in the region.

Main themes to be discussed during the conference are:• mental health law and its evolution;• legal and policy questions of competency;• disobedience and the declared preference for the individual;• sexual violence involving individuals with mental retardation; and• legal and ethical considerations.

In addition to topics related to the conference theme, there will be two plenary sessions focusing on the mental health justice system:• homogeneous, homeless, courts and mental-health court models;• jurisprudence and cross-cultural perspective;• sexual violence off-enders, law, science and policy; and• ethical challenges in interdisciplinary teaching and practice.

The conference also is part of a two-year project on "Justice, Ethics, and Interdisciplinary Teaching and Practice" being undertaken by the law school’s Clinical Education Program, the Center for Interdisciplinary Studies and the Journal of Law & Policy.

This interdisciplinary project was designed to explore the practic- es and boundaries of interdisciplinary teaching and practice, and said conference organizer Karen L. Tokarz, J.D., professor of law and executive director of clinical and alternative dispute resolution programs at the law school.

"In particular, we are examining the relationship between mental health and legal profession and other profes- sions and the unique needs of individuals with mental disabili- ties." Co-sponsored by the George Warren Brown School of Social Work, the Department of Medicine and the Department of Psychology in Arts & Sciences, the conference is designed for both academics and practitioners in law/social work, psychology, psychiatry, education, governmental studies and other related fields.

The conference is free and open to the public, however, advance registration is required. The total confer- ence enrollment is limited to 175 people.

For registration information, call Deborah Krause, associate professor of English, at 935-6419. A conference registration form is now available online at spring04/agenda.html.

**Jordaniun prince to lecture March 18**

**BY ALISON PEARLMAN**

*March 18, 2004*  The Assembly of State Parties for the International Criminal Court has approved a Motion by the University of Chicago to invite Her Highness Al-Hussein to deliver the Galerie of Art Lecture.

Her Highness Al-Hussein is the permanent representative of the Hashemite Kingdom of Jordan to the United Nations and president of the Jordanian Prince Zeid Ra’ad Zeid Al Hussein will lecture on "The International Criminal Court: The First Five Years" on March 18 in Anheuser-Busch Hall. Room 643.

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just completed his tenure as head of visual arts and design the Sam C. and Elizabeth H. Fox Arts Center and the Saint Louis Zoo. From the Arts and Education Council of Greater St. Louis, Barites Jewish Hospital, Civic Palace, the Missouri Botanical Garden to the Jewish Federation of St. Louis. She has taken a role in organizations dedicated to improving the quality of life for residents of the St. Louis region and beyond. She has been a volunteer for the Jewish Community Center, Missouri History Museum, United Way, and the Jewish Community Relations Council. She is a past president of the Missouri History Museum and is the founder of the Mary and Stanley Lupow Foundation, vice president of the Board of Commissioners of the St. Louis County Planning Commission, and president of the St. Louis County Historical Society. She has also served as the mayor's representative on the boards of many institutions. From the Arts and Education Council of Greater St. Louis, Barites Jewish Hospital, Civic Palace, the Missouri Botanical Garden to the Jewish Federation of St. Louis. She has served on the boards of many institutions including the Missouri History Museum, the Missouri Botanical Garden, the Jewish Community Relations Council, and the St. Louis County Historical Society. She is a past president of the Missouri History Museum and is the founder of the Mary and Stanley Lupow Foundation, vice president of the Board of Commissioners of the St. Louis County Planning Commission, and president of the St. Louis County Historical Society. She has also served as the mayor's representative on the boards of many institutions. From the Arts and Education Council of Greater St. Louis, Barites Jewish Hospital, Civic Palace, the Missouri Botanical Garden to the Jewish Federation of St. Louis. She has served on the boards of many institutions including the Missouri History Museum, the Missouri Botanical Garden, the Jewish Community Relations Council, and the St. Louis County Historical Society. She is a past president of the Missouri History Museum and is the founder of the Mary and Stanley Lupow Foundation, vice president of the Board of Commissioners of the St. Louis County Planning Commission, and president of the St. Louis County Historical Society. She has also served as the mayor's representative on the boards of many institutions.
Just think: MetroLink

Right now, they don’t look like much — nothing more than torn-up dirt, holes in the ground and heavy machinery moving around. But soon, three MetroLink stations will start taking form as foundation work has started on three stations adjacent to the University.

TOP RIGHT: This is an overhead view of what the station at Forest Park Parkway and Forsyth Boulevard will look like. The station will be below-grade, with entries to the station on both sides of Forsyth.

MIDDLE RIGHT: An overhead view of the station at Forest Park Parkway and Skinker Boulevard. Two entrances to the below-grade station will be available, and a bridge over the tracks will make crossing from eastbound to westbound trains easier.

BOTTOM: The station as it will appear at Big Bend Boulevard and Forest Park Parkway. This below-grade station will feature four entrances, as well as a bridge over the tracks.
The anatomy of a psychiatrist

John G. Csernansky develops new techniques to identify risk factors for mental illness

By Jim Dresen

John G. Csernansky was attending medical school at New York University when he heard about schizophrenia. "I was in the midst of a University of Chicago psychiatry rotation at Bel-levue Hospital in Manhattan. Just the name "Bellevue" conjures up the image of a psychiatric hospital but includes so many stories for many, but in fact, it is one of the world's largest general city hospitals and provides health care to most of Manhattan. In the mid-1970s, it had 1,600 patient beds and a '30s era building with 300 psychiatric beds.

During his rotation, Csernansky, now M.D. and the Gregory B. Couch Professor of Psychiatry, was assigned "Jane Doe," a woman who had been picked up on the streets of Manhattan. She couldn't tell people who she was because she spoke in a "word salad" with various unrelated words seeming to appear at random in her speech. She also had violent fits and would fling herself at things.

Her diagnosis — like so many other patients who had been given up on — was schizophrenia.

"They pointed and said, "Why don't you go talk to her?"" Cser- nansky recalls. "And I remember saying, "Well, I can't tell a lie," which is never what they said. It doesn't matter." They felt she was bil and all unable to communicate that it didn't matter.

But after spending some time with her, he found that although the woman had trouble putting words together, she was very attentive and eager to communi- cate. So Csernansky got a legal pad and repeatedly asked her four questions: her name, the name of someone who would know her, the person's telephone number and their address. He noted these in the legal pad. "And when I asked her her name, I recorded all of the proper names that she said, and it turned out that she said one name much more than any other," he recalls.

"The one name that she kept saying, the name of a person who would know her, as well as their phone number and address. So he got a phone book and spent most of an afternoon matching names with addresses and phone numbers that turned up most often in her answers.

"After about a dozen calls to wrong numbers, I found some- body who knew her," Csernansky says. "He hadn't seen her in two or three years, but he was an old family friend, and he told me about her medical history."

In fact, this "Jane Doe" did not have schizophrenia. She had a tumor in the left temporal lobe of her brain that interfered with her ability to understand her own speech. Because of the tumor, she also had epilepsy, so her fits were revealed for what they really were seizures.

"Once we knew her history, she was treated with anticonvul- sant medication, and she got bet- ter," he says. "We were able to reconnect with her past and make her better, at least for a time."

"So I decided to become a psychiatrist!"

And now when medical stu- dents ask him what they should say to a patient in a psychiatric ward, Csernansky never says, "It doesn't matter."

"These are human beings," he says. "They have parents. They had a childhood and a favorite pet or toy. They went to school and played on the football team."

"But if you just see them as a collection of signs and symp- toms, you can't make that connec- tion."

Inside the black box

After medical school, Csernansky did a residency at Stanford. He wanted not only to be a psychiatrist, but also to study the brain.

His mentor was internist Leo Hollister, who was the first per- son to conduct a controlled clinic- al trial of an antipsychotic drug. During his years at Stanford, Csernansky learned the impor- tance of bringing rigorous scien- tific principles into psychiatric research.

And that training prepared him well for Washington Uni- versity. He arrived in 1990, hop- ing to collaborate with neurosci- entists and radiologists to learn more about what happens in the brain during mental illness.

He began in treatment re- search, studying how people with schizophrenia respond to various therapies. It was done in a sys- tematic, scientific way, but it didn't reveal the underlying disease process.

That kind of research treats the brain like a "black box," Cser- nansky says. "You can do it very systematically, but you're still tak- ing systematic shots in the dark." He felt that to develop more effective treatments, we needed to better understand the underlying mechanisms of mental illness.

"We had to get a grip on the mechani- nisms, he decided that you first had to understand the anatomy of diseases like schizophrenia."

Unfortunately, much of the technology that now can identify the subtle changes in brain struc- ture that characterize schizophrenia did not exist then. So Cser- nansky and his colleague Michael D. Miller, Ph.D., now the director of the Center for Imaging Science, the Seder Professor of Biomedical Engineering and professor of elec- trical and computer engineering at the Johns Hopkins University, began working on ways to understand the brain.

"At the time, it was at the School of Engineering at the Hill- top Campus, and he's been using computers to quantify the shapes of the various parts of the brain," Cser- nansky says. "It took me a second to realize that if we could apply those methods to the brain, we could learn a great deal about mental illness."

By connecting magnetic reso- nance imaging scans to Miller's computer algorithms, the two were able to map the anatomy of key brain structures and identify subtle differences between healthy brains and those with mental illness.

Nowadays, most of the work can be done on a laptop computer. But when the collaboration began, only a handful of computers in the United States (one which hap- pened to be in the electrical engi- neering department at the University) could handle the com- puter algorithms that were required to perform those opera- tions.

Miller recalls that the complexi- ty never slowed Csernansky down. "John is the kind of scientist who, when things get windy and rainy, just concentrates harder and keeps the boat mov- ing in the right direction," colleague Michael I. Miller says.

And in recent years, their com- plex imaging techniques have made it possible to identify little changes in the size and shape of brain structures that seem to serve as early markers of the dis- ease process in patients with schizophrenia and Alzheimer's disease.

Over the years, the imaging research effort has expanded, and now Csernansky directs the Skull-Center for Neuroscience Research, which is based at Wash- ington University but includes Miller's group at Johns Hopkins and neuroscientists at other institutions around the world.

"They hope to find markers that may make it possible to iden- tify mental illness before it be- comes clinically apparent."

"Take hypertension as an example," Csernansky says. "We don't wait for heart attacks to begin treating hypertension. If we can identify subtle anatomical and cognitive risk factors for psy- chosis, it should be possible to begin treating people before men- tal illness develops." Playing the field

When he's not developing new techniques to identify risk factors for schizophrenia, Csernansky has two hobbies that keep him hum- mered. First, the Chicago native is a Cubs fan.

"Let's just say it goes one for a first-hand appreciation of chronic suffering," he says. "My heart was broken in 1969, and it's never been fixed. I'm still angry at the Pitts- burgh Pirates for knocking the Cubs out of the pennant race that year."

"Last season's playoffs just tore open the old wound."

His other hobby is a bit more relaxing: playing the violin.

"It's what I do to calm myself," he says. He played the instrument as a child and took it up again a few years ago.

"I am particularly impressed by the fact that John is an accom- plished violin player," says Dea- nna M. Barch, Ph.D., associate pro- fessor of psychology in Arts & Sciences and a collaborator at the Center. "In addition to being the cutting-edge 'scientist,' he is also an artist. He even does some of his own yard work."

As his son, Matt, a sophomore in Washington University's School of Medicine, partly graduating Csernansky's high school, believes Csernansky's "As a child I do not want to come up with. Fortunately my daughter was at just the right age to start, and we've been studying ever since."

Also, music is good for the brain."

John G. Csernansky

Born: Feb. 28, 1954, in Chicago

Education: B.A. with honors in chem- istry, Northwestern University, 1975; M.D. New York University School of Medicine, 1979

University positions: Gregory B. Couch Professor of Psychiatry, associ- ate professor of neurology and director of the Unit Center for Neurosciences Research

Family: Wife, Cynthia Csernansky; children, Matt, a sophomore in the School of Arts & Sciences, 2004, freshman at Clayton High School; sisters, Roseanne and Sandy

Hobbies: Playing the violin; also enjoys the outdoors and spends sum- mer vacations with the family in Wisconsin's Apostle Islands

(From left) Csernansky, wife Cynthia, son Matt, daughter Julia, mother-in-law Eddy and father-in-law Cecil.