Researchers image brains of infants with autism risk

By Jim Dryden

Autism researchers at the Washington University School of Medicine are most interested in understanding autism spectrum disorders by identifying anatomical and behavioral changes in the brains of infants and children at risk for autism. "We're recruiting infants as young as possible — even during the mother's pregnancy — for interviews and screenings, and then they come to see us for brief testing and to have MRI scans at 6 months," said Botteron, a child psychiatrist at St. Louis Children's Hospital. "They come back for more scans and more testing at 12 months and again at 24 months."

The WUSTL portion of the Infant Brain Imaging Study uses MRI imaging to get a very detailed look at the brain anatomy. The investigators also perform so-called resting-state, functional MRI imaging, which provides information about how the various structures in the brain connect to one another while the baby is resting. A third imaging technique, called diffusion tensor imaging, allows researchers to analyze characteristics of the brain's anatomy, which may reflect underlying white matter. The imaging is done in the morning while the babies are asleep.

"The parents rock the baby to sleep, and we put headphones on their ears so the noise of the MRI machine won't wake them up," said Botteron. "Most of the infants we've studied so far have slept peacefully for the 45 minutes or so that it takes to complete the various scans."

The brain scans in the study are currently being analyzed by S. Botteron, an assistant professor of child psychiatry and of radiology. "We think it's going to be very important to learn about the changes in regions used to process similar regions used to process similar mental simulations using brain imaging, which allows us to see what the brain is doing when we present the baby with a new situation encountered in a narrative."

"It was a great competition, and we learned a lot about designing and creating an interactive site that tracks students' questions and progress, which can be shared with parents and teachers to improve the learning process."

Both of Virtual Nerd's young entrepreneurs admitted they were "stunned and shocked — in a good way" about winning the $70,000 investment award. "It was a great competition, and we learned a lot about our own business," said Shmuylovich, whose business card reads "Chief Scientific Nerd." "Winning puts some legitimacy in our step," he said. "It's very motivating and very exciting."
Assembly Series presents trio of talks; announces changes, additions

The Interplay between man and technology

The development of high-performance game-playing computer programs has been one of the major successes of artificial intelligence research. This talk, by cultural historian Janice Radway, will discuss how artificial intelligence research has influenced and been influenced by scientific and technological developments.

George Washington: the legend vs. the man

To commemorate the 277th anniversary of George Washington's birth, WUSTL scholars will examine how the legend versus the man and consider whether in the new millennium moral ambiguities and corruption of our forefathers are relevant today.

A Discussion About Race and Identity

4 p.m., Feb. 25, Daulhart University Center Fun Room. Students and faculty will convene for an informal and candid conversation about being a member of a minority group in America.

Changes to Assembly Series schedule

This week, the Assembly Series schedule will include a panel discussion on the legacy of Canadian researcher David Konig, a presentation by cultural historian Janice Radway, and a panel discussion on the story world and updating their cognitive and motor brain regions specifically related to those contents increased. But this result might not be typically of normal reading — in the previous studies, there was no study to try to understand, and participants sometimes had to make an explicit judgment about what work or phrase. In this study, Spero and colleagues used a database of 1,500 words excerpted from a simple 1960s-era book about automobiles to show that activity in some brain regions that are selectively activated when a child starts to wake up or cry, that activity in some brain regions that are selectively activated when a child starts to wake up or cry, that

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Results pleased one word at a time — from Page 1

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Scientists uncover new genetic variations linked to psoriasis

BY CAROLINE ABNAS

Two international teams of researchers announced on Feb. 29, 2009, that they had identified genetic variations linked to psoriasis, a disease that affects as many as 1 in 200 people. The discoveries are significant because they could help explain why some people are more susceptible to the disease than others and could lead to new treatments.

The first study, conducted in collaboration with the University of Michigan, the University of Utah and colleagues in Canada and Europe, focused on sites with a single nucleotide of DNA that is changed, called a single nucleotide polymorphism (SNP). The researchers scanned nearly 400,000 SNPs in each of the genomes of 1,409 psoriasis patients and compared the DNA variations with those in 1,456 healthy controls. They initially discovered 21 suspect variants associated with psoriasis and then tested the validity of these variants in another group of psoriasis patients and controls. This revealed seven confirmed variants, all of which appear to heighten the risk of the disease. Five of the variants cluster in two distinct pathways, and a second study of 2,381 patients with psoriasis looked for links between the disease and copy number variations, in which a gene is produced in multiple copies.

Both genes normally are activated after an injury to the skin. The researchers suspect the absence of the genes could lead to an inappropriate immune response, which may cause the skin inflammation that is a hallmark of the disease. "Until now, all of the genes linked to psoriasis have been involved in the immune system," Bowcock said. "But psoriasis is a disease of the immune system and the skin, and it makes sense that we would eventually find genes in the skin that are involved in the disease."
Classical Ahn Trio return to Edmond Feb. 28

By Cynthia Georges

Born in Seoul, Korea, and educated at the prestigious Yewall School in New York, the Ahn Trio—sisters Maria, Lucia and Angelia—are returning to Edmond Theatre at 8 p.m. Feb. 28 to present a repertoire commissioned with works commissioned by some of today's most visionary com-

In addition to the trio will present a special matinee performance in the ovations for young people series at 11 a.m. that day. The entire family can enjoy the Ahn sisters, musicians who are setting the standard for the next genera-

The evening program features "Devotement for Violin, Cello and Piano," the first trio Nikolai Kapustin has composed for the Ahns, and Pat Metheny's "Yu Yang" (Korean for "ghost figure"). which the musicians premiered in summer 2008 in Mexico and have performed in New York, Chicago and Toronto.

The trio will conclude its performances with selections from "Lullaby for My Favorite Insom-

"The Ahn Trio will perform these works with special guests Taku Hirano, a top-rated percussionist who has played with Fleetwood Mac, Whitney Houston, The Miller, Dr. Dre and Steve Nick's and The Kin, Australian-born brothers Thierry and Lasten. Of The Kin, Billboard Magazine wrote, "These transnational siblings have a radiating gift for songwriting and performing that infuses their live shows and is winning believers in clubs across the United States. The Koren brothers' trump cards are their vocals and dual harmonies — un-

LUCAS (piano), Angelia (violin) and Maria (cello) have read their work with that of other greats, pop stars, jazz iconoclasts, electronic music artists, painters, installation artists, film directors, designers, ecologists and even kite makers and have received critical acclaim for their collaborative project with the David Parsons Dance Company.

This year, the Ahns were the only classical group to be invited to perform at the Three LIVES Festival in London. Their emerging group, with performers Taro Ito at the Czech Grammaphone led to the Ahns' recording a collaborative album, "Smokett," with the award-winning Czech rock band.

Next year, the trio will premiere Mark O'Connor's "Triple Concerto" as well as Nikolai Kapustin's second trio — works that the award-winning composers are writing.

Posing a hypnotic combination of talent and style, the Ahns are gifted publicity for the international press. They made their magazine premier as teenage in Time's cover story "Asian American White Kids" and have gone on to frequent fashion pages, the likes of Vogue and GQ. In 2007-08, they were named one of People Magazine's 50 Most Beautiful People.

The Ahns recently signed a multi-album exclusive recording artist contract with BMG International. The trio is in high demand for concert hall performances, master classes and workshops across the United States and around the world as youth in the Ahns travel, they share their innovative spirit and ever-evolving vision of music.

Tickets for the 8 p.m. perfom-

Lectures

Thursday, Feb. 12


Friday, Feb. 13

11 a.m. Pediatric Grand Rounds. "Reducing Healthcare Readmissions." Steven Brady, assoc. prof. of medicine, Clayton Aud., 4900 Children's Place, 4:30-6:00.

11 a.m. Immunology Research Seminar. "Immunological Conflicts and the Bacterial Use of Host-Associated Antigens." Christopher L. Byrne, prof. of electrical and computer engineering, Bryan Hall, RM 308, 10:30-12:00.

11 a.m. Neuroscience and Chemical Engineering Colloquium. "Human Embryonic Nanoparticles for the Catalytic Cleansing of Water." Michael W. Gevertz, assoc. prof. of chemistry, Rice Univ., University Blvd., 101, 11:00-1:00.


Monday, Feb. 14

Science and Society. "Science and Society." Barbara A. Schub, prof. of biology, Missouri Botanical Garden, Hazelwood. 935-8570. 9 a.m.-5 p.m.

Monday, Feb. 16


4:30 p.m. Sung Min Lee Public Lecture Series. "The Legacy of George Washington." David Raphel, prov. of history,闻of public policy, director of the Davis Center for the Study of World Politics, Harvard University. 935-6000.

6:30 p.m. Sung Min Lee Public Lecture Series. "Thirsting for the Light: (path to enlightenment)." Steinberg Aud., 935-9300.

Tuesday, Feb. 17


Neuro-Molecular Microscopy and Ocular Pathogenesis Seminar. "Aye, Oculars to Clinical Inflammatory Disease." Michael Markowitz, prof. of medicine, McDonnell Medical Sciences Bldg., Room 301, noon. 935-5028.


6:30 p.m. Immunology Research Seminar. "Aye, Oculars to Clinical Inflammatory Disease." Michael Markowitz, prof. of medicine, McDonnell Medical Sciences Bldg., Room 301, noon. 935-5028.

Wednesday, Feb. 18

11 a.m. Anatomy Seminar. "Computer (and the Human Brain): The Riddle of the Human Mind... or Brain, Is It Just a Computer?"" Michael DeLauro, prov. of pediatrics, thru Thursday. 4900 Children's Place, 11 a.m. 935-5028.

11 a.m. Interdisciplinary Project in the Humanities, Social Sciences, Literature, Humanities and Public Affairs. "The Anatomy of Aesthetic Experience in the Humanities." Room 301, noon. 935-5028.

Buder Center trivia night, auction

By Jessica Martin

The Kathryn M. Buder Center for American Indian Studies at the School of Social Work will host a trivia night and silent auction Feb. 20 in Brown Hall Lounge. Table prices of 10 players are available for $15 per person.

In addition to the trivia competition, a silent auction will be held featuring items collected from local businesses and individuals who support the Buder Center and its programs.

**Spring concerts in the Department of Music**

**By Cynthia Geoghegan**

The Department of Music in Arts & Sciences continues its 2009 concert series with a variety of events that will entertain, educate, and focus on the music-loving audiences in the St. Louis and surrounding areas.

The year’s offerings range from international jazz greats Marc Copland, Gary Peacock and Fred Hersch, who perform Thursday, Feb. 12, at the 536 Music Center (co-sponsored with Jazz at Hollister), to Dominc Raouf and the Upstage Papers’ operatic adaptation of Henry James’ novel of the same name. (See page 2.)

**March 20 and 21 at Edison Theatre**

Hugh Macdonald, Ph.D., the Art H. Blewett Professor of Music, head of musicology and acting chair of the Department of Music in Arts & Sciences, noted additional highlights of the spring 2009 concert series with the public unless otherwise noted.

**March 1. A program of Broadway selections, led by Jon Kern and George Gerbasi, will be introduced by Todd Decker, Ph.D., associate professor of musicology, and featuring Will Goode, a master puppeteer and director at the University Center under the direction of Dan Provencher, who will present selections of orchestra and wind ensembles.

**March 22. An intimate program titled “Virginals, Voice and Viol,” featuring violinist and harpsichordist Charles Metzler, the new friends of Music’s group, supports the Department of Music in Arts & Sciences’ mission of music education and research while encouraging all WUSTL students and faculty in their own artistic and scholarly experimentation and creativity.

**March 30. “Unofficial Leningrad,” 1967, will be presented in partnership with the Saint Louis Symphony Orchestra and featuring some of the orchestra’s members with an introduction by Peter Schmid, Ph.D., assistant professor of musicology.

“An all-day tour of our rehearsal — the jazz band, the concert Choir and the Symphonic Orchestra — for the Chancellors’ Concert April 26th is an annual favorite,” Macdonald said. “With our regular series of lectures and student recitals, the calendar is quickly filled. I look forward to seeing the departments’ friends and supporters at some or all of these events.”

**All events are free and open to the public unless otherwise noted. Call 935-4566 or e-mail Music@artsci.wustl.edu.**

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**Construction Update**

Construction Update is published periodically and provides information about the progress of major building and renovation projects. Information is provided to the Record by facilities management.

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**South 40 Uhrath House replacement**

The lower level and first and third floors are under way. The LEED team’s development of material to achieve LEED innovation points continues.

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**South 40 utilities**

Concrete work continues. Dutchtown�s brick plant has been erected, and the first floor area has been paved. The remaining steps are to move the plant to the site and backfill.

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**Busch Hall renovation**

Painting and acoustic ceiling grid and lighting installation have begun on the second floor and upper level. Elevator rough-in will start in mid-February. Terrazzo flooring will begin installation in the end of February.

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**Medical Campus**

**BJC Institute of Health at Washington University**

The steel frame of the BJC Institute of Health at Washington University will be completed this month, pending weather. Encapsulation of the building will begin after the finishing touches on the service area, which will load from Taylor Avenue to the building's entrance. After the renovation of 2009, work will shift to finishing the interior as well as installing the stairs and escalators. The building will open in December 2009.
The Engineering school honors alumni

Olin Cup Q&A: All participants benefit from the judging process — from Page 1

and prone to falling out of his ears.

"With a background in mini-

mize comfort and allow them to

go through a team of 27 judges, includ-

ing WUSTL faculty and community busi-

ness leaders. The judging process plays an

important role in helping entrepreneurs turn

their ideas into viable businesses.

"We are very grateful to the judges and local realities for their input," Harrington said. "All of our judges receive valuable advice and feed-

back from the teams on how to improve their businesses."

Sponsors of the 2008 Olin Cup included

Louis Cottrell Co. LLC; Ernst & Young; Shugart PC; Rublin Brown PLC; L.L. St. Louis; and Olin Business Services.

Engineering school honors alumni

Peace Corps acting director to speak Feb. 19

by JESSICA MARTIN

J

oe4n4h, Ph.D., of the Peace Corps, will present the talk "International Volunteerism and Service in the 21st Century: Toward Peace and Develop-

ment" at 4 p.m. Feb. 19 in the Brown Hall Lounge.

For more information, contact the Peace Corps/ 

Office of Research and CSD research director.

"Through our research, we are both trying to gain a broader scope of international service, helping the Peace Corps and other service programs and providers, said McBride. "McBride also is director of the Gehardt Institute.

For more information about the lecture, contact Terri Behr at 938-9060.

For more information, contact Erin Pennington at 938-9209 or visit engineering.wustl.edu/csd.

Engineering Week on campus

The School of Engineering will host a week of special events that will highlight the focus on this year's theme: inspiring current and future engineers at WUSTL. This is a natural fit for Google, and we're looking forward to matching technology. She is the author of the largest index, TenGoogling, consisting of 30 billion pages. In 2006, Patterson left Google to help create Cuill (a Greek word with the same roots as the large search engine currently available, July 1998; BSME 80, MSSE '70), as chief technology officer and director of science and technology at Johns Hopkins University Applied Physics Laboratory.

The lab provides the U.S. Department of Defense and NATO with essential capabilities in combat and guided missile systems, airborne and theater ballistic missile defense, space science and exploration, strategic missile test and evaluation, information technology and command, control, communications, and research and development. Sommerville serves as primary technical authority for the academy's division of international services. Since 2006, Sommerville has served as the head of the labs space department, including the lab's division for executing NASA missions to Mercury (in transit), the mission of the Radiation Belt Storm Probes mission to explore the Van Allen Belts (in spacecraft development), and the Solar Probe mission to explore the Sun's outer atmosphere (in engineering and mission design).

Gerald Williams (BSME 70; MSSE '72) began work for McEnerney Engineers in St. Louis in 1974, advancing to president in 2000 — an office he has held for eight years until his recent retirement. To honor his contributions, he is credited with increasing the staff from 35 to 51 and increasing revenue from $3.3 million to $8.6 million. He also has been named by the National Society of Professional Engineers, it is among the oldest of 

engineers, it is among the oldest of services. CSD has a number of re-

ments and opportunities for service prog-

matics for service programs and

understanding of and interest in engineering and technology careers among non-traditional students, and promoting precollege literacy in math and science. Our work also raises public understanding of engineers' contributions and importance.

Founded in 1951 by the National Society of Professional Engineers, it is among the oldest of professional and technical organizations and government agencies — is dedicated to ensuring a diverse and well-educated future engineering workforce by increasing engagement among non-traditional students, and promoting precollege literacy in math and science. Our work also raises public understanding of engineers' contributions and importance.

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Of note

Elizabeth Haswell, Ph.D., assistant professor of biology in Arts & Sciences, has received a four-year, $408,562 subaward from the California Institute of Technology for research titled "Biophysical, Structural and Functional Analysis of TranssensoryChannelS." Prof. Haswell, a neurobiologist, uses new microanalytical techniques to study the connections between sensory inputs and the brain. Her research team includes Prof. Dan Driscoll of the University of California, San Diego, and Dr. C. Thomas Tolkien of Caltech.

Shelley Schuessler, Ph.D., professor of physical therapy, of cell biology and physiology of neurobiology, has been selected to receive the Richard W. Bowling—Richard E. Erhard Orthopedic Clinical Practice Award from the Orthopedic Section of the American Physical Therapy Association (APTA). The award, which honors fabbrini's outstanding contribution to the clinical practice of orthopedic physical therapy, will be presented at the Combined Sections Meeting of the APTA in February.

Thaddeus Stappenbeck, M.D., Ph.D., assistant professor of pathology, immunology and of developmental biology, has received a two-year, $330,000 grant from the National Institute of Health to conduct research titled "Identification of Collagenic Bacteria in an Ambiently-Friendly Environment of Fulfurant Ulcerative Colitis." The project examines the role of bacteria in the development of inflammatory bowel disease.

Hannah W. Vigersky, Ph.D., M.D., the Edward Mallinckrodt Professor and chair of pathology and immunology and professor of molecular microbiology, has received a two-year, $330,000 grant from The Broad Foundation for research titled "In Vivo Function of Crohn's Disease Susceptibility Gene ATG16L1 in Intestinal Inflammation..." The award is in recognition of her significant contributions to the field of gastrointestinal disease.

Thomas A. Woolsey, M.D., the George H. and Ethel B. Bishop Scholar in Neurosurgery and professor of neurosurgery, of neuroanatomy and neurobiology, of cell biology and physiology and of biomedical engineering, has been awarded the Science Educator Award at the Society for Neuroscience annual meeting. The award recognizes his dedication to teaching and his contributions to the field of neuroscience.

Architecture

DUC architects win award for design

Tom Kobus & Associates Inc., the Cambridge, Mass., architecture firm that designed the Danforth University Center, has received a 2009 Palladio Award for its work on the center's design. The Palladio Award honors outstanding achievement in architecture and is judged by a panel of architects, historic preservationists, and art historians. The award was presented by the American Institute of Architects, the nation's oldest and largest professional society for architects.

Speaking of

Robert McGregor, the Ruth and Norman Moore Professor of Architecture and chair of the Architecture Graduate Program, gave two invited lectures in November: "Embassings of the Sky: Louis Kahn and the Light-Giving Well," presented at the AIA New York Chapter for Architecture, and "Louis Kahn: The Eternal and the Temporal:" the latter was held as part of the Architecture Lecture Series at Kansas State University.

Yes, we did

Students who attended the inauguration of President Barack Obama in Washington, D.C., hold a forum in Lambeth Lounge of the Mallinckrodt Student Center to discuss their experiences and give the WUSTL community an inside look at the inaugural event. The forum was hosted by the Democracy and Citizenship Initiative and included interviews from Alumns David Shapiro; graduate student Alana Fields; Junior Matthew Aiken; moderator Randall Talbot; Ph.D., the Thomas F. Eagleton University Professor of Public Affairs and Political Science and director of the American Culture Studies Program in Arts & Sciences; and senior Andrew Fick. The Democracy and Citizenship Initiative in a campus-wide effort, curricular and co-curricular, to expand American Culture Studies Program, to foster discussions about the role of the university in a democratic society.

Obituary

Nassief, associate professor of neurology, 43

Adullah M. Nassief, M.D., one of the region's premier experts on stroke, died Feb. 3, 2009, of coronary artery disease while playing soccer, one of his favorite pastimes. He was 43.

Nassief, associate professor of neurology, was co-director of the Cerebrovascular Disease Section in the Department of Neurology. He also was director of the Neurology Residency Program at the School of Medicine and of the Clinical Stroke Center and of Accreditation and Certification Services at Barnes-Jewish Hospital. Nassief spearheaded the team that made the Barnes-Jewish Hospital's name a synonym for_quality in stroke care. He was a true pioneer in developing Washington University Medical Center as one of the premier stroke centers in the country.

"Abdul was a compassionate, caring physician and a dedicated teacher," said David M. Holzman, M.D., the Andrew B. and Sheri, and two young sons, Fahris, and Norman Moore Professor of Neurology, helped to train hundreds of residents and students. He will be remembered for his contributions to the field of neurology and for his leadership in the Health Care Reform effort. He was a wonderful role model to many medical students and residents, and his students and residents will be saddened by his loss."

Mark Goldberg, M.D., professor of neurology, helped to train Nassief when he came to the School of Medicine as a fellow. "He was a stroke expert for the whole region and was the person residents turned to with difficult questions about stroke. His mission was to take care of stroke patients."

Goldberg said Nassief was dedicated to his family and was extremely friendly as well as the people he touched.

"He had an encyclopedic knowledge for clinical things," Goldberg said. "Abdul was a very special person," said Lim Miao Lee, M.D., Ph.D., associate professor of neurology and director of the Cerebrovascular Disease Section in the Department of Neurology. "He had a presence and a sincere way of connecting with people. He touched many hearts — colleagues, co-workers and patients alike. He will be dearly missed."

Nassief earned a medical degree at King Saud University College of Medicine in Riyadh, Saudi Arabia, in 1989. He completed residencies at King Fahd Hospital in Riyadh and at the University of Vermont. He completed two years of fellowship training in cerebrovascular disease at Washington University School of Medicine before joining the faculty in 2000.

Nassief was an admired and recognized teacher who was several teaching awards, including the Distinguished Clinical Teacher of the Year Award. He was also named to the prestigious Washington University School of Medicine Distinguished Clinical Teacher of the Year Award in 2008. He also received clinical teaching awards from students in 2000, 2001, and 2004.

Nassief is survived by his wife, Shem, and two young sons, Fahris, and Sunny, 5. A memorial service will be held in St. Louis at a later date.

Beth Miller
Substance behind theory

Van Dillen studies how movement contributes to pain

Washington University — about five miles from where she grew up with her parents, and three sisters — and has been here ever since.

"I heard there was a job at Washington University," she says. "I didn't know who to contact to apply, I called the admissions office of the physical therapy program, and I was told it was very competitive, as it is today. I applied, I called the admissions office of the physical therapy program, and I was told it was very competitive, as it is today."

"I had known Van Dillen since she graduated from Washington University in 1979, and she was very excited about going into the field of physical therapy. She was very competitive, as it is today."

The "long ago" was in 1975, when she worked at the Walter Johnson Institute of Physical Therapy, was also the director of the physical therapy educational program. She was a nationally renowned scientist and clinician in the field of PT.

"Fortunately, I didn't know that she was then the head of the Walter Johnson Institute of Physical Therapy, was also the director of the physical therapy educational program."

Fortunately, I didn't know that she was then the head of the Walter Johnson Institute of Physical Therapy, was also the director of the physical therapy educational program.

"Mark Rosati Kain High School, a few blocks from her current office. "The field wasn't necessarily new, but admission to PT programs was very competitive, as it is today."

"Physical therapy was very selective, and the classes were small — 1 or 2 out of a class of 26," she says.

She interviewed at several places after graduation, thinking she'd prefer to do something else, but she knew she would be a physical therapist.

Van Dillen began as a staff physical therapist in the Neurology Service at FW. Within 18 months, she was moved to a senior physical therapy position and later on to work as a supervisor. Under her leadership, physical therapy clinicians built a comprehensive service for neurologic rehabilitation that included acute care, inpatient and outpatient rehabilitation and home health care. The clinicians followed the patients across levels of care to see how they were doing at different stages of their condition.

"Before this system, a therapist would see a patient in the hospital and would not know how the treatment affected the patient in the home after discharge," Van Dillen says.

When Dr. Rose came to Washington University in 1979, he initiated a research program that was focused on the field of physical therapy. Van Dillen joined the research program and began her work on the study of musculoskeletal pain, particularly spinal pain conditions.

Evidence-based care

In the 1980s, Van Dillen became increasingly bothered by the lack of evidence-based treatment in the field. She returned to school to earn a master's degree in health science in physical therapy at WUSTL, where she took classes on experience with the research process. Van Dillen said her master's experience made it clear that she wanted to conduct sound research, so she returned to school."

"I decided that I needed to go back to school and really learn the scientific process well to effectively examine anything we were providing to patients in PT really made a difference," she says. "Around this time, I took a course in my profession to identify clinical as well as basic science evidence underlying PT, and my generation instead began to do research."

"When Dr. Rose came to Washington University in 1979, he invited Van Dillen to work with the education, clinical care and research together," she says. "This approach was unique, and the structure and philosophy of the Program in Physical Therapy now is a model for many other PT programs across the US."

Van Dillen pursued a doctorate in experimental psychology at WUSTL and studied under Richard Abrams, Ph.D., professor of psychology in Arts & Sciences, in his perceptual-motor laboratory. The work served as a model to conduct very structured experimental movements of behavior in humans and to get background in research design and analysis that could be applied to a different area of investigation.

After she earned a doctorate, Van Dillen began studying musculoskeletal pain conditions at the suggestion of Shirley Sahrmann, Ph.D., professor of physical therapy, of cell biology and physiology and of neurology.

"Shirley pointed out that people in her clinic with musculoskeletal pain displayed very stereotypic movement patterns that appeared to contribute to their pain problem," Van Dillen says.

They were similar to my patients with pain. If you are a clinician who typically develop stereotypic movement patterns as a result of their nervous system condition. They often look at the clinician with musculoskeletal pain develop specific movement patterns as a result of activities that they perform repetitively.

Challenging research

The major focus of Van Dillen's funded work has been on the study of musculoskeletal pain, particularly spinal pain conditions.

"Spinal pain conditions are among the most common conditions referred to outpatient PT," she says. "Spinal pain conditions have a huge impact on the quality of life and have enormous economic and social consequences that impact the public health system. She says, "Low back pain is the greatest cause of work lost due to injury and is not easily targeted linked to a specific pathoanatomy and lack of a specific treatment for it."

Sahrmann, Van Dillen's research approach is unmatched. Van Dillen has systematically put real substance behind theory in an area that is not easy to break into," Sahrmann says. "In addition to the typical challenges of grant funding, she has to fight the battle associations associated with breaking into new territories."

With grant funding, her team has studied trunk movement in people with low back pain who regularly participate in racquet sports, a surprisingly active group of people.

The researchers proposed that trunk movements used repeatedly in the racquet sport would contribute to the development of stereotypic movement strategies that people use in other activities. The representation of the same movement strategies during the day was proposed to contribute to the low back pain.

"Using a structured clinical examination and laboratory environment, we subgroup people with low back pain into groups with specific movement pattern they consistently display and the associated conditions. Van Dillen says, "We can then examine what factors contribute to why they move in a particular way. This gives us a basis for treatment, where we focus on modifying the contributing factors to alleviate the related low back pain symptoms and functional limitations."

Van Dillen is conducting a Phase I clinical trial that involves people with low back pain based on their movement and alignment patterns identified with a standard clinical examination. Participants are then randomly assigned to one intervention based on which results in the best outcome.

Van Dillen's published work has taken her around the world — she has attended conferences in Spain, the United Kingdom, Canada and Australia. She set to go back to Australia this year to the University of Queensland for a consensus conference on treatment of the spine.

"Linda is a wonderful citizen of our program and has brought us great distinction," says Susan Deusinger, Ph.D., executive director of the Program in Physical Therapy and professor of physical therapy and of neurology. "Her logical and organized approach makes her a wonderful researcher."

In the meantime, Van Dillen stays busy with her friend Mark Meniers and enjoys entertaining in their Central West End condominium. "We like to cook, so when people come in to work with us in our laboratory, we have a few people from the lab, and a few faculty members come over. It gives us a chance to get to know everyone away from the work setting," she says.

Linda Van Dillen

Education: B.S., 1979, University of Missouri-Columbia; M.S.H., 1985, and Ph.D., 1994, Washington University

Institute: Associate professor of physical therapy and of orthopedic surgery, director of Musculoskeletal Analysis Laboratory

Family: Husband, Mark Meniers; mother, Rose Van Dillen; brothers James and Don Van Dillen; sisters Nancy Meniers and Sheryl Dillen; daughter Megan; mother, 20 nieces and nephews

Hobbies: Spending time with family, tennis, cycling, hiking and keeping up with the world by reading The Economist and BusinessWeek and biographies and autobiographies of political figures.