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HMRInsights

Huntington Medical Research Institutes

New Implant Therapy Offered to Treat Chronic Involuntary Bowel Incontinence

Dr. Howard Kaufman, director of HMRI's Colorectal Research Program, is one of the initial 16 doctors across the nation approved to perform the new InterStim® bowel control therapy, offered by Medtronic, Inc., of Minneapolis, MN.

He was a co-investigator in a multinational multicenter clinical study into whether the InterStim Therapy for urinary incontinence, for which Medtronic won FDA approval in 1997, could be successfully applied to bowel incontinence.

Dr. Howard Kaufman with the device.

"The study in which Dr. Kaufman participated to evaluate the Medtronic InterStim system as a remedy for bowel incontinence fits well with the history of HMRI's Neural Engineering Program for developing and evaluating clinical applications of nerve stimulations," said Dr. Douglas McCreery, Neural Engineering director.

The HMRI Neural Engineering researchers have a long history of developing electrodes for activating nerves. The Huntington Helix array was licensed to Cyberonics, Inc. and subsequently has been implanted into more than 40,000 persons with epilepsy and with depression. Other versions of our nerve electrodes have been evaluated for treating swallowing difficulties following stroke and for treating urinary urge incontinence.

Chronic involuntary loss of bowel control is a humiliating, life-changing condition. According to a National Institutes of Health (NIH)-funded study, more than 18 million Americans have fecal incontinence. Among older persons, the infirmity is the single most frequent factor for admittance to nursing homes because families have difficulty dealing with its demands.

Caused by a variety of factors, it is most common among adults, predominately women who experience nerve and muscular trauma in the anus, rectum, and pelvic floor during childbirth.

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Understanding the Vital Role of Lipids in Alzheimer's Disease

When HMRI Senior Biochemist Alfred Fonteh reflects on his childhood in Cameroon, Africa, he can't help thinking his paternal grandmother had Alzheimer's Disease when she died in her 80s. Her inability to remember the names of family members and make new memories, her drifting into past memories, and her wanderings from home were all classic symptoms. By contrast, Dr. Fonteh's maternal grandmother — who loved to eat fish — lived 105 years. Ironically, his latest HMRI study may soon lead to the first effective methods for protecting the brain from AD, enabling many older people to live longer, happier lives.

"The story of my grandmother adds some context to our brain lipids study," said Dr. Fonteh. "Lipids are a broad category of naturally occurring molecules that include fats, sterols, fat-soluble vitamins, and fatty acids, including those in fish, that play a dominant role in brain function and health," he said. "Not only do they account for a large percentage of brain content, making up the structure of brain cell membranes, they also store energy, produce signal molecules, and influence inflammation. The goal of our study is to create new dietary intervention methods and drug targets."

Interestingly, when Dr. Fonteh left

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New Therapy for Chronic Involuntary Bowel Incontinence

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Eileen Brophy Williams was Dr. Kaufman's first patient to participate in the clinical study. The former Newport Beach resident's bowel incontinence resulted from an unsuccessful sphincteroplasty repair of an episiotomy following the birth of her first child 13 years ago. Her colorectal surgeon, Dr. Babak Rad, heard of the clinical study and referred her to Dr. Kaufman.

She simply had no feeling or sensation when she had incontinent episodes that occurred almost every day. Her life was severely limited to her household, and she wasn't able to participate in her children's school projects and so much more.

"When I had this surgery within two weeks time, I was able to get involved with my kids in school," Brophy Williams said. "It gave me back my life."

Eileen was a perfect candidate for the clinical trial because she had gone through various other treatment options. Dr. Kaufman explained those therapies included bowel habit modification through diet (increasing fiber, prescribing anti-diarrheal medications, etc.), sphincter muscle surgery, as well as biofeedback and physical therapy.

She went through InterStim's two-step outpatient implant process in March 2005. During the first visit, an electrode connects sacral nerves to an external test stimulator that can be adjusted for the correct amperage to stimulate nerves.

"Patients will walk around with the InterStim on a belt that's programmed with the help of a Medtronic technician," Dr. Kaufman explained. "If they pass the test of a reduction of incontinence of more than 50 percent for two weeks, they will qualify for a permanent implant."

During those two weeks, Eileen experienced the sensation for a bowel movement that she hadn't experienced in years. She became a candidate for permanent implant. The InterStim Therapy uses an implantable system consisting of a thin wire lead and a neurostimulator, or pacemaker-like device about the size of a quarter, to stimulate the sacral nerve to control bowel function. The neurostimulator is implanted on the upper part of the buttock above the pelvis.

"I was involved with the industry and thought this would be a technology to offer patients who had been unsuccessful with available therapies," Dr. Kaufman said. "I was fortunate to have the patient population so we could stratify patients based on their anatomy and physiology."

"We implanted the device in 120 patients who met the inclusion criteria with various degrees of fecal incontinence," Dr. Kaufman said. The study ran from 2002-2008, and "showed that at 12 months, 83 percent achieved 'therapeutic' success (with 41 percent of those subjects reaching 100 percent continence). While our paper reported on sustained success through two years, most patients have had continued success through their continued length of follow-up."

"When I had this surgery within two weeks time, I was able to get involved with my kids in school," Brophy Williams said. "It gave me back my life. I had stopped myself from having a life."

"There are women who are going through this who don't even know they have this. I had no idea I was as injured as I was. I was told there wasn't any help for me. Dr. Rad and Dr. Kaufman never gave up on me," she recalled. "I owe them my life and my life with my kids and family."

Dr. Kaufman is the first physician authorized to perform the InterStim implant for patients in the Southwest. After he has completed 20 implants, he will train other colorectal surgeons in the two-step, out-patient procedure.

In an unrelated project funded by the National Institutes of Health, HMRI's Neural Engineering Program researchers have been working to develop a neuroprosthetic device to artificially control urination for spinal cord injured patients. HMRI NEP scientists are also studying mechanisms of stroke-induced overactive bladder and a possible treatment by intraspinal microstimulation. ■

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HMRI Boswell Fellow Working to Cure the Incurable

HMRI's 2011 Boswell Fellowship winner, Dr. Sergii Romanenko, is hoping to break new ground with biophysical research he believes has the potential to treat some of the most intractable and painful maladies known to man.

"HMRI is involved in studies that are on the cutting edge of medicine and technology. ...scientific work that's on a higher plane than most."

Having earned his Ph.D. in Biophysics from the International Center of Molecular Physiology in Kiev, he then applied for and was awarded a James Boswell Postdoctoral Fellowship which is a joint Caltech-HMRI program endowed by the James Boswell Foundation. As a Boswell fellow, his mentors are HMRI scientist Dr. Victor Pikov and Caltech professor Peter Siegel.

(L-R) Dr. Victor Pikov, Dr. Sergii Romanenko and Caltech professor Peter Siegel.

It wasn't until college that Sergii began to consider a career in science. "I was studying electronics and biophysics. One day my lecturer invited me to the Bogomoletz Institute of Physiology, and brought me to see the director, explaining that he was going to interview me. Strangely, I wasn't nervous talking to this important man; on the contrary, I felt comfortable and completely absorbed by his intelligence and passion. But to be honest, at the time I didn't even know his name. It was only later I found out he was Platon Kostyuk, whose book "Biophysics" I was reading exactly at that time. That's the moment I turned from electronics to biology, and I'm still confident it was the right decision!"

Kostyuk also influenced Romanenko's career direction. "He often said international scientific interaction isn't just about attending conferences, but living and working in other countries. It gives you the opportunity to learn from diverse viewpoints, share ideas and solve problems cooperatively."

Romanenko says, "HMRI is involved in studies that are on the cutting edge of medicine and technology. The Boswell Fellowship allows both the fellow and his or her mentor to concentrate on scientific work that's on a higher plane than most."

"My research is an investigation of the influence of high frequency electromagnetic irradiation (HFEMI) on the electrical properties of living tissues and their functionality. Initial results show that 'millimeter waves' which are very, very short microwaves, slow down the firing rate of neurons."

And the possible benefits of his research? "We can envision effective treatments for disorders including epilepsy, migraine, focal headache and other painful, drug-resistant conditions that are currently very difficult to cure completely."

"For example, there's no universal approach for treating epilepsy. But the root cause is excessive electric activity within a group of neurons, which is exactly the field we're exploring. Migraine and neuropathic pain are even less studied, but we believe manipulation of the brain's electromagnetic field is potentially very promising." ■

Vital Role of Lipids in Alzheimer's Disease — *Continued from page 1*

Cameroon to begin his undergraduate studies in London, he didn't intend to major in biochemistry. "The major I had chosen was filled, so I settled for what is today one of the most progressive areas of medicine. Later, during my research in clinical immunology at Johns Hopkins and in pulmonary medicine at Wake Forest University, I heard a presentation by Dr. Mike Harrington. It became clear that my lipid studies were related to brain inflammation and AD,

Alfred N. Fonteh, PhD (Biochemist) and Kuo Chao-Chin (Analytical Chemist) in Molecular Neurology with the new Triple Quadrupole Mass Spectrometer.

so I contacted him and we eventually began our collaboration."

Dr. Fonteh and Dr. Harrington, Director of the HMRI Molecular Neurology Program, have studied AD and other diseases at HMRI for 10 years. Together, they have made important AD-related discoveries, including low levels of Omega Fatty Acids (OFA) and antioxidants in the cerebrospinal fluid of AD patients. Much more complicated, however, is the job of identifying the exact types and amounts of the various lipids and other compounds involved in AD. A new Triple Quadrupole Mass Spectrometer (TQMS) is making that possible.

"I am very excited about what we can now accomplish with the new TQMS," said Dr. Fonteh. "This machine is more than 1,000 times more sensitive than our previous equipment, enabling us to detect very low concentrations of key molecules. Everyone knows that Omega-3 Fatty Acids found in fish and other foods help keep the brain healthy. What we don't know are the biomarkers of AD and the quantities of various lipids involved in balancing brain inflammation, oxidation and metabolic function. Our brain lipid study will explain this."

Mass spectrometers can identify molecules in study samples by measuring the mass-to-charge ratio. About the size of a large office copier, HMRI's new TQMS is three mass spectrometers in one. Using six different scan parameters, it finds the "mass fingerprints" of very small quantities of lipid molecules. This will enable Dr. Fonteh and his team to accurately ID and quantify the many lipids and other compounds found in AD patients.

HMRI has recruited 70 study participants, including those who are cognitively healthy, mildly impaired and those with AD. During the two-year study, Dr. Fonteh and the HMRI team will use the TQMS to measure the lipids in participant fluid samples, including inflammatory and anti-inflammatory lipids, steroids that modulate brain function, lipid signaling molecules, proteins that bind and transport lipids, and enzymes that break them down. By the end of the study, HMRI's Molecular Neurology team expects to identify lipid changes in diseased brains that can guide early diagnosis and new treatments. ■

New President of the Altadena Guild Embraces Tradition While Exploring the New

A personal dedication to service is what motivates Debbie Williams, 2011 President of the Altadena Guild of Huntington Hospital. "My parents instilled in us a belief that 'to whom much is given, much is expected.'" Today, giving back is still a family affair.

"My husband volunteers with several organizations, so it's something we share. Additionally, my children are both young adults and do various forms of volunteering.

Since 1951 the Guild has raised funds for HMRI by hosting high-profile events, including their signature annual walking tour of beautiful Pasadena homes, the proceeds of which are used to purchase laboratory equipment, augment research libraries and fund scholarships and grants.

Williams credits her non-profit work for her current position, "Before retiring, I worked in healthcare for thirty-three years and my skills grew significantly as a manager. However, my experiences as a volunteer are what really helped prepare me for my role within the Altadena Guild."

A member since 2002, it was her admiration for the beautiful floral designs at the Guild's home tour that initially led her to volunteer in the hopes of learning flower arranging.

But she soon realized, "The Guild is very special. There's a joy and willingness that comes from knowing folks are there because they want to be there."

Williams sees her role as simultaneously forward-looking and mindful of the past. "I want to preserve the history and traditions of the Guild, but also ensure we're making the changes necessary to attract new members, including potentially increasing internet and email outreach, and exploring venues like Twitter to let people know what we're doing."

She feels just as strongly about HMRI's goals. "Health is a great equalizer, and because it's critical for all of us, supporting the mission of HMRI to improve health and prolong life through research is one that I feel is easy to support." ■

Board Member Spotlight

Serving as an HMRI board member is one of the great pleasures and responsibilities I have enjoyed over the years," says Dan Brigham. "The guidance I now contribute toward this outstanding organization is very rewarding to me personally — and even more so to the many people who benefit from its research and clinical work. My work with HMRI is a truly fascinating journey of discovery that has introduced me to people I admire and thoroughly enjoy working with."

Dan Brigham was introduced to HMRI through his wife of 60 years, Louise. Her father, Gardner Grout, was an outstanding champion of HMRI who spent 35 years supporting its work. His passion and commitment literally helped build HMRI into a world-class institute dedicated to developing and applying new technology for the prevention, diagnosis and treatment of disease.

"Louise and I have enjoyed such a wonderful life together. Since we met, we have always looked for opportunities to use our success to help others, despite my busy career as an insurance broker. In the past, I served on the nonprofit boards of the Army and Navy Academy, Girls Club of Pasadena, Children's Hospital of Los Angeles, and Pasadena Community Foundation, to name a few. Then, when Gardner was no longer able, I was happy to step in and offer my support to HMRI."

HMRI thanks Dan for his volunteer service. ■

MRC Summer Intern Event

For 57 years, HMRI has opened its laboratories to college students during Summer Research Programs. A record 22 students worked with researchers throughout HMRI this summer, gaining invaluable experience in scientific techniques and methods.

Fourteen students shared presentations about their projects with the Medical Research Council on August 11 at Caltech's Athenaeum.


Dr. Gordon Sasaki

The program opened with a slide presentation honoring Summer Research Program supporters of the Summer Research Program, and Lois Matthews, Board Member of Huntington Hospital, shared appreciative thoughts about the intern program.

"The young folks you are going to see tonight represent the future of medical research and to the extent that we can somehow encourage them to continue to focus on the San Gabriel Valley, we will all win," said Mike Doyle, HMRI Board Chairman.


Paige McCleary, Matthew Techy and Linus Kuo

"These students will be able to tell you about new and exciting things we do here at HMRI," said Dr. Victor Pikov, Director of the Summer Research Program. "You will learn about the new things that are going on and new experiments, new approaches we are exploring. You will be able to view them through the eyes of the students."

Three students worked with Dr. Myron Tong, Director of HMRI's Liver Center: **Judy A. Trieu** of Alhambra and a USC graduate student discussed clinical characteristics and follow-up of inactive carriers of hepatitis B. **Patrick Chang** of San Marino, a UCLA junior, explored hepatitis C and HPC patients treated with Interferon and its outcomes and how the treatment relates to liver cancer. **Tiffany Bui**, UCLA senior, focused on clinical progression of chronic hepatitis B in patients with normal liver enzymes and no liver cancer.

Cameron Henneberg of Pasadena and a Princeton University sophomore worked with Dr. Henry Chan of Magnetic Resonance Spectroscopy in exploring parahydrogenic-induced polarization or hyper-polarization, for short.

Jessica Liu of San Marino and a UCLA sophomore, worked with Thao Tran, director of MRS Clinical Services. Liu's project combined MRS with magnetic resonance imaging (MRI) to more accurately differentiate between normal aging in patients with mild congnitive impairment.

Hector Salavarrieta of Oxnard and a California Lutheran University senior, worked with mentor Dr. Marylou Ingram, Director of the Tissue Engineering and In Vitro Systems Program. His project was toxicity screening of cancer cell lines and his principal investigator focuses on breeding cultures that give a more realistic environment for testing drugs.

Michelle Miller of Stevenson Ranch and a junior at Loyola University Chicago worked on a project exploring the role of administration in medical research with her mentor, HMRI Chief Financial Officer Frank Davis

Robert Trent Jones, a USC sophomore from La Cañada Flintridge, investigated with Dr. Alfred Fonteh of the Molecular Neurology Program the hypothesis that Alzheimer's Disease is caused by abnormal lipo-metabolism in the brain and he used mass spectrometry to detect various compounds in the tissue.

Rebecca Liu of South Pasadena who attends UCLA also worked with Dr. Fonteh on evaluating the amount of cholesterol in cerebrospinal fluid .

A trio of students who worked with Dr. Xianghong Arakaki of the Molecular Neurology Program presented different aspects of their research about migraines: **Paige McCleary** of Upland who is attending Claremont McKenna College;

Linus Kuo of Claremont attending Pomona College; and **Matthew Techy** of Monrovia and a student at Washington University at St. Louis.

Riley Marangi of South Pasadena and a Stanford University senior was mentored by Dr. Douglas McCreery, Director of the Neural Engineering Program, to work on a cochlear nucleus auditory prostheses for people who specifically lack or have a damaged auditory nerve.

Concluding presentations was **Carmen Cong** of Monterey Park who is attending UCLA. She worked with Dr. Martin Han of the Neural Engineering Program on a project titled, "The Quantification of Tissue Response to Neuroprobe."

"HMRI helps create physicians who return to Pasadena to be some of our best doctors," said HMRI President Dr. William Opel to put added perspective on the students' work and the evening.

"In many cases, people not only become clinicians, they go on to become great producers of research," he continued. "People have gone on to become the chairs of departments, to become directors of research, to be elected to the National Academy of Sciences and to become even president of the Salk Institute. All have come from this

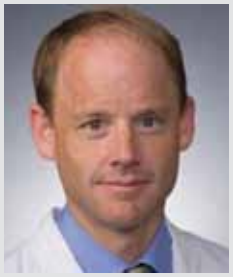
HMRI summer student program over the years."

Dr. Gordon Sasaki, a Pasadena plastic surgeon who was an HMRI summer student in 1963 while he attended Pomona College, was the evening's featured speaker, and directed several inspirational comments to students in the audience.

"The value of this association with HMRI is two-fold," Dr. Sasaki said. "One is that you will understand the scientific method, and secondly, you will form relationships, and it is all about relationships between and amongst your student colleagues, between you and your mentors. Please remember that you do not progress by yourself. You are always on the shoulders of someone else." ■ (Story by Elizabeth Hezlep)

HMRI Helps Three Brothers Find Success in Medicine

Ask any medical doctor or researcher the secret to success in medicine, and you'll usually hear about a teacher who inspired his or her work. A triple-case in point is the Broberg family. Three of Dr. Charles and Jeanne Broberg's five sons have participated in HMRI's Summer Research Program and then enjoyed successful careers in medicine.



Todd Broberg

Craig Broberg

Jeffrey Broberg

"HMRI's program helped me gain a deep respect for the medical research process — from hypothesis to trial and then redirection," said Todd Broberg. "As a microbiology major, everything I did at HMRI was relevant to my career and continues to be helpful. My HMRI experience is the foundation I continue to draw upon to treat clinical patients at Southern California Permanente Medical Group, where I have been a head and neck surgeon for 14 years."

Todd's brother Craig followed in his footsteps. "I knew Todd had a great experience at HMRI and learned a lot from Dr. David Kirk, so I sought the same experience," said Craig. "Dr. Kirk was everything a proper mentor should be. He was a very patient, encouraging and supportive educator, who gave me free reign to try a few things of my own. Plus, he had great stories to tell in his delightful Irish brogue."

Craig is now an assistant professor of cardiovascular medicine and director of the adult congenital heart disease program at Oregon Health and Science University, where he has worked for six years. Dr. Craig Broberg has been awarded research grants from the National Institutes of Health, American Heart Association and the Agency for Health Research and Quality. He recently completed a new book on congenital heart disease.

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Fashion with Compassion

The Altadena Guild of Huntington Hospital partnered with Macy's South Lake in Pasadena and Jones New York to host a spectacular evening ***FALL FASHION FUN*** event on October 13th to benefit HMRI and the Constance G. Zahorik Appearance Center at Huntington Hospital. 200 guests enjoyed wine from the San Antonio Winery and appetizers from The Market on Holly, strolled through racks of new clothing arrivals and heard from entertaining speakers about apparel and cosmetic fall fashion trends. Personal stylists offered guests a unique opportunity for a consultation, and Jones New York offered guests a purchasing discount. Altadena Guild members and some of their spouses modeled casual, business and evening wear to motivating music by a disc jockey. HMRI extends sincere appreciation to event co-chairs Carole Key and Fran Combe and event committee members Patti Ebbert, Susan D'Antuono, Maureen Savage and Debbie Williams for their tireless philanthropic efforts. ■

(L-R) Event Co-Chairs Carole Key and Fran Combe with Debbie Williams, Guild President.

Let's Not Forget Alzheimer's

Dr. Michael Harrington, Director of Molecular Neurology and his assistant, RN Sherri Lee, gave an informative talk about Alzheimer's disease addressing an interested audience of 35 residents at the Royal Oaks Manor located in Duarte and invited them to participate in HMRI's research study. Helen Posthuma, a loyal supporter of Harrington's research, and Janice Moist, Resident Program Director, helped arrange the event. "This was a very successful outreach," commented Dr. Harrington, "Six of the Manor residents showed a keen interest in participating in our study which surpassed our expectations."

HMRI supporter Helen Posthuma and Dr. Michael Harrington.

"Alzheimer's research is so important," says Dr. Harrington, "because symptoms are not recognizable early on in its progression. When memory loss finally becomes apparent to us or family members, slow brain damage has already been going on up to 20 years and by that time it is too late to intervene with an effective treatment. We need to find biomarkers that signal AD onset prior to clinical symptoms and investigate treatments that hold promise in stalling its progression at a much earlier stage." Personal experience with his grandmother who had AD, gave Harrington first-hand knowledge about the stages of disease progression and its hereditary component as a risk factor.

The aim of this community outreach is to educate people about aging issues, to communicate the latest advances being made in AD research at HMRI, and to recruit individuals ages 70 to 90 to participate in the two-year study. Contact Sherri Lee at 626-795-4343 to learn more. ■

Jones Coffee Roasters Hosts HMRI

On Sunday, July 31st, Lawrence W. Jones, M.D. and his wife Mireya Asturias Jones welcomed an enthusiastic group of friends and supporters of Huntington Medical Research Institutes (HMRI) to their Jones Coffee Roasters location in Pasadena. Close to seventy guests were treated to an afternoon that included sangria, paella by Chef Manuel, a Spanish guitarist, and, of course, the opportunity to sample wonderful coffees.

Lawrence and Mireya Jones.

Mireya Jones welcomed guests with a presentation entitled "From Seed to Cup." Guests then joined Chef Manuel in the kitchen, where they were able to see first-hand how he prepares his mouth-watering paella. Not surprisingly, a perfect summer dinner of paella, salad, and dessert followed.

Later, Jones Coffee CEO Chuck B. Jones took to the mic and led a question and answer session. It was a sea of hands as guests asked questions about everything from marketing to coffee. Chuck's passion for coffee stems from his family's 140-year-old coffee plantation in the highlands of Guatemala, where Mireya was born.

As roasters, growers and importers of premium specialty coffees, Jones Coffee Roasters has been sharing a passion for fine beans with consumers, retailers and wholesalers in the Pasadena area and beyond since 1994.

For HMRI's guests, this was simply an afternoon to enjoy and be recognized for their ongoing support. Board Chairman Michael C. Doyle welcomed the crowd, and HMRI President William Opel, PhD, took a moment to acknowledge all the different groups in attendance—from Altadena Guild members to researchers to donors.

Lawrence W. Jones, MD—"Larry" to all—joined HMRI in 1974 and currently serves on the board of directors. Combining his strong interest in research with the practice of medicine made him a successful collaborator to HMRI's cell culture and prostate cancer research programs. He generously contributed his time and efforts to make this special event a success. ■

HMRI Helps Three Brothers Find Success in Medicine

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Jeff Broberg was the last member of his family to benefit from HMRI's Summer Research Program. "I missed out on Dr. Kirk's great stories, but Dr. Shankar Narayan was also a very accomplished researcher and patient teacher. I very much enjoyed my work with him in studying tumor suppressor genes and prostate cancer. He taught me the critical thinking needed to solve both scientific and clinical problems." Dr. Jeff Broberg is now a specialist in obstetrics and gynecology in Provo, Utah.

The boys' father, Dr. Charles Broberg, was also an ob-gyn specialist who practiced in La Canada, California. He died in April, 2010, but his work and inspiration lives on through his boys' medical careers. HMRI is proud to have furthered their training and wishes them the best success in their ongoing work. ■

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Colorectal Research Program

Wexner, S. D., J. A. Coller, G. Devroede, T. Hull , R. McCallum , M. Chan, J. M. Ayscue, A. S. Shobeiri, D. Margolin, M. England, H. Kaufman, W. J. Snape, E. Mutlu, H. Chua, P. Pettit, D. Nagle, R. D. Madoff, D. R. Lerew, A. Mellgren. Sacral nerve stimulation for fecal incontinence: Results of a 120-patient prospective multi-center study. *Ann Surg.* 2010; 251:441-449.

Wexner, S. D., T. Hull, Y. Edden, J. A. Coller, G. Devroede, R. McCallum, M. Chan, J. M. Ayscue, A. S. Shobeiri, D. Margolin, J. England, H. Kaufman, W. J. Snape, E. Mutlu, H. Chua, P. Pettit, D. Nagle, R. D. Madoff, D. R. Lerew, A. Mellgren. Infection rates in a large investigational trial of sacral nerve stimulation for fecal incontinence. *J Gastrointest Surg.* 2010 Jul;14(7):1081-9. Epub 2010 Mar 31.

In Vitro Systems/Tissue Engineering

Ingram, M., G. B. Techy, B. R. Ward, S. A. Imam, R. Atkinson, H. Ho and C. R. Taylor (2010). "Tissue engineered tumor models." *Biotech Histochem* **85**(4): 213-29.

Magnetic Resonance Spectroscopy

Kanamori, K. and B. D. Ross (2010). "Chronic electrographic seizure reduces glutamine and elevates glutamate in the extracellular fluid of rat brain." *Brain Res* **1371**: 180-91.

Lingwood, M. D., T. A. Siaw, N. Sailasuta, B. D. Ross, P. Bhattacharya and S. Han (2010). "Continuous flow Overhauser dynamic nuclear polarization of water in the fringe field of a clinical magnetic resonance imaging system for authentic image contrast." *J Magn Reson* **205**(2): 247-54.

Mountford, C. E., P. Stanwell, A. Lin, S. Ramadan and B. Ross (2010). "Neurospectroscopy: the past, present and future." *Chem Rev* **110**(5): 3060-86.

Perman, W. H., P. Bhattacharya, J. Leupold, A. P. Lin, K. C. Harris, V. A. Norton, J. B. Hovener and B. D. Ross (2010). "Fast volumetric spatial-spectral MR imaging of hyperpolarized 13C-labeled compounds using multiple echo 3D bSSFP." *Magn Reson Imaging* **28**(4): 459-65.

Ross, B. D., P. Bhattacharya, S. Wagner, T. Tran and N. Sailasuta (2010). "Hyperpolarized MR imaging: neurologic applications of hyperpolarized metabolism." *AJNR Am J Neuroradiol* **31**(1): 24-33.

Ross, B. D., P. Bhattacharya, S. Wagner, T. Tran and N. Sailasuta (2010). "Hyperpolarized MR imaging: neurologic applications of hyperpolarized metabolism." *AJNR Am J Neuroradiol* **31**(1): 24-33.

Sailasuta, N., O. Abulseoud, K. C. Harris and B. D. Ross (2010). "Glial dysfunction in abstinent methamphetamine abusers." *J Cereb Blood Flow Metab* **30**(5): 950-60.

Sailasuta, N., T. T. Tran, K. C. Harris and B. D. Ross (2010). "Swift Acetate Glial Assay (SAGA): an accelerated human (1)(3)C MRS brain exam for clinical diagnostic use." *J Magn Reson* **207**(2): 352-5.

Molecular Neurology

Fonteh, A. N., R. Chung, T. L. Sharma, R. D. Fisher, J. M. Pogoda, R. Cowan and M. G. Harrington (2010). "Cerebrospinal fluid phospholipase C activity increases in migraine." *Cephalalgia*.

Harrington, M. G., R. M. Salomon, J. M. Pogoda, E. Oborina, N. Okey, B. Johnson, D. Schmidt, A. N. Fonteh and N. F. Dalleska (2010). "Cerebrospinal fluid sodium rhythms." *Cerebrospinal Fluid Res* **7**: 3.

Harrington, M. G., A. N. Fonteh, X. Arakaki, R. P. Cowan, L. E. Ecke, H. Foster, A. F. Huhmer and R. G. Biringer (2010). "Capillary endothelial Na(+), K(+), ATPase transporter homeostasis and a new theory for migraine pathophysiology." *Headache* **50**(3): 459-78.

Pikov, V., X. Arakaki, M. Harrington, S. E. Fraser and P. H. Siegel (2010). "Modulation of neuronal activity and plasma membrane properties with low-power millimeter waves in organotypic cortical slices." *J Neural Eng* **7**(4): 045003.

Riggins, J. N., W. Corey, A. N. Fonteh and M. G. Harrington (2010). "Blood serum alpha fetoprotein enhancer binding protein, a tumor suppressor, decreases in chronic HBV hepatitis patients as hepatocellular cancer appears." *Dis Markers* **28**(3): 125-35.

Xia, N., L. Liu, M. G. Harrington, J. Wang and F. Zhou (2010). "Regenerable and simultaneous surface plasmon resonance detection of abeta(1-40) and abeta(1-42) peptides in cerebrospinal fluids with signal amplification by streptavidin conjugated to an N-terminus-specific antibody." *Anal Chem* **82**(24): 10151-7.

Molecular Pathology

Ingram, M., G. B. Techy, B. R. Ward, S. A. Imam, R. Atkinson, H. Ho and C. R. Taylor (2010). "Tissue engineered tumor models." *Biotech Histochem* **85**(4): 213-29.

Neural Engineering

Manoonkitiwongsa, P. S., R. L. Schultz, P. D. Lyden. Safe and effective vascular endothelial growth factor (VEGF)-based therapeutic angiogenesis for ischemic stroke: Crucial insights from preclinical trials. In Therapeutic Angiogenesis for Vascular Diseases: Molecular Mechanisms and Targeted Clinical Approaches for the Treatment of Angiogenic Disease. Slevin M, Ed. *Springer*. 2010.

Manoonkitiwongsa, P. S., E. F. Whitter, J. N. Chavez and R. L. Schultz "Blood-brain barrier Ca2+-ATPase cytochemistry: incubation media and fixation methods for differentiating Ca2+-specific ATPase from ecto-ATPase." *Biotech Histochem* **85**(4): 257-68.

McCreery, D., M. Han and V. Pikov "Neuronal activity evoked in the inferior colliculus of the cat by surface macroelectrodes and penetrating microelectrodes implanted in the cochlear nucleus." *IEEE Trans Biomed Eng* **57**(7): 1765-73.

McCreery, D., V. Pikov and P. R. Troyk "Neuronal loss due to prolonged controlled-current stimulation with chronically implanted microelectrodes in the cat cerebral cortex." *J Neural Eng* **7**(3): 036005.

Pikov, V., X. Arakaki, M. Harrington, S. E. Fraser and P. H. Siegel "Modulation of neuronal activity and plasma membrane properties with low-power millimeter waves in organotypic cortical slices." *J Neural Eng* **7**(4): 045003.

Pikov, V. and P. H. Siegel "Thermal monitoring: Raman spectrometer system for remote measurement of cellular temperature on a microscopic scale." *IEEE Eng Med Biol Mag* **29**(1): 63-71.

Sharma, V., D. B. McCreery, M. Han and V. Pikov "Bidirectional telemetry controller for neuroprosthetic devices." *IEEE Trans Neural Syst Rehabil Eng* **18**(1): 67-74.

Siegel, P., V. Pikov (2010) THz in biology and medicine: toward quantifying and understanding the interaction of millimeter- and submillimeter-waves with cells and cell processes. *SPIE BiOS* 7562: 75620H.

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