



Children's Memorial
Research Center™

Spring 2010
Volume 7: Issue 1

A Member of the
McGaw Medical Center
of Northwestern University
Chicago, Illinois

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InTouch

WITH RESEARCH

at Children's Memorial Research Center

Fifteen Years of Student Achievement

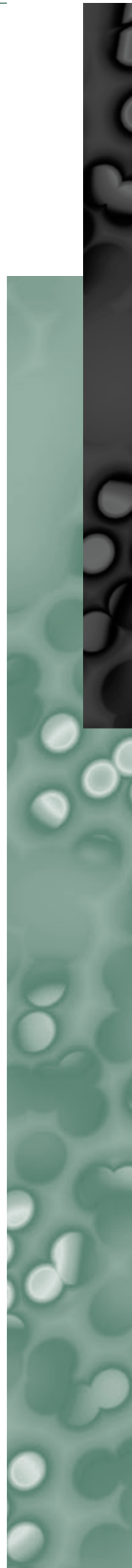


Photo: Children's Memorial Audio-Visual Department

Current graduate student Rocco Gogliotti with recent graduate Suzan Hammond, PhD

The Children's Memorial Research Center Training Program is a dedicated and distinguished endeavor, developing graduate and postgraduate scientists for prolific careers. The program is directed by Hans-Georg Simon, PhD, Associate professor of [Pediatrics](#) at Northwestern University's Feinberg School of [Medicine](#) and Bernard L. Mirkin Scholar. Currently, 41 graduate students, postdoctoral fellows and clinical fellows work in 19 different research center laboratories in areas including genetics, developmental biology, neurobiology and cancer biology. Guided by Simon, the trainees organize committees and coordinate a number of activities, including seminars, travel awards and grant writing workshops. Their monthly meetings feature such diverse topics as research progress reports; invited speakers discussing career options; new research center scientists describing how to navigate to a first faculty appointment; or recent graduates who talk about their new positions. Three Northwestern University programs form the cornerstone of graduate student recruitment to the research center: the [Integrated Graduate Program in the Life Sciences \(IGP\)](#), the [Interdepartmental Neuroscience \(NUIN\) Program](#), and the [Medical Scientist Training Program \(MSTP\)](#).

[continued]



Fifteen Years of Student Achievement (continued from cover)

Under these programs, each student selects a laboratory in which to conduct a research project that will culminate in a PhD thesis. Research center faculty who are members of these programs encourage students to meet, discuss science and collaborate. Over the years, former training program students have flourished in a variety of settings.

Some facts and figures:

- Since opening its doors, 17 individuals have completed the training program; nine currently hold postdoctoral fellowships at prestigious research institutions.
- Since 2000, 13 students have been awarded PhDs. Of these, five have graduated in the past year.
- Career paths have led to assistant professorships, clinician-researcher, science teacher and pharmaceutical industry liaison.
- Over 20 first author papers have been published by students while in the training program.
- Former graduate students have contributed about 40 peer-reviewed journal articles to the scientific literature since embarking on new careers.

In 2009, the training program members conceptualized and enacted the first biomedical research symposium to great success. In addition to highlighting the accomplishments of trainees and encouraging interactions among students, scientists and visitors, the symposium serves as a recruitment vehicle for new trainees. Planning is under way for this year's symposium to be held in September.

What current students have to say about the program: "The training program provides us with a casual environment where we can feel comfortable to share ideas and receive feedback from our peers without the added pressure or scrutiny that is often associated with a more formal setting. This combination of both structured and relaxed atmospheres, as well as the intimacy of a smaller, focused group of researchers provides a wonderful setting for scientific excellence."

"It's self-sustaining in that the students talk about what they want to do, organize the program, and promote it so that others are attracted to come here as well. The fact that it works so well is a great recruitment tool." ■



Graduates of the training program include (top row, left to right): Troy Camarata, PhD, Developmental Biology Program; Catherine Drerup, PhD, Human Molecular Genetics Program; Allison Rufatto Ebert, PhD, Neurobiology Program; Suzan Hammond, PhD, Human Molecular Genetics Program.

(Bottom row, left to right): Hai Jiang, PhD, Neurobiology Program; Edward Kang, PhD, Neurobiology Program; Tyler Schwend, PhD, Developmental Biology Program; Kathleen Somera-Molina, PhD, Neurobiology Program. Also, Kathryn Meyer, PhD, Human Molecular Genetics Program (see page 5).

Director's Message:

Phase Two of Research Strategic Planning Commences



Mary J.C. Hendrix, PhD,
Medical Research Institute
Council Professor, President
& Scientific Director,
Children's Memorial
Research Center

We would like to thank you for your participation in the first phase of the strategic planning process for Children's Memorial Research Center. With your support the initial assessment established a framework that includes: current-state income statements for each research program; preliminary inventory of key metrics (e.g. research faculty, space utilization, funding benchmarks, productivity metrics) to set the stage for subsequent decision-making; and income and cash flow statements for potential scenarios for relocating research activities to Streeterville.

We are moving to the second stage of our work which will be completed with

Mary J. C. Hendrix, Ph.D.
President and Scientific Director
Children's Memorial Research Center

Patrick M. Magoon
President and CEO
Children's Memorial Hospital

the assistance of a Research Advisory Committee comprised of research center Board members, Children's Memorial Hospital department heads, select research center leadership, select hospital division heads, and representation from the Feinberg School. This committee will develop principles relative to the vision and goals for the research enterprise with respect to the transition to Streeterville, provide insights into key issues, and review and validate study findings. The first meeting of the committee is set to take place in early May.

We thank you for all that you have done to help bring us to this point, and look forward to your assistance in the next phase of this important engagement.

Kirk B. Johnson
Chair, Board of Directors
Children's Memorial Research Center



Published by Children's
Memorial Research Center

Spring 2010
Volume 7: Issue 1

www.childrensmrc.org

Children's Memorial Research Center is the research arm of Children's Memorial Hospital, and a virtual center for pediatric research at Northwestern University's Feinberg School of Medicine. Founded in 1989, the research enterprise has grown to include more than 200 investigators and more than \$34 million in external funding for research, two-thirds from the NIH and other federal agencies.

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Students Win at Mouse Genetics Group Meeting and Poster Competition



photo: Children's Memorial Audio-Visual Department

Chris Heier



photo: Children's Memorial Audio-Visual Department

Diana Himmelstein

At the spring 2010 meeting of the Center for Genetic Medicine's Mouse Genetics Group, Northwestern University, two research center graduate students won top awards in the poster competition. Chris Heier, DiDonato laboratory, Human Molecular Genetics Program, received first place. Second place went to Diana Himmelstein, Kohtz laboratory, Developmental Biology Program. Heier is an IGP student; Himmelstein is in the NUIN Program.

Profile:

Rochanna Thomas



photo: Peggy Murphy

Rochanna Thomas

Rochanna Thomas, Senior administrative assistant in the Office of Sponsored Programs

(OSP) of the research center, has been with Children's Memorial for six years. She provides assistance for pre- and post-award projects: processing grant proposals, monitoring funds for projects, maintaining the OSP database and website and assisting Harmony Maple, OSP director, with special projects. Until recently, Rochanna was involved with the Children's Memorial Blood Drive, recruiting new members, registering donors and making reminder calls.

Rochanna particularly appreciates seeing a research project come together, starting with a scientist's idea, continuing to proposal submission and, hopefully, a grant, and finally the results. "You don't realize the involvement until you work on one of these projects. It's a satisfying feeling to see everyone pull together to submit a proposal and have it result in an award," she says.

Outside of work, Rochanna likes to read, and looks forward to returning to a particular love of hers, writing poetry. She says it helps her to express herself. She is the mother of an 11-year-old daughter, with whom Rochanna spends a great deal of her free time.

Appointments



photo: Peggy Murphy

Nancy Danielov

The Office of Research Integrity and Compliance (ORIC) is pleased to welcome two new staff

members: Nancy Danielov, Associate director, and Elizabeth Smith, Research compliance coordinator. Danielov brings six years of IRB experience to Children's Memorial, having served as the Senior education analyst for the IRB at Cedars-Sinai Medical Center in Los Angeles, and in the IRB offices at the UCLA Medical Center and Children's Hospital of Los Angeles. She earned her Master of Arts degree from Pepperdine University and is pursuing her Doctorate in Education in Organizational Leadership from Argosy University. Danielov will help facilitate the conduct of research at Children's Memorial while upholding its high standards of human research. Smith previously served as a Research coordinator for the Cognitive Neurology and Alzheimer's Disease Center at Northwestern University, and as a Clinical research associate at Cognitive Research Corporation, a contract research organization in St. Petersburg, Florida. She earned her Bachelor of Science degree from Illinois State University and is a certified Registered Health Information Administrator. At Children's Memorial, Smith will focus mainly on IRB submis-

sions and provide assistance to investigators and their staff in ensuring they are compliant with the applicable regulations and institutional policy.

The goal of ORIC is to provide support and education for the Children's Memorial research community in regulatory requirements for scientific research. With these two new additions, ORIC will continue in its mission to build an environment that fosters the responsible conduct of research by promoting the principles of scientific and administrative excellence and compliance with both the letter and spirit of governing regulations.

by Greg Wendling

In March, the Biostatistics Research Core hired a master level biostatistician Zhenling Huang, MS.

Zhenling Huang earned her Master of Science in Statistics degree at Purdue University. She has experience in performing complex data mining and manipulating in a data warehouse environment. Her unique experience working with an international pharmaceutical company gives her a working statistical analyst knowledge base.

by Rebecca Prescott

photo: Children's Memorial Audio-Visual Department



Zhenling Huang, MS

In the News



Debra Weese-Mayer, MD

American Thoracic Society Issues Statement on Disorder of Respiratory and Autonomic Nervous System Regulation

ATS has released a new official clinical policy statement on congenital central hypoventilation syndrome (CCHS), a disorder of respiratory and autonomic nervous system (ANS) regulation.

The ANS regulates reflexive acts, including heart rate and blood pressure, digestion, body temperature and pain perception. The statement appears in the March 15, 2010 issue of the *American Journal of Respiratory and Critical Care Medicine*. In 2003, a gene called PHOX2B was found to be the disease-defining gene for CCHS. The specific manner in which the gene mutates predicts the severity and form of the disease. "This discovery confirmed what we had long believed to be true: first, that CCHS is a genetic disorder; second, that the gene responsible for CCHS has a key role in the early embryology of the ANS; third, that inheri-

tance of CCHS and the PHOX2B mutation is autosomal dominant; fourth, that the nature of the PHOX2B mutations can explain the spectrum of the CCHS," explained Debra E. Weese-Mayer, MD, who chaired the committee that wrote the guidelines. "The discovery that PHOX2B is the gene that defines CCHS offers endless opportunities in terms of basic science inquiry and clinical care — all with the long-term goal to improve quality of life for these patients."

Neurology Today Interview

Weese-Mayer was interviewed by Neurology Today about a February 2010 report in the

Journal of the American Medical Association that identified abnormalities in serotonin (5-HT) and tryptophan hydroxylase levels, and significantly reduced 5-HT receptor binding in the brains of babies who had died of sudden infant death syndrome (SIDS). Weese-Mayer said "As proposed

[continued]

Student News

Kathryn Meyer, a graduate student in the laboratory of Jill Morris, PhD, Human Molecular

Genetics Program, defended her thesis on March 26, 2010. The title of her talk was "Expression and function of Disrupted-In-Schizophrenia 1 in the developing mouse hippocampus". She is a graduate of the *NUIN Program*. Meyer's accomplish-

ments during her career at the research center include:

- Participated in the *Neuroscience in the Early Years: Predoctoral Training Program* through NUIN;
- Participated in the *Neurobiology of Information Storage Training Program (NISTP)* through NUIN;
- Presented the 2009 alumni lecture at the annual meeting of the NISTP;
- **Published a seminal research study** using in-utero electroporation of the developing mouse hippocampus in *Human Molecular Genetics*, 2009. A figure from the research was featured on the cover of the journal.

Meyer has begun a postdoctoral fellowship in the laboratory of Samie Jaffrey, MD, PhD at Weill Cornell Medical College. Her research will focus on identifying the roles of RNA regulation in neuronal growth, plasticity and development.

Kathryn Meyer with her parents and brother



photo: Jeff Shaw

previously, and confirmed in this new manuscript, there is likely a spectrum of serotonin deficiency such that some babies will need to be exposed to modifiable risk factors to succumb to SIDS but others will die regardless of risk factor exposure. It was this logic that originally led us to consider a genetic basis for SIDS.” Weese-Mayer is Professor of Pediatrics at the Feinberg School, Medical director, Center for Autonomic Medicine in Pediatrics at Children’s Memorial and a member of the Clinical and Translational Research Program of the research center.

Racial Disparity Seen in Infant Sleep Deaths

March 28, 2010

adapted from the *Chicago Tribune*

African-American infants in Cook County are 12 times more likely to die of sleep-related causes than white infants, according to researchers at Children’s Memorial Research Center. Sleep-related deaths include SIDS, unintentional suffocation in bed and those in which the cause was undetermined but investigations found that the infant died during sleep. When researchers took a closer look at the undetermined deaths, they found an even more striking racial disparity: African-American infants were almost 17 times more likely to die of unknown sleep-related causes. In most cases, the infants had been sleeping in unsafe situations that put them at risk, such as being placed in a bed with a parent. Such deaths are relatively rare, but many could be prevented if all infants had a safe place to sleep and parents were educated about safe sleep practices, said Jenifer Cartland, PhD, director of the research center’s Child Health Data Lab, which analyzed the data. “Decreasing the disparity between African-American and other ethnic groups is a major national public health goal,” Cartland said. “In Cook County, these (sleep-related) deaths account for almost 20% of African-American infant mortality deaths but fewer than 5% of white infant mortality deaths.” The study was based on data from the Illinois Violent Death Reporting System and funded by the Illinois Department of Public Health, the Joyce Foundation and the Chicago Community Trust.

by Deborah L. Shelton



photo: Liz Weisfeld

Jenifer Cartland, PhD



photo: Children's Memorial Audio-Visual Department

Praveen Kumar, MD

Praveen Kumar, MD is the lead author of two recently published American Academy of Pediatrics (AAP) statements:

Premedication for Nonemergency Endotracheal Intubation in the Neonate, AAP Committee on Fetus and Newborn, Section on Anesthesiology and

Pain Medicine (*Pediatrics* 125(3) March 2010). Endotracheal intubation is a common procedure in newborn care. The purpose of this clinical report is to review currently available evidence on use of premedication for intubation, identify gaps in knowledge, and provide guidance for making decisions about the use of premedication.

Hospital Stay for Healthy Term Newborns, AAP Committee on Fetus and Newborn (*Pediatrics* 125(2) February 2010). The hospital stay of the mother and her healthy term newborn infant should be long enough to allow identification of early problems and to ensure that the family is able and prepared to care for the infant at home. The length of stay should also accommodate the unique characteristics of each mother-infant dyad, including the health of the mother, the health and stability of the infant, the ability and confidence of the mother to care for her infant, the adequacy of support systems at home, and access to appropriate follow-up care. Input from the mother and her obstetrician should be considered before a decision to discharge a newborn is made, and all efforts should be made to keep mothers and infants together to promote simultaneous discharge.

Kumar is Associate professor of Pediatrics at the Feinberg School, Attending physician in Neonatology at Children’s Memorial and a member of the Clinical and Translational Research Program of the research center.

Publications



Bridgette Guthrie, MD

Ovarian torsion is the twisting of the ovary

on its vascular support. When undiagnosed, blood supply becomes compromised, resulting in tissue necrosis and loss of function. There is significant variation in the literature regarding the characteristics that are associated with pediatric ovarian torsion

and its management. In the March 2010 issue of *Pediatrics*, Bridgette Guthrie, MD and colleagues Elizabeth Powell, MD, MPH and Mark Adler, MD sought to describe its epidemiology and the rate of oophorectomy by using nationally representative data. The researchers conducted a cohort analysis of the Healthcare Cost and Utilization Project Kids' Inpatient Database (KID) 2000, 2003, and 2006. The analysis found 1,232 cases of ovarian torsion in KID 2006, an estimated incidence of 4.9 per 100,000. A total of 58% were treated with oophorectomy. Younger patient age, lower median household income by zip code, and presence of a benign neoplasm were associated with an increased rate of oophorectomy. Fewer than 0.5% of ovarian torsion hospitalizations were associated with malignant neoplasm. The data indicate that ovarian torsion is uncommon but occurs in all ages and is typically associated with normal ovaries or benign lesions. A growing body of literature supporting conservative management of ovarian torsion may decrease over time the rate of torsion-related oophorectomy. Powell, who is senior author on the study, is Associate professor of *Pediatrics* at the *Feinberg School*, an attending physician in *Emergency Medicine* at *Children's Memorial* and a member of the *Mary Ann and J. Milburn Smith Child Health Research Program* of the research center.

In 2009, Hehuang Xie, PhD and colleagues in the laboratory of Marcelo Bento Soares, PhD developed a technique to assess the methylation pattern of Alu repeat elements genome-wide. The

results were published in *Nucleic Acids Research*. The group's 2010 publication in the *Proceedings of the National Academy of Sciences of the United States of America* uses this method to understand the pattern of hypomethylation in the cancer genome. Global loss of DNA methylation is known as an epigenomic aberration associated with carcinogenesis and cancer progression. This loss affects predominantly repetitive elements, which encompass over 50% of the CpG dinucleotides present in the human genome. To precisely deter-



Hehuang Xie, PhD

mine the CpG sites with methylation loss during progression of pediatric intracranial ependymomas, the group exploited a high-throughput bisulfite sequencing approach that generates methylation profiles for thousands of Alu elements and their flanking sequences.

They demonstrated that methylation losses in Alu elements are insignificant in primary nonaggressive ependymomas but increase in aggressive primary tumors and further yet in relapsed ependymomas. In particular, the data suggest that the methylation status of some Alu elements may serve as prognostic factors for a subset of aggressive ependymomas. Xie is Research assistant professor in the *Cancer Biology and Epigenomics Program* of the research center. The study was conducted with the *Falk Brain Tumor Center* of *Children's Memorial*.

In a study published in the January 2010 issue of *Pediatric Pulmonology*, Frank Zelko, PhD

and colleagues examined indices of neurocognitive functioning in children with PHOX2B mutation-confirmed neonatal onset congenital central hypoventilation syndrome (CCHS) and related them to indices of PHOX2B genotype, demographics and disease severity. Twenty patients with the syndrome who had undergone neurocognitive assessment at the Rush Children's Hospital CCHS Center between 1990 and 2006 were studied. Neurocognitive variables of interest included Full Scale IQ (FSIQ) and [continued]



View a list of all research center publications from September 2009 to the present.



photo: Children's Memorial Audio-Visual Department

Frank Zelko, PhD

Wechsler-derived marker indices of verbal comprehension, visuo-perceptual reasoning, working memory, and clerical/processing speed. The results reveal participants' general intelligence index (FSIQ) to be lower than the general population, though the range of FSIQ observed was broad.

Visuo-perceptual reasoning and clerical/visuographic speed marker indices were depressed. These deficits were related to special education participation but not to PHOX2B genotype status or other demographic and clinical risk factors. In conclusion, PHOX2B mutation-

confirmed CCHS confers risk for adverse neurocognitive outcome, though the range of functioning observed raises questions about factors that may contribute to neurocognitive variability. PHOX2B genotype and disease severity indicators were unrelated to neurocognitive indices, possibly due to the modest sample. Increased recognition and expedited diagnosis with PHOX2B testing should allow larger studies of the relationship between neurocognitive functioning, genotype/mutation, and disease severity and management. Zelko is Assistant professor of [Psychiatry and Behavioral Sciences](#) at the [Feinberg School](#), a pediatric neuropsychologist in the [Department of Child and Adolescent Psychiatry](#) at [Children's Memorial](#) and a member of the [Clinical and Translational Research Program](#) of the research center.

The Importance of Science Education

On March 11, 2010, Samuel Silverstein, MD, the John C. Dalton Professor of Physiology and Cellular Biophysics and Professor of Medicine at Columbia University College of Physicians & Surgeons, met at the research center with program administrators from Illinois universities, consortia, corporations and non-profit entities to discuss the possibility of launching a training program. In 1990, Silverstein started the Summer Research Program for Science Teachers at Columbia to give middle- and high-school science teachers in New York City experience in research laboratories. His intention was to provide teachers with experience that would improve the quality of science teaching and ultimately lead to an increase in student interest and achievement. In addition to being mentored by bench scientists, the teachers participate in a rigorous professional development series. So far, the program has been a success: To earn a high school diploma in New York state, students must pass several Regents exams, one of

them in science. Teachers who participated in the Columbia program for more than one year saw their students' passing rates go from about 45% to over 50%. The pass rate jumped to 10% higher for students of teachers who were in the program for three or more years compared to students of non-participating teachers.

A lively discussion among the meeting participants probed the challenges of obtaining buy-in from key parties (Chicago Public Schools administrators, teachers and universities), attracting funding and measuring outcomes. Silverstein argued that Chicago has an invaluable, unvalued resource in its rich array of institutions and faculty, and that a Chicago program should be developed.

The meeting was followed by a [public lecture at C²ST, the Chicago Council on Science and Technology](#), which "works to enhance public understanding of important science and technology issues critical to the health and well-being of our community".



photo: Children's Memorial Audio-Visual Department

Maria Dizon, MD

Developing Therapies for Cerebral Palsy

The benefits of combining clinical practice with laboratory research are evident in the work of Maria Dizon, MD. As a practicing neonatologist at Prentice Women's Hospital and Children's Memorial, Dizon encounters babies at risk for brain injury. She also is completing a Mentored Clinical Scientist Research Career Development Award from the National Institute of Neurological Disorders and Stroke. Previously in the laboratory of former research center investigator Francis Szele, PhD, Dizon now conducts research with John Kessler, MD, head of the Ken & Ruth Davee Department of Neurology at the Feinberg School. She focuses on developing novel therapies for cerebral palsy, a non-progressive disorder of motor control that can affect both full term and prematurely born babies. This disorder results from injury to white matter (myelin) in the brain. Work done in conjunction with Szele suggests that neural progenitors found within injured areas may be the appropriate targets of manipulation. Dizon has now turned her attention to these progenitors, called NG2 cells. Her work with Kessler seeks to manipulate NG2 cells to produce new oligodendrocytes, the cells that produce myelin.

Dizon is completing work showing that down-regulation of bone morphogenetic proteins results in protection and even increased production of myelin after hypoxia-ischemia. This finding is relevant to an important clinical problem in which white matter is lost in the preterm baby. Dizon has demonstrated rescue of both neurons and neuronal function. Experiments are under way to further elucidate the mechanism underlying this protection. Dizon will present her work at the Hershey Conference on Developmental Brain Injury in June. Dizon is Assistant professor of Pediatrics at the Feinberg School and a member of the Neurobiology Program of the research center.

by Brian Corstange



photo: Children's Memorial Audio-Visual Department

Max Maizels, MD

CEVL for Health Care

For over a century, medical residency training programs have utilized the Halstedian apprenticeship method (i.e., "see one, do one, teach one") as the standard of surgical education. Recent changes in the landscape of health care training necessitate changing how residents are trained to assure skill proficiency in residency graduates. Attending physician teachers increasingly need to utilize operating room time efficiently, document resident skill performance, and provide training for both open and endoscopic surgery; while resident learners are experiencing more restricted time in the operating room. A web-based curriculum that includes multimedia as written text, two- and three-dimensional visuals as annotated pictures and movie clips, and interactive animations, along with a method for feedback and remediation would comprise strategies designed to implement such change and improve skill proficiency. CEVL (Computer Enhanced Visual Learning) provides the necessary web-accessible curriculum and a method for feedback and remediation of skill performance. CEVL presents curriculum with hierarchical steps, visuals, readiness, feedback and remediation. Further, it appeals to inter-institutional training, provides reports that are ACGME-(Accreditation Council for Graduate Medical Education) compatible and documents level of resident skill proficiency. Over the past year, the CEVL team has presented and won honors at professional meetings, received research grants, and published on the concept of CEVL and its outcomes in specific training situations. Team leader Max Maizels, MD is Professor of Urology at the Feinberg School, director of Perinatal Urology and co-medical director of the Institute for Fetal Health at Children's Memorial and a member of the Developmental Biology Program of the research center.

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New Opportunities



Jacek Topczewski, PhD (left) and Jorge Cantu with the Zeiss LSM 700

In November of 2009, the Microscopy and Imaging Facility of the research center added

a new instrument to its arsenal of tools. The Zeiss LSM 700 laser scanning confocal microscope combines ease of use with complex functionality to aid researchers in obtaining quality images of experimental samples. The instrument's acquisition is due to significant support from the Mark Morton Memorial Fund.

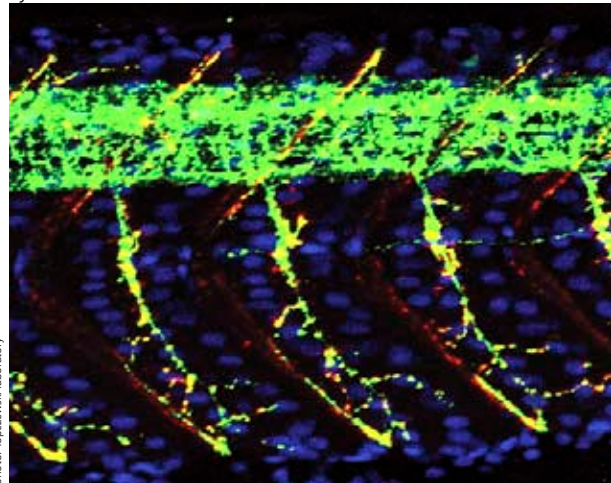
Laser scanning confocal microscopes use lasers of specific wavelengths to elucidate molecules or structures of interest that have been labeled with a fluorescent probe. Confocal microscopes are uniquely configured to produce images of only the in-focus part of a specimen when using microscope objectives. This gives researchers the same advantage in examination of specimens as physicians have by using MRI or CT scans. This ability to perform "optical slicing" with confocal microscopes allows researchers precise spatial information that has been otherwise unattainable.

The LSM 700 uses new technology to simplify use yet increase the quality of images. Zeiss incorporated a variable secondary dichroic beamsplitter into the lightpath of the microscope that allows spectral control while increasing signal strength.

This technology is coupled with the latest Zeiss ZEN 2009 software package that is exceptionally user friendly. Since the LSM 700 is enclosed in an environmental chamber, complete control of temperature, humidity and carbon dioxide levels is possible. This allows long-term imaging of live tissues and cells to follow developmental and disease processes over time under precisely controlled conditions. The addition of Zeiss' latest "Definite Focus" module enables the microscope to maintain focus for long periods of time when focus drift can be a problem.

Four research center laboratories currently use the instrument in their studies. The laboratory of Jacek Topczewski, PhD has already benefitted. Jorge Cantu, a PhD candidate in the NUIN Program, seeks to understand the molecular mechanisms involved in motor axon pathfinding and muscle innervation. The Topczewski laboratory has recently developed genetic tools to use together with the live-imaging capabilities of the Zeiss 700 to monitor motor neuron development and innervation of trunk muscle in vivo. This study will allow functional characterization of several candidate genes that they have found to be necessary for proper motor axon patterning.

by Bill Goossens



Axons of motor neurons innervating the trunk of a zebrafish 48 hours after fertilization. Green marks synaptic vesicles, red indicates the position of acetylcholine receptors located within neuromuscular junctions. Yellow areas mark places where both synaptic vesicles and acetylcholine receptors are present.

Awards and Honors



Mary J.C. Hendrix, PhD
and Ann Lurie

The University of Alabama at Birmingham

Department of Pathology honored

Mary J.C. Hendrix, PhD with the 2010 Paulette Shirey Pritchett Endowed Lectureship Award.

Now in its 19th year, the lecture is named for the late Paulette Shirey Pritchett, MD, renowned faculty member whose research advanced the fields of pathology, dermatopathology and electron microscopy.

Hendrix's presentation,

“Targeting a novel embryonic pathway to suppress the metastatic phenotype” addressed the ways in which genes and regulatory molecules interact during the development of cancer metastasis, and the role of tumor classification in the search for new targets in cancer therapeutics. Hendrix is president and scientific director of the research center, Professor, Robert H. Lurie Comprehensive Cancer Center and Medical Research Institute Council Endowed Chair at the Feinberg School.

Ann Lurie was recognized by Research!America in Washington, DC on March 16, 2010 for her significant contributions to medical and health research and advocacy. Ms. Lurie, a veteran public health and pediatric intensive care nurse, has devoted herself to philanthropy, research and humanitarian causes. She is the founder and President of AID Village Clinics, Inc., a comprehensive health care initiative that provides free care for a rural population in southeast Kenya; she supports Ancient Egypt Research Associates, a U.S.-based archaeological excavation on the Giza plateau; and in cooperation with Save the Children and ONE Love Africa, she funded construction of 30 rural schools in Ethiopia.

The Raymond and Beverly Sackler Award for Sustained National Leadership recognizes medical and health research advocacy leaders who have been instrumental in developing and implementing a sustained advocacy program for medical or health research at the national level, or who have consistently fostered legislation and/or programs that strive to make medical or health research a higher national priority. Children's Memorial has come to know Ann Lurie through her service as a pediatric intensive care nurse; a board member; the public/private partnership with the National Institutes of Health's Adolescent Medicine Trials Network for HIV/AIDS Intervention and the Howard Brown Health Center to advance research, treatment and prevention for Chicago-area adolescents and at-risk youth — and her commitment to provide the principal funding for Ann & Robert H. Lurie Children's Hospital of Chicago. Ms. Lurie has also endowed the Robert H. Lurie Medical Research Center at Northwestern University, and the Robert H. Lurie Comprehensive Cancer Center of Northwestern University, where she continues to provide advocacy and leadership, and academic chairs in cancer research at both Northwestern and Children's Memorial. Research!America treasurer and board member Mary J.C. Hendrix presented the award to Ms. Lurie. In her remarks, Hendrix acknowledged “the world is a better place because of Ann Lurie's vision, her leadership, and her extraordinary generosity”. Research!America is the nation's largest not-for-profit public education and advocacy alliance working to make research to improve health a higher national priority.

by Francine Blazowski



Awards and Honors (continued)

Bradley Kulat CCP, LP, coordinator of Perfusion Services, Division of Cardiovascular-Thoracic Surgery at Children's Memorial, has been nominated to the American Board of Cardiovascular Perfusion Board of Directors. The primary purpose of the board is protection of the public through the establishment and maintenance of standards in the field of cardiovascular perfusion.

Chandra Shekhar Mayanil, PhD, Developmental Biology Program, has been honored by the Spina Bifida Association with a SBAA Young Investigator award. His work identifies microRNA as a candidate in mediating the effect of folic acid in prevention of neural tube defects. Folic acid is not completely effective in preventing spina bifida, one of the most common birth defects. This work points to mechanisms of action that are likely to enhance prevention strategies for children. Mayanil is Assistant professor of Neurological Surgery, Division of Pediatric Neurosurgery of the Feinberg School.

Please refer to the research center website for recent awards, including the Bridge Grant Awards.

The Cure JM Foundation is an all volunteer non-profit organization formed in 2003 to support research and raise awareness for juvenile myositis, the specialty of Lauren Pachman, MD. In 2007, the Cure JM Program of Excellence in Juvenile Myositis Research was established to support Pachman's laboratory. Pachman teamed with Cure JM to hold its first weekend event around the Chicago Marathon in 2006. Since then, she has been involved with every conference Cure JM has held, making scientific presentations to JM families. Additionally, she has been instrumental in initiating education to grown young adults with JM. She held the very first JM young adult gathering in 2008, followed by one in 2009. The next planned event in September of 2010 will be led by two of Pachman's adult patients who are on the Advisory Council of Cure JM. The young adult events have been supported in part by a Physician Advocacy Project grant awarded to Pachman by the Department of Pediatrics at Children's Memorial. Please visit the Cure JM website

for more information. Pachman is Professor of Pediatrics at the Feinberg School, an attending physician in the Division of Rheumatology at Children's Memorial and director of the Chicago City-Wide FOCIS Center of Excellence in Clinical Immunology of the research center.

Iannaccone Honored for Contributions

In March, Philip M. Iannaccone, MD, PhD received a plaque for outstanding contributions as an associate editor for *Environmental Health Perspectives (EHP)*, in appreciation for significant contributions made to the advancement of knowledge in environmental health sciences. EHP, a monthly journal of peer-reviewed research and news on the impact of the environment on human health, is published by the National Institute for Environmental Health Sciences. Iannaccone is George M. Eisenberg Professor, Senior Vice President, Deputy Director for Research—Basic Sciences and director of the Developmental Biology Program of the research center.



Philip M. Iannaccone, MD, PhD

photo: Jeff Shaw