

Benchmark to Bedside

January 2007

RESEARCH AT THE CHILDREN'S HOSPITAL OF PHILADELPHIA

Stokes to Automate Research Processes Through Click Commerce's eResearch Portal

The Joseph Stokes Jr. Institute will soon implement the Click Commerce eResearch Portal, which will streamline research administration and integrate processes to efficiently oversee research compliance. When fully implemented, use of the centralized, Web-based system will help improve study teams' productivity by allowing them to submit research projects electronically, eliminating routine errors and alerting investigators and their teams of approaching deadlines.

Click Commerce's eResearch Portal system will provide a comprehensive database for researchers and Stokes support systems, extending investigators' ability to work collaboratively while reducing the burden of intensive paper-based work flows.

With the eResearch Portal, investigators on Macs or PCs will be able to complete grant applications and submit them to Stokes' standard routing and review system, enhancing that system's efficiency and effectiveness. The portal's centralized database and Web services will also bridge formerly isolated review processes, including those involving funding and ethical review.

"Stokes researchers deserve cutting-edge systems that support faster response time, more effective communication between researchers, study teams and administrative processes, as well as the ability to collaborate across disciplines and between institutions," says Director of Research Planning Jeanne Buckley, Ed.D., who oversees the project. "We believe the Click Commerce system will provide the research community with the requisite tools it needs to be successful in the 21st century."

The Click Commerce implementation project, which will last from 18 months to two years, begins with the Hospital's Institutional Review Board. The IRB module will allow the electronic submission of protocols and the instant distribution of data to all members of the research team, who may check on the status of an application's progress from any computer with a Web browser.

After implementation of the IRB module, Stokes will expand the eResearch Portal system to pre-award management, clinical trials, animal care and use and biosafety.

Children's Hospital Boston, Johns Hopkins University, St. Jude's Children's Research Hospital, Washington University, the Mayo Clinic, the University of Michigan and Columbus Children's Research Institute are among the major U.S. research institutions using the Click Commerce eResearch Portal system.

The Stokes Institute will soon launch a page on its intranet dedicated to updating the research community on progress with the Click Commerce initiative. Further details about the site are forthcoming. In the meantime, please direct questions about the Click Commerce project to Jeanne Buckley, Ed.D., (buckleyj@email.chop.edu) or Mary Tomlinson, vice president of Research Administration (tomlinson@email.chop.edu).

Stokes Establishes Discussion Board on Policies

The Stokes Institute has established a Research Administration Discussion Board on its intranet for review and comment on proposed policies. The discussion board, located at <http://dem.infosys.chop.edu/bboard/>, allows for 30 days of comments on posted policies.

Stokes is seeking feedback on a proposed policy and related procedure on the circumstances under which an individual is eligible to be designated as a principal investigator or request temporary PI status.

Members of the research community are encouraged to review and comment on the policy. The comment period for the policy will end Feb. 11.

New Dates for 2007 'Town Hall' Meetings

The dates of the Stokes Institute's 2007 "Town Hall" meetings for principal investigators and faculty have been changed.

The new dates are March 16, June 29 and Nov. 12. All of the meetings will take place from 4 to 6 p.m. in Conference Room 123 of the Abramson Building. The sessions include brief presentations and discussion followed by a reception.

The interactive meetings with Phil Johnson and the Stokes directors are designed to foster direct communication with faculty and investigators on what is happening in Research and to provide a forum for faculty to ask questions and raise concerns.

Please contact Chris Ringgold at ext. 6-0351 or ringgoldc@chop.edu with questions about the meetings.



New Research Employees (November-December 2006)

We welcome the following new research employees:

Associate Director – Tech Transfer

Gregory Baker

Research Assistants

Kim Barnhart Wilson

Nakeisha Blades

Torrey Creed

Katie Hayes

Lydia Heemstra

Heshu Huang

Athina Kalaitzoglou

Darlyn Merilan

Kelly Sloane

Clinical Research Assistants

Denise Actie

Kelly Cochlin

Dorea LaForett

Yolanda Hurt

Pedro Munoz

Clinical Research Coordinators

Caroline Murray

Jaclyn Sharman

Research Associates

Parvathi Kamath

Ping La

Research Nurse

Contract Administrator

Jennifer Hufford

Donna Deiss

Research Technicians

Coordinator – Center for Injury Research and Prevention

Avana Bradshaw

Xenia Bateman

Paula Bruckler

Jamie Dillinger

Jaime Taylor

Executive Secretary

Pearl Ben

Secretary to the Chief

Chris Ringgold

Intellectual Property Specialist

Susan Allen

Scientist

Edward Williamson

IRB Analyst

Kelly Riordan

Social Worker

Anne Marie Lyles

Program Coordinator

Rebecca Flanders

Sponsored Projects Analyst

Lori McCole

Reach Out and Read Assistant

Sonya Vankawala

Gene Therapy Inhibits Epilepsy in Animals

More than 2.7 million Americans of all ages live with recurring seizures, known as epilepsy. Every year, 181,000 Americans will develop seizures and epilepsy for the first time. Epilepsy can develop at any time of life, especially in early childhood. The most common form of epilepsy in both children and adults is temporal lobe epilepsy, which frequently develops after a severe brain insult such as a prolonged seizure with fever (febrile seizure) in early childhood or a traumatic brain injury.

For the first time, researchers have inhibited the development of epilepsy after a brain insult by using gene therapy to modify signaling pathways in the brain. The study by Children's Hospital investigators shows that altering specific signaling pathways in nerve cells after a brain insult or injury could provide a scientific basis for treating patients to prevent epilepsy.

"We have shown that there is a window to intervene after a brain insult to reduce the risk that epilepsy will develop," says senior author Amy R. Brooks-Kayal, M.D., Division of Neurology.

Working in an area of the brain called the dentate gyrus, Dr. Brooks-Kayal and her colleagues focused on one of the receptors that bind the inhibitory neurotransmitter gamma-aminobutyric acid (GABA), GABA(A) receptors. Seizures are thought to occur, at least in part, because of an imbalance between the GABA system, which inhibits neuron firing, and the glutamate system that stimulates neurons to fire. Once activated, GABA(A) receptors inhibit the repetitive, excessive firing of brain cells that characterize a seizure.

GABA(A) receptors are made up of five subunits — proteins that play important roles in brain development and in controlling brain activity. Previous research by Dr. Brooks-Kayal and Douglas Coulter, Ph.D., Division of Neurology, found that in certain models of epilepsy there were lower levels of the GABA(A) receptor subunit alpha1 and higher levels of alpha 4 subunits. In this study, Dr. Brooks-Kayal and her colleagues used gene delivery to alter the expression of the alpha1 subunit to see if this would have an effect on later seizure development.

Researchers delivered the gene that alters the expression of alpha1 directly into the dentate gyrus, followed by a drug that causes status epilepticus (SE), a convulsive seizure. They then evaluated the models for spontaneous seizures or epilepsy, which usually occurs after an initial SE injury. Those models that received the gene therapy had elevated levels of alpha1 proteins and either did not develop spontaneous seizures or took three times as long to experience a spontaneous seizure, compared with those that did not receive the gene.

In this short-term study, it was impossible to determine if the increased alpha1 subunit levels were only suppressing seizures or whether they would permanently prevent epilepsy from developing.

When humans have an initial episode of SE or other severe brain insult, it is known to raise the risk of later developing epilepsy. This study suggests that strategies aimed at modifying signaling pathways in the brain may help prevent epilepsy.

The National Institutes of Health and the American Epilepsy Society funded the study, which was published in the Nov. 1 issue of the *Journal of Neuroscience*. Hospital co-authors included YogendraSinh H. Raol, Ph.D., John Wolfe, V.M.D., Ph.D., Ingrid V. Lund, and Guojun Zhang, M.D., Ph.D.

Second Research Annual Report Available

The second research annual report from the Stokes Institute was recently distributed. A pdf version of the report is available at http://stokes.chop.edu/news/annual_report/. Contact Jennifer Long in Research Communications at longj@email.chop.edu if you would like additional hard copies of the report.

Study Identifies Need for New Approaches to Child Passenger Safety

Parents with a high school education or less are among the least likely to use appropriate child restraints, according to a study by The Children's Hospital of Philadelphia-State Farm alliance. The findings suggest that current public education campaigns aimed at increasing car seat use may need to be better tailored to these families at highest risk for crash injury.

The study, published in the journal *Traffic Injury Prevention*, used information collected from parents involved in crashes reported to State Farm Insurance Companies®. Using this data from real-life crashes, researchers identified specific socioeconomic factors associated with inappropriate restraint use for children under age 9.

More than any other demographic factor, a parent's level of education has the biggest impact on whether or not they use age- and size-appropriate child restraints to protect their children in a crash. Children whose parents have a high school education or less have the highest risk of serious injury or death in a crash, because these children are 27 percent more likely to be inappropriately restrained compared with those whose parents have attended some college.

"What this research shows us is that broad educational campaigns to improve child passenger safety are no longer sufficient. Many parents who want to do the best for their children still do not understand the importance of booster seats in protecting their children," says Flaura Winston, M.D., Ph.D., who led the study. "In order to protect all children riding in cars, we need to develop more effective educational campaigns that provide a compelling and clear safety message that resonates with families who stand to benefit the most."

For the purpose of this study, the authors defined inappropriate restraint as using a forward-facing seat for a child less than one year and 20

pounds, or using a seat belt rather than a car seat or booster seat for children younger than 9. Independent of education level, the researchers found that African Americans, children with parents older than 35, and families with an income of \$20,000 or less were also more likely to use inappropriate child restraints. Individually, each of these risk factors increases a child's likelihood of being inappropriately restrained by about 25 percent.

Children in the 4- to 8-year-old age group had the highest likelihood of being improperly restrained, with 65 percent riding in an adult seat belt instead of in the appropriate car seat or booster seat.

Data for this study were gathered from interviews with 3,818 parent-drivers who were in crashes involving 5,146 restrained children age 9 and younger, between the years 2000 and 2004. These interviews were conducted as part of the Children's Hospital of Philadelphia-State Farm alliance that includes the world's largest on-going surveillance system of children involved in real-world crashes. The crashes occurred in 15 states in the Eastern, Midwestern and Western United States.

The researchers identified strategies for improved educational efforts, including the need for separate educational tactics for parents who don't restrain their children at all, and for those who incorrectly use seat belts.

Children's Hospital researchers are currently working with the National Highway Traffic Safety Administration to better understand the challenges faced by African American and Hispanic parents with a high school education or less, and are testing interventions with parents to develop safety campaigns that are proven to reach the audiences who need the information most.

Revised Patent and Intellectual Property Policy Goes Into Effect

The Hospital recently made several important changes to its patent and intellectual property policy.

The revised policy, which went into effect in November, uses more contemporary definitions of intellectual property to better reflect the Hospital's current and proposed administrative practices. More importantly, the revised policy is more in line with that of the University of Pennsylvania and significantly changes the economic incentives to reflect those available from peer institutions.

The most significant changes are reflected in payment distribution, those eligible for royalties and potential start-ups.

Under the previous policy, payment to inventors was based on gross income, with 50 percent distribution on the first \$250,000, 30 percent on the next \$250,000, 15 percent on the next \$4.5 million and 10 percent on the remainder.

The revised policy, however, provides payment to inventors, labs and departments based on net income. The distribution under the proposed policy includes a 30 percent share to inventors; a 12.5 percent share to

laboratories, to a maximum of \$350,000 annually; a 12.5 percent share to the department, with a maximum of \$500,000 annually; and a 45 percent share to research.

In addition, the proposed policy broadens the class of inventors eligible for royalties and addresses the possibility of entering into start-ups and other relationships. The policy also features an internal Intellectual Property Advisory Committee consisting of both faculty and administrative staff to review all intellectual property disclosures and discuss a technology's potential patentability.

The revised patent and intellectual property policy may be found at http://stokes.chop.edu/forms/policies/Patent_Policy.pdf.

Please contact Deputy Scientific Director Tom Curran at currant@email.chop.edu with questions about the revised policy.

Hospital Develops Nursing Research Program

The world-renowned research enterprise at Children's Hospital was fortified recently by the addition of several doctorally prepared nurses who will lead and support the Institution's pediatric nursing research program.

There are approximately 85 research projects involving nurses at Children's Hospital. Projects span multiple subspecialties and care methods including diabetes, HIV, patient safety, CPR, breastfeeding and end-of-life care. The addition of the new nurse researchers to Children's Hospital will enhance the opportunity for all nurses to contribute to research and patient-care innovation.

The newest members of the nursing research team:

Sharon Barton, A.P.R.N.-B.C., Ph.D., has expertise in infant feeding, qualitative research and evidence-based nursing. Dr. Barton's recently completed a National Institute of Health/National Institute of Nursing Research funded (NIH/NINR) study that investigated family and cultural beliefs related to infant feeding practices. She has helped implement numerous clinical nursing research studies with practicing nurses.

Kathleen Philbin, R.N., Ph.D., is an internationally recognized expert on the effects of hospital noise on preterm infants, and she translates research into practice by contributing to national standards for newborn ICU design. Dr. Philbin conducts both basic and clinical studies on the effects of unusual early experience on infant behavior and development.

Katherine Finn Davis, R.N., Ph.D., recently completed a NIH/NINR funded study examining the effects of sleep on health outcomes in preschoolers attending daycare. She currently is researching sleep in hospitalized children.

Elizabeth Ely, R.N., Ph.D., has expertise in pediatric pain assessment and management. Dr. Ely conducts clinical research with children with sickle cell disease and their families. She also consults nurses regarding application of research findings to practice.

Drs. Barton, Philbin and Ely will serve as leaders, mentors and consultants to current and future bedside nurse scholars, helping them develop research questions and guiding them through the process of inquiry. The nurse researchers also will evaluate the applicability of nursing research, while maintaining their own active research programs.

Several additional nurse researchers will be added in 2007 to contribute expertise and knowledge to the Hospital's research enterprise.

Center for Biomedical Informatics Educational Seminars in the Works

Do you know what informatics is all about?

Children's Hospital's Center for Biomedical Informatics (CBMI) is currently planning two seminar series that will focus on both clinical and research informatics and offer employees CME and CEU credits.

The CBMI seminar series began last November with a concentration on research informatics. The next seminar, entitled "Mining the Bibliome," is scheduled for Jan. 31 from 4 to 5 p.m. The event will take place at 3535 Market St., 16th Floor, Conference Room B.

The seminar series on clinical informatics is scheduled to begin in March.

Both seminar series will be presented by internal and external experts specializing in informatics, using lectures, videos and group discussions to highlight a variety of topics.

Be sure to visit the Employee Intranet in the near future for the lectures' times, dates and locations. For any questions, please contact Mark Diltz, Ed.D., M.B.A., manager of Biomedical Informatics Education, at ext. 6-2775 or at diltz@email.chop.edu.

Faculty Awards

Terri Finkel, M.D., Ph.D., chief, Division of Rheumatology, was recently honored with election to the prestigious Henry Kunkel Society. The Kunkel Society was established in memory of Henry George Kunkel, a professor at Rockefeller University, whose contributions to the field of basic and clinical immunology are legendary. He was perhaps best known for his pioneering and extensive studies on immunoglobulins. Dr. Finkel's nomination honored her "seminal contributions to the fields of immunology and rheumatology," in particular, in the areas of cell signaling in T-cell development and cell death in AIDS.

Jordan Orange, M.D., Ph.D., Division of Allergy and Immunology, was recently elected secretary of the Basic and Clinical Immunology section of the American Academy of Allergy Asthma and Immunology, the largest society for allergists and immunologists. Dr. Orange's election will lead to the chair position in 2011-2013.

Avital Cnaan, Ph.D., chief, Division of Biostatistics and Epidemiology, was recently appointed to the Food and Drug Administration's (FDA) Pediatric Advisory Committee. The Committee makes recommendations to the Commissioner of the FDA regarding identification of research priorities related to pediatric therapeutics, the ethics, design and analysis of clinical trials related to pediatric therapeutics, pediatric labeling changes as well as adverse event reports for drugs granted pediatric exclusivity based on the Best Pharmaceuticals for Children Act, and any other matter involving pediatrics for which FDA has regulatory responsibility. Dr. Cnaan's term is through June 30, 2010.

The University of Pennsylvania School of Medicine recently bestowed **Phyllis Dennery, M.D.**, chief, Division of Neonatology, with the Alfred Stengel Health System Champion Award. The award recognizes a Penn Medicine physician who has made significant contributions toward the clinical integration of the University of Pennsylvania Health System, along with a demonstrated commitment to the improvement of quality care.

Bret Rudy, M.D., Division of Adolescent Medicine, recently received the Red Ribbon Award for Research by the Center for AIDS Research in recognition of his continuing contribution in the area of HIV/AIDS research.

Elizabeth Alpern, M.D., Division of Emergency Medicine, and **Theoklis Zaoutis, M.D.**, Division of Infectious Diseases, were recently elected to the Society for Pediatric Research.

Award Supports Research on Infant Leukemia Treatments

Leukemia accounts for approximately 25 percent of all childhood cancers, affecting 2,200 children each year. While the rate of survival for children with leukemia has increased over the past 30 years, the outlook for individual children varies greatly.

Treating infants with acute leukemia is particularly challenging because their symptoms are resistant to the therapies that are currently available, including intensive chemotherapy and transplantation of stem cells that can form red and white blood cells. In addition, infants are especially vulnerable to treatment side effects.

Recognizing the need for new treatment options for infants, the National Institutes of Health recently awarded Carolyn Felix, M.D., Division of Oncology, a Specialized Center of Research (SCOR) in Targeted Therapies for Infant Leukemias. This five-year, \$6.25 million award enables researchers to perform rigorous preclinical and clinical studies of molecularly targeted therapies and evaluate their potential activities against infant leukemias in a near-population framework.

In her previous research, Dr. Felix has shown that chromosomal translocations in a gene that is critical for blood cell development — known as the MLL (Mixed Lineage Leukemia) gene — have a significant impact on morbidity and mortality in infants with leukemia. The translocations happen when the MLL gene breaks and recombines with one of many partner genes. These MLL translocations may be targets for new therapeutic agents that promote leukemia cell death.

The SCOR award funds four projects that focus on different aspects of targeting therapies for infant leukemias. Investigators are working to identify drug treatments using microarray analysis, using therapeutic agents to promote leukemia cell death in patients with MLL translocations, targeting leukemia in patients with FLT3 mutations (another common gene mutation associated with leukemia), and isolating, characterizing and targeting leukemia stem cells with MLL translocations.

Dr. Felix' team collaborates with the Children's Oncology Group (COG), the national cooperative group for pediatric cancer research and treatment. Because even the largest medical center has a relatively small number of patients with infant leukemia, collaborating with COG allows investigators to capture information about the majority of infants throughout North America who have acute leukemia.

The SCOR officially began on Oct. 1, 2006. "The SCOR grant brings together researchers from around the United States and harnesses our efforts to build bridges between basic science and bedside treatments and have the utmost impact for infants with this dreaded disease," says Dr. Felix.

The multicenter study is being conducted at Children's Hospital, the University of Pennsylvania, the University of New Mexico, Johns Hopkins University, Stanford University, Tulane University, the University of Southern California and the Children's Oncology Group.

Investigators Asked to Update Profiles

The Stokes Institute is known worldwide for conducting the most innovative and promising research to improve the healthcare of children. Preserving our claim on this status is no easy task. We need to solidify our reputation by promoting our pioneering research and the impact that it has on the healthcare of children.

That's why we're asking investigators to help maintain the Institute's vibrant presence on the World Wide Web by creating and updating their profiles.

Stokes believes it is important that all members of the research community have an investigator profile on the Institute's Web site. The site is a forum to display investigators' research capabilities with other researchers, students and staff. Investigator profiles are a key feature of our external site, and it is important that all Stokes investigators are included.

Maintaining current and accurate investigator profiles is critical for Stokes' external presence and the image of research conducted at Children's Hospital. It is also a valuable way to help heighten investigators' professional visibility and enhance their reputations, which may lead to more collaborations, opportunities for additional funding, traffic to laboratory Web sites, or recruitment of lab staff and postdocs.

The Research Communications Department is currently contacting all investigators with detailed information about how to construct a new profile or update current information. The department's writers are available to help investigators draft their profile information and help them through the short process.

Please contact Sarah Reedy at reedy@email.chop.edu or ext. 6-7449 with any questions or if you do not receive an e-mail about your profile.

AAHRPP Accreditation Update

In keeping with its overall commitment to excellence, the Hospital's human research protection program strives for performance standards that surpass state and federal requirements, while allowing investigators to conduct the highest quality of research. To that end, the Institute continues its work toward accreditation of its human subjects protection program through the Association for the Accreditation of Human Research Protection Programs Inc. (AAHRPP).

The Hospital submitted its preliminary application to AAHRPP in early October 2006. The preliminary application allows

the organization and AAHRPP to identify areas that require clarification or revision prior to submission of a final application. Children's Hospital recently received a 38-page report containing recommendations for improving the Institution's policies and procedures.

Lynn Bevan, C.I.P., director of IRB Operations, will be working with key individuals to address the comments made in the report. A final application will be submitted to AAHRPP in spring 2007.

NIH Will Be Conservative During FY07 Continuing Resolution

As previously reported, fiscal year 2007 funding from the National Institutes of Health will be covered through a continuing resolution until at least Feb. 15, 2007. The Association of American Universities has learned how the NIH will operate under the CR:

- Until the FY07 appropriation is finalized, the institutes can't know how far down the pay line they can fund. They will therefore tend to make conservative choices so that they have the flexibility to adjust to the FY07 budget once it is known.
- Institutes are able to fund new grants under a continuing resolution.
- It is likely that competing continuation grants — called Type 2 awards — that have a December start date will begin to be paid this month. Some institutes may already have started paying them, albeit at conservative levels that will be adjusted to the final FY07 appropriation.
- Grants to support new research starts — Type 1 awards — will be delayed in many institutes until January or later. However, even if there is no final appropriation by January or February, most institutes will begin to pay Type 1 grants (which face the same pay line challenge described above for Type 2s).
- As in FY06, funding for non-competing continuation grants in years two, three or four will be funded at 80 percent of what was promised until the FY07 appropriation is signed into law.
- Once NIH had its final FY06 appropriation last year, continuation grants received 97.65 percent of what the Notice of Grant Award had promised for FY06.

Please contact Sponsored Projects at ext. 6-0122 with questions.

Department of Rheumatology Announces Awards to Fellows

Several fellows in the Division of Rheumatology recently received prestigious training awards.

Edward M. Behrens, M.D., with faculty mentorship of **Stefania Gallucci, M.D.**, received the ACR REF/Amgen Pediatric Rheumatology Research Award for his study, "CR3 Ligation Delivers a 'Non-Danger' Signal to Dendritic Cells to Suppress Stimulatory Activity." The ACR REF/Amgen Pediatric Rheumatology Research Award recognizes and promotes scholarship in the field of pediatric rheumatology.

Dr. Behrens, with faculty mentorship of **Randy Q. Cron, M.D., Ph.D.**, also received the AAP Earl J. Brewer Research Award for his study, "Occult Macrophage Activation Syndrome in Systemic Juvenile Idiopathic Arthritis." This award recognizes a training fellow who, in his first two years of fellowship, has distinguished himself in an area of clinical research.

Pam G. Weiss, M.D., with faculty mentorship of **Chris Feudtner, M.D., Ph.D., M.P.H.**, received the ACR REF Clinical Investigator Fellowship Award for her study, "Henoch Schönlein Purpura and Corticosteroid Treatment." The ACR REF Clinical Investigator Fellowship Award provides a training program to rheumatology fellows or rheumatologists in the early stages of their career on aspects of clinical investigations through a structured, formal training program. Through this award, the REF provides a means for ensuring more qualified, highly trained clinical investigators in the field of rheumatology.

Tracey B. Wright, M.D., with faculty mentorship of **Jon M. Burnham, M.D., M.S.C.E.**, received the ACR REF Physician Scientist Development Award for her study entitled "Obesity and the Metabolic Syndrome." The Physician Scientist Development Award aims to encourage qualified physicians without significant prior research experience to embark on careers in biomedical and/or clinical research in arthritis and rheumatic diseases. This mentored post-doctoral fellowship program provides for the early years of research training in an environment that includes the active participation of established arthritis investigators and an affiliation with a clinical unit involved in the care of arthritis.

Uma Sriram, Ph.D., with faculty mentorship of **Stefania Gallucci, M.D.**, received the Arthritis Foundation Stewart J. McCracken Award for her study, "Role of Type I Interferons in Lupus." Each year the Arthritis Foundation of Eastern Pennsylvania presents an award to the individual who receives the highest-rated research project in the Philadelphia area.

Sharon Bout-Tabaku, M.D., with faculty mentorship of **Jon M. Burnham, M.D., M.S.C.E.**, received the ACR REF Paula de Merieux Rheumatology Fellowship Award, which helps ensure a diverse and highly trained workforce is available to provide competent clinical care to those affected by the rheumatic diseases. Children's Hospital has been the recipient of this award two years in a row.

HAVE NEWS?

Contact Jennifer Long at ext. 4-2105
or by e-mail at longj@email.chop.edu.

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online at <http://stokes.chop.edu/intranet/pubs/>



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