

# Kids Connection

a monthly newsletter from MUSC Children's Hospital



March 2008

## Letter from the Chair

Dear faculty, Children's Hospital staff and friends,

During the DCRI 3rd Anniversary celebration, Dr. Bill Mobley from Stanford made a powerful statement about the strength of the Darby Children's Research Institute (DCRI) by asking, "What is the mission of a children's research institute?" We all listened as he noted that an institute must have a mission. This area is where we have already excelled. Our number one criterion for inclusion in the DCRI is that the discoveries that are being made and the research that is performed should help us to understand, diagnose, and treat the diseases of children. In the vision of those of us who were involved in the inception of the DCRI, the most important issues were that we needed research capabilities to recruit the best physician scientists, and scientists that can help to improve the care in the Children's Hospital through basic and translational therapies.

We have all heard the old baseball axiom, "Keep your eye on the ball." This is certainly pertinent for our upcoming review of the DCRI space. Certainly, there are some investigators who have concentrated almost completely on children's diseases. Two great examples are Dr. Singh and Dr. Hollis. Dr. Singh has helped Dr. Jenkins to protect animals and now children whose mothers have chorioamnionitis (an infection of the uterus). This type of infection can be treated with antibiotics, but this does not necessarily stop the damage that comes from the prior inflammation. This is an excellent example of an investigator



**L. Lyndon Key, MD**  
Professor and Chairman  
Department of Pediatrics

in neuroscience moving from metabolic diseases and translating his knowledge of inflammation to protect the developing brain.

Another example of the power of the DCRI is a change of plan from studying breast milk components and moving to understanding of the physiology and requirements of vitamin D in children and pregnant and nursing women. This study has caused a national movement, redefining the amount of vitamin D that is needed.

Finally, we have also seen the recruitment of faculty such as Dr. Dieter Haemmerich, a cardiology faculty member who through his knowledge of engineering is creating new catheters, expanding the opportunities to heal children from dysrhythmias.

Many exciting discoveries have been made (about 252). This explosion of knowledge is moving us toward new therapies and helping us to hire new cardiologists, bone researchers (such as Dr. Reddy), and aiding in collaborations with developmental biology to discover the genesis of congenital heart disease (Dr. Markwald).

In the coming months, we will convene our DCRI Oversight Committee to look at productivity, not just productivity, but rather productivity in improving the science that will allow us to better treat children and to attract the top physicians from the United States and beyond.

Sincerely,

L. Lyndon Key, MD

Chair, Department of Pediatrics



### FEATURE STORY

**Sunflower Project to cast new light on education program**  
See page 2.



## Sunflower Project to cast new light on education program

As sunflowers turn their faces toward the sun, so the MUSC Pediatric and Peds/Med residency program is turning toward the light with a new approach to its educational program.

It's an approach to organizational change called appreciative inquiry (AI), and it involves discovering your core strengths and then building on them, explains Dr. Michael Southgate of the Department of Pediatrics.



"It's about focusing on what works - instead of focusing on what's wrong," he notes.

Dr. Southgate aims to apply this new approach to expand and enhance student and residency training and education. He's been instrumental in organizing the upcoming Sunflower Project, a day-long workshop for attendings and physicians from across MUSC, as well as community practitioners.

"We're calling it the Sunflower Project because of the way sunflowers 'look' to the energy of the sun," says Dr. Southgate. "Likewise, the goal is to find the positive energy within the residency program and turn to that. The concept of AI is that we will then be drawn in that direction. We will build on that, using those successes as a foundation."

AI has been successfully used in business, military, religious, governmental and educational organizations since it was developed in the 1980s. A process used to facilitate positive change in human systems, AI is known for effecting across-the-board change quickly.

The Sunflower Project is a joint effort among faculty, house staff and others both inside and outside of the MUSC community with a vested interest in pediatric education.

"We're expecting 100 to 150 participants - folks who are and will continue to be involved in shaping future pediatricians," says Dr. Southgate. The goal? To gather feedback and input, and generate ideas about what's right with the program to enhance and improve the future of pediatric training.

"It's an inquiry process to discover what we do well, to pinpoint our strengths, envision the ideal future and then make it happen," he says.

Physicians are already playing a role by participating in and conducting appreciative interviews across the department.

He anticipates the changes will be palpable almost immediately, yet will also translate into the future through a continual process of renewal instilled in the program. "We train close to 50 residents each year, and conceivably they will be practicing until the mid-21ST century, so it's a process of change that will hopefully be felt and built upon for a while to come."

Though AI flies in the face of traditional problem-solving — identifying problems, coming up with diagnoses, and then attacking them one-by-one — businesses have latched on to the concept.

"It's worked for big names like British Airways, the U.S. Navy, AT&T, and The Cleveland Clinic," notes Dr. Southgate.

He hopes the Sunflower Project will be a jumping off point for change in MUSC's educational program approach, and anticipates it will be an ongoing process. "I'd like to see it occur annually, each spring before current residents leave and new ones begin."

The Sunflower Project is scheduled for April 19, 9 a.m. – 5 p.m., at the Marriott Charleston (formerly the Charleston Riverview Hotel) on Lockwood Blvd. For more information or to participate, please contact Dr. Southgate at [southgaw@musc.edu](mailto:southgaw@musc.edu).

## Message from our Medical Director

Childhood safety is something we think about a lot at the MUSC Children's Hospital. Even though most of our care is directed at the less common diseases of childhood, such as congenital heart disease, cancer, kidney disease, diabetes and cystic fibrosis, it turns out that accidental injury is the leading cause of death among school age children. Consequently, every time a child comes to our emergency room or is admitted to our Pediatric Intensive Care Unit with a traumatic injury, it is important to examine how that injury might have been prevented.



**J. Philip Saul, MD**  
Medical Director  
Pediatric Cardiology

Fortunately, many of the most serious injuries are the most preventable from simple precautions like wearing a seat belt, using a helmet when biking or skateboarding, or following pool safety rules. Unfortunately, these simple measures are often not used. Despite my admonitions, the children of an adult emergency room physician in my own neighborhood never wear a helmet when riding a bike. Many parents don't insist on seat belt use for themselves or their children. If we really want to impact child health, all of us, including the Children's Hospital physicians and staff, and the adults in the community must be vigilant in supporting appropriate safety measures wherever possible. This can be done on a personal level when we see poor safety practices, by counseling our patients, and finally by actively supporting laws that mandate safe practices—seat belt, bike helmets and ATV safety. Think about it for your own children and all the children in our state.

## Update from the Administrator

### *Politics Affect Children's Hospitals*

One of the most focused initiatives in children's hospitals is working with state and federal representatives to make sure that funding and support is kept constant for health care for children. More than 50 percent of the children that are cared for at the MUSC Children's Hospital are funded by Medicaid. This is a very typical for children's hospitals across the country. This dependence on public funding causes us to be vulnerable to any changes in state and federal guidelines and because Medicaid is such a big budget, it is vulnerable for changes and cuts in funding.



**John Sanders, MHA**  
Administrator  
MUSC Children's  
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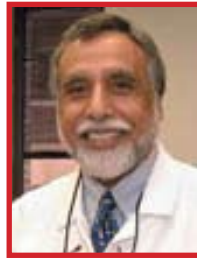
Obviously, this is an important year for public office elections so it is crucial that we all communicate with our representatives to make sure they understand the needs of our most vulnerable patients. Health care has become a very important campaign issue for the presidential candidates. We have had some exposure to various campaigns, including President Clinton and Mrs. Huckabee where we had the opportunity to talk about the challenges we see with changing and complex reimbursement processes.

As we move through this important election year, we must be focused on the messages that all candidates provide regarding health care and more specifically, health care coverage for children. This election could give us an idea of what programs children's hospitals will be able to continue or change so it's imperative that we stay informed and voice our thoughts. During this time, and always, MUSC Children's Hospital is dedicated to provide comprehensive care for all children and it is necessary that our political leaders understand our needs.

## Children's Research Institute News Brief



**Bernard L. Maria, MD, MBA**  
Executive Director  
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**Inderjit Singh, PhD**  
Scientific Director  
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For a few special days last month, the halls of the Darby Children's Research Institute (DCRI) were lively with discussions, explanations and thought-provoking conversations as investigators gathered to present nearly 100 abstracts featured in the institute's third anniversary celebration.

Collaborations that criss-cross the entire MUSC campus were evident in the 97 posters on display on February 28. The event highlighted the accomplishments, discoveries and strides made in children's health research during the past year.

Studies presented in the posters provoked questions, incited friendly debate and encouraged opinions from researchers, clinicians, the media, visitors and attendees from across MUSC.

The event marked the year's culmination of the coming together of minds across traditional boundaries.

"Should everyone be taking N-acetyl cysteine?" asked Dr. Bill Mobley of Dr. Inderjit Singh, prompted by the results reported in Dr. Singh's study, "Modulation of peroxisome proliferator-activated receptor- $\alpha$  activity by N-acetyl cysteine attenuates inhibition of oligodendrocyte development in lipopolysaccharide stimulated mixed glial cultures."

This study laid the groundwork for a further study, noted below, that Dr. Singh did in collaboration with Dr. Doe Jenkins to show that an existing drug, N-acetyl cysteine (NAC), protects the developing brain of unborn babies.

A noted pediatric neurologist at Stanford University and the featured guest speaker at the anniversary event, Dr. Mobley enjoyed an informal tour of the posters displayed on the second, third, fourth, fifth and sixth floors of the DCRI.

"This shows that the DCRI is able to provide the kinds of resources necessary for great collaborations to turn great science into great medicine," he noted.

"And that's what it's all about – finding a brand new way of thinking."

He pointed to a nearby poster he'd been discussing with investigator Srinivasan Shanmugarajan: "Congenital bone fractures in spinal muscular atrophy."

"This work shows that the gene responsible for spinal muscular atrophy is also causing abnormal bone cell formation," explained Dr. Mobley. "I didn't know that."

Down the hall, child psychiatrist Dr. Eve Spratt noted the special interest that her study, "Behavior problems and parenting stress in young children with history of inconsistent early care giving," might have for Dr. Charles Darby, who recently welcomed into his family a grandchild adopted from Russia. The sample in the small pilot study included 15 children adopted from orphanages in Russia, and indicated that children adopted from international orphanages exhibit fewer behavior problems than US-born children with a history of neglect.

Also among the abstracts were those that looked at ways to prevent births to teen mothers; determined whether patient-held vaccination records improved vaccination rates; and showed that maternal milk protects against necrotizing enterocolitis in extremely preterm infants.

The study, "Vitamin D deficiency during pregnancy: at epidemic proportions in SC," tested 694 women for vitamin D deficiency at two sites in S.C. Of that sample, 74% of African American women, 32% of Hispanic women, 50% of Asian women and 13% of Caucasian women were vitamin D deficient.

Using cultured tumor cells and animal models in their research for "Targeting hyaluronan interactions in brain and spinal cord tumors," investigators tested the efficacy of a new treatment for brain and spinal cancer that was shown to target particularly hard-to-kill cancer cells. Tumors reduced in size and became incapacitated. By stopping the cells' malignant behaviors, the treatment was shown to have an effect on the multiple components needed for tumor growth. The technology has been patented and licensed to Halozyyme Therapeutics, Inc., for clinical production.

"Dysfunction exacerbates cerebral white matter injury: attenuation by N-acetyl cysteine" showed that NAC seems to protect the developing brain of unborn babies. This study could have further implications in clinical trials with mothers whose children are at risk for developing cerebral palsy.

## Evidence-Based Tip

### *Making sure you have ALL of the evidence*

In addition to rounding with pediatrics, I also round at the Institute of Psychiatry once a week. If ever there was a place where “practicing medicine” refers to medicine as in pharmaceuticals, it is in psychiatry. It is not unusual for our patients to be on six or more medications.



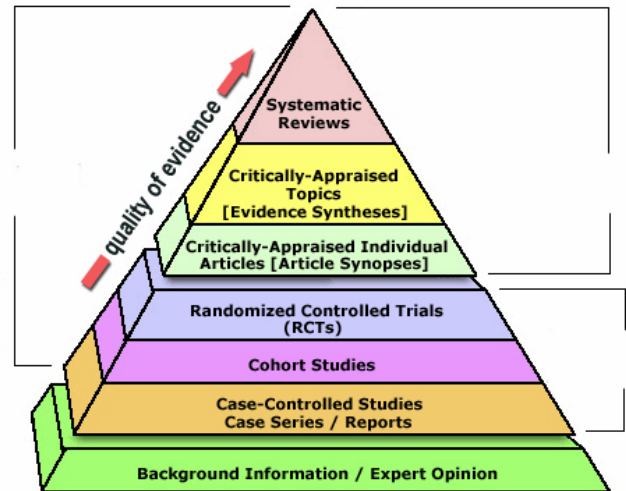
**Laura Cousineau, MLS**  
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With appropriate drug selection being so important, I read with interest the January 17 article in NEJM on the selective publication of antidepressant trials\*. The first line of this article reads “Evidence-based medicine is valuable to the extent that the evidence base is complete and unbiased.”

In teaching evidence-based medicine, we emphasize the difference between a review article and a systematic review. A review of the literature is subject to selection bias, and often chooses only articles selected from a single search of the literature. A systematic review must be excruciatingly thorough, using complex search strategies over several databases, and hand searches of appropriate journals. A systematic review should also look for grey literature; that is, conference reports, unpublished studies, theses and other such materials that do not turn up in literature searches alone. However, some reviews that are called systematic reviews have not been conducted with the thoroughness required.

As this NEJM article points out, that can make a difference in properly estimating the benefit or harm of a given therapy. A full 31 percent of the studies done on the 12 antidepressant agents tracked had not been published. There are many reasons why a study might not be published: a rejected manuscript, failure to submit, blocked by the sponsor, etc. What was startling for the investigation of these

12 drugs was that the non-published studies were overwhelmingly negative. This falsely increased the published benefit for the drugs by an average of 32 percent, and as high as 69 percent in one.



It is an important lesson for both those of us that teach and those of us who seek to practice evidence-based medicine. It helps us remember that our evidence pyramid, that hierarchy of studies with systematic reviews at the top, is only as sturdy as the quality of the studies in its levels. It reminds us of the need to understand the mechanics of studies, and to critically read the methodology sections of articles. For those of us who publish systematic reviews, it is also a reminder to pick up that phone, send those e-mails, search the websites of drug manufacturers and the FDA to find those unpublished studies. And you might want to enlist the help of your local medical librarian as well.

\*Turner EH, Matthews AM, Linardatos E, Tell RA, Rosenthal R. Selective publication of antidepressant trials and its influence on apparent efficacy. *New England Journal of Medicine* (Jan 17 2008) v358 n3 p252-60.

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