

## Researchers find better ways to treat respiratory illness, lung disorders

Investigators at Le Bonheur and the Children's Foundation Research Institute are finding new treatments for lung disorders like asthma, cystic fibrosis and other respiratory illnesses – using this translational research to improve care. Some of our work in 2013 includes:

**Weiqiang Zhang, PhD**, is conducting cystic fibrosis translational studies on the clinical and molecular characterization of novel cystic fibrosis transmembrane conductance regulator (CFTR) mutations and finding optimal therapies for children with these mutations.

Critical Care Specialist **Andreas Schwingshackl, PhD, MD**, is using two grants to study Acute Lung Injury (ALI) and Acute Respiratory Distress Syndrome (ARDS). His recent National Institutes of Health's K12 Career Development Award and American Lung Association Biomedical Grant will help him continue his research focus on the role of stretch-activated ion channels in the development of ALI and ARDS, inflammatory mediator secretion, loss of epithelial barrier function and propagation of lung inflammation.

Asthma researcher **Stephania Cormier, PhD**, has been able to pinpoint at what age RSV infections becomes a predictor of asthma



in mice models. She's now testing that predictor on RSV-infected human cells, hoping to develop vaccine strategies to that could prevent RSV and reduce RSV-associated asthma. She's also working to understand how early environmental exposures to pollution,

allergens and other respiratory viruses – like influenza – play a role in developing asthma.

Using novel co-morbidity models of asthma and influenza, researchers **Amali Samarasinghe, PhD**, and **Jon McCullers, MD**, have found that the state of allergic airways at the time of influenza virus infections impacts pathogenesis. Mice infected with the virus during acute allergic inflammation cleared the virus more efficiently and did not suffer influenza morbidity. Researchers found acute allergic asthma

reduces morbidity and mortality from secondary bacterial infections. New studies are underway to delineate mechanisms that may be involved in this protection.

Neonatologist **Ramesh Krishnan, MD**, is studying

how gentle ventilation strategies can optimize the premature lung for mechanical ventilation reducing lung injury. Using preterm pig models, he is studying airway pressure release ventilation mode, in addition to the role of growth factors in enhancing lung development in animals.

Pulmonologist **Dennis Stokes, MD, MPH**, is conducting Phase 3 studies of VX-809 (lumacaftor) in combination with ivacaftor in children and adults with cystic fibrosis. Subjects in the study have homozygous copies of the F508del mutation in the cystic fibrosis transmembrane conductance regulator (CFTR) gene.

Le Bonheur Pulmonologists are contributing to the **St. Jude Children's Research Hospital Lifetime Cohort Study**. Results published in the *Journal of the American Medical Association* this summer reported that adult survivors of childhood cancer suffered adverse pulmonary health outcomes – among other adverse outcomes. More than 65 percent of those exposed to pulmonary toxic cancer treatment had abnormal pulmonary function – the highest prevalence occurring among those treated with lung radiation, followed by those treated with bleomycin and thoracotomy.

Pulmonology Fellow **Errin Newman, MD**, is studying the culture-independent molecular analysis of microbiome in patients with tracheostomy.

Pulmonologist **Dennis Stokes, MD, MPH**, and Allergist-Immunologist **Christie Michael, MD**, are tackling asthma – applying new approaches to reduce deaths, Emergency Department and urgent care visits, avoidable hospitalizations and asthma exacerbations or episodes with a program called CHAMP, Changing High-Risk Asthma in Memphis through Partnership.



## Le Bonheur Pulmonology Highlights: 2013

In 2013, pulmonologists at Le Bonheur cared for thousands of children with respiratory illnesses – providing care to families with asthma, cystic fibrosis, sleep disorders and more. Highlights for 2013 included:

- Our pediatric pulmonology program was ranked again by **U.S. News and World Report**.
- Our Cystic Fibrosis center continues to rank among **Top 10** percent of centers for nutritional outcomes in young children.
- A **sleep medicine fellowship** has been established in partnership with the adult sleep specialists at Memphis' VA Medical Center. Robert Schoumacher, MD, director of the Pediatric and Adolescent Sleep Center is providing the pediatric experience for the fellowship, and Le Bonheur Pulmonologist Brent Haberman, MD, is one of the program's first two fellows.
- Technology like the state's only **infant pulmonary function laboratory** helped us diagnose and treat young children with lung disorders – providing reliable measures of lung volumes and spirometry in babies.
- We added respiratory therapy and nutrition services to our Cystic Fibrosis Clinic in Tupelo, Miss., improving **care we offer children in our region**.
- Our **Muscular Dystrophy Association**-affiliated clinic added pulmonary medicine to its lists of specialty services.
- **T.C. Thompson Children's Hospital** in Chattanooga, Tenn., joined us as an affiliate CF center. Le Bonheur former Pulmonology Fellow Devon Greene serves at the site.
- Our community **CHAMP** program – Changing High-Risk Asthma in Memphis through Partnership – continues to improve outcomes and quality of life for high-risk asthma patients. The \$3 million Centers for Medicare and Medicaid Services-funded program partners with community pediatricians, schools and families to care for children at risk.



Referrals: 888-890-0818

[www.lebonheur.org/pulmonology](http://www.lebonheur.org/pulmonology)

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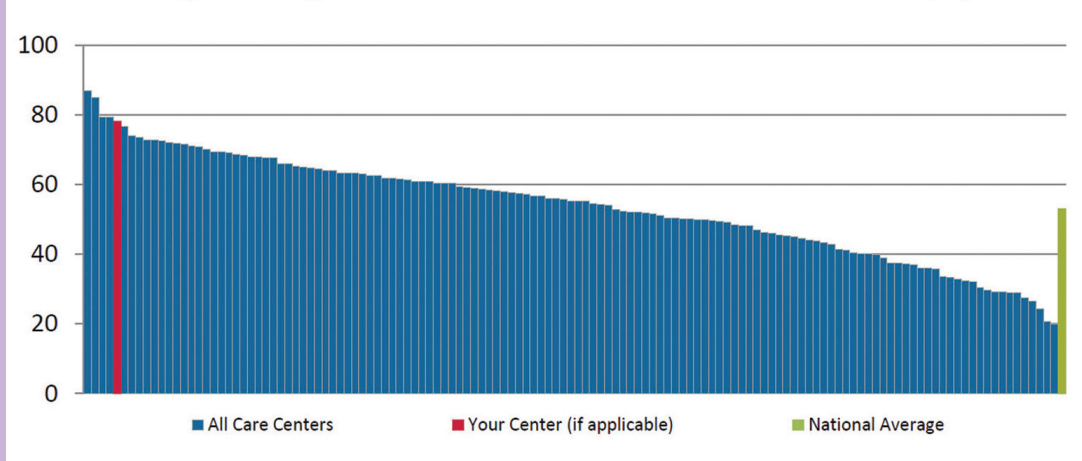


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#### Median Weight-for-Length Percentile for Patients Less than 24 Months in 2012, by Center



## Key CF outcomes rank among nation's best

The University of Tennessee Cystic Fibrosis Center at Le Bonheur Children's Hospital ranked again in 2012 among the top 10 CF centers in the country for key nutritional outcomes.

Those outcomes include patients with a median weight-for-length percenile for patients less than 24 months — a factor that can length expectancy for many children. The center also ranks well above the national average in the use of pulmonary therapies for treatment of appropriate patients and screening for complications of cystic fibrosis, according to the national Cystic Fibrosis Foundation.

The Le Bonheur center is expected to receive a Quality Award in 2014 from the CF Foundation for outstanding care and care improvement work.

### Dennis Stokes, MD, MPH

Dennis Stokes, MD, MPH, is chief of Pulmonology and St. Jude Professor at The University of Tennessee Health Science Center (UTHSC). He is also center director of the UT CF Care and Research Center and director of pulmonology services at St. Jude Children's Research Hospital.



Stokes graduated from the University of Kentucky, completed pediatrics at the Johns Hopkins Hospital, and a pulmonology fellowship at Boston Children's Hospital/Harvard University School of Medicine. He holds a Master's in Public Health degree from Indiana University and is board certified in pediatrics and pediatric pulmonology.

Stokes' patient care emphases include asthma, cystic fibrosis, and pulmonary infections in the immunocompromised host.

### Brent Haberman, MD

Pulmonologist Brent Haberman, MD, is an assistant professor at UTHSC. He is board certified in pediatrics with a subspecialty in pediatric pulmonology.

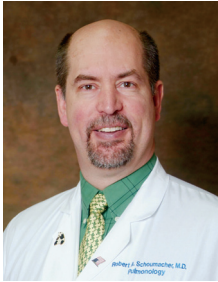


Haberman graduated from Saint Louis University College of Medicine. He completed pediatrics residency at Le Bonheur and a fellowship in pediatric pulmonology at Baylor College of Medicine. His clinical interests include pulmonary complications of neuromuscular disorders, cystic fibrosis and pediatric sleep disorders.

### Robert Schoumacher, MD

Robert Schoumacher, MD, is a professor at UTHSC and director of Le Bonheur's Pediatric and Adolescent Sleep Center.

He is board certified in sleep medicine and in pediatrics with a pediatric pulmonology subspecialty. Schoumacher attended Vanderbilt University School of Medicine, pediatrics residency at the University of Virginia, and fellowship training at the University of Alabama at Birmingham. He has special interests in pediatric sleep medicine, home ventilation and cystic fibrosis.



### Saumini Srinivasan, MD, MS

Saumini Srinivasan, MD is an assistant professor at UTHSC and associate director of the UT CF Care and Research Center.

She completed her medical degree at the University of Delhi in India and completed her pediatric residency at UCLA Children's Hospital. She earned her fellowship in pediatric pulmonology at the Children's Hospital of Los Angeles/University of Southern California. She is board certified in pediatrics with a subspecialty in pediatric pulmonology. Her clinical interests include cystic fibrosis, exercise physiology and clinical exercise testing and pediatric sleep disorders.



### James Tutor, MD

James Tutor, MD is a professor at UTHSC and medical director of the infant pulmonary function laboratory at Le Bonheur. He completed medical school and residency at the University of Mississippi and pulmonology fellowship at Tulane. He is board certified in pediatrics with a subspecialty in pediatric pulmonology.

Tutor's clinical interests include infant pulmonary function testing, aspiration disorders, cystic fibrosis and sleep disorders.



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