



THE
CHEST
FOUNDATION®

**THE CHEST FOUNDATION AWARDS
2010**



ACCP Mission

*To promote the prevention and treatment of
diseases of the chest through leadership,
education, research, and communication*



THE
CHEST
FOUNDATION®

The CHEST Foundation Mission

*To provide resources to advance the
prevention and treatment of
diseases of the chest*



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The CHEST Foundation

Dedicated to helping you help your patients live and breathe easier, The CHEST Foundation makes its impact on world health through its focus on four key areas: tobacco prevention, humanitarian service, clinical research and end-of-life care/critical care. The Foundation continues its efforts to strengthen its strategic relationships with private and public organizations and to support the work of ACCP members involved in pro bono service, clinical research, and leadership in end-of-life care.

The CHEST Foundation Awards Program

One of the important programs of The CHEST Foundation that holds the promise of improving patient care, along with supporting clinical investigators whose research projects could lead to important breakthroughs in the treatment of chest diseases, is its extensive awards program. The Foundation offers ACCP members opportunities to apply for a variety of awards in the areas of clinical research, leadership in end-of-life care, and humanitarian service in projects/services in the United States and communities throughout the world. The CHEST Foundation awards have supported ACCP members early in their careers, as well as those Distinguished Scholars whose innovations have the impact to transform clinical care and save lives.

In 2010, The CHEST Foundation offered over \$500,000 in awards to ACCP members submitting applications relating to cardiopulmonary and critical care medicine.

The first section of this Awards book features the **2010 award recipients**. The middle section includes **progress summaries from The CHEST Foundation Distinguished Scholars and research summaries from previous award recipients**. Some of the past award recipients also share the impact the award has had on their careers.

The final section lists the **awards that are available as of August 2010**, with a description of the new online application process that will continue to be offered for all 2011 CHEST Foundation awards. ACCP members are encouraged to regularly check www.chestfoundation.org for the latest information about additional 2011 award opportunities that will be offered in December 2010 and January 2011. Applications will be available online after January 3, 2011. The deadline for submission of all applications is April 29, 2011.

Distinguished Scholar Program

Initiated in 2000, the Distinguished Scholar Program enables ACCP members who propose outstanding projects in cardiopulmonary and critical care medicine to extend their impact in clinical practice. Through the generous support of Eli Lilly and Company and GlaxoSmithKline, The CHEST Foundation's Distinguished Scholar Program makes an impact on patient care in critical care, thrombosis, and respiratory health.

Third Eli Lilly and Company Distinguished Scholar in Critical Care Medicine



The Third Eli Lilly and Company Distinguished Scholar in Critical Care Medicine, **Steven Q. Simpson, MD, FCCP**, Associate Professor, The University of Kansas School of Medicine, Division of Pulmonary and Critical Care Medicine, in Kansas City, KS

has completed his first year. His project is "A Statewide Program To Effect the Timely Diagnosis and Treatment of Severe Sepsis: Application of Evidence-Based Principles in Rural and Urban Settings."



Second GlaxoSmithKline Distinguished Scholar in Respiratory Health



Sidney S. Braman, MD, FCCP, the Second GlaxoSmithKline Distinguished Scholar in Respiratory Health, has completed his third and final year. Dr Braman is the Division Director of Pulmonary and Critical Care Medicine at the Warren

Albert Medical School of Brown University in Providence, RI. His project is "The ACCP Chronic Care Model for COPD and Its Comorbidities: An Initiative for Primary Care Physicians and Other Health-care Providers To Improve the Quality of Life and Health Outcomes for Patients With COPD."



Second GlaxoSmithKline Distinguished Scholar in Thrombosis



Completing his second year as the Second GlaxoSmithKline Distinguished Scholar in Thrombosis is **Henry I. Bussey, PharmD, FCCP**. Dr Bussey is Professor in the Division of Pharmacotherapy, College of Pharmacy, at the

University of Texas at Austin and the University of Texas Health Science Center at San Antonio. He is also president of Genesis Clinical Research in San Antonio. His project is "A Superior Method of Oral Anticoagulation Management To Substantially Reduce Event Rates, Improve Quality of Life, and Reduce Health-care Costs."



Third GlaxoSmithKline Distinguished Scholar in Respiratory Health



The CHEST Foundation is delighted to announce that **Sandra G. Adams, MD, FCCP**, has been selected as the Third GlaxoSmithKline Distinguished Scholar in Respiratory Health. Dr Adams is Associate Professor, the University of Texas Health Science Center, Department

of Medicine, Division of Pulmonary Disease and Critical Care, in San Antonio, TX. Her project is "Assessment of an Interactive Education Tool To Disseminate Best Practice Recommendations on Chronic Obstructive Pulmonary Disease to Primary Care." Her plan is to develop and assess an interactive education tool for primary care clinicians to disseminate evidence-based, best practice recommendations on COPD care. She will build on her prior experience of

developing a "live" interactive, continuing medical education (CME)/ continuing education (CE) course based on adult learning principles and the ACCP six learning categories. She will pilot her newly developed interactive, Web-based course on second-year internal medicine residents from Texas residency programs.

Dr Adams was selected by a review committee of ACCP members, including Paula Anderson, MD, FCCP (Chair); Christopher L. Carroll, MD, FCCP; Rubin I. Cohen, MD, FCCP; Nicola A. Hanania, MBBS, FCCP; Philip Marcus, MD, FCCP; and Jay I. Peters, MD, FCCP.



For more information about this award, contact Lee Ann Fulton at lfulton@chestnet.org.

Past Distinguished Scholar Award Recipients

Second Eli Lilly and Company Distinguished Scholar in Critical Care Medicine

2006

Recipient: Kalpalatha K. Guntupalli, MD, FCCP

Institution: Baylor College of Medicine, Houston, TX

Project: *Development and Validation of the Educational Materials for Use by the Critical Care Health-care Team (Physician Trainees, Respiratory Therapists, Physician Assistants) and Patient/Family for Use in the Critical Care Units*

GlaxoSmithKline Distinguished Scholar in Thrombosis

2004

Recipient: Timothy A. Morris, MD, FCCP

Institution: San Diego School of Medicine, University of California, San Diego, CA

Project: *Learning From Ourselves: Application of the Continuous Quality Improvement Model for the Management of Pulmonary Embolism*

GlaxoSmithKline Distinguished Scholar in Respiratory Health

2003

Recipient: Richard J. Martin, MD, FCCP

Institution: National Jewish Medical Center and Research Center, Denver, CO

Project: *Asthma Knowledge Implementation Program (AKIP) for Physicians and Patients*

Eli Lilly and Company Distinguished Scholar in Critical Care Medicine

2002

Recipient: Nicholas S. Hill, MD, FCCP

Institution: New England Medical Center, Boston, MA

Project: *Enhancing Utilization of Noninvasive Positive Pressure Ventilation in Critical Care*

The CHEST Foundation Humanitarian Awards Program

The D. Robert McCaffree, MD, Master FCCP Humanitarian Awards were conferred at The CHEST Foundation's 12th Annual Making a Difference Awards Dinner during CHEST 2010. Awards granted were on three levels: \$10,000, \$7,500, and \$5,000. They were given to the nonprofit and nongovernmental organizations throughout the world where ACCP members volunteer their time and medical expertise to help those most in need.

This year, The CHEST Foundation conferred awards to six organizations benefiting from the volunteer efforts of ACCP members. The recipients also were recognized at the Making a Difference Awards Ceremony and Presentation on October 30, 2010, during CHEST 2010. A special subcommittee of The CHEST Foundation's Ambassadors Group selected one of the Humanitarian Award winners to be the fifth recipient of the Ambassadors Group Humanitarian Award.

Recipients of the 2010 Humanitarian Awards

The 2010 Review Committee, chaired by Sandra K. Willsie, DO, FCCP, and composed of ACCP Governors and other leaders, selected five of the six awards.



Margaret A. Clark, RRT
***Not One More Life Asthma
Clinic***
Atlanta, GA



**Kevin R. Flaherty, MD,
FCCP**
Faith Medical Clinic
Pinckney, MI



Robert C. Hyzy, MD, FCCP
***Sustainable Health
Promotion for the Indigent
of Belin, Peru***
Belin, Peru



Syed S. Naqvi, MD, FCCP
***Sustainable Healthcare
Initiatives Now Empowering
(SHINE), USA***
***In Affiliation With
Comprehensive Disaster
Response Services (CDRS),
Pakistan***
Chikar, District
Muzaffarabad, Pakistan

The Ambassadors Group selected the following Humanitarian Award project that was funded through the generosity of that group.



Lata R. Casturi, MA
Project S.I.E.S.T.A. (Students Involved in the Education About Sleep Hygiene for Teen Adolescents)
Houston, TX

The 2010 Humanitarian Award Committee was chaired by Sandra K. Willisie, DO, FCCP, and included the following ACCP members: Vera A. De Palo, MD, FCCP; Raymond J. Foley, DO, FCCP; Allen I. Goldberg, MD, Master FCCP; Paul A. Kvale, MD, FCCP; James B. D. Mark, MD, FCCP; D. Robert McCaffree, MD, Master FCCP; Om P. Sharma, MD, Master FCCP; and Jorge E. Sinclair Avila, MD, FCCP.

For more information about applying for a Humanitarian Award, contact Lee Ann Fulton at lfulton@chestnet.org.

American Lung Association and The CHEST Foundation Asthma Clinical Patient Care Research Award

NEW for 2010, the American Lung Association (ALA) and The CHEST Foundation entered a joint partnership and offered the Asthma Clinical Patient Care Research Award to ACCP members in October 2009. This is a 2-year award granting \$40,000 each year to the candidate who submits an outstanding application in the area of asthma and patient care. Applications submitted were judged on the proposed project's relevance to improving patient care and treatment for asthma, scientific merit, innovation, and feasibility of the research plan.

The American Lung Association is a leading organization working to save lives by improving lung health and preventing lung disease. In its second century, it focuses its efforts on research, education, and advocacy.



Shamsah Kazani, MBBS, of Brigham and Women's Hospital, Division of Pulmonary and Critical Care Medicine, Department of Medicine, Boston, MA, was selected to receive this award. Her project is "Leukotriene Pathway Polymorphisms: Asthma Pharmacogenetics and Exhaled Biomarkers."

The American Lung Association and The CHEST Foundation Asthma Clinical Patient Care Research Award Review Committee included ACCP members Rubin Cohen, MD, FCCP; Thomas Fullman, MD, FCCP; Gary Kohn, MD, FCCP; and Howard Panitch, MD, FCCP.

Annual Awards

Alpha-1 Foundation and The CHEST Foundation Clinical Research Award in COPD and Alpha-1 Antitrypsin (AAT) Deficiency

Beginning in 2008 and continuing through 2010, the Alpha-1 Foundation and The CHEST Foundation expanded the focus of their joint research award to include COPD and AAT deficiency. This year's winning candidate has submitted an outstanding research project and will receive a \$25,000 grant to conduct research over a period of 1 year, from July 2010 through June 2011. The main objective of this award is to support a physician who conducts clinical research relating to COPD and AAT deficiency that will lead to improving the health and quality of life of people living with AAT deficiency.

The Alpha-1 Foundation is a not-for-profit Florida corporation that was founded in 1995 by John Walsh, Susan Stanley, and Sandy Lindsey, all individuals diagnosed with AAT deficiency. The Foundation is dedicated to providing the leadership and resources that will result in increased research, improved health, worldwide detection, and a cure for alpha-1 antitrypsin deficiency.



Ann E. Tilley, MD, is Assistant Professor of Genetic Medicine at Weill Medical College of Cornell University in New York, NY. Her project is "Endothelial Microparticles as a Biomarker for Emphysema in Alpha-1 Antitrypsin Deficiency." Her project

has two aims: (1) to evaluate endothelial microparticle (EMP) levels in patients with alpha-1 antitrypsin (AAT)-deficiency emphysema as compared with control patients and to relate these levels to measurement of the severity of emphysema; and (2) to evaluate the response of EMP levels in patients with AAT-deficiency emphysema receiving AAT augmentation therapy in order to assess whether EMP levels may serve as a reliable marker of adequate treatment.

The Alpha-1 Foundation and The CHEST Foundation Clinical Research Award in COPD and Alpha-1 Antitrypsin Deficiency Review Committee members were: Charlie Strange, MD, FCCP (Co-Chair); and Alan F. Barker, MD, FCCP, representing the American College of Chest Physicians. Also serving on the committee were: Ralph Panos, MD (Co-Chair); Pierre-Yves Berclaz, MD, PhD; and N. Tony Eissa, MD, representing the Alpha-1 Foundation.

For more information about this award, contact Lee Ann Fulton at lfulton@chestnet.org.

Past Recipients of the Alpha-1 Foundation and The CHEST Foundation Clinical Research Award in COPD and Alpha-1 Antitrypsin (AAT) Deficiency

2009

Recipient: Robert M. Reed, MD
Institution: Johns Hopkins Hospital, Baltimore, MD
Project: *Cardiac MRI in Screening for Pulmonary Hypertension Complicating COPD*

2008

Recipient: Amir Sharafkhaneh, MD, FCCP
Institution: Baylor College of Medicine, Houston, TX
Project: *Autophagy in Alveolar Macrophages*

2006

Recipient: Eric L. Olson, MD, FCCP
Institution: University of Florida Health Science Center, Gainesville, FL
Project: *The Role of Alpha-1 Antitrypsin in Modulating Airway Inflammation*

2005

Recipient: Joseph C. Cicens III, MD, FCCP
Institution: Saint Vincent's Catholic Medical Center, Manhattan, NY
Project: *HIV-Related Emphysema and Alpha-1 Antitrypsin Deficiency: A Pilot Study*

Association of Specialty Professors and The CHEST Foundation of the ACCP Geriatric Development Research Award

To provide the impetus required for long-term career development focused on integrating geriatrics into the subspecialties of internal medicine is the main objective of the Association of Specialty Professors (ASP) and The CHEST Foundation of the ACCP Geriatric Development Research Award. This award is offered to physicians, in the first 4 years of their faculty appointment, who develop and implement a basic, clinical, or health services research project focused on a geriatric aspect of chest medicine. Since 2001, the successful partnership between ASP and The CHEST Foundation has granted 2-year awards to outstanding candidates who have conducted projects that address the health-care needs of an aging population. The award recipient also becomes a member of the T. Franklin Williams Scholar Program, which was created by ASP to identify and train a new generation of subspecialists prepared to meet the health-care needs of the nation's aging population.

The ASP is the organization of specialty internal medicine divisions at medical schools and community teaching hospitals in the United States and Canada. It is the only organization that focuses specifically on providing training and educational opportunities for internal medicine division chiefs and fellowship training program directors. The T. Franklin Williams Scholars Program is part of ASP's Geriatrics Development Initiative.



Jessica Y. Chia, MD, is an Instructor of Medicine, Duke University Medical Center, Department of Medicine and Division of Pulmonary, Allergy, and Critical Care in Durham, NC. Her project is "Role of Aging and Endoplasmic Reticulum Stress in the Pathogenesis

of Pulmonary Fibrosis." Dr Chia's objectives are: (1) to characterize the pulmonary endoplasmic reticulum (ER) stress response in young and aged animals (C57B16 mice) in response to various ER stress-inducing agents, using in vivo and in vitro techniques; (2) to determine the role of ER stress in regulating pulmonary fibrosis during noninfectious lung injury in young and aged mice; and (3) to determine if alveolar epithelial cells from aged patients with idiopathic pulmonary fibrosis (IPF) have increased susceptibility to ER stress.

The review committee was chaired by Steve G. Peters, MD, FCCP, and included the following ACCP members: Lee K. Brown, MD, FCCP; Edward F. Haponik, MD, FCCP; and Margaret A. Pisani, MD, FCCP.

For more information about this award, contact Lee Ann Fulton at lfulton@chestnet.org.



Past Recipients of the Association of Specialty Professors and The CHEST Foundation of the ACCP Geriatric Development Research Award

2009

Recipient: Kathleen M. Akgun, MD
Institution: Yale University School of Medicine, New Haven, CT
Project: *Aging and Critical Illness in HIV-Infected Patients*

2008

Recipient: Jeffrey C. Horowitz, MD, FCCP
Institution: University of Michigan Medical School, Ann Arbor, MI
Project: *Mycofibroblast Fate Determination by Extracellular Matrix Interactions*

Recipient: Shirley F. Jones, MD
Institution: Scott and White Memorial Hospital/ Texas A&M Health Sciences Center, Temple, TX
Project: *Understanding the Relationship Between Sleep, Circadian Rhythm, and ICU Delirium*

2007

Recipient: Harold R. Collard, MD, FCCP
Institution: San Francisco Hospital, San Francisco, CA
Project: *Dyspnea in Patients With Idiopathic Pulmonary Fibrosis*

Recipient: Carlos A. V. Fragoso, MD, FCCP
Institution: Yale University School of Medicine, New Haven, CT
Project: *Establishing Chronic Obstructive Pulmonary Disease in Older Persons*

2006

Recipient: Renee D. Stapleton, MD
Institution: University of Washington, Seattle, WA
Project: *Disease-Specific and Long-term Survival in Older Adults After In-Hospital CPR*

2005

Recipient: Reena Mehra, MD, MS, FCCP
Institution: University Hospitals of Cleveland, Case Medical School, Cleveland, OH
Project: *Sleep-Disordered Breathing and Cardiac Arrhythmia Associations With Alcohol Use and Dependence in Elderly Men*

2004

Recipient: Lee E. Morrow, MD, FCCP
Institution: Creighton University Medical Center, Omaha, NB
Project: *A Multidisciplinary Intervention To Optimize the Recovery of Elderly Patients Hospitalized With Community-Acquired Pneumonia*

Recipient: Eric S. White, MD, FCCP
Institution: University of Michigan Medical School, Ann Arbor, MI
Project: *The Role of Fibronectin in Pulmonary Fibrosis*

2003

Recipient: Brian K. Gehlbach, MD
Institution: University of Chicago Hospitals, Chicago, IL
Project: *Predicting Functional Decline and the Need for Long-term Care in Elderly Critically Ill Patients*

2002

Recipient: Margaret A. Pisani, MD, FCCP
Institution: Yale University School of Medicine, New Haven, CT
Project: *The Contribution of Psychoactive Drug Use to Poor Outcomes in Older ICU Patients*

Roger C. Bone Advances in End-of-Life Care Award

Created in 2000, the Roger C. Bone Advances in End-of-Life Care Award recognizes outstanding leadership in end-of-life care. Dr Bone wrote about the ethical and humanistic issues that surround end-of-life decisions as he was dealing with his own terminal diagnosis. He stressed the importance of communication among physicians and their patients. Dr Bone was a Master Fellow and Past President of ACCP.

The award recipient is selected by a review committee of members from the ACCP Palliative and End-of-Life Care NetWork and other distinguished leaders in end-of-life care. This award gives special recognition to an ACCP member who has shown outstanding leadership in palliative and/or end-of-life care, particularly in the areas of improved communication, compassion, and effective listening between themselves and their patients and families. The 2010 award recipient receives a grant of \$10,000 for his or her specific end-of-life care project.

In addition, in 2010 a certificate of commendation was granted to Abhijit Kanti Dam, MD, Bokaro General Hospital, Anesthesiology & Critical Care, Jharkhand, India, for his exceptional pioneering work in initiating a palliative care program in the tribal state of Jharkhand, India.



Dee W. Ford, MD, FCCP, is an Assistant Professor, Department of Medicine, Division of Pulmonary, Critical Care, Allergy, and Sleep at the Medical University of South Carolina in Charleston, SC. Her project is “Integrating an End-of-Life Communication

Curriculum Into Pulmonary/Critical Care Training.” Her project is designed to adapt and implement a communications skills training program into pulmonary and critical care training. She will incorporate lessons learned from an ongoing, education-based research study wherein she is the principal investigator. This study, Improving Clinician Communication Skills (ICCS), is a multisite, multidisciplinary, randomized, controlled study to assess whether internal medicine residents’ and nurse practitioners’ end-of-life communication skills can be improved through a series of educational modules. ICCS is built on adult-learning principles wherein most class time is devoted to simulated patient communication skills practice rather than didactic instruction. The seven topics of ICCS are: (1) giving bad news; (2) managing transitions to palliative care; (3) advance care planning; (4) family communication and conferences; (5) cultural and spiritual issues at the end of life; (6) identifying and managing clinicians’ emotions; and (7) addressing team conflict.

The Roger C. Bone Advances in End-of-Life Review Committee was co-chaired by Rosemary Bone Mason, RN, and D. Robert McCaffree, MD, Master FCCP, and included the following review committee members: Richard Dart, MD, FCCP; Daniel E. Ray, MD, FCCP; Paul A. Selecky, MD, FCCP; and Stephen C. Telatnik, MD, FCCP.

For more information about this award, contact Lee Ann Fulton at lfulton@chestnet.org.

Past Recipients of the Roger C. Bone Advances in End-of-Life Care Award

2009

Recipient: Graeme Martin Roker, MBBCh, FCCP

Institution: Dalhousie University/Queen Elizabeth II Sciences Centre, Halifax, NC, Canada

Project: *A Journey Through End-of-Life Care: From Academic Critical Care, to Innovative Community-Based Collaborations, to the INSPIRED Outreach Service*

2008

Recipient: Richard A. Mularski, MD, FCCP

Institutions: Center for Health Research at Kaiser Permanente Northwest and Oregon Health & Science University, Portland, OR

Project: *Improving Communication and Palliative Care in the Intensive Care Unit*

2007

Recipient: James A. Avery, MD, FCCP

Institution: New York Hospice Care, New York, NY

Project: *Helping Physicians Help the Dying*

2006

Recipient: Daniel E. Ray, MD, FCCP

Institution: Lehigh Valley Hospital, Allentown, PA

Project: *Implementing Palliative Care in the ICU and Across the Continuum*

2005

Recipient: John E. Barkley, MD, FCCP

Institution: Medical Services, Hospice & Palliative Care-Charlotte Region, NC

Project: *Integration of Hospice and Palliative Care Into Mainstream Medicine*

2004

Recipient: Stephen C. Telatnik, MD, FCCP

Institution: Pike's Peak Hospice and Palliative Care, Colorado Springs, CO

Project: *Initiation of Memorial Hospital (Colorado Springs) Palliative Intensive Care Unit: Consult in a Community Hospital*

2003

Recipient: Craig M. Lilly, MD, FCCP

Institution: Brigham and Women's Hospital, Boston, MA

Project: *An Intensive Communication Intervention for the Critically Ill*

2002

Recipient: Judith E. Nelson, MD, JD, FCCP

Institution: Mount Sinai School of Medicine, New York, NY

Project: *Integration of Palliative Care and Intensive Care To Improve the End-of-Life Experience for Patients With Acute and Chronic Critical Illness: A Program of Research, Education, and Clinical Initiatives*

2001

Recipient: J. Randall Curtis, MD, FCCP

Institution: University of Washington, Seattle, WA

2000

Recipient: Basil Varkey, MD, FCCP

Institution: Froedtert Memorial Lutheran Hospital, Milwaukee, WI

The CHEST Foundation California Chapter Clinical Research/Medical Education Award

Created in 2008, this award opportunity is based upon an agreement between The CHEST Foundation and the officers of the ACCP California Chapter that was dissolved in late 2006. For the next 5 years, a 1-year research/medical education award will be offered to ACCP members living in California. The amount of \$5,000 will be granted to a physician who submits an outstanding research or medical education project that can be completed from July 2010 through June 2011.



Hubert Chen, MD, FCCP, is an Assistant Professor at the University of California San Francisco, Division of Pulmonary and Critical Care, Department of Medicine, School of Medicine in San Francisco, CA. His project is “Effects of Air Travel on Patients With Pulmonary Arterial Hypertension.”

The primary objective of Dr Chen’s study is to assess the incidence and severity of hypoxemia experienced by patients with pulmonary arterial hypertension (PAH) during air travel. The secondary objectives are: (1) to assess the relationship between cabin pressure during flight and oxygen saturation, heart rate, and symptoms in patients with PAH; and (2) to determine whether oxygen desaturation during a 6-minute walk test (at sea level) predicts patients who are at risk for hypoxemia during flight.

The CHEST Foundation California Chapter Research/ Medical Education Award Review Committee was chaired by Susan Murin, MD, FCCP, and included the following ACCP California members: Kimberly A. Hardin, MD, FCCP; Michael W. Peterson, MD, FCCP; Paul A. Selecky, MD, FCCP; and Ira Jeffry Strumpf, MD, FCCP.

For more information about this award, contact Lee Ann Fulton at lfulton@chestnet.org.

Past CHEST Foundation California Chapter Clinical Research/Medical Education Award Recipients

2009

Recipient: Viswam S. Nair, MD

Institution: Stanford University School of Medicine, Stanford, CA

Project: *Increased Positron Emission Tomography 18F-Fluorodeoxyglucose Uptake, Gene Expression and Outcome in Stage I Resected Lung Adenocarcinoma*

2008

Recipient: Henri G. Colt, MD, FCCP

Institution: University of California Irvine, Orange, CA

Project: *Development and Validation of the Effectiveness of a One-Day Structured Bronchoscopy Training Curriculum for First Year Pulmonary and Critical Care Medicine Trainees in Southern California*

The CHEST Foundation and the Respiratory Health Association of Metropolitan Chicago Clinical Research Award in Women's Lung Health

Created as a Clinical Research Trainee Award in 2001 for affiliate ACCP members only, The CHEST Foundation's Clinical Research Award in Women's Health was expanded to all levels of ACCP membership in 2005. **NEW in 2010:** The Respiratory Health Association of Metropolitan Chicago has partnered with The CHEST Foundation to grant a \$10,000 award to the candidate who proposes an outstanding research project related to women's lung health for 1 year from July 2010 through June 2011.

The Respiratory Health Association of Metropolitan Chicago was founded more than a century ago in 1906 by Dr Theodore Sachs and nurse Harriet Fulmer and called the Chicago Tuberculosis Institute. Over the years, the organization has grown deep roots in the community and has branched out to address all lung diseases. It offers services throughout metropolitan Chicago and across the state. The organization has championed various initiatives and has had different names but has maintained its commitment to community lung health. Its mission is to promote healthy lungs and fight lung disease through research, advocacy and education.



Jacob Allan Udell, MD, is a Clinical Fellow at Brigham & Women's Hospital—Cardiovascular Medicine, in Boston, MA. His project is "The GRAVID Study: General Reproductive Assistance and Vascular Illness Downstream." The goal of Dr Udell's study is

to assess if women who had pregnancies associated with fertility therapy are at higher risk of future cardiothoracic disease. He will study records of doctor visits collected by provincial health agencies of all women who gave birth in Ontario between January 1, 1992, and January 1, 1995, distinguishing those who did and did not receive fertility treatment in the 9 months prior to delivery. The principle health outcome will be whether or not a woman developed a subsequent heart attack, stroke, or lung blood clot over the next 15 years. His project may identify a previously unrecognized risk of premature heart and lung disease among otherwise healthy women who use fertility therapy. Knowledge of this risk may motivate women who use fertility therapy to be screened for cardiothoracic disease and adopt healthy lifestyles. An understanding of long-term cardiothoracic effect could better inform women considering fertility treatment of the potential complications, and, thereby, aid their decisions.

The following members of the Women's Health NetWork served on the review committee: Sheila J. Goodnight, MD, FCCP (Chair); Donna Gardner, RRT; MeiLan K. Han, MD; Susan M. Harding, MD, FCCP; and Daya Upadhyay, MD.

For more information about this award, contact Lee Ann Fulton at lfulton@chestnet.org.



Past Recipients of The CHEST Foundation Clinical Research Award in Women's Health Award

2009

Recipient: Ghada R. Bourjeily, MD, FCCP

Institution: The Warren Alpert Medical School of Brown University, Providence, RI

Project: *Differences in Respiratory Sleep Parameters of Pregnant and Nonpregnant Women*

2008

Recipient: Subani Chandra, MBBS

Institution: Long Island Jewish Medical Center, Albert Einstein College of Medicine, New Hyde Park, NY

Project: *Investigation and Correction of Gender Disparity in Chest Compression Technique During CPR*

Recipient: Margaret A. Pisani, MD, FCCP

Institution: Yale University School of Medicine, New Haven, CT

Project: *Gender Differences as They Relate to Outcome in an Older ICU Cohort*

2007

Recipient: Thirumagal Anandhi Murugan, MD

Institution: University of Texas Medical Branch, Galveston, TX

Project: *Menstrual Differences in Airway Inflammation in Asthma*

2006

Recipient: Varsha Taskar, MD, FCCP

Institution: University of Texas Health Center, Tyler, TX

Project: *Is There a Relationship Between Anxiety, Depression, Peripheral Vascular Disease, and Hormonal Imbalance Among Women with COPD?*

2005

Recipient: Jonathan A. Bernstein, MD, FCCP

Institution: University of Cincinnati College of Medicine, Cincinnati, OH

Project: *Assessment of Women With and Without Asthma Exposed to Cleaning Agents in the Home*

The CHEST Foundation and the LUNgevity Foundation Clinical Research Award in Lung Cancer

Since 2002, The CHEST Foundation and the LUNgevity Foundation have jointly sponsored a clinical research award in lung cancer. The objective of this clinical research program is, ultimately, to save the lives of those people afflicted with lung cancer, the nation's leading cancer killer. In 2010, The CHEST Foundation and the LUNgevity Foundation continued to support the second year research projects of the

2009 CHEST Foundation and LUNgevity Foundation Clinical Research Award in Lung Cancer recipients, Dr Johann Brandes and Dr Dennis Wigle.



Past Recipients of The CHEST Foundation and the LUNgevity Foundation Clinical Research Award in Lung Cancer

2009

Recipient: Johann C. Brandes, MD, FCCP
Institution: Emory University School of Medicine and Atlanta VA Medical Center, Atlanta, GA
Project: *CHFR Methylation as Novel Predictor for Chemotherapy Response in Non-small Cell Lung Cancer (NSCLC)*

Recipient: Dennis A. Wigle, MD
Institution: Mayo Clinic College of Medicine, Division of Thoracic Surgery, Department of Surgery, Rochester, MN
Project: *Surgery vs Stereotactic Body Radiation Therapy for Patients With Lung Cancer and Limited Pulmonary Function*

2008

Recipient: Scott L. Shofer, MD, PhD
Institution: Duke University Medical Center, Durham, NC
Project: *Heterogeneity of Microarray-Based Lung Cancer Risk Signature in Patients With Lung Cancer*

Recipient: Christopher G. Slatore, MD, MS
Institution: Portland VA Medical Center, Health Services Research & Development, Portland, OR
Project: *The Association Between Incident Lung Cancer and Hormone Replacement Therapy in a Large Cohort*

2007

Recipient: Patrick Nana-Sinkam, MD, FCCP
Institution: Ohio State University, Columbus, OH
Project: *Circulating MicroRNA as a Biomarker in Lung Cancer*

2006

Recipient: Anil Potti, MD
Institution: Duke University Medical Center, Durham, North Carolina
Project: *A Genomic Strategy to Src Pathway Inhibition in Non-small Cell Lung Carcinoma*

2005

Recipient: Douglas A. Arenberg, MD, FCCP
Institution: University of Michigan Medical School, Ann Arbor, MI
Project: *Profiling the Phenotype of Tumor Derived Stroma Fibroblasts*

2004

Recipient: William Pao, MD, PhD
Institution: Memorial Sloan-Kettering Cancer Center, New York, NY
Project: *Mutational Analysis of the Tyrosine Kinome in Lung Cancer*

2003

Recipient: W. Jeffrey Petty, MD
Institution: Dartmouth-Hitchcock Medical Center, Lebanon, NH
Project: *Targeted Combination Therapy for Lung Carcinogenesis*

2002

(Clinical Research Trainee Award Category—Open to ACCP Affiliate Members)

Recipient: Alexei V. Bogolioubov, MD
Institution: Memorial Sloan-Kettering Cancer Center, New York, NY
Project: *Occurrence of Lung Cancer After Surgical Resection: Impact of New Staging System, Use of Adjuvant Chemotherapy, and Value of Chest CT vs Chest Radiograph*

Recipient: Clinton H. Doerr, MD
Institution: Mayo Graduate School of Medicine, Rochester, MN
Project: *Fluorescence In Situ Hybridization for the Detection of Lung Cancer*

Scientific Abstract Awards

Top Five Posters

Alfred Soffer Research Awards

Young Investigator Awards

The scientific abstract awards comprise three different types of awards: Top Five Poster Awards, Alfred Soffer Research Awards, and Young Investigator Awards. Abstracts of applicants' original investigative work are judged by the Scientific Presentations and Awards Committee. Finalists present their studies during the CHEST annual meeting. In 2010, The CHEST Foundation conferred \$18,500 in abstract awards.

2010 Scientific Presentations and Awards Committee

The Scientific Presentations and Award Committee is led by Jeana D. O'Brien, MD, FCCP, Chair, and Namita Sood, MD, FCCP, Vice-Chair. It includes the following ACCP members: Dahlia A. Blake, MD, FCCP; Christopher L. Carroll, MD, FCCP; Feroza M. Daroowalla, MD, FCCP; Maria L. Jison, MD, FCCP; Christina C. Kao, MD, FCCP; John P. Kress, MD, FCCP; Deborah Jo Levine, MD, FCCP; Muthiah P. Muthiah, MBBS, FCCP; Kevin O'Neil, MD, FCCP; William Rodriguez-Cintron, MD, FCCP; and Charlie Strange, MD, FCCP. Luis Angel, MD, FCCP, serves as ex officio member.

Top Five Posters Semifinalists

The Top Five Posters will be selected at CHEST 2010. The semifinalists will be evaluated on their written abstract, as well as the quality of their poster presentation during CHEST 2010. All categories are eligible. The winners of the Top Five Posters will each receive \$500. The semifinalists are:

Renee C. Benson, MD

Children's Hospital & Research Center Oakland
Oakland, CA

William D. Carroll, MD

Derbyshire Children's Hospital
Derby, England

Caroline Chapman, MD

University of Nottingham
Nottingham, England

Jesse Greer, MD

Walter Reed Army Medical Center
Washington, DC

David S. Hui, MBBS, FCCP

The Chinese Univeristy of Hong Kong
Shatin, Hong Kong

David Lieberman, MD

Soroka Medical Center
Beer Sheba, Israel

Rita Mukerji, MD

University of Missouri Health Sciences Center
Columbia, MO

Yong-Ho Roh, MD

Seoul Veterans Hospital
Seoul, South Korea

Roopa Siddaiah, MBBS

Children's Medical Center
at Winthrop University Hospital
Mineola, NY

Ji-Young Son

Yonsei University College of Medicine
Seoul, South Korea

Alfred Soffer Research Awards

Two \$1,500 awards are granted to the winners and four \$1,000 awards are granted to the semifinalists submitting abstracts to CHEST 2010. Semifinalists are evaluated on the basis of their written abstract and the quality of their oral presentation during CHEST 2010. Award recipients are selected for their outstanding original scientific research by judges from the Scientific Presentations and Awards Committee of the ACCP. Primary authors are considered for all abstract-related awards but may win only one award. This award is named in honor of Alfred Soffer, MD, Master FCCP, who was Editor in Chief of *CHEST* from 1968 to 1993, and Executive Director of the ACCP from 1969 to 1992. The CHEST 2010 semifinalists are:

Sneh Arora, PhD

All India Institute of Medical Sciences
New Delhi, India

Christopher L. Carroll, MD, FCCP

Connecticut Children's Medical Center
Hartford, CT

Mary E. Cataletto, MD, FCCP

Winthrop University Hospital
Mineola, NY

Lee E. Morrow, MD, FCCP

Creighton University Medical Center
Omaha, NE

Matthew J. Schuchert, MD

University of Pittsburgh Medical Center
Pittsburgh, PA

Ran Wang, MD

Department of Respiratory Medicine, Tongji Hospital,
Tongji Medical College
Hefei, PRC

Young Investigator Awards

A total of \$9,000 will be granted to six abstract semifinalists at CHEST 2010 in this category. The top two winners will each receive \$2,000, and the remaining four will each be awarded \$1,250. Investigators must be enrolled in a training or fellowship program or have completed a fellowship program within 5 years prior to CHEST 2010. Semifinalists are evaluated on the basis of their written abstract and their presentation at CHEST 2010. Primary authors are considered for all abstract-related awards but may only win one. Award recipients are selected for their outstanding original scientific research by judges from the Scientific Presentations and Awards Committee. The CHEST 2010 eligible participants are:

Fatima Anjum, MD

SUNY Downstate Medical Center
Brooklyn, NY

Laura C. Barber, MD

East Carolina University
Greenville, NC

Ara Chrissian, MD

Washington University School of Medicine
St Louis, MO

Kevin Doerschug, MD, FCCP

University of Iowa, Roy J. and Lucille A. Carver
College of Medicine
Iowa City, IA

Manish Joshi, MBBS, FCCP

Central Arkansas VA Healthcare System
Little Rock, AR

Michelle Kompare, MD

University of Iowa Children's Hospital
Iowa City, IA

Takahiro Nakajima, MD

Toronto General Hospital, Division of Thoracic
Surgery, University Health Network
Toronto, ON, Canada

Abdelbaset Mohamed Saleh, MD

Mansoura University
Mansoura, Egypt

*For more information about these awards, contact
Robb Rabito at rrabito@chestnet.org.*

CHEST Challenge

CHEST Challenge is an educational and fun activity created to maximize affiliate involvement in the ACCP. The initial phase is an online contest. Fellows-in-training from all pulmonary/critical care training programs nationwide and internationally were invited to take the online test, with the nine top-scoring teams competing in the live semifinal rounds in Vancouver. The winner of each round will go on to compete in the championship event on Wednesday evening.

CHEST Challenge Play-offs

Monday, November 1

Maimonides Medical Center

Prashant Gundre, MBBS
Arjun Madhavan, MBBS
Kavan Ramachandran, MBBS

University of California San Francisco at Fresno

Chitra Kandaswamy, MBBS
Baljinder Sidhu, MD

University of Missouri – Columbia

Shilpa Patel, MBBS
Casey Stahlheber, MD

Tuesday, November 2

Baylor College of Medicine

Soma Jyothula, MBBS
Amarbir Mattewal, MD
Vishal Sawhney, MD

Indiana University Pulmonary & Critical Care Training Program

Radek Dutkiewicz, MD
Michael Muzoora, MBChB
Brent Toney, DO

New York Methodist Hospital

Adebayo Esan, MBBS
Neil Ninan, MD
Vishal Patel, MBBS

Wednesday, November 3

East Tennessee State University

Nisrine Bou Malhab, MD
Mayur Patel, MD
Abhijit Raval, MD

National Capital Consortium Pulmonary and Critical Care Fellowship Program

CPT Matthew Aboudara, MC, USN
LT Gregory Fuhrer, MC, USN
LT Scott Parrish, MC, USN

San Antonio Uniformed Services Health Education Consortium

Capt Shawn French, MC, USAF
MAJ Herbert Kwon, MC, USA
Capt Mehdi Shelhamer, MC, USAF

CHEST Challenge Championship and Awards Celebration

Wednesday, November 3, 2010

6:00 pm – 9:00 pm

CHEST Challenge Championship and Awards Celebration

CHEST Challenge Committee

LTC William Kelly, MC, USA, FCCP, Chair
Sonja Bartolome, MD, FCCP
Gabriel Bosslet, MD
John Buckley, MD, FCCP
James Carroll, MD, FCCP
Kevin Chan, MD, FCCP
Michael Ezzie, MD, FCCP
Nader Kamangar, MD, FCCP
Tim Lahm, MD
Mark Regan, MD, FCCP
Cristina Reichner, MD, FCCP
Kanta Velamuri, MBBS, FCCP

The Championship is supported by a grant from AstraZeneca LP.

For more information about CHEST Challenge, contact Jenny Nemkovich at jnemkovich@chestnet.org.

**PROGRESS SUMMARIES FROM
THE CURRENT CHEST FOUNDATION
DISTINGUISHED SCHOLARS**

2007 Award Recipient

Sidney S. Braman, MD, FCCP
Warren Medical School of Brown University
Division of Pulmonary and Critical Care Medicine
Providence, RI

Project: The ACCP Chronic Care Model for COPD and Its Comorbidities: An Initiative for Primary Care Physicians and Other Health-care Providers To Improve the Quality of Life and Health Outcomes for Patients With COPD

The project entered its third and final phase over the past year. Since the last report, a number of events have occurred to ensure completion of the disease management program using the COPD chronic care model. The demonstration site chosen was The Bristol Medical Center in Bristol, RI, described in my previous report. The following occurred:

1. Two COPD educational meetings have been held with the primary care practitioners of the Bristol Medical Center to prepare them for this project.
2. The COPD Primary Care Handbook that I wrote was distributed to all primary care healthcare providers.
3. Quality indicators of adherence to the disease management program were chosen for the project by the clinicians themselves.

They include:

- a. Smoking cessation advice
 - b. Administration of influenza and pneumococcal vaccines
 - c. Patient taking long acting bronchodilator (with or without ICS)
 - d. Action plan given for an acute exacerbation of COPD
 - e. Patient education materials given to patient
 - f. Assessment of COPD comorbidity (hemoglobin level, fasting blood sugar, bone density study, electrocardiogram and cardiac risk assessment)
4. Two spirometry clinics a week have been active since February 2010 (over 90 patients screened). Patients known to have COPD and those felt by their primary care provider to be at risk for COPD were identified and a COPD patient registry was begun (patients with post bronchodilator airflow obstruction and an FEV₁ of 60% predicted or less). Of the 90 patients screened, 33 patients met GOLD

criteria for COPD with an FEV₁/FVC less than 70%. Only 13 patients of the this entire group had an FEV₁ percent predicted less than 60% and, therefore, were eligible for entry into the registry through As a result of this low yield, patients are now being identified for the registry through the EMR (diagnosis of COPD) and are being sent for spirometry to confirm the diagnosis.

5. After Institutional Review Board approval was received patients who were being included in the COPD registry participated in the research component of the project. Each patient completed: (1) a patient satisfaction questionnaire; (2) the St Georges Respiratory Questionnaire; and (3) a depression scale. This will be repeated after they are in the project 1 year.
6. Primary care practitioners were informed that their patient was in the COPD registry and they were given the results of the depression assessment.
7. The disease management program (based on the COPD Chronic Care Model) has been added to the Bristol Medical Center electronic medical record (EMR). During each encounter with a patient in the registry, the computer screen identifies the patient as being in the "COPD Project." The quality indicators are listed, and it is anticipated that this will ensure adherence to the program. This will be assessed 6 months after the patient is entered into the registry and, if needed, a reminder will be sent to the clinician. At 1 and 2 years, I will make an assessment using the EMR data regarding clinician adherence to this disease management program.
8. I have reviewed the evidence that supports the use of a chronic care model for COPD, such as the one I have initiated through this GSK Distinguished Scholar in Respiratory Health Award, and published my findings in a peer-reviewed journal: Braman SS, Lee DW. Primary care management of chronic obstructive pulmonary disease: an integrated goal-directed approach. *Curr Opin Pulm Med.* 2010; 16(2):83-88.

2008 Award Recipient

Henry S. Bussey, PharmD, FCCP
The University of Texas at Austin
Division of Pharmacotherapy, College of Pharmacy
University of Texas Health Science Center
San Antonio, TX

Project: A Superior Method of Oral Anticoagulation Management To Substantially Reduce Event Rates, Improve Quality of Life, and Reduce Health-care Costs

Overview: The initial proposal “A Superior Method of Oral Anticoagulation Management To Substantially Reduce Event Rates, Improve Quality of Life, and Reduce Health-Care Costs” is the focus of the work supported by the GSK Distinguished Scholar in Thrombosis Award. The first study outlined in the proposal was completed at the end of May 2010, and data are currently being analyzed. An interim analysis of the data just before the study was completed revealed a level of improvement in control of the International Normalized Ratio (INR) not previously achieved (Tables 1 and 2), with substantial improvement in the ease and efficiency of anticoagulation management.¹ Patient survey data indicate improved quality of life, less utilization of time and resources, and improved patient satisfaction.² Clinical sites are currently being sought to implement the new management approach in order to validate the results in other settings.

Background: If optimally managed, vitamin K antagonist (VKA) therapy is very effective in preventing stroke, myocardial infarction, deep vein thrombosis, pulmonary embolism, and other potentially catastrophic thromboembolic events; and it carries a major bleeding risk approximately equivalent to taking an aspirin daily.³ Unfortunately, VKA management continues to be a problem in most settings. Although thromboembolism and major bleeding rates are very low when the INR is kept within the therapeutic range, the risk of such adverse events increase exponentially as the INR moves further out of the target range.^{4,5} Unfortunately, even in randomized control trials, the time that the INR is kept within the therapeutic range (TTR) is often only about 50%;⁵⁻⁷ and the majority of the events occur while the INR is out of range.^{5,8} Analysis of data from a large anticoagulation clinic⁹ the pooled analysis of two large randomized studies,¹⁰ and a recent large trial,¹¹⁻¹³ indicate that the 25% to 33% of patients with the poorest INR control have substantially higher major event rates to the degree that treatment may be causing more harm

than good (Table 3). There are several new oral anticoagulants in development, and one such agent, dabigatran, was recently reported to be noninferior and, possibly, superior to warfarin. Further analysis, however, revealed that the 50% of patients with the best INR control (ITTR > 67%) had substantially lower event rates than those treated with dabigatran (Table 4). Available data, therefore, would suggest that improving INR control has the potential to reduce thromboembolism, major bleeding, and death by approximately 50% and provide a superior form of therapy compared to current warfarin therapy or the new agents in development. An interim analysis indicates that the optimal use of current technology can achieve such optimal INR control while substantially reducing the time and resources required for VKA management and improving patient satisfaction and quality of life.^{1,2}

Current Study Methods and Interim Results:

The “Triple Intervention Study of Daily Low Dose Vitamin K, Frequent INR Self-Testing, and Automated Online Management” was a “before and after” design study to compare INR control for the 6 months before entering the study vs 12 months of “triple intervention.” Self-testing was performed using the CoaguChek (Roche Diagnostics, Indianapolis, IN), vitamin K was provided as 100 mcg tablets (General Nutrition Centers, Pittsburgh, PA), and the automated online management was achieved using ClotFree (Genesis Advanced Technologies, Inc., Lakehills, TX).

Sixty-three patients from 11 medical practices were enrolled in the trial, but 8 were excluded (4 withdrew consent in the first week, 3 were protocol violators, and 1 discontinued warfarin on day 11). Improvement was seen in all measures of INR control (Tables 1 and 2) and clinician management time averaged 8.94 min (range 4 to 13 min) per four virtual visits. Patient survey data revealed that 90% of patients preferred this new method of management and that it eliminated an average driving distance of 20 miles per visit while

reducing the time for each “visit” by approximately 100 min. The percent of patients who indicated that they would recommend anticoagulation therapy to a friend with the same condition increased from 62% before starting the study to 100% during the study.

Other studies attempting to improve INR control have reported approximately a 10% improvement in INR control (Table 1).¹⁴⁻¹⁷ The interim analysis of this study, however, reflects more than a 22% improvement from 56.83% vs 79.65% TTR (Table 1). Because a slight deviation from the target INR range probably carries minimal risks, we also evaluated the time spent in a therapeutic range that was expanded by 0.3 INR units (TTR +/- 0.3). The prestudy INR control of 82.55% TTR +/- 0.3 INR units is surprisingly good, but the 93.57% in-study value is exceptional (Table 1). Lastly, because the event rates increase exponentially as the INR falls below 1.5 or rises above 5, we evaluated the time at these extremes and found that such wide deviations were all but eliminated during the study period (0.40% time < 1.5 and 0.07% time > 5). The degree of INR control in this interim analysis is better than three somewhat similar recent studies;¹⁵⁻¹⁷ and it is better than the INR control in our own clinic (Table 1).¹⁸

Because recent evidence has pointed out that the individual's time in the therapeutic range (ITTR) may vary widely within a given group of patients, we also evaluated the ITTR changes seen during this study (Table 2). In the analysis by White, et al.,¹⁰ patients with an ITTR of 75% or more had a 50% lower major event rate than did patients with an ITTR < 60%. We, therefore, assessed the number and percent of patients in these categories. The number of patients with an ITTR > 75% more than tripled from 11 before the study to 39 during the study. Similarly, the number with an ITTR in the expanded range (+/- 0.3 INR units) also more than tripled from 17 before the study to 55 (100%) during the study. The number of patients with an ITTR < 60% was reduced by almost 90% from 30 patients before the study to 4 patients during the study; and, when the therapeutic range was expanded by +/- 0.3 INR units, 7 patients had an ITTR < 60% prior to the study but none had an ITTR < 60% during the study.

Based on the differences in event rates with ITTR > 75% vs ITTR < 60% reported by White et al.,¹⁰ and the estimated costs of these events, we estimated that the improved INR control in the current study would prevent approximately 65 major events per 1,000 patients per year (Table 5) at a savings of just over \$4 million (Table 6).

Clinician time required for managing patients under the “Triple Intervention Approach” was evaluated in the interim analysis. A time of 1 min was assigned to each automated virtual visit (VV), and the time was recorded for the remaining VVs that required clinician review. A review of time required for all VVs during a single month at midstudy revealed that the average amount of clinician time required to manage four VVs per patient per month was 8.94 min (an average per VV of less than 2.3 min). This time requirement is almost identical to that reported in a similar study,¹⁷ and it compares quite favorably with the 15 to 20 min that is required for a clinic visit or the 10 min or more that is required for telephone follow-up (which also introduces the risk of miscommunication and incomplete documentation).

Other factors that are being evaluated in this trial are the influence of hepatic CYP 2C9 and VKORC1 genetic polymorphisms on patient responsiveness to daily low dose vitamin K and the measured vitamin K content of the vitamin K tablets. These factors will be reported later.

Discussion. The 22% improvement in INR TTR and the more than three-fold increase in the number of patients who achieved an ITTR > 75% is very exciting in view of the fact that in three large studies, this degree of improved INR control was associated with approximately a 50% lower rate of stroke, myocardial infarction, major bleeding, and death. It is projected, therefore, that 65 such events per 1,000 patients could be prevented each year with this method of management for an annual savings of more than \$4 million dollars. Further, this method of management reduces both clinician time and patient time required for management, eliminates much of the overhead associated with clinic visits, and improves patient satisfaction and quality of life.

Ultimately, we are hopeful that initiatives within the health-care system to optimize the use of technology to improve outcomes and reduce costs will produce new reimbursement models that will make optimal warfarin management more feasible and financially sustainable. The next step in our efforts to develop and refine this method of management will be to have other sites adopt this approach in order to evaluate the degree to which results can be reproduced by other clinicians in other settings.

Those interested in helping to evaluate this system further are invited to contact the author.

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Table 1: Comparison of INR Control in Selected Studies

Study (n)	TTR			TTR +/- 0.3		T < 1.5		T > 5		T < 1.5 or > 5	
	Pre	Study	% Chg	Pre	Study	Pre	Study	Pre	Study	Pre	Study
Ref 14 (732)*	44 - 55	55 - 63	10 (+/-)	61 - 70	73 - 80	44	41 - 45	21	7 - 19		
Ref 15 (132)	60.2	71.4	11.2							6	2.4
Ref 16 (43)	71	80.4	9.4					0.57	0		
Ref 17 (n=102)	55.7	64.9	9.2								
Ref 18 (52)**		69.6			87.8		1.26		0.45		1.71
Ref 1 (53)**	56.83	79.65	22.82	82.55	93.57	2.41	0.40	0.09	0.07	2.50	0.47

Key: TTR = percent of time that INR was within therapeutic range, TTR +/- 0.3 = percent of time that the INR was within the expanded therapeutic range plus/minus 0.3 INR units.

T = percent of time that the INR below 1.5 and/or above 5.

*Data ranges are for different intervention groups, TTR +/- 0.3 reported as +/- 0.75 of target of 3.5, T < 1.5 was reported as % of INRs < 2, and T > 5 was reported as % of INRs > 5.

**In-study data excluded intentional interruption in management.

Table 2: Number and Percent of Patients at Different Levels of INR Control Before and During the Study

	ITTR > 75%			ITTR +/- 0.3			ITTR < 60%			ITTR +/-0.3 < 60%	
	Pre	Study	Change	Pre	Study	Change	Pre	Study	Change	Pre	Study
Patients:	11	39	355%	17	55	324%	30	4	-87%	7	0
No. %	20	70.1		30.1	100		54.5	7.3		12.7	0

Key: ITTR = individual time in the therapeutic range

Table 3. Event Rates by INR Control

Group by %TTR	TE*	Maj Bld	Comb.
Veeger, et al. ⁹ – INR 2.5 to 3.5, n = 2,614			
Top ¾, mean 51% ITTR	1.3*	1.3	2.6
Bottom ¼, <30% ITTR	4.1, RR 2.7	4.1, RR 3.2	8.2, RR 3.2
White, et al. ¹⁰ INR 2 to 3, n = 3,587			
Top 3 rd , >75% ITTR	1.69	1.58	3.27
Bottom 3 rd , < 60% ITTR	3.48, RR 2.1	3.85, RR 2.4	7.33, RR 2.2
Wallentin, L. ¹³ INR 2 to 3, n = 6022			
Top 2 quartiles, > 67.1% ITTR	1.3	2.7	5.3**
Bottom quartile, < 53.4 % ITTR	2.2, RR 1.7	4.6, RR 1.7	11.9, RR 2.2

Key: *Includes ischemic stroke and MI except in Wallentin report.

**Includes stroke, syst. Embolism, MI, PE, death, maj bleed.

RR = Relative risk

ITTR = Individual time in therapeutic range

Table 4. Event Rates vs Treatment and INR Control in Atrial Fibrillation.¹¹⁻¹³

Event (%/yr)	Warf. n=6022	Warf. 4 th Quart.	Warf. 1 st Quart.	Dabig 110 n=6015	Dabig 110 n=6015
Stroke* + SEE	1.69	2.2	1.3	1.53 (NI)	1.11**
Maj Bleed	3.36	4.6	2.6	2.71**	3.11
M.I.	0.53	na	na	0.72	0.74**
Total	5.58	n		4.96	4.96
Death	na	7.5	2.7	na	na
Comp.	7.64	11.9	5.3	7.09	6.91
NNT	23	---	15.2	20.7	20.0

Key: *"Stroke" includes hemorrhagic stroke

**stat. sig. vs warfarin.

Comp = Stroke, systemic embolism, MI, PE, death, major bleeding.

Warf 4th quartile = ITTR < 53.4%, 1st quartile = ITTR > 72%.

NNT = number needed to treat for 1 year to prevent a composite event compared to those in the 4th quartile of INR control

Table 5: Excess Events With Suboptimal INR Control

Events (%/yr)	Top 1/3 vs bottom 1/3, Total n=3587 ¹⁰ (>75% vs < 60% TTR)	Top 1/2 vs bottom 1/4, Total n=6,022 ^{11,13} (>67% vs < 53% TTR)
Stroke* + SEE	10	9
Maj Bleed	8	Not reported
M.I.	22	20
Total	25	50
Death	25	50
Total/Composite	65	66
NNT ^{##}	15.4	15.2

Key: ^{##} Number needed to treat per year to prevent one major event compared to typical INR control.

Comp = Stroke, systemic embolism, MI, PE, death, major bleeding.

Table 6: Estimated Number of Events and Costs per 1,000 Treated Patients per Year with Optimal vs Poor INR Control (ITTR > 75% vs ITTR < 60%)¹⁰

Fewer Events	Cost/Event	Total
Strokes, 10	\$140,000*	\$1,400,000
Heart Attacks, 8	\$147,500*	\$1,180,000
Maj. Bleeds, 22	\$25,000 [#]	\$550,000
Deaths, 25	\$50,000 [#]	\$1,250,000
Total		\$4,380,000

Key: Number of events based on White, et al⁹

*Cost based on 2010 Am Heart Statistics

[#] Rough estimate of cost

2009 Recipient

Steven Q. Simpson, MD, FCCP
University of Kansas School of Medicine
Division of Pulmonary and Critical Care Medicine
Kansas City, KS

Project Title: A Statewide Program To Effect the Timely Diagnosis and Treatment of Severe Sepsis: Application of Evidence-Based Principles in Rural and Urban Settings

Severe sepsis is a frequently deadly disease process that results from acute infection. The condition is defined by three essential elements: known or suspected infection; body-wide manifestations of inflammation, known as systemic inflammatory response syndrome or SIRS; and dysfunction or failure of one or more noninfected organs. Patients with this combination of signs and symptoms historically have a 30% - 50% risk of dying from the acute illness, and the risk is higher—as high as 80%—if shock is present. Severe sepsis is an important healthcare problem across the globe. In the United States, over three quarters of a million patients develop the condition annually, and approximately 500 people die of it every day.

Although severe sepsis is potentially deadly, its lethality can be reduced when it is recognized early and when several key aspects of care are followed, as evidenced by positive results from the Surviving Sepsis Campaign. The 252 participating hospitals were able to collectively reduce their severe sepsis mortality rate by 6.2 %, even though they acted independently and used site-specific quality improvement tools to achieve their goals. On average, hospitals reduced their absolute mortality rate by 0.9% for every calendar quarter that they participated in the campaign. Importantly, over 90% of the hospitals that participated in the campaign had > 250 beds.

The overall purpose of this project is to improve the mortality risk from severe sepsis in the state of Kansas. Kansas is a largely rural state. Over half of the state's population resides in rural areas, compared with a national average of approximately one in four. The population is also geographically dispersed; Kansas is the 11th largest US state, geographically, while its population is 32nd largest. Because the distribution of physicians is even sparser, many of the state's inhabitants suffer from a geographic health disparity. However, Kansas is not alone in this regard; the state is representative of a large swath of the Midwest and Mountain West regions. The majority of Kansas' hospitals are critical access hospitals, having 25 or fewer beds.

With the support of The CHEST Foundation, we instituted a novel program within the state that combines physician, nurse, and hospital participation in performance improvement (PI) around the recognition and treatment of severe sepsis with opportunities for distance learning about severe sepsis and about performance improvement principles. Participants are granted continuing education credit for both components of the program. Credit is granted for the PI component via the pathway approved by the AMA. The PI component also meets the requirements of both the American Board of Internal Medicine and the American Board of Family Medicine for maintenance of certification. We are actively seeking pre-certification/approval of the project by both boards, which would make it even easier for participants to receive maintenance of certification credit.

The initial phases of the project have now been completed. We first developed the infrastructural components to facilitate performance improvement. The Web-based tools include a severe sepsis screener, severe sepsis tracking tools for both smaller (critical access type) hospitals and larger hospitals, and a severe sepsis outcome form. The portal for access to these tools is the MWCCC Web site (www.mwcccare.org/sepsisproject). All tools are designed to be completed rapidly and are pared to the minimum essential information that one would need to diagnose and effectively treat patients with severe sepsis, according to currently accepted guidelines. The database behind the tools is HIPAA-compliant, allowing clinicians to input identifying information and allowing them to track individual patients between referring and referral hospitals, if desired.

Participants are asked to use the tools to evaluate 10 previously admitted patients, to identify problem areas in both recognition and in treatment of severe sepsis patients, and to develop a performance. The PI plan is reviewed with an expert in severe sepsis and quality improvement (the Distinguished Scholar or a designee) and refined before it is initiated. Participants implement the plan while prospectively

collecting screening, tracking, and outcome information for 6 months. The process is then repeated. Participants can earn a total of 40 hours of CME credit for a year of participation in the program.

The project is being piloted in the Northwest Kansas Health Alliance, which is centered at Hays, KS, and is the largest rural health network in the nation, with 28 critical access hospitals supported. Initial recruitment was performed at winter and spring meetings of the Alliance. Hays Medical Center, the supporting hospital, is fully invested in the program, and we have active participation of their

staff physicians, nursing personnel, and hospital administration. To further focus the initial phases of the project, we enrolled physicians in Quinter, KS, who are considered to be thought leaders in the Alliance. Data collection is ongoing at this “pilot within the pilot” site. Already, refinements to our online tools have been made, and other sites are actively coming on board. Meanwhile, other centers outside the Alliance are requesting participation, including physicians and hospitals in other states, and we are actively signing up additional participants.

**RESEARCH SUMMARIES FROM
PREVIOUS AWARD RECIPIENTS**



2009 Award Recipient

Kathleen M. Akgun, MD
Yale University School of Medicine
New Haven, CT

Project: Aging and Critical Illness in HIV-Infected Patients

HIV-infected patients are living longer with combination antiretroviral therapy (cART). Older HIV-infected patients, defined as age 50 years and older, progress to AIDS faster compared with younger HIV-infected patients and have greater mortality rates. As HIV-infected patients are aging, comorbid non-HIV-associated medical diseases are increasingly prevalent. Non-HIV comorbid diseases progress more rapidly and lead to more end-organ dysfunction in HIV-infected patients. In addition to the effects of HIV itself, increased comorbid medical diseases may result in accelerated physiologic aging and increased frailty in aging HIV-infected patients.

Recent studies suggest that intensive care unit (ICU) admission diagnoses for HIV-infected patients have shifted to non-AIDS-associated conditions such as sepsis, exacerbation of obstructive lung disease, pneumonia, and end-stage liver disease. Older HIV-infected patients may be particularly at risk of ICU admission from general medical illness. The impact of aging on ICU admission rate, diagnosis and outcome in HIV-infected patients has not been investigated in the current cART era. The aims of this study are: 1) to determine risk factors for ICU admission in HIV-infected patients, 2) to compare indications for ICU admission between older and younger HIV-infected patients, and 3) to determine risk factors for poor outcomes following ICU admission in HIV-infected patients.

For this research project, we used the Veterans' Aging Cohort Study (VACS). VACS is a large, prospectively-assembled, observational cohort of more than 3,200 HIV-infected patients and more than 3,200 HIV-uninfected patients enrolled at eight different Veterans' Affairs Medical Centers across the United States.

During the first year of this CHEST Foundation award, we found that ICU admission rates increase with age in HIV-infected patients. Compared with HIV-infected

patients not admitted to the ICU, HIV-infected patients admitted to the ICU had more prevalent cardiovascular disease, renal disease, hepatitis C coinfection, and cancer history. In multivariate analysis, we found that age was an independent risk factor for ICU admission in HIV-infected patients. Additional risk factors for ICU admission included: African American race, lower body mass index (BMI), lower physical function score, lower CD4+ T-cell count, higher HIV viral load, prevalent cardiovascular disease or renal disease, history of cancer, and hepatitis C coinfection. Finally, in unadjusted preliminary analysis, we found that HIV-infected patients admitted to the ICU have higher mortality than non-HIV-infected patients admitted to the ICU.

Comorbid, non-AIDS-associated diseases are increasingly prevalent in aging HIV-infected patients. Age and comorbid disease are among the risk factors for ICU admission in HIV-infected patients. Identifying HIV-infected patients at risk of ICU admission may allow earlier intervention that may minimize organ dysfunction and critical illness. Future work with this project includes investigating ICU admission diagnosis, prognosis and outcomes for older HIV-infected patients admitted to the ICU.

The CHEST Foundation Award has allowed me to pursue further training in biostatistics, biostatistics software, and epidemiology, which will contribute to my development as a clinical research investigator. I have enrolled in a Masters Program in Chronic Disease and Epidemiology at Yale University, which will provide me additional training necessary to further pursue a successful academic career as an independent clinical research investigator. Finally, I have had the opportunity to present work related to this project at international scientific meetings, as well as within my own institution.



2009 Award Recipient

Elie Akl, MD, MPH, PhD

University of Buffalo

Division of General Internal Medicine and Department of Family Medicine

Buffalo, NY

Project: Developing and Pilot Testing a Novel Outcome Performance Measure for the ACCP Recommendations for the Prophylaxis and Management of Venous Thromboembolism

A systematic review of the medical literature found that among patients with cancer who suffered a venous thromboembolic event (VTE), low molecular weight heparin (LMWH), compared to vitamin K antagonists (VKA), provides a statistically significant reduction in the recurrence of venous thromboembolism. Accordingly, the American College of Chest Physicians (ACCP) has strongly recommended at least 3 months of treatment with LMWH for patients with VTE and cancer, followed by treatment with LMWH or VKA as long as the cancer is active.

Our first goal is to involve oncological patients who have a newly diagnosed VTE in the decision making related to the long-term management of their VTE. From the clinical care point of view, patient involvement is crucial in this particular decision because it is sensitive to personal values and preferences. For example, a patient who has a strong preference for avoiding daily injections may opt for oral anticoagulation despite the proven superiority of LMWH in preventing recurrent VTE. As long as this decision is an informed one, it should not be considered contradictory to the standard of practice; it actually takes into account both the recommended standard of practice and the patient values and preferences.

Our second goal is to develop a tool enabling performance measurement for an ACCP management recommendation that is sensitive to patient values and preferences. As stated above, a patient who has a strong preference for avoiding

daily injections may opt for oral anticoagulation despite the proven superiority of LMWH. From the performance measurement point of view, simply recording that the patient care was not in compliance with the ACCP recommendation would be unfair and misleading. Unfortunately, this is current practice by those developing performance measures and pay for performance programs. A better way to measure performance for such a value sensitive decision would be to explicitly document that the healthcare provider engaged the patient in an informed decision making process for that particular decision.

We are achieving our goals using a multifaceted intervention targeting patients, attending physicians, and residents. The main intervention consists of the use of a decision aid to assist patients with cancer and a newly diagnosed VTE to decide on the type of long-term anticoagulation, ie, LMWH vs oral anticoagulation. We are using the following additional interventions to train physicians in the use of the decision aid: an educational game focusing on the recommendations of the ACCP VTE guidelines (for residents); case-based sessions about integrating patients values and preferences in the decision making process (for attending and residents); and training sessions about the use of the decision aid (for attending and residents).



2009 Award Recipient

Ghada R. Bourjeily, MD, FCCP
The Warren Alpert Medical School of Brown University
and the Women & Infants Hospital
Providence, RI

Project: Differences in Respiratory Parameters During Sleep in Pregnant Women Compared to Matched Nonpregnant Controls

Progesterone is one of the main hormones responsible for maintaining pregnancy. Circulating levels increase very early in gestation and continue to rise until delivery. Progesterone, a strong respiratory stimulant, upregulates the ventilatory drive by stimulating the chemoreceptors located on the ventrolateral surface of the medulla (Lyons HA 1976, White DP 1983) and leads to an increase in minute ventilation and a resultant drop in arterial carbon dioxide pressure (P_{CO_2}) to about 27-32 mm Hg and respiratory alkalosis. It is well recognized in the nonpregnant population that hypocapnia and respiratory alkalosis may lead to central apneas during NREM sleep if the P_{CO_2} falls below the apnea threshold (Javaheri S 1999). However, no conclusive evidence currently exists to establish whether respiratory alkalosis seen in pregnancy is associated with central apneas. It also is not clear how and whether this strong respiratory stimulant affects the respiratory response to obstructive events in pregnancy.

Snoring is a common finding in pregnancy and has been associated with adverse pregnancy outcomes (Bourjeily G 2010). Preliminary evidence suggests that the incidence of sleep-disordered breathing (SDB) is low in pregnant snorers (Sahin FK 2008). These data suggest that flow limitations in pregnancy may be an important finding and may be associated with adverse outcomes.

The main goals of this study are to determine whether pregnant women suspected of having SDB are more likely to have central apneas or flow limitations when compared with age, gender, BMI, and disease severity-matched nonpregnant controls and to evaluate the difference in respiratory parameters in response to obstructive events in these two groups.

Controls have been identified to match pregnant women suspected of having OSA recruited for another study by searching the polysomnography laboratory database. Scoring of each polysomnography study was performed by two independent scorers. Apneas, hypopneas, respiratory effort related arousals were defined according to AASM criteria. Flow limitations that do not meet above criteria were defined as either (1) reduction in flow of 10 s or longer without arousals or desaturations; or (2) reduction in flow for less than 10 s that are associated with either arousals or 1 or 2% desaturation.

To answer the question on the difference in respiratory parameters among the pregnant and nonpregnant controls, patients with severe disease were excluded. An analysis of respiratory parameters of all obstructive events occurring outside of rapid eye movement (REM) sleep in both groups is currently being done. Preliminary data do not appear to show an increase in the incidence of central apneas in the pregnant group compared to the control group. Data on flow limitations are currently being analyzed.

The CHEST Foundation research award has allowed us to obtain preliminary data on sleep parameters in pregnancy. These data will help with future funding that would allow us to analyze sleep characteristics in pregnancy. This research will direct further research in women's health in answering questions regarding relevant polysomnographic findings.



2009 Award Recipient

Johann C. Brandes, MD, FCCP
Atlanta VA Medical Center and Emory University School of Medicine
Hematology and Oncology
Atlanta, GA

Project: CHFR Methylation as Novel Predictor of Chemotherapy Response in Advanced NSCLC

Non-small cell lung cancer (NSCLC) remains the most deadly malignancy and the most common cause of cancer death. Response rates to chemotherapy in advanced NSCLC remain disappointing. The identification of predictive biomarkers for sensitivity to particular chemotherapeutic agents promises to increase response rates and survival and to decrease unnecessary toxicity. Markers currently under investigation such as ERCC1 have not been shown to be associated with a survival advantage in prospective randomized trials. The current study is built on new exciting data that methylation of the gene CHFR strongly predicts survival and clinical response after taxane-based neoadjuvant combination therapy in esophageal cancer. CHFR is methylated in about 15% of all NSCLC. We hypothesize that CHFR methylation predicts response to taxane-based chemotherapy. We have assembled a retrospective cohort of 220 patients treated at the Atlanta VAMC between 2000 and 2007 for incurable NSCLC with platinum taxane combination chemotherapy. We have established the clinical characteristics of this cohort by chart review.

As expected, most study subjects are men with a current or former smoking history. Although EGFR mutational analysis or analysis for EML4-Alk translocation has not been performed, the clinical characteristics suggest that those novel targetable molecular markers are likely to be infrequent in this cohort. In fact, we believe that the cohort is a good representation of the typical lung cancer patient for whom conventional chemotherapy will remain the standard of care. The observed median overall survival in this "real-life cohort" of 6-7 months falls short of median overall survival rates that are commonly observed in current clinical trials in advanced NSCLC, likely due to the inclusion of patients with poorer performance status and elderly patients.

We have developed and optimized a real-time methylation-specific PCR (MSP) for the quantitative detection of CHFR methylation in paraffin embedded tissue. Furthermore, our coinvestigators in pathology have received a list with all histopathology numbers of the patients' tissue specimens. We anticipate that the final molecular analysis can be performed in the next 2 to 3 months.

This project has had an impact on my career as a clinical researcher. The identification of CHFR methylation as a predictor of response to chemotherapy with taxanes forms one cornerstone on which I am planning to build my career toward full independence as a researcher. The results of this retrospective study will allow for a prospective study in which patients will get assigned to individualized chemotherapy on the basis of their CHFR methylation status. Moreover, in patients with unmethylated tumors, CHFR could serve as a molecular target to overcome taxane resistance. We have preliminary data that CHFR function can be disrupted by treatment with Poly-ADP-Ribose Polymerase (PARP) inhibitors, and this observation forms the basis for a complementary project funded jointly by the Uniting against Lung Cancer and the LUNgevity Foundations. It is my expectation that these two projects will allow me to design prospective studies of treatment with taxanes in CHFR methylated and combination treatment with taxanes and PARP-inhibitors in CHFR unmethylated patients. I also expect that these projects would be competitive for independent funding through NIH R-award or VA merit award mechanisms.



2008 Award Recipient

Jeffrey C. Horowitz, MD, FCCP
University of Michigan Medical School
Division of Pulmonary and Critical Care Medicine
Ann Arbor, MI

Project: Myofibroblast Fate Determination by Extracellular Matrix Interaction

Idiopathic pulmonary fibrosis (IPF), a disease of the elderly for which there is no effective treatment, results from a dysfunctional repair process following lung injury. Myofibroblasts are critical effectors of fibrosis which accumulate in fibroblastic foci, the active lesions of pulmonary fibrosis. Myofibroblast apoptosis is necessary for the resolution of normal wound-repair responses, and we have hypothesized that their accumulation in IPF is due, in part, to resistance to apoptotic stimuli. Our previous studies have defined mechanisms by which soluble fibrogenic mediators promote myofibroblast survival, but the role of signaling from the extracellular matrix (ECM) in the regulation of myofibroblast fate has not been shown.

This study was undertaken to examine how ECM biomechanics regulate fibroblast fate and to define the temporal relationships between lung compliance following injury and pulmonary fibrogenesis. Using the murine model of bleomycin-induced pulmonary fibrosis, we found that decreased lung compliance is associated with increased lung fibronectin and precedes the establishment of fibrosis. A similar temporal pattern of increased lung stiffness was observed in lung tissue strips harvested following intratracheal bleomycin treatment.

To determine how ECM stiffness affects myofibroblast survival signaling and apoptosis, we cultured normal lung fibroblasts on polyacrylimide gels engineered to have shear moduli similar to the stiffness of either normal or fibrotic lung parenchyma. Cells were either untreated or exposed to a stimulus of apoptosis in the presence or absence of TGF- β 1 and we assessed apoptosis and the activation of pro-survival signaling pathways involving focal adhesion kinase (FAK) and AKT. These studies

showed that fibrotic-range ECM stiffness promotes activation of FAK and AKT while reducing spontaneous apoptosis. Susceptibility to Fas-mediated apoptosis decreased with increased matrix stiffness while apoptosis induced by plasminogen was not affected by matrix stiffness. Finally, the ability of TGF- β 1 to reduce apoptosis and promote myofibroblast differentiation and activation declined as ECM stiffness increased, suggesting that fibrotic-range ECM stiffness could maintain the myofibroblast phenotype even in the absence of a soluble fibrogenic mediator.

IPF is a devastating disease with no effective therapy. Our studies show that ECM biomechanics can regulate mesenchymal cell signaling and susceptibility to apoptotic stimuli, thereby potentially contributing to the inappropriate accumulation of these cells within the fibrotic lung. Moreover, our studies suggest that the loss of lung compliance precedes collagen accumulation and, therefore, may contribute to fibrogenesis. Interventions targeting mechanisms by which myofibroblasts sense and respond to changes in matrix stiffness may have the potential to arrest, or even reverse the progression of pulmonary fibrosis.

The CHEST Foundation award has contributed to my development as a physician-scientist through the provision of resources facilitating the expansion of my research program to study the relationship between matrix biomechanics, cellular phenotypes, and lung physiology. Data generated during this funding period are the foundation of an R-01 proposal recently submitted to the NIH. Finally, funding-related activities have afforded me the opportunity to participate in focused career development seminars and networking, opening the doors for future collaborative efforts.



2008 Award Recipient

Shirley F. Jones, MD, FCCP
Scott and White Memorial Hospital/Texas A& M Health Sciences Center
Division of Pulmonary, Critical Care and Sleep Medicine
Temple, TX

Project: Understanding the Relationship Between Sleep, Circadian Rhythm, and ICU Delirium

ICU delirium is a frequent complication associated with poor outcomes including prolonged hospital stay, institutionalization, and mortality. Despite its enormous impact, the etiology of ICU delirium remains largely unknown but a relationship between alterations in sleep and the sleep-wake circadian rhythm is suggested. Our study examines the role of sleep and circadian rhythm dysfunction on the development of ICU delirium. We hypothesize that characteristics of sleep (efficiency) and circadian rhythms (amplitude and regularity) will differ between subjects with and without delirium. In our study, we perform electroencephalography and measure core body temperature and melatonin, markers of the underlying circadian rhythm. Delirium assessments are performed using the Confusion Assessment Method for the ICU (CAM-ICU).

I have learned a tremendous amount in the last 2 years. In the first year, our efforts examined research methods, which included designing novel ways to train individuals to perform the CAM-ICU. By using a standardized patient program and case simulation, we devised a training video that can be used for future studies and to ensure valid and reliable assessments among members of our team. Our study opened for enrollment in February 2009 and to date, we have accrued approximately 50% of our target. A preliminary analysis was performed which included 15 subjects; 80% (n=12) of subjects were delirious at least once during hospitalization. The average ICU length of stay for delirious subjects was 6.5 days compared to 2 days for the never delirious. Severity of illness (APACHE II) was similar between groups. Sleep efficiency was greater in the delirious

group (72.2% SE 19.95) than the never delirious group ($p < 0.0001$). The difference in sleep efficiency persisted after adjusting for covariates. The study is ongoing, and we aim to complete enrollment in the upcoming year. Future analyses will determine whether this pattern persists and will test whether differences in circadian rhythms exist between groups. Results from this study will generate original manuscripts for publication and preliminary data for additional funding.

The ASP-CHEST Foundation of the American College of Chest Physicians Geriatric Development Research Award has given me an opportunity to develop into an independent investigator. In the last 2 years, I have gained valuable research skills and knowledge from direct mentoring sessions with experts in gerontology, critical care, and sleep medicine. Through collaborations within and outside our institution, we have identified additional research opportunities in the areas of delirium, sleep measurements in the critically ill, and critical care outcomes. We are currently examining novel methods aimed to improving the care of ICU survivors with an emphasis on those diagnosed with delirium. Our program will track longitudinal outcomes in this population. I look forward to advancing research in the areas of delirium, sleep, and outcomes research.

The results of this study will provide data to advance the prevention and treatment of delirium using both pharmacologic and nonpharmacologic means. We hope that our efforts will improve the care of survivors of critical illness and delirium



2009 Award Recipient

Timothy A. Morris, MD, FCCP
University of California, Division of Pulmonary and Critical Care Medicine
San Diego, CA

Project Title: User-Friendly Venous Thromboembolism Prophylaxis

Dr Morris condensed the 73-page “Prevention of Venous Thromboembolism” chapter of the 8th American College of Chest Physicians Evidence-Based Clinical Practice Guidelines (*CHEST* 2008;133:381S-453S) into a Web-based algorithm with which clinicians could design VTE prophylaxis order sheets for their home institutions. He piloted the program at individual health-care institutions and at a special display booth at the CHEST 2009.

Over 30 participants who represented separate institutions provided feedback to the first version. The comments demonstrated that the strength of the algorithm was its flexibility, which allowed clinicians a wide range of choices about how to put the guidelines into operation. At one extreme, they could adopt every recommendation item verbatim, without reviewing any of the supporting information. However, clinicians also had the option of linking to the supporting text from the recommendation manuscript itself, as well as the primary data referenced in the manuscript. Since the clinicians themselves needed to “buy into” the algorithms to maximize their usage locally, they were given the option of modifying the recommendations to fit their own local standards of care. If clinicians chose to modify the recommendations at their institutions, then they had to acknowledge that they were doing so and document their reasons.

The first wave of participants requested that clinicians be given the option to generate a simpler, albeit less

precise, set of VTE prophylaxis orders that would be more straightforward and easier to insert into a printed order sheet. To accommodate those requests, Dr Morris redesigned the Web-based program. The new version of the program allows clinicians to select a “granular” order sheet format or a “smoothed” set, after they have gone through the process of reviewing the recommendations themselves. Of note, the choice between brevity and precision could be obviated with the use of individualized computerized decision-support systems, which are currently being explored.

Additional features of the new version of the program are some stylistic upgrades that make it easier to use. For example, the user can perform the process over several different sessions. The program directs him/her to the appropriate place upon “re-log in” and highlights the unfinished topics in the review.

The efficacy of the decision support program will be studied as an educational intervention in the ACCP VTE Prophylaxis Performance Improvement Project. Subjects will use the program to help design and utilize VTE prophylaxis algorithms in their home institution that are based on the latest recommendations from the ACCP guidelines. The performance improvement project will study the effect of the decision support program on the participants’ consistency and appropriateness of VTE prophylaxis.



2009 Award Recipient

Viswam S. Nair MD
Stanford University School of Medicine
Divisions of Pulmonary & Critical Care
Palo Alto, CA

Project: Glycolytic Gene Expression, ¹⁸F-FDG PET Uptake and Prognosis in Patients With Resected, Stage I Non-small Cell Lung Cancer

FDG-PET imaging is the current standard of care for pre-operative staging of non-small cell lung cancer (NSCLC). In addition to defining the location and extent of disease, ¹⁸F-fluorodeoxyglucose (FDG) uptake predicts poor outcome for patients with early-stage NSCLC. The Warburg Effect, as defined by aberrant aerobic glycolysis, has established the biologic mechanism for increased FDG uptake in tumors, but the genetic basis of Warburg's theory has not been previously investigated in lung cancer. We explored the expression of glycolytic genes in a homogeneous group of patients with NSCLC and examined their relationship to FDG uptake and patient outcome.

We examined the clinical, FDG-PET and gene expression characteristics of a 27 patient cohort consisting of 28 stage I, formalin-fixed-paraffin-embedded tumor specimens primarily of adenocarcinoma histology. A candidate gene-based approach was used to develop an array of 10 genes fundamentally involved in glycolysis and gene expression was assayed using multiplex qRT-PCR. Copy number differences for gene transcripts were correlated to FDG uptake as measured by a standard uptake value (SUV) and compared with patient outcome using Cox-proportional hazards modeling.

The average age for this cohort was 69 years (± 10.1), and mean tumor size was 2.9 cm (± 1.4). Forty-two percent of patients recurred and 29 percent died during an average follow-up of 35 months. Twenty-five specimens had associated SUV data and 23 had quantifiable gene expression. Mean tumor SUV was

6.3 (± 4.4), and tumor SUV was associated with decreased survival despite the small sample size (CI 1.41, HR 1.07-1.85). Examination of gene expression indicated that CAIX was both the most variably and abundantly expressed. HK2, GLUT1, and LDHA correlated modestly with SUV and while no one gene significantly predicted increasing SUV, CAIX and LDH showed an association with poor outcome.

These results indicate that tumor SUV was a stronger predictor of death compared to an array of glycolytic genes involved in FDG metabolism that are thought to be up-regulated during tumor development. Surprisingly, these same genes correlated only modestly with SUV. Although a lack of power and post-translational modification of transcripts could partly explain these findings, it is possible that FDG uptake may be a surrogate for additional cell derangement beyond that of glycolytic hypermetabolism alone.

Understanding the fundamental molecular and genetic differences that drive tumor development in humans is crucial for preventing and curing cancer. This award provided by The CHEST Foundation has allowed the investigator, who has a particular interest in molecular and genetic epidemiology, to apply principles of clinical epidemiology to a basic investigation of tumor genetics. This study has been integral in spawning further investigations that will include focusing on genome-wide analyses and micro-rna assays of early stage, FDG-avid NSCLC. Work performed under the auspices of The CHEST Foundation will be presented at CHEST 2010 and submitted for publication this fall.



2008 Award Recipient

Scott Shofer MD, PhD

**Duke University Medical Center, Division of Pulmonary, Allergy, and Critical Care
Durham, NC**

**Project: Heterogeneity of Microarray-Based Lung Cancer Risk Signature in
Patients With Lung Cancer**

Recent work by investigators at the Duke Institute of Genome Science and Policy and others have applied a method of expression pattern analysis to bronchial epithelial cells obtained during bronchoscopy to probe the genetic changes in epithelial cells in smokers. Employing an RNA microarray technique they have developed a lung cancer risk signature (LCRS) and have shown that the expression model can differentiate smokers with lung cancer from those without lung cancer with $\geq 80\%$ accuracy.

We hypothesize that the LCRS model is a marker of field cancerization and reflects diffuse pre-malignant transformation of epithelial cells throughout the respiratory tree. To test this hypothesis, we have collected brushings of airway epithelial cells from the bilateral mainstem bronchi and oral epithelium to determine the extent of epithelial involvement, as well as the heterogeneity of the LCRS within the upper and lower airway.

In order to demonstrate the feasibility of performing expression analysis on oral samples and to investigate the similarity of sample expression between oral and bronchial sources, we performed an initial analysis from a subset of patients enrolled in the biorepository. Samples were selected from seven patients with a spectrum of malignancy types, all with primary pulmonary disease or pulmonary metastasis. We also selected three patients with history of carcinoma in situ. Subjects 1 and 3, subsequently, developed invasive squamous cell carcinoma, while subject 2 had regression of disease and was found to have squamous metaplasia on

follow-up biopsies. In addition, we selected a patient with squamous cell carcinoma of the lung, a patient with adenocarcinoma of the lung, a patient with mesothelioma, and one with testicular cancer metastatic to the lung. Bronchial samples from the patients with mesothelioma and testicular cancer were duplicated from the same mainstem bronchus and were analyzed separately to evaluate for reproducibility of the sampling technique. Cluster dendrograms were developed by unsupervised clustering of the top 5% differentially expressed genes and show clear separation of clustering between oral and bronchial samples. As expected, the duplicate bronchial samples clustered together with a high degree of homology. Interestingly, the two carcinoma in situ samples that displayed progressive disease clustered together on the bronchial samples and separated from the sample which regressed. Finally, comparison of clustering patterns between oral and bronchial samples show similar groupings of the types of malignancy between the two sampled sites, suggesting the potential utility for the development of an oral lung cancer signature. We are currently completing processing the samples from the 142 patients who have been enrolled in the biorepository. Should our hypothesis prove to be true, this study may provide the basis for an oral screening tool for patients at increased risk for lung cancer. Such a tool would provide a valuable mechanism to identify patients in early stages of their disease, maximizing chances for long-term survival



2008 Award Recipient

**Christopher Slatore, MD, MS
Portland Veterans Affairs Medical Center and
Oregon Health & Science University
Portland, OR**

Project: The Association Between Incident Lung Cancer and Hormone Replacement Therapy in a Large Cohort

Lung cancer is by far the leading cause of cancer-related mortality for women in the United States (US). Cigarette smoke causes 90% of all lung cancers, and tobacco cessation is the only recommended method to prevent lung cancer. However, the prevalence of active tobacco use remains high and the risk of lung cancer persists even after smoking cessation. Accordingly, it is important to evaluate additional modalities that may affect the risk of incident lung cancer.

The effects of hormone replacement in breast cancer development have been well studied but sex hormones may also impact lung cancer development. The underlying biologic mechanisms between hormone metabolism and lung cancer development are unclear, both in direction and magnitude, but may involve the formation of DNA adducts, growth factor pathways, and/or estrogen receptors on lung cancer cells. Results from observational studies of the association between hormone replacement therapy (HRT) use and incident lung cancer are mixed, and many have had limitations, such as not examining individual HRT formulations, duration of use, limited adjustment for the confounding effects of tobacco use, and/or limitation to nonsmokers. Furthermore, associations found in observational studies may not be replicated in placebo-controlled trials as shown in lung cancer chemoprevention and HRT trials. Indeed, trials have suggested that estrogen plus progestin HRT may be associated with an increased risk of lung cancer incidence and death.

We evaluated a prospective cohort of 36,588 peri- and postmenopausal women aged 50 to 76 years

from Washington state recruited between 2000 and 2002 (VITamins And Lifestyle (VITAL) Study). Lung cancer cases (n=344) were identified through the Seattle-Puget Sound SEER cancer registry during 6 years of follow-up. After adjusting for smoking, age, and other potential confounders, there was an increased risk of incident lung cancer associated with increasing duration of estrogen plus progestin (E+P) use (HR 1.27 for E+P use 1 - 9 years, 95% CI, 0.91-1.78; and HR 1.48 for E+P use \geq 10 years, 95% CI, 1.03-2.12; P for trend 0.03). There was no association with duration of unopposed estrogen use. Duration of E+P use was associated with an advanced stage at diagnosis (P for trend 0.03).

We conclude that use of estrogen plus progestin increased the risk of incident lung cancer in a duration-dependent manner, with an approximate 50% increased risk for use of 10 years or longer. These findings may be helpful for informing women of their risk of developing lung cancer and delineating important pathways involved in hormone metabolism and lung cancer.

The CHEST Foundation and the LUNgevity Foundation Clinical Research Award in Lung Cancer has been extremely helpful for this research and my own career. We published the results of this work in the *Journal of Clinical Oncology* in March 2010. On a personal level, this award facilitated my career advancement, as I was recently promoted to Assistant Professor at Oregon Health and Science University and Portland VA Medical Center. I further anticipate this award will lay the groundwork for my Veterans Affairs Career Development Award application.

THE CHEST FOUNDATION 2011 AWARDS PROGRAM

The CHEST Foundation 2011 Award Opportunities

NEW online application process will continue for 2011!

Clinical Research and Leadership Awards

The CHEST Foundation has awarded over \$5 million to ACCP members to promote cutting-edge research—research that can provide new treatment options for patients around the world. These research grants reflect the multidisciplinary nature of the ACCP. These include awards for work in alpha-1 antitrypsin (AAT) deficiency, COPD, critical care, lung cancer, thrombosis, and women's health. The CHEST Foundation also recognizes exceptional leadership in end-of-life care through the Roger C. Bone Advances in End-of-Life Care Award.

Available in January 2011, ACCP members can again apply for a CHEST Foundation award via a specially designed online application process in three categories: clinical research, leadership in end-of-life care, and humanitarian service. Initiated in 2010, the online application process has worked very well, giving ACCP members a direct way to apply for an award by going to The CHEST Foundation's Web site (www.chestfoundation.org), logging into the special URL for that particular award, and following the directives given for the award application. ACCP members who serve on the review committees will also use the online system to review the submitted applications and select the top candidate in each of the award categories.

Following are the awards that will be offered in 2011, as of September 2010:

- (1) The Third GlaxoSmithKline Distinguished Scholar in Thrombosis
- (2) Alpha-1 Foundation and The CHEST Foundation Clinical Research Award in COPD and Alpha-1 Antitrypsin (AAT) Deficiency
- (3) Roger C. Bone Advances in End-of-Life Care Award
- (4) The CHEST Foundation California Chapter Clinical Research/Medical Education Award
- (5) The CHEST Foundation Clinical Research Award in Women's Health
- (6) Association of Specialty Professors and The CHEST Foundation of the ACCP Geriatric Development Research Award

Please check The CHEST Foundation's Web site, www.chestfoundation.org, after January 1, 2011, for additional awards that are still being finalized with other partnering organizations and foundations.

D. Robert McCaffree, MD, Master FCCP Humanitarian Awards

The CHEST Foundation's Humanitarian Awards Program supports the volunteer efforts of ACCP members who generously give of their time and medical expertise to improve the health of people living in communities throughout the world. Since 1998, The CHEST Foundation has awarded over \$1.5 million in awards given to nonprofit and nongovernmental organizations where ACCP members focus their pro bono service.

Deadline for all 2011 CHEST Foundation award applications is April 29, 2011.

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Visit The CHEST Foundation Web site at
www.chestfoundation.org.

The CHEST Foundation is grateful for the enthusiastic involvement and generosity of ACCP members, program partners, and donors. Through their contributions, The Foundation can continue to improve the health of patients and positively change lives. If you require further information or wish to make a donation, please contact:

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