

Courageous cancer survivor John Casterline hikes for the American Lung Association



On April 28, 2011, John Casterline, 68 years old and a stage four lung cancer survivor, set out to conquer the 2,650-mile Pacific Crest Trail. Despite his recent chemotherapy treatments for prostate and throat cancer, he was determined to

go the distance, raising awareness for lung cancer and the work of the American Lung Association.

To promote his Lung Cancer Hike, John did interviews with Fox News, the Orlando Sentinel, the Growing Bolder Radio Show and several national media outlets. To prepare for his hike, he walked in several 5K and 15K races with his backpack and a sign promoting it and requesting donations.

As John set out for his Lung Cancer Hike, he said his motto would be to "never quit on a bad day." He hiked nearly 1,000 miles, encountering rattlesnakes, bears, an upper respiratory infection and horrible rashes. But because of his ongoing health problems, he had to make the agonizing decision to quit the Mexico to Canada trek, hitchhiking 50 miles to find a doctor. He had a severely infected MRSA wound which would require surgery.

John may not have completed the trek this time around, but he still raised \$20,000 for the American Lung Association. And yes, his goal is to give his hike another try in the future. In the meantime, John is involved with the American Lung Association's Lung Cancer Support Group, sharing his own experiences with other patients and caregivers, offering hope to those in the midst of treatments.

John retired as a commander with the United States Navy and later as a 7-Eleven stores project manager. He was recently awarded the American Lung Association of the Southeast's most prestigious recognition for volunteers, the Charles F. Tate Volunteer of the Year Award. To learn more about John's Lung Cancer Hike, please visit www.lungcancerhike.org.

Happy New Year!

We hope you've enjoyed this edition of the President's Research Report. As you've read, the efforts of the American Lung Association help prevent lung disease in millions of people in the U.S., and we look forward to its eradication in future generations. New and improved treatments, programs to help stop and prevent smoking, and legislation to improve the air we breathe, are all funded through your generous donations.



If you contributed to our recent Christmas Seals campaign or visited www.ChristmasSeals.org, we thank you. Christmas Seals generates millions of dollars from supporters of the American Lung Association, but we need the year-round support of concerned donors like you to accomplish the mission of saving lives, improving lung health and preventing lung disease. *Please continue to stand with us; we can't do it without you.*

AMERICAN LUNG ASSOCIATION
Fighting for Air

1-800-LUNG-USA • www.Lung.org

Our Mission:

To save lives by improving lung health and preventing lung disease.

Mission Goals:

- The American Lung Association will eliminate tobacco use and tobacco-related lung disease.
- The American Lung Association will improve the air we breathe so it will not cause or worsen lung disease.
- The American Lung Association will reduce the burden of lung disease on patients and their families.

The American Lung Association's National Office is located at 1301 Pennsylvania Ave., NW, Suite 800, Washington, D.C. 20004-1725

R12-PRE-3-01

AMERICAN LUNG ASSOCIATION
Fighting for Air

PRESIDENT'S RESEARCH REPORT

Why Lung Disease Research is Vital to America

- There are 443,000 tobacco-related deaths in America each year, including those related to secondhand smoke.
- During 2011, more than 221,000 new cases of lung cancer were diagnosed. Six out of ten of those will die within one year.
- Asthma affects more than 7.1 million children under 18, and more than half of those have experienced an asthma attack during the previous year.
- Each year, an estimated 226,000 people are hospitalized due to influenza.
- COPD (chronic bronchitis and emphysema) is the third leading cause of death in America, just behind heart disease and cancer.
- About one in 17 people in the U.S. lives in an area with unhealthy year-round levels of fine particle pollution.
- Over 46 million adults in the U.S. still smoke.

Questions About Lung Health? Ask An Expert!

Our Lung Helpline is a toll-free resource for patients and caregivers. Speak with qualified professionals on lung health related topics, including lung cancer, asthma, COPD and quitting smoking. Call **1-800-586-4872** Monday-Friday from 7 a.m.-11 p.m. TTY service is available at **1-800-501-1068**.



The American Lung Association has been saving lives by improving lung health and preventing lung disease for more than 100 years. Medical research has long been a critical keystone of our mission. Today it's more important than ever.

As the nation's leading organization fighting for healthy lungs and healthy air, our mission work takes a comprehensive approach that combines medical research with educational programs, patient resources and public health policy in a way that benefits virtually everyone across the country.

Thanks to your generous donations, the Lung Association has been able to continue to fund high-quality researchers who seek treatments and cures that have helped people, coast to coast, live longer, healthier lives. You have directly helped make possible medical breakthroughs that have added new and better weapons in the fight against a multitude of lung diseases, from lung cancer to asthma.

In 2011-12, the Lung Association awarded 88 grants totaling more than \$5 million to advance our understanding and further the fight against lung cancer, asthma, chronic obstructive pulmonary disease (COPD) and other serious ailments.

A perfect example seeks to improve the health and future for the most vulnerable among us, premature infants. A study being conducted by Dr. Fumihiko Namba, Ph.D., of Children's Hospital of Philadelphia, aims to protect new lungs from damage by oxygen therapy. Most newborn babies who are born prematurely or who experience respiratory problems shortly after birth need supplemental oxygen. While this supplemental oxygen helps them survive, exposure to excess oxygen, called hyperoxia, can cause lung injury and abnormal development of lung tissue. Dr. Namba and his team are studying whether an enzyme called heme oxygenase-1 (HO-1), found in the nucleus of lung cells, can protect newborn lungs from the damage caused by hyperoxia.

This is just one example of the promising research made possible through your continued generosity. Each one, with your help, promises to move us one step closer to our goal of a world without lung disease. Our deepest thanks for your commitment and your support. Together, we are saving lives and fighting for air.

Sincerely,

Charles Dean Connor
President & CEO

The Awards and Grants Program: An Investment in Up-and-Coming Research Scientists

HOSHANG UNWALLA, PhD



University of Miami, Miami, FL
Biomedical Research Grant Funded in Partnership with the American Lung Association of the Southeast

Improving Effectiveness of COPD Drugs

During acute flare-ups of COPD, the lungs' smooth muscle cells contract. Inhaled bronchodilators must travel through epithelial cells to reach these smooth muscle cells in order to relax and widen the airways. Albuterol, a commonly used bronchodilator, has been shown to enhance its own transport across epithelial cells to elicit a rapid onset of action on smooth muscle cells. The researchers will study the basis of this action, and determine if other inhaled bronchodilators demonstrate a similar ability. Results from this study could lead to better formulations and combinations of bronchodilators for effective treatment of COPD or alternative strategies in airway diseases where this pathway is afflicted.

GENEE SMITH, MSPH

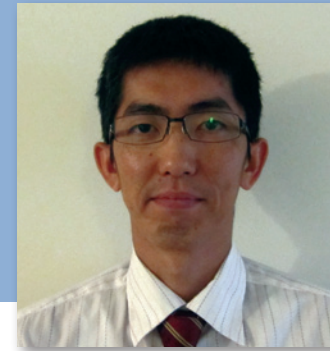


University of North Carolina, Chapel Hill, NC
Lung Health Dissertation Grant

Does Air Pollution Increase the Risk of Developing TB?

Mycobacterium tuberculosis is the cause of pulmonary tuberculosis (TB), but environmental factors may influence the development and progression of the disease. Animal models have shown that air pollution is associated with decreased ability to prevent infection with the TB bacteria from progressing into clinical disease. The researchers will evaluate the association between air pollution and TB in humans by comparing electronic medical records with monthly averages of air pollutants in California. This will be the first epidemiologic investigation to formally evaluate the hypothesis that individual-level estimates of air pollution concentrations are associated with an increased risk of TB.

FUMIHIKO NAMBA, PhD, MD



Children's Hospital of Philadelphia, Philadelphia, PA
Senior Research Training Fellowship

Protecting New Lungs from Damage by Oxygen

Most newborn babies who are born prematurely or who experience respiratory problems shortly after birth need supplemental oxygen. The exposure to excess oxygen, called hyperoxia, can cause lung injury and abnormal development of lung tissue. The researchers will study whether a specific enzyme (HO-1) protects against hyperoxia in the newborn lung. Understanding HO-1's function and its role in hyperoxia in the newborn lung may lead to treatments to protect newborn babies against lung damage caused by hyperoxia.

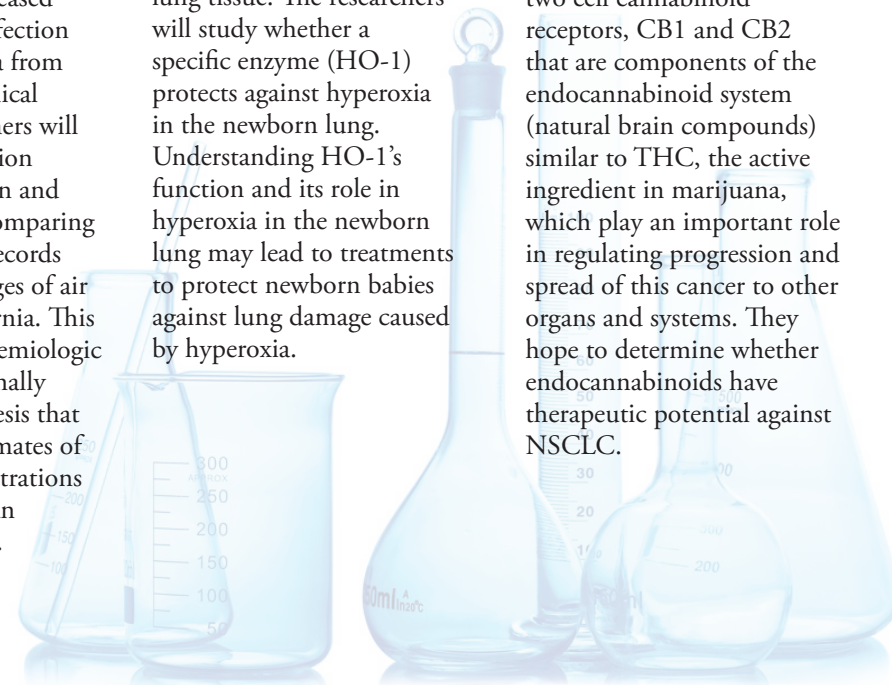
RAMESH GANJU, PhD



Ohio State University, Columbus, OH
Lung Cancer Discovery Award

Receptors that Bind to Marijuana Tested for Non-small Cell Lung Cancer

Non-small cell lung cancer (NSCLC) is one of the leading causes of cancer-related death in the United States. Fewer than 15% of patients survive beyond five years after diagnosis. The researchers will study two cell cannabinoid receptors, CB1 and CB2 that are components of the endocannabinoid system (natural brain compounds) similar to THC, the active ingredient in marijuana, which play an important role in regulating progression and spread of this cancer to other organs and systems. They hope to determine whether endocannabinoids have therapeutic potential against NSCLC.

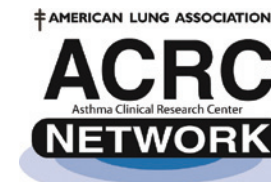


The American Lung Association and its Fight Against Asthma

Linda Rogers, MD, New York University



American Lung Association Asthma Clinical Research Centers (ALA-ACRC) Helping Asthma Patients



The Nation's largest not-for-profit network of clinical centers dedicated to asthma treatment research, the ALA-ACRC, is currently examining the optimal way to de-escalate therapy in patients with asthma that is well controlled on fixed dose combination ICS/LABA. Lead investigator Linda Rogers, MD, Assistant Professor of

Medicine at the NYU School of Medicine, is confident that the results of the LASST trial will have a significant impact for clinicians and patients with asthma. "One of the most common dilemmas currently faced by practicing physicians is how to reduce therapy once asthma is controlled on combination ICS/LABA." She says "A study evaluating outcomes of reducing treatment with long term follow-up and using outcomes relevant to patients and clinicians is needed".

The Long-acting Beta Agonist Step Down Study (LASST) is being funded in partnership with GlaxoSmithKline.

Roger Tsien, PhD, University of California, San Diego



Forging A Strategic Alliance with the American Asthma Foundation

Roger Tsien, PhD., a Nobel Prize winner in chemistry, is the first recipient of the American Lung Association/American Asthma Foundation Senior Investigator Award, an award given to a non-pulmonologist conducting novel and innovative research on asthma. Dr. Tsien's research focuses on the work of proteases, which are ubiquitous enzymes involved in many biological processes including the inflammation that underlies asthma. Professor of Pharmacology and Chemistry & Biochemistry at the University of California, San Diego, Dr. Tsien will use an imaging technique already developed for cancer and apply it to proteases to better understand how they are involved in asthma.

"I am hopeful we can make a scientific discovery that could help develop a better understanding of a disease I have experienced personally."