



Obsessed with Addiction

UNMC'S FIRST SCIENTIST LAUREATE NEVER QUILTS

by ELIZABETH KUMRU



Colleagues call him brilliant, thoughtful, creative.

At UNMC, he's the best of the best researchers and he's set himself a mighty task.

Stephen Rennard, M.D., one of the world's foremost experts in pulmonary and critical care medicine, wants to cure the incurable.

"It's unsatisfying for patients to seek treatment for which there is no cure. People are still dying from asthma and chronic obstructive pulmonary disease (COPD). I want more for my patients," he said.

The mysteries of such lasting diseases as asthma and COPD weigh heavily on Dr. Rennard's mind. COPD ailments include emphysema and chronic bronchitis, and is the fourth leading cause of death in the United States.

UNMC's first Scientist Laureate wants cures.

As a physician, teacher and storyteller, Dr. Rennard takes clinical problems and asks important basic research questions.

"He's unique in that he can see the forest and the trees," said Lynell Klassen, M.D., chairman of internal medicine. Most researcher/clinicians can only see one or the other. He asks specific questions that are important to the whole biologic picture.

"He also models characteristics I would love our scientists to have more of – inquisitiveness, and an ability to ask thoughtful questions, then put answers into the larger picture of biology and clinical care."

Dr. Rennard lives in both worlds, said Joe Sisson, M.D., Larson Professor of Medicine and chief of the pulmonary, critical care, sleep and allergy section of the department of internal medicine.

"He thinks about problems differently from anyone else. There are two things we think about – innovation and significance. He excels in both. We are especially fortunate to have Dr. Rennard at UNMC because of his leadership, scientific innovation and worldwide reputation as a lung clinician and scientist. He has an encyclopedic memory and is a real superstar in pulmonary research."

Dr. Rennard's basic and clinical research takes him many directions at once, from the mechanisms of what causes disease and the subtleties of prevention to the methods for developing cures and implementing disease management programs. He's been innovative in developing novel approaches to research in inflammatory airway diseases, fibrosis and lung stem cell biology, and in clinical care for COPD, smoking cessation, asthma and bronchitis.

He currently juggles \$7 million from 19 different grants – three from the National Institutes of Health – and



conducts 10 to 12 clinical trials at any one time. Six to eight new trials are initiated each year.

He's called on to present, serve and consult at national and international meetings, committees and foundations and has been asked to present medical grand rounds at universities throughout the country. More than one-third of his year is spent traveling.

Even his legendary research on his wife's grandmother's chicken soup recipe continues in one part of his laboratory in the Durham Research Center. "The project is too much fun to drop," he said.

Despite its controversial nature, embryonic stem cell research is one of the new challenges in which Dr. Rennard sees great promise. He's created a mouse model that shows embryonic stem cells can form cells that may repair lung tissue damaged by emphysema. A patent that will be owned by UNMC is pending.

"Good research should be controversial because it challenges conventional wisdom," Dr. Rennard said.

Among the activities of which he is most proud are the recent smoking bans in Nebraska. As soon as he arrived in Nebraska from the National Institutes of Health, he was asked to testify before the Omaha City Council on

the hazards of secondhand smoke and began lobbying for a smoking ban in bars and public places.

"I was delighted to contribute to the 22-year quest that finally succeeded last year for Omaha and Lincoln, the state's two largest cities," he said.

Smoking was considered a lifestyle choice long ago.

"In truth, it's more than that. It is a medical disease, not just a habit. You can choose to do it, but, for most people, you can't choose not to do it. It's an addiction. People have an uncontrollable urge to smoke that drives behavior. It is not a matter of choice or willpower," he said.

More than 20 percent of adults smoke, and it is the single most important cause of preventable deaths in the United States.

Upon landing in Omaha, Dr. Rennard began doing research with Irving Kass, M.D., the founding chief of pulmonary medicine at UNMC, who started the smoking cessation research program at UNMC, and David Daughton, pulmonary medicine researcher, with whom Dr. Rennard collaborated until Daughton's recent retirement.

The breadth of Dr. Rennard's research into treatments for smoking has included nicotine vaccines, alternative

SANDY MCGRANAGHAN, PULMONARY FUNCTION TECHNOLOGIST AT THE NEBRASKA MEDICAL CENTER, PERFORMS BREATHING TESTS ON A PATIENT TO ASSESS LUNG VOLUMES. THE TESTS HELP PHYSICIANS DIAGNOSE LUNG DISEASES.

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Dr. Stephen Rennard

Dr. Rennard CLOSE UP

Stephen Rennard, M.D., is the Larson Professor of Medicine in pulmonary, critical care, sleep and allergy section of the UNMC Department of Internal Medicine and courtesy professor of pathology and microbiology. He joined UNMC in 1984 as chief of pulmonary and critical care, a position he retained until 1997. He also is director of the Nebraska Office of Tobacco Control and Research.

He attended Harvard University and received his bachelor's degree cum laude in folklore and mythology. "I wanted a liberal arts education," he said. "Everything you learn enriches your life."

Dr. Rennard received his medical degree with honor from the Baylor College of Medicine in Houston and then completed internal medicine training at Barnes Hospital, Washington University in his hometown of St. Louis. Before joining UNMC, he trained in pulmonary diseases at the National Institutes of Health, where he remained for seven years conducting research in the cell biology of lung disease.

Dr. Rennard is active in several professional societies and serves or has served on the board of directors for the Alpha-1 Foundation, the COPD Foundation, American Thoracic Society and the Council of the American Lung Association. He also was a governor for the American College of Chest Physicians. He served on the American Board of Internal Medicine, Pulmonary Section, and was a member of the expert panel, which prepared the Global Initiative for Chronic Obstructive Lung Disease guidelines for COPD and on the American Thoracic Society COPD guidelines committee.

He's published 243 research articles, 537 abstracts and has two patents pending.

Dr. Rennard was formerly the North American editor for Respiratory Medicine and serves on the editorial board of several journals. He also has been a regular on the "America's Top Doctors" list by Castle Connolly Medical Ltd.

John Gollan, M.D., Ph.D., dean of UNMC's College of Medicine, calls Dr. Rennard "a pathfinder in research" who is breaking down barriers with the application of stem cells.

"He'll ask thoughtful, creative questions that no one else will think to ask," Dr. Gollan said. "He's a great model for research. We're lucky to have this national figure in COPD at UNMC."

tobacco products and products to help people stop smoking, many of which are now on the market. He has written many articles on smoking cessation and was the lead author for the smoking cessation section of the COPD guidelines of the American Thoracic Society.

While the search for better smoking cessation treatments is an important part of his research, Dr. Rennard also is concerned that current therapies that can help are not as widely available as needed. For this reason he obtained a grant to institute a smoking cessation program for the underserved population at the SHARING (Student Health Alliance Reaching Indigent Needy Groups) Clinic in South Omaha.

The power of nicotine addiction is one of the reasons Dr. Rennard has evaluated harm reduction therapies including alternative tobacco products. “Most of the tobacco-related diseases are caused by the other 6,000 chemicals in tobacco smoke, many of which are exceedingly toxic. Nicotine, the main addicting substance, is not that toxic.

“So the question is, ‘Could people remain addicted and not get the disease by using harm reduction strategies?’” Dr. Rennard said. His group was among the first to test these approaches and data from UNMC was

included in the Institute of Medicine report, “Clearing the Air,” which supports the concept of potential reduced exposure products as part of a comprehensive tobacco-control program.

“The best way to control tobacco-related disease is not to smoke. Next best is to quit, the sooner the better. Harm reduction could represent an approach for individuals who are unable or unwilling to quit,” he said.

So, what drives this man of excellence? For this voracious reader, a lover of mysteries and a student of mythology – the answer may lie in literature.

He’s asked, “What was your favorite book as a child?”

Pressing his fingers and thumbs together to form a triangle, Dr. Rennard searches his memory while rocking in a chair that once eased newborns to sleep in the University Hospital nursery more than two decades ago. A father to eight and grandfather to seven, the motion is as familiar as it is comfortable.

“It was the ‘Little Engine That Could.’” 📖