

UA research helps Arizonans breathe easier



On April 30, Congress reached a bipartisan agreement to boost funding by \$2 billion for the National Institutes of Health. Its prudent decision to make medical research a national priority came at an apropos time, the eve of National Asthma and Allergy Awareness Month.

As the saying goes, April showers bring May flowers, but for those who suffer from asthma and allergies, May often brings the worst of symptoms. Airborne irritants can cause bouts of coughing, difficulty breathing and respiratory infections. In more severe cases, asthma sufferers may have an asthma attack, ending in visits to the emergency department or even fatality.

In Arizona, this is no small problem.

Asthma, for which there is no cure, affects more than 750,000 Arizonans. Phoenix and Tucson are on the list of most challenging cities to live with asthma. Our beloved paloverdes, now in full bloom, creating beauty and shade, are causing terrible symptoms for many as the breeze disperses their pollen.

For many, asthma is personal, affecting friends, family and colleagues. Funding NIH is more than a civic duty — it's an act of loving care. We were pleased to see Congress stepping up to provide the needed funding for medical research investments to benefit us all.

Delivering results

At the University of Arizona, we are delivering results with our NIH funding. For example:

Dr. Fernando Martinez, a UA regents' professor and director of the Arizona Asthma and Airway Diseases Research Center, is one such researcher.

Martinez remembers as a child in Chile waking up to see his mother suffering an asthma attack. With a \$28 million NIH-funded award, Martinez's team is testing a cure for the disease.

In a previous study of asthma in Amish communities that suffer from asthma at lower rates, this team isolated a protective compound from house dust extracts.

With the new NIH grant, Martinez and his team are evaluating whether

treatment with this compound in infancy can prevent or minimize children respiratory tract illness later in life in those at highest risk for asthma.

Over 1,000 babies, 6 to 18 months old, in Arizona and other states will be genetically screened for asthma risk and participate in the study.

Dr. Monica Kraft, department head of medicine at UA College of Medicine-Tucson, who specializes in translational asthma research, is using her \$7.7 million NIH award to identify the genetic factors related to surfactant signaling that help control lung inflammation.

Surfactant is a substance released in your lungs that helps to open up aveolar sacs in the lungs and change surface tension so lungs can expand properly during breathing.

New and better medicines

The ultimate goal of these projects is to produce new or improved medicines that could be widely administered to those most at risk to reduce severe attacks in adults with asthma.

NIH recognized our role at the forefront of research discovery in translational biomedicine by selecting UA and our partner, Banner Health, in the first cohort of four (along with world-renowned medical centers at Columbia University, Northwestern University and the University of Pittsburgh) for the single largest competitive NIH award in Arizona's history (more than \$43 million), as a part of the National Precision Medicine Initiative.

Precision medicine is a revolutionary approach using "big data" analytics to target new treatments based on people's individual differences in genetics, environments and lifestyles.

It will help in the customization of health care, tailoring medical decisions, practices or products to the individual patient. Patients across the Banner Health Network of over 26 hospitals and clinical facilities in the West will have the opportunity to participate.

At the University of Arizona, we work every day to help those in our community and beyond to breathe easier — work that would not be possible without competitive funding from the NIH.

We urge you to join us in this work. Talk to your medical professional, take part in clinical research or advocate for research to improve our health.

Kimberly Andrews Espy, Ph.D., is senior vice president for research and Leigh A. Neumayer, MD, MS, FACS, is interim senior vice president for health sciences at the University of Arizona.