Case for Support
Nothing is more basic to human life than breathing. Diseases that impact individuals’ ability to perform this vital function – including lung and respiratory disorders – exact an enormous toll upon human welfare, affecting millions of people and amounting to billions of dollars in direct and indirect costs each year in the United States alone. Globally, respiratory illnesses represent the single most burdensome disease category. To date, there are no known cures for these conditions.

Since its inception in the early 1960s, UCSF’s Pulmonary, Critical Care, Allergy, and Sleep Medicine Division has been a leader in the research and care of pulmonary diseases. Comprising an international pool of talented physician scientists, the division offers world-class programs in interstitial lung disease, chronic airway disease, acute lung injury, and global lung health. The division is housed among three hospital sites – UCSF, San Francisco General Hospital, and the Veterans Administration Medical Center – and is closely affiliated with the Cardiovascular Research Institute (CVRI), the UCSF Biomedical Sciences and Immunology Programs, and the Lung Biology Center. The division’s faculty regularly collaborate across disciplines with pioneering investigators in fields such as stem cell biology, molecular genetics, and tissue engineering and regeneration – enhancing the division’s ability to develop improved treatments for pulmonary diseases.

The division is poised to meet the growing need for its expertise. A recent generous donor bequest presented the division with a unique opportunity to build upon its past successes and secure a future full of promise for people everywhere who are coping with lung disease. Leveraging the momentum generated by this gift, we seek additional private philanthropy to help us consolidate and expand our facilities; develop and retain outstanding faculty and researchers; and create highly specialized “cores,” available to researchers across campus, that foster innovative collaborations. The opportunity to help save lives has never been greater.

I thank you for your interest in our efforts and hope that you will consider joining us to make an impact now and for generations to come.

Sincerely,

Dean Sheppard, MD
Chief, Pulmonary, Critical Care, Allergy, and Sleep Medicine Division
Director, Lung Biology Center
Why the Urgency?

The UCSF Pulmonary, Critical Care, Allergy, and Sleep Medicine Division is dedicated to developing prevention measures and cures for lung diseases, and improving the outcomes and quality of life for our patients. As we probe the underlying causes and mechanisms of these diseases, the facts remain sobering:

- Chronic Obstructive Pulmonary Disease (COPD), which includes emphysema and chronic bronchitis, is now the third leading cause of death in the United States, behind heart disease and cancer.

- The total direct and indirect economic cost of lung disease in the United States in 2010 has been estimated at $186 billion.

- Respiratory disease is currently the only leading cause of death that has risen in incidence, rather than fallen, in recent decades.

- Worldwide, respiratory infections exact a greater health burden than any other single category of disease.

- Lung cancer is now the leading cause of cancer death in men and women in the United States.

- Pulmonary fibrosis claims as many lives each year as breast cancer.

- There are no curative treatments for asthma, COPD, pulmonary fibrosis, and acute lung injury, the four most common pulmonary afflictions.

Pulmonary disease is a killer. The American Journal of Respiratory and Critical Care Medicine recently noted that, while significant progress is being made in reducing the burden of heart disease and cancer, lung and airway diseases are on the rise, continue to claim lives, lower productivity, and exact a toll upon society in the United States and beyond.
**Major Areas of Interest**

*Because the lungs are the primary interface between the environment and the human body our work is broad, and touches upon many facets of health. The division conducts clinical, research, and training pursuits in all areas of pulmonary medicine. This diverse field encompasses:*

**Interstitial Lung Disease**
The UCSF Interstitial Lung Disease (ILD) program is dedicated to improving the lives of patients with ILD, the scarring of lungs from mold, gas, dust, fumes, autoimmune disease, and (often) unknown causes. For years, UCSF has been a leader in accurately diagnosing and caring for patients with ILD. Because current drug treatments for ILD are inadequate, faculty in the Pulmonary, Critical Care, Allergy, and Sleep Medicine Division plan and participate in most major clinical trials for ILD patients. We are also at the forefront of basic research in ILD, and with a large federal grant, are developing novel treatments based upon our basic science discoveries. Our team includes pulmonologists, radiologists, pathologists, nurses, and other staff members with ILD expertise. The UCSF ILD program has grown dramatically in the last five years, with approximately 300 new-patient visits each year.

**Chronic Airway Disease**
At the UCSF Airway Clinical Research Center (ACRC), UCSF clinicians and investigators are greatly expanding our understanding of asthma and COPD. With an infrastructure that facilitates integration between laboratory and clinical endeavors, the ACRC is an excellent model for the division’s growing programs in translational medicine. The center’s innovative research initiatives have garnered an unprecedented success rate in NIH grant awards and continue to attract industry partners interested in new treatments for asthma and COPD.

**Acute Lung Injury**
Acute lung injury (ALI) is a syndrome that causes shortness of breath and often necessitates mechanical ventilation. Pneumonia, viral infections, sepsis, aspiration, and trauma are among the causes of ALI, which kills as many Americans annually as do breast, colon, and prostate cancer combined. UCSF has a rich history of research on ALI. UCSF investigations have led to gentler lung ventilation protocols and demonstrated beneficial effects of stem cell therapies in animal models and human lungs.

**Global Lung Health**
Lung disease — especially infectious illnesses like tuberculosis and pneumonia — is on the rise across the globe. UCSF’s pulmonary experts are part of a large, multidisciplinary initiative to address the world’s most daunting health
challenges, including lung and breathing disorders that result from infection, environmental insults, and the global AIDS epidemic.

**Lung Transplant**
Since its establishment in 1991, the UCSF Lung Transplant program has grown to one of the largest lung transplant programs in the country. We have performed nearly 500 transplants, with 40 to 50 new procedures performed every year. Lung transplant remains a field with great opportunity for improved outcomes, and we are pushing the envelope as we rapidly expand our research programs in lung transplantation. Our average survival rate is not only higher than the national average, it is also higher than what is predicted for our program, given the complexity of our patients.

**Sleep Medicine**
The UCSF Sleep Center includes practitioners and researchers who are leaders in identifying the causes of sleep disorders, including sleep apnea, a common disruption of breathing during sleep. Our clinicians and scientists are helping patients sleep more soundly, while they investigate new therapies for this condition.

**Cystic Fibrosis**
At the UCSF Adult Cystic Fibrosis Center, we provide comprehensive evaluation as well as inpatient and outpatient care for patients with cystic fibrosis. Our services include diagnosis, care coordination, nutritional assessment and counseling, symptom management, and evaluation for lung transplantation.

**Allergy**
The lungs are the first line of defense against external antigens. Tapping into UCSF’s preeminence in basic and applied immunology, UCSF researchers are helping us gain a better understanding of the underlying mechanisms of allergies.

**Lung Cancer**
The division conducts basic research into the biochemical mechanisms responsible for lung tumor formation and metastasis. Discoveries in our labs have helped lead to earlier diagnosis and are pointing the way toward treatments that effectively intervene with cancer formation and progression.

**Sarcoidosis**
Sarcoidosis is a systemic inflammatory disease that involves the lungs in up to 80 percent of affected individuals. The Sarcoidosis Research Program focuses upon improving the lives of sarcoidosis patients through clinical and translational research. We seek to better understand the role of the immune system in sarcoidosis, identify new ways to treat the abnormal immune response in the disease, discern ways to predict disease progression or remission, and illuminate how sarcoidosis affects different organ systems.
Donor Profile: Nina Ireland
Endowment Opens Unique Opportunity for Pulmonary Medicine at UCSF

The Nina Ireland Lung Disease Program was established in 2010, when Nina Ireland, a longtime patient of UCSF pulmonologist Jeffrey Golden, MD, left nearly her entire estate to UCSF to establish an endowment supporting pulmonary medicine. The Ireland bequest – the largest ever bequeathed to UCSF (and believed to be the largest gift ever made to pulmonary medicine) – provides an unprecedented, stable source of restricted income that will help the division to fully realize its great potential.

The Nina Ireland Lung Disease Program (NILDP), focuses on four thematic areas: Lung Transplantation, ILD, Lung Diseases of Underserved Populations, and Pulmonary Rehabilitation. In its first year, the NILDP added three new faculty members, supported enhanced training for 12 research fellows, helped six junior faculty establish independent laboratories, created an invaluable bio-repository that combines clinical data and biospecimens from large groups of lung disease patients, expanded UCSF’s clinical program in ILD, and supported competitive grants for innovative research.
The Time is Now

From the stable foundation ensured by investment income from the Ireland gift, we must continue to build capacity in order to address the enormous challenges pulmonary diseases pose to health in the United States and abroad. Across the board, NIH funding for pulmonary medicine has not kept pace with allocations for cancer and heart disease, even as the prevalence of asthma, COPD, and other lethal conditions continues to grow. To sustain our ventures we rely upon private support to help us recruit faculty and fund creative, high-risk, high-reward projects. The urgent priorities that your gift will support include:

Expansion and Consolidation of Facilities
Because the scope of the Pulmonary, Critical Care, Allergy, and Sleep Medicine Division is broad and touches upon nearly every department within UCSF, our team is dispersed across the University, offering compelling opportunities for consolidation and critical collaboration. Bringing faculty, clinicians, and other staff within the Nina Ireland Lung Disease Program under one roof, for example, will create synergy and promote efficiency in all programmatic areas. In particular, the division hopes to create state-of-the-art facilities to foster patient-based research in ILD and lung transplantation.

Recruitment and Training
Private support is essential as we strive to attract and train future leaders in the field of pulmonary medicine, allowing us to create flexible training plans that fit the needs and goals of our excellent recruits, and transition trainees to faculty members with base salaries that allow them the freedom to be creative in their research.

Technology/Research Core Development
Based upon the highly successful core facilities we have created for the study of asthma, we hope to build new cores to support all aspects of lung biology and disease. These cores will be accessible to researchers across the campus to seed promising new avenues of research, encourage interdisciplinary collaboration, and attract talent to UCSF.

Looking towards the future, the division is working to establish a Center for Lung Regeneration that will leverage stem cell and bioengineering expertise from the Eli and Edythe Broad Center of Regeneration Medicine and Stem Cell Research, and the joint UCSF-UC Berkeley program in bioengineering. We will continue to build bridges between our world-class programs in basic lung biology, our equally rigorous patient-based research programs, and UCSF’s leaders in basic and translational biology. With your partnership, we can make a profound difference in the lives of people everywhere.
For more information on the UCSF Pulmonary, Critical Care, Allergy, and Sleep Medicine Division, including ways to support the initiatives described here, please contact:

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