

## **5. Institute-Initiated Programs Starting in FY 2004**

More than two-thirds of the research supported by the NHLBI is initiated by individual investigators; the remainder is initiated by the Institute. Institute-initiated programs are developed in response to evolving national needs, Congressional mandates, and advances in scientific knowledge. Each initiative represents the outcome of extensive discussions and thorough reviews by representatives of the scientific community, Institute advisory committees or special emphasis panels (SEPs), the Board of Extramural Advisors (BEA), and the National Heart, Lung, and Blood Advisory Council (NHLBAC). The advisory committees, SEPs, and the BEA, together with professional societies and NHLBI staff, continually review the progress of research within the NHLBI program areas, assess newly acquired knowledge, and identify research topics that offer the best opportunities or constitute the greatest needs. This planning process contributes to policy development at the national level by setting priorities among competing programs and establishing budgets for individual programs and projects.

Initiatives generally emanate as Requests for Applications (RFAs) for grants, including cooperative agreements, or Requests for Proposals (RFPs) for contracts. A smaller number of initiatives take the form of Program Announcements (PAs). Applications and proposals submitted in response to RFAs and RFPs compete among themselves for specific “set-aside” funds. Applications submitted in response to PAs generally compete with other investigator-initiated applications for funding.

RFA, RFP, and PA concepts prepared by the Institute are presented to the BEA, which reviews and prioritizes them. The concepts, along with the comments from the BEA, are then sent to the NHLBAC for review, comment, and concurrence. Initiatives that receive the concurrence of the NHLBAC are considered further by the NHLBI Director in the context of the Institute's budget, program priorities, review workload, and proposed mechanisms. These considerations guide the Director's subsequent decisions to approve initiatives for release. RFAs, RFPs, and PAs are announced in the weekly publication, the *NIH Guide to Grants and Contracts*.

Applications and proposals submitted in response to RFAs and RFPs are reviewed by the NHLBI. Applications submitted in response to PAs are reviewed by the NIH Center for Scientific Review.

Descriptions of the Institute-initiated programs that began or were renewed (i.e., were funded) in FY 2004 are presented below according to NHLBI scientific program. Also described are trans-NIH and interagency initiatives in which the NHLBI is participating.

### **Heart and Vascular Diseases Program**

#### **Initiative Being Renewed**

##### ***Coronary Artery Risk Development in Young Adults (CARDIA) Study***

The purpose of this renewal is to continue support for research that examines the development of atherosclerosis in adults in their forties, an age when the earliest detectable subclinical disease appears to accelerate. Scientists will use the CARDIA study's 15 years of data and stored

samples and the Year 20 exam to address questions pertaining to subclinical disease development that cannot be determined in older cohorts.

## **New Initiatives**

### ***Interventions To Improve Hypertension Control Rates in African Americans***

The purpose of this RFA is to evaluate interventions to improve medical care delivery so that a greater proportion of black patients will have their blood pressure controlled to below 140/90 mm Hg as specified in the JNC 7. The study will focus on patients; clinicians; the interactions between them; and physical, social, and administrative environments in which the interactions occur.

### ***Partnership Programs To Reduce Cardiovascular Disparities***

The purpose of this RFA is to encourage research that improves CVD outcomes in racial and ethnic minorities by establishing partnerships between minority-serving health care systems that lack a strong research program and research-intensive medical centers that have a track record of NIH-supported research and patient care. The partnership will conduct collaborative research on the causes and resolution of health disparities that exist among minority populations and provide culturally sensitive, reciprocal educational and skills development programs to enhance the research potential and CVD management capabilities at the collaborating organizations.

### ***Pediatric Circulatory Support***

The purpose of this RFP is to develop circulatory assist devices such as left and right ventricular assist devices, extracorporeal gas exchange systems, and other bioengineered systems for infants and children with congenital and acquired CVD who experience cardiopulmonary failure and circulatory collapse.

### ***Specialized Centers of Clinically Oriented Research (SCCOR) in Pediatric Heart Development and Disease***

The purpose of this SCCOR is to conduct interdisciplinary studies of the etiology, pathophysiology, and diagnosis of congenital and acquired pediatric heart disease. The goal is to translate research findings into more effective methods of treatment and prevention.

## **Lung Diseases Program**

### **Initiative Being Renewed**

#### ***Childhood Asthma Research and Education (CARE) Network***

The purpose of this closed-competition renewal is to continue support for a network of clinical centers and a data coordinating center to evaluate new treatment approaches and management strategies for children with asthma, assess available medications, and disseminate findings rapidly to the health care community.

## **New Initiatives**

### ***Granulomatous Lung Inflammation in Sarcoidosis***

The purpose of this RFA is to elucidate the mechanisms involved in the development of pulmonary sarcoidosis, an autoimmune disease characterized by granulomatous inflammation in the lungs. Research will focus on determining the etiology of the disease and its susceptibility factors and identifying components in the innate and adaptive immune pathways that affect lung lymph nodes and tissues in the early stage of the disease.

### ***Immune System Development and the Genesis of Asthma***

The purpose of this RFA is to stimulate research on immune function early in life in order to determine its impact on the development of asthma. Research findings will be used to devise preventive strategies that will not compromise the integrity of the immune system.

### ***Lung Tissue Research Consortium***

The purpose of this RFP is to facilitate studies of pulmonary disease by establishing a program for standardized processing, storage, and distribution of lung tissues and their associated clinical data. This resource will enable investigators to perform studies correlating molecular histopathology of lung with pulmonary function and clinical status.

## **Blood Diseases and Resources Program**

### **Initiative Being Renewed**

#### ***Retrovirus Epidemiology Donor Study (REDS)***

The purpose of this renewal is to continue support for studies on volunteer blood donors to ensure the safety and availability of the Nation's blood supply. Research includes monitoring known blood-borne infectious agents, evaluating rapidly the impact of emerging pathogens, assessing the safety implication of changes in laboratory and blood donor screening protocols, and examining blood supply availability issues.

### **New Initiative**

#### ***Molecular Mechanisms Underlying Diamond-Blackfan Anemia and Other Congenital Bone Marrow Failure Syndromes***

The purpose of this RFA is to encourage research associated with the genetics and basic mechanisms of Diamond-Blackfan anemia and other rare inherited bone marrow failure syndromes. Scientists are seeking to understand the molecular pathways that are disrupted in these syndromes.

## **Trans-NHLBI**

### **Initiatives Being Renewed**

#### ***NHLBI Competitive Supplements for Human Embryonic Stem Cell Research***

The purpose of this renewal is to enable NHLBI grantees with little or no prior experience working with human embryonic stem cell lines to incorporate the lines into their experimental plan when the research falls within the original scope of the parent grant and is a logical extension of its goals and objectives.

#### ***NHLBI Innovative Research Grant Program***

The purpose of this renewal is to support investigators with innovative hypotheses pertaining to heart, lung, and blood diseases and sleep disorders by relaxing the stringent criteria for preliminary data and demonstration of concept feasibility during standard NIH research project (R01) reviews. The initiative will provide limited R21 awards, not to exceed \$100,000 in direct cost per year for up to 2 years.

#### ***NHLBI Mentored Minority Faculty Development Award***

The purpose of this renewal is to provide minority faculty members with varying levels of research experience the opportunity to acquire the skills needed to become independent investigators. Selected candidates will undertake 3 to 5 years of special study and supervised research under an established scientist.

#### ***NHLBI Minority Institution Research Scientist Development Award***

The purpose of this renewal is to enhance NHLBI-relevant research skills of faculty members with doctoral degrees in biomedical or behavioral science at minority institutions. Awardees will be mentored by an accomplished investigator at a nearby institution and are required to develop a program of up to 5 years of intensive, full-time training during the summer and part-time training during the academic year.

#### ***NHLBI Minority Institutional Research Training Program***

The purpose of this renewal is to provide full-time research training to graduate, postdoctoral, or health professional students at minority schools for investigative careers in cardiovascular, pulmonary, and blood diseases and sleep disorders.

#### ***NHLBI Short-Term Training for Minority Students***

The purpose of this renewal is to provide research training for minority students to encourage them to participate in cardiovascular, pulmonary, hematologic, and sleep disorders research. The awardees will receive 2 to 3 months of research training with experienced investigators.

#### ***Programs for Genomic Application (PGAs) for Heart, Lung, and Blood Research***

The purpose of this renewal is to advance functional genomic research related to heart, lung, blood, and sleep health and disorders. Areas of emphasis include production and biological validation of resources and tools, education, and increased interactions between the PGA groups.

### ***SBIR/STTR Technologies for Monitoring and Performing Resuscitation***

The purpose of this renewal is to develop innovative approaches, tools, devices, and biomaterials related to bioengineering-based methodologies for monitoring and performing resuscitation. The goal is to reduce morbidity and mortality from circulatory, hypoxemic, and traumatic arrest by fostering improved systems and methods for out-of-hospital and basic resuscitation.

### **New Initiatives**

#### ***Aldosterone Antagonists for the Treatment of Heart Failure With Preserved Systolic Function***

The purpose of this RFP is to evaluate the effectiveness of aldosterone antagonist therapy to reduce mortality in patients who have heart failure with preserved systolic function.

#### ***Cultural Competence and Health Disparities Academic Award***

The purpose of this RFA is to develop core curricula and other educational materials at U.S. medical institutions that will increase the overall knowledge and skills of medical students, house staff, and other professionals on the ethnic, cultural, religious, socioeconomic, and linguistic factors that contribute to health disparities and on culturally competent approaches to mitigate them.

#### ***DNA Resequencing and Genotyping Centers***

The purpose of this RFP is to establish high-volume DNA resequencing and genotyping centers to discover and type DNA variations needed to elucidate genomic components involved in the cause, variable outcome, and progression of heart, lung, blood, and sleep disorders.

#### ***Interrelationships of Sleep, Fatigue, and HIV/AIDS***

The purpose of this RFA is to elucidate the etiology of sleep disturbances and fatigue associated with HIV and AIDS. Research findings will be used to develop approaches to improve sleep and quality of life in patients with HIV and will contribute to our understanding of the relationship between sleep and chronic diseases.

#### ***Mentored Quantitative Research Career Development Award (K25)***

The purpose of this PA is to support the career development of investigators with quantitative scientific and engineering backgrounds outside biology or medicine who have made a commitment to focus their research endeavors on behavioral or biomedical research.

#### ***NHLBI Exploratory and Developmental Research Grants for Investigations in Rare Diseases***

The purpose of this PA is to encourage new exploratory and developmental research to understand, treat, and prevent rare diseases in areas of heart, lung, and blood diseases and sleep disorders. The R21 awards will enable investigators to test innovative ideas without the need for substantial preliminary data.

#### ***Overweight and Obesity Control at Worksites***

The purpose of this RFA is to assess the effectiveness of worksite interventions for preventing or controlling overweight and obesity in adults. Environmental approaches include programs and policies that increase physical activity during and after work hours and that improve diet by offering healthier, lower-calorie foods in cafeterias and vending machines. The study population will consist of employees of varying socioeconomic status and from diverse racial/ethnic groups.

## **Trans-NIH Initiative Being Renewed**

### ***Immune Tolerance: Innovative Grants***

The purpose of this renewal is to support high-risk, novel, or speculative research on molecular mechanisms and applications of antigen-specific immune tolerance. Scientists will investigate selective long-term inactivation of immune responses—a promising approach for the treatment of allergies, asthma, autoimmune diseases, and transplant rejection.

## **New Initiatives**

### ***Career Enhancement Award for Stem Cell Research***

The purpose of this PA is to provide investigators with the opportunity to acquire new research capabilities in the use of human or animal embryonic, adult, or cord blood stem cells.

### ***Progression of Cardiovascular Disease in Type 1 Diabetes***

The purpose of this RFA is to elucidate the mechanisms involved in the development of accelerated CVD in type 1 diabetes. Areas of interest include the vascular wall, endothelial dysfunction, and the role of inflammation and the immune system in the onset and progression of cardiovascular complications in type 1 diabetes.

## **Interagency**

## **New Initiatives**

### ***Cellular and Molecular Imaging of the Cardiovascular, Pulmonary, and Hematopoietic Systems***

The purpose of this RFA is to develop in vivo molecular and cellular imaging methods to image the cardiovascular, pulmonary, and hematopoietic systems. Specifically, the goals are to detect and quantify the cellular pathways that regulate heart, lung, and blood function and the abnormalities in these pathways that lead to disease and to develop methods for cell tracking to monitor the movement and location of specific cell populations in vivo for application in cell-based therapeutics.

### ***Clinical Research Consortium To Improve Resuscitation Outcomes***

The purpose of this RFA is to establish a clinical research consortium to conduct collaborative trials that will facilitate the rapid translation of promising scientific and clinical advances to improve resuscitation outcomes in patients who experience cardiopulmonary or traumatic arrest leading to cardiopulmonary collapse.

### ***Exploratory/Developmental Bioengineering Research Grants***

The purpose of this PA is to encourage high-risk, high-impact bioengineering research in new areas that lack preliminary testing or development and fall within the purview of the NHLBI.

***Hypovolemic Circulatory Collapse: Mechanisms and Opportunities To Improve Resuscitation Outcomes***

The purpose of this RFA is to improve resuscitation outcomes from severe blood volume loss (hypovolemia) and subsequent irreversible and fatal circulatory collapse. Research will focus on identifying the molecular, cellular, and pathophysiologic response of the whole organism to hypovolemia and translating research findings into innovative approaches for out-of-hospital resuscitation following severe trauma and hemorrhage.

***Human Embryonic Stem Cell Research Resource Infrastructure Enhancement Award***

The purpose of this PA is to enhance the availability of human embryonic stem cells (hESC) for preclinical investigations. Studies will address the expansion, testing, quality assurance, cryopreservation, and distribution of the existing hESC lines that are registered in the NIH Human Embryonic Stem Cell Registry and approved for Federal Government-supported research.

***Inflammation and Thrombosis***

The purpose of this RFA is to identify molecular targets and develop new therapeutic agents for better management of thrombotic disorders such as heart attack, stroke, deep vein thrombosis, and pulmonary embolism. Research will focus on molecular and cellular interactions between the hemostatic and inflammatory systems to identify novel therapeutic agents for preclinical studies.