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This application requests funding for the third competitive renewal of a postdoctoral training program in Cardiovascular Diseases. The program is designed to provide opportunities for Cardiology, Surgical and Pediatrics-based physician-scientist trainees to become independent investigators in Cardiovascular research. Trainees will be exposed to a diverse group of faculty, ranging from junior faculty to full professor, each well-funded, with outstanding training and publication records. Trainees are encouraged to choose co-mentors, to enhance their multi-disciplinary training. Faculty mentors will direct research training in four primary areas: 1) Vascular Biology including atherosclerosis, angiogenesis and stem cells; 2) Cardiomyocyte biology, including ion channels, pharmacology and tissue- and biomedical-engineering, 3) Immunology and Genomics, including transplantation and disease markers, and 4) Translational, Outcomes and Clinical Research, including population disparity in cardiovascular diseases, access to cardiac care and selective therapy. Strong emphasis is given to training physician-scientists with broadly based, interdisciplinary knowledge and unique skill sets, with a strong fundamental understanding of cardiovascular biology and physiology. The usual duration of the program is two years and depending upon the individual trainees' selected area of research focus may be extended to three years. Candidates are selected from a very large pool of outstanding applicants to our clinical training programs in Surgery, Cardiothoracic Surgery, Adult and Pediatric Cardiology, Neonatology and Pediatric Critical Care, as well as through direct applications to the training program. Special efforts are undertaken to enhance our recruitment of woman and minorities, in part through affiliation with Harlem Hospital's Surgical Residency program. The training program and the core departments have well-established cardiovascular seminar series and journal clubs, joint laboratory meetings and retreats that are designed to foster collaborations and interdisciplinary research. In addition, the training program itself sponsors an annual retreat, seminars and work-in-progress sessions to assess trainee progress. The training program has an efficient evaluation and feedback system to ensure appropriate training of our fellows. Throughout the program and afterwards, trainees are advised on research and career development, individually and through a mentoring program headed by an Associate Director for Trainee Development. The program is designed to take advantage of the many existing strengths of Columbia University, including the Irving Center for Clinical and Translational Research (CTSA), Mailman School of Public Health, Genome Center, Bioinformatics, Tissue and Biomedical Engineering and numerous basic science departments and strong clinical programs, as well as the established track record of research training of physician-scientists in this program for the past 15 years.
