# J. DESCRIPTION OF INSTITUTIONAL ENVIRONMENT AND COMMITMENT TO TRAINING

Emory University provides an outstanding institutional environment for the training and research plan the applicant has devised. While many academic organizations lack the range of faculty and resources necessary to meet the challenges of training future leaders in multidisciplinary fields, Emory has key strengths in the area of cardiovascular sciences, and many programs, collaborations, and resources that facilitate interactions and networking of trainees with a variety of faculty and ongoing research opportunities. A highlight of our environment is the synergistic sharing of resources and research collaborations between the Rollins School of Public Health and the Emory University School of Medicine.

## Facilities and Other Resources

Rollins School of Public Health: Emory University provides an environment that emphasizes research and training across six departments (Behavioral Sciences and Health Education, Biostatistics and Bioinformatics, Environmental Health, Epidemiology, Health Policy and Management, Hubert Department of Global Health). Housed in two state-of-the-art research and teaching buildings totaling 330,000 square feet, RSPH is ranks 5th among schools of public health by U.S. News and World Report, ranks second for units within Emory University for research funding (>$90 million annually in funded research), and ranks 5th nationally in total federal funding among all schools of public health. RSPH has seen substantial growth in the past 15 years (currently ~200 full-time, >150 jointly appointed, and >350 adjunct faculty) as has the Department of Epidemiology, which currently has 40 primary faculty, >80 jointly appointed with other departments or schools, and >100 adjunct faculty. In any given year the School has approximately 1000 Master’s degree seeking students and 150 doctoral students. Office space and computers will be provided to this postdoctoral candidate. There is also state of the art information technology support, administrative support within the Epidemiology Department for routine teaching and research needs, support for preparation and submission of grant proposals, post-award management support, and research compliance services available.

Office Space: The primary office space of the sponsor (Dr. Vaccarino) and co-sponsors (Dr. Alonso and Dr. Amit Shah) is at RSPH. The RSPH has recently completed an expansion project with the construction of a new state-of-the art 10-story building (CNR), which is adjacent to the pre-existing 10-story building (GCR); the two facilities are connected through a bridge. Both buildings are within the Emory main campus, next to the School of Medicine and close to the Emory University Hospital. The new CNR building houses various departments and laboratories, including the Department of Epidemiology and, within it, the respective offices of each of the sponsors. RSPH also houses EPICORE, which include the research staff and postdocs. Within the EPICORE facility, databases are stored in a dedicated server. Data are entered into the databases using the TELEFORM application and Web-based systems. Dr. Anish Shah will have his own office and computer at the RSPH, in proximity to our offices, with access to printers and to the RSPH and EPICORE database servers. Patient examination for ongoing studies is conducted in the nearby Woodruff Memorial Research building, in a facility entirely dedicated to cardiovascular clinical research, as well as the connected Emory University Hospital.

### Computer Services: The core of our compute services at the Rollins School of Public Health is provided by a Sun SunFire V1280, which has 12 1.2GHz UltraSparc IIIci processors and 24G RAM. Storage is provided through our SAN (storage area network) over a fibre channel network, with 1 terabyte of RAID-protected storage dedicated to the compute server. The server hosts analysis and programming tools including: SAS, SPlus, Fortran 77/90, C, C++, Gauss, Java, R, and IMSL. Database Services. Our main database server is a Dell PowerEdge 2650 with dual Pentium 4 Xeon processors and 8G RAM, running Windows 2003 and MS-SQL Server. The SAN provides access to 265G of RAID-protected storage. Web access to this database is provided by Macromedia's ColdFusion application server, which runs on a Dell PowerEdge 2650 (dual P4 Xeon, 4G RAM) running RedHat Enterprise Linux. The RSPH network consists of Fast Ethernet hardware running TCP/IP. Gigabit Ethernet provides high speed transmission to each of 10 floors and across three buildings. Ethernet provides high speed (10 Mbps) access to most desktop computers and peripheral devices. The network terminates at over 900 locations. The RSPH network is connected to the Emory Campus backbone via a 100 Mbps Ethernet. The applicant will have access to the above computing environments.

Emory University School of Medicine**:** Emory is one of the top biomedical research institutions in the nation, ranking among the top 20 schools of medicine in NIH research funding, at $218 million in 2008. Emory has more than 2,500 faculty members. Emory Healthcare, which includes Emory’s own or affiliated clinics and hospitals, is the largest service provider in Georgia. The clinics and hospitals, with almost 3,000 inpatient beds and more than 2 million annual outpatient and emergency visits, create an exceptional environment for patient-oriented research. Emory physicians also provide a major portion of the city’s indigent and public health care. It is considered to be the premier institution for cardiology and cardiac surgery care in the Southeastern United States. Atlanta has also one of the largest African American populations of any city in the U.S. and approximately 30% of all patients in Emory Healthcare hospitals and clinics are African American in origin.

The Epidemiology Program in Outcomes Research (EPICORE) is led by Dr. Vaccarino (**sponsor**), and also is a multidisciplinary cooperative research group engaged in a wide range of research, including clinical and population epidemiology, outcomes research, clinical trials, and translational research, with a focus on cardiovascular disease. Many MD and PhD students rotate through EPICORE, which has conducted several studies, including the MIMS parent study and the Emory Twins Studies. The applicant will have direct contact with the research core and will develop other projects in addition to that in this training grant.

The Emory Clinical Cardiovascular Research Institute (ECCRI)is a 7,300 square foot clinical and translational research center that is co-directed by Dr. Arshed Quyyumi. Investigators at this institute have been engaged in numerous multi-center clinical trials, including the NIH Heart Failure Clinical Trials Network and the ISCHEMIA study. ECCRI’s full-time faculty researchers include Dr. Quyyumi, as well as other leaders in the field of cardiovascular (CV) research, including Peter Wilson MD. ECCRI also houses post-doctoral fellows, research coordinators, technical personnel and secretaries to assist in the daily conduct of the multiple patient-oriented research protocols. The ECCRI facility consists of 25 fully furnished offices, 2 clinic rooms, and one conference room. ECCRI is located on the Emory University Campus, within walking distance of the Emory University Hospital and Clinics, and the Clinical Interactions Network. This applicant will have the opportunity to work directly with investigators at this center. ECCRI and EPICORE also jointly organize the **Clinical CV Research Conference series**, a bi-weekly interdisciplinary seminar series, and the **METRIC Seminar Series and Research in Progress Roundtable**, which provide excellent opportunities for fellows, including the applicant, to interact/network with faculty in different departments and other fellows.

Training Programs**:** Emory University is actively involved in training researchers through multiple pathways: 1) the Master of Science in Clinical Research (MSCR) Program, directed to clinical fellows (MD’s) and junior faculty; 2) the NHLBI-sponsored **T32 Multidisciplinary Research Training to Reduce Inequalities in Cardiovascular Health** **(METRIC)**, directed by Dr. Vaccarino and co-directed by Dr. Quyyumi; 3) the KL2-Emory Mentored Clinical Research Scholars (EMCRS) Program, which supports fellows and junior faculty, including the applicant; and 4) the graduate program in epidemiology and public health at the Rollins School of Public Health, which trains and supports PhD students. The institute provides a strong collaborative and training milieu across Emory, Morehouse, and GA Tech. This applicant will have the opportunity to take advanced coursework at the Rollins School of Public Health in advanced epidemiological methods and grant writing to prepare for his future career as an academic physician. Emory University also has an NIH-sponsored **Institutional Clinical and Translational Science Award (CTSA)** program. **The Georgia Clinical and Translational Science Alliance (Georgia CTSA)** is led by Emory University, along with partners Morehouse School of Medicine (MSM), the Georgia Institute of Technology (GA Tech), and the University of Georgia (UGA). The consortium was created in 2017 (to succeed and expand the former Atlanta CTSA) with the goal of fostering translational research and training. The CTSA’s priorities include promoting education in translational sciences, facilitating collaboration and integration across multidisciplinary research, and developing new informatics solutions to advance translational research and foster public health and better care. The CTSA includes and coordinates faculty and programs that integrate clinical and translational science across multiple departments, schools, hospitals and clinical and research programs at Emory, MSM, GA Tech and UGA.

Emory Library System: The Libraries of Emory University include the Robert W. Woodruff Library and libraries for health sciences, law, theology, business, and Oxford College. Holdings total approximately 3.7 million volumes, including electronic resources, including more than 56,000 e-journal titles. This applicant and all members of the research team will have full access to the electronic and print resources that are available through the Emory library system. These resources will be used to maintain up-to-date reviews of the literature relevant to the proposed project.