

**DESCRIPTION:** State the application's broad, long-term objectives and specific aims, making reference to the health relatedness of the project. Describe concisely the research design and methods for achieving these goals. Avoid summaries of past accomplishments and the use of the first person. This abstract is meant to serve as a succinct and accurate description of the proposed work when separated from the application. If the application is funded, this description, as is, will become public information. Therefore, do not include proprietary/confidential information. **DO NOT EXCEED THE SPACE PROVIDED.**

The objective of the training program is to provide an environment for the generation of cardiovascular scientists with the capability moving through the continuum of investigations linking genomic and proteomic information to the understanding of complex systems, and translating this information to the diagnosis, treatment and prevention of diseases of the heart and blood vessels. A theme of the program is the integration of understanding at the levels of molecules and cells to the systems biology of cardiovascular function at the levels of the dynamics of and activity of tissues, organs, and animals. Two major institutions in Chicago, The University of Illinois at Chicago (UIC) and Rush University College of Medicine, have been working together for the past 14 years to meet these objectives in a joint training effort. This long standing interaction provides a unique and diverse training environment with a common thread of emphasis on integrated control mechanisms and translational research. Focus areas include physiological and patho-physiological phenotyping; endocrine and paracrine signaling; channels, receptors, G proteins, and transporters; excitation-contraction coupling; protein phosphorylation and sarcomeric motor and regulatory proteins; and, regulation of transcription and translation. A strength of the program is a seamless training environment where trainees collaborate with teams of investigators in joint projects. Pre-doctoral candidates enter the program after a successful year of graduate study in the core curriculum of the UIC Graduate Education in Medical Sciences (GEMS) Program. They continue training in various areas of specialization including Physiology and Biophysics, Biological Chemistry and Molecular Biology, Cell Biology, and Pharmacology. Students write and orally defend a formal pre-thesis proposal along the NIH or AHA format. The pre-doctoral curriculum is supplemented by required upper level graduate course in areas of special interest including courses on control theory, system biology, techniques, concepts, and strategies of scientific enquiry. Training includes the opportunity to pursue in depth informatics associated with genomic and proteomic information as well the opportunity to pursue in depth training in systems and computational biology. Post-doctoral students are trained in two or three year programs tailored to their career objectives, background, and specific course needs.

PERFORMANCE SITE(S) (*organization, city, state*)

University of Illinois at Chicago, College of Medicine, Chicago, IL

**KEY PERSONNEL.** See instructions. *Use continuation pages as needed* to provide the required information in the format shown below. Start with Principal Investigator. List all other key personnel in alphabetical order, last name first.

Name	Organization	Role on Project
R. John Solaro, PhD	University of Illinois at Chicago	PI
See attached for other personnel		

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**Disclosure Permission Statement.** Applicable to SBIR/STTR Only. See instructions.  **Yes**  **No**