Challenge. Innovation. Growth. Excitement. You will find it all at Infraredx! Infraredx, Inc., a Nipro company, is advancing the diagnosis and management of coronary artery disease by providing cardiologists with the most precise imaging tools required to predict and ultimately prevent heart attacks. Utilizing ultrasound for depth-resolved structural information, and NIRS for artery wall chemical composition, its Makoto™ Intravascular Imaging System, with accompanying Dualpro™ IVUS+NIRS catheter, is the only technology on the market that is FDA-cleared for the detection of lipid core plaque (LCP).

LCP, suspected to be vulnerable plaque, is well-documented in studies as the cause of most serious heart attacks. Infraredx is dedicated to advancing this important field of research to transform how we view and treat heart disease. In fact, Infraredx shared the results of a large clinical study (LRP study, presented at TCT 2018), that demonstrated a person is 3-times more likely to have a major adverse cardiac event at an artery wall location, as shown by our device to contain a cholesterol-rich plaque, than at another artery wall location. See https://www.infraredx.com/lrp. Based upon these positive results, we have increasing demand from cardiologists to use our device, and are poised to rapidly expand global sales in the coming years. As a result, we are actively seeking to expand our 4-person systems engineering group, currently comprised of 3 PhD and 1 BS engineers with an active internship program.

**Senior Biomedical Engineer (Scientist)**

Plans and executes product research and design projects using advanced knowledge in various disciplines of science and engineering. Designs non-clinical studies to improve or create medical devices for vascular disease diagnosis and monitoring. Conducts experiments to determine the chemical and physical properties of biological materials for medical spectroscopy and ultrasound applications. Reports on progress of research projects to work both individually and as part of a diverse team.

**Responsibilities:**

* Contributes to and supports engineering projects involving the design and development of intravascular spectroscopy and ultrasound system for diagnosis of vascular disease.
* Design and conduct *ex vivo* and phantom experiments for performance evaluation of current products, expanded product features, and new products.
* Develop and evaluate algorithms for detection, classification and quantification of vascular disease based on near-infrared and/or acoustic signals.
* Develop, implement and conduct test methods and procedures for system verification and validation.
* Provide root cause analysis of systems failures in manufacturing and field related complaints.
* Design and conduct studies to characterize chemical, physical, and functional properties of tissue and biological fluids using near-infrared spectroscopy and/or ultrasound.
* Performs data analysis and write technical reports to document results of experiments, evaluations and investigations.
* Generate and assess scientific and technological ideas, discoveries, and inventions to expand publications and intellectual property portfolio.

**Qualifications**

* Degree in Chemistry, Physics, Biology, Biomedical Engineering or related field. B.S. Degree with 5-7 years of related experience or M.S. degree with 3-5 years of related experience or Ph.D. degree with 0-2 years of related experience.
* Demonstrated proficiency in MATLAB computing environment for data analysis and data mining.
* Proven technical analysis and related capabilities for troubleshooting and root cause analysis as well as in designing and performing experiments for concept evaluation.
* Familiarity with C/C++, C# desirable.
* Knowledgeable in image analysis and/or signal processing for data mining, machine learning or algorithm development (MATLAB, Python, Octave or R).
* Desire and ability to perform product-driven research and development as part of a small, diverse team.
* Experience with medical device product design and development.
* Experience with optical components/systems, spectroscopy, and ultrasounds desirable.
* Excellent communication, technical writing, oral presentation, and interpersonal skills.

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**Approvals:**

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Stephen Sum Date Katie Nazzaro Date

Senior Vice President of Clinical, Director of Human Resources

Regulatory & Research