

Job Title: Biomedical Engineer  
Department: Product Development  
Reports To: Lead Biomedical Engineer and R&D Group Manager

## **GENERAL DESCRIPTION**

The Biomedical Engineer is responsible for the applied research and development of bio-medical systems and sub-systems to be used in the development of the Paratus foundational point-of-care cartridge technology. The Biomedical Engineer is responsible for the design and development of new device structures of the basic specimen delivery system as applicable to multiplexed chemiluminescent (and fluorescent) detection systems. The candidate should be an expert in SolidWorks, and 3D printing in order to facilitate the rapid development of fluidic, mechanical, and optical components for proof of principle and prototype multiplex analyte detection systems. The position also requires a working knowledge of injection molding processes, and the principles of design for manufacturing. A successful candidate will also have deep skills in MatLab, C++, and ImageJ. The position also requires an in depth knowledge of fluid mechanics, assay binding chemistries, organic dyes, substrates, chemiluminescent and fluorescence reporter chemistries, and optical detection methods. This is an entry level position.

## **REQUIREMENTS**

### **Education:**

- BS in Bio-Medical Engineering from a major University

### **Skills and Experience Required:**

- Strong analytical and communication skills.
- Strong proficiency with SolidWorks required.
- Strong background in fluid dynamics (especially microfluidics) highly desired.
- Experience with plastics (design, fabrication, 3D printing, injection molding) highly desired.
- Experience investigating chemiluminescent reporter chemistries for multiplexed assays.
- Experience investigating fluorescence reporter chemistries for multiplexed assays.
- Hands on experience in developing, producing, and running multiplexed assays.

## **Essential Duties and Responsibilities**

### **Responsibilities:**

- Design and fabrication of primarily plastic components and devices.
- Research and development of multiplexed assay chemistries.
- Construct the design of complex laboratory experiments.
- Perform experimental testing and data analysis.
- Design of mechanical structures meant to house, deliver, distribute and otherwise manipulate fluid at sub-milliliter volumes.
- Testing and validation of aforementioned devices and components.
- Research of chemiluminescent probe chemistries.

- Research of fluorescence probe chemistries.
- Development of prototype assay processing and assay analysis equipment.
- Modeling and data analysis of multiplexed assay results.
- Contribute to the creation of innovative solutions.
- Assist with the maintenance, cleanliness and safety of the laboratory.
- Interface and work effectively with multiple interdisciplinary departments.

**Working Conditions:**

- Work is normally performed in a typical office or lab work environment.
- Possible exposure to mechanical, biologic and chemical hazards.
- Frequent use of personal computer, copiers, printers, and telephones.
- Frequent standing, walking, climbing stairs, sitting, listening, and talking.
- Frequent work under stress, as a team member, and in direct contact with others.
- Infrequent lifting of up to 25 lbs.