Job Title - Post-Doctoral Fellow – Lab of Dr. Isidore Rigoutsos

Job Responsibilities:

The responsibilities of this position include research in the field of non-coding RNAs with a focus on the elucidation of the mechanisms underlying the onset and progression of disease and the involvement of non-coding RNAs in these mechanisms. The candidate must have the requisite graduate level knowledge base to effectively perform assigned and independent activities:

- Assist the PI in designing, implementing and conducting experiments as required by the above stated goals.
- Analyze and report on research findings.
- Publish novel research findings in appropriate scientific journals and present research findings to the scientific community by attending relevant scientific meetings.
- Demonstrate commitment to our core values of excellence and innovation, integrity and respect, teamwork and communication.
- Know policies and procedures applicable to assigned duties.
- Use sound judgment and be aware of potential hazards before taking action.
- Promptly report errors/events or situations of actual or potential harm.
- Understand emergency procedures and can demonstrate appropriate response.

Educational Requirements: Postdoctoral trainees must have received, as of the beginning date of the appointment, a Ph.D. in Biochemistry, Molecular Biology, Biomedical Engineering, The ideal candidate should have working experience with laboratory techniques such as DNA purification, RNA extraction, northern/Southern/western blotting, transfection/transduction, RNAi/miRNA, siRNA design, PCR, RT-PCR, RACE, vector construction, site-directed mutagenesis, etc. Knowledge in the field of non-coding RNAs, RNA interference, and related matters is a must. Previous working experience in these areas is a must. A strong publication record is a must.

The ideal candidate should also be generally familiar with topics pertaining to computer science, machine learning, bioinformatics and be aware as to how these disciplines are used in the context of biology and medicine. Working knowledge of technical computing software packages such as Matlab, R, etc. and of tools for data visualization, data analysis and data mining is a must.

Research training is for postdoctoral training of professionals for the purpose of leading independent research. In all cases, postdoctoral trainees will engage in research, research training, or comparable activities beginning at the time of appointment.

The Rigoutsos lab (https://research.jefferson.edu/labs/researcher/rigoutsos-research.html) is a highly dynamic and collaborative environment. The lab is at the cutting edge of biomedical research and pursues “data-driven basic science.” Central to the lab’s activities is the combination of experimental work (wet bench) with computational analyses of Big Data.

Research work in the lab over the last 20 years has focused on short regulatory RNA molecules. The lab specifically studies three types of molecules in health and disease: the isoforms of microRNAs (miRNAs) that are known as isomiRs; the fragments of transfer RNAs (tRNAs) that are known as tRFs; and the fragments of ribosomal RNAs (rRNAs) that are known as rRFs.

The Rigoutsos lab is one of the leaders in this field and their work to date has led to several pioneering discoveries. The lab’s work has appeared in many high-impact factor journals, including Science, Nature, Nature Biotechnology, Nature Methods, Cell, Cancer Cell, Proceedings of the National Academy of Sciences (PNAS), Nucleic Acids Research, Genome
Biology, Genome Research, and Cancer Research. Several of these results have important ramifications for Precision Medicine and the study of health disparities.

The lab seeks motivated Postdoctoral Fellows to join and embark on an exciting journey to study these molecules functionally and work towards unravelling their roles in the mechanistic events that underlie health and disease. The studies require advanced knowledge of genomic, biochemical, cell and molecular biology approaches. Working experience with modern computational techniques and analytical tools is a plus. Highly specialized equipment, high performance computing infrastructure, software applications and computer models commensurate with the programmatic needs of the laboratory.