

Postdoctoral Fellow – Imaging and Nano-Sensing

Note: Applicants for this position must have a PhD and direct research experience in optics and super-resolution microscopy

The Center for Physical Genomics and Engineering (CPGE) at Northwestern University is a pioneer in the development of novel super-resolution imaging and nano-sensing technologies and is currently seeking a postdoctoral fellow to join a multidisciplinary team of scientists leading exciting, cutting-edge research at the crossroads of optics, biology, physics, engineering, genomics and medicine. The Center develops novel imaging technologies including partial wave spectroscopic microscopy (PWS), intrinsic contrast-stochastic optical reconstruction microscopy (IC-STORM), and inverse spectroscopic optical coherence tomography (ISOCT), among others, to interrogate fundamental molecular questions and develop novel approaches relevant to the prevention, early detection, diagnosis and treatment of cancer and other currently intractable diseases.

As evidenced by recent publications in *Nature Biomedical Engineering*, *Science Advances*, *PNAS*, *Cancer Research*, and *Scientific Reports*, we undertake a systematic approach to understanding carcinogenesis and cancer development by integrating molecular dynamics simulations, live-cell super-resolution nanoimaging, computational genomics, and genome mapping technologies. CPGE is a participant in two of the National Cancer Institute's U54 cancer research networks, with significant funding and recognition as an NCI Center for Chromatin Nanolmaging in Cancer and an NCI Center for Cancer Mestastases Research (in collaboration with MIT). Additionally, the Center runs the first physical genomics training program in the United States, supported by an NIH T32 grant.

CPGE provides a highly collaborative transdisciplinary environment populated by researchers with diverse backgrounds: optics, biomedical engineering, molecular biology, computer science, biophysics, chemical engineering, etc. CPGE has collaborative projects with over 20 physicians, biomedical, and physical sciences investigators both internationally and domestically.

We are looking for an independent, highly creative and resourceful individual to provide technical expertise and lead the development, validation and ongoing maintenance of new optical instruments in a fast-paced research environment. The successful candidate will join our multidisciplinary team of engineers, scientists and staff to provide direction and coordination in the experimental planning, implementation and improvement of the lab's imaging technology platforms (both hardware & software), manage current & future project needs in a manner that is driven for consistently improved performance, ensure safe operations, and acquire data for various ongoing projects.

Responsibility and Duties:

- Works independently and leads a team in the experimental planning and design of optical microscopy instruments.
- Responsible for instrumentation development and validation.

- Performs data acquisition and analysis for validation of instruments and protocols. Records detailed observation and measurements, and presents those findings in meetings as required.
- Ability to prepare and acquire data for samples from across a variety of cell types, slide formats and media conditions within specifications and timelines provided.
- Identifies opportunities for improvement of existing optical instruments.
- Maintains high level of professional expertise through familiarity with scientific literature.
- Participates in the development of new research proposals.
- Additional duties may be required at the discretion of the supervisor.

Education requirements:

- PhD in an Optics or Biomedical Engineering-related field required with expertise in optics/optical engineering, optical microscopy, instrumentation and system design.

Northwestern University is an Equal Opportunity, Affirmative Action Employer of all protected classes, including veterans and individuals with disabilities. Women, racial and ethnic minorities, individuals with disabilities, and veterans are encouraged to apply. Hiring is contingent upon eligibility to work in the United States.

Applicants should send a CV and cover letter to physicalgenomics@northwestern.edu