Massachusetts General Hospital
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HARVARD MEDICAL SCHOOL
TEACHING HOSPITAL

Alejandro Bertolet, PhD

Assistant Professor of Radiation Oncology
Division of Biophysics
Dept. of Radiation Oncology
Massachusetts General Hospital

125 Nashua St, 3rd Fl, Suite 320
abertoletreina@mgh.harvard.edu

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Open Postdoctoral Fellow Position – GPU-based SPECT Reconstruction

B-lab, Division of Physics, Department of Radiation Oncology, Mass General Hospital and Harvard Medical School

We are excited to announce an open position for a postdoctoral fellow with expertise in medical imaging reconstruction and Monte Carlo methods. Our Department, situated within the vibrant ecosystem of the Mass General Hospital and Harvard Medical School in Boston, MA, is at the forefront of radiation therapy and biology modeling.

Application Process:

Submit your CV and **two** letters of reference (submitted directly by your references) to Dr. Alejandro Bertolet, Ph.D., at **abertoletreina@mgh.harvard.edu**, and optionally to our Director of Physics Research, Prof. Harald Paganetti, Ph.D., at **hpaganetti@mgh.harvard.edu**

Desired Expertise:

Ideally, the candidate should have knowledge or experience in **at least one** (or more) of the following areas:

- Monte Carlo simulations of radiation transport
- Medical imaging, especially reconstruction of three-dimensional tomographies
- Familiarity with the physics of Nuclear Medicine imaging, particularly SPECT
- GPU-based programming

Candidates with similar but not explicit expertise in these areas are also encouraged to apply.

Project Overview:

The selected candidate will work on optimizing the current reconstruction methods for SPECT imaging, with a special view on its use for dosimetry in radionuclide and radiopharmaceutical therapy. They will be responsible for implementing a GPU-based code for reverse-physics Monte Carlo algorithm to mitigate known image quality degrading factors. Please check our website at **https://bertoletlab.mgh.harvard.edu** for more details on our lab and ongoing projects.

Importantly, our lab thrives on collaboration. We work closely within a larger research structure, partnering with other labs within our Division, such as those led by Drs. Harald Paganetti, Jan Schuemann, Aimee McNamara, and Ibrahim Chamseddine. Our present and future projects include a variety of exciting topics in radiation therapy and radiation biology, such as experimental and computational dosimetry for proton FLASH radiotherapy, artificial intelligence applied to radiotherapy, and computational modeling of multiple aspects involved in cancer care. A special collaborative spirit and involvement in these areas is expected from the selected candidate.

What we value:

- **Collaboration**. Applicants should enjoy and promote collaboration with the rest of our team.
- **Diversity**. We highly value diversity and inclusivity as a means to ensure novel and multifaceted ideas. International and minority candidates are encouraged to apply.
- **Innovation**. Our lab offers a stimulating environment with multiple projects. We encourage innovative thinking and the exploration of new methodologies.
- **Forward-Thinking**. Proactive, visionary candidates seeking to develop modular and flexible tools that can serve as a foundation for future research are highly valued.

Dates:
The selected candidate is expected to start this position as soon as possible.

Join us in our mission to push the boundaries of cancer care modeling. We look forward to welcoming a new member to our dynamic team!