

# Postdoctoral Research Associate

## Clinical Research in Aortic Disease Imaging

*Advanced Aortic Imaging for Clinical and Translational Research (AAI-CTR) Lab*

Department of Radiology, University of Wisconsin–Madison

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### Overview

The Advanced Aortic Imaging for Clinical and Translational Research (AAI-CTR) Lab at the University of Wisconsin–Madison is seeking a Postdoctoral Research Associate with clinical training (MD or equivalent) to join our NIH-funded, multidisciplinary research group. This position emphasizes clinical research in aortic disease and will support multiple active projects, with a primary focus on a newly formed multi-center consortium aimed at identifying novel imaging biomarkers of risk for aortic dissection using pre-dissection imaging data.

UW–Madison Radiology is a leading academic center for imaging research with state-of-the-art imaging equipment, robust research infrastructure for AI and image analysis, a collegial and collaborative environment, and strong partnerships with other departments (e.g., Medical Physics, Surgery, Cardiology) and industry partners.

### Why Join Us

The AAI-CTR Lab is an internationally recognized research group focused on using advanced imaging to improve surgical and medical treatment for aortic patients. Our team offers a genuinely collaborative, multi-disciplinary environment spanning Radiology, Surgery, Cardiology, and Medical Physics. **Current and former trainees have received awards from prominent scientific societies and competitive grant funding for their work. Importantly, we have a well-established track record of clinical trainees who have completed research in our lab and gone on to match at top training programs in the US and abroad, predominantly in Radiology & Surgery.** Given the novelty of the research techniques, both technical developments and clinical analyses are anticipated to yield high-impact, publishable results.

### Position Responsibilities

- Assist the PI and collaborators with clinical research investigating imaging-based biomarkers for diagnosing, phenotyping, and risk-stratifying patients with diseases of the aorta, with emphasis on aortic dissection prediction
- Contribute to the design and execution of multi-center consortium studies focused on pre-dissection imaging analysis
- Build, curate, and manage clinical research databases across institutional and consortium datasets
- Independently perform advanced data analysis and statistical modeling, and take the lead on preparing research manuscripts for publication
- Supervise and mentor undergraduate research students
- Present research findings at national and international scientific meetings
- Processing datasets using existing neural networks and performing optimization and validation tasks

## Required Qualifications

- Doctoral degree in Medicine (MD or equivalent); candidates with a PhD in Epidemiology, Public Health, Biomedical Engineering, or Medical Physics with strong clinical research interest and experience will also be considered
- Experience building and maintaining clinical research databases
- Strong oral and written communication skills, with a minimum of 2 peer-reviewed publications demonstrating a scientific background in clinical research
- Enthusiasm for exploratory research in areas with limited prior published literature
- Strong organizational and project management skills
- Familiarity with basic biomedical research statistics (e.g., correlation, regression) and willingness to learn new analytical methods; experience with R, STATA, SPSS, or similar software is a plus
- Experience with medical imaging data (CT, MRI), whether through clinical practice or research

## Desired Qualifications

- Clinical background or research experience in genetics, heritable conditions, aortic disease, or aortopathy
- Research experience with medical imaging data analysis (e.g., image segmentation, registration, quantitative measurement)
- Experience with advanced statistical or data science techniques such as mixed models, clustering/classification
- Familiarity with machine learning/deep learning concepts or applications
- Basic proficiency in Python and/or MATLAB

## Work Authorization

We have a strong preference for candidates who are currently authorized to work in the United States, due to the significant processing delays associated with visa sponsorship. However, we will consider exceptionally strong applicants for H-1B sponsorship on a case-by-case basis.

## Appointment Details

This is a one-year appointment with the option to renew based on performance and funding availability. The position is available immediately.

## How to Apply

Interested candidates should submit the following materials to Dr. Nicholas Burris at [nsburris@wisc.edu](mailto:nsburris@wisc.edu):

- Cover letter addressing your specific interest in the position and outlining relevant skills and experience
- Curriculum vitae
- Reprints of two representative publications

Reference letters will be requested for highly qualified candidates.