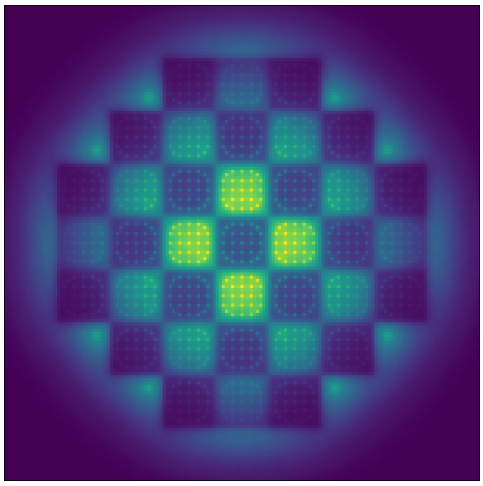
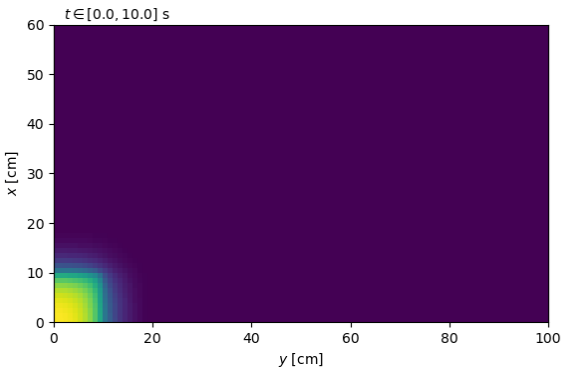
Center for Exascale Monte Carlo Neutron Transport

Position

The Center for Exascale Monte Carlo Neutron Transport (CEMeNT) is recruiting for a postdoctoral scholar to provide computational science research, code development, and student mentoring support. This position is a full-time, 12-month Postdoctoral Scholar located in Corvallis, Oregon, working within the School of Nuclear Science and Engineering at Oregon State University. Funding for this position is expected to exist for two years; however, contracts are annual and are eligible for extension based on satisfactory performance and mutual agreement.





CEMeNT is a competitively designated National Nuclear Security Administration funded Focused Investigatory Center as part of the Predictive Science Academic Alliance Program (PSAAP). Within CEMeNT, researchers from Oregon State University, the University of Notre Dame, and North Carolina State University work to develop the mathematics, computational physics, and computer science required to scale time-dependent Monte Carlo neutron transport

simulations to exascale-class computers. Our work has high visibility in the US National Laboratories and the computational science community.

The universities participating in CEMeNT commit to inclusive excellence by advancing equity and diversity in all that we do. We are Affirmative Action/Equal Opportunity employers, and particularly encourage applications from members of historically underrepresented racial/ethnic groups, women, individuals with disabilities, veterans, LGBTQ community members, and others who demonstrate the ability to help us achieve our shared vision of a diverse and inclusive community.

Responsibilities

The successful applicant will:

- Collaborate with the CEMeNT Leadership and CEMeNT-affiliated faculty to conduct cutting edge research in computational and develop software for solving neutron transport problems on world-leading architectures.
- Advance the state-of-the-art in Monte Carlo particle transport, hybrid methods, uncertainty quantification, and/or machine-learning enhanced physics simulation.
- Work alongside colleagues at US National Laboratories to further the impact of the research and development at CEMeNT.
- Mentor and direct the research work of graduate students.

Required Qualifications

- Ph.D. in nuclear engineering, mechanical engineering, computational physics, applied mathematics or scientific computing disciplines.
- Proven track-record of independent research, critical thinking, and successful academic publications.
- Excellent written and verbal communication skills.
- Experience in developing software for high performance computing applications using Python and C++.
- A demonstrable commitment to promoting and enhancing diversity.

Preferred Qualifications

- Education, training or direct experience with modern software engineering practices such as version control with Git, collaborative development, and continuous integration testing.
- Experience developing scientific software applications that run on GPUs.
- Education, training or prior experience with the simulation of neutron transport physics.
- Education, training or prior experience with Monte Carlo simulations.

Position available: November 15, 2022 (open until filled)
U.S. citizens and residents will be prioritized.

Stipend and benefits conform with postdoctoral scholar standards at Oregon State University More information about postdoctoral scholar appointments can be found at the Office of Postdoctoral Scholars at Oregon State University.

Application

For full consideration, apply by November 1, 2022. Applicants must send the following documents in a single PDF file (Word documents will not be opened) to both contacts listed below:

- A detailed CV and academic transcript
- A one-page statement describing your background and how you fit the advertised position. Please specifically reference the required and preferred qualifications.
- Contact information for three references

The subject line of your email should contain the following text: “CEMeNT Post-doctoral Scholar - (your last name).” Please note that only candidates whose applications contain evidence of the required skills and expertise will be contacted.

Contacts

Dr. Todd Palmer, CEMeNT Director
School of Nuclear Science and Engineering
Oregon State University
todd.palmer@oregonstate.edu

Dr. Ryan McClarren, CEMeNT Deputy Director
Department of Aerospace and Mechanical Engineering
University of Notre Dame
rmcclarr@ndu.edu