Radiation Transport Applications Group November 16, 2019
X-Computational Physics Division
Los Alamos National Laboratory
Vacancy Name: IRC76512

Dear Team Hiring Manager,

I am interested in joining your team as an early career scientist to work with the application of radiation transport modeling and simulatios in support of laboratory missions. I would like to apply for Vacacy Name: IRC76512.

I am currently a post-doctoral scholar at the University of California, Berkeley with expertise in particle transport and nuclear decay simulations working in particle/nuclear physics.

With regard to my ability to meet the specific requirements of this job:

- **Education:** PhD in experimental particle physics (2016) with emphasis on particle/radiation transport simulations and algorithm development for novel particle detection technologies.
- **Expertise in radiation transport simulations:** 8 years of experience working with GEANT4 modeling particle/radiation transport, nuclear decays, photon propagation, and their effects on hardware. 1.5 years of experience with GEANT4-based RAT.
- **Oral and written communication skills:** Talks given at institutions such as Sanford Underground Research Facility, Fermilab, Lawrence Livermore National Laboratory. Contributed work published in various journals.
- **Demonstrated scientific productivity:** Past work includes independent development of directional neutrino detection/imaging algorithms in scintillator and comparison with data.
- **Working in a team environment:** Worked in 3 multinational collaborations in Japan, Italy, and US. Original work successfully interfaced with larger collaboration. Mentored PhD-level students in weekly GEANT4 tutorials and increased productivity by organizing group initiatives.
- **Willingness to learn new skills and be flexible:** Post-doctoral work involves learning multi-physics thermal/mechanical stress simulations using ComSol/SolidWorks to evaluate compliance with target safety factors for hardware R&D.
- **Knowledge of a scripting language and data analysis:** Over 8 years of experience analyzing large-scale simulated/experimental data using statistical analysis tools in ROOT/RooFit/Python. Typical work involves uncertainty analysis, trade studies, sensitivity studies.
- **Experience modeling particle transport experiments and comparison with experimental data:** Lead developer of GEANT4 detector modeling of mini-TimeCube portable neutrino detector experiment. Current work involves simulation/data comparisons of nuclear decay spectrum of decay daughters from ^{238}U/^{232}Th chain.
- **Ability to obtain secret clearance:** US citizen.

I would appreciate an opportunity to meet and discuss my application at an interview. I have also sent my resume and other relevant documents for your consideration. Please feel free to let me know if you have any questions.

Thank you for your time,

Michinari Sakai

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