

## Postdoctoral Researcher – Next-Generation Solvers for Mixed-Integer Nonlinear Programs

The Mathematics and Computer Science (MCS) Division at Argonne National Laboratory invites outstanding candidates to apply for a postdoctoral position focusing on Mixed-integer nonlinear programming (MINLP) which combines the difficulty of optimizing over discrete variable sets with the challenges of handling nonlinear functions. MINLP is one of the most flexible modeling paradigms available, and an expanding body of researchers and practitioners, including computer scientists, engineers, economists, statisticians, and operations managers, are interested in solving large-scale MINLPs.

The successful candidate will work on a joint project with the University of Wisconsin - Madison. The aim of this project is to make MINLP as ubiquitous as MILP by analyzing the structure of fundamental MINLP models, by designing search and partitioning strategies capable of leveraging the results of these analysis as fully as possible, and by implementing the resulting algorithmic frameworks efficiently on modern computational resources.

Candidates are also encouraged to expand their own research agenda at Argonne. The appointment will be in the Mathematics and Computer Science Division, which has strong programs in scientific computing, software tools, and computational mathematics. Candidates should have a background in one or more of the following: optimization, numerical analysis, linear algebra, scientific computing, and C/C++. Experience with integer or nonlinear optimization techniques and modeling languages such as AMPL and GAMS is a plus.

Internationally recognized for innovative research in high-performance computing, the MCS Division supports an excellent computational environment that includes access to a scientific visualization laboratory and a distributed computing laboratory. Argonne is located in the southwestern Chicago suburbs, offering the advantages of affordable housing, good schools, and easy access to the cultural attractions of the city.

Candidates should submit an application via the Argonne website under division postdoctoral job openings for job requisition MCS-313702. The application must include a curriculum vitae; list of publications, abstracts, and significant presentations; and the names of three references, other than Argonne staff, who can attest to the candidate's ability and potential.

For further information about division postdoctoral appointments at Argonne, see the <http://www.dep.anl.gov/postdocs/divisionpostdoc.htm> website. Questions can be addressed to Sven Leyffer, or Todd Munson, MCS Division, by e-mail to [leyffer@mcs.anl.gov](mailto:leyffer@mcs.anl.gov) or [tmunson@mcs.anl.gov](mailto:tmunson@mcs.anl.gov).

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