Postdoctoral Scholar in Power Systems Modeling and Controls

A postdoctoral scholar position is open at Arizona State University (ASU) within the general area of power systems modeling, optimization, and control. The scholar will be supervised by Dr. Nathan Johnson in The Polytechnic School of the Ira A. Fulton Schools of Engineering and join a research team of 15 people working in synergistic cohorts on high-penetration renewables, micro-grids and building energy systems, and complex systems modeling and optimization (http://faculty.engineering.asu.edu/nathanjohnson).

The scholar is expected to work directly with Dr. Johnson to complete research, publish results, and assist in managing graduate students on two or more of the below projects:

- Micro-grid modeling, design, hardware integration, and operation
- Resiliency simulation of electrical power networks and interdependent infrastructures
- Distributed energy resource modeling, design, and distributed control
- Building energy management systems, adaptive self-organizing control, and transactive energy
- Energy for global development—off-grid and on-grid applications in emerging markets

The above work is funded by NSF, US DOE, US DOD, and various industry partners.

The postdoctoral scholar will coordinate research projects and work directly with public and private partners. The scholar will act as the technical and programmatic leader of a subset of work in Dr. Johnson’s team. The above work aligns with the Systems Engineering Environment and Studio (SEES) Laboratories led by Dr. Johnson. SEES offers several computational and physical environments for taking energy innovations from concept to construction. Some examples include containerized micro-grids, integrated building energy systems, advanced inverter communications and control, low-cost charge controllers and micro-grid controllers for off-grid power solutions, electric power distribution network modeling, resilient self-organizing control, and techno-economic optimization of advanced concentrating solar power systems. This work is completed in collaboration with 16 entities from academia, industry, national laboratories, and non-governmental organizations.

Qualifications: A Ph.D. degree in electrical engineering, mechanical engineering, systems engineering, or related discipline with an emphasis in power systems modeling and controls. The scholar must be experienced in developing software and hardware solutions. Experience in C/C++, Python, Java, and Matlab is desired alongside any background in commercial packages (e.g., OpenDSS, PLEXOS, PowerWorld, Aspen, Siemens PSS/E, GE MAPS, HOMER, RETScreen, BEOpt, Dymola). Capability to design and build operational hardware is necessary in the range of 100 W to 100 kW. Applicants must have demonstrated capacity to work independently and in groups.

Salary: The base salary of $50,000-$60,000 per year is commensurate with experience and responsibilities, with additional salary available based on performance during the appointment.

Term of employment: 12-24 months. Applicants available for longer periods will be looked upon favorably.

Start date: Available immediately. Initial review of applications will begin on December 1, 2015.

How to apply: Applications must be submitted via e-mail to NathanJohnson@asu.edu. Applications will be reviewed as they are received and continue until the position is filled. Submit the following documents as one PDF document: cover letter, research statement (two pages), personal statement (one page), curriculum vitae. Applicants must arrange to have three reference letters submitted to NathanJohnson@asu.edu.

Questions: Contact Dr. Johnson directly with any questions pertaining to the responsibilities and research projects expected of the postdoctoral scholar. NathanJohnson@asu.edu or 480-727-5271.