Opportunity Title: Statistical Machine Learning Supporting Environmental Decision-Making with Bayesian Networks - EPA
Opportunity Reference Code: EPA-ORD-NRMRL-LRPCD-2016-01

Organization U.S. Environmental Protection Agency (EPA)

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How to Apply A complete application consists of:

- An application
- Transcripts – Click here for detailed information about acceptable transcripts
- A current resume/CV, including academic history, employment history, relevant experiences, and publication list
- Two educational or professional references

All documents must be in English or include an official English translation.

If you have questions, send an email to *EPArpp@orau.org*. Please include the reference code for this opportunity in your email.

Description A research project training opportunity is currently available at the U.S. Environmental Protection Agency's (EPA) Office of Research and Development (ORD)/National Risk Management Research Laboratory (NRMRL). The appointment will be served with the Land Remediation and Pollution Control Division (LRPCD) in Cincinnati, Ohio.

LRPCD conducts research at the basic level, as well as bench-scale and pilot-scale levels, to explore innovative solutions to current and future land pollution problems. Bench scale research will be conducted to test hypotheses related to the quantifications and effects of physicochemical properties of nanomaterials in environmental media.

The participant will gain educational and professional benefits through involvement in a statistical modeling and interoperability project focusing on machine learning approaches to abstract process model results into causal statistical relationships, and representing those as Bayesian networks supporting decision analysis.

The research participant will gain experience by:

- Developing methods for abstracting complex environmental model input/output causal relationships
- Investigating approaches to integrating spatial and temporal aspects of environmental modeling in these relationship
- Exploring approaches to represent these relationships in formats amenable to decision analysis e.g. Bayesian Networks
- Summarizing research for presentations and scientific manuscripts in refereed literature

This program, administered by ORAU through its contract with the U.S. Department of Energy to manage the Oak Ridge Institute for Science and Education, was established through an interagency agreement between DOE and EPA.

Qualifications Applicants must have received a master's degree in computer science,

statistics, environmental modeling, or a closely related field within five years of the desired starting date, or completion of all requirements for the degree should be expected prior to the starting date.

The appointment is full time for one year and may be renewed upon recommendation of EPA and contingent on the availability of funds. The participant will receive a monthly stipend. Funding may be made available to reimburse the participant's travel expenses to present the results of his/her research at scientific conferences. No funding will be made available to cover travel costs for pre-appointment visits, relocation costs, tuition and fees, or participant's health insurance. The participant must show proof of health and medical insurance. **The participant does not become an EPA employee**.

The mentor for this project is Brian Dyson (dyson.brian@epa.gov). The desired start date is March 1, 2016.

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Master's Degree received within the last 60 month(s).
- **Discipline(s):**
  - **Computer, Information, and Data Sciences** (4 👁)
  - **Mathematics and Statistics** (2 👁)