



**Oak Ridge Institute for Science and Education**  
**RESEARCH PARTICIPATION PROGRAM For the**  
**NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY (NGA)**

---

**Visiting Scientist Fellowship Program**  
**Vehicle Properties in Motion Imagery Project in the Reston, VA area**

**PROJECT #NGA FY2008-09**

The National Geospatial-Intelligence Agency (NGA) provides timely, relevant, and accurate geospatial intelligence in support of national security objectives. Geospatial intelligence is the exploitation and analysis of imagery and geospatial information to describe, assess, and visually depict physical features and geographically referenced activities on the Earth. Information collected and processed by NGA is tailored for customer-specific solutions. By giving customers ready access to geospatial intelligence, NGA provides support to civilian and military leaders and contributes to the state of readiness of U.S. military forces. NGA also contributes to humanitarian efforts such as tracking floods and fires, and in peacekeeping. NGA is a member of the U.S. Intelligence Community and a Department of Defense (DoD) Combat Support Agency. Headquartered in Bethesda, Md., NGA operates major facilities in the St. Louis, Mo. and Washington, D.C. areas. The Agency also fields support teams worldwide.

**PROJECT DETAILS**

An appointment is available at the NGA InnoVision Basic and Applied Research Office.

NGA is studying the phenomenology of moving vehicles, specifically looking at the vibrations and motions that take place. The work may look at the physics of vehicle oscillations and movements affected by the shock absorber system, stresses and movements in the vehicle. Specifically we want to understand how the load and distribution of the load in the vehicle affect the oscillations and what other observables there may be if the motion is exaggerated in image processing of the vehicle in motion. Pattern recognition means of classifying vehicles and the load they carry are being sought. NGA anticipates using the fruits of this effort to identify priorities for future research and to assess progress toward NGA goals.

This appointment includes, but is not limited to, the following:

- Immersion in NGA analysis activities to identify opportunities to apply known methods, tools and techniques,
- Close work with government, university, and contractor scientists and engineers to monitor progress in relevant domains, to evaluate research results, and to determine the feasibility of using such methods,
- Planning and executing original research, and
- Assembling a corpus of ground-truthed data.

**INDIRECT BENEFITS OF POSITION**

Selected Visiting Scientists will have the opportunity to perform research on topics of interest to the U.S. Government. NGA's extensive partnering relationships with other government agencies will expose Visiting Scientists to a broad government research community. Visiting Scientists will have the opportunity to meet government scientific decision-makers, and learn directly from them about the role of scientific research in government activities. Furthermore, Visiting Scientists have the opportunity to learn how research products transition from the proof-of-concept stage to integrated production systems.

**ELIGIBILITY**

- Applicants should have received a Doctoral Degree in physics, remote sensing, computer science, engineering, or a related discipline within the last five years or should complete all requirements for the degree before the starting date. Students who have not completed their degrees should have completed all required courses and qualifying examinations. Current college or university faculty members on sabbatical are also eligible. Other applicants will be considered on a case-by-case basis.



**Oak Ridge Institute for Science and Education**  
**RESEARCH PARTICIPATION PROGRAM For the**  
**NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY (NGA)**

---

- Applicants should have a research interest or experience in one or more of the following topics: signal processing, remote sensing, computer vision, image science, or photogrammetry, as well as having excellent verbal and written communication skills.
- U.S. citizenship is required for the applicant and all immediate family members. Please see further eligibility under security requirements.
- A background check will be conducted for an SCI security clearance. Completion of a Questionnaire for National Security Positions is required. Details under security requirements.
- NGA is a drug-free workplace. Initial and random drug tests will be conducted.

### **BASIS OF SELECTION**

Participants will be selected based on research interests stated in a 2-4 page research proposal, relevant experience, academic performance, overall technical expertise, publications, recommendations, and compatibility of background with basic and applied research programs and projects at NGA and/or the host Installation.

### **RESEARCH PROPOSAL**

The research proposal is a concise statement of the proposed research interest, including goals and anticipated outcomes, work products, methodologies, hypothesis, if appropriate, and timeline. An explanation of the relationship to the candidate's previous work or research experience is desirable. Relevant benefits and relationship to the NGA mission and objectives should also be included. The research proposal is a significant component of the selection criteria. There is a four-page limit to the proposal. NGA and the selected candidate will work cooperatively to define mutual research assignments and goals in support of the NGA mission and the Visiting Scientist's educational pursuits.

### **APPOINTMENT TERM AND WORK ENVIRONMENT**

The initial appointment is for **one year** and may be renewed for an additional year based upon recommendation of NGA and subject to availability of funds. This is a **full time** residency appointment at NGA. Work will require SCI clearances and drug testing, and work will not begin until all security processes and drug testing are completed successfully. During the entire period of the award, participants must devote their activities to the approved research program and must be in-residence at an NGA facility in the Reston, VA area, not at their home institution or any other site. NGA approval is required before participants may accept additional monetary aid or other remuneration from another fellowship appointment, or similar grant during the period of award.

Participants will be working in a classified environment. Approval for any publication of articles or presentations during the appointment is subject to the NGA process for public release of information. The requirement for publications and presentations to undergo a NGA public release process extends beyond the term of the appointment when a research product, article or presentation contains information directly arising from participation in the appointment. For inventions conceived of or reduced to practice during the appointment, the fellow shall assign to NGA a perpetual world-wide royalty-free non-exclusive irrevocable license to practice the invention on behalf of the Government. A fellow may hold a copyright in information created by the fellow during the appointment.

### **COMPENSATION**

The participant will receive a monthly stipend. The stipend rate is determined based upon level of education, training, and experience. Inbound travel and moving expenses may be considered and reimbursed according to established policies. Limited travel and other costs will also be reimbursed for training related to the project as approved by ORISE and the host installation. The participant does not become an NGA employee and there are no fringe benefits paid.

The participant must show proof of health and medical insurance. Health plans are available through the Oak Ridge Institute for Science and Education for Postgraduate Internship participants. The monthly stipend



**Oak Ridge Institute for Science and Education**  
**RESEARCH PARTICIPATION PROGRAM For the**  
**NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY (NGA)**

---

is intended to cover costs for health and medical insurance. NGA does not provide additional compensation for these expenses.

### **APPLICATION and DEADLINE**

Applications should be submitted by November 30, 2008. Applications will be processed after that date, but those received by November 30, 2008 will be given preference. The Visiting Scientist Program for NGA is administered by the Oak Ridge Institute for Science and Education. A complete application package consists of

- Application form or a current curriculum vitae containing the information on the form
- 2 completed reference forms
- 2-4-page research proposal
- Optional demographic form

Please reference **Project #NGA FY2008-09** when calling, emailing, or writing for information. For immediate consideration applicants may forward resumes or vitas to the email address listed at the end of this announcement. Additional information and application material can be found on the following website [www.ornl.gov/Maryland](http://www.ornl.gov/Maryland).

### **SECURITY REQUIREMENTS**

The program is open to qualified U.S. citizens ONLY without regard to race, sex, religion, color, age, physical or mental disability, national origin, or status as a Vietnam era or disabled veteran. All members of immediate family (to include parents, stepparents, siblings, children, stepchildren and cohabitants) must be citizens of the United States when the applicant applies.

- The "Questionnaire for National Security Positions", Standard Form 86 (SF-86) and "Fingerprint Chart", Standard Form 87 (SF-87) September 04 must be completed by the selectee to initiate a background investigation. The SF-86 can be found at <http://www.opm.gov/forms/html/sf.asp>. ***These forms must be received within two weeks of selection for an appointment and required clarification must be completed within two weeks of request.***
- Top Secret security clearance with access to Sensitive Compartmented Information (SCI) required (may take 4-5 months to complete). Applicants who claim dual citizenship or hold foreign passports are not eligible for DoD granted security clearances. Clearance determinations are based upon careful consideration of the following:
  - o Allegiance to the United States
  - o Foreign Influence
  - o Foreign Preference
  - o Sexual Behavior
  - o Personal Conduct
  - o Financial Considerations
  - o Alcohol Consumption
  - o Drug Involvement
  - o Emotional, Mental, and Personality Disorders
  - o Criminal Conduct
  - o Security Violations
  - o Outside Activities
  - o Misuse of Information Technology Systems
- Applicants must undergo a comprehensive background investigation and be adjudicated in accordance with the guidelines set by "Director of Central Intelligence Directive 6/4" and DoD 5200.2-R, "Department of Defense Personnel Security Program Regulation". Available, reliable information about the person, past and present, favorable and unfavorable, will be considered in



**Oak Ridge Institute for Science and Education**  
**RESEARCH PARTICIPATION PROGRAM For the**  
**NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY (NGA)**

---

reaching a determination. Each case will be judged on its own merits, and any doubt concerning personnel being considered for access to classified information will be resolved in favor of national security.

- A counterintelligence polygraph may be required.
- NGA is a drug-free workplace. Initial and random drug tests will be conducted.

**ORAU/ORISE Maryland Office**  
4692 Millennium Drive, Suite 101  
Belcamp, MD 21017  
Email : [Recruiter@orau.org](mailto:Recruiter@orau.org)  
Fax: (410) 306-9306  
[www.ORAU.org/Maryland](http://www.ORAU.org/Maryland)