

**Opportunity Title:** Predicting behavioral influences on epidemic dynamics

**Opportunity Reference Code:** IC-18-05



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**Organization** Office of the Director of National Intelligence (ODNI)

**Reference Code** IC-18-05

**How to Apply** **Create and release your Profile on Zintellect** – Postdoctoral applicants must create an account and complete a profile in the on-line application system. **Please note: your resume/CV may not exceed 2 pages.**

**Complete your application** – Enter the rest of the information required for the IC Postdoc Program Research Opportunity. The application itself contains detailed instructions for each one of these components: availability, citizenship, transcripts, dissertation abstract, publication and presentation plan, and information about your Research Advisor co-applicant.

Additional information about the IC Postdoctoral Research Fellowship Program is available on the program website located at: <https://orau.org/icpostdoc/>.

If you have questions, send an email to [ICPostdoc@orau.org](mailto:ICPostdoc@orau.org). Please include the reference code for this opportunity in your email.

**Application Deadline** 3/12/2018 11:59:00 PM Eastern Time Zone

**Description** **Research Topic Description, including Problem Statement:**

Behavioral changes in response to infectious disease outbreaks can have strong effects on the course of the outbreak. For example, patterns of social mixing and healthcare-seeking may shift in response to information about the outbreak and alter disease dynamics, or the patterns may fail to change in ways anticipated. Outbreak models that account for behavior could improve predictions and identification of intervention strategies to control the outbreak, but many models do not account for these influences, or use generic inputs that do not adequately represent the population of interest.

**Example Approaches:**

This research could be approached by:

- Developing game-theoretical or other approaches to model a “baseline” behavior and its perturbation during an outbreak.
- Applying perspectives and methods from econometrics to model behavioral heterogeneities during an outbreak across subpopulations.

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- Accounting for changes in healthcare-seeking and in healthcare provider reporting in outbreak models.
- Modeling disruptions of mobility patterns and contact networks during an outbreak.
- Integrating social media, mobile phone, and other digital data into outbreak models, and using such data to evaluate model predictions--especially in low-resource areas where digital data use patterns may not be well-studied.
- Identifying key drivers in individual and/or community behavior response to outbreaks, comparing responses across various diseases (e.g., hemorrhagic fevers versus respiratory illness).
- Developing tools to visualize population-level behavioral changes and potential impacts on disease dynamics.

*Note: No Human Subject Research is authorized for the IC Postdoctoral Research Fellowship Program.*

## Qualifications

### Postdoc Eligibility

- U.S. citizens only
- Ph.D. in a relevant field must be completed before beginning the appointment and within five years of the application deadline
- Proposal must be associated with an accredited U.S. university, college, or U.S. government laboratory
- Eligible candidates may only receive one award from the IC Postdoctoral Research Fellowship Program.

### Research Advisor Eligibility

- Must be an employee of an accredited U.S. university, college or U.S. government laboratory
- Are not required to be U.S. citizens

## Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12 )
  - **Communications and Graphics Design** (6 )
  - **Computer, Information, and Data Sciences** (16 )
  - **Earth and Geosciences** (21 )
  - **Engineering** (27 )
  - **Environmental and Marine Sciences** (14 )
  - **Life Health and Medical Sciences** (45 )
  - **Mathematics and Statistics** (10 )
  - **Other Non-Science & Engineering** (5 )
  - **Physics** (16 )

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- **Science & Engineering-related** (1 )
- **Social and Behavioral Sciences** (28 )