

# VINCENT WONG

## PhD Student in Complex Systems and Cognitive Science

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## EDUCATION

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PhD Student in Complex Systems and Cognitive Science

### Indiana University

📅 August 2017 – Present

📍 Bloomington, IN

#### Research Interests

Community dynamics and dynamic social networks  
Social cognition and intergroup relations  
Social media

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B.A. in Complex Systems with Honors

### Brandeis University

📅 Sept 2010 – May 2014

📍 Waltham, MA

Independent Major comprising Physics, Neuroscience, and Economics

#### Graduate Level Courses

Biological Physics  
Computational Neuroscience  
Independent Study in Dynamical Systems  
Game Theory  
Principles of Neuroscience  
Statistical Machine Learning  
Systems Neuroscience  
Thermodynamics and Statistical Mechanics

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## EMPLOYMENT

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Researcher

### New England Complex Systems Institute (NECSI)

📅 2014 – 2017

📍 Cambridge, MA

#### Responsibilities

Developing models and simulations  
Producing figures and visualizations  
Writing and editing papers  
Managing and analyzing data  
IT and hardware management  
Supervising at NECSI courses

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## FELLOWSHIP

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NSF Research Trainee Fellowship (CNS-NRT)

📅 2018 – 2020

Dual-PhD program in the methodology and perspective of complex systems, and the domain-specific knowledge of a particular field.

## PUBLICATIONS

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***"Beyond Contact Tracing: Community-Based Early Detection for Ebola Response."***

Wong, V., Cooney, D., Bar-Yam, Y.  
PLOS Currents Outbreaks. 2016 May 19.  
Edition 1.

***"How Do People Differ? A Social Media Approach."***

Wong, V., Bar-Yam, Y.  
Submitted for publication  
necsi.edu/research/networks/personality

## CURRENT RESEARCH

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**Progressive Involvement in Communities on Dynamic Networks**

2017 – Present

Finding patterns in how people become closer to or further from communities over time. Time series analysis and network analysis of dynamic retweet networks on Twitter

**Social Cognition and Social Network Structure**

2017 – Present

Investigating how social cognition like group homogeneity biases correspond with explicit social network structure, how people perceive finer grain social structures and where their perceptions are inaccurate

## PAST RESEARCH

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**Undergraduate honors thesis**

*"Application of Random Field Ising Model of Magnets to Financial Data"*

Fall 2013 to Spring 2014

Found distribution patterns between avalanche data (number of spin flips per time step) and time series of high-frequency financial returns

**Undergraduate Research Internship**

Summer 2013

Pseudo-random motion of particle was simulated in static mesh, applying distribution results to dynamic network of microtubules with kinesin

## TEACHING

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### Assistant Instructor

#### I201: Math Foundations of Informatics

📅 August – December 2017    📍 Indiana University

Leading lab session, grading assignments and exams, processing absences, organizing undergraduate teaching assistants

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### Teaching Assistant

#### Summer and Winter Schools

📅 2014-2017    📍 NECSI

Biyearly, two-week intensive courses on complexity. Assisted during full-day lectures and full day programming crash course, and supervised student projects

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## SERVICE

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### Publicity Chair

#### Graduate Informatics Student Association

📅 February 2018 – Present    📍 Indiana University

Broadcast events, manage social media and outreach to current and previous informatics students, assist Social Events Chairperson, participate in board meetings and decisionmaking

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## EXTRACURRICULAR

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### • Co-Director of *The Maw*

#### Bernstein Festival of the Arts 2014

📅 May 2014    📍 Brandeis University

Grant application, project design and construction

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### • Co-Director of *Epithelium*

#### Bernstein Festival off the Arts 2013

📅 May 2013    📍 Brandeis University

Grant application, project design, geodesic dome design, project construction

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### • Composer Concerts

#### Undergraduate Composers' Collective

📅 Fall 2013, Spring 2014    📍 Brandeis University

Stage manager, composer, and performer for semester concerts featuring undergraduate compositions

## PRESENTATIONS AND POSTERS

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Poster on social cognition and social networks

#### NRT Conference

📅 September 2018    📍 Washington, DC

Conference for NRT administrators on program management and evaluation, and showcasing current work being done through NRT programs across the United States

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Poster on dynamic community involvement

#### NRT Research Showcase

📅 April 2018    📍 Indiana University

Poster session for current research by CNS-NRT trainees

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Talk on community response strategies for Ebola epidemic

#### Conference on Complex Systems

📅 September 2017    📍 Cancun, MX

DELVE: Digital Epidemiology and Surveillance satellite session

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## SKILLS

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Python, MongoDB, Javascript, HTML/CSS, C++, Processing, Unix, Matlab, Unity, SQL

## COURSEWORK

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- Intro to Informatics
- Social Media Research
- Network Science
- Complex Systems Advanced Seminar I
- Complex Systems Advanced Seminar II
- Human Centered Research Methods
- Group Processes
- Theoretical Machine Learning