Interdisciplinary Training in Complex Networks and Systems

Dual Ph.D. Traineeships

Understanding complex networked systems is key to solving some of the most vexing problems confronting humankind, from discovering how dynamic brain connections give rise to thoughts and behaviors to detecting and preventing the spread of misinformation or unhealthy behaviors across a population.

Graduate training, however, typically occurs in one of two dimensions: experimental and observational methods in a specific area such as biology and sociology, or in general methodologies such as machine learning and data science.

The Indiana University National Science Foundation Research Traineeship (NRT) addresses the growing need for students to be versatile with an integrated dual Ph.D. program that trains students to be "bidisciplinary" in Complex Networks and Systems (CNS) and another discipline of their choosing from the natural and social sciences.

cns-nrt.indiana.edu

Research Themes

- Complex networks and systems
- Network neuroscience
- Social network science
- Health and health care
- Science of science
- Finance and economy networks
- Biological and chemical networks
- Many others

Program Benefits

- Prestigious NSF fellowship with $34,000 stipend
- Tuition and health insurance
- Dual proficiency development
- Interdisciplinary training
- Early integration in research via Indiana University's Network Science Institute
- National and international internships
- Academic and industrial professional development
- Diverse, collaborative cohorts
- Interaction with world-renowned visiting scientists and field experts

NSF fellows must be U.S. citizens or permanent residents. IU fellowships and NRT affiliate positions are available for international students.

Academics

Dual Ph.D. program in CNS and another domain such as biology, chemistry, cognitive science, economics, psychological and brain sciences, sociology, political science, physics, etc.

Hands-on training in general purpose methodologies of CNS, computational and data science, as well as domain-specific methodologies of a chosen natural, behavioral, or social science.

CNS NRT

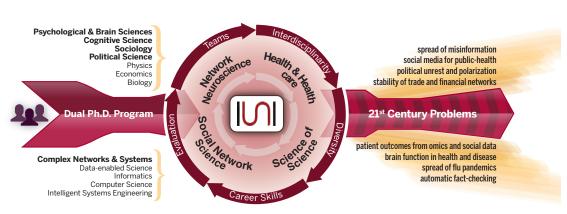## Academic and Industry Internships

- University Medical Center Utrecht
- Instituto Gulbenkian de Ciência
- Institute for Scientific Interchange
- Chinese Academy of Sciences
- Santa Fe Institute
- LinkedIn
- Facebook
- Persistent Inc.
- Among others

Psychological & Brain Sciences
Cognitive Science
Sociology
Political Science
Physics
Economics
Biology

Dual Ph.D. Program

Complex Networks & Systems
Data-enabled Science
Informatics
Computer Science
Intelligent Systems Engineering

Teams
Interdisciplinarity
Network Neuroscience
Health & Health care
Social Network Science
Science of Science
Evaluation
Diversity
Career Skills

spread of misinformation
social media for public-health
political unrest and polarization
stability of trade and financial networks

21st Century Problems

patient outcomes from omics and social data
brain function in health and disease
spread of flu pandemics
automatic fact-checking

ACADEMICS   **RESEARCH**   **WORKFORCE**