



SPECIAL POINTS OF INTEREST

Important Dates:

**First Brown Bag
lunch
10 October**

**Dr. Chris Arney
will speak on
Net-Centric Modeling
& Complexity**

Social Networks:



[Facebook](#)



[Twitter](#)



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[Central Node](#)

Building tools to understand local networks

Dan Evans

In January of 2010, Major General Michael Flynn, the Director for Intelligence for the International Security Assistance Force in Afghanistan, published a report entitled, "Fixing Intel: A Blueprint for Making Intelligence Relevant in Afghanistan." In this report General Flynn described the shortfalls of intelligence in theater that he had witnessed over the previous eight years. One of the main failures he described was the lack of knowledge that his headquarters had about the local environment in Afghanistan. He stated in the report, "because the United States has focused the overwhelming majority of collection efforts and analytical brainpower on insurgent groups, the intelligence apparatus still finds itself unable to answer fundamental questions about the environment in which U.S. and allied forces operate in and the people they are trying to protect and persuade." He goes on to state that the coalition is "ignorant of local economics and landowners, hazy about who the powerbrokers are and how they might be influenced...and disengaged from people in the best position to find answers."

The Network Science Center at West Point has been involved in ongoing research exploring the network topologies of Capital Markets in Frontier Capital Markets. A topology refers to the shape of a network, or the network's layout. Network topologies reveal how actors in the network are connected and highlight which individuals and organizations serve as central hubs and power brokers. A team of faculty and cadet researchers have begun data collection in-

cluding numerous interviews with financial leaders and innovators in these emerging economies.

The team's research has initiated a project that will develop entrepreneurial network topologies. Armed with the information that a topology imparts, policymakers will be able to understand and influence that network with knowledge of the "driver nodes;" the nodes in the network that have the greatest probability of affecting a desired outcome. We envision that this analytical methodology can facilitate development of a playbook for evaluating and understanding many types of complex networks including the local networks described by General Flynn.

collaborative partner. First, we've added two additional cadets to the team: Diamond Rorie and Garrett Schubert. Diamond and Garrett are Computer Science majors and their senior year capstone project will involve adding additional functionality to the *Lighthouse* application concept. This functionality will enable our team to conduct analysis "on the fly" out in the "field" on handheld smart phones. Second, the team will collaborate with members of the US Army National Guard.

Agricultural Development Teams (ADTs) are currently the military's main model for military-led development efforts. ADTs are company-sized units of 55-70 Guard members

who bring their civilian skills in agricultural and community development, their links to agricultural colleges, and their military training to the unit. This makes it possible for ADTs to engage in economic development work in areas where security risks are too great for staff



CDTs Zachary Langhans and Evan Szablowski conducted a pilot study with local entrepreneurs and small business owners

The study utilized a smart phone application called *Lighthouse* developed by CORE Lab at Naval Postgraduate School



Our team developed an innovative survey that builds upon a social capital measurement tool called a *Position Generator*. This type of survey asks for basic demographic data yet keeps the interview subject's identity anonymous. The survey asks questions in regards to positions or roles in the local network. While in Addis Ababa, Ethiopia this past summer, Cadets Evan Szablowski and Zachary Langhans conducted a pilot study with local entrepreneurs and small business owners. During the visit, the team utilized a smart phone application called *Lighthouse* developed by CORE Lab at the Naval Postgraduate School.

Based on our lessons learned, the team has now grown, expanded our project's scope and is adding a

from non-governmental aid organizations, private sector businesses or civilian governmental aid organizations.

The project team will demonstrate an initial prototype of the handheld application to ADT members in Kansas at the end of October. Based on customer feedback, we will then make necessary adjustments and complete the working application. During the Cadet Spring Break in March, the team will deploy to a Frontier Market to test the application in a realistic operational environment. After returning and making required modifications, the team will then demonstrate the application with the ADTs in their home states as well as at West Point's Projects Day on May 2.

Current Publications/Presentations:

Current articles are on NSC website under Publications or linked below:

[Similar Pathogen Targets in *Arabidopsis thaliana* and *Homo sapiens* Protein Networks](#)

[Using Generalized Annotated Programs to Solve Social Network](#)

[Diffusion Optimization Problems](#)