

# **Proposal for Establishing the Arkansas Security Research and Education (ASCENT) Institute**

## **1. Name of the Unit in which the institute will be housed**

College of Engineering, University of Arkansas

## **2. Name and title of the person(s) proposing creation of the institute**

- Dr. Jia Di, Professor and 2P1 Century Research Leadership Chair, Computer Science and Computer Engineering Department, University of Arkansas
- Dr. Chase Rainwater, Associate Professor, Industrial Engineering Department, College of Engineering, University of Arkansas
- Dr. Steven Ricke, Wray Food Safety Endowed Chair and Director of the Center for Food Safety, Food Science Department, Dale Bumpers College of Agricultural, Food and Life Science, University of Arkansas
- Dr. Dale Thompson, Associate Professor, Computer Science and Computer Department, College of Engineering, University of Arkansas

## **3. Type of the institute**

Research

## **4. Reason for proposing the institute**

Since security threats continue to increase, the demand for security talent grows in a rapid pace. As of 2014, there was a global deficiency of 1 million security professional worldwide. University of Arkansas is well-positioned to become of the leader in the state as well as nationwide in contributing to the research for security solutions and the training of students to become future security workforce. There is no other security center/institute on campus or within the state that covers all four research thrusts, i.e., cyber, transportation, critical infrastructure, and food/water. The institute will initiate and facilitate multidisciplinary collaborations among departments and colleges, leveraging the research strengths in existing on-campus centers, e.g., Center for Information Security and Reliability (cyber), Mack-Blackwell/CELDi (transportation), GRAPES (infrastructure), Center for Food Safety (food).

## **5. Mission and role for the institute**

The mission of the institute is to:

- Identify and solve modern security challenges in the areas of cyber, transportation, critical infrastructure, and food/water;
- Establish and grow partnerships with industry professionals to ensure that the security research retains significant and practical impacts;
- Develop and support educational initiatives that continuously evolve with state-of-the-art security issues and technologies in all thrust areas;
- Serve as the Arkansas' source for communication and awareness of security threats, solutions, and needs.

The role of the institute is to bring important practical security problems to the most talented University of Arkansas' researchers, to recruit industry members to sustain the institute and provide research and educational vision, to assist institute's researchers in pursuing competitive research funding, and to facilitate improving the security education at the University of Arkansas.

## **6. The unique value of the program to the university, and the distinction to any similar programs in Arkansas**

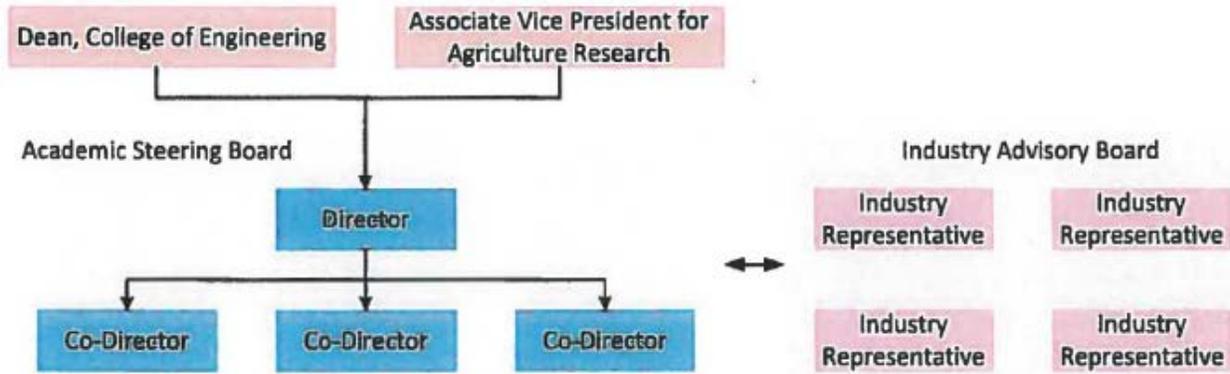
The ASCENT Institute will have four main research thrust areas, i.e., cyber security, transportation security, critical infrastructure security, and food/water security. The institute will synthesize multidisciplinary research capabilities across colleges and departments in security, a high-demand problem domain, which will open new opportunities for securing funded research contributing towards the university's goal of becoming a Top 50 public research institution. Industry members will bring in real-world guidance as well as financial support to the research and education mission of the university. Activities of the institute will enhance the visibility of the university in the globally emerging area of security.

Distinction to similar programs in Arkansas:

- Center for Information Security and Reliability at the University of Arkansas: Focuses only on one area of the institute, i.e., cyber security.
- Center for Excellence for Assurance, Security, and Software Usability, Research, and Education at the University of Arkansas - Little Rock: Includes only information/cyber focus and a more focused education mission (scholarships, curriculum, etc.).
- Mack-Blackwell Transportation Center at the University of Arkansas: Focuses only on transportation area. Does not emphasize the security elements in its current form. Mack-Blackwell did previously belong to National Transportation Security Center of Excellence (NTSCOE), but that designation ended in 2013.
- Center for Food Safety at the University of Arkansas: Key contributor to our institute, but currently focuses only on the safety and quality of food products with emphasis on biological, chemical, and physical hazards.
- Center for GRid-connected Advanced Power Electronics Systems at the University of Arkansas: Focuses on accelerating the adoption and insertion of power electronics into the electric grid in order to improve system stability, flexibility, robustness, and economy. Security is not emphasized in its current form.

## **7. Information on the Director position and the organizational structure**

The director is appointed by the Dean of the College of Engineering or his/her delegate and the Associate Vice President for Agriculture Research or his/her delegate with a five-year term. The organizational structure is as below:



Supervised by the Dean of the College of Engineering or his/her delegate and the Associate Vice President for Agriculture Research or his/her delegate, the Academic Steering Board consists of one institute director and multiple co-directors, whom are faculty of the University of Arkansas, as well as experts appointed as appropriate by the director. The co-directors are appointed by the director with a five-year term. The Industry Advisory Board is comprised of industry representatives. Each industry member has one representative serving on the board. The term is the same as the membership period.

**8. Identification of faculty (or qualifications of type of faculty), other personnel, and academic units that will be involved with the institute**

Faculty will be invited by the Academic Steering Board to join the institute as faculty member if (1) they agree with and support the mission of the institute; (2) their research area is related to one or more research thrust areas of the institute; and (3) they agree to submit at least one external proposal through the institute every year. Faculty members are eligible to compete for the annual internal research grants.

The Dale Bumpers College of Agricultural, Food and Life Science is involved in one research thrust area, i.e., food/water security.

**9. Student involvement, if any**

Undergraduate and graduate students will be supported to participate in the institute's research and educational activities.

**10. Annual budget for the institute or the estimated expenditures per year**

\$200,000

**11. Estimated fiscal resources and potential sources of funding**

Private and grant

**12. Space and equipment needs of the institute and a description of how they will be met**

The institute will be housed in the J. B. Hunt Transportation Center for Academic Excellence. There are no additional space or equipment needs.

### **13. Description of administrative control and lines of authority for the institute**

The ASCENT Institute will follow the campus policy and procedures of the University of Arkansas. Appointed by the Dean of the College of Engineering or his/her delegate and the Associate Vice President for Agriculture Research or his/her delegate, the director of the institute is responsible for managing the institute's finances and staffing. The director also manages the institute's day-to-day operation, including administrative review of expenditures. The director reports to the Dean of the College of Engineering or his/her delegate and the Associate Vice President for Agriculture Research or his/her delegate.

One or more co-directors can be appointed by the director. Their responsibilities should be clearly described in the initial appointment letters. The director and co-directors, as well as experts appointed as appropriate by the director, form the Academic Steering Board of the institute. Decisions on the institute's operation will be made by the Academic Steering Board, consulting with the Dean of the College of Engineering or his/her delegate, the Associate Vice President for Agriculture Research or his/her delegate, and the Industry Advisory Board.

Each industry member will have one representative serving on the Industry Advisory Board of the institute. The Industry Advisory Board will provide advices to the institute's research and educational activities, including voting on the annual internal research grants. The Industry Advisory Board and the Academic Steering Board will be meeting once a year.

### **14. Description of the advisory board including its size, the method of its selection, and length of terms**

Supervised by the Dean of the College of Engineering or his/her delegate and the Associate Vice President for Agriculture Research or his/her delegate, the Academic Steering Board consists of one institute director and multiple co-directors, whom are faculty of the University of Arkansas, as well as experts appointed as appropriate by the director. The co-directors are appointed by the director with a five-year term. The Industry Advisory Board is comprised of industry representatives. Each industry member has one representative serving on the board. The term is the same as the membership period.

### **15. The metrics to be used to evaluate the institute's feasibility at its five-year review**

The metrics will include the number of industry members, the annual expenditure, the research proposals submitted and funded through the institute, other research proposals enabled by the institute, and the number of students employed by the member companies as interns and full-time employees.

Signed:   
John English, P.D., P.E,  
Dean, College of Engineering

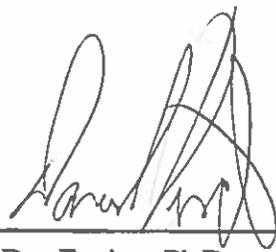
Date: 8.17.15

Signed:   
James Rankin, Ph.D.  
Vice Provost for Research and Economic Development

Date: 9-17-15

Signed:   
Ashok Saxena, Ph.D.  
Provost

Date: 9/23/15

Signed:   
Dan Ferritor, Ph.D.  
Interim Chancellor

Date: 9/23/15

Signed: R. A. Roeder

Date: 9/15/15

Richard A. Roeder, P.D.  
Associate Director of the Arkansas Agricultural Experiment Station

Signed: C. E. Watson

Date: 9/15/15

Clarence E. Watson, Ph.D.  
Associate Vice President for Agriculture Research and Director of the Arkansas  
Agricultural Experiment Station

Signed: Mark J. Cochran

Date: 9/15/15

Mark J. Cochran, Ph.D.  
Vice President for Agriculture