Join us for the
Fall S²ERC Showcase
Nov. 13-14, 2013
Evening Reception Nov. 12
Hosted by the
University of West Florida
Pensacola, Florida

Researchers and Affiliates, check out a meeting agenda and register today for the showcase at www.serc.net.

At the spring showcase this year, Elliott Torres, Chairman of the Industrial Advisory Board, spoke on the value of attending an S²ERC Showcase for an affiliate. For Torres (BCBSA), the value of a showcase is found in hearing the feedback of the other affiliates and having the opportunity to look at all of the other ongoing projects in the center. ‘After coming to one or two showcases, it becomes about more than just “my project,”’ he remarked. We invite researchers and affiliates to take part in the conversation this November. Register now at www.serc.net/showcases!

S²ERC welcomes new affiliates:
- Pacific Northwest National Laboratory.
  POC Nick Multari.
- Principal Financial Group.
  POC Kevin Riggins.
- Rockwell Collins. 2nd membership.
  POC Raymond Richards.

In This Issue
Page 1
- Upcoming Showcase
- New Managing Director Position
- New Affiliates
Page 2
- News & Announcements
- Featured Project
Page 3
- Current Projects
Page 4
- May 2013 Meeting Review

New Position Soon To Post:
S²ERC Managing Director
The National Science Foundation has created a new opportunity for I/UCRCs to support the work of an individual innovatively serving in a Managing Director capacity, and the S²ERC has recently been notified that its application for the supplement was selected as one of the recipients of this grant. Per a November 2012 memo from Dr. Grace Jinliu Wang, Division Director of Computer and Network Systems: “Cultivation and maintenance of trusted industry relationships as well as professional project management of the center’s portfolio of activities are essential to I/UCRC member recruitment and retention and a vibrant I/UCRC ecosystem. In recognition of the importance of these functions to Center success, this opportunity provides support to assist Centers in either creating and filling a new position of Center Managing Director or supporting an existing position in their leadership team with this function.” We look forward to providing even better service to our affiliates with the addition of the Managing Director position to the S²ERC’s administrative structure. If you or someone you know would be a great fit for this role, please write to Wayne Zage, wmzage@bsu.edu. Application instructions will be posted at the HR employment opportunities page on Ball State University’s website.

S²ERCULATE
The newsletter of the Security and Software Engineering Research Center ............... October 2013

In This Issue
Page 1
- Upcoming Showcase
- New Managing Director Position
- New Affiliates
Page 2
- News & Announcements
- Featured Project
Page 3
- Current Projects
Page 4
- May 2013 Meeting Review

New Position Soon To Post:
S²ERC Managing Director
The National Science Foundation has created a new opportunity for I/UCRCs to support the work of an individual innovatively serving in a Managing Director capacity, and the S²ERC has recently been notified that its application for the supplement was selected as one of the recipients of this grant. Per a November 2012 memo from Dr. Grace Jinliu Wang, Division Director of Computer and Network Systems: “Cultivation and maintenance of trusted industry relationships as well as professional project management of the center’s portfolio of activities are essential to I/UCRC member recruitment and retention and a vibrant I/UCRC ecosystem. In recognition of the importance of these functions to Center success, this opportunity provides support to assist Centers in either creating and filling a new position of Center Managing Director or supporting an existing position in their leadership team with this function.” We look forward to providing even better service to our affiliates with the addition of the Managing Director position to the S²ERC’s administrative structure. If you or someone you know would be a great fit for this role, please write to Wayne Zage, wmzage@bsu.edu. Application instructions will be posted at the HR employment opportunities page on Ball State University’s website.

S²ERCULATE
The newsletter of the Security and Software Engineering Research Center ............... October 2013

In This Issue
Page 1
- Upcoming Showcase
- New Managing Director Position
- New Affiliates
Page 2
- News & Announcements
- Featured Project
Page 3
- Current Projects
Page 4
- May 2013 Meeting Review

New Position Soon To Post:
S²ERC Managing Director
The National Science Foundation has created a new opportunity for I/UCRCs to support the work of an individual innovatively serving in a Managing Director capacity, and the S²ERC has recently been notified that its application for the supplement was selected as one of the recipients of this grant. Per a November 2012 memo from Dr. Grace Jinliu Wang, Division Director of Computer and Network Systems: “Cultivation and maintenance of trusted industry relationships as well as professional project management of the center’s portfolio of activities are essential to I/UCRC member recruitment and retention and a vibrant I/UCRC ecosystem. In recognition of the importance of these functions to Center success, this opportunity provides support to assist Centers in either creating and filling a new position of Center Managing Director or supporting an existing position in their leadership team with this function.” We look forward to providing even better service to our affiliates with the addition of the Managing Director position to the S²ERC’s administrative structure. If you or someone you know would be a great fit for this role, please write to Wayne Zage, wmzage@bsu.edu. Application instructions will be posted at the HR employment opportunities page on Ball State University’s website.

S²ERCULATE
The newsletter of the Security and Software Engineering Research Center ............... October 2013

In This Issue
Page 1
- Upcoming Showcase
- New Managing Director Position
- New Affiliates
Page 2
- News & Announcements
- Featured Project
Page 3
- Current Projects
Page 4
- May 2013 Meeting Review

New Position Soon To Post:
S²ERC Managing Director
The National Science Foundation has created a new opportunity for I/UCRCs to support the work of an individual innovatively serving in a Managing Director capacity, and the S²ERC has recently been notified that its application for the supplement was selected as one of the recipients of this grant. Per a November 2012 memo from Dr. Grace Jinliu Wang, Division Director of Computer and Network Systems: “Cultivation and maintenance of trusted industry relationships as well as professional project management of the center’s portfolio of activities are essential to I/UCRC member recruitment and retention and a vibrant I/UCRC ecosystem. In recognition of the importance of these functions to Center success, this opportunity provides support to assist Centers in either creating and filling a new position of Center Managing Director or supporting an existing position in their leadership team with this function.” We look forward to providing even better service to our affiliates with the addition of the Managing Director position to the S²ERC’s administrative structure. If you or someone you know would be a great fit for this role, please write to Wayne Zage, wmzage@bsu.edu. Application instructions will be posted at the HR employment opportunities page on Ball State University’s website.
...psst! hey! **stop** for a minute & **think**...

Do you have a contact in an organization that would make a great member of the S²ERC?

Growing & enriching the research center is in all our best interests. Let us know if we can help with the outreach opportunities you see in your area. Do you know you can...

- Request S²ERC brochures and swag to hand out individually or at an event?(!)
- Request an outreach visit to a prospective affiliate?(!)

To make it happen, contact Lauren at lewilliams@bsu.edu or (765) 285-2795.

---

**Featured Project**

**Semantic Data Modeling for System & Data Comprehension**

*Researchers:* Thomas Reichherzer, John Coffey, Bilal Gonen, Norman Wilde  
*University of West Florida*  
*Primary collaborator:* Blue Cross Blue Shield Association

Healthcare information systems collect and provide vast amounts of information for the purpose of delivering a variety of different services to constituents of the healthcare market. Modern systems have become huge, complex, and difficult-to-understand with no real consistency in the use or meanings of the vocabularies that describe the collected data, the services, or service providers. Every organization that builds and manages its own healthcare information system must address issues of software evolution and interoperability among different systems to be able to meet new demands in the market. As is well known, changes and reuse of software requires deep understanding of code and data representations, which becomes progressively more difficult as the systems grow in size and complexity. An additional challenge for engineers working with healthcare information systems is the interpretation of electronic health data whose content and structure is based on a vast and complex vocabulary with little standardization.

---

**News & Announcements**

**S²ERC Invited to Present at DHS Innovation Summit**

In Aug. 2013, the Dept. of Homeland Security asked Wayne and Dolores Zage, S²ERC Director and Research Coordinator, to present the center at the SINET Innovation Summit, hosted this year by Columbia and attended by approx. 300 practitioners. The S²ERC gained exposure with practitioners at organizations that are current affiliates of the S²ERC, as well as potential new members.

---

**IAB Chair**

As of Nov. 2012, the S²ERC has a new Industrial Advisory Board Chair, Elliott Torres, Enterprise Architect at Blue Cross Blue Shield Association. Torres did a superb job unifying the Board and facilitating discussion at IAB meetings as he took up his new duties at the May 2013 Showcase at BCBSA. Redge Bartholomew (Rockwell Collins) previously served as IAB Chair.

---

**Georgetown Applies to Become Fourth S²ERC Site**

With the approval of the Industrial Advisory Board, Georgetown University has submitted its application to become the fourth NSF-funded site of the research center. The prospective S²ERC site at Georgetown has recruited the following affiliates: Check Point Software, Cisco, Comcast, Edgewater Networks, IID, Symantec, and Verisign.

---

**S²ERC Meets Indiana Congressman**

In Sept. 2013 Ball State University invited Wayne and Dolores Zage to present the research center to visiting Congressman Larry Buschon of Indiana’s 8th District. Congressman Buschon pledged to recruit companies from his district that he believes will benefit from membership in the S²ERC.
This project aims to develop a knowledge model that can provide semantic information to existing data models and services in the healthcare provider domain. The goal of developing a knowledge model is to describe the vocabulary of healthcare providers as known by domain experts, to capture nuanced, subtle differences among concepts and relations within the vocabulary, that are critical for understanding abstract data models and data structures used by information systems. The knowledge model provides contextual information on the data models that serves as linkage between an expert's understanding of the data and the abstract models. They can help engineers to bridge the gulf between domain knowledge about provider information and formal representations created for building software systems. The knowledge model also serve as a navigational aid to access descriptions of data models on provider information published in Web format.

An initial model has been built and shared with stakeholders within the organization. The next steps are to 1) refine and extend the knowledge model beyond the current domain and 2) build formal descriptions that can be used for automated tasks such as data model consistency checking; (2) faceted navigation within complex, large data sets; and (3) semantic search.

Contributed by Thomas Reichherzer, Assistant Professor of Computer Science, University of West Florida.
One of the S^2ERC’s affiliates took a turn hosting our meeting in May. For two days Blue Cross Blue Shield Association welcomed over 70 showcase attendees to their international headquarters on Chicago’s Magnificent Mile (1). Loyola University opened a friendship with the S^2ERC, hosting the Tuesday night reception in their historic Lewis Towers at the downtown Water Tower Campus (7). On Wednesday morning, before the New Proposal presentations began, Nasir Khan, Executive Director and Head of Enterprise Information Technology at BCBSA, welcomed the group of S^2ERC affiliates, researchers, students, and NSF representatives (2). Included in the assembly were 20 students, 20 faculty, 18 affiliate representatives, and 2 NSF representatives (3).

Poster sessions gave showcase attendees the opportunity to stretch their legs and talk more about proposed and current projects. In the photos below, NSF CISE Program Director Rita Rodriguez talks with Jane Cleland-Huang and her doctoral and graduate students from DePaul about their New Proposal—Archie: Identifying and Protecting Architecturally Significant Code— which was awarded funding at the showcase (4). Two Northrop Grumman colleagues from Florida and California, Allison Heinen and Maria Penedo, also check out the posters and compare notes (5). And on a cookie break, Joseph Rosen, Software Architect at BCBSA, talks with Thomas Reichherzer, researcher and faculty member at UWF (6).

In addition to the Tuesday night reception, the banquet dinner, a Wed. night tradition of the showcase, offers an excellent opportunity to chat in a less structured setting. In the photo at left, Amjad Fseisi (the SI Org) and Dolores Zage (Ball State) talk at the reception before the banquet dinner at the Grand Luxe Café (8). Above, Donald Steiner (Northrop Grumman) raises his hand to pose a question to Intel’s ASIP and Big Data Group CTO and Chief Architect Andy Thurai, who engaged and entertained the group with his after-dinner talk (9).