



The Information Science & Technology Center

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Colorado State University's  
Information Science and Technology Center (ISTeC)  
*presents two lectures by*



**Dr. Elisa Bertino**  
Professor  
Department of Computer Science  
Purdue University

### ISTeC Distinguished Lecture

In conjunction with the  
Electrical and Computer Engineering Department and  
Computer Science Department Seminar Series

**“Securing Data in the Cloud - Challenges and Research Directions”**

Monday October 7, 2013  
Reception with refreshments: 10:30 am  
Lecture: 11:00 am – 12:00 noon  
Location: Morgan Library, Event Hall



Computer Science Department Special Seminar *Sponsored by ISTE C*

**“Digital Identity Protection - Concepts and Issues”**

Monday, October 7, 2013  
Lecture and Discussion: 3:00 – 4:00 pm  
Computer Science Building, Rm. 130

ISTeC (Information Science and Technology Center) is a university-wide organization for promoting, facilitating, and enhancing CSU's research, education, and outreach activities pertaining to the design and innovative application of computer, communication, and information systems. For more information please see [ISTeC.ColoState.edu](http://ISTeC.ColoState.edu).

## **Abstracts**

### **Securing Data in the Cloud - Challenges and Research Directions**

Managing data is arguably one of the reasons for adopting cloud technologies. These technologies are very promising with respect to enhancing scalability, reducing costs, and rapidly adapting to changes in application demands. However the adoption of these technologies is not without risks. Data stored in a cloud would be accessible to a large variety of individuals, like the IT staff of the cloud providers. The cloud providers may in turn outsource data management functions to other providers. Data integrity and availability are critical issues. Physical protection, crucial for data security, may be difficult to assess for the organization owning the data as data may be stored in different countries, which makes difficult making inspections to the data storage location. In some cases, even being able to control the location of the data may be difficult. However, making sure that data is stored or not stored in certain locations is crucial for compliance. Data segregation is essential in the context of multi-tenant contexts in which data owned by different organizations may reside on the same systems. Support for disaster recovery, and accountability are also critical requirements. In the talk we will first elaborate on these issues. We will then present an overview of the MASK system, able to support fine-grained encryption of data while at the same time supporting identity-based privacy-preserving access control on encrypted data.

### **Digital Identity Protection - Concepts and Issues**

Digital identity management (DIM) has emerged as a critical foundation for supporting successful interaction in today's globally interconnected society. It is crucial not only for the conduct of business and government but also for a large and growing body of electronic or online social interactions. Digital identity management is usually coupled with the notion of federation. The goal of federations is to provide users with protected environments to federate identities by the proper management of identity attributes. Federations provide a controlled method by which federation members can provide more integrated and complete services to a qualified group of individuals within certain sets of business transactions. By controlling the scope of access to participating sites, and by enabling secure, cross-domain transmission of user's personal information, federations can make the perpetration of identity frauds more difficult, as well as reduce their frequency, and their potential impact. In this talk we will first discuss basic digital identity concepts and requirements towards DIM solutions and we will overview relevant initiatives currently undergoing in academia and industry. We will then focus on the problem of identity theft and discuss an initial solution to the problem of establishing and protecting digital identity.

### **Speaker Biography:**

Elisa Bertino is professor of computer science at Purdue University, and Director of the Purdue Cyber Center (Discovery Park). She also serves as Research Director of the Center for Information and Research in Information Assurance and Security (CERIAS). Prior to joining Purdue, she was a professor and department head at the Department of Computer Science and Communication of the University of Milan. She has been a visiting researcher at the IBM Research Laboratory (now Almaden) in San Jose, at the Microelectronics and Computer Technology Corporation, at Rutgers University, at Telcordia Technologies. Her recent research focuses on database security, digital identity management, policy systems, and security for web services. She is a Fellow of ACM and of IEEE. She received the IEEE Computer Society 2002 Technical Achievement Award and the IEEE Computer Society 2005 Kanai Award. She is a member of the editorial board of IEEE Transactions on Dependable and Secure Computing, and IEEE Security & Privacy. She has served as chair of the ACM Special Interest Group on Security, Audit and Control (ACM SIGSAC).

**To arrange a meeting with the speaker, please contact Indrakshi Ray ([iray@cs.colostate.edu](mailto:iray@cs.colostate.edu)).**