SECURE KNOWLEDGE MANAGEMENT WORKSHOP
SKM 2004

23-24 September 2004
Program Overview

Introduction

- Welcome to SKM 2004

- Purpose of the Workshop

  – Gather like minds and cultivate a significant research problem

  – Lead to some important research agenda

- Workshop logistics

  – 50 submissions from North America, Europe, Asia

  – 26 regular papers, 8 posters after a refereeing process by the PC

  – 15 special presentations

    - 3 keynotes + 2 dinner/lunch speeches + 4 plenary talks + 6 invited papers from SKM experts and practitioners + 1 high-powered panel

- Support from NSF, AFRL, DoD/NSA and UB

- Thanks are due to the Deans of SEAS and SOM

Invited Presentations

- **Federal/State**
  - **Bhavani Thuraisingham, NSF**
  - **Hun Kim, DHS**
  - **Robert McGraw, NSA**
  - **William K. McQuay, AFRL**
  - **Russell W. Bessette, NYSTAR**
- **Industries**
  - **Alan D. Marwick, IBM**
  - **Shriram Revankar, Xerox**
  - **Margaret (Peg) Grayson, V-One Corporation**
- **Academic**
  - **Bharat Bhargava, Purdue**
  - **Peter Chen, LSU**
  - **Shiu-Kai Chin, Syracuse**
  - **Johannes Gehrke, Cornell University**
  - **Andrew Odlyzko, Univ. of Minnesota**
  - **Ravi Sandhu, GMU**
  - **Akhilesh Tyagi, Iowa State**

Day 1 Program

- 7:30 – 8:30   Breakfast / Registration   Outside ballroom 1-3

- 8:30 – 8:45   Welcome Address – Satish Tripathi   Ballroom 1-3

- 8:45 – 9:30   Keynote Address - *Secure Knowledge Management* – Dr. Thuraisingham Ballroom 1-3

- 9:30 – 10:15   Keynote Address - *National Cyber Security – Progress and Road Ahead* - Hun Kim
  Ballroom 1-3

- 10:15 – 10:45   Coffee Break   Outside Ballroom 1-3

- 10:45 – 12:00   SESSION 1A: Access Control and Rights   Ballroom 1-3

       SESSION 1B:Trust and Privacy   Salon C&D

- 12:00 – 1:15   Lunch   Nightclub

- 1:15 – 2:45   SESSION 2A: Monitoring, Detection and Intrusion Response   Ballroom 1-3
  SESSION 2B: Security in Health Informatics   Salon C&D

- 2:45 – 3:10   Coffee Break   Outside Ballroom 1-3

- 3:10 – 4:15   Plenary Talks   Ballroom 1-3

- 4:15 – 5:45   Panel Discussion - Women and Cyber Security: Gendered Tasks and Inequitable
  Outcomes   Ballroom 1-3

- 6:15 – 7:30   Social Hour and Poster Session   Pre Assembly & Ballroom 5

- 7:30 – 9:00   Workshop Banquet Speech - The Challenges of Secure Knowledge Management -
  Margaret (Peg) Grayson   Ballroom 5

Opening Remarks

- Prof. Satish Tripathi, the Provost of University at Buffalo, The State University of New York

Keynote Addresses (8:45 – 10:15)

- <u>Keynote Addresses</u>   (Ballroom 1-3)

  Chair: Satish Tripathi, University at Buffalo

  - *Secure Knowledge Management*

    Bhavani Thuraisingham, Program Director, Cyber Trust and Data and Applications Security at the National Science Foundation

  - *National Cyber Security – Progress and Road Ahead*

    Hun Kim, Deputy Director, Strategic Initiatives at the Department of Homeland Security, National Cyber Security Division

- <u>SESSION 1A:</u> Access Control and Rights (Ballroom 1-3)

  Chair: Chris Brown, Independent Health and Information Systems Security Association

  – *A Trusted Information Sharing Project*

    Shiu-Kai Chin, Professor and Director, CASE Center,
    a NY State Center for Advanced Technology in Information Technology, Syracuse University (Invited Talk)

  – *Using Subject and Object Specific Attributes for Access control in Web-based Knowledge management Systems*

    Gerald Stermsek*, Mark Strembeck, and Gustaf Neumann, Vienna University of Economics, Austria

  – *Auditable Security Controls of Best in Class Security and Operations Organizations*

    Gene Kim*, Tripwire Inc., Portland, Oregon

- <u>SESSION 1B:</u> Trust and Privacy   (Salon C&D)

  Chair: Nasir Memon, Polytechnic University

  – *Private and Trusted Collaboration*

    Bharat Bhargava, Purdue University (Invited Talk)

  – *Trust-based Security Policies*

    Henry Hexmoor*, Sandeep Bhattaram, and Seth Wilson, University of Arkansas

  – *Assessing the Effect of Deceptive Data in the Web of Trust*

    Yi Hu, Brajendra Panda*, and Yanjun Zuo, University of Arkansas

Session 2A (1:15 – 2:45)

- SESSION 2A: Monitoring, Detection and Intrusion Response   (Ballroom 1-3)

  Chair: Henry Hexmoor, University of Arkansas

  - *A Queuing Formulation of Intrusion Detection with Active and Passive Responses*

    Wei T. Yue*, Metin Cakanyildirim, and Young U. Ryu, University of Texas at Dallas

  - *Workflow Anomaly Detection in Secure Systems*

    Timothy J. Smith*, MCNC Research and Development Institute

  - *Detecting the Misappropriation of Information through Bottleneck Monitoring*

    Terrance Goan* and Matthew Broadhead, Stottler Henke Associates, Inc., Seattle, Washington

  - *Network Log Anonymization: Application of Crypto-PAn to Cisco Netflows*

    Adam Slagell*, Jun Wang, and William Yurcik, University of Illinois at Urbana-Champaign

- <u>SESSION 2B:</u> Security in Health Informatics   (Salon C&D)

  Co-Chairs: Raj Sharman & Peter Winkelstein, University at Buffalo

  – *Data Access Control and Measure in the Development of Web-Based Health Insurance Systems*

    Zhen Jiang*, West Chester University

  – *A Policy-Based Security Mechanism for Distributed Heath Networks*

    A. Onabajo*, C. Obry and J.H. Jahnke, University of Victoria

  – *Securing Clinical Knowledge: Balancing Accessibility, Security, and Privacy in Dental Education*

    Daniel W. Emmer and Ebrahim Randeree*, State University of New York at Buffalo

  – *Securing Pervasive Networks using Biometrics*

    V. Chavan, S. Chikkerrur*, S. Tulyakov and V. Govindaraju, State University of New York at Buffalo

- <u>Plenary Talks</u>   (Ballroom 1-3)

  Chair: Larry Kerschberg, George Mason University

  – *Cyber-Identity, Authority and Trust in an Uncertain World*

    Ravi Sandhu, Department of Information and Software Engineering, George Mason University, Co-Founder of Securivacy (formerly, SingleSignOn.net)

  – *Patterns of Knowledge Management in Secure Environments*

    Alan D. Marwick, Senior Manager, Knowledge Management, IBM T.J. Watson Research Center

Panel Session (4:15 – 5:45)

- <u>Panel Discussion</u>   (Ballroom 1-3)
- Moderator – Sharmistha Bagchi-Sen, University at Buffalo
- *Women and Cyber Security – Gendered Tasks and Inequitable Outcomes*
- Panelists:
  - Margaret (Peg) Grayson

    President and CEO, V-One Corporation and Member, National Infrastructure Advisory Council

  - Harry G. Meyer

    Partner, Hodgson Russ LLP and Board Member, FBI Infragard Program

  - Susan Patrick

    Director of Education Technology, U.S. Department of Education

  - Bhavani Thuraisingham

    Program Director, Cyber Trust and Data and Applications Security at the National Science Foundation

Banquet (7:30 – 9:00)

- Workshop Banquet   (Ballroom 5)

  Chair: John Thomas, Dean, School of Management, University at Buffalo

- *Banquet Speech: The Challenges of Secure Knowledge Management*

  – Margaret (Peg) Grayson, President and CEO, V-One Corporation and Member, National Infrastructure Advisory Council

Day 2

SECURE KNOWLEDGE MANAGEMENT WORKSHOP
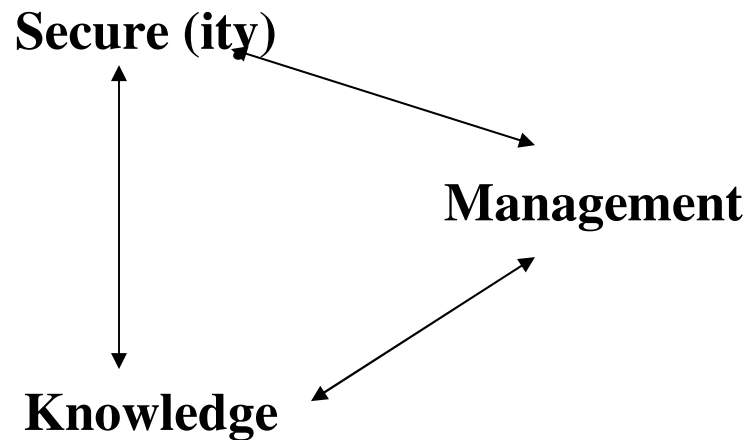**SKM 2004**
23-24 September 2004
Program Overview

Workshop is also supported by DoD via its IASP Infrastructure Grant Program

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Secure, Knowledge, Management

("Eats. Shoots and leaves" or "Eats shoots and leaves")

Secure (ity)

Management

Knowledge

- **A mandate for the participants – develop a research agenda in secure knowledge management**

  – **What do you think are the top five most** *important* **problems that need resolution in secure knowledge management**

  – **What do you think are the top five most** *urgent* **problems that need resolution in SKM**

  – **E-mail to skm-2004@cse.buffalo.edu**

	Risk (Hi,Med,Lo)	Cost (Hi, Med, Lo)
1		
2		
3		
4		
5		
1		
2		
3		
4		
5		

Call for Papers

Special Issue on Secure Knowledge Management

Guest Editors: H. R. Rao (SOM) and S. Upadhyaya (CSE) SUNY at Buffalo

High quality manuscripts are sought for a special issue of IEEE Transactions on SMC (Part A). The purpose of this special issue is to bring together the works of researchers, designers, and implementers of secure knowledge management systems. In addition to traditional submissions, we specially welcome papers that promote methodologies of systems, man, and cybernetics. We encourage papers that describe industrial projects, prototype systems, exploratory or emerging applications.

Day 2 Program

- 7:30 – 8:30   Breakfast / Registration   Outside Ballroom 1-3

- 8:30 – 9:15   Keynote Address   - *Collaborative Secure Knowledge Management*

         – William K. McQuay   Ballroom 1-3

- 9:15 – 10:20   Plenary Talks   Ballroom 1-3

- 10:20 – 10:45   Coffee Break   Outside Ballroom 1-3

- 10:45 – 12:00   SESSION 3A: Trusted Computing   Ballroom 1-3
         SESSION 3B: Secure Content Management   Salon C&D

- 12:00 – 1:45   Luncheon Talk - *Securing Knowledge in an Insecure World* - Russell Bessette

         Ballroom 4

- 1:45 – 3:00   SESSION 4A: Security and Privacy   Ballroom 1-3

         SESSION 4B: Security in Document Control Systems   Salon C&D

- 3:00 – 3:30   Coffee Break   Outside Ballroom 1-3

- 3:30 – 4:30   SESSION 5A: New Security Paradigms for Knowledge Management   Ballroom 1-3

         SESSON 5B: Theoretical Approaches to Information Assurance   Salon C&D

- 4:30 – 4:45   Wrap-Up   Ballroom 1-3

Keynote Address

- <u>Keynote Address</u> (Ballroom 1-3)

- Chair: Nikolaos Bourbakis, Wright State University

  - *Collaborative Secure Knowledge Management*

    William K. McQuay, Technical Advisor, Collaborative Simulation Technology and Applications Branch, Information Systems Division, Information Directorate, AFRL, Wright Research Site

- <u>Plenary Talks</u>   (Ballroom 1-3)

- Chair: Dipak Pravin, Xerox Corporation

  - *Economics, Psychology, and Sociology and the Limitations they Impose on Secure Knowledge Management*

    Andrew Odlyzko, ADC Professor and Assistant VP for Research; Director, Digital Technology Center, University of Minnesota

  - *Faster Differentiation of Terrorists and Malicious Transactions from Good People and Transactions*

    Peter P. Chen, M.J. Foster Distinguished Chair Professor of Computer Science, Louisiana State University

- <u>SESSION 3A:</u> Trusted Computing   (Ballroom 1-3)

  Chair: Brajendra Panda, University of Arkansas

  - *A Control Flow Integrity based Trust Model*

    Akhilesh Tyagi, Iowa State University (Invited Talk)

  - *Trust Management and Theory Revision*

    Ji Ma*, University of South Australia

  - *Using Entropy to Tradeoff Privacy and Trust*

    Yuhui Zhong and Bharat Bhargava*, Purdue University

- <u>SESSION 3B:</u> Secure Content Management   (Salon C&D)

  Chair: Kevin Kwiat, Air Force Research Laboratory

  - *Securing Content in DoD's Global Information Grid*

    Robert McGraw, National Security Agency (Invited Talk)

  - *Using Facets of Security within a Knowledge-based Framework to Manage Semantic Web Services*

    Randy Howard and Larry Kerschberg*, George Mason University

  - *The Interrelationship between Security and KM*

    Karen Neville* and Philip Powell, National University of Ireland – Cork, Ireland

Luncheon Session (12:00 – 1:45)

- Luncheon Speech   (Ballroom 4)

  Chair: Mark Karwan, Dean, School of Engineering and Applied Sciences, University at Buffalo

- *Securing Knowledge in an Insecure World*

  - Russell Bessette, Executive Director, New York State Office of Science, Technology and Academic Research (NYSTAR) and Member, Homeland Security Science and Technology Advisory Committee (HSSTAC)

- <u>SESSION 4A:</u> Security and Privacy   (Ballroom 1-3)

  Chair: John McDermott, Naval Research Laboratory

  – *Statistical Privacy for Privacy-Preserving Data Mining*

    Johannes Gehrke, Cornell University (Invited Talk)

  – *On Privacy and Anonymity in Knowledge Externalization*

    Yuen-Yan Chan*, The Chineese Institute of Hong Kong

  – *Trust-Based Privacy Preservation for Peer-to-peer Media Streaming*

    Yi Lu, Weichao Wang, Dongyan Xu, and Bharat Bhargava*, Purdue University

Session 4B (1:45 – 3:00)

- <u>SESSION 4B:</u> Security in Document Control Systems   (Salon C&D)

  Chair: Robert DelZoppo, Syracuse Research Corporation

  - *Adaptive Smart Documents*

    Shriram Revankar, Xerox Research (Invited Talk)

  - *Enhanced Access Control for Collaborative Documents*

    Jeffrey D. Campbell*, University of Maryland, Baltimore Country

  - *Securing Organizational Knowledge using Automated Annotation*

    Savitha Kadiyala, Kamesh Namuduri* and Venu Dasigi, Georgia State University, Wichita State University, Southern Polytechnic State University

- <u>SESSION 5A:</u> New Security Paradigms for Knowledge Management
  (Ballroom 1-3)

  Chair: Al F. Salam, University of North Carolina, Greensboro

  – *Securing Information through Trust Management in Wireless Networks*

    Mohit Virendra* and Shambhu Upadhyaya, State University of New York at Buffalo

  – *PBKM: A Secure Knowledge Management Framework*

    Shouhuai Xu* and Weining Zhang, University of Texas at San Antonio

  – *Securing Knowledge Queries Using Code Striping*

    Mark W. Bailey and Kevin Kwiat*, Air Force Research Lab, Rome Research Site

- <u>SESSON 5B:</u> Theoretical Approaches to Information Assurance (Salon C&D)

  Chair: Raghu Santanam, Arizona State University

  - *A Multi-Disciplinary Approach for Countering Insider Threats*

    Robert DelZoppo*, Eric Brown, Matt Downey, Elizabeth Liddy, Svetlana Symonenko, Joon Park, Shuyuan Ho, Michael D'Eredita and Anand Natarajan, Syracuse Research Corporation and Syracuse University

  - *A Game-theoretic Approach to the Design of Self-Protection and Self-Healing Mechanisms in Autonomic Computing Systems*

    Birendra Mishra and T. S. Raghu*, University of California, Riverside and Arizona State University

  - *Information Theoretic Model for Inference-resistant Knowledge Management in RBAC based Collaborative Environment*

    Manish Gupta and Sivakumar Chennuru*, M&T Bank Corporation Buffalo, New York

Finally

- **The workshop will be deciding on a best paper award shortly based on the recommendations of the session chairs and the referees.**

- **Photographs of the workshop will be displayed on the workshop website shortly.**

- **Thanks to all the participants especially to those who came from the farthest parts of the globe and all the PC committee members, some of those who could not be with us.**