

NSF Biosurveillance Workshop Systems and Case Studies (BioSurveillance 2007)

May 22, 2007

Hyatt Regency New Brunswick
2 Albany Street
New Brunswick, New Jersey, USA, 08901

Program and Schedule

Short papers will have 15 minutes of presentation time. Long papers will have 20 minutes of presentation time. All authors and presenters are also requested to attend the Workshop Poster Session and Conference Reception and post their slides (an actual poster is not required), and thus provide attendees with the opportunity to interact more fully with presenters. Ample fare for dinner or snacking and no-host bar will also be provided!

Workshop Schedule Overview

Time	Session	Location
7:00 – 8:00 am	Continental Breakfast	Foyer / Pre-function area
8:00 – 8:10 am	Opening Remarks	Regency Ballroom D
8:10 – 8:50 am	Keynote Presentation by Dr. Kimothy Smith, DHS	Regency Ballroom D
8:50 – 10:05 am	Session 1: Biosurveillance Data Feed and Processing	Regency Ballroom D
10:05 – 10:35 am	Morning Break	Foyer / Pre-function area
10:35 – 12:15 pm	Session 2: Biosurveillance Models and Outbreak Detection (I)	Regency Ballroom D
12:15 – 1:15 pm	Lunch	TBD
1:15 – 2:35 pm	Session 3: Outbreak Detection Algorithms	Regency Ballroom D
2:35 – 2:50 pm	Afternoon Break I	Foyer / Pre-function area
2:50 – 4:20 pm	Session 4: Biosurveillance Models and Outbreak Detection (II)	Regency Ballroom D
4:20 – 4:30 pm	Afternoon Break II	Foyer / Pre-function area
4:30 – 6:10 pm	Session 5: Informatics Infrastructure and Case Studies	Regency Ballroom D
6:10 – 6:30 pm	Poster Session Set-up	Garden State Ballroom
6:30 – 8:00 pm	Poster Session and Reception	Garden State Ballroom

Complete Program and Schedule

Tuesday, May 22, 2007

Time	Session
7:00 – 8:00 am	Continental Breakfast (<i>Foyer / Pre-function area</i>)
8:00 – 8:10 am	Opening Remarks (<i>Regency Ballroom D</i>)
8:10 – 8:50 am	Keynote Presentation by Dr. Kimothy Smith, DHS (<i>Regency Ballroom D</i>)
8:50 – 10:05 am	Session 1: Biosurveillance Data Feed and Processing (<i>Regency Ballroom D</i>) <i>Session chair: Howard Burkom</i> Early Outbreak Detection Using an Automated Data Feed of Test Orders from a Veterinary Diagnostic Laboratory (<i>20 min.</i>) By: Loren Shaffer, Julie Funk, Paivi Rajala-Schultz, Garrick Walstrom, Thomas Wittum, Michael Wagner and William Saville (The Ohio State University, Michigan State University, and the University of Pittsburgh) Chinese Chief Complaint Classification for Syndromic Surveillance (<i>20 min.</i>) By: Hsin-Min Lu, Chwan-Chuen King, Tsung-Shu Wu, Fuh-Yuan Shih, Jin-Yi Hsiao, Daniel Zeng and Hsinchun Chen (The University of Arizona, and National Taiwan University) Incorporating Geographical Contacts into Social Network Analysis for Contact Tracing in Epidemiology: A Study on Taiwan SARS Data (<i>20 min.</i>) By: Yi-Da Chen, Chun-Ju Tseng, Chwan-Chuen King, Tsung-Shu Joseph Wu and Hsinchun Chen (The University of Arizona, and National Taiwan University) Ambulatory e-Prescribing: Evaluating a Novel Surveillance Data Source (<i>15 min.</i>) By: David Buckeridge and Aman Verma (McGill University)
10:05 – 10:35 am	Morning Break (<i>Foyer / Pre-function area</i>)
10:35 – 12:15 pm	Session 2: Biosurveillance Models and Outbreak Detection (I) (<i>Regency Ballroom D</i>) <i>Session chair: Artur Dubrawski</i> A Model for Characterizing Annual Flu Cases (<i>20 min.</i>) By: Miriam Nuno and Marcello Pagano (Harvard School of Public Health) Population Dynamics in the Elderly: The Need for Age-Adjustment in National Biosurveillance Systems (<i>20 min.</i>) By: Steven Cohen and Elena Naumova (Johns Hopkins University and Tufts University) Data Classification for Selection of Temporal Alerting Methods for Biosurveillance (<i>20 min.</i>) By: Howard Burkom and Sean Murphy (Johns Hopkins University) Assessing Seasonal Variation in Multisource Surveillance Data: Annual Harmonic Regression (<i>20 min.</i>) By: Eric Lofgren, Nina Fefferman, Meena Doshi and Elena N. Naumova (Tufts University) A Study into Detection of Bio-Events in Multiple Streams of Surveillance Data (<i>20 min.</i>) By: Josep Roure, Artur Dubrawski and Jeff Schneider (Carnegie Mellon University)
12:15 – 1:15 pm	Lunch (<i>Location TBD</i>)
1:15 – 2:35 pm	Session 3: Outbreak Detection Algorithms (<i>Regency Ballroom D</i>) <i>Session chair: Mark Thurmond</i> High Performance Computing for Disease Surveillance (<i>20 min.</i>) By: David Bauer, Brandon W. Higgs and Mojdeh Mohtashemi (The MITRE Corporation) Towards Real Time Epidemiology: Data Assimilation, Modeling and Anomaly Detection of Health Surveillance Data Streams (<i>20 min.</i>) By: Luis M. A. Bettencourt, Ruy M. Ribeiro, Gerardo Chowell, Timothy Lant and Carlos Castillo-Chavez

(Los Alamos National Laboratory and Arizona State University)

Algorithm Combination for Improved Performance in Biosurveillance Systems (20 min.)

By: Inbal Yahav and Galit Shmueli (University of Maryland)

Decoupling Temporal Aberration Detection Algorithms for Enhanced Biosurveillance (20 min.)

By: Sean Murphy and Howard Burkom (Johns Hopkins University)

2:35 – 2:50 pm

Afternoon Break I (Foyer / Pre-function area)

2:50 – 4:20 pm

Session 4: Biosurveillance Models and Outbreak Detection (II) (Regency Ballroom D)

Session Chair: Michelle Podgornik

Detecting the Start of the Flu Season (15 min.)

By: Sylvia Halasz, Philip Brown, Colin Goodall, Arnold Lent, Dennis Cochrane and John Allegra (AT&T Labs and Emergency Medical Associates of New Jersey Research Foundation)

Syndromic Surveillance for Early Detection of Nosocomial Outbreaks (15 min.)

By: Kiyoshi Kikuchi, Yasushi Ohkusa, Tammy Suger, Kiyosu Taniguchi and Nobuhiko Okabe (National Institute of Infectious Diseases, Japan)

A Bayesian Biosurveillance Method that Models Unknown Outbreak Diseases (15 min.)

By: Yanna Shen and Gregory F. Cooper (University of Pittsburgh)

Spatial Epidemic Patterns Recognition using Computer Algebra (15 min.)

By: Doracelly Hincapie and Juan Ospina (University of Antioquia and EAFIT University)

Global Surveillance of Novel Influenza with Integrating Information of Agent, Host and Environment (15 min.)

By: Chwan-Chuen King, Chung-Ming Liu, Hsiu-Ping Lin, Chang-Chun Lee, Katherine Chun-Min Lin, Chien-Yu Lin, Ching-Yi Hsiao, Muh-Yung Yen and Fu-Chang Hu (National Taiwan University, Global Change Research Center, Taipei City Hospital, and NTU Hospital)

Detecting Conserved RNA Secondary Structures in Viral Genomes: The RADAR Approach (15 min.)

By: Mugdha Khaladkar and Jason T. L. Wang (New Jersey Institute of Technology)

4:20 – 4:30 pm

Afternoon Break II (Foyer / Pre-function area)

4:30 – 6:10 pm

Session 5: Informatics Infrastructure and Case Studies (Regency Ballroom D)

Session Chair: Greg Cooper

A Web-based System for Infectious Disease Data Integration and Sharing: Evaluating Outcome, Task Performance Efficiency, User Information Satisfaction, and Usability (20 min.)

By: Paul Hu, Daniel Zeng, Hsinchun Chen, Catherine Larson and Chunju Tseng (University of Utah and The University of Arizona)

Public Health Affinity Domain: A Standards-Based Surveillance System Solution (20 min.)

By: Boaz Carmeli, Tzilla Eshel, Daniel Ford, Ohad Greenshpan, James Kaufman, Sarah Knoop, Roni Ram and Sondra Renly (IBM Haifa Research Lab and the IBM Almaden Research Lab)

The Influenza Data Summary: A Prototype Application for Visualizing National Influenza Activity (20 min.)

By: Michelle Podgornik, Alicia Postema, Roseanne English, Kristin Uhde, Steve Bloom, Peter Hicks, Paul McMurray, John Copeland, Lynnette Brammer, William Thompson, Joseph Bresee and Jerome Tokars (Centers for Disease Control and Prevention)

Global Foot-and-Mouth Disease Surveillance using BioPortal (20 min.)

By: Mark Thurmond, Andres Perez, Chunju Tseng, Hsinchun Chen and Daniel Zeng (University of California-Davis and The University of Arizona)

Utilization of Predictive Mathematical Epidemiological Modeling in Crisis Preparedness Exercises (20 min.)

By: Colleen Burgess (MathEcology)

6:10 – 6:30 pm

Poster Session Set-up (Garden State Ballroom)

6:30 – 8:00 pm

Poster Session and Reception (including ample fare for dinner or snacking, and a no-host bar) (Garden State Ballroom)

Posters

Biosurveillance Data Feed and Processing

- 1) Early Outbreak Detection Using an Automated Data Feed of Test Orders from a Veterinary Diagnostic Laboratory (20 min.)
By: Loren Shaffer, Julie Funk, Paivi Rajala-Schultz, Garrick Walstrom, Thomas Wittum, Michael Wagner and William Saville (The Ohio State University, Michigan State University, and the University of Pittsburgh)
- 2) Chinese Chief Complaint Classification for Syndromic Surveillance (20 min.)
By: Hsin-Min Lu, Chwan-Chuen King, Tsung-Shu Wu, Fuh-Yuan Shih, Jin-Yi Hsiao, Daniel Zeng and Hsinchun Chen (The University of Arizona, and National Taiwan University)
- 3) Incorporating Geographical Contacts into Social Network Analysis for Contact Tracing in Epidemiology: A Study on Taiwan SARS Data (20 min.)
By: Yi-Da Chen, Chun-Ju Tseng, Chwan-Chuen King, Tsung-Shu Joseph Wu and Hsinchun Chen (The University of Arizona, and National Taiwan University)
- 4) Ambulatory e-Prescribing: Evaluating a Novel Surveillance Data Source (15 min.)
By: David Buckeridge and Aman Verma (McGill University)
- 5) Gemina: a Web-Based Epidemiology and Genomic Metadata System Designed to Identify Infectious Agents
By: Lynn M. Schriml, Aaron Gussman, Kathy Phillippy, Sam Angiuoli, Kumar Hari, Alan Goates, Ravi Jain, Tanja Davidsen, Anu Ganapathy, Steven Salzberg, Owen White and Neil Hall
- 6) Internet APRS Data Utilization for Biosurveillance Applications
By: Tanya Deller, Rochelle Black, Frances Uzowulu, Vernell Mitchell and William Seffens

Biosurveillance Models and Outbreak Detection

- 7) A Model for Characterizing Annual Flu Cases (20 min.)
By: Miriam Nuno and Marcello Pagano (Harvard School of Public Health)
- 8) Population Dynamics in the Elderly: The Need for Age-Adjustment in National Biosurveillance Systems (20 min.)
By: Steven Cohen and Elena Naumova (Johns Hopkins University and Tufts University)
- 9) Data Classification for Selection of Temporal Alerting Methods for Biosurveillance (20 min.)
By: Howard Burkorn and Sean Murphy (Johns Hopkins University)
- 10) Assessing Seasonal Variation in Multisource Surveillance Data: Annual Harmonic Regression (20 min.)
By: Eric Lofgren, Nina Fefferman, Meena Doshi and Elena N. Naumova (Tufts University)
- 11) A Study into Detection of Bio-Events in Multiple Streams of Surveillance Data (20 min.)
By: Josep Roure, Artur Dubrawski and Jeff Schneider (Carnegie Mellon University)
- 12) Detecting the Start of the Flu Season (15 min.)
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- 13) Syndromic Surveillance for Early Detection of Nosocomial Outbreaks (15 min.)
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- 14) A Bayesian Biosurveillance Method that Models Unknown Outbreak Diseases (15 min.)
By: Yanna Shen and Gregory F. Cooper (University of Pittsburgh)
- 15) Spatial Epidemic Patterns Recognition using Computer Algebra (15 min.)
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- 16) Global Surveillance of Novel Influenza with Integrating Information of Agent, Host and Environment (15 min.)
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- 17) Detecting Conserved RNA Secondary Structures in Viral Genomes: The RADAR Approach (15 min.)
By: Mugdha Khaladkar and Jason T. L. Wang (New Jersey Institute of Technology)
- 18) National Biosurveillance Integration System 2.0: Monitoring for Avian Influenza
By: Nancy Grady, Joe Dudley, Jeanne Sappington, Bob Hogan, Anne Havey, Laura Peitersen, Jim Jones, Dennis Beal, Karl Kropp, Kimothy Smith

Outbreak Detection Algorithms

- 19) High Performance Computing for Disease Surveillance (20 min.)
By: David Bauer, Brandon W. Higgs and Mojdeh Mohtashemi (The MITRE Corporation)
- 20) Towards Real Time Epidemiology: Data Assimilation, Modeling and Anomaly Detection of Health Surveillance Data Streams (20 min.)
By: Luis M. A. Bettencourt, Ruy M. Ribeiro, Gerardo Chowell, Timothy Lant and Carlos Castillo-Chavez (Los Alamos National Laboratory and Arizona State University)
- 21) Algorithm Combination for Improved Performance in Biosurveillance Systems (20 min.)
By: Inbal Yahav and Galit Shmueli (University of Maryland)
- 22) Decoupling Temporal Aberration Detection Algorithms for Enhanced Biosurveillance (20 min.)
By: Sean Murphy and Howard Burkom (Johns Hopkins University)
- 23) An Adaptive Anomaly Detection Algorithm for Biological Outbreaks Using Open-Source Media*
By: Dongjin Kim, David M. Hartley, and James M. Wilson

Informatics Infrastructure and Case Studies

- 24) A Web-based System for Infectious Disease Data Integration and Sharing: Evaluating Outcome, Task Performance Efficiency, User Information Satisfaction, and Usability (20 min.)
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