

BRIMS 2010 AGENDA

Monday, 22-March

- 9:00 - 5:00 pm **Tutorial**
Cognitive Crash Dummies: Here Today, Look Toward Tomorrow
(Bonnie John, Carnegie Mellon University, #52)
- 1:00 - 5:00 pm **Tutorial**
The Systems Social Science (S3) Approach to Behavioral Modeling
& Simulation of Ethno-Political Conflicts
(Barry Silverman & Ray Kang, University of Pennsylvania, #53)

Tuesday, 23-March

- 7:30 - 8:00 am **Refreshments**
- 8:00 - 9:00 am **Welcome/Sponsor Panel**

TECHNICAL SESSION 1: COMPUTATIONAL AND COGNITIVE MODELING

- 9:00 - 10:00 am **Plenary** - The Shape of Things to Come: An Emerging
Constellation of Interconnected Tools for Developing the Right
Cognitive Model at the Right Scale (#01)
Wayne Gray, Rensselaer Polytechnic University
- 10:00 - 10:30 am **Break**
- 10:30 - 10:50 am Reducing the Variability between Novice Modelers: Results of a
Tool for Human Performance Modeling Produced through Human-
Centered Design (Bonnie John, #05)
- 10:50 - 11:10 am Plan, Replan and Plan to Replan: Algorithms for Robust Courses of
Action Under Strategic Uncertainty (Maciej Latek & Seyed Rizi,
#06)
- 11:10 - 11:30 pm Projecting Grammatical Features in Nominals: Computational
Implementation (Jerry Ball, #07)
- 11:30 - 11:50 pm Modeling the Control of Attention in Complex Visual Displays (Kelly
Steelman-Allen & Jason McCarley, #08)

11:50 – 12:25 pm **Short Talks**
Cognitive Flexibility through Learning from Constraint Violations
(Dongkyu Choi & Stellan Ohlsson, #29)

Human Capacity Development through Simulations: Constructive
Simulations as a Basis for Understanding Competency
Requirements in Initiative-Based Tactics (Bruno Emond, #30)

Rapid Development of Intelligent Agents in First/Third-Person
Training Simulations via Behavior-Based Control (George
Alexander, G. Michael Youngblood, Frederick W.P. Heckel, D.
Hunter Hale, & Nikhil S. Ketkar #31)

12:25 – 2:00 pm **Lunch (Provided)**

**TECHNICAL SESSION 2:
UNDERSTANDING AND PREDICTING TERRORISM AND
COUNTERINSURGENCY**

2:00 - 3:45 pm **Special Session** - When Hatred is Bred in the Bone: The
Psychocultural Foundations of Contemporary Terrorism (#02)
Jerrold Post, George Washington University
(former Director of the Center for the Analysis of Personality and
Political Behavior at the Central Intelligence Agency)

3:45 - 4:15 pm **Break**

4:15 - 4:35 pm Modeling Behavioral Activities Related to IED Preparation (Lora
Weiss, Elizabeth Whitaker, Erica Briscoe, & Ethan Trehwitt, #09)

4:35 - 4:55 pm Modeling Complex Social Behavior: A System Dynamics Approach
(John Sokolowski & Catherine Banks, #10)

4:55 - 5:15 pm Process Modeling for the Study of Non-State Political Violence
(Olivier Georgeon, Jonathan Morgan, John Horgan, & Kurt
Braddock, #11)

5:15 – 5:35 pm A Hybrid Model of Ethnic Conflict, Repression, Insurgency, and
Social Strife (Stacy Pfautz & Michael Salwen, #12)

5:35 – 5:55 pm Dynamic Data and Modeling Services Suite (Tina Chau, Alexander
Moore, Richard Mullikin, & Janet Wedgwood, #13)

5:55 - 7:30 pm **Break (Dinner on your own)**

7:30 - 9:30 pm **Poster Session, Demonstrations, Exhibits and Reception**
(see back of agenda for content details)

Wednesday, 24-March

7:30 - 8:00 am **Refreshments**

TECHNICAL SESSION 3: INTEGRATIVE MODELS OF HUMAN PERFORMANCE

8:00 - 9:00 am **Plenary – Representing Human Behavior: Where to Next? (#03)**
LCDR Joseph Cohn, DARPA

9:00 - 9:20 am Identification and Applications of Neurophysiologic Synchronies for Studying the Dynamics of Teams (Ronald Stevens, Chris Berka, Trysha Galloway, & Adrienne Behneman, #14)

9:20 - 9:40 am Improving Usability and Integration of Human Behavior Representation Engineering across Cognitive Modeling, Human Factors, and Modeling and Simulation Best Practices (Sylvain Pronovost & Robert West, #15)

9:40 – 10:05 am **Short Talks**
Developing a Model of Expert Performance for Ship Navigation Tasks in an Intelligent Tutoring Environment (Jason Wong, Susan Kirschenbaum, & Stanley Peters, #32)

Plan Ahead: Pricing ITS Learner Models (Jeremiah Folsom-Kovarik, Sae Schatz, & Denise Nicholson, #33)

10:05 - 10:35 am **Break**

TECHNICAL SESSION 4: MODELING COMPLEX SYSTEMS

10:35 - 12:05 am **Symposium**
Human Behavior Modeling in Network Science (Chairs: Sibel Adali & Jeffrey Hansberger; Panelists: William Wallace, Wayne Gray, Ching-Yung Lim, & David Hachen, #39)

- 12:05 – 12:25 pm Extracting the Ontological Structure of OpenCyc for Reuse and Portability of Cognitive Models (*Bradley J. Best, Nathan Gerhart, & Christian Lebiere, #16*)
- 12:25 – 12:45 pm Taxonomy and Method for Handling Large and Diverse Sets of Interactive Objects in Immersive Environments (*David Pietrocola & Barry Silverman, #17*)
- 12:45 - 2:00 pm **Lunch (Provided)**

TECHNICAL SESSION 5: COLLECTIVE BEHAVIOR AND SOCIOCULTURAL MODELING

- 2:00 - 3:00 pm **Plenary** - How People Discount the Future: Empirical Data and a General Mathematical Representation (#04)
Robert Axtell, George Mason University
- 3:00 – 3:20 pm Shifts of Critical Personnel in Network Centric Organizations (*Craig Schreiber, Kathleen Carley, & Jeffrey Hansberger, #18*)
- 3:20 – 3:40 pm An Agent-Based Model of Conflict in East Africa and the Effect of Watering Holes (*William Kennedy, Atesmachew Hailegiorgis, Mark Rouleau, Jeffrey Bassett, Mark Coletti, Gabriel Balan, & Tim Gulden, #19*)
- 3:40 – 4:00 pm Resistance is Futile: Winning Lemonade Market Share through Metacognitive Reasoning in a Three-Agent Cooperative Game (*David Reitter, Ion Juvina, Andrea Stocco, & Christian Lebiere, #20*)
- 4:00 - 4:30 pm **Break**
- 4:30 – 4:50 pm Modeling the Theory of Planned Behavior from Survey Data for Action Choice in Social Simulations (*Jonathan Alt & Stephen Lieberman, #21*)
- 4:50 – 5:10 pm Social Identity: Past Work and Relevant Issues for Socio-cultural Modeling (*Jonathon Kopecky, Nathan Bos, & Ariel Greenberg, #22*)
- 5:10 – 5:50 pm **Short Talks**
Subjective Logic for Composing Utility Functions from Maslow Models (*Nathan Denny, #34*)

Data-Driven Coherence Models (*Peter Danenberg & Stacy Marsella, #35*)

Agent Frameworks for Discrete Event Social Simulations (*Jonathan Alt & Stephen Lieberman, #36*)

5:50 - 7:00 pm **Executive Committee Business Meeting**

Thursday, 25-March

7:30 - 8:00 am **Refreshments**

TECHNICAL SESSION 6: MODEL VERIFICATION, VALIDATION, EXPLORATION, & COMPARISON

- 8:00 - 9:30 am **Symposium**
Results and Lessons Learned from the 2009 DSF Modeling Comparison Challenge (*Walter Warwick, Varun Dutt, Kevin Gluck, & David Reitter, #40*)
- 9:30 - 9:50 am Cognitive Model Exploration and Optimization: A New Challenge for Computational Science (*Rick Moore, #23*)
- 9:50 - 10:10 am Sailing to the Model's Edge: Testing the Limits of Parameter Space and Scaling (*Amy Santamaria & Walter Warwick, #24*)
- 10:10 – 10:30 am Modeling Situation Awareness for Army Infantry Platoon Leaders Using Fuzzy Cognitive Mapping Techniques (*Rashaad Jones, Erik Connors, Mary Mossey, John Hyatt, Neil Hansen, & Mica Endsley, #25*)
- 10:30 – 10:55 am **Short Talks**
Cultural Geography Model Validation (*Lisa Jean Bair, Eric Weisel, & Richard Brown, #37*)

Procedure Design and Validation by Cognitive Task Model Simulations (*Tomasz Mistrzyk, Tina Mioch, & Frank Rister, #38*)
- 10:55 - 11:25 am **Break**

**TECHNICAL SESSION 7:
MODELING STRESS, EYE MOVEMENTS, AND A COLLABORATIVE
MODELING TOOL**

- 11:25 - 11:45 am Adapting the Taxon-Task-Taxon Methodology to Model the Impacts of Chemical Protective Gear (*Shane Mueller, #26*)
- 11:45 – 12:05 pm Modeling Human Eye-Movements for Military Simulations (*Patrick Jungkunz & Christian Darken, #27*)
- 12:05 – 12:25 pm Collaboration and Modeling in CogLaborate (*Reuben Cornel, Robert St Amant, & Jeff Shrager, #28*)
- 12:25 - 12:30 pm ***Closing Remarks***

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***For travel and other planning purposes, please note that tutorials will begin at approximately 9:00 on Monday, March 22 and the Technical program will end at approximately 12:30 on Thursday, March 25.***  
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POSTER SESSION

Posters

1. Modeling a Visual Search Task with a Secondary Task in IMPRINT (*Carolyn J. Buck-Gengler, William D. Raymond, Alice F. Healy, & Lyle E. Bourne, Jr., #41*)
2. Applying the Human Behavior Architecture in the Simulation of a Networked Command, Control and Communication Structure (*Walter Warwick, #42*)
3. Prediction Intervals for Future Performance (*Kelly Addis, Michael Krusmark, Tiffany Jastrzembski, Kevin Gluck, & Stuart Rodgers, #43*)
4. Evaluating Behavior modeling Toolsets (*Jennifer Pagan, Beth Wheeler Atkinson, & Melissa Walwanis Nelson, #44*)
5. Dynamic Data and Modeling Suite (*Tina Chau, Alexander Moore, Richard Mullikin, & Janet Wedgwood, #45*)
6. Policy Analysis Using Q-Learning (*Ceyhun Eksin, #46*)
7. Tactical Behavior Composition (*Evan Clark, Jeffrey Smith, & Joel Eichelberger, #47*)
8. Levy Distributed Search Behaviors for Mobile Target Locating and Tracking (*William Lenagh & Prithviraj Dasgupta, #48*)
9. Imperfect Situation Awareness: Representing Error and Uncertainty in Modeling, Simulation & Analysis of Small Unit Military Operations (*Victor Middleton, #49*)
10. Cognitive Flexibility through Learning from Constraint Violations (*Dongkyu Choi & Stellan Ohlsson, #29*)
11. Human Capacity Development through Simulations: Constructive Simulations as a Basis for Understanding Competency Requirements in Initiative-Based Tactics (*Bruno Emond, #30*)
12. Rapid Development of Intelligent Agents in First/Third-Person Training Simulations via Behavior-Based Control (*George Alexander, Frederick Heckel, Michael Youngblood, Nikhil Ketkar, & Hunter Hale, #31*)
13. Developing a Model of Expert Performance for Ship Navigation Tasks in an Intelligent Tutoring Environment (*Jason Wong, Susan Kirschenbaum, & Stanley Peters, #32*)

14. Plan Ahead: Pricing ITS Learner Models (*Jeremiah Folsom-Kovarik, Sae Schatz, & Denise Nicholson, #33*)
15. Subjective Logic for Composing Utility Functions from Maslow Models (*Nathan Denny, #34*)
16. Data-Driven Coherence Models (*Peter Danenberg & Stacy Marsella, #35*)
17. Agent Frameworks for Discrete Event Social Simulations (*Jonathan Alt & Stephen Lieberman, #36*)
18. Cultural Geography Model Validation (*Lisa Jean Bair, Eric Weisel, & Richard Brown, #37*)
19. Procedure Design and Validation by Cognitive Task Model Simulations (*Tomasz Mistrzyk, Tina Mioch, & Frank Rister, #38*)
20. Reducing the Variability between Novice Modelers: Results of a Tool for Human Performance Modeling Produced through Human-Centered Design (*Bonnie John, #05*)
21. Plan, Replan and Plan to Replan: Algorithms for Robust Courses of Action Under Strategic Uncertainty (*Maciej Latek & Seyed Rizi, #06*)
22. Modeling Behavioral Activities Related to IED Preparation (*Lora Weiss, Elizabeth Whitaker, Erica Briscoe, & Ethan Trehitt, #09*)
23. Identification and Applications of Neurophysiologic Synchronies for Studying the Dynamics of Teams (*Ronald Stevens, Chris Berka, Trysha Galloway, & Adrienne Behneman, #14*)
24. Extracting the Ontological Structure of OpenCyc for Reuse and Portability of Cognitive Models (*Bradley J. Best, Nathan Gerhart, & Christian Lebiere, #16*)

Demonstrations

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| 7:30 – 8:00 pm | Dynamic Data and Modeling Suite (<i>Tina Chau, Alexander Moore, Richard Mullikin, & Janet Wedgwood, #45</i>) |
| 8:00 – 8:30 pm | CogTool: Predictive Human Performance Modeling by Demonstration (<i>Bonnie John, #50</i>) |
| 8:30 – 9:00 pm | Creating Realistic Human Behavior in Physical Security Systems Simulation (<i>Volkan Ustun & Jeffrey Smith, #51</i>) |

**Note: Demonstrators will be showcasing their tools using the projection system in the plenary room according to the schedule below, and will be available for the full poster session (7:30 – 9:30pm) to interact with audience participants.*

Exhibits

1. Michael D. Young, *President, Social Science Automation, Inc.*