

HSCB FOCUS 2011:

INTEGRATING SOCIAL SCIENCE THEORY AND ANALYTIC METHODS FOR OPERATIONAL USE

CALL FOR ABSTRACTS



CAPT Schmorrow
*HSCB Focus 2011
Conference Chair*

Please plan to participate in the Human Social Culture Behavior (HSCB) Modeling Program Focus 2011 Conference, the third in a series of technical exchange meetings hosted by the Office of the Secretary of Defense (OSD) HSCB Modeling Research Program. The meeting will be held from 8–10 February 2011 at the Westfields Marriott Hotel, near Dulles Airport, in Virginia. This meeting will be a gathering of Department of Defense (DoD) and other US government agencies that fund, develop, and transition HSCB related research and development as well as transition partners, potential technology end-users, and program awardees.

The Conference will focus on providing an overview of methods, models, technologies and analysis with the DoD, Interagency, and Allied partner social-cultural domains. This emerging area affects many organizations within DoD, including a large part of the operational forces and portions of the Intelligence and Research communities. Operational forces have begun to incorporate social science methodologies into planning, and there are programs that have implemented social science methodologies and advising on a large scale within the military services, primarily the brigade staff. Clearly, emerging priorities at the operational level must be met with both policy and social science research that are supportive of the warfighters goals. Traditional research, development, testing, and engineering are becoming more and more integrated with the social and behavioral sciences and emerging analytic tradecraft making it ever more important that relevant policies be examined and perhaps updated to reflect new research thrusts.

MEETING PURPOSE

The goal of this meeting is to showcase research and applications in the general HSCB modeling area and to engage OSD HSCB Modeling Program personnel as well as leading scientific and technical experts working in HSCB related fields in a technical exchange. A specific focus of this conference will be to promote communication between the development and user communities and to facilitate the transition of HSCB capabilities into operational use.

In addition to personnel from the OSD HSCB Modeling Program, representatives from both DoD and other Government agencies are expected to attend and showcase their programs in this area. This includes representatives from the Office of Naval Research (ONR), Combating Terrorism Technical Support Office (CTTSO), Defense Advanced Research Projects Agency (DARPA), Defense Threat Reduction Agency (DTRA), Joint Improvised Explosive Device Defeat Organization (JIEDDO), Defense Intelligence Agency (DIA), Intelligence Advanced Research Projects Agency (IARPA), Department of State (DOS), Department of Homeland Security (DHS), the Office of the Director of National Intelligence (ODNI), the Federal Bureau of Investigation (FBI), and the National Science Foundation (NSF). Researchers and developers from industry, academia, and government labs, including current HSCB program awardees, are invited to present their work and ideas related to HSCB technologies. Additionally, representatives from end-user communities within DoD and elsewhere in the U.S. government are strongly encouraged to present requirements, use cases, and challenge problems to the community.

REGISTRATION

Registration for the conference must be completed online via the [conference Website](#). The deadline to register is 12 January 2011 and the registration fee is \$395.00 USD. All presenters and exhibitors must register for the conference.

EXHIBITS

The HSCB Focus 2011 Conference has limited space available for exhibitors. For additional information regarding exhibits and to apply online, visit the [conference Website](#). The exhibit application deadline is 12 November 2010.

HSCB FOCUS 2011:

INTEGRATING SOCIAL SCIENCE THEORY AND ANALYTIC METHODS FOR OPERATIONAL USE

CALL FOR ABSTRACTS

HSCB FOCUS 2011 will consist of presentations, poster sessions, and exhibitions to showcase research and applications in the general HSCB modeling area and to engage OSD HSCB Modeling Program personnel as well as leading scientific and technical experts working in HSCB related fields in a technical exchange. The opportunity to give presentations will be awarded based on the quality of the abstracts received and the relevance to a conference track. The Conference is also interested in any relevant innovations or developments that have not yet been introduced to the defense community. Conference Tracks include the following:

- Operational Use and Requirements with Social-Cultural Science: Combatant Commands (COCOMS)
- Application of Social Cultural Methods, Models, and Tools (MMT)
- Commercial Research and Applications of Social-Cultural Science
- Social-Cultural Data
- Analytic Methods Science and Technology
- Hybrid Models
- Comprehensive Approach to Operations
- Understanding and Modeling Human Behavior
- Visualization for Computational Social Science
- Cultural Training
- Valid Model Use and Validation

In addition to the conference tracks listed above, a separate track has been established that provides a comprehensive overview of funding opportunities and work across several DoD organizations and other federal government entities in these areas.

Abstracts of presentations should be submitted through the [conference Website](#) by 12 November 2010. The abstract and research description submission should follow the structure and formatting found below.

Title of Presentation and Authors

Conference Track

Abstract: The abstract of the presentation should clearly state the objective and significant conclusions in no more than 200 words.

Research Description: The description should discuss the objective, methods, and significant results and conclusions, and may include relevant tables and figures. The description should be no longer than 1,000 words.

Acknowledgments

Biography: A short biography (150 words or less) for the presenting author only should be included.

References

A panel of subject matter experts will review each submission. Notifications will be sent by 10 December 2010.

CONFERENCE TRACK DEFINITIONS

Operational Use and Requirements with Social-Cultural Science: Combatant Commands Track

This track seeks posters/presentations that address the specific operational use and requirements for social science within the different combatant commands. Focus of this track will be on the application of HSCB tools and methods to the specific operational uses and requirements of the specific COCOMs:

- How can the different COCOM's missions be supported by HSCB applications.
- COCOMs are either REGIONAL (e.g., EUCOM, CENTCOM) or FUNCTIONAL (e.g., SOCOM, TRANSCOM, CYBERCOM). Many functional HSCB needs (lots of Training, Experimentation) differ from the many regional HSCB needs (lots of Operational Planning and Influence Operations)
- Regional COCOMs have some common HSCB needs and many very different HSCB needs. Some COCOMs are Force Providers (SOCOM, STRATCOM). Force providers have specific HSCB needs; COCOMs are also Force Employers/Deployers—what are their HSCB needs?
- COCOMs provide "joint capability areas" (e.g., Joint Network Operations, Joint Interagency Coordination, Joint Public Affairs Operations, Joint Information Operations), in different combinations depending on the COCOM; all "joint capability areas" have greater or lesser HSCB support requirements.

HSCB FOCUS 2011:

INTEGRATING SOCIAL SCIENCE THEORY AND ANALYTIC METHODS FOR OPERATIONAL USE

CONFERENCE TRACK DEFINITIONS (CONTINUED)

Operational Use and Requirements with Social-Cultural Science: COCOMS Track (Continued)

Given the variations in the nature and missions of the COCOMs, how can HSCB applications be efficiently and effectively adapted to specific COCOM requirements?

Application of Social Cultural Methods, Models, and Tools (MMT) Track

This track seeks posters/presentations addressing the application to an enterprise (including, but not exclusively, military enterprises) of social cultural methods, models, and tools (MMT). The track is divided into specific enterprise domains, including:

Training:

Methods, models, and tools to train enterprise personnel in the socio-cultural and behavioral landscape, and provide the ability to quickly assess and identify the societal norms, behaviors, and social structures in social or cultural groups. Training of both specific social-cultural knowledge and skills and general cultural understanding, awareness, and sensitivity are of interest.

Intelligence Analysis:

Understanding the human terrain allow enterprises to better anticipate and affect adversarial and allied activities and help make more informed decisions. MMT that provide behavioral and socio-cultural knowledge about situations, individuals, and entities and essential intelligence on the human terrain are of interest.

Influence Operations (IO):

MMT for understanding of the dynamics of human, social and cultural influences on behavior and attitudes are of interest: MMT that provide the capability to understand the influence of information and its impacts on human behavior, information influences on the perceptions and public opinion of populations with which the enterprise is engaged, and how these influences are transmitted and communicated (e.g., through the media, peer groups).

Operational Planning:

Successful plans and operations require understanding the cultural geography (family, tribal, ethnic, religious); social, economic, and communication links; media influences; and social,

financial, moral, and or logistic support of allied and adversarial groups. HSCB MMTs of interest enable the enterprise to better support its objectives by assessing trends to better plan operations in a specific cultural environment, and to design courses of action that are socio-culturally aware and informed.

Experimentation:

Experiments (e.g., table top exercises, organizational exercises, role playing exercises, computer games, "serious games") enable evaluation, learning, and understanding for the personnel of the enterprise. Of interest are HSCB MMTs that introduce realistic settings and scenarios; complex situations, adaptive adversaries, difficult alliances; human, group, and social behavior under extreme stress; and culturally valid allied and adversarial responses. Exercises incorporating HSCB MMTs that provide enterprise decision makers with skills to better develop informed courses of action in dynamic and complex situations, environments, and cultures.

Papers and presentations on HSCB MMTs that are applied or integrated across multiple domains are welcomed.

Commercial Research and Applications of Social-Cultural Science Track

This track seeks posters/presentations that include research in or applications of the social—behavioral sciences that are primarily focused on non-DoD applications but may be relevant to military needs. This includes, but is not limited to, theory, models, analytic methods, and software developed for applications in the following domains:

- consumer behavior/psychology
- financial markets
- fraud and security
- gaming and entertainment
- health science/social response to health threats
- social dynamics of education

HSCB FOCUS 2011:

INTEGRATING SOCIAL SCIENCE THEORY AND ANALYTIC METHODS FOR OPERATIONAL USE

CONFERENCE TRACK DEFINITIONS (CONTINUED)

Social-Cultural Data Track

This track seeks posters/presentations that address the following:

- Methods and tools for the collection and generation of socio-cultural data
 - ♦ Range of operational contexts and environments: How to understand them and their impact on identifying critical data and appropriate data collection methods. (Does "One-size" Really fit all?)
 - ♦ Data collection and validation for the warfighter: Methods for rapid data collection & propagation by non-experts
 - ♦ Innovative data collection: Using field studies, field experiments, crowd sourcing, and potentially massively multiplayer online games (MMOGs) as the basis for supporting S-C modeling & analysis.
 - ♦ Innovative uses of Open Source data for understanding Socio-cultural topologies
 - ♦ Tools & techniques to support rapid data collection
- Developing Socio-Cultural Trip Wires: How do you know when the data no longer applies?
- Developing Socio-Cultural Taxonomies: Techniques for the application and fusion of data across data domains (academic, scientific, military/user communities)
- Approaches and methods to overcome challenges in data (e.g. collection in denied environments, addressing validity/bias of open source data, data inconsistencies and missing data, integration of data from various sources).
- Establishment of Culture/Society specific baseline data and identifying the most critical/salient driving factors for different cultures

Analytic Methods Science and Technology Track

This track seeks posters/presentations that address the following:

- Scientifically-based analytic methodologies for using qualitative and quantitative data on human, social, cultural and behavioral factors for decision support.
- Hybrid methodologies that integrate human, social, cultural and behavioral factors with decision support by combining analytic methods from various social science disciplines.

- Analytic methods that incorporate social-cultural influences and dynamics, including:
 - ♦ Uncovering and understanding human networks, relationships, and influences.
 - ♦ Analyzing the behavioral, social, and cultural effects of decisions on courses of action.
 - ♦ Validating social science data and analysis methods.
 - ♦ Assessing the uncertainty of social-cultural data, knowledge, and understanding on decisions and action.

Hybrid Models Track

This track seeks posters/presentations that address the following:

- Applications of hybrid modeling to address operational questions, where hybrid can mean using a combination of modeling paradigms (e.g., Systems Dynamics, Game Theory, Agent Based Modeling) or multiple levels of granularity to capture dynamic of interest during runtime or in an output-input fashion
- Methods of using data or combinations of data that were not designed or optimized for given model
- Theories that support hybrid, generalizable models across the spectrum from tactical to operational to strategic applications
- Effectiveness of models at the tactical, operational, and strategic levels of granularity using uncertainty analysis (e.g., sensitivity analysis, robust decision making, output value scoring methods)
- Determine the data fidelity requirements for each level of modeling granularity (tactical, operational, and strategic), including methods to support data processing, disaggregation, aggregation, etc. for use of data in models of different granularity
- Architectures or frameworks that allow for joining heterogeneous collections of models, including allowing the integration of models to form a hybrid model
- Multi-disciplinary research for new models that integrate across disciplines producing a more holistic model or hybrid model to allow rapid adaptation to a new culture

HSCB FOCUS 2011:

INTEGRATING SOCIAL SCIENCE THEORY AND ANALYTIC METHODS FOR OPERATIONAL USE

CONFERENCE TRACK DEFINITIONS (CONTINUED)

Comprehensive Approach to Operations Track

In the current global security environment, operations are increasingly complex, with objectives focused on impacting civilian, non-combatant populations, and often involve facilitating the post-conflict recovery, reconstruction, and transition of a region. Success depends on leveraging all instruments of national and international power in a coherent fashion. Such a "comprehensive approach to operations" (CA) involves coordinated and coherent action by multiple operational entities that may include national/international government agencies, militaries, non-governmental organizations, corporations, and other actors. This track seeks posters/presentations that address the following:

- Case studies of the comprehensive approach to operations and lessons learned
- The relationship between the comprehensive approach to operations and related concepts, (e.g. whole of government, complex operations, counter-insurgency (COIN), Smart Power)
- Core technical challenges associated with effective implementation of the CA
- Measures of effectiveness and metrics
- Studies/reports on analytic methods and models that have been or are currently being applied to address those challenges
- Description and discussion of critical Science and Technology gaps, forthcoming programs, and emerging technologies

Understanding and Modeling Human Behavior Track

Computational social science (CSS) is an emergent field at the intersection of the social sciences, mathematical models, quantitative analysis techniques, and computer programming. The focus of this track will be basic social science and theory which are amenable to such computational development. The posters/presentations in this track should address science and theory that will drive CSS in the following areas:

- Human, social, cultural and behavioral factors that influence human behavior
- Decision-making frameworks informed by socio-cultural information. How these frameworks be used to model influences on decision making at individual, group and societal levels

- Cognitive or psychological factors that exist across cultures that may influence individual and group decision making
- Roles and/or structures in societies which define power relationships, governing structures, and formal and informal organizations. Influence of these roles/structures on individual and group behavior.
- Motivations and influences underlying terrorist and insurgent behavior. Factors that influence individuals, groups, and organizations to commit terrorist/violent acts

Visualization for Computational Social Science Track

This track seeks posters/presentations that address the following:

- Visualization capabilities for translating socio-cultural behavior model outputs into military decision-making processes
- Spatio-temporal visualizations methods to display socio-cultural model outputs within temporal / spatial contexts
- Identification and evaluation of common visualization methods that can be applied to socio-cultural modeling
- Data requirements to improve the usability and utility of socio-cultural model outputs
- Perceptual and cognitive processing methods to improve the usability and utility of socio-cultural model outputs
- Imagery (including static images, video, animation and interactive applications) that leads to better analysis and enhanced socio-cultural understanding

Cultural Training Track

This track seeks posters/presentations that address research in the following areas:

- Training approach for social-cultural skills and cultural awareness. Training of both specific social-cultural skills and culture-general skills, such as cultural awareness and sensitivity and cross-cultural communication
- Training that provides warfighters with the ability to quickly assess and identify the societal norms, behaviors, and social structures in a social or cultural group.
- HSCB- related training that provides an understanding of adversarial or neutral populations

HSCB FOCUS 2011:

INTEGRATING SOCIAL SCIENCE THEORY AND ANALYTIC METHODS FOR OPERATIONAL USE

CONFERENCE TRACK DEFINITIONS (CONTINUED)

Cultural Training Track (Continued)

- Analysis of culture-general cross-cultural skills (e.g. perspective taking) and training applications/curriculum to teach these skills
- Integration of culture specific skills training into existing training deployable training systems for current areas of interest
- Identification and/or assessment of characteristics and conditions that make the warfighter more culturally adaptable

Valid Model Use and Validation Track

Realizing that validation within a socio-cultural context presents unique challenges, this track will take a broad perspective. We see valid *use* of these models, given their inherent deep uncertainty, as complementary to validating the models themselves.

We welcome submissions in the following areas (this list should not be seen as exhaustive):

- Determining valid uses of a model (we are looking for way under deep uncertainty to determine the valid areas

of input parameter space, the ways of using output data, and determining the valid range of applications)

- Exposing the "black box," how to find and expose areas of deep uncertainty within these models (areas where the theoretic underpinning is unknown or ill-defined, areas where data is unknown, or areas where many factors coincide to produce behavior that is difficult to predict with causal structures that are difficult to unpack)
- Tools to support policy analysis and decision support with socio-cultural models (How do you take a model filled with deep uncertainty and make it useful for decision makers? How do you choose the right model to apply?)
- The definition of validity in a socio-cultural domain; is there a single definition or must it be idiosyncratic to each model/effort? Is there a theory of validity for these types of models?
- Applications and case studies of socio-cultural model validation
- Tools and techniques for determining model validity



HSCB FOCUS 2011 CONFERENCE

8-10 FEBRUARY 2011

WESTFIELDS MARRIOTT HOTEL
14750 CONFERENCE CENTER DRIVE
CHANTILLY, VIRGINIA 20151 USA

WWW.SA-MEETINGS.COM/HSCBFOCUS2011