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RPPR Final Report

as of 22-Jan-2020

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Final Report for Period Beginning 23-Mar-2017 and Ending 19-Jan-2020

Title: SBP 2017-2019 Conference Sponsorship Grant Proposal

Begin Performance Period: 23-Mar-2017

End Performance Period: 19-Jan-2021

Report Term: 0-Other

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Distribution Statement: 1-Approved for public release; distribution is unlimited.

STEM Degrees:

STEM Participants:

Major Goals: The 2017-2019 International Conference on Social Computing, Behavioral-Cultural Modeling, & Prediction and Behavior Representation in Modeling and Simulation (<http://sbp-brims.org/>) was held in George Washington University, Washington, D.C.

The goal of the conference is to cultivate cross-disciplinary communication and collaboration, for the purpose of advancing substantive domain knowledge and advanced computational methodologies across the social, behavioral, and economic sciences. The conference is a merger of three successful conferences,

- International Conference on Computational Cultural Dynamics (2007–2009),
- International Conference on Social Computing, Behavioral-Cultural Modeling, and Prediction (2008–2013) (<http://sbp.asu.edu/>), and
- Behavioral Representation in Modeling and Simulation (2004-2013).

The conference offers an opportunity for behavioral and social science researchers to come together with computer and information scientists and other related disciplines. It seeks to attract researchers, practitioners, program staff from federal agencies, and graduate students across a broad range of scientific disciplines, including complexity science, sociology, behavioral science, psychology, political science, cultural studies, health sciences, economics, computer science, engineering, information systems, physics, and operations research.

Accomplishments: Major Accomplishments

- Conference attendance has increased from 2017 to 2019.
- Number of submissions and quality has increased from 2017 to 2019.
- Attendance from other non-computer science disciplines such as computational social science, traditional social sciences, mathematics, statistics, health sciences, economics, behavioral sciences, etc. have increased. This is a direct outcome of the funding provided by ARO.
- Students from non-CS programs were able to attend, who would otherwise be unable to attend due to funding limitations.
- ARO funding enabled successful organization of research challenge track, doctoral consortium track, late-breaking track.

The SBP-BRiMS Proceedings were published by Springer as part of its Lecture Notes in Computer Science series. These proceedings for 2017-2019 can be accessed online through the following links:

- 2017: <https://link.springer.com/book/10.1007/978-3-319-60240-0>: 56k downloads as of 01/12/20
- 2018: <https://link.springer.com/book/10.1007/978-3-319-93372-6>: 69k downloads as of 01/12/20

RPPR Final Report as of 22-Jan-2020

- 2019: <https://link.springer.com/book/10.1007/978-3-030-21741-9>: 6.7k downloads as of 01/12/20

Training Opportunities: Please see the attached report for detailed training opportunities provided during the conference to the participants, especially the travel award recipients.

Results Dissemination: Proceedings

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Additionally, the conference website (<http://sbp-brims.org/>) provides detailed information including links to non-proceedings articles, links to tutorials and keynotes, and resources for the challenge problems.

Presentations that consented to be recorded and made available online are uploaded on the conference's YouTube channel at <https://www.youtube.com/channel/UCnmlC9LUCqKqJM5g3Jn2iUQ>.

Honors and Awards: Nothing to Report

Protocol Activity Status:

Technology Transfer: Nothing to Report

PARTICIPANTS:

Participant Type: PD/PI

Participant: Nitin Agarwal

Person Months Worked: 1.00

Funding Support:

Project Contribution:

International Collaboration:

International Travel:

National Academy Member: N

Other Collaborators:

BOOKS:

Publication Type: Book

Peer Reviewed: Y **Publication Status:** 1-Published

Publication Identifier Type: DOI

Publication Identifier: 10.1007/978-3-319-60240-0

Book Edition: Volume:

Publication Year: 2017 Date Received: 15-Jan-2020

Publication Location:

Publisher: Springer

Book Title: Social, Cultural, and Behavioral Modeling: 10th International Conference, SBP-BRiMS 2017, Washington, DC, USA, July 5-8, 2017, Proceedings

Authors: Dongwon Lee, Yu-Ru Lin, Nathaniel Osgood, Robert Thomson

Editor:

Acknowledged Federal Support: Y

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Publication Year: 2018 Date Received: 21-Jan-2020

Publication Location:

Publisher: Springer

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as of 22-Jan-2020

Book Title: Social, Cultural, and Behavioral Modeling: 11th International Conference, SBP-BRiMS 2018, Washington, DC, USA, July 10-13, 2018, Proceedings

Authors: Robert Thomson, Christopher Dancy, Ayaz Hyder, Halil Bisgin

Editor:

Acknowledged Federal Support: Y

Publication Type: Book

Peer Reviewed: Y **Publication Status:** 1-Published

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Publication Identifier: 10.1007/978-3-030-21741-9

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Publication Year: 2019

Date Received: 15-Jan-2020

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Publisher: Springer

Book Title: Social, Cultural, and Behavioral Modeling: 12th International Conference, SBP-BRiMS 2019, Washington, DC, USA, July 9–12, 2019, Proceedings

Authors: Robert Thomson, Halil Bisgin, Christopher Dancy, Ayaz Hyder

Editor:

Acknowledged Federal Support: Y

SBP-BRiMS 2017-2019 Conference Final Report

Submitted by: Dr. Nitin Agarwal, SBP-BRiMS Chair (nxagarwal@ualr.edu)

January 21, 2020

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Acknowledgments: SBP-BRiMS 2017-2019 is supported by ARO grant number W911NF-17-1-0138.

Overview

The 2017-2019 International Conference on Social Computing, Behavioral-Cultural Modeling, & Prediction and Behavior Representation in Modeling and Simulation (<http://sbp-brims.org/>) was held in George Washington University, Washington, D.C.

The goal of the conference is to cultivate cross-disciplinary communication and collaboration, for the purpose of advancing substantive domain knowledge and advanced computational methodologies across the social, behavioral, and economic sciences. The conference is a merger of three successful conferences,

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Major Highlights

- ◆ Conference attendance has increased from 2017 to 2019.
- ◆ Number of submissions and quality has increased from 2017 to 2019.
- ◆ Attendance from other non-computer science disciplines such as computational social science, traditional social sciences, mathematics, statistics, health sciences, economics, behavioral sciences, etc. have increased. This is a direct outcome of the funding provided by ARO.
- ◆ Students from non-CS programs were able to attend, who would otherwise be unable to attend due to funding limitations.
- ◆ ARO funding enabled successful organization of research challenge track, doctoral consortium track, late-breaking track.

Proceedings

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- ◆ 2018: <https://link.springer.com/book/10.1007/978-3-319-93372-6>: 69k downloads as of 01/12/20
- ◆ 2019: <https://link.springer.com/book/10.1007/978-3-030-21741-9>: 6.7k downloads as of 01/12/20

Conference Committees

The following were members of the SBP-BRiMS committees:

Conference Co-Chairs

Kathleen M. Carley, Carnegie Mellon University
Nitin Agarwal, University of Arkansas – Little Rock

Program Co-Chairs

Christopher Dancy II, Bucknell University
Halil Bisgin, University of Michigan-Flint
Robert Thomson, United States Military Academy
Ayaz Hyder, The Ohio State University

SBP-BRiMS Advisory Committee

Rebecca Goolsby, Office of Naval Research
Stephen Marcus, National Institutes of Health
Paul Tandy, Defense Threat Reduction Agency
Edward T. Palazzolo, Army Research Office

SBP-BRiMS Advisory Committee Emeritus

Fahmida N. Chowdhury, National Science Foundation
Patricia Mabry, Indiana University
John Lavery, Army Research Office

Tisha Wiley, National Institutes of Health

Industry Sponsorship Committee

Kathleen M. Carley, Carnegie Mellon University
Ayaz Hyder, The Ohio State University
Sun-Ki Chai, University of Hawaii
Subhadeep Chakraborty, University of Tennessee

Government Sponsorship Committee

Nitin Agarwal, University of Arkansas – Little Rock
Christopher Dancy II, Bucknell University
Yu-Ru Lin, University of Pittsburgh

Travel Scholarships

Nitin Agarwal, University of Arkansas – Little Rock

Publicity Chair

Donald Adjeroh, West Virginia University
Hemant Purohit, George Mason University
Katrin Galeano, University of Arkansas – Little Rock

Web Chair

Tuja Khaund, University of Arkansas at Little Rock

Sienna Watkins, Carnegie Mellon University

Katrin Galeano, University of Arkansas at Little Rock

Dmitriy Babichenko, Learning Technologies Lab

Tutorial and Demo Chair

Kathleen M. Carley, Carnegie Mellon University

Local Area Coordination

David Broniatowski, The George Washington University

Challenge Problem Committee

Kathleen M. Carley, Carnegie Mellon University

Proceedings Chair

Robert Thomson, United States Military Academy

BRIMS Society Chair

Christopher Dancy II, Bucknell University

Graduate Consortium

Yu-Ru Lin, University of Pittsburgh

SBP Society Chair

Shanchieh (Jay) Yang, Rochester Institute of Technology

Submission and Acceptance Statistics

Submission and acceptance statistics for 2017-2019 are provided in Table 1. Number of submissions has grown consistently for the last three years, indicating growing interest in the community in social computing, behavioral-cultural modeling, and simulation and prediction topics. The acceptance ratio has also increased primarily due to an increase in high-quality submissions.

Table 1: Summary of submission and acceptance statistics for SBP-BRiMS 2017-2019

	Total Submissions	Oral (Accept %)	Poster
2017	79	16 (20.2%)	27
2018	85	18 (21.2%)	27
2019	110	28 (25.5%)	34

Attendee Statistics

The 2017 conference had 143 registrants, 2018 had 141, and 2019 had 159 registrations. Conference attracted contributions and attendees from several disciplines. Table 2 provides an average disciplinary distribution of the attendees for SBP-BRiMS 2017-2019. Attendees from computer science and computation social science were the two largest groups followed by

traditional social sciences, engineering, health sciences, mathematics, statistics and other disciplines such as economics, anthropology, etc. Compared to previous years (i.e., before 2017), SBP-BRiMS has successfully attracted quality submissions and attendance from non-Computer Science disciplines that are relevant to social computing.

Table 2: Average Disciplinary Distribution of Attendees for SBP-BRiMS 2017-2019

Computer Science	35.10%
Comp. Social Science	31.13%
Social Sciences	12.58%
Engineering	3.97%
Health Science	3.31%
Mathematics	3.31%
Statistics	0.66%
Other Science	3.97%
Other	5.96%

The majority of authors came from academia, with significant student participation.

Travel Awards

Funding from ARO supported travel scholarships for 39 students in 2017, 35 in 2018, and 30 in 2019. Five students could not accept the award in 2019 due to travel related issues and funds received from home institution.

Table 3: Gender Distribution of Travel Award Recipients for SBP-BRiMS 2017-2019

	Female	Male
2017	12 (30.77%)	27 (69.23%)
2018	14 (40%)	21 (60%)
2019	10 (40%)	15 (60%)

Travel awardees were asked to provide a post-attendance feedback. Few of these remarks are presented below:

“I attended SBP-BRiMS conference held in George Washington University in Washington, DC from July, 10, 2019 to July, 12, 2019. I presented a poster as part of the ‘disinformation challenge’ in the conference. Additionally, it was exciting to attend keynote speaker sessions and panel discussions while discovering new research in my areas of interest. Finally, the application of computational methods in social sciences was unique compared to the

conferences I have attended previously. Overall, it was a great learning opportunity and I wish to return to present my work next year.”

“SBP-BRiMS 2019 is the first multidisciplinary conference I have ever attended. It was a great experience of having people from different domains sharing their research and achievements. As a PhD student working mainly on education-related research, I was exposed to and learned a lot of new ideas from all the talks and attendees. For example, I learned how the social scientists transform real world problems into controllable experiments and use agent-based simulation approaches to resolve the problems. As far as I know, such an approach is not common in my domain and I learned a lot from the talk. This conference really helps me explore how I can push my research life forward.”

“My experience at SBP-BRiMS 2019 was a very positive one! While my tutorial session on Monday was only attended by 7 people, they all stayed for the duration of the tutorial and most seemed engaged, asking several questions throughout the session. Among the presentations, I found the first two in the Large Scale Modeling presentation most compelling. The first, presented by Dr. Osgood, demonstrated a great combination of the 3 main modeling paradigms (ABM, System Dynamics, and Discrete Systems). It also covered maternal diabetes, which is closely related to work I’m involved in with inter-generational obesity. I hope to draw from their methods of describing and presenting their results. In the second, Alina Vereshchaka demonstrated a fascinating combination of ABM, Reinforcement Learning, and Decision Theory (via utility functions) – all areas of interest for me. I also found the various discussions and panels on validation very helpful. I find it’s one of the biggest challenges, especially in ABMs, where it’s so easy to end up with, “the model shows what we want because that’s how we made it”. Lastly it was extremely rewarding to meet and talk with so many brilliant and passionate people. Overall it was a very inspiring experience! Dr. Carley asked if will return next year and I will do everything possible to do so! And hopefully I’ll have a paper to present as well as a tutorial session.”

“SBP-BRiMS 2019 International Conference was a very good learning experience and I thoroughly enjoyed the entire conference. I got an opportunity to meet and interact with students, professionals, and Researchers in the field of Social Behavioral and Predictive Modelling across the country and gain valuable knowledge. It was a good platform for me to learn about innovative ideas used in working papers, listen to speakers about their work, attend informative talks, and participate in hands-on workshops. This also helped me to showcase our work to a wider audience, get productive feedback. This conference has helped me to strengthen my foundation, gain exposure and I hope that this experience will propel me to excel further in my career in innovation and research.”

“SBP-BRiMS did not only allow me to share my research work with the conference attendees, but it was also an ideal opportunity to network. Throughout the various breaks and poster sessions I was able to meet other researchers and professionals that shared valuable knowledge about their research and publications of interest. I will use the feedback I received during the poster sessions and after the talk presentation to enhance my work. Even though peer reviews also assist in the improvement of my work, the face-to-face contact with others is crucial. This also became apparent during the Social Cyber-Security Working Group meeting, which created a sense of community. We were able to discuss current and future efforts freely and either make new connections or strengthen existing ones. Thank you very much for the financial support. I am hoping to be able to attend SBP-BRiMS this upcoming year.”

Photo: Some of the 2017 student travel support awardees



Photo: Some of the 2018 student travel support awardees



Photo: Some of the 2019 student travel support awardees



Program Details

The full program is listed at <http://sbp-brims.org/2017/program/>, <http://sbp-brims.org/2018/program/>, and <http://sbp-brims.org/2019/program/>, for 2017, 2018, and 2019, respectively.

Features included keynote speakers, tutorials, oral paper presentations, poster session (short papers and late-breaking papers), challenge problem session and video recording, best paper awards, challenge problem awards, and a funding panel. The challenge problem presentations are also recorded and made available on SBP-BRiMS' YouTube channel at:

<https://www.youtube.com/channel/UCnmlC9LUCqKqJM5g3Jn2iUQ>