

## Social *in silico* Research Forum

The Social *in silico* Research Forum (SISR; pronounced “scissor forum”) is an academic interest group consisting of researchers. The mission of SISR is to understand emergent large-scale social behavior as a function of individual psychological processes using *in silico* research methods.

### *Resources*

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Coordinator	Ian Dennis Miller
Website	<a href="http://imiller.utsc.utoronto.ca/research/sisr.html">http://imiller.utsc.utoronto.ca/research/sisr.html</a>
Charter	<a href="http://imiller.utsc.utoronto.ca/pub2/sisr_2016.pdf">http://imiller.utsc.utoronto.ca/pub2/sisr_2016.pdf</a>

## Organization

### Meetings

The group meets once per week at the University of Toronto. Meetings are held Mondays at 10am EST (Toronto time) and they run for 2 hours. Meetings will be simulcast via online video conferencing so that remote members may participate.

### Agenda

1. old business
2. announcements and new business
3. project updates and brainstorming
4. discuss readings
5. presentation<sup>1</sup>
6. closing

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<sup>1</sup>If we achieve a critical mass of group members, we will add weekly rotating presentations.

## Projects

Members of the group should conduct a project that makes use of SISR's methods or advances SISR's scholarly objectives. Completed projects should be published in peer reviewed journals and disseminated at academic conferences as posters and presentations. Before undertaking a project, please write and share a brief proposal.

## Materials

We strive to standardize our tool use across projects so that it is as easy as possible to share our work. In selecting software, we favor Free and Open Source Software to maximize third-party reproducibility of results. The following table contains an abbreviated software list.

### *Software*

Name	Description	Link
RStudio	A statistics language and environment.	<a href="https://www.rstudio.com/">https://www.rstudio.com/</a>
Zotero	Citation management.	<a href="https://www.zotero.org/">https://www.zotero.org/</a>
NetLogo	Pedagogical ABM environment.	<a href="http://ccl.northwestern.edu/netlogo/">http://ccl.northwestern.edu/netlogo/</a>
MASON	Java ABM library.	<a href="https://cs.gmu.edu/~eclab/projects/mason/">https://cs.gmu.edu/~eclab/projects/mason/</a>
Octave	Computational language; compatible with MATLAB.	<a href="https://gnu.org/software/octave/">https://gnu.org/software/octave/</a>
NWB	Network Workbench; Social Network Analysis	<a href="http://nwb.cns.iu.edu/">http://nwb.cns.iu.edu/</a>
Gephi	Graph visualization.	<a href="https://gephi.org/">https://gephi.org/</a>
Python	General programming language.	<a href="http://python.org/">http://python.org/</a>
Flask-Diamond	Python Application Framework.	<a href="http://flask-diamond.org/">http://flask-diamond.org/</a>

## Academic Society

A scholarly discussion is taking place in journals and at conferences. The following tables provide a starting point for finding the conversation. These are also outlets for contributing to the conversation.

### *Journals*

Name	Impact	Link
Nature	41.296	<a href="http://nature.com/">http://nature.com/</a>
Science	33.194	<a href="http://www.sciencemag.org/">http://www.sciencemag.org/</a>

*Journals*

Name	Impact	Link
Psychological Bulletin	22.155	<a href="http://www.apa.org/pubs/journals/bul/">http://www.apa.org/pubs/journals/bul/</a>
Psychological Review	11.398	<a href="http://www.apa.org/journals/rev/">http://www.apa.org/journals/rev/</a>
Proceedings of the National Academy of Science	10.563	<a href="http://www.pnas.org">http://www.pnas.org</a>
Journal of Applied Psychology	7.753	<a href="http://www.apa.org/pubs/journals/apl/">http://www.apa.org/pubs/journals/apl/</a>
Journal of Personality and Social Psychology	7.521	<a href="http://www.apa.org/pubs/journals/psp/">http://www.apa.org/pubs/journals/psp/</a>
Psychological Science	6.473	<a href="http://pss.sagepub.com/">http://pss.sagepub.com/</a>
Journal of Experimental Psychology: General	6.268	<a href="http://www.apa.org/pubs/journals/xge/">http://www.apa.org/pubs/journals/xge/</a>
American Journal of Sociology	5.326	<a href="http://www.journals.uchicago.edu/toc/ajs/current">http://www.journals.uchicago.edu/toc/ajs/ current</a>
Ecological Modelling	2.752	<a href="http://www.elsevier.com/locate/ecolmodel">http://www.elsevier.com/locate/ecolmodel</a>
Social Forces	2.236	<a href="http://sf.oxfordjournals.org/">http://sf.oxfordjournals.org/</a>
Artificial Life	1.386	<a href="http://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=6720217">http://ieeexplore.ieee.org/xpl/RecentIssue .jsp?punumber=6720217</a>
Social Science Computer Review	1.364	<a href="http://ssc.sagepub.com">http://ssc.sagepub.com</a>
Journal of Autonomous Agents and Multi-Agent Systems	1.254	<a href="http://www.springer.com/computer/ai/journal/10458">http://www.springer.com/computer/ai/journal/ 10458</a>
Journal of Artificial Societies and Social Simulation	1.155	<a href="http://jasss.soc.surrey.ac.uk/">http://jasss.soc.surrey.ac.uk/</a>
Journal of Economic Interaction and Coordination Simulation	0.962	<a href="http://link.springer.com/journal/11403">http://link.springer.com/journal/11403</a>
Simulation	0.818	<a href="http://sim.sagepub.com/">http://sim.sagepub.com/</a>
International Journal of Microsimulation	0	<a href="http://microsimulation.org/ijm">http://microsimulation.org/ijm</a>
Social Network Analysis and Mining	0	<a href="http://link.springer.com/journal/13278">http://link.springer.com/journal/13278</a>

*Conferences*

Short	Full	Link
APS	Association for Psychological Science	<a href="http://aps.psychologicalscience.org/convention/">http://aps.psychologicalscience.org/ convention/</a>
ASONAM	ACM International Conference on Advances in Social Networks Analysis and Mining	<a href="https://duckduckgo.com/?q=ASONAM">https://duckduckgo.com/?q=ASONAM</a>
CCS	Conference on Complex Systems	<a href="https://duckduckgo.com/?q=conference+on+complex+systems">https://duckduckgo.com/?q=conference+on+ complex+systems</a>
CHI	ACM Computer-Human Interaction	<a href="http://www.sigchi.org/">http://www.sigchi.org/</a>
CI	Collective Intelligence Conference	<a href="https://duckduckgo.com/?q=collective+intelligence+conference">https://duckduckgo.com/?q=collective+ intelligence+conference</a>
CSCW	ACM Computer-Supported Cooperative Work and Social Computing	<a href="http://cscw.acm.org/">http://cscw.acm.org/</a>
CSSSA	Computational Social Science Society of the Americas	<a href="https://computationsocialscience.org">https://computationsocialscience.org</a>
HT	ACM Hypertext	<a href="http://ht.acm.org/">http://ht.acm.org/</a>

## Conferences

Short	Full	Link
ICCSS	International Conference on Computational Social Science	<a href="http://www.kellogg.northwestern.edu/news-events/conference/ic2s2/">http://www.kellogg.northwestern.edu/news-events/conference/ic2s2/</a>
ICWSM	AAAI Conference on Web and Social Media	<a href="http://www.icwsm.org/">http://www.icwsm.org/</a>
SPSP	Society for Personality and Social Psychology	<a href="http://spspmeeting.org/">http://spspmeeting.org/</a>
WCCI	World Congress on Computational Intelligence	<a href="http://cis.ieee.org/">http://cis.ieee.org/</a>
WI	International Conference on Web Intelligence	<a href="https://duckduckgo.com/?q=ACM+Conference+on+Web+Intelligence">https://duckduckgo.com/?q=ACM+Conference+on+Web+Intelligence</a>
WSC	ACM Winter Simulation Conference	<a href="https://duckduckgo.com/?q=acm+wintersim">https://duckduckgo.com/?q=acm+wintersim</a>
WSDM	ACM Web Search and Data Mining	<a href="http://www.wsdm-conference.org/">http://www.wsdm-conference.org/</a>
WWW	ACM International World Wide Web Conference	<a href="http://www.iw3c2.org/">http://www.iw3c2.org/</a>

## Institutions, Labs, and Other Groups

Name	Link
Santa Fe Institute	<a href="http://www.santafe.edu/">http://www.santafe.edu/</a>
Brookings Institute	<a href="http://www.brookings.edu/">http://www.brookings.edu/</a>
MIT Center for Collective Intelligence	<a href="http://cci.mit.edu/">http://cci.mit.edu/</a>
Manchester Centre for Policy Modelling	<a href="http://cfpm.org/">http://cfpm.org/</a>
GMU Computational Social Science	<a href="http://css.gmu.edu/">http://css.gmu.edu/</a>
Surrey Centre for Research in Social Simulation	<a href="http://cress.soc.surrey.ac.uk/">http://cress.soc.surrey.ac.uk/</a>
International Microsimulation Association	<a href="http://microsimulation.org/">http://microsimulation.org/</a>
UMich Center for the Study of Complex Systems	<a href="http://www.lsa.umich.edu/cscs">http://www.lsa.umich.edu/cscs</a>
LSE Complexity Group	<a href="http://lse.ac.uk/complexity">http://lse.ac.uk/complexity</a>
New England Complex Systems Institute	<a href="http://necsi.edu/">http://necsi.edu/</a>
Groningen Center for Social Complexity Studies	<a href="http://www.rug.nl/research/gcscs/">http://www.rug.nl/research/gcscs/</a>
Northwestern Center for Connected Learning	<a href="http://ccl.northwestern.edu/">http://ccl.northwestern.edu/</a>
Harvard Institute for Quantitative Social Science	<a href="http://www.iq.harvard.edu/">http://www.iq.harvard.edu/</a>
International Network for Social Network Analysis	<a href="http://insna.org/">http://insna.org/</a>
ASU Research Network for Computational Modeling in the Social and Ecological Sciences	<a href="https://shesc.asu.edu/research/projects/research-network-computational-modeling-social-and-ecological-sciences-comses-net">https://shesc.asu.edu/research/projects/research-network-computational-modeling-social-and-ecological-sciences-comses-net</a>

## Websites

Link	Description
<a href="https://www.openabm.org/">https://www.openabm.org/</a>	"...a growing collection of tutorials and FAQs on agent-based modeling"
<a href="http://modelingcommons.org/">http://modelingcommons.org/</a>	NetLogo Modeling Commons

## Literature

### Keywords

Agent-Based Modeling; Individual-Based Modeling; Simulation; Computational Social Science; Computational Social Psychology; Computational Psychology; Complexity; Complexity Science; Emergence; Emergent Systems; Social Systems; Quantitative Social Science; Dynamic Systems;

### Textbooks

Edmonds and Meyer (2015); Wilensky and Rand (2015); Railsback and Grimm (2011); Gilbert and Troitzsch (2005);

### *Reading Plan*

Topic	Readings
Sugarscape, part 1	Epstein and Axtell (1996). Ch 1-3.
Sugarscape, part 2	Epstein and Axtell (1996). Ch 4-6.
Computational Social Science	Mann (2016).
Agent-Based Modeling	Bonabeau (2002).
ABM Toolkits	Tisue and Wilensky (2004); Luke et al. (2005);
Arguments for ABM	Chattoe-Brown (2012).
ABM Specification	Grimm et al. (2014).
Networks	Watts and Strogatz (1998);
Evolution	Chattoe-Brown and Edmonds (2013).
Complexity	Barabási (2007)
Diffusion	Centola and Macy (2007);
Psychology	Smith and Conrey (2007).
Sociology	Macy and Willer (2002);
Epidemiology	Barrett et al. (2005);
Politics	Cioffi-Revilla and Rouleau (2010).
Economics	Farmer and Foley (2009);
Cities	Barrett et al. (2004)
Crowds	Helbing et al. (2000);
Virality	Leskovec et al. (2007);

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