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CoMSES Digest: Summer 2022

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Editor's Note

Summer is upon us in the Northern Hemisphere, and many of us are venturing out of our offices to see colleagues and friends from around the world. We are once again fully immersed in our global community. This community and the role we play in it as "global citizens" is on the mind of this issue's guest editor, Moira Zellner, a newly re-elected member of the CoMSES Net Executive Board:

As this issue's guest editor, I would like to focus on a topic that is near and dear to my heart, my research, and my activism: the use of complex systems modeling to support decision making and democratic institutions. The first question one might ask is why do we even need to do this? It's hard enough to advance and disseminate the science! I hear you, but consider the following: As much as we are modelers, we are also global citizens. As such, we contribute to the systems of governance of which we are part and/or on which we do research. Our job doesn't end with the series of publications and models we produce. The whole point of our work is to motivate change that is based on proper scientific inquiry, the "skeptical inquiry" that Carl Sagan talked about. Because if, as a society, we don't have that scientific understanding, we easily become vulnerable to propaganda that propagates and perpetuates social, economic, geopolitical, and environmental damages and inequities.

There are numerous crises occurring right now across the globe: from social and environmental injustice, to increasingly frequent climate-related extremes, to domestic and international extremism and war. The work that we do is important to counter these crises and strengthen democracy, a governance institution that allows for fair representation in the allocation of resources and burdens, and supports socio-economic and environmental coordination, innovation, and adaptation critical for justice, sustainability and resilience. Even in the US, for a long time considered the bastion of Western democracy, this institution has been severely weakened over time by self-reinforcing economic interests and the ensuing misinformation, polarization, and radicalization of the public. Complex problems are particularly vulnerable to being co-opted by such interests to justify further self-reinforcement and avoid or outright eliminate the checks and balances that make a democracy work as such. It is not democracy when compromise cannot be reached. True compromise cannot be reached without proper evidence of the possible ramifications and tradeoffs of each solution. This evidence is necessary for effective deliberation on how to best address the negative impacts of a chosen solution and to fairly distribute the positive ones. Natural and social sciences and modeling are a critical source for this kind of evidence. I urge you to get involved and put your SES science and modeling expertise to the service of democracy, worldwide.

CoMSES News

Consortium of Scientific Software Registries and Repositories

CoMSES Net is a founding member of the newly established Consortium of Scientific Software Registries and Repositories (https://scicodes.net), an Alfred P. Sloan supported international organization of editors and maintainers of academic discipline and institutional software registries and repositories. SciCodes was formed to help its members develop and share best practices (https://scicodes.net/best-practices-for-software-registries-and-repositories/) and collaborate on the challenges and solutions to common issues that arise in the management of our diverse software resource. This includes metadata standards like CodeMeta and the Citation File Format (citation.cff files now natively supported on GitHub!) which the CoMSES Net Computational Model Library has provided integration with since early 2021 (https://ascl.net/assets/scicodes/videos/CoMSES_Net_CodeMeta_Support_AllenLee.mp4).

SciCodes will be accepting applications for new organizational members soon, so if you or anyone you know helps curate or maintain a scientific software registry or repository, please contact us at support@comses.net and we will get back to you when the new member request form is available.

FAIRsharing Community Curation Programme
Dr. Allyson Lister and the FAIRsharing Team

We are proud to announce the official launch of the FAIRsharing Community Curation Programme (https://fairsharing.org/community_curation)! Together with our initial set of community curators, who have helped us prototype the programme and have already received attribution and other benefits, we are now actively seeking additional community curators across all subject areas (Engineering, Natural Sciences, and Humanities and the Social Sciences). Although software itself is not within the remit of FAIRsharing, we do describe repositories and databases, and one of the areas I wish to have increased coverage within FAIRsharing is in the software repository domain. We do describe tools and APIs related to databases and standards, and we also have many tools that access FAIRsharing's API. All three of these are areas in which we would be happy to have community curators focus. I'm hoping to recruit Software Repository Community Curators as part of this programme, and I think there might be some interested parties within this group.

The current call will run through August, with successful participants being contacted by September. Please fill out this form (https://docs.google.com/forms/d/e/1FAIpQLSf-iO_1DUp_wcawVul8TKBi-VAu7ZY5TFj6aznDrozCPIrL8A/viewform) to let us know you're interested, and get in touch with us via email (contact@fairsharing.org) or Twitter (https://twitter.com/FAIRsharing_org) if you have any questions. For more information about the tasks community curators do as well as the benefits, please see our information on joining the programme (https://fairsharing.gitbook.io/fairsharing/community-curation/thinking-of-joining-us).

This initiative is also supported by my RDA / EOSC Future Domain Ambassador (https://eoscfuture-grants.eu/node/262) for standards, repositories and policies award, as the FAIRsharing Content and Community Lead, and it is also closely linked the work and outputs of the RDA FAIRsharing WG.

CoMSES Net Is Hiring!

Join CoMSES Net and help us build software tools that support open, transparent, reusable, and interoperable scientific computation in the study of complex social and natural systems. We have an opening for a junior front-end software engineer; this entry-level position will help the successful candidate grow in their ability to build functional, intuitive user interfaces and data visualizations as well as robust and scalable backend web services. As part of the ASU College of Global Futures, our mission is to improve the ways we understand and collectively navigate our increasingly complex world.

For more information, please email us at: editors@comses.net

Update your CoMSES Profile!

Please consider keeping the CoMSES community informed by updating your user account on CoMSES Net! Let fellow researchers and modelers get to know you by including a biography, research interests, and/or institutional affiliation. You can navigate to your account in the upper right corner of the website to edit your profile and link your account to GitHub and ORCID. As always, feel free to join the conversation by visiting the Forums tab or by starting a discussion on a specific model, event, or job posting.

Calendar of Events

Please follow the links to the local event organizers for the latest information or go to https://comses.net/events/ for a listing of all recent events. You can also subscribe to new events by following us on Twitter or subscribing to our RSS Events feed.

Upcoming Deadlines

15th International Conference on Social Computing, Behavioral-Cultural Modeling & Prediction and Behavior Representation in Modeling and Simulation

Dates: Tuesday, September 20, 2022 - Friday, September 23, 2022
Submission Deadline: Friday, July 01, 2022

SBP-BRiMS is a multidisciplinary conference with a selective single paper track and poster session. The conference also invites a small number of high quality tutorials and nationally recognized keynote speakers. The goal of this conference is to build a new community of social cyber scholars by bringing together and fostering interaction between members of the scientific, corporate, government and military communities interested in understanding, forecasting, and impacting human socio-cultural behavior. It is the charge to this community to build this new science, its theories, methods, and its scientific culture in a way that does not give priority to either social science or computer science, and to embrace change as the cornerstone of the community. Despite decades of work in this area, this scientific field is still in its infancy. This is a hybrid conference (Pittsburgh, PA, USA; Online).

MISS-ABMS: Multi-platform International Summer School on Agent-Based Modelling & Simulation

Dates: Sunday, August 28, 2022 - Thursday, September 08, 2022
Registration Deadline: Thursday, June 30, 2022

By taking part of this 2-week training course, you will gain a modelling culture and learn the different skills required for building agent-based models applied to sociological, ecological or socio-ecological systems. This course will be held at Agropolis International, Montpellier (France).

Model Library

Newly Reviewed

Six models passed CoMSES's peer review process this quarter. Some are still unpublished while their companion publications undergo journal peer review; others are currently under review by CoMSES. Published include the following models:

- Two-stage migration decisions in a conceptual regions is a proof-of-concept model explores the effects of how social and natural factors are incorporated (factor configuration) in environmentally induced migration. (Woi Sok Oh, Alvaro Carmona Cabrero, Rafael Muñoz-Carpena, and Rachata Muneepeerakul)
- Simulating Economic Learning in Dynamic Strategic Scenarios with a Genetic Algorithm uses an experimental and exploratory approach, combining game theory and Genetic Algorithms to simulate evolutionary economic learning. (Vinicius Ferraz and Thomas Pitz)
- INOvPOPis designed to simulate population dynamics (abundance, sex-age composition and distribution in the landscape) of white-tailed deer (Odocoileus virginianus) for selected Indiana counties. (Aniruddha Belsare)

- **INOvCWD** is a spatially-explicit, agent-based model designed to simulate the spread of chronic wasting disease (CWD) in Indiana's white-tailed deer populations. (Aniruddha Belsare)
- **The Viability of the Social-Ecological Agroecosystem (ViSA) Spatial Agent-based Model** simulates the decision behaviors of different stakeholders showing demands for ecosystem services (ESS) in the agricultural landscape. ViSA investigates conditions and scenarios that can minimize supply-demand gaps while reducing the risk of conflicts by suggesting different mixes of management options and decision rules. (Mostafa Shaaban)
- **FIBE - FIsher BEhaviour model** represents a simple fishery model. The aim of the model is to reflect the different fishing behaviours as described and observed in the (Swedish) Baltic Sea fishery and explore the consequences of different approximations of human/fisher behaviour under different environmental and managerial scenarios. (Nanda Wijermans, Maja Schlüter, Kirill Orach, Wijnand Boonstra, and Jonas Hentati-Sundberg)

New Model Uploads

25 new models were published in the CoMSES Model Library on a wide variety of topics that illustrate the depth and breadth of our community. These include:
- **friendship formation** based on extraversion, resemblance, and status
- **patterns of Chinese and Western civilization** to explore history dynamics and civilization formation
- the execution of **mite control strategies** according to good beekeeping practice in Germany
- exploring how **gambling-like behavior can emerge through social influence** among online gaming communities
- the propagation of photons in a water tank to aid in **underwater optical wireless communications**

These models and more can be discovered at the **CoMSES Model Library** - you can also keep up-to-date with newly published models on our **Twitter** and **RSS** feeds.

Most Downloaded Models

Published models were downloaded a total of 7,699 times this quarter, across 976 unique codebases. Here are the top 5:

1. **Fertility Tradeoffs** by Kristin Crouse (121 downloads)
2. **The Hawk-Dove Game** by Kristin Crouse (119 downloads)
3. **Transport Simulation in a Real Road Network** by Jiaqi Ge and Gary Polhill (81 downloads)
4. **Lansing-Kremer Model of the Balinese Irrigation System** by Marco Janssen (75 downloads)
5. **MOOvPOPsurveillance** by Aniruddha Belsare, Matthew Gompper, and Joshua J Millspaugh (67 downloads)

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Arizona State University

**CoMSES Net is headquartered in The School of Complex Adaptive Systems
College of Global Futures**