

NIMBioS

National Institute for Mathematical
and Biological Synthesis

Collaborating across disciplines to solve today's problems
Educating to solve tomorrow's

NIMBioS Mission: To preserve and enhance the University of Tennessee, Knoxville as a premier international center for research and education at the interface between quantitative sciences and the life sciences by providing leadership, coordinating efforts across units, fostering diverse collaborations within and outside the University and in particular through Oak Ridge National Laboratory, and through these efforts enabling faculty, staff, and students to achieve their full potential as interdisciplinary scholars.

Convergence Science at NIMBioS

- National Institute for STEM Evaluation and Research (NISER)
- Center for the Dynamics of Social Complexity (DySoC)
- Spatial Analysis Lab (SAL)
- Mathematical Modeling Consulting Center (MMCC)



The National Institute for STEM Evaluation and Research at NIMBioS (stemeval.org) provides a range of quality research and evaluation services tailored to support evidence-based decision-making of the value, utility, and impacts of STEM-related initiatives in research and education. Since 2016, NISER has collaborated on more than 80 grant proposals, of which 18 have been awarded (including 11 at UT) totaling \$1.8 million.



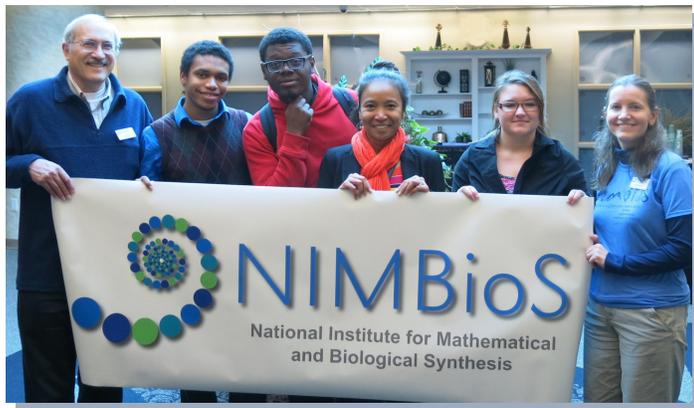
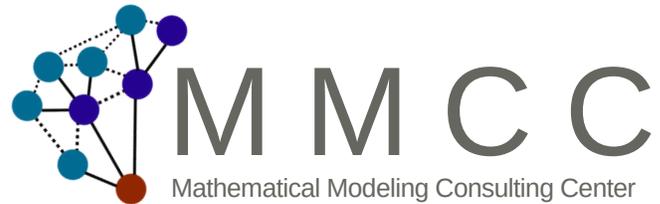
The Center for the Dynamics of Social Complexity at NIMBioS (dysoc.org) uses theoretical and empirical methods at the interface of mathematical, data, biological, social, and computational sciences to promote connections and collaborations between researchers investigating various aspects and levels of human social behavior. DySoC combines system thinking, modeling tools, and big data to develop testable predictions and practical agendas.

SAL

The
Spatial Analysis
Lab@NIMBioS

The **Spatial Analysis Lab at NIMBioS** (nimbios.org/SAL) offers state-of-the-art capabilities to researchers investigating spatial aspects of biological, geographic, and socio-economic processes. SAL enables cross-disciplinary research in biogeographical modeling, spatial statistics, data acquisition and mapping and offers multi-spectral UAV (drone) and terrestrial Lidar services. The lab also trains students in spatial data collection and analysis tutorials, workshops and online offerings at NIMBioS.

The **Mathematical Modeling Consulting Center at NIMBioS** provides access to researchers who might otherwise not have the time, resources, or even inclination to build or employ mathematical models independently. We are a team with diverse skills, across math and computing, in application to numerous research areas. The MMCC provides brief and ongoing consultation per project, or can engage in longer collaborations.



The **NIMBioS Education & Outreach Program** has hosted over 270 activities focused on promoting math and biology to a wide range of audiences and participants. About 25% of participants in all NIMBioS events and activities are associated with a NIMBioS Education & Outreach Program, including a nationally competitive Summer Research Experiences for Undergraduates program, the annual Undergraduate Research Conference, and a variety of programs for graduate students, postdocs, and faculty.

"What People Are Saying"

"NIMBioS has united the forces of mathematical and computational biology and forever changed the landscape of mathematical biology research and education in the US and the world."

--Participant, Food Web Dynamics Working Group

"The NIMBioS network that brought our team of mathematicians, economists, ecologists and epidemiologists together has gone on to win grants from the NIH, the NSF and the UK's BBSRC."

--Participant, Play & Sociality Working Group

"We would not have been able to create the output or impact if it weren't for the ideas generated during our Working Group. Though our work was spread over two years, the intensity and focus during these sessions ensured we would create an immediate and tangible output."

--Participant from IBM

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Join us



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