**Invitation to present on the**

**Special Session on The Use of Computational Tools and New Augmented Methods in Networked Collective Problem Solving** (Code: SS 18A) at the

**AMS 2023 Spring Western Sectional Meeting, California State University, Fresno, Fresno, CA, May 6-7, 2023** (Meeting #1187)

Computer-supported methods for collaborative problem solving play a more and more important role in the development of various fields of mathematics and its applications in the recent decades. They can be broadly classified as computational tools used in applied mathematics; design and software engineering methods augmenting mathematical discovery; machine and deep learning for discovering patterns and conjectures; computer aided proof methods involving reasoning assistants, property testing and theorem provers; HCI linking human heuristics and heuristic computing; collaborative networking including knowledge graphs, semantic web and IoT technologies. Last, but not least, we are witnessing the expanding educational application of these technologies from problem-based learning in augmented reality and embodied mathematics to computer-supported tutoring and instruction, modeling, and visualization tools, such as computer algebra systems or dynamic GeoGebra-type applications for problem solving, or IoT apps for collaborative learning in STEM education.

The session is intended to concentrate on new methods, emerging trends and recent successful applications keeping the issue of *collaboration* in focus, but systematic reviews of subfields are also welcome.  We plan to organize topic-centered clusters of talks devoted to new tools and current issues that link the incoming talks such as information systems that support situated collaborative processes of knowledge-discovery, models bridging human and computational reasoning, human inspired meta-heuristics, reliance on provenance information of human perspectives necessary for successful implementation of various computer-aided problem solving and design methods, or to models of interactive deep learning. We expect insights on the emergence and evolution of understanding in networked collective problem solving and studies exploring in what ways humans think better together with computers over time. Finally, we invite case studies on computational methods and models of collaborative improvement of problem solving in teaching and learning mathematics and computer science discussed with successful examples just as demonstrations of new solutions of deep tech partners using instructional architectures augmenting human problem solving.

The direct link to the conference is <https://www.ams.org/meetings/sectional/2293_program.html>

The special sessions are listed here: <https://www.ams.org/meetings/sectional/2293_special.html>

The abstract submission is described here: <https://meetings.ams.org/math/spring2023w/cfp.cgi>

**Final deadline for abstract submissions is Tuesday, March 7, 2023.** **The presenter is required to register for the meeting before submitting an abstract.**

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