

Plenary Speaker

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Countermeasures for Infectious Diseases

Abstract: For the applied mathematician, both vaccination and testing are fascinating infectious disease countermeasures. Why? First, their impact depends on how and when you use them, meaning that (i) their value is connected to a dynamics and (ii) there are associated optimization problems for their usage. Second, it's extremely difficult to directly estimate the effectiveness of either countermeasure at a population scale from empirical data, elevating the value of mathematical models that can predict impact from first principles. In this talk, I'll introduce and discuss such models for both vaccination and testing in the context of respiratory syncytial virus (RSV), influenza A, and SARS-CoV-2, alongside critical optimization problems: who should get the first doses of a scarce vaccine? And, how should we use the new wave of at-home rapid antigen tests for maximum impact? Finally, we'll reflect on how our understanding of the answers to these questions has changed since early 2020, and highlight a few other interesting open problems in the study of infectious disease countermeasures.

Call for Presentations

All students (both undergraduate and graduate) are invited to submit abstracts on any research topic in Applied Mathematics. Abstracts should include:

- Title of work to be presented,
- Author's name,
- The university the author is currently attending,
- Names of any advisors or other collaborators,
- An extended description of the research to be presented (of length no greater than 500 words).

Talks: All (except the plenary lecture) will be student presentation: 20-minute talks followed by 5 minutes for questions and set-up of the next speaker. A special MCM/ICM session will also be organized.

Please send abstracts in LaTeX or plain text to FRAMSC.abstracts@gmail.com

The abstract submission deadline is **Friday, Mar 1st, 2024!**



20th Front Range Applied Mathematics Student Conference (FRAMSC)

University of Colorado
Denver

SATURDAY
MARCH 9TH, 2024

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About the conference

The Front Range SIAM Student Chapters are sponsoring the 20th Anniversary Edition of the Annual Front Range Applied Math Student Conference (aka FRAMSC). This event allows students from all universities along the Front Range to learn about new developments in Applied Mathematics and promotes interest in the field. Additionally, this event is open to both undergraduate and graduate students.



SIAM Student Chapters

Several universities in Colorado host active SIAM Student chapters, with the mission to promote applied mathematics and computational science and to encourage young mathematicians to pursue these fields. Student chapters provide opportunities to share ideas, learn about careers in applied and computational mathematics and develop networks with faculty and fellow students.

Registration Information

This will be an in-person conference. There will be a \$10 student registration fee for in-person participants, to defray the cost of the refreshments, and \$20 for faculty. *All speakers and conference attendees should fill out a short registration form so we can keep you updated with any changes.* For more information and to register, please visit the website: <http://framsc.org>.

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Schedule and Location

The conference is scheduled for Saturday, March 9th 2024, 8:30am - 4pm. Exact schedule will be posted on the conference website. Events will include a plenary address and parallel sessions for student presentations. The conference will take place in the North Classroom building, on the Auraria campus in downtown Denver.

Registration and Breakfast will open at 8:30am with talks beginning at 9am. The conference will take place in the Student Commons Building (1201 Larimer Street) on the Auraria campus, in downtown Denver. Early registration is encouraged. Please contact the organizers if you would like to coordinate registration and carpool with other participants from your school.

For more details, directions and parking information, please visit the conference website.

<http://framsc.org/>

