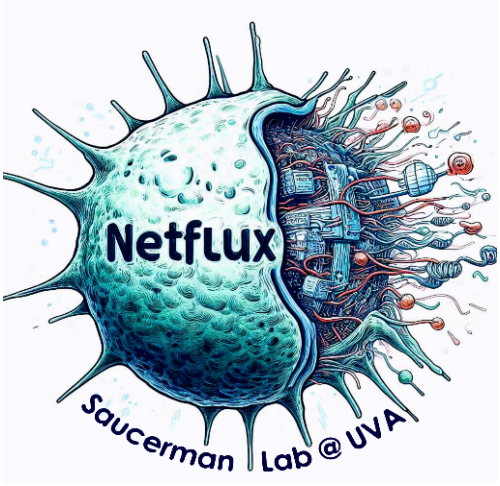
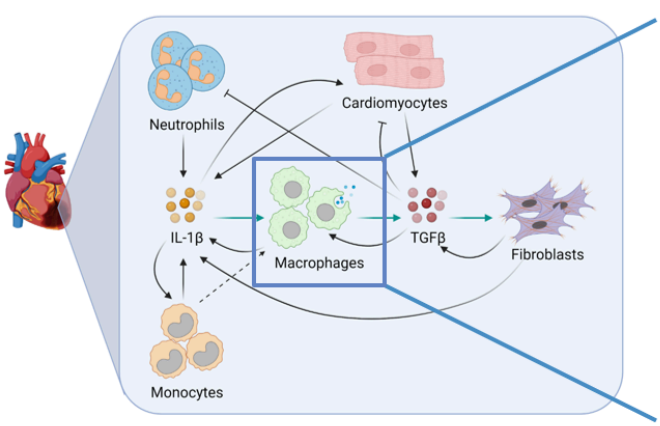
4th Netflux and Network Biology Conference

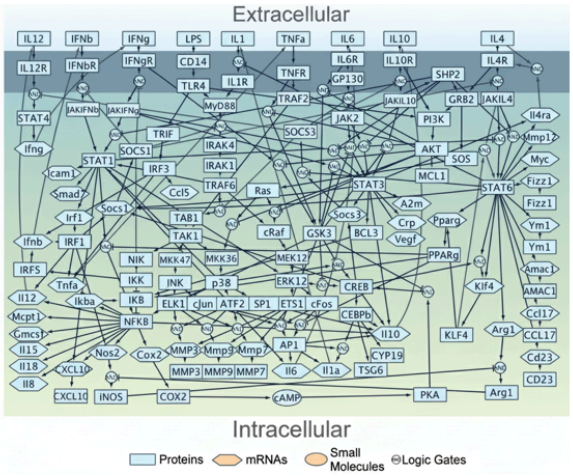
January 7, 2026, 1-5 pm EST on Zoom

Keynote speaker:

Suzanne Gaudet (Novartis), Interim Head of Modeling and Simulation







Short talks and lightning talks from students with a wide range of biological applications and approaches for network modeling

Live demo of the new Netflux webapp for user-friendly modeling of biological networks

Meeting Chair: Jeff Saucerman (U. Virginia, jsaucerman@virginia.edu)

Program Committee: Johane Bracamonte (U. Alabama Birmingham), Eleonora Grandi (UC Davis), Padmini Rangamani (UC San Diego), Seth Weinberg (Ohio State)

Free Registration. Agenda: https://tinyurl.com/netfluxnet2026

Free Registration

Registration form: https://forms.gle/tGiQTE4XCUhBULyD9

Zoom login details will be emailed to those registered ~24 h in advance of the meeting.

Abstract submission form: (closed 12/12)

We will select as many relevant abstracts for lightning or short talks as possible.

Agenda (Jan 7 on Zoom)

1:00 pm Jeff Saucerman (U. Virginia), Meeting introduction

1:15 pm Session 1 (moderator: Mukti Chowkwale (Regeneron), Adi Lakshmikanthan (UC Irvine)). Short talks (10 minutes + 2 minutes for questions each).

Najme Khorasani, Stefano Morotti, Jeffrey J Saucerman, Dobromir Dobrev, Eleonora Grandi (UC Davis), “Computational Modeling Identifies Protective Mechanisms of Estrogen and Testosterone Against Atrial Fibrosis”

Erin Gibbons, Ana Estrada (Fairfield U.), “Computational Modeling of Hypoxia in Pulmonary Artery Smooth Muscle Cells”

Nicolae Moise, Seth Weinberg (Ohio State U.), “Calcium homeostatic feedback control predicts atrial fibrillation initiation, remodeling, and progression”

Connor J. Moore, Mariska Batavia, William Shao, Fatima Zulqarnain, Glynis L. Kolling, Adam Greene, Jason D. Matthews, Sana Syed, Jason A. Papin (U. Virginia), “Metabolic network analysis of Crohn’s disease reveals sex-specific cellular phenotypes”

Yogi Raghav, John Platig (U. Virginia), “Learning a Regulatory Logic of Exon Skipping”

2:15 pm Break

2:20 pm Session 2 (moderators Bryana Harris (U. Minnesota), Tanya Cruz (U. Virginia)) Short talks (10 minutes + 2 minutes for questions each)

Yonatan Degefu, Mohammad Fallahi-Sichani (U. Virginia), “AP-1 co regulatory network organizes discrete, heterogenous, and reconfigurable melanoma cell states”

Elmar Bucher, Paul Mackin (Indiana U.), “The PhysiCell Approaches to Modeling Metabolic and Gene Regulation Pathways”

Ethan A. Nelson, John Darrell Van Horn (U. Virginia), “Digital Organoid: A Biologically Inspired Neural Network for Image Classification”

Malcolm O'Malley, Upendra Chalise, Alicja Kuzniewska, Mukti Chowkwale, Sanja Arandjelovic, Merry Lindsey, Jop van Berlo, Jeffrey Saucerman (U. Virginia), “Systems model predicts mechanisms of neutrophil activation in response to conflicting cues”

3:10 pm Break

3:15 pm Session 3: Lightning Talks (4 minutes + 1 minute for a question; moderators: Julie Leonard-Duke (Columbia U.), Nicolae Moise (Ohio State))

Ifunanya (Ify) Nwolah, Anders Nelson, Jennifer Davis, Jeffrey Saucerman (U. Virginia), "Investigating Casein Kinase 2 as a Driver of Cardiac Fibrosis"

Mohammad Sharifian Gh., Fatemeh Norouzi, Gordon W. Laurie, (U. Virginia) "Complex Lacritin Cleavage-Potentiated Alteration of the P. aeruginosa Transcriptome"

Rumesh Nanayakkara, Kyle Lampe (U. Virginia), "In vitro tissue models of neural cell development towards myelination and remyelination"

Alice Luanpaisanon, Matthew Wolf, Jeffrey Saucerman (U. Virginia), "In silico model of hypertrophic cardiomyopathy predicts MYBPC3 mutation-specific drugs"

3:35 pm Break

3:40 pm Live demo on Netflux, user-friendly tool for network modeling (Alex Clark (U. Virginia), w. 5 min questions)

4:00 pm Keynote: Suzanne Gaudet (Novartis), (40 min + 5 min questions; moderator Jeff Saucerman)

4:45 pm Wrapup: Jeff Saucerman

Netflux Student Workshop (Jan 8 2-5 pm, on Zoom)

Ready to try Netflux yourself? We encourage you to attend the Netflux Student Workshop, which will be held online on Zoom. Facilitated by experienced Netflux users/developers, you will learn how to use Netflux and implement your own model of a biological network. Registration is is separate from the Jan 7 conference but still FREE!: https://forms.gle/XRqzrcFU1fLoC3Ky7

The Student Workshop will be organized by Kaitlyn Wintruba (U. Virginia) and Sophia Kerns (U. Virginia).

☰ Netflux

Simulation Settings

Time Span:
10

Species to Plot:
A
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Simulate

Plot

Reset Parameters

Reset Simulation

Status: Simulation complete

Species Parameters

Species:
A

Y0:
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Ymax:
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Reaction Parameters

Reaction:
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