



Emergent Mechanisms in Biology of
Robustness, Integration & Organization

Emergence: A biweekly newsletter of discovery, education, and outreach from the EMBRIO Institute

Issue 17: April 19, 2023

DIRECTORS' NOTE

With only a few weeks of the spring semester to go, there is a lot happening. Please note that the upcoming Weekly Update on the 24th will be dedicated to breakout rooms supporting discussions on the integrated and enabling project proposals that are due May 1st. This meeting is optional for trainees, though both graduate students and postdocs may find it useful and educational to participate. The internal RFP and associated resources are available on our Box account in the "EMBRIO RFP" folder: <https://app.box.com/s/3fb0bo9inlh1lp52k8oxiqbozfo99sh4>

Please take advantage of several opportunities this and next week to engage in sessions relevant to EMBRIO (further details in the upcoming deadlines and important dates section below, and the attached flyers).

- EMBRIO Ph.D. candidate Nilay Kumar in the Zartman Lab at Notre Dame will defend his thesis this Friday, **April 21st, 11am ET** and all are invited to attend. Thesis Title: "Reverse Engineering Epithelial Morphogenesis: A Systems Biology Approach".
zoom: <https://notredame.zoom.us/j/7175280638>
- The Deng Lab at Purdue has invited Dr. Yubin Zhou, Texas A&M, to present a seminar on **April 24th, noon-1 pm ET**, in LILY 117 (no zoom link). His talk will focus on new tools to control calcium currents and possibly other cell signaling events with implications such as in immune therapy.
- ABIDES Weekly open office/Trainee lunch hour meeting **April 24, 12 – 1 pm** by
Zoom: <https://purdue-edu.zoom.us/j/99630373235>
- Purdue Biological Sciences and The Purdue Institute of Inflammation, Immunology, and Infectious Disease (PI4D) will be hosting Dr. Satyajit Mayor, National Centre for Biological Science, TIFR, Bangalore, India, on Tuesday, April 25th from 12:00 pm to 1:00 pm in Pfendler Hall, Rm 241 (no zoom link). His seminar title is "The eukaryotic cell membrane: an integrator of mechanical and chemical inputs".

Please note that Brent will be out of office away from email starting Friday, April 21st returning May 1st.

We want to hear about your news and announcements. Send them to Brent (laddb@purdue.edu) by April 28th for inclusion in the next issue of *Emergence*.

David, Chris, Stephanie, Anjali, and Brent

Notable Quote

"Science is a way of thinking much more than it is a body of knowledge." ~ Carl Sagan

QUICK LINKS

[EMBRIO Integrated & Enabling Projects RFP – Due May 1](#)

[Journal Club – Calcium Imaging Techniques: Monday's 11am Zoom, papers to be discussed](#)

[CompuCell3D School and Hackathon July 31 – August 13](#)

[ABIDES Open Office Mondays 2:30 - 3 pm Zoom link](#)

[Schedule Your One-on-One Interview with Soumi](#)

[Weekly Update Meeting Recordings](#)

JOURNAL CLUBS

NEW CLUB: CALCIUM IMAGING TECHNIQUES Meets Monday's 11am ET [via Zoom](#)

Due to the need within our EMBRIO community to process and analyze Ca²⁺ Images, Director Umulis has proposed to discuss papers regarding methods and tools for analyzing calcium imaging as part of a new journal club. **The goal, beyond integrating these techniques, is to write a review paper.**

Norma Perez (nperezro@purdue.edu), EMBRIO Postdoc with the Buganza-Tepole and Umulis Labs, is leading the effort to organize this journal club, please contact her about joining the club.

The club is currently discussing the following papers:

https://docs.google.com/document/d/1uESi45Zv_kGL369NW8sPW60GByOAXme7-vr1XKBM18U/edit?usp=sharing

ONGOING CLUB: Multimodal Functions of Calcium in Tuning and Regulating Cytoskeleton Networks

Please contact Dr. Linlin Li (li2212@purdue.edu) for information. The club is currently entering the writing stage for organizing and publishing a review paper on the topic. It isn't too late to join.

Here is the link to the current working documents:

https://docs.google.com/document/d/1Cpg77ytioWiluRmiDMCcAiAd4jNNX_J7s64RQk8xOU/edit?usp=sharing

EMBRIO ABIDES (Access, Belonging, Inclusion, Diversity, Equity, Support)

Dr. Anjali Iyer-Pascuzzi, EMBRIO ABIDES Director and Associate Professor at Purdue, is leading activities for Institute members. Planned ABIDES activities for this semester (Zoom links are also shared in the [ABIDES folder in the EMBRIO BOX](#) account):

- Weekly open office/Trainee lunch hour combined meeting **April 24, 12 – 1 pm** by Zoom: <https://purdue-edu.zoom.us/j/99630373235>

UPCOMING DEADLINES, IMPORTANT DATES, & INFO

Weekly Research & Education Zoom Meetings Spring Semester, Monday's 3 – 4 pm.

Recordings: EMBRIO Box account > Weekly Update Meeting. [Direct URL](#).

Spring Semester [Zoom link](#):

- January 9 – Krishna Jayant, Asst. Prof., BME, Purdue
- January 16 – Martin Luther King, Jr. Day – No Meeting, please volunteer locally
- January 23 – Trainee Professional Development, Grants Series Session #2
- January 30 – Anjali Iyer-Pascuzzi, Assoc. Prof., BPP, Purdue, DEI Director, EMBRIO
- February 6 – Thrust & Site Leads Update Meeting
- February 13 – Priyanka Baloni, Asst. Prof, HHS, Purdue
- February 20 – Trainee Professional Development, Grants Series Session #3
- February 27 – Bakary Samasa, Mary Mullins Lab
- March 6 – Thrust & Site Leads Update Meeting – NSF site visit debrief, next steps
- March 13 – Spring break, no meeting
- March 20 – NSF site visit debrief and trainee orientation to the Institute
- March 27 – Nilay Kumar, Ph.D. Candidate, Zartman Lab, Notre Dame
- April 3 – Thrust & Site Leads Update Meeting
- April 10 – Manager Meets
- April 17 – Project Discussions
- April 24 – Project Discussions
- May 1 – No meeting. Integrated and Enabling Project Proposals Due.
- May 8 – TBD
- May 15 – TBD
- May 22 – TBD
- May 29 – No meeting, Memorial Day

April 21, 2023. Nilay Kumar Ph.D. Thesis Defense. 11 am ET. Thesis Title: “Reverse Engineering Epithelial Morphogenesis: A Systems Biology Approach”. Zoom link: <https://notredame.zoom.us/j/7175280638>

April 24, 2023. CMB Seminar, Biological Sciences, Purdue. 12 pm ET, Purdue, LILY 1-117 (no zoom link). Yubin Zhou, Ph.D, Institute of Biosciences and Technolgy, Texas A&M University. “Optogenetic Engineering for Biomedical Applications” . (flyer attached)

April 25, 2023. Purdue Biological Sciences Seminar Series. 12 pm ET, Purdue, Pfendler Hall, Rm 241 (no zoom link). Satyajit Mayor, Ph.D., National Centre for Biological Science, TIFR, Bangalore, India, “The eukaryotic cell membrane: an integrator of mechanical and chemical inputs”.

May 1, 2023. DUE: Integrated and Enabling Project Proposals. RFP and associated resources are available on our Box account in the “EMBRIO RFP” folder:

<https://app.box.com/s/3fb0bo9inlh1p52k8oxiqbozfo99sh4>

July 10-12, 2023. EMBRIO Trainees Summer Workshop, Notre Dame University. Details forthcoming.

July 13-14, 2023. EMBRIO All-Hands Annual Meeting, Purdue University. More information forthcoming.

July 31 - August 13, 2023. 2023 Multicell Virtual-Tissue Modeling Online Summer School and Hackathon
Learn to model your biological system of interest with one-on-one help. Week 1 will cover CC3D basics. Week 2 will cover advanced topics in CC3D, followed by a 2-day model-building hackathon. Physicists, biologists, computer scientists, and modelers team up to build research-grade models of biological systems. All experience levels are welcome. For more information, email compucell3d.iu@gmail.com or visit www.compucell3d.org/Workshop23. Register at: www.tinyurl.com/CC3D2023.

INSTITUTE EVALUATION: SIGN UP FOR YOUR ONE-ON-ONE INTERVIEW (hint: it’s mandatory)

If you are a member of the EMBRIO institute currently doing a research project, we would like to invite you for participating in this study. Participation in the evaluation process is **MANDATORY** for all the members of the institute.

As a part of the evaluation process, you will take part in an online session (via Zoom), which includes an interview and a brief survey, and the entire process should be completed in less than an hour. Interviews will be conducted annually for the total duration of your participation in the institute and the session would not exceed an hour and would be completed in a day.

Please fill in all the times you may be available for our interviews using the link below with either your name or email address. This information is requested so that we may contact you to set up an online session, but we will use a randomly generated 4-digit code in place of your name to identify all your information for the data collection and analysis.

<https://www.when2meet.com/?18327719-shNWM>

Your participation will not affect any aspect of your association with the EMBRIO institute. If you have any doubts regarding the evaluation process, please reach out to Soumi at mukher42@purdue.edu.”

With Regards
Soumi

Hot Off the Press: New EMBRIO Journal and Conference Papers

Let us know about new papers you want to highlight for the EMBRIO community!

REMINDER: EMBRIO Acknowledgement for Scholarly Papers.

For EMBRIO related research publications, NSF requires acknowledgement of EMBRIO NSF funding for our Institute to claim the work in our reporting back to NSF. Please include the following acknowledgement in your journal and conference papers and posters: **“This work is based upon efforts supported by EMBRIO Institute, contract #2120200, a National Science Foundation (NSF) Biology Integration Institute.”**

Conference Presentations:

Let us know about your conference presentations.

Awards

Let us know about your awards.

Open Positions

Two Open-Rank Professor Positions in Technology and Research Related to Next-Generation Biomedical Digital Twins

The Department of Intelligent Systems Engineering at Indiana University is pleased to announce a search to fill Two Open-Rank Professor Positions in Technology and Research Related to Next-Generation Biomedical Digital Twins. Appointments can be at Full, Associate or Assistant Professor level and two-person cluster hires are possible. Appointments can begin as early as August 1, 2023. This search is part of a broad collaborative initiative to create key hardware and software components of next-generation digital twins for research, bioengineering and clinical application.

To learn more about Luddy School, ISE, and to apply online, please visit <https://indiana.peopleadmin.com/postings/16811>

For more details see attached full announcement.

Questions, nominations, and confidential inquiries may be sent to Prof. James A. Glazier (jaglazier@gmail.com)

New Lab Members?

Did you recently have new students or staff members join your EMBRIO projects? We want to add them to the listserv, Box account, demographics survey, and Personnel List for ensuring their inclusion in communications and participation. If they are not already on our Personnel spreadsheet (<https://app.box.com/s/frd9275xc069gmtbe3y1osoz1j7ssk7>), or they have graduated, let Brent know their names and email contacts (laddb@purdue.edu)

Submit your items for the next newsletter by **April 28th** to Brent (laddb@purdue.edu)