



Emergent Mechanisms in Biology of  
Robustness, Integration & Organization

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

Issue 29: January 17, 2024

### DIRECTORS' NOTE

We hope everyone enjoyed a restful holiday season. Except for our partners at U. of Puerto Rico Mayagüez (where it remains enviously tropical), probably most everyone else is enduring the deep freeze this week. Despite the cold weather, we kicked off the semester with the first Thrust seminar on Jan. 8<sup>th</sup> highlighting the many Thrust 4 projects focused on pedagogical research, curriculum development, training, diversity, evaluation, and outreach efforts. If you missed it, you may access the recording in the [All-Hands Weekly Meeting folder](#) on Box. Our next All-hands meeting will be Jan. 29<sup>th</sup> with an ABIDES session featuring effective project management for researchers (details forthcoming).

Check out the [agenda](#) for the NSF Biology Integration Institutes conference happening January 22-23. This year's conference will be a hybrid, with most attending via Zoom, and a smaller team from EMBRIO in person at NSF headquarters. All sessions will be available via Zoom, with exception of the poster sessions and the breakout sessions. Especially, we want as many EMBRIO members as possible to join for Director Umulis's talk at 11:15 ET on the 22<sup>nd</sup>.

Thrust and site leaders and key investigators are planning to be in-person for a two-day collaborative science retreat taking place on Feb. 6-7<sup>th</sup>. Outcomes of the retreat will be shared institute wide. This retreat is focused on in depth exchanges to foster what is working well, address what isn't working, share key results and outcomes to date, and plan for higher levels of integration as we enter the second half of year 3 of our NSF funding and begin strategizing for funding renewal.

A reminder that if you are new to EMBRIO or you have someone in your lab that is new or desires an introduction or refresher on EMBRIO, we recommend that you take a look at the resources on the shared Box account in the [Orientation to EMBRIO](#) sub-folder. We will dedicate part of the All-Hands session to this topic on Feb. 12<sup>th</sup>.

David, Chris, Stephanie, Anjali, Janice, Jeremy, and Brent

### Notable Quote

*"In winter we must protect ourselves. Look after one another," says Arya. "When the snows fall and the white winds blow, the lone wolf dies but the pack survives," the elder, Sansa, chimes in. **Game of Thrones** season 7, episode 7 "The Dragon and the Wolf".*

## QUICK LINKS

[BII Conference Agenda](#)

[SURF Post a Research Project Portal](#)

[All-Hands Meetings Recordings](#)

[Orientation to EMBRIO](#)

[ABIDES Culture and Mentoring resources](#)

## Undergraduate Researchers Opportunities for EMBRIO Labs and Students

*Note from Kay Kobak, Assoc. Dir., EURO, Purdue:*

Hello Undergraduate Research Allies,  
[SURF Post a Research Project Portal](#) is accepting projects from faculty through this Friday (unofficial extended deadline).

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Program Name	Description	Student Compensation	In-Lab Time Commitment	Funding provided by	Call for applications*
<a href="#">Summer Undergraduate Research Fellowships (SURF)</a>	Summer program for both Purdue Internal and external students, full time research experience.	A total of \$6000 paid over 12 weeks.	30-40 hours/week	Cost shared 1:1:1 between EURO (SURF), the College, and the lab. (EMBRIO Note: the Institute will pay the PI tab of \$2K, plus the \$1K housing stipend if a non-Purdue student)	Summer 2024 project portal closes after Friday Jan. 19 <sup>th</sup> .

*\*if you have already identified a student you wish to work with for a given time period, we still ask you post the project so we can maintain that information for our records. We can expedite the selection process and then close the project to other applicants if you already have someone in mind.*

Additional opportunities if you're currently hosting undergraduate researchers:

**[EURO Travel Grant](#):** For Purdue affiliated undergraduates who will be presenting their research at a conference - \$500 awarded by EURO

Other undergrad researcher funding opportunities can be found [here](#), [here](#), and [here](#).

Please feel free to reach out if you have any questions,

Kay Kobak, Ph.D.

she, her, hers

Associate Director, Engineering Undergraduate Research Office

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## STUDENT LEADERSHIP COUNCIL CORNER

The SLC is recruiting new officers to represent your university and your perspective for EMBRIO. Reach out to David Gazzo (dgazzo@nd.edu), incoming president, for more information, and [log your ideas for future topics or events](#) that the SLC could organize. [Access SLC slides and documents](#), and consider [signing up to give or receive mentoring](#) for/from EMBRIO trainees in helping support and orient to the EMBRIO mission and interdisciplinary framework.

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

Dr. Anjali Iyer-Pascuzzi, EMBRIO ABIDES Director and Professor at Purdue, leads activities for Institute members. A training session on project management is being planned for January 29<sup>th</sup> (details TBA). A series of mentoring topics were presented at the beginning of Weekly meetings this past Fall, and a continuation of the Mentoring Panel topics from the annual retreat was presented October 23<sup>rd</sup> during the EMBRIO Weekly with a deeper dive into how culture impacts our mentoring and team thinking.

BTW, if you missed “The role of culture and communication in mentoring” mini-workshop – [view it here](#), or the previous “mentoring snacks” check out the slides and resources in the ABIDES > [Mentoring folder](#), and listen to “[The Secret of Great Teams](#)” episode of The Hidden Brain podcast.

## JOURNAL CLUBS

### Journal Club on Calcium Imaging Techniques meets Monday’s 11am ET

Due to the need within our EMBRIO community to process and analyze Ca<sup>2+</sup> Images, Dr. Norma Perez Rosas ([nperezro@purdue.edu](mailto:nperezro@purdue.edu)) is helping lead this club in discussing papers regarding methods and tools for analyzing calcium imaging. **The goal, beyond integrating these techniques, is to write a review paper.** The Club is meeting weekly on Mondays at 11am. Please contact Norma about participating.

### Journal Club on Multimodal Functions of Calcium in Tuning and Regulating Cytoskeleton Networks

Please contact Dr. Linlin Li ([li2212@purdue.edu](mailto:li2212@purdue.edu)) for information. The club is in 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/1Cpg77yjtioWiluRmiDMCcAiAd4jNNX\\_J7s64RQk8xOU/edit?usp=sharing](https://docs.google.com/document/d/1Cpg77yjtioWiluRmiDMCcAiAd4jNNX_J7s64RQk8xOU/edit?usp=sharing)

## EMBRIO SUMMER WORKSHOP RESOURCES

EMBRIO Institute’s 2<sup>nd</sup> Annual Summer Training Workshop took place July 10-12, 2023. [Workshop Schedule of Sessions](#). Hosted by Dr. Jeremiah Zartman at the University of Notre Dame with a theme of *Image Acquisition, Processing, and Analysis*, tutorials and hands-on sessions were specifically aimed at

benefiting trainees from both computational and experimental domains. Slides, handouts, and video recordings from this workshop are available on our shared Box account: <https://app.box.com/s/mzo5ihlqiq4tfeig2psx2l6rmmdxto0c>

## EMBRIO ALL-HANDS ANNUAL RETREAT MATERIALS

EMBRIO Institute's Annual Retreat was hosted in the Weldon School of Biomedical Engineering on the Purdue University West Lafayette Campus, July 13-14, 2023. The annual retreat brought together the large majority of EMBRIO members in one physical place, with more than 60 of us engaging in research talks, poster presentations, programmatic discussions, and informal gatherings. Slide decks and posters from the annual retreat can be accessed here: <https://app.box.com/s/rmsiuvydlsccezhugyjp2b5v72xlg9l>

## UPCOMING DEADLINES, IMPORTANT DATES, & INFO

EMBRIO All-hands Meeting Schedule, Monday's 3-4pm ET. [Zoom](#). [All Hands Zoom Meeting Recordings](#)

Jan	8	Thrust 4 Seminar
	15	No Meeting: MLK Day
	22	BII Conference - NSF Headquarters and Zoom
	29	ABIDES topic: Project Management
Feb	5	break
	12	Orientation to EMBRIO/State of the Institute and open discussion (debrief PI's Retreat)
	19	break
	26	Guest Speaker TBD
March	4	break
	11	No Meeting: Spring Break
	18	Thrust 2 Seminar
	25	break
April	1	Guest Speaker TBD
	8	break
	15	Thrust 1 Seminar
	22	break
	29	Trainee topic or Speaker TBD
May	6	Thrust 3 Seminar
	13	break
	20	Guest Speaker TBD

**BII Annual Conference - January 22-23, 2024** . NSF is planning a hybrid one and 1/2 day meeting for all Biology Integration Institutes. Most attendees will be virtual, with a few of us in person at NSF headquarters. [View the draft agenda](#).

**February 6-7, 2024. EMBRIO Thrust & Site Leads Retreat.** Thrust and site leads, and key investigators, will engage in two days of thrust and project working sessions in person (and yes, actual retreat social activity, as well). Logistics have been shared with all involved.

**March 6-10, 2024.** The Allied Genetics Conference (TAGC24). Washington D.C. (Genetics Society of America). <https://genetics-gsa.org/tagc-2024/> EMBRIO is organizing an in-person workshop at this conference.

## Hot Off the Press: New EMBRIO Journal Papers

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

### **REMINDER: EMBRIO Acknowledgement for Scholarly Papers and Posters.**

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.”**

## Awards

### 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/frd9275xc069gmtbe3y1oso21j7ssk7> ), or they have graduated, let Brent know their names and email contacts ([laddb@purdue.edu](mailto:laddb@purdue.edu) )

Submit your items for the next newsletter by **January 26th** to Brent ([laddb@purdue.edu](mailto:laddb@purdue.edu))