



Emergent Mechanisms in Biology of  
Robustness, Integration & Organization

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

Issue 37: November 21, 2024

### **DIRECTORS' NOTE**

Plan to join us for the Institute's all-hands seminar this coming Monday, November 25<sup>th</sup>, 3PM ET with **"Development of EMBRIO as a Community of Practice"** (abstract in the newsletter) **presented by Soumi Mukherjee and Emily Georgopoulos in the [Gardner Lab at Purdue](#)**. Their research is a central component to understanding interdisciplinarity evolution, functioning, and community derived value of our Institute, as well as providing insights into evidence-based intentional improvements the Institute can incorporate.

EMBRIO investigators at Purdue – **it is time it is time to post your summer research projects with the SURF program to recruit undergraduate researchers to your lab!** EMBRIO will cover the faculty portion of the stipend and housing agreement. The SURF program provides an 11-week on campus research experience. Get your project posted by December 1<sup>st</sup> for priority consideration (details and links below). There is a new First Time Researcher program that provides an additional \$1K scholarship – but your proposal must be in by tomorrow, Friday, Nov. 22<sup>nd</sup> (see below).

**Mayesha Sahir Mim, Ph.D. Candidate in EMBRIO** (Zartman Lab) at Notre Dame, will defend her Ph.D. dissertation on **"Engineering Morphogenesis through Calcium Signaling and Cellular Mechanical Mediators."** She invites all EMBRIO members to join her talk Tuesday, November 26<sup>th</sup> at 9:30AM ([Zoom](#)). *(Please send Brent advanced notices of your graduate thesis defense dates and details, so that we can announce these to the community!)*

The **NSF Biology Integration Institutes Grantee Annual Meeting will be held December 17-18**, Denver, CO. The NSF Research Coordination Network grant team with the BII's will be hosting this year's meeting, with goals of community building, peer learning, and future visioning for transformative scientific impact. Please check out the [event website](#) for details on hybrid sessions, keynotes, and panels (more details below).

Many of you are working on manuscripts of your EMBRIO research results to submit for publication in peer-reviewed journals. Please remember to acknowledge our NSF BII Award for EMBRIO as NSF award #2120200. For a more complete [record of scholarly products](#) produced from EMBRIO members and collaborations see the updated list at our website. The [Institute's Google Scholar](#) page presents our publications and pre-prints. **Please send citations and links for new, or missed, publications and preprints to Brent ([laddb@purdue.edu](mailto:laddb@purdue.edu))**. Stay tuned for a more robust public-facing webpage highlighting EMBRIO publications along with their associated data, videos, and Github code!

A reminder that if you have new EMBRIO members joining your lab, please alert Brent with their names, emails, information, so that I can subscribe them to the listserv and Box account, and point them to our [Orientation to EMBRIO](#) folder.

Winter weather is upon us for all but our more southern located members. As Thanksgiving break arrives next week, wishing you all safe travels and relaxation. Consider decolonizing traditional ideas of this holiday by including [Native American perspectives on Thanksgiving](#) from the National Museum of the American Indian. For those in northern climes, the winter holiday season brings with it not only dragging fir trees indoors and imbibing warm mugs of cider, hot chocolate, and hot buttered rum, but also freezing temps, snow, icy winds, and significantly fewer daylight hours – this can lead to the “winter blues”, technically known as seasonal affective disorder. Check out [these strategies](#) to cope and even thrive and embrace the winter season from our friends living in the “windy city” at University of Chicago’s Dept. of Psychiatry and Behavioral Neuroscience.

**David, Chris, Jeremy, Anjali, Janice, Alejandra, Elsje, and Brent**

## **QUICK LINKS**

[All-Hands Meetings Recordings](#)

[Materials from Summer School & Annual Retreat](#)

[Institute Skills and Strengths Sharing Platform](#)

[Orientation to EMBRIO](#)

[ABIDES Cultural and Mentoring resources](#)

[Sign the Data Sharing Policy Agreement](#)

[EMBRIO Personnel List](#)

## **EMBRIO Partnership with SURF (Summer Undergraduate Research Fellowship)**

Purdue EMBRIO faculty, it is time to post your summer research projects to recruit undergraduate researchers to your lab!

### **RECRUITING OPPORTUNITIES**

[First-Time Researcher \(FTR\) Fellowship](#) **PROJECT POSTINGS DEADLINE EXTENDED!**

You have **more time** to submit your research projects for the FTR Spring 2024 program and recruit motivated undergraduate talent!

The program offers a **\$1,000 scholarship** for students, shared between EURO and faculty— (faculty portion covered by EMBRIO). [Learn more here.](#)

[Submit your proposal here](#) by **Friday, November 22**

[Summer Undergraduate Research Fellowship \(SURF\)](#) **PROJECT POSTINGS ARE OPEN!**

This **11-week, on-campus summer program** provides a unique opportunity to mentor undergraduate students through **hands-on research experiences**. Students receive a **\$6,500 stipend**, subsidized by the school/department and college affiliated with the project.

[Learn more about the program and submit your project today!](#)

**Priority Deadline:** December 1, 2024. Submit early to maximize your project's visibility!

[Host RWTH Aachen University Students \(Germany\)](#) **RECRUITING OPPORTUNITY**

**RWTH Aachen University** invites faculty to participate in the [UROP Abroad program](#), which provides funding for talented undergraduate students to join research teams at top-tier North American universities and institutions for **up to six months**.

To promote your research projects, publish them in the [UROP Project Database](#). Detailed **information for supervisors (Professors, researchers, postdocs and doctoral students)** is [available here](#).

Feel free to **reach out** to **Jan Müller** at [jan.mueller@zhv.rwth-aachen.de](mailto:jan.mueller@zhv.rwth-aachen.de) for more information.

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

Dr. Anjali Iyer-Pascuzzi, EMBRIO ABIDES Director, Thrust 2 Co-Lead, and Professor at Purdue, has led and organized sessions on mentorship, project management, careers, and individual development plans that are available on the Institute's shared [Box folder under ABIDES](#).

The ABIDES program will host a talk on active mentoring for EMBRIO in January 2025 by Denise Driscoll, DEI Director, CISTAR ERC, Purdue University.

### **STUDENT LEADERSHIP COUNCIL CORNER**

The Student Leadership Council has put together a resource to boost collaboration and community connection in EMBRIO. They've have created a platform ([google slide deck](#)) where we can all share a little about who we are and what kinds of strengths we can and are willing to share with others. **We kindly request that all members take a few minutes to fill out a slide for themselves.** This way, we can also use this to gauge what topics would be of most value to EMBRIO for hosting workshops.

The SLC welcomes new officers to represent your university and your perspective for EMBRIO. Reach out to David Gazzo ([dgazzo@nd.edu](mailto:dgazzo@nd.edu)), SLC 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.

### **UPCOMING DEADLINES, IMPORTANT DATES, OPPORTUNITIES & INFO**

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

Sept	2	Labor Day
Sept	9	State of the Institute and open discussion
Sept	23	Donny Hanjaya-Putra, Notre Dame
Oct	7 & 8	Fall Break at Purdue
Oct	14	Holly Goodson, Notre Dame
Oct	28	Mark Alber (re-scheduled)
Nov	11	Alex Dowling, Notre Dame
Nov	25	Soumi Mukherjee and Emily Georgopoulos, Gardner Lab, Purdue
Dec	9	Mark Alber, UC-Riverside

**November 25.** EMBRIO All-hands seminar November 25, 3PM **“Development of EMBRIO as a Community of Practice”** presented by Soumi Mukherjee and Emily Georgopoulos in the [Gardner Lab at Purdue](#). Join Zoom Meeting:

<https://purdue-edu.zoom.us/j/99105530025?pwd=wPuFZtASboXSfD8Y9e4vsbKpcrKl5j.1&from=addon>

Meeting ID: 991 0553 0025

Passcode: 469678

General resource: What’s a CoP? [Wikipedia on CoP](#)

**Abstract:**

Biology Integration Institutes (BII) are interdisciplinary, multi-institutional communities dedicated to advancing interdisciplinary research and training. Sustaining BII requires addressing members' diverse needs across time and space. Using the Community of Practice (CoP) change theory, we examined a BII's progression from its potential stage to stewardship stage, documenting its development through meaningful, shared, and coordinated activities. Feedback gathered from evaluation surveys and interviews informed repair mechanisms to support member growth and expertise. Insights from this study can guide other Institutes in fostering collaborative CoPs through intentional structures, activities, and evaluation strategies.

**Nov. 26, 2024:** Mayesha Sahir Mim, Ph.D. Candidate in EMBRIO (Zartman Lab) at Notre Dame, will defend her Ph.D. dissertation on "*Engineering Morphogenesis through Calcium Signaling and Cellular Mechanical Mediators*." She invites all EMBRIO members to join her talk (in person or via Zoom):

Time: Tuesday, Nov 26 at 9.30 am

Location: McCourtney Hall, B01

Zoom Link: <https://notredame.zoom.us/j/9721071389> Passcode: 071389

(please send Brent advanced notices of your graduate thesis defense dates and details, so that we can announce these to the community!).

**Dec. 9<sup>th</sup>, 2024.** EMBRIO All-Hands Seminar, December 9<sup>th</sup>, 3PM, Mark Alber, Ph.D., Distinguished Professor of Mathematics, Director of the Interdisciplinary Center for Quantitative Modeling in Biology, UC-Riverside, seminar title TBA.

**Dec. 17-18<sup>th</sup>, 2024. NSF Biology Integration Institutes Grantee Annual Meeting, December 17-18,** Denver, CO. The NSF Research Coordination Network grant with the BII's will be hosting this year's meeting, with goals of community building, peer learning, and future visioning for transformative scientific impact. Please check out the [event website](#) for details on hybrid sessions, keynotes, and panels (times shown in Mountain Standard time). Each BII will be presenting a lightning talk during Tuesday, Dec. 17 (Noon – 1pm ET). Contact lead organizer, Dr. Gemma Jiang ([gemma.jiang@colostate.edu](mailto:gemma.jiang@colostate.edu)) for the zoom link to connect to sessions. Each BII is sending a small team in person (EMBRIO will be represented by David Umulis, Jeremy Zartman, Stephanie Gardner, Linlin Li, and Brent Ladd).

### Hot Off the Press: New & Recent EMBRIO Journal Papers

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

[Check out our Google Scholar Page](#)

See a more complete list of [Scholarly Products produced under support of EMBRIO Institute](#)

### 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

Let us know about your grants and other 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](#), or they have graduated, let Brent know their names and email contacts ([laddb@purdue.edu](mailto:laddb@purdue.edu))