



Emergent Mechanisms in Biology of
Robustness, Integration & Organization

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

Issue 6: October 19, 2022

DIRECTORS' NOTE

Dear EMBRIO Members,

Thank you to everyone that participated in the NSF Biology Integration Institute annual meeting this week, and to the students and postdocs that presented posters. The sessions provided a platform for exchange of insights and ideas for continually improving BIIs. We would like to capture your key take-aways from the sessions – please share these directly with Brent (laddb@purdue.edu). Welcome back to everyone who traveled for conferences recently, and presented EMBRIO research, including at the BMES annual meeting last week.

We want to call your attention to the internal request for proposals for faculty positions to lead and expand diversity, equity, inclusion, and broadening participation activity for the Institute (due next Monday, Oct. 24). The [RFP is available on our Box account](#). Please contact Brent (laddb@purdue.edu) if you are interested in submitting a proposal.

A huge thank you from the Directors and all Institute members to Carl Huetteman, Managing Director for Special Projects, who has supported the development of the Institute this past year in many capacities. Carl will still be around now and then, but please do thank him the next time you see him. Please read the parting note from Carl in this issue.

Soumi Mukherjee in Stephanie Gardner's lab is featured in our Member Spotlight this issue. She is conducting interviews with everyone in the Institute as part of the overall evaluation for EMBRIO. If you haven't yet had a chance, please complete the [online schedule for one-on-one interviews](#) with her this semester. All interviews and their content will be confidential.

Brandon Allen, Program Manager of DCI & EWD with the ASPIRE ERC at Purdue, will present "*Answering the Call: Embedding Social Justice and Equity into Research*" during our Weekly Update, October 24. The following Weekly Update on October 31 is dedicated to our first proposal writing professional development activity for Graduate trainees and Postdocs on learning to craft an Aims page with Jason Cannon. You can find the remaining Weekly meeting semester schedule in this newsletter under the section: "Important Dates, Upcoming Deadlines, & Info".

We encourage those mentoring trainees to check out the new series that NIH is offering to promote mental health and well-being of the academic research community titled [RAISING A RESILIENT SCIENTIST](#). The series of five sessions begins Nov. 9th and is being offered free of charge.

We want to hear about your news and announcements. Send them to Brent (laddb@purdue.edu) by 10/28 for inclusion in the next issue of *Emergence*.

David, Chris, Stephanie, Brent, and Carl

QUICK LINKS

[EMBRIO Internal RFP for DEI and BP Positions](#)

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

Propose Breakout Room Topics during Weekly Updates (Email Brent: Laddb@purdue.edu)

[RAISING A RESILIENT SCIENTIST](#) series

INSTITUTE RFP FOR DEI AND BP POSITIONS

Diversity, equity, inclusion, and broadening participation are crucial to the overall growth and success of EMBRIO, and directly to our trainees as next generation scientists. The Institute will expand its Leadership Team with one to two new faculty-led positions. All EMBRIO investigators interested in an active, leadership role focused on DEI and/or REU programs are invited to [apply via the internal RFP](#) (available on Box: EMBRIO Institute > EMBRIO RFP). Collaborative proposals are also welcomed. Contact Brent (laddb@purdue.edu) if you are interested in applying. **Deadline for proposals is October 24.**

Weekly Update Zoom Breakout Rooms:

Are you looking for a collaborator? Would you like to get conversation started about a specific research topic with other EMBRIO members? Email me (Brent, laddb@purdue.edu) with your breakout room topics for upcoming Weekly Update sessions.

NOTE FROM CARL HUETTEMAN:

Thank you to Carl for the hugely beneficial support and guidance during EMBRIO's start-up year!! He has been an amazing asset to our Institute, and a truly great mentor to me (Brent). Please read this note from Carl to the community:

As an "itinerant" Managing Director in Purdue's College of Engineering, my duties include helping launch large, funded centers and then moving on. Effective now-ish, all management responsibilities will be handled by Brent as EMBRIO moves from an establishment phase to maturation – I absolutely know you are in great hands. I have greatly enjoyed getting to know and work with you over the previous year (time flies!). Odds are you may still hear from me now and again, but also please feel free to contact me if there is somewhere else I can assist. Best wishes and continued success!

MEMBER SPOTLIGHT: Soumi Mukherjee



What's your hometown, State, Country (and one thing you love, miss, remember, or want to tell others about it)?

I come from Kolkata, also known as the 'City of Joy' in India. I think I miss hustle bustle and the chaotic peacefulness of my city. I am a Bengali, which means we take our food, sweets, political ideologies, and cultural heritage very seriously. And one thing all Bengalis definitely miss is Durga Puja which is recognized as an intangible cultural heritage by UNESCO (to know more, refer to this website <https://ich.unesco.org/en/RL/durga-puja-in-kolkata-00703>). Also, if you want to know more about my culture, we have a very active student organization at Purdue called Purdue University Tagore Society, that keeps the Bengali spirit alive in West Lafayette.

What are your hobbies?

I have a list of things I like to do. I have been trained in Indian Classical Music as a vocalist. I also like dancing a lot and perform at many of the cultural events here at Purdue. If you manage to glance at my notebook, you will find it mostly covered in doodles than notes. Haha! And I also love cooking and if anyone wants to try good Indian food, shoot me an email as I love hosting and feeding people.

What drew you into becoming a scientist or engineer (or both)?

I think that when we discover something, after working on it relentlessly, in that split moment we are only ones knowing about the discovery. That feeling of knowing something that no one else does in that brief period of time, is exciting and gives us a

sense of empowerment. I guess this excitement about knowing the unknown and contributing and adding to existing knowledge is what drew me to becoming a scientist.

Tell us the main point of your research as it relates to EMBRIO:

My research is a part of Thrust 4 initiative in EMBRIO. For now, I can only say this much. To know more about my research project, please sign up for the interviews using the link Brent sends out every week. :D

You find yourself alone on an elevator with the president of your university – who knows very little about your field: They ask you to tell them about your research (15 seconds - go!):

Pedagogical research promotes learning in students by understanding how learning takes place and what strategies can be adopted to make learning better for students. I mostly focus on qualitative research component in this field, which means I look at human experiences to answer my queries, where it is the study of a nature of phenomenon and 'why' something is (not) observed. So, to make it simpler, if data is 'numbers' for quantitative field, data for qualitative researchers is 'words'.

What's on the horizon for you (research, career, personal, whatever you want to share)?

I would like to pursue a career as a science communicator. I want to use my creative ideas and artwork to disseminate scientific knowledge and promote outreach. I am also inclined to join the education software industry to help promote learning using user-oriented software technologies.

What's your various URL/social media handles that others can follow (prof. website, twitter, LinkedIn, blog, etc)?

Linked In - <https://www.linkedin.com/in/soumi-mukherjee-373023157/>

Twitter - @soumimukherjeez

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

“My name is Soumi Mukherjee, and I am a Graduate Student at the Department of Biological Sciences at Purdue. Along with my advisor Dr. Stephanie Gardner, I will be conducting an institute wide evaluation study as a part of Thrust 4 initiative. The process will help in capturing your experiences as a member of EMBRIO, which will be utilized to create a formative evaluation report for NSF at the end of each year. Your participation will not only aid in furthering the goals of the institute for providing an interdisciplinary collaborative environment essential for promoting knowledge integration across all the four thrusts, but also enable us to structure activities catered towards your own professional development.

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/?16968903-R8veS>

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 me at mukher42@purdue.edu.”

With Regards
Soumi

NIH Raising a Resilient Scientist Series

The NIH OITE is pleased to offer the [RAISING A RESILIENT SCIENTIST](#) series for faculty, staff scientists, and administrators who mentor students and postdoctoral fellows in the biomedical, behavioral, and social sciences. A variety of topics will be covered with a specific focus on communication and shared problem-solving to help trainees deal with the inevitable setbacks experienced in high knowledge environments. The goal of the Raising a Resilient Scientist series is to promote the mental health and well-being of the academic research community by supporting faculty and administrators to develop self-management, relationship-management, and mentoring skills. There will be five units in the series and start on November 9th, 2022; each unit will consist of a 75-minute lecture followed by a 1-hour facilitated discussion with peers.

Previous participants found participation very valuable, and the tools presented practical and actionable. Here is what those who participated in series have to say:

1. *“Informative workshop that I think all faculty should be required to attend. Making this a requirement for mentoring teams for fellowship and training grants would be a great approach! They need to be invested in mentoring and training, as much as training fellows.”*
2. *“Thank you! I've done a lot of mentoring workshops/training but feel like this one is already taking things to another level.”*
3. *“This course needs to be offered again and again, such an important resource in any academic curriculum.”*

There is no charge for participation, but advanced registration is required. For more information, and to register, please visit our [webpage](#). Participation in the entire series is recommended but is not required. Please do not hesitate to email us if you have any questions.

Dr. Sharon L. Milgram

(she/her/hers)
Director, NIH Office of Intramural Training & Education
NIH Office of the Director
www.training.nih.gov

UPCOMING DEADLINES, IMPORTANT DATES, & INFO

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

Zoom link:

<https://purdue-edu.zoom.us/j/96053485465?pwd=eVnY2owcm9kaFRtVUdPcmFHGl1UTo9&from=addon>

- October 24 – DEIA Topic: "Answering the Call: Embedding Social Justice and Equity into Research" by Brandon Allen, Ph.D., Program Manager DCI & EWD, ASPIRE ERC, Purdue
- October 31 – EMBRIO Aims Page Student Professional Development session 1
- November 7 – Dhulika Ravinuthala (Janice Evans Lab), Breakout Rm. Topics
- November 14 – Daniel Rocha and Liz Teran (Mauricio Cabrera Lab), Breakout Topics
- November 21 – Jeffrey Coulter (Taeyoon Kim Lab), Breakout Topics
- November 28 – EMBRIO Aims Page Student Professional Development session 2
- December 5 – Gregory Reeves, Assoc. Prof., Chem. Eng., TAMU

October 24, 2022. [EMBRIO DEI/BP Position Proposals](#) Due (email to laddb@purdue.edu)

October 28-30, 2022. The [Louis Stokes Midwest Regional Center of Excellence \(LSMRCE\) conference](#), "STEM Ecosystem: Diversity, Partnership, and Empowerment," will be held October 28-30, 2022 at the Hyatt Regency Schaumburg.

Nov. 2, 2022. 12 – 1pm, LILY 1-117. Purdue Biological Sciences Seminar (hosted by Qing Deng): "Regulation of Cell Division by A Force-sensing Ion Channel" by Qian Chen. Contact Qing (qingdeng@purdue.edu) for a time to meet with Qian Chen Nov. 2 on campus.

Nov. 9, 2022. NIH [RAISING A RESILIENT SCIENTIST](#) series begins.

Nov. 9 – Nov. 12: The [Annual Biomedical Research Conference for Minoritized Scientists \(ABRCMS\)](#) is a go-to conference for underrepresented groups in STEM fields.

Jan. 2 – 6, 2023: The BMES Cellular and Molecular Bioengineering Special Interest Group is seeking abstracts for the [BMES Conference \(CMBE\)](#) in Indian Wells, CA.

Hot Off the Press: New EMBRIO Papers

Nilay Kumar, Kevin Tsai, **Mayesha Sahir Mim**, Jennifer Rangel Ambriz, Weitao Chen, **Jeremiah J. Zartman**, Mark Alber. Balancing competing effects of tissue growth and cytoskeletal regulation during *Drosophila* wing disc development.
doi: <https://doi.org/10.1101/2022.09.28.509971>

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.”**

Awards

Let us know about awards that you want to highlight.

Open Positions

Postdoctoral Fellow Position in Interdisciplinary Biochemical Cancer Research, University of Notre Dame

A full-time postdoctoral fellow position is available immediately for Multidisciplinary Cancer Research at the University of Notre Dame, affiliated with the Harper Cancer Research Institute, the Notre Dame Warren Drug Delivery Center and Notre Dame Institute for Precision Health. The perspective candidate will conduct an interdisciplinary research on projects studying the basic molecular mechanisms of multiple birth defects, cancer progression and neurodegeneration and developing novel therapies to combat them. The postdoctoral fellow will receive crossdisciplinary training in biochemistry, cell biology, synthetic organic chemistry, and drug discovery utilizing a broad range of biochemical assays related to phenotypic screening and protein-protein interactions. The postdoctoral fellow will conduct research under the guidance of a mentoring team, including Dr. Jeremiah Zartman (<http://sites.nd.edu/zartmanlab/>) and Dr. Brandon Ashfeld (<https://ashfeldlab.nd.edu/>).

A Ph.D. or M.D. degree in cell or molecular biology, genetics, biochemistry, chemistry or a related discipline, is required. Previous experience in genetics, screening technologies and associated statistical analysis, synthetic chemistry, imaging or mouse modeling is desired. Successful applicants will be detail oriented, eager to learn new techniques, and enthusiastic about biology, exploring the interface between chemistry and biology, and working in an academic lab environment. Salary is commensurate with experience.

To apply this position, please submit: (1) your CV, (2) a cover letter explaining your background, interest and qualifications for the position, and (3) contact information for three references, including your relationship to the reference, their phone number, email address, and mailing address. Please contact Dr. Jeremiah Zartman (jzartman@nd.edu) or Dr. Brandon Ashfeld (bashfeld@nd.edu) for formal inquiries.

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/frd9275xc069gmgtbe3y10soz1j7ssk7>), or they have graduated, let Brent know their names and email contacts (laddb@purdue.edu)

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