

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

Issue 4: September 21, 2022

DIRECTORS NOTE

Hello EMBRIO Community!

First, a fun announcement of member voting results on a name for this newsletter: The winning name, with 42% of the votes, was *Emergence: A biweekly newsletter of discovery, education, and outreach from the EMBRIO Institute*. Thank you to everyone who voted, and those who submitted name ideas.

Our thoughts this week are with our colleagues and friends in Puerto Rico with Mauricio Cabrera, Clara Isaza, and their students Daniel Rocha, Liz Teran, Adriana Santos Bague, and Chiana Barski, as they deal with the aftermath of Hurricane Fiona. For those at Purdue, *The Puerto Rican Student Association* is collecting items of need or monetary donations to help those affected by this disaster. Please contact Angel Enriquez to help at aenrique@purdue.edu.

Thank you in advance for taking time to participate in brief surveys and interviews that will capture your input and participation for efforts to continually improve the Institute. Soumi Mukherjee in Stephanie Gardner's lab is conducting research on the interdisciplinary nature of the Institute and will be incorporating results as part of the overall evaluation component for EMBRIO. Soumi is asking for ALL members to complete an **online schedule for one-on-one interviews** with her this semester. The evaluation component is mandatory for everyone to participate. Also, check out the BII NSF meeting agenda (attached) and sign up to participate via the **BII Meeting sign up**. We want to have broad representation among our members. And there is still time to get in on **participating in the CUREs program**!

Based on your previous feedback on our progress with core values of the Institute, we are incorporating informal discussion opportunities into our future Weekly Update meetings. For this to be useful, we invite you to submit topics you desire to discuss, as well as "looking for a collaborator" requests for breakout rooms starting October 3. **Please submit your requests for Breakout room topics directly to Brent** (laddb@purdue.edu).

In closing, we are looking forward to seeing everyone next Monday during our Weekly Update. David Gazzo and Mayesha Sahir Mim in Jeremey Zartman's lab and Sharon Minsuk from James Glazier's Lab (all featured in Member Spotlights) will present their research in progress. A well-deserved congratulations to Dr. Matt Thompson for his successful Ph.D. thesis defense last week! We want to hear about your news and announcements. Send them to Brent (laddb@purdue.edu) by 9/30 for inclusion in the next issue of *Emergence*.

QUICK LINKS

Schedule Your One-on-One Interview with Soumi

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

BII Meeting Participation sign up

CUREs Participation Interest Survey

INSTITUTE EVALUATION: SIGN UP FOR YOUR ONE-ON-ONE INTERVIEW (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/?16898439-47uZv

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

BII NSF ANNUAL MEETING

Our BII NSF Program Directors have requested broad participation of faculty, students, postdocs, and staff in the upcoming BII NSF Annual Meeting taking place online October 18 - 19.

A draft schedule of events is attached to this email. NSF Program Directors have especially requested our Institute have at least one representative attend each of the 8 breakout sessions during 2-3pm Tuesday Oct. 18. And, to nominate student or postdoc led posters to be presented early afternoon Wednesday Oct. 19.

BII NSF Breakout Session Topics:

1: Running a complex project
2: Creating an institute culture
3: Data management and data access
4: Integration challenges
5: Integration through modeling
6: Project evaluation
7: Promoting early career advancement
8: Enhancing diversity, equity, and inclusion

Please complete the web-based survey to indicate your participation: https://purdue.ca1.qualtrics.com/jfe/form/SV_9KpbIbln6tkQ84u

RESEARCH & EDUCATION INTEGRATION: CURES PROGRAM OPPORTUNITY

Want to broaden access to undergraduate research experiences in integrative biology? CUREs could be an answer! Course-based Undergraduate Research Experiences (CUREs) are a way to allow more and diverse students the opportunity to experience research by embedding real research projects into courses students might take as part of their normal coursework. CUREs can be a full-semester course in which the focus is the work on the research project, or they can be a multi-week research module embedded within a course.

Stephanie Gardner has worked with instructors in one-on-one or in cohort models to train and support them as they develop and teach CUREs. Within the EMBRIO Institute engaging students in interdisciplinary research is a priority, incorporating imaging, simulation and computation, as relevant to the project. Stephanie is excited to work with interested EMBRIO graduate students, postdocs, research scientists, and faculty on CUREs.

To gauge interest and help with planning, please complete this brief interest survey by September

23rd: https://purdue.ca1.qualtrics.com/jfe/form/SV_29tas2RkBAA5e8S

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? Beginning October 3 we will dedicate time during one or more Weekly Update meetings each month to allow for all participants to get-to-know each other a little better and have more opportunity to informally connect and discuss research and collaboration next steps. The person/people who propose a research topic for discussion, or a "looking for a collaborator on [fill in your topic]" will orient the breakout group by taking a few minutes to introduce the project or topic. People can choose to join a group at-will. For those not looking for a collaborator(s) or not interested in the available research topics that week will have an option to join an informal "get to know each other" chat group. We'll also designate a "students only" breakout group for any of our trainees who want to chat with other students, however, students are encouraged to join other breakout groups as they desire. Email me (Brent, laddb@purdue.edu) with your breakout room topics for October Weekly Update sessions.

MEMBER SPOTLIGHT: Sharon Minsuk



Sharon Minsuk is a Research Fellow in James Glazier's lab at Indiana University.

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

We moved around a lot, mostly in the northeast (U.S.), but I suppose my home was New Jersey more than anywhere else. One thing I miss would be: real seasons. The one thing I *don't* miss? Mosquitos! (NJ shares these things with Indiana, but although I'm in James Glazier's lab in Bloomington, I'm doing the work remotely, living in the San Francisco Bay Area where I have lived most of my adult life.)

What are your hobbies?

Recently, being a political activist (progressive), though that's not much of a "hobby"! But over the years I have enjoyed training (and teaching) aikido (2nd degree black belt), bicycling (including a solo bike trip from Indiana to New Jersey, many years ago), and just kicking back with some science fiction (big Star Trek fan, among many others).

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

I was fascinated by it from an early age, so it was natural. My earliest science memories: a book given to my mom by her obstetrician, which included pictures of human embryos and fetuses at various stages; and kids' books about dinosaurs (a fascination shared by many kids, but which most grow out of; I didn't).

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!):

Embryos of all multicellular species go through a spectacular transformation from that first cell to the complex organisms they become. I'm especially interested in morphogenesis — the dramatic changes in shape of embryonic tissues that give rise to all these forms. My work is to simulate these processes in a computer, which not only tests our current understanding, but can stretch our ability to make predictions and can suggest new experiments.

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

Career/personal: this is a second start for me. My first academic career led to two postdocs but not to a faculty position, and I got out. Now, later in life, I'm back and getting a second chance. It will of course look different this time around, since I think I'm past the expiration date for starting a faculty position. I hope to focus on research and build competitiveness for sustainable funding, beyond my current position, for my own research goals.

Research: My passion is evolutionary developmental biology, and I've always wanted to apply simulation to that. I've long been interested in the approaches used in the field of Artificial Life, as a vehicle to exploring the evolution of development and body plans, but I've felt that they tend to be a little lacking in the physicality that drives evolution of development in the real world. I am here to beef up my knowledge and toolkit on the physics side of things, then hopefully in the future can bring this into the world of adaptive evolutionary simulations.

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

Connect to me on LinkedIn.

MEMBER SPOTLIGHT: Mayesha Sahir Mim



Mayesha is a Ph.D. student in the Department of Chemical and Biomolecular Engineering with Jeremy Zartman's Lab at University of Notre Dame.

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

Dhaka, Bangladesh. My country is small but we are the most densely populated nation on earth; so, I sure don't miss the crowd! I do miss the spicy, delicious meals with my family and friends.

What are your hobbies?

I love to read *non-scientific, fiction novels* and I am the President of the Book Club at Notre Dame (sorry for the shameless plug)! I also like hiking/traveling in general, and watching sports- specially cricket.

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

The money! Just kidding...Both my parents are corporate bank executives and I knew that I don't want to do that. I loved reading science fiction since forever, and attending science fairs, olympiads

and Astronomy summer schools are some of my best memories from middle and high school. These made me want to become an Astrophysicist, which somehow turned into an undergrad degree in Electrical Engineering, and today I am pursuing a Ph.D. in Bioengineering! So yeah, I have always been passionate about STEM but I will digress too much if I keep writing under this question.

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

My research in EMBRIO is part of Thrust 2: Cellular to multicellular communication and coordination. I am studying if tissue size and shape can be programmed by regulating Ca2+ dynamics using genetic and pharmacological manipulations of Optogenetic (e.g. channelrhodopsin) and Mechanosensitive (e.g. Piezo) tools. *Drosophila melanogaster* is our primary animal model for these investigations but we are also extending our research into plasmids and mammalian cells to discover robust rules of Ca2+-dependent cell signaling in morphogenesis.

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!): I poke around the genes of fruit flies to mimic human diseases related to calcium levels. Then, I further poke around those genes to find cures through non-invasive, environmental cues like light or pressure. I also feed them potential remedial drugs which, if successful, can be translated to mice, monkeys, and eventually humans!

What's on the horizon for you (research, career, personal, whatever you want to share)? I find it really exciting working hands-on in the wet lab, so I will likely try to get an R&D job after Ph.D. where I can still spend my days in the lab. I don't care too much about where in the world I settle down as long as my husband and I can build our careers together and I can have a good worklife balance to someday be able to start a family. Well, I do care a little; I definitely wanna work somewhere warmer!

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

- <u>LinkedIn</u>
- <u>Twitter</u>

MEMBER SPOTLIGHT: David Gazzo



David is a Ph.D. student in the Bioengineering Graduate Program with Jeremy Zartman's Lab at University of Notre Dame.

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

I grew up in Missoula, Montana, and miss my

mountains.

What are your hobbies?

I enjoy backpacking, hiking, canoeing, and reading fictitious literature in sunny areas.

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

My love for the wilderness first inspired me to go into a STEM field in hopes to create more sustainable practices but then got distracted by the biology of it all and have since been drawn to more health-related work.

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

My research involves the second thrust of the EMBRIO project (cellular to multicellular communication and coordination). I specifically study how calcium signaling functions within developing tissues and its connection to complex gene expression profiles. I strive to answer how small perturbations affect phenotypic outcomes.

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!):

I currently work in the Zartman Lab at the University of Notre Dame where we study the intricacies of calcium signaling, which our cells use to communicate. You can think of calcium signaling as a sophisticated form of smoke signals. By either changing the frequency, duration, or origin of the signal, a diverse array of messages can be conveyed and tasks carried out. Every cell in our body utilizes calcium in some way, and it's not only important for coordinating an individual's task but also for coordinating tasks with surrounding cells, therefore, many developmental processes are controlled by it, like organ growth. Understanding how tissues determine when to stop their development can be beneficial in treating many diseases like cancer. So, our lab works to elucidate our understanding around calcium and how it does what it does, and every way it does it.

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

The long road to a Ph.D. But after that, I would like to join a research lab either in industry or a national lab. I greatly enjoy the wet lab work I've done and want to keep getting my hands dirty.

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

LinkedIn

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=elVnY20wcm9kaFRtVUdPcmFHaGl1UT09&from=addon

- September 26 Presenters David Gazzo and Mayesha Mim (Jeremy Zartman Lab), Sharon Minsuk (James Glazier Lab)
- October 3 Presenters: Janice Evans Lab (Dhulika Ravinuthala), Breakout Rm. Topics
- October 10 No meeting in observance of Indigenous People's Day and Fall Break

- October 17 Presenters Tami Kinzer-Ursem Lab, Breakout Rm. Topics
- 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

National Postdoc Appreciation Week September 19-23

The National Postdoctoral Association is promoting a weeklong appreciation of postdocs with useful online professional development and support sessions. Check out the offerings: https://www.nationalpostdoc.org/page/2022NPAW

A shoutout to all EMBRIO postdocs. Your research and leadership in the Institute moves us forward. Our postdocs by name below:

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Purdue	Aishwarya Pawar
Purdue	Aritra Chatterjee
Indiana	Hayden Fennell
Penn	Joe Zinski
Purdue	Norma Perez
Indiana	Sharon Minsuk
Indiana	TJ Sego

September 23, 2022. EMBRIO Related Talk.

Chris Staiger will present an in-person talk titled "Cooperative actin filament nucleation in the homeostatic cortical array of plant cells" at the Chicago Cytoskeleton meeting on Friday, September 23. For more information about the meeting visit the CC website: https://chicagocytoskeleton.net/

September 23, 2022. Response Deadline for Interest in CUREs Program

To gauge interest and help with planning, please complete this brief interest survey for participation in Course-based Undergraduate Research Experiences

(CUREs): https://purdue.ca1.qualtrics.com/jfe/form/SV 29tas2RkBAA5e8S

September 30, 2022. PhD Defense Announcement for Catherine Weathered (E. Pienaar,

advisor), **Fri., Sept. 30,** 11:00 a.m., MJIS 2001 and via Zoom. Title: Multiscale Spatiotemporal Modeling for Human Disease: Agent Based Models for Nontuberculous Mycobacterium Infections and Alzheimer's Disease. Everyone is invited to attend the public presentation beginning at 11:00am.

Advisory Committee: Elsje Pienaar, PhD, Chair, Tamara Kinzer-Ursem, PhD, Gregory Knipp, PhD, Patricio Escalante, MD. Zoom link: https://purdue-

edu.zoom.us/j/92267006282?pwd=RVo1Nm82R29OUGovNnlJdVVadkR2Zz09

If you (or a mentee) have a thesis defense coming up, let us know!

October 12-15, 2022. The <u>Biomedical Engineering Society (BMES) 2022 Annual Meeting</u> will be held in San Antonio, Texas. Registration is open.

October 18-19, 2022. Our NSF Biology Integration Institutes Annual Conference will be held virtually and run by NSF BII Program Officers. <u>ALL EMBRIO members are encouraged to participate</u>, as you are able. Registration link, schedule, and topic session details are forthcoming. Each day is forecast to run from 10am – 5pm EST. At this early-stage discussions are focused on sessions that are most useful for developing successful institutes, team science and overcoming integration challenges, NSF expectations, student perspectives on interdisciplinary mentoring, methods and lessons learned on data sharing and management, and modeling approaches in common with most BII's. Stay tuned for more information.

Nov. 9 – Nov. 12: The <u>Annual Biomedical Research Conference for Minoritized</u>
<u>Scientists (ABRCMS)</u> 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 <u>BMES Conference (CMBE)</u> in Indian Wells, CA. <u>DEADLINE</u> for submissions is September 14.

Hot Off the Press: New EMBRIO 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."

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 Sept. 30 to Brent (laddb@purdue.edu)

Agenda for BII NSF Meeting below:



Biology Integration Institutes 2022 Awardees Meeting - Draft National Science Foundation Directorate of Biological Sciences

Zoom Link:

Meeting ID: Passcode: Phone:

Tuesday, October 18, 2022 (Times given for Eastern Daylight Time)

Sign in for Zoom meeting: {Link}
Statement of Purpose and Agenda Overview, Reed Beaman Welcome from the Directorate of Biological Sciences, TBD
Presentations from the 2020 Institutes – Project Overviews (5 mins per presentation)
<u>Virginia Rich</u> – The EMERGE Institute: Identifying EMergent Ecosystem Responses through Genes-to-Ecosystems Integration at Stordalen Mire
<u>Rachel Whitaker</u> – GEMS: Genomics and eco-evolution of multi-scale symbioses

Fabrizio Gabbiani – Behavioral Plasticity Research Institute (BPRI): Transforming the Study of Phenotypic Plasticity through Biological Integration Jeannine Cavender-Bares – The causes and consequences of plant biodiversity across scales in a rapidly changing world 10 Minute Q&A for all groups Presentations from the 2021 Institutes (5 mins per presentation) Michael Lynch – Mechanisms of Cellular Evolution Ruben Ceballos – Host-Virus Evolutionary Dynamics Institute (HVEDI) Allison Miller – New Roots for Restoration: integrating plant traits, communities, and the soil ecosphere to advance restoration of natural and agricultural systems David Umulis – Emergent Mechanisms in Biology of Robustness, Integration & Organization (EMBRIO) Susan VandeWoude – Regional OneHealth Aerobiome Discovery Network (BROADN) Corinne Richards-Zawacki – Uncovering mechanisms of amphibian resilience to global change from molecules to landscapes
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10 Minute Q&A for all groups
Lunch
Presentations from the 2022 Institutes (5 min for presentations)
<u>Colin Carlson</u> – Predicting the global host-virus network from Molecular foundations
<u>Sue Rhee</u> – Life without water: protecting macromolecules, cells and organisms during dessication and rehydration across kingdoms of life
Nicole Riddle – SAGE: Discovering the mechanisms and evolution iof aging differences between females and males
<u>Michele Nishiguchi</u> – INSITE: Institute for Symbiotic Interactions, Teaching and Education in the Face of a Changing Climate
10 Minute Q&A for all groups
BII management challenges and solutions Panel of Representatives from the 2020 project cohort
Breakout Sessions: Lessons Learned What has been working? What looked good but did not work? Projects assign a point person to attend each breakout group.

	TOPIC #1: Running a complex project
	TOPIC #2: Creating an institute culture
	TOPIC #3: Data management and data access
	TOPIC #4: Integration challenges
	TOPIC #5: Integration through modeling
	TOPIC #6: Project evaluation
	TOPIC #7: Promoting early career advancement
	TOPIC #8: Enhancing diversity, equity, and inclusion
3:00 pm – 3:30 pm	Project Oversight for BII from the NSF – Jennifer Weller
	- Annual report templates
	 Blocking of award actions Expected documents in first year: (BP plan, Strategic Plan, Governance)
	- NSF expectations about Project Management
	- Site visits
3:30 pm – 5:00 pm	Mixer in Gather Town
	Job fairConsultation with NSF program officers
	- Space to continue small group discussions (self organized)
	- Poster previews
5:00 pm – 6:00 pm	Offline: Participants post topics (on GoogleDocs) for Breakout Sessions on Wednesday.

Wednesday, October 19, 2022

9:45 am	Sign in for Zoom meeting: {Link}
10:00 am – 10:05 am	Greetings and Updates, Reed Beaman
10:05 am – 11:00 am	Team Science Speaker: Dr. Jenny Cross, Colorado State University This may be an activity or an in-depth discussion of specific challenges suggested by participants,
11:00 am – 12:00 pm	Education and Outreach Success Stories Contributed by project representatives Q&A
12:00 pm – 12:30 pm	LUNCH BREAK Gather Town Mixer
12:30 pm – 2:30 pm	Poster Sessions in Gather Town 12:30pm -1:30pm. Presenters of even-numbered posters available for questions

	1:30pm – 2:30pm. Presenters of odd-numbered posters available for questions.
2:30 pm – 2:45 pm	Break Job Forum 'Live' in Gather Town
2:45 pm – 3:45 pm	Emerging Issues Breakouts: Topics determined by participants earlier in the meeting. Each session appoints a moderator. Each session assigns a notetaker. Notes are posted to a Google Docs folder. TOPIC #1: TBD TOPIC #2: TBD TOPIC #3: TBD TOPIC #4: TBD TOPIC #5: TBD TOPIC #5: TBD TOPIC #6: TBD TOPIC #7: TBD
3:45 pm – 4:00pm	Closing comments – NSF Biology Integration Institutes Working Group
4:00 pm – 5:00 pm	Gather Town mixer - Job fair - Consultation with NSF program officers - Space to continue small group discussions (self organized) - Poster previews Suggestion Box open in Google Docs for next year's meeting