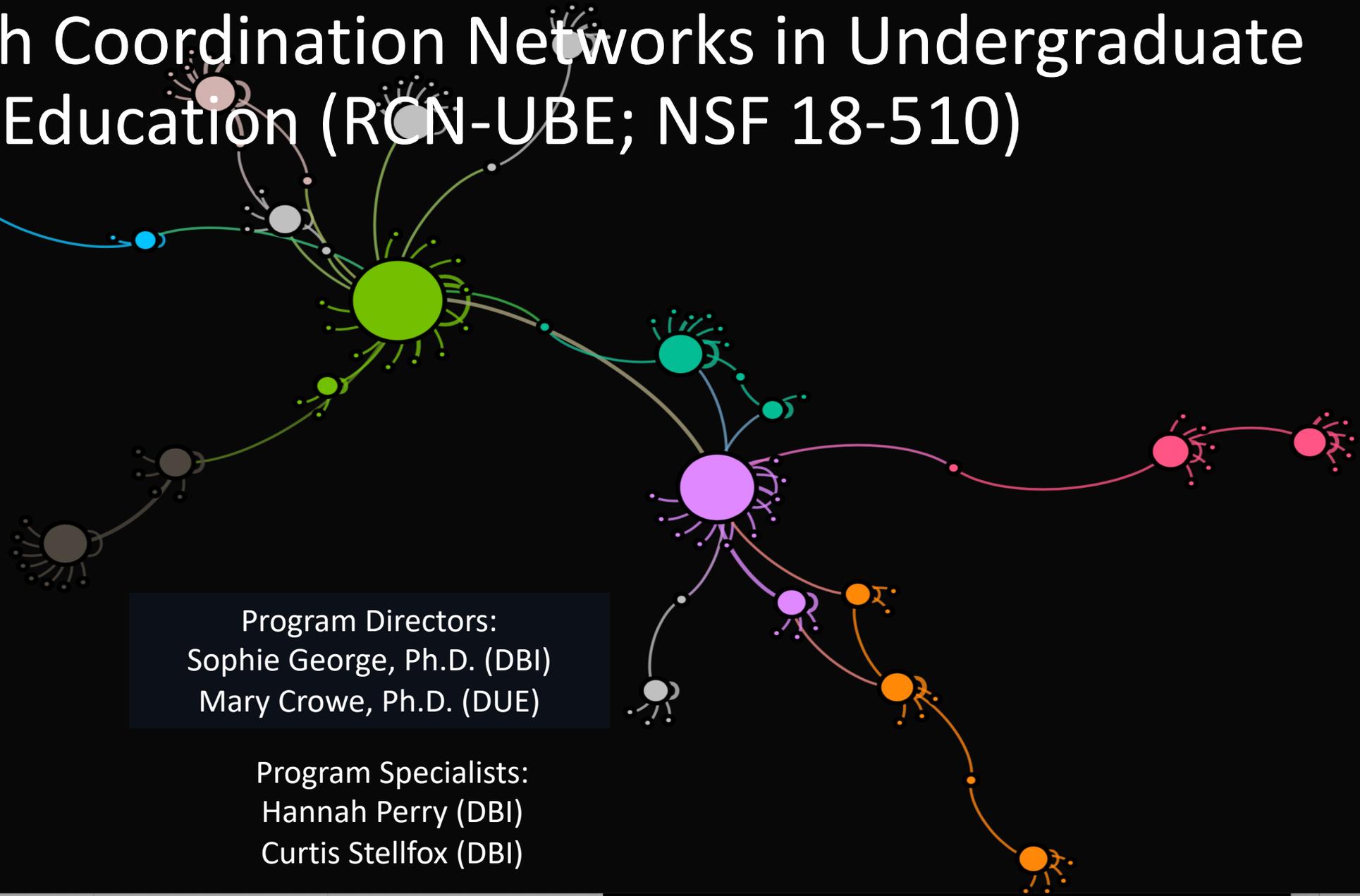


Research Coordination Networks in Undergraduate Biology Education (RCN-UBE; NSF 18-510)



Program Directors:
Sophie George, Ph.D. (DBI)
Mary Crowe, Ph.D. (DUE)

Program Specialists:
Hannah Perry (DBI)
Curtis Stellfox (DBI)



Webinar Outline

1. General information about RCN-UBE (NSF 18-510)
2. Preparing and Submitting
3. Proposal Processing & Merit Review
4. Proposal Writing Tips
5. Q&A



Part 1

General Information



RCN-UBE Program

- Supports the creation of networks of scientists, educators, and other stakeholders that **collaboratively address a common problem in undergraduate biology education** (the **theme** of the proposal)
 - The problem must be shared by all network members —solving the problem should benefit the wider community
 - RCN-UBE awards do not support existing networks.
- A (research) collaboration is not a network.
- **One institution or member** cannot not drive the network—awards cannot be used to coordinate the research of an individual or propagate an intervention developed at an institution.



Potential Themes (not inclusive or limiting)

- Active learning
- Course-based research experiences
- Incorporating subdisciplines into curricula
- Service learning
- Quantitative reasoning
- Biological literacy
- **Assessment**
- Transfer success
- **Engaging underrepresented students**
- **Community college involvement**
- Computational thinking
- **Professional development**

Primary area of emphasis								
Professional development	Specific Skills	Assessment	Community College involvement	Engaging students in Learning	Broadening Participation	Curriculum	Interdisciplinary training	Total No. of categories
				x	x			2
x				x	x		x	4
					x		x	2
				x			x	2
		x		x	x	x		4
x	x	x		x			x	5
					x	x	x	3
x	x	x	x	x	x	x	x	8
x	x	x			x		x	5
x				x	x			3
		x		x	x	x	x	5
x		x		x		x	x	5
x				x	x			3
x		x			x		x	4
x					x			2
x		x			x	x		4
x	x	x					x	4
x		x	x	x	x			4
x	x					x		3
13	5	11	2	11	14	7	11	
0.7	0.3	0.6	0.1	0.6	0.7	0.4	0.6	



Research Coordination Networks in Undergraduate Biology Education (RCN-UBE)

PROGRAM GUIDELINES

Solicitation [18-510](#)

Important Information for Proposers

A revised version of the *NSF Proposal & Award Policies & Procedures Guide (PAPPG)* (NSF 20-1), is effective for proposals submitted, or due, on or after June 1, 2020. Please be advised that, depending on the specified due date, the guidelines contained in NSF 20-1 may apply to proposals submitted in response to this funding opportunity.

DUE DATES

Full Proposal Deadline Date

January 19, 2021

[What Has Been Funded \(Recent Awards Made Through This Program, with Abstracts\)](#)

[Map of Recent Awards Made Through This Program](#)

[News](#)

1. First Google hit for "NSF RCN-UBE"

Scroll down to the bottom of the page

Recent Awards



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Recent Awards (cont.)

RCN-UBE: Equity and Diversity in Undergraduate STEM (EDU-STEM)

Award Number:1919462; Principal Investigator:Sehoya Cotner; Co-Principal Investigator:Carrie Hall, Cissy Ballen, Jordan Harshman, Sheritta Fagbodun; Organization:University of Minnesota-Twin Cities;NSF Organization:DBI Start Date:09/01/2019; Award Amount:\$499,385.00; Relevance:48.0;

CREST3: Engaging Undergraduates in the Community of Science through Modeling

Award Number:1725940; Principal Investigator:Tim Herman; Co-Principal Investigator:Margaret Franzen, Cheryl Bailey, Diane Munzenmaier; Organization:Milwaukee School of Engineering;NSF Organization:DUE Start Date:08/01/2017; Award Amount:\$599,971.00; Relevance:48.0;

RCN-UBE: A New Faculty Development Approach to Expand Authentic Course-based Research Opportunities Focused on Microbial Bioinformatics and Functional Genomics

Award Number:1729944; Principal Investigator:Bradley Goodner; Co-Principal Investigator:Derek Wood; Organization:Hiram College;NSF Organization:DBI Start Date:09/01/2017; Award Amount:\$499,619.00; Relevance:48.0;

RCN-UBE: HITS: High-throughput Discovery Science & Inquiry-based Case Studies for Today's Students

Award Number:1730317; Principal Investigator:Carlos Goller; Co-Principal Investigator:Sabrina Robertson; Organization:North Carolina State University;NSF Organization:DBI Start Date:08/15/2017; Award Amount:\$499,901.00; Relevance:48.0;

RCN-UBE: Networking STEM Initiatives To Enhance (NSITE) Adoption of Evidence-Based Practices

Award Number:1827108; Principal Investigator:Michelle Withers; Co-Principal Investigator:Debra Pires, Xinnian Chen, Eleanor Vandegrift, Elizabeth Luoma; Organization:SUNY at Binghamton;NSF Organization:DBI Start Date:09/01/2018; Award Amount:\$472,898.00; Relevance:48.0;

RCN-UBE: Biodiversity Literacy in Undergraduate Education - Data Initiative (BLUE Data Network)

Award Number:1730526; Principal Investigator:Anna Monfils; Co-Principal Investigator:Elizabeth Ellwood, Debra Linton, Lisa White, Alison Hale; Organization:Central Michigan University;NSF Organization:DBI Start Date:09/01/2017; Award Amount:\$499,941.00; Relevance:48.0;

Engaged Student Learning: Development of active learning bioinformatics education apps for mobile technology

Award Number:1612576; Principal Investigator:Scott Kelley; Co-Principal Investigator:; Organization:San Diego State University Foundation;NSF Organization:DUE Start Date:09/01/2016; Award Amount:\$330,000.00; Relevance:48.0;

RCN UBE Incubator: Failure as part of Learning, A Mindset Education Network (FLAMEnet)

Award Number:1827160; Principal Investigator:Jennifer Heemstra; Co-Principal Investigator:Louise Charkoudian, Lisa Corwin; Organization:Emory University;NSF Organization:DBI Start Date:08/01/2018; Award Amount:\$75,000.00; Relevance:48.0;

RCN-UBE: Northwest PULSE-A Community of Practice for Departmental Transformation Using Vision and Change

Award Number:1346583; Principal Investigator:William Davis; Co-Principal Investigator:Joann Otto, C. Reiness, Pamela Pape-Lindstrom; Organization:Washington State University;NSF Organization:DBI Start Date:07/01/2014; Award Amount:\$587,215.00; Relevance:48.0;

RCN-UBE: A National Network for Integrating the Study of Microbiomes into Course-based Undergraduate Research Experiences

Award Number:1827035; Principal Investigator:Theodore Muth; Co-Principal Investigator:Avrom Caplan; Organization:CUNY City University of New York;NSF Organization:DBI Start Date:10/01/2018; Award Amount:\$474,610.00; Relevance:48.0;

Go to the dropdown menu “Relevance” and click on “**Award Title**”
Most of the RCN-UBE Incubator awards will be on the first page

https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505495&org=BIO&from=home





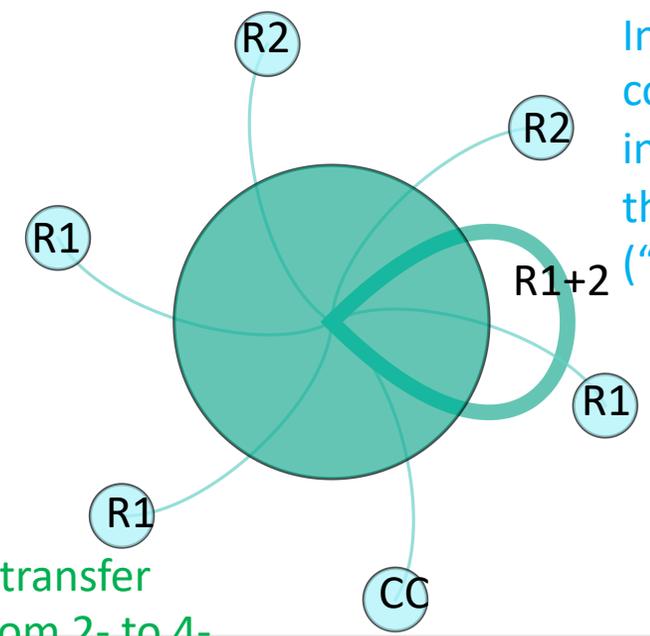
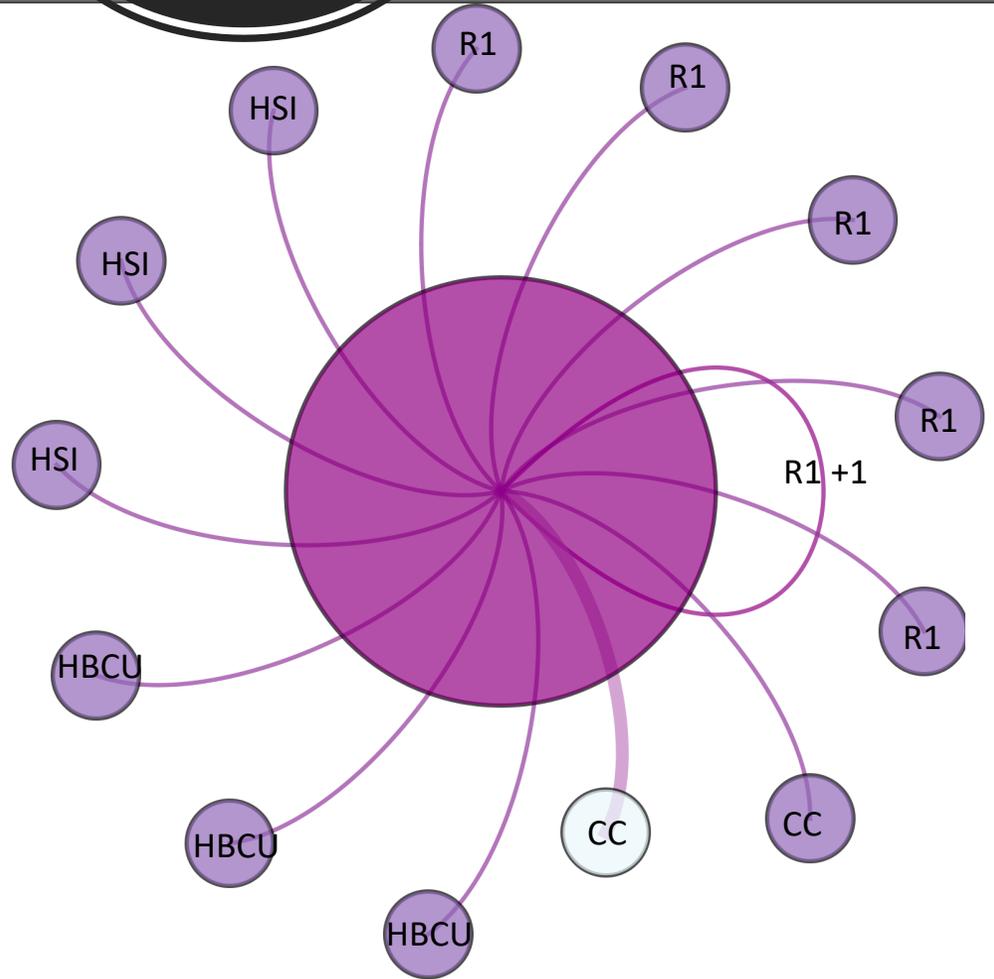
RCN-UBE networks

© 2020 Mapbox © OpenStreetMap



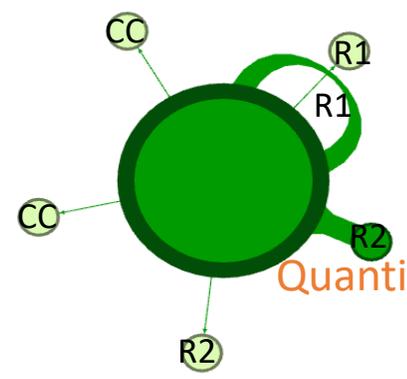
Examples of active RCN-UBE awards

Addressing barriers to inclusivity in STEM across the nation ("Diversity and equity")

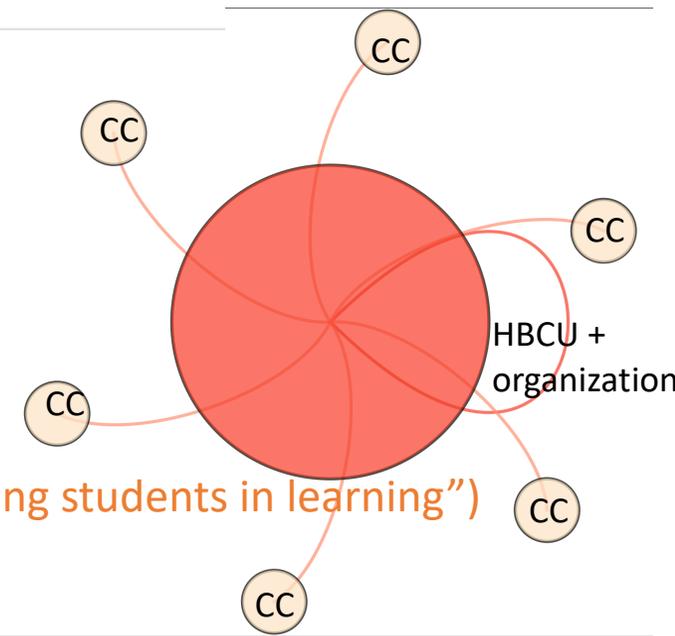


Integrate responsible conduct of research into college courses in the form of CURES ("Specific skills")

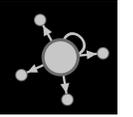
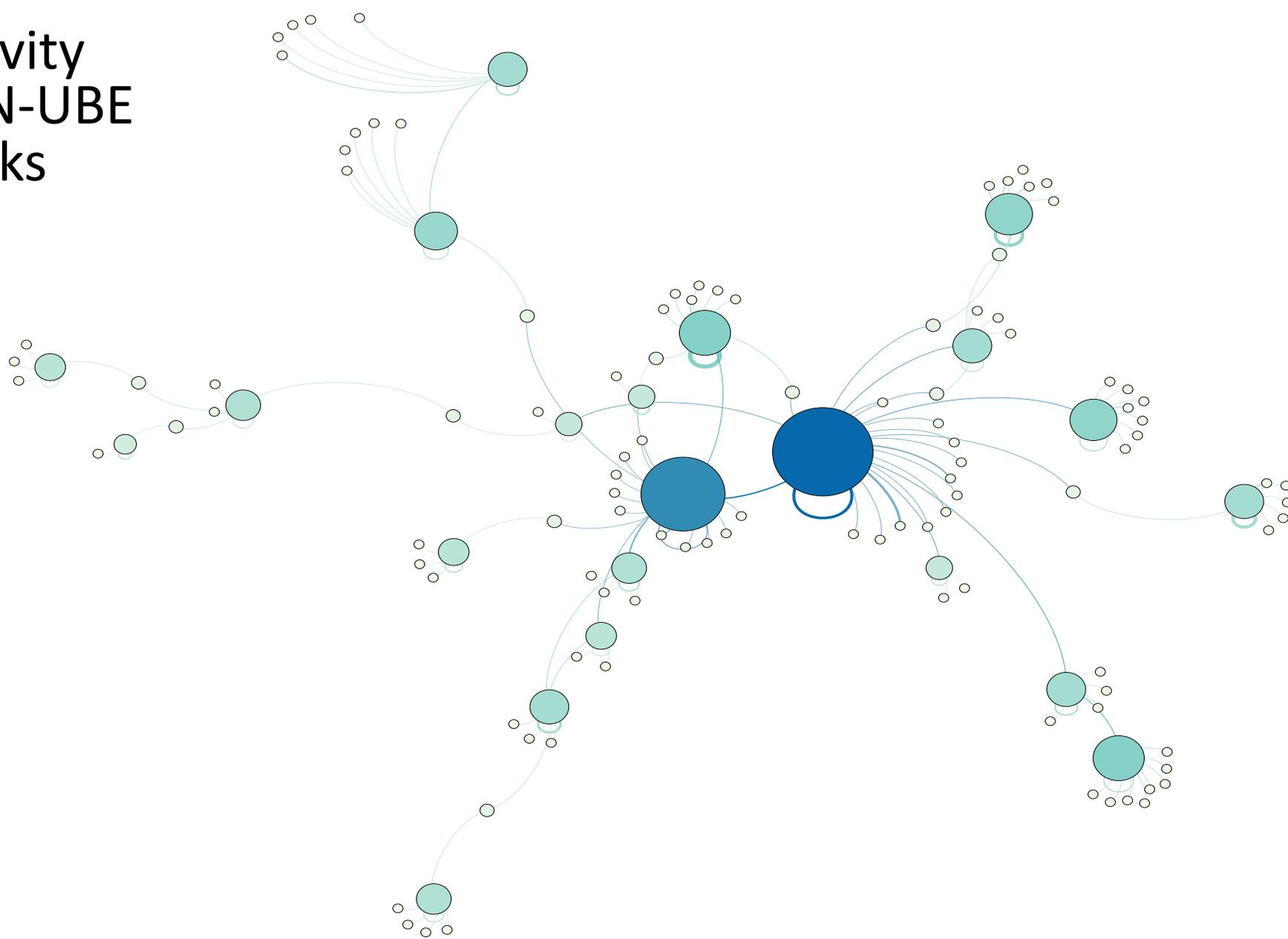
Increase minority transfer student success from 2- to 4-year institutions ("Professional development")



Quantitative Biology ("Engaging students in learning")



Connectivity among RCN-UBE networks



Part 2

Preparing and Submitting



Title

The title of an RCN-UBE proposal *must** begin with “RCN-UBE: “ or “RCN-UBE Incubator: “ as appropriate.

*If the solicitation says that a proposal “must” do something and the proposal doesn’t do that thing, it can be returned without review



Project Summary

Three parts:

1. an overview that includes a description of the proposed RCN-UBE activities and objectives, and ***a listing of steering committee members along with their home organizations;***
2. a statement of the Intellectual Merit of the proposed RCN-UBE project, indicating how it will advance undergraduate biology education;
3. the Broader Impacts of the proposed work, including mechanisms for actively promoting participation of groups underrepresented in biology.

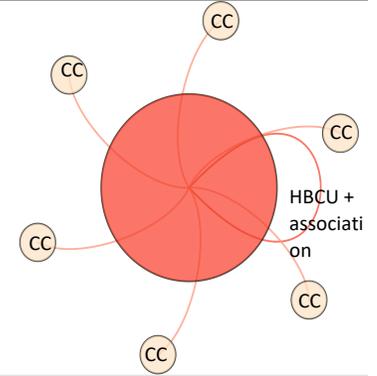
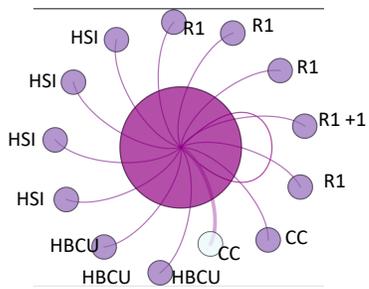
The Project Summary should be written in the third person, informative to other persons working in the same or related fields, and, insofar as possible, understandable to a scientifically or technically literate lay reader.

*If the solicitation says that a proposal “must” do something and the proposal doesn’t do that thing, it can be returned without review (RWR; more later)



Project Description

(Page 5 of the solicitation)



RCN-UBE proposals, in accord with all RCN proposals, must conform to the following seven guidance items:

1. **Topic/focus of research coordination.**
2. **Principal investigator (PI).** Although research coordination networks are expected to involve investigators from multiple sites, a single organization must serve as the submitting organization for each proposal. Of the two types of collaborative proposal formats described in the Proposal & Award Policies & Procedures Guide (PAPPG), this solicitation allows only a single proposal submission with **subawards administered by that lead organization.**
3. **Steering committee.** Members of the steering committee will be network participants that assume key roles in the leadership and/or management of the project. The steering committee should be representative of the communities of participants that will be brought together through the RCN. It must include all Co-PIs, if any are listed on the cover page of the proposal, and **any other senior personnel, including any foreign collaborators involved as leaders or otherwise considered senior personnel. Therefore, the steering committee constitutes all the senior personnel for the RCN proposal.**
4. **Network participants.** The size of a network is expected to vary depending on the theme and the needs of the proposed activity. The network may be regional, national, or international. It is expected that a proposed network will involve investigators at diverse organizations. The inclusion of new researchers, post-docs, graduate students, and undergraduates is encouraged. Specific efforts to increase participation of underrepresented groups (women, underrepresented minorities, and persons with disabilities) must be included.
5. **Coordination/management mechanism.** The proposal should include a clearly defined management plan. The plan should include a description of the specific roles and responsibilities of the PI and the steering committee. Mechanisms for allocating funds, such as support for the work of a steering committee, should be clearly articulated.
6. **Information and material sharing.** The goals of this program are to promote effective communication and to enhance opportunities for collaboration (QUBEShub, CUREnet, etc.)
7. **International participation.** NSF encourages international collaboration, and we anticipate that many RCN projects will include participants, including steering committee members, from outside the US. International collaborations should clearly strengthen the proposed project activities.



Submission Deadline

- 19 January 2021

(The third Tuesday in January)

Proposals must be received by 5:00 p.m. local time on the due date.



Submitting the Proposal

Proposals can be submitted using either Research.gov/FastLane or Grants.gov

Research.gov/FastLane

 NSF User Sign In

There are 2 ways to sign in to Research.gov. Use your **NSF ID** or your **organization credentials**.

NSF ID
 [Forgot? / Look Up NSF ID](#)

Password
 [Forgot Password](#)

[Sign In](#)

New to NSF?
[Register](#)

OR

Organization Credentials 

Select your organization from the drop-down menu below, to be taken to the InCommon Log In page for your organization.

Pick Your Organization

[Sign In](#)

Don't see your organization listed?
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Grants.gov →



The screenshot shows the Grants.gov website interface for applicants. At the top, there is a navigation bar with links for HOME, LEARN GRANTS, SEARCH GRANTS, APPLICANTS (highlighted), GRANTORS, SYSTEM-TO-SYSTEM, FORMS, CONNECT, and SUPPORT. A search bar is located on the right with the text "SEARCH: Grant Opportunities" and "Enter Keyword...". Below the navigation bar is a large banner image showing the lower legs and feet of a group of people walking. The text "FOR APPLICANTS" is overlaid on the banner. Below the banner are several service tiles: "Check Your Eligibility", "Get Registered", "Apply for Grants", "Track Your Application", "Adobe Compatibility", "Applicant Training", "Applicant FAQs", and "Manage Subscriptions". Each tile includes a brief description and a link to the relevant service. At the bottom of the page, there is a footer with various links for "CONNECT WITH US" (Blog, Twitter, YouTube, Alerts, RSS, XML Extract, Get Adobe Reader) and "HEALTH & HUMAN SERVICES" (HHS.gov, EEOC / No Fear Act, Accessibility, Privacy, Disclaimers, Site Map). The footer also includes "COMMUNITY" links (USA.gov, WhiteHouse.gov, USAspending.gov, SBA.gov, CFDA.gov, SAM.gov, DUNS Request, Report Fraud) and contact information for "GRANTS.GOV Applicant Support" (1-800-518-4726, support@grants.gov).



Part 3

Proposal Processing and Merit Review



NSF Merit Required Review Criteria: Intellectual Merit

- Importance to **advancing knowledge and understanding**
- **Creative**, original, and/or **potentially transformative**
- Proposers' qualifications
- Access to sufficient resources
- Proposed activity well-conceived and organized
- Data management plan
- Post-doc mentoring plan, if applicable
- Evaluation



NSF Merit Required Review Criteria: Broader Impacts

- Promote teaching, **training**, and learning
- Broaden the participation of underrepresented groups, new institutions, influence on field, etc.
- Enhance the infrastructure for research and education
- Partnership development
- Disseminate results broadly
- Benefit society



Review Criteria Specific to RCN-UBE

(Page 11 of the solicitation)

- RCN-UBE proposals will be evaluated for their **creativity, innovation, and potential to advance and transform biology education**, including emerging areas at the interface of other disciplines.
- RCN-UBE proposals must establish **the infrastructure to create new networks** of scientists, educators, and other stakeholders who have not previously worked together. RCN-UBEs cannot use resources to fund primary research or to sustain existing networks.
- For all proposals involving **international collaborations**, reviewers will consider: mutual benefits, true intellectual collaboration with the foreign partner(s), benefits to be realized from the expertise and specialized skills, facilities, sites and/or resources of the international counterpart, and active engagement of U.S. students and early-career researchers in the RCN-UBE activities.



Proposal Processing and Timeline



Part 4

Proposal Writing Tips



A few suggestions

- 1) Bring all your partners into the planning process early as true collaborators with a **shared and unifying vision**;
- 2) Include **diverse partners and institutions at the start** of the project;
- 3) Make room in the **budget for a coordinator of network activities and for assessment**;
- 4) Be purposeful in engaging partners through regular communication and virtual platforms;
- 5) **invite other disciplines to participate** in the use, evaluation, and dissemination of RCN-UBE findings, especially in reaching out to diverse participants for RCN activities—explore participation and motivation from the perspective of the diverse audience, not from the perspective of a need for diverse participants.

*Eaton, CD, et al. “Summit of the Research Coordination Networks for Undergraduate Biology Education,” *CBE-Life Sciences Education*, <https://doi.org/10.1187/cbe.16-03-0147>



What Makes a Proposal Competitive?

- Aligns with the solicitation
- Original ideas
- Succinct, focused project plan (**Cite the literature**)
- **Realistic amount of work**; i.e., doable in the time and with the resources proposed
- Sufficient detail provided
- **Cost-effective**
- **High-impact**
- Knowledge and experience of PIs
- Contribution to the field
- **Rationale and evidence of potential effectiveness**
- Likelihood the project will be **sustained**
- Solid evaluation plan with **timelines and benchmarks.**



General Tips for Success

- ★ • Write to the solicitation: Read the solicitation. Read the solicitation again.
- ★ • E-mail a cognizant NSF program officer and set up a time to talk; send them a **one-page project summary** (you will have to write it anyway).
- **Attend Office hours.**
- Be aware of other projects and advances in the field.
- Discuss prior (NSF) results (within last 5 years).
- Put yourself in the reviewers' place.
- If resubmitting, briefly discuss how you've addressed the concerns of the previous review.
- Have someone else read the proposal.



Return without Review

- A proposal may be returned without review if it does not meet the **requirements** of the PAPPG and/or the solicitation.
- Examples:
 - Missing explicit Intellectual Merit section (narrative)
 - Missing explicit Broader Impacts section (narrative)
 - An incubator proposal that is > 8 pages.
 - No steering committee
 - Steering committee members not listed in the Project Summary



Resources

- NSF 18-510: RCN-UBE Solicitation
- NSF 20-1: NSF *Proposal and Awards Policies and Procedures Guide* (PAPPG)
- *Vision and Change in Undergraduate Biology Education: Chronicling Change, Inspiring the Future* (http://visionandchange.org/files/2015/07/VISchange2015_webFin.pdf)
- Eaton CD, et al. “Summit of the Research Coordination Networks for Undergraduate Biology Education,” *CBE-Life Sciences Education*, <https://doi.org/10.1187/cbe.16-03-0147>

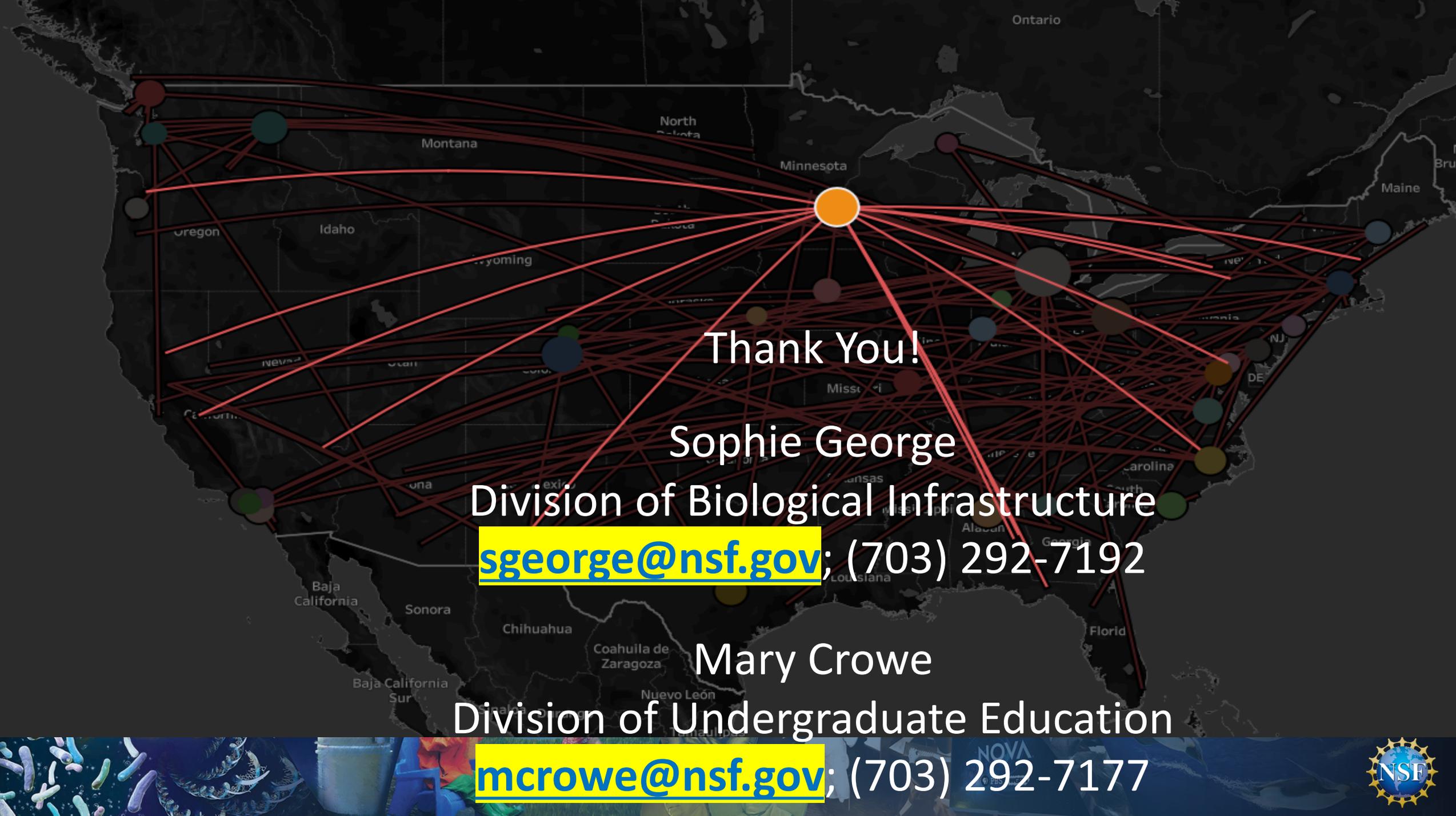
Example of an RCN-UBE project website:

https://qubeshub.org/community/groups/qbcc/qb_modules

Example of large platforms that host several RCN-UBE websites:

- <https://qubeshub.org>
- <https://serc.carleton.edu/curenet/index.html> (go to CURE Collection)





Thank You!

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