

2007 - 2012

worldofviruses.unl.edu

2012 - 2018

biologyofhuman.unl.edu

2018 - 2023

worldsofconnections.com

Spreading knowledge and excitement about network science among members of underrepresented minority communities to support diversity in bio-behavioral and biomedical careers.



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WHAT IS NETWORK SCIENCE?

“The study of the collection, management, analysis, interpretation, and presentation of relational data.” (Brandes et al 2013.)

Some core ideas from Network Science Literacy (NetSciEd)

- Networks are everywhere, they describe how things connect and interact, they help reveal patterns through visualization.
- Today’s computer technology allows you to study real-world networks.
- Network science can illuminate social forces that shape opportunities for health interventions.
- Fits NGSS: “K-12 science education should reflect the interconnected nature of science as it is practiced and experienced in the real world.”

REFERENCES

Brandes, Ulrik, Garry Robins, Ann McCranie, and Stanley Wasserman. 2013. *What is network science?* *Network Science*. 1(1)1-15.

Improve understanding of how informal STEM experiences with network science in health research can increase **STEM identities**, STEM possible selves, and STEM career aspirations among 6-8th grade youth from groups historically underrepresented in STEM disciplines at the center of health science research.

AIM 1



AIM 2

Create emerging media resources (e.g. augmented/virtual reality) to stimulate broad interest in and understanding of the role of network science in biomedical and public health research.

Anticipated Project Deliverables & Commercialization Opportunities

- A set of Network Science informal activities
- NE STEM 4U afterschool club chapter at UNL
- Network Science Institute for 6-12th grade teachers
- District-wide network study of teacher information sharing
- Dynamic media stories (Augmented Reality/Virtual Reality) for widespread dissemination of network science for health
- Research publications

RESEARCH

- Patterns of science identities over time
- Diffusion of science identities from clubs through middle schools
- Science teacher knowledge sharing through networks
- Informal engagement in middle school and High School science course pathways
- Comparison of Network Science and Biology focused activities and youth science possible selves

INTERNAL EVALUATION

- Provide ongoing monitoring of project goals, plans, and progress
- Ensure rigorous, iterative development of network science activities
- Document, track, and assess project outreach, professional development, and deliverables

EXTERNAL EVALUATION

- Ongoing monitoring of project partnerships
- Document diversity
- Assess quality and value of education resources
- Monitor development of research capacity
- Determine impact of project on different audiences

Long-term Outcomes

- Assess the potential of Network Science to attract historically underrepresented youth to health research
- Increase the diversity of the Bio-Behavioral and Biomedical workforce
- Enhance public awareness, interest, and understanding of Network Science for Health

WoC INVESTIGATOR TEAM

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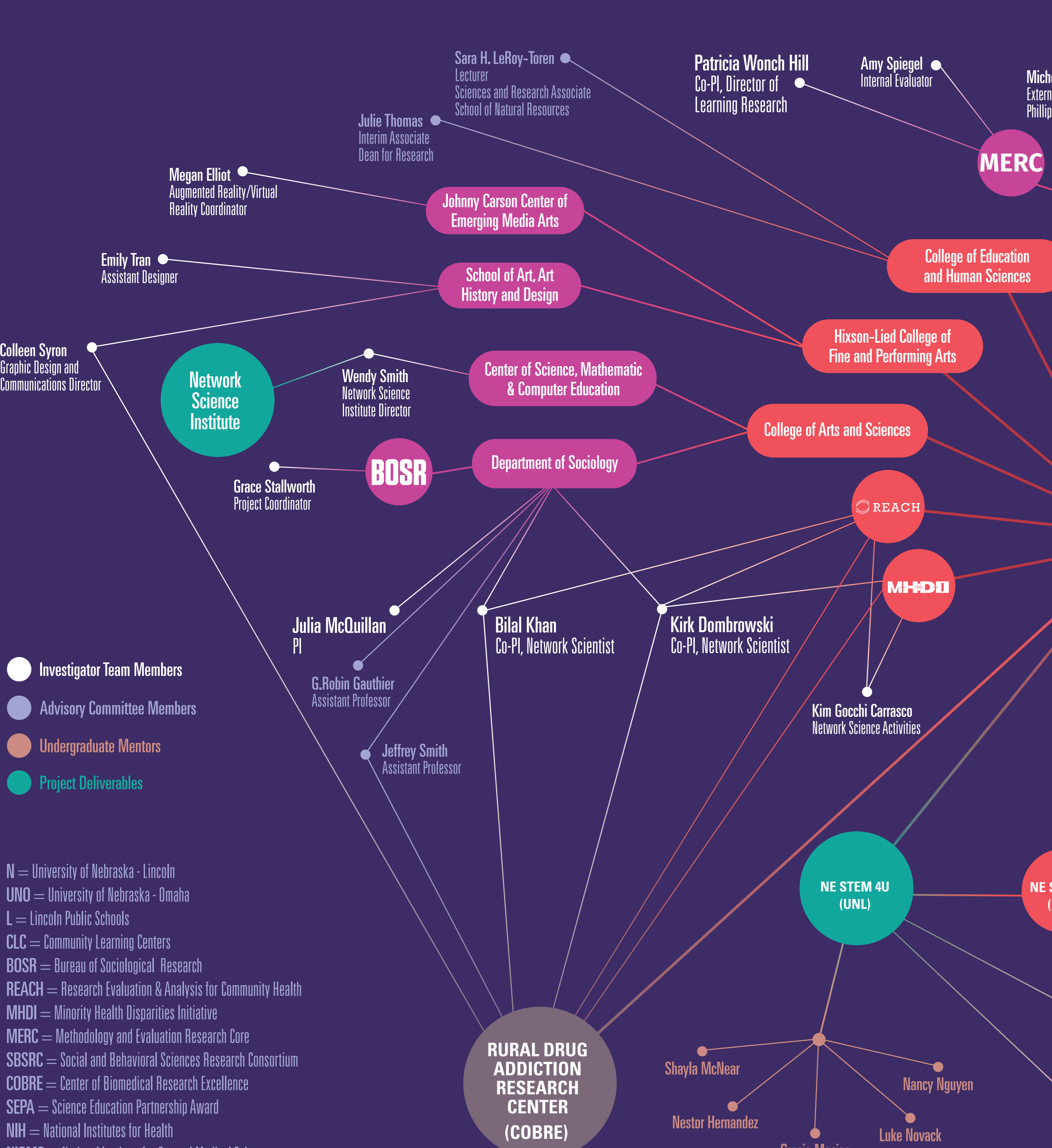
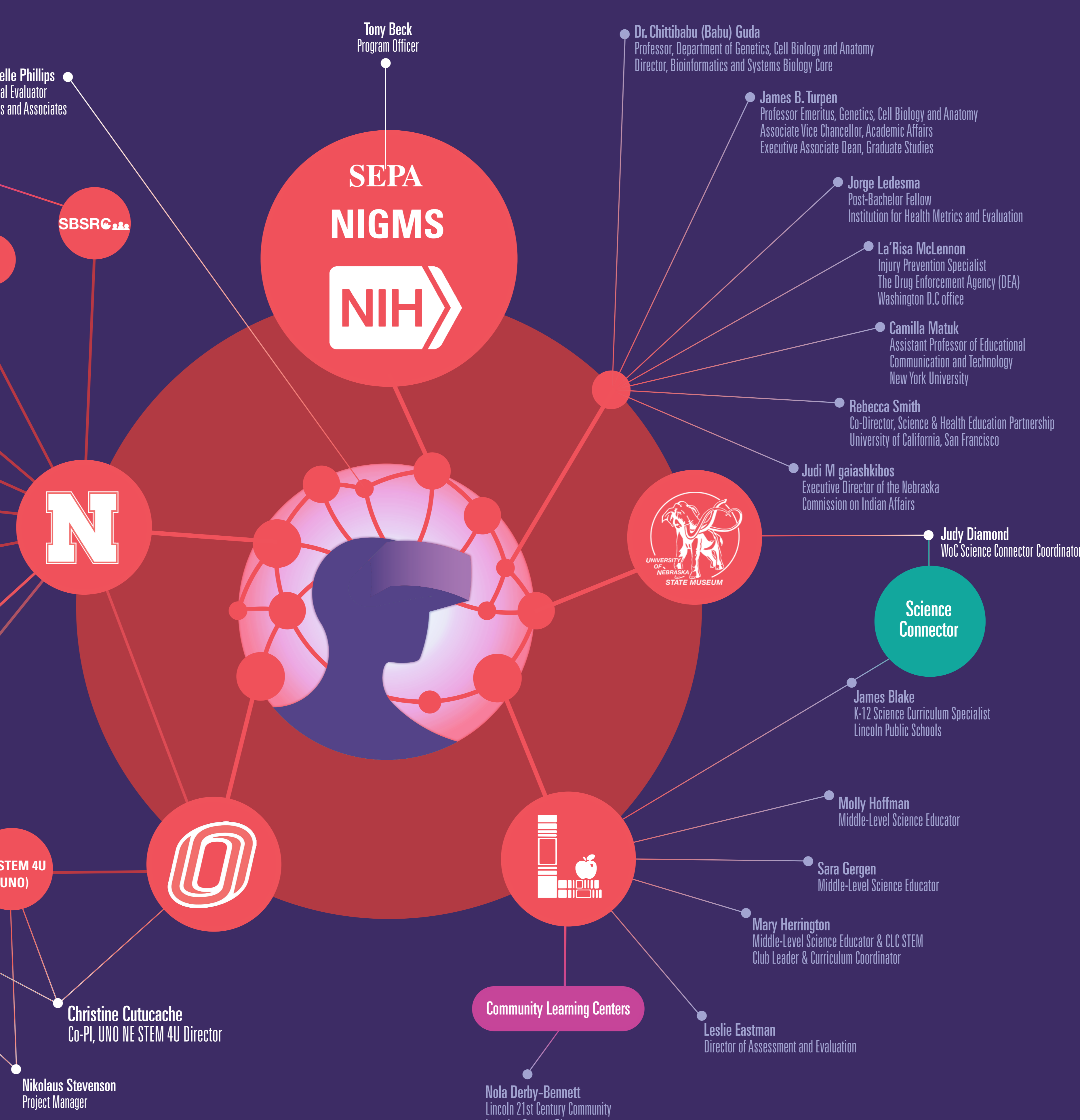
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- Investigator Team Members
- Advisory Committee Members
- Undergraduate Mentors
- Project Deliverables

UN = University of Nebraska - Lincoln
UNO = University of Nebraska - Omaha
L = Lincoln Public Schools
CLC = Community Learning Centers
BOSR = Bureau of Sociological Research
REACH = Research Evaluation & Analysis for Community Health
MHDI = Minority Health Disparities Initiative
MERC = Methodology and Evaluation Research Core
SBSRC = Social and Behavioral Sciences Research Consortium
COBRE = Center of Biomedical Research Excellence
SEPA = Science Education Partnership Award
NIH = National Institutes for Health
NIGMS = National Institute for General Medical Sciences



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