PennState
Huck Institutes of the Life Sciences

HUCK CATALYSIS TRAINING SERIES 2025

INSTITUTES/CENTERS ORGANIZATIONAL STRUCTURE AND GOVERNANCE

PRESENTERS

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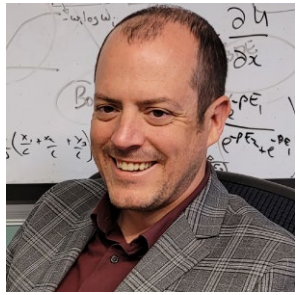
Huck Early Career Chair in Neurobiology & Neural Engineering
Assistant Professor, Department of Biology, Biomedical Engineering, & Pharmacology

Matt Ferrari
Director, Center for Infectious Disease Dynamics, Dorothy Foehr Huck and J. Lloyd Huck Chair in Gobal Health, Eberly College Distinguished Senior Scholar in Global Health, Professor, Department of Biology



Ed O'Brien
Professor of Chemistry
Professor of Computational and Data Sciences
Director, NSF National Synthesis Center for Emergence in the Molecular and Cellular Sciences (NCEMS)

Dipanjan Pan
Dorothy Foehr Huck & J. Lloyd Huck Chair
Professor in Nanomedicine
Professor of Materials Science and Engineering and of Nuclear Engineering

Mauricio Terrones
George A. and Margaret M. Downsbrough Department Head, Department of Physics
Evan Pugh University Professor
Verne M. Willaman Professor of Physics
Director, Center for 2-Dimensional and Layered Materials
Director, NSF-IUCRC ATOMIC

GOAL

- This webinar will equip participants with the roadmap for building new or evolving existing interdisciplinary Institutes/Centers/Consortia with an emphasis on tools and knowledge to design and implement effective organizational structures and governance frameworks.

WHY

- The gained knowledge will be useful to current or future Institute/Center leaders as well as for putting together competitive large-grant proposals for new Institutes, Centers, or Consortia.

KEY TAKEAWAYS

1

Penn State roadmap for initiating new Institutes/Centers/Consortia.

2

Tips on securing buy-in from collaborators and securing funding.

3

Insights from panelists' real-world experiences in leading, revitalizing, or starting new research centers

4

Actionable steps for improving organizational governance practices.

AGENDA

- Speakers Introductions
- Penn State policies, structure, and roadmap for establishing new I/C/Cs
- Panel Discussion
- Q&A and Closing Remarks

WHY GOVERNANCE MATTERS

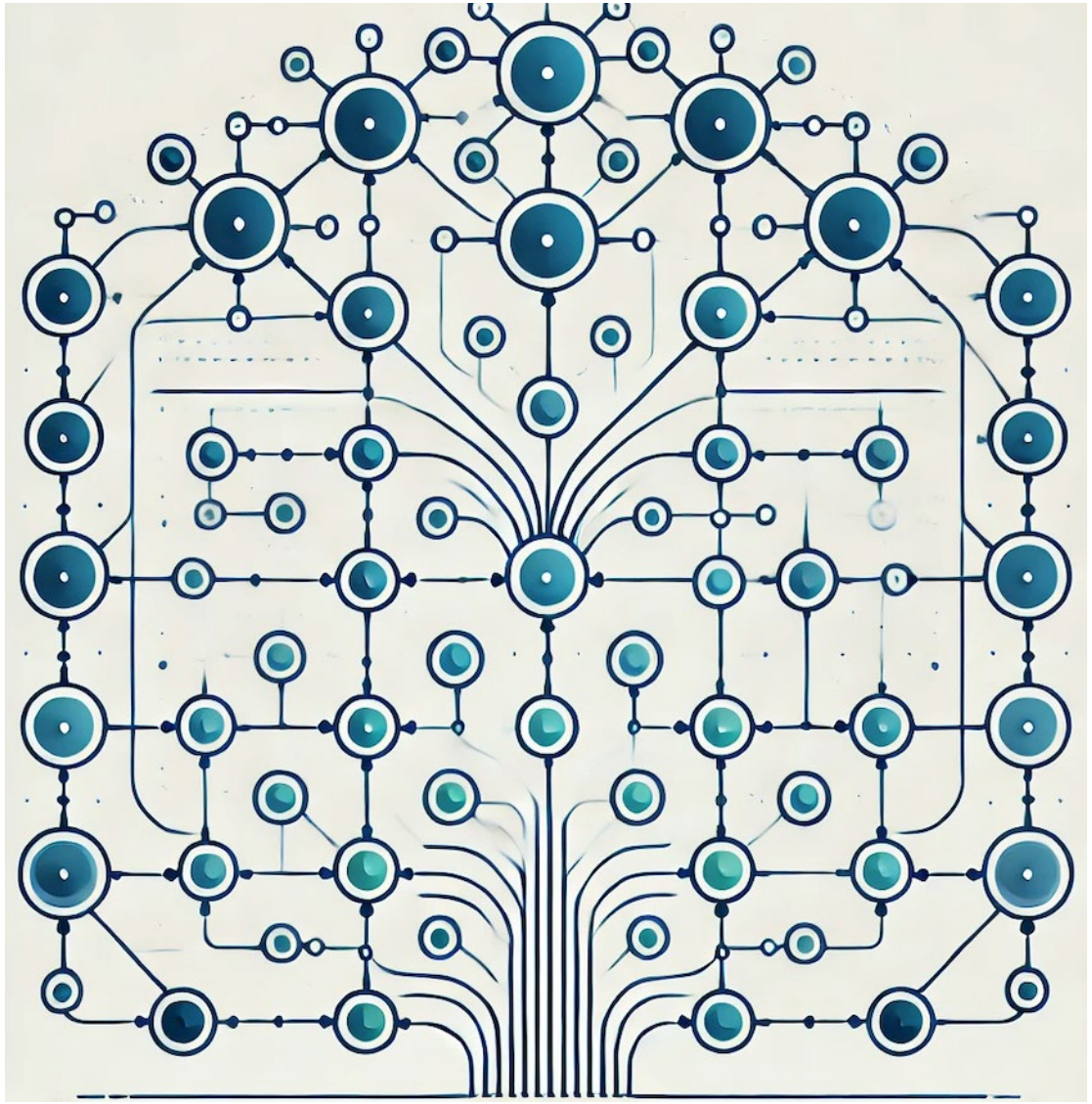
- Ensures clarity in roles and responsibilities
- Facilitates decision-making
- Promotes collaboration, efficiency, allocation of resources, and communication.
- Supports scalability and sustainability (including in leadership)
- Aligns with funder expectations for managing funding for expected ROI.
- Part of the external identity of the unit
- Not only valuable in the academic environment but also in partnerships with industry, government, foundations, etc. (external)

PENN STATE I/C/C ROADMAP

Categories

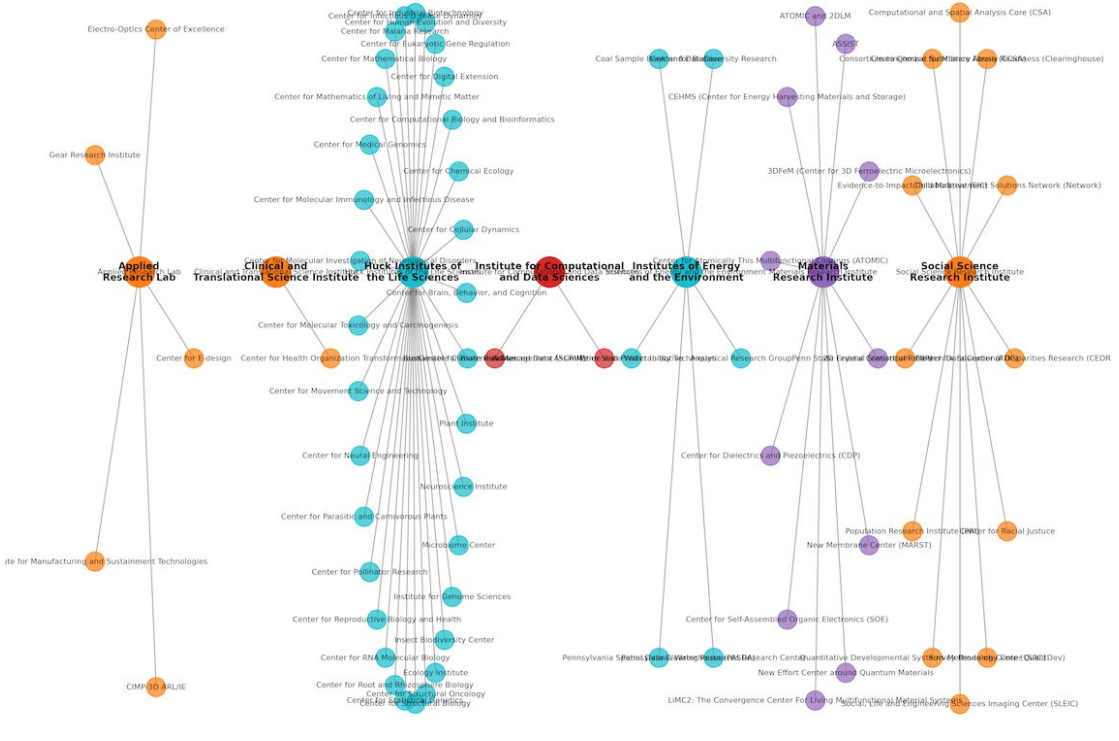
- University level - presidential priority areas (e.g., Cocoziello Institute).
- College level- more focused (e.g., Institute for Sustainable Agricultural, Food, and Environmental Science (SAFES), Dutton Institute).
- Cross-College- multidisciplinary (e.g., the PA Space Grant Consortium).
- Interdisciplinary Research Institutes- interdisciplinary, larger, under OSVPR.
- Externally funded- exempt from RAG05 approval (while funded) - supported by specific unit(s).

Over 300 at Penn State!



COMPLEX CONNECTIONS

REDUNDANCY



OSVPR INSTITUTES

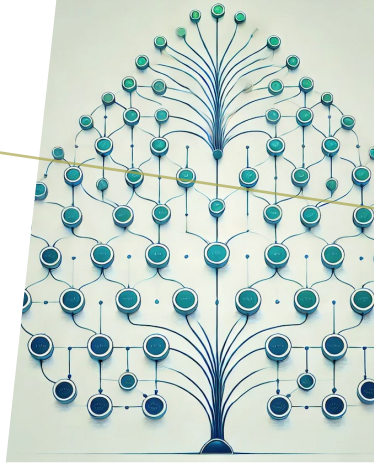
8 Institutes - 70+ Institutes/Centers

- Applied Research Lab
- Clinical and Translational Science Institute
- Huck Institutes of the Life Sciences
- Institute for Computational & Data Science
- Institutes of Energy & the Environment
- Materials Research Institute
- Social Science Research Institute
- PSU Cancer Institute

STEPS TO ESTABLISH A NEW I/C/C

- **Identify a potential area of research excellence-** consider: PSU position in the field, faculty expertise, and already available resources (e.g., core facilities, existent centers).
- Find **a faculty to lead it and a core group** to co-lead- the more, the better. Map all faculty who could contribute to the I/C/C. Reach out and seek their buy-in.
- Put together a **white paper (proposal)**. This should include organizational structure, faculty stakeholders, milestones, sustainability of funding, potential external funding sources and plan to secure funding.
- **Consult with administration-** dean, associate dean for research, institute director/associate director, associate VP for Research/Director of Strategic Initiatives.
- If supported by College/Institute, **advance the proposal-** submit to OSVPR.
- **Get approval-** the SVPR will approve the proposal and forward to the Executive VP and Provost.

COLLEGE I/C/C



- To foster collaboration across existing college organizational boundaries and a***ccelerate the pace of research progress on socially relevant problems*** aligned with the college's mission that require and benefit from multiple perspectives and approaches.
- Expected to facilitate such activities on ***a scope that is beyond what can typically be achieved within a single department.***
- The mission should be ***substantially more focused*** than the collective research mission of any college department.
- Form the focus for ***targeted areas of excellence*** that can promote collaborations across departments, across colleges, across campuses, and across institutions.
- Can also often ***establish valuable research resources*** such as specialized laboratories and ***shared infrastructure and facilities***, and they can ***attract a critical mass of faculty to a specialized area.***
- ***Research focus*** but also encouraged to strategically engage in ***teaching and/or outreach.***

COLLEGE I/C/C LEADERSHIP & FUNDING

- Director is appointed by the dean and will report directly to the associate dean for research.
- A 30% appointment in the center and a 70% appointment in their home department (can vary).
- 2-course (6-credit) release from departmental teaching and the director may also buyout of one additional course (vary).
- Associate directors and assistant directors may be appointed at the center director's discretion-principally motivated by need related to the scope and size of an I/C/C.

College of Health & Human Development example:

HUCK GOVERNANCE STRUCTURE

- Centers and Institutes are led by Directors, appointed typically for a 3 to 5-year renewable term, through a collaborative process involving nomination or external recruitment by members of the Center.
- A public presentation is required and will include an inclusive vision to lead and elevate the community.
- Appointment will be made by the Huck Director in consultation with the Huck Executive committee and C/I faculty.
- Each Center and Institute should have an Executive Committee, typically comprising ~5 or more members that represent the broad interests of the organization and appointed for a defined term by the Director to assist in strategic planning and operational management.

PSU RAG05 policy for establishing Research Institutes, Consortia, and Centers

DEFINITIONS:

Research Institutes should be viewed as the largest of entities with more resources invested in the activities than Consortia or Centers. The activities should be extensive in scale.

Research Consortia should be collectives of two or more (probably more) entities which could include internal units, e.g., colleges and external units, company members, etc. These activities should be extensive in scale and scope.

Research Centers should:

1. have an identifiable focus
2. have on-going funding
3. have funding including multiple grants and contracts; not a single grant
4. engage multiple faculty (more than 2) and graduate students (optimal but not a requirement)
5. have some clearly identified rationale for being established

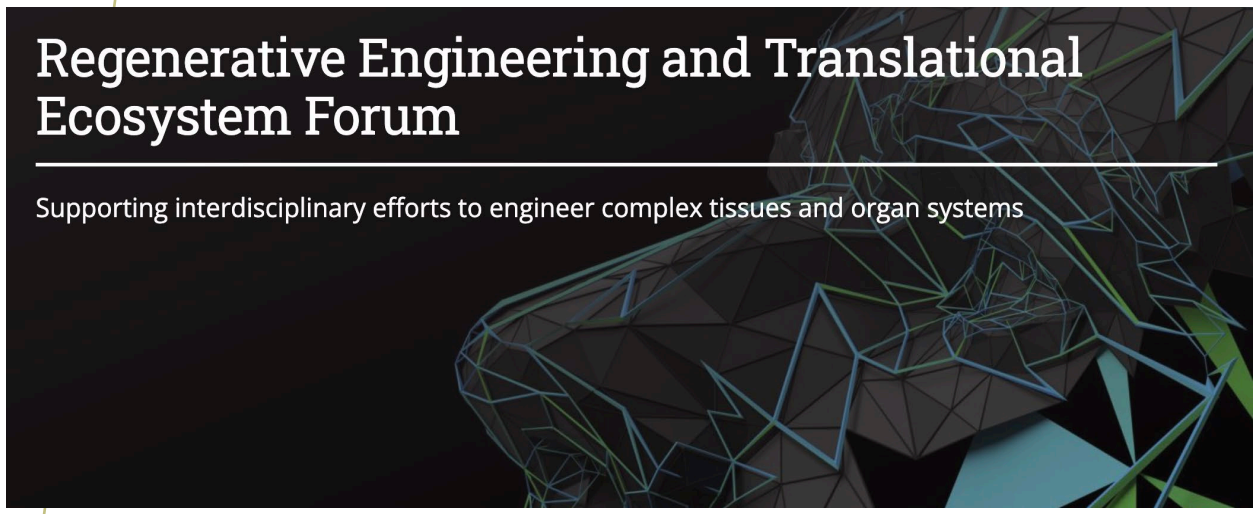
Source: https://policy.psu.edu/policies/rag05

QR to RAG05 policy

PSU APPROVAL PROCESS FOR ESTABLISHING I/C/C

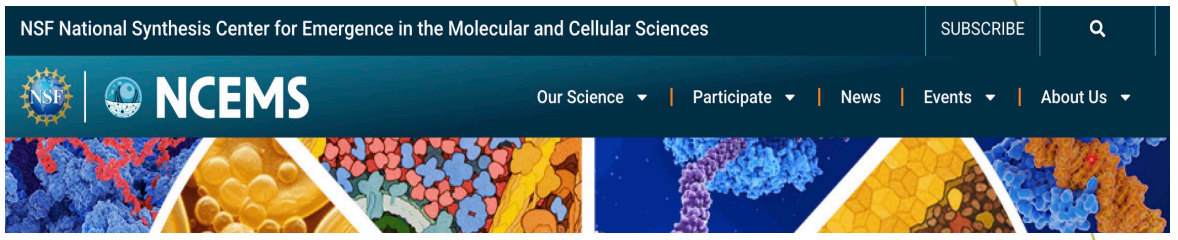
- All institutes, consortia, and center approvals, regardless of whether through a college or at the university level must follow PSU RAG05.
- Request to be sent to OSVPR (Ruth Weber, Doug Wolfe)
- All newly formed research institutes, centers, and consortia should be established with the approval of the Senior Vice President for Research.
- Approvals will be forwarded from the Senior Vice President for Research to the Executive Vice President and Provost.
- Pre-approval involves approvals and support from Deans or Institute Directors.

PILOT INITIATIVES



The Forum for Fast Virus Detection, Surveillance, and Response (VIDARE)

FUNDED INITIATIVES



The Future of Research Administration

The **Skilled Training in Administration and Institutional Research (STAIR)** program is an initiative funded by the National Science Foundation (Award #2419948) that addresses critical gaps in research administration capabilities.

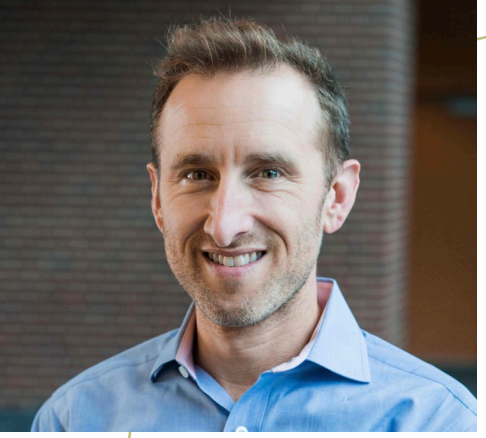
STAIR

Center for Nanoscale Science

MRSEC

NSF

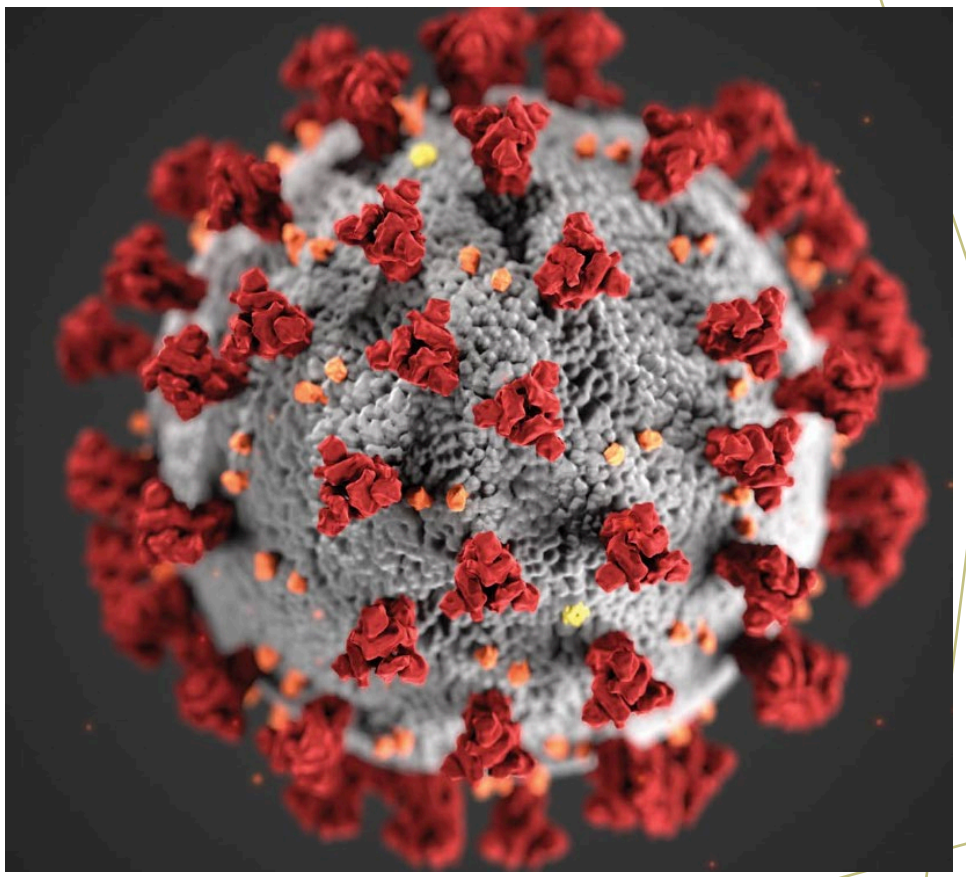
Materials Research Science & Engineering Centers



INTERNAL I/C/C GOVERNANCE & SUSTAINABILITY

PennState
Huck Institutes of the Life Sciences

- Center for Infectious Disease Dynamics (CIDD)



Center Overview

CIDD encompasses expertise in such basic fields as ecology, evolution, mathematical biology and molecular biology as well as applied disciplines including epidemiology, drug development, and vector control. We have partnerships across the globe with academic institutions, health agencies, and industry leaders to help bring its science into translational practice. Trainees in CIDD benefit from developing scientifically in this rich collaborative research environment, informed and shaped by real world practice.

70+ Research Groups engaged globally in **40+ Countries** representing **15 Academic Departments** across **5 Colleges** at Penn State

INTERNAL I/C/C GOVERNANCE & SUSTAINABILITY

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The Neuroscience Institute

The Penn State Neuroscience Institute at University Park is comprised of **over 80 faculty** across over 25 departments, **over 50 graduate students** in both Huck Institutes PhD programs and departmental graduate programs, **staff and postdoctoral fellows. 300+ undergraduate students** conduct research in PSNI labs.

THE NEUROSCIENCE INSTITUTE

> The existence of the Institute as a multi-campus entity offers tremendous opportunity to leverage strengths at the UP and Hershey campuses and foster synergistic interactions that benefit faculty, trainees, and students on either campus.

Krish Sathian
Director, Penn State Neuroscience Institute at the College of Medicine

I/C/C GOVERNANCE & SUSTAINABILITY

"Anyone who has never made a mistake has never tried anything new."

"Everything should be made as simple as possible, but not simpler."

"Great spirits have often encountered violent opposition from weak minds."

Albert Einstein 1879-1955

- **Center for Nanoscale Science**

PennState Materials Research Institute

Mission and Vision

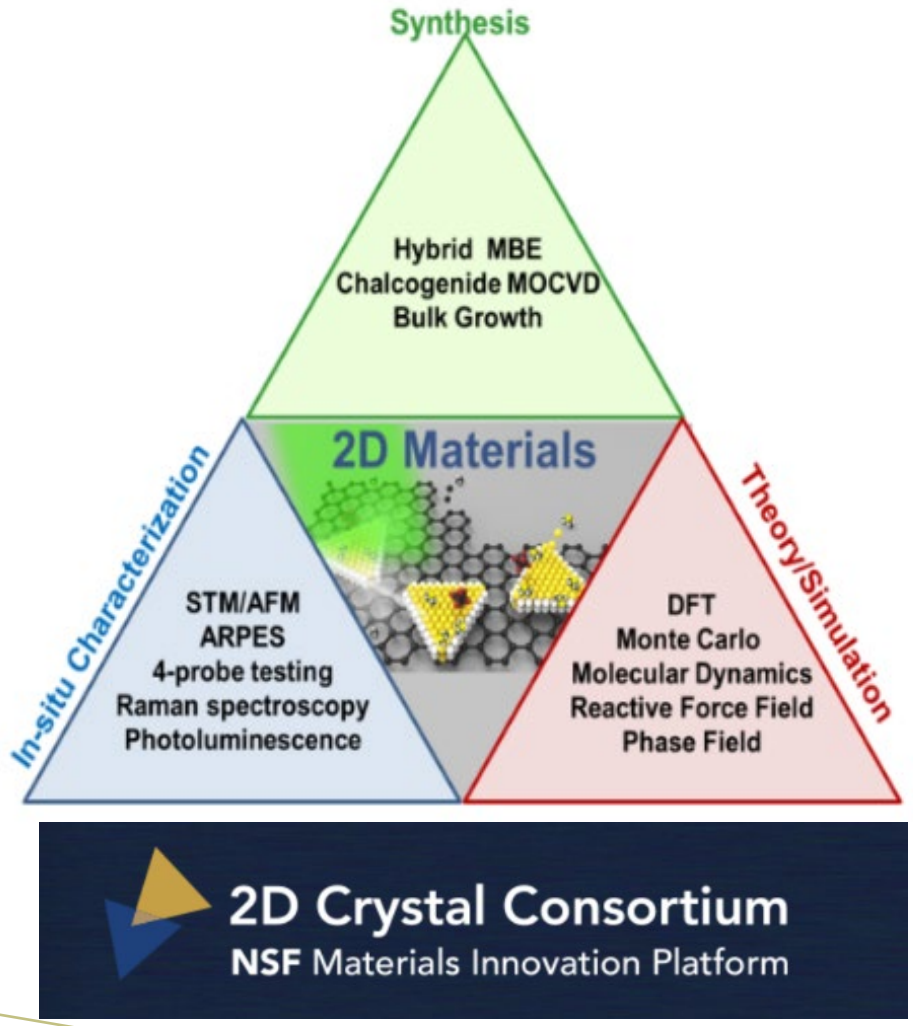
To conduct leading international and multidisciplinary research on 2D layered materials aiming at finding new phenomena and applications, that could be transformed into high impact products. The center offers a unique, vertically integrated research education to graduate and undergraduate students, with extremely valuable components including state-of-the-art infrastructure, and research environment.

ATOMIC Center for Atomically Thin Multifunctional Coatings

2DLM Center for 2-Dimensional and Layered Materials

2D Crystal Consortium NSF Materials Innovation Platform

Two New NSF-Funded Research Centers



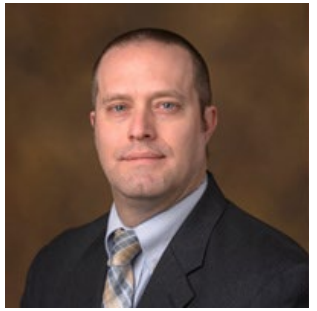
Joan Redwing
Director

Nitin Samarth
Assoc. Director

Vincent Crespi
Theory Lead

Joshua Robinson
Director of User Programs

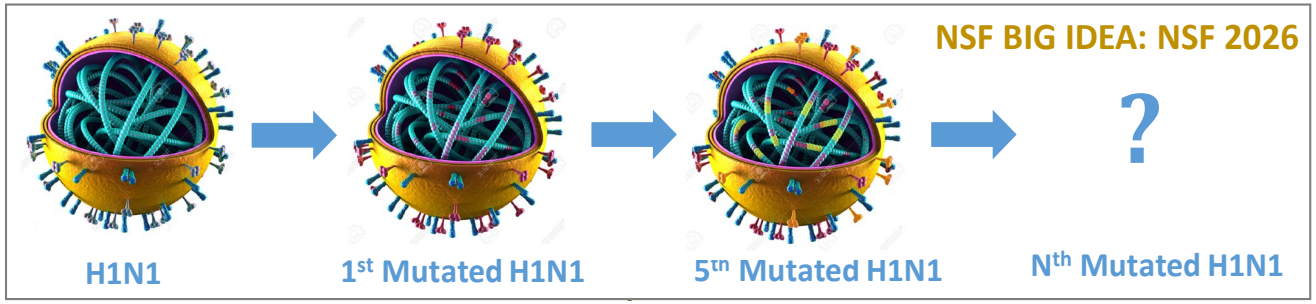
Eric Hudson
Director of Education



Kevin Dressler
Operations Director

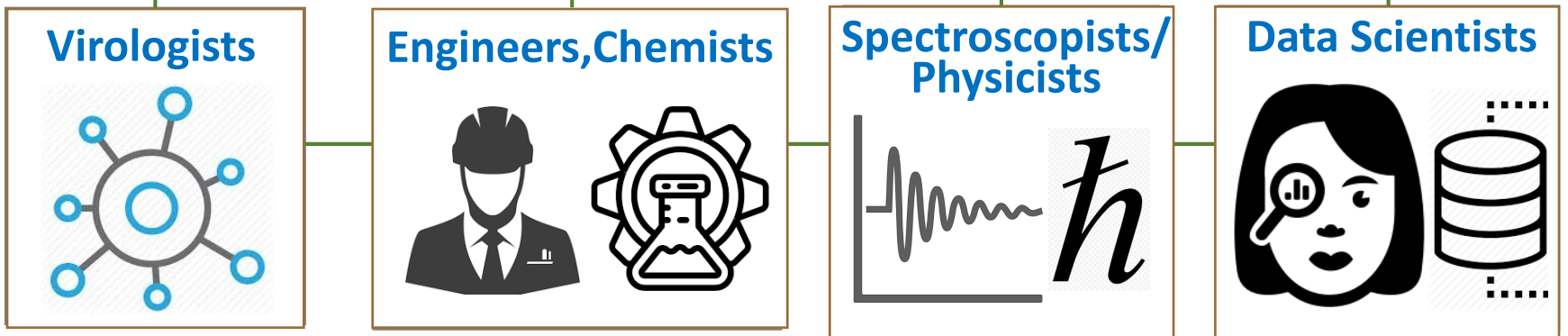
Growing Convergence Grant

Vision: Understanding virus evolution through deep Raman spectroscopy



CONVERGENCE PLATFORM (G5)

NSF BIG IDEA: Rules of Life | NSF BIG IDEA: Convergence | NSF BIG IDEA: Data Rev.



VIRUS MUTATION CONTROL (G1)

VIRUS ENRICHMENT (G2)

RAMAN ENHANCEMENT (G3)

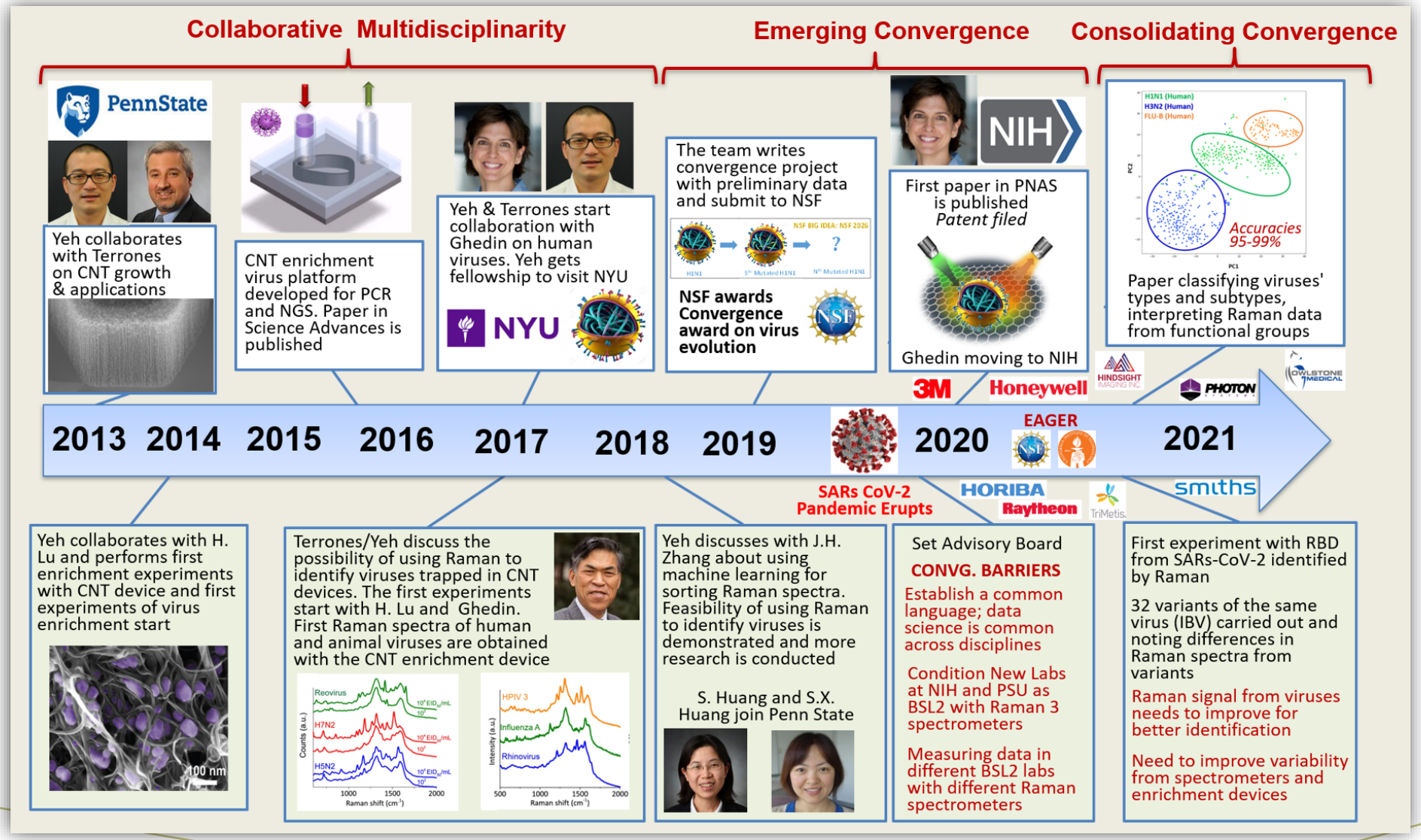
DEEP LEARNING (G4)

PennState NYU NIH National Institutes of Health NSF

NSF Award 1934977

Growing Convergence

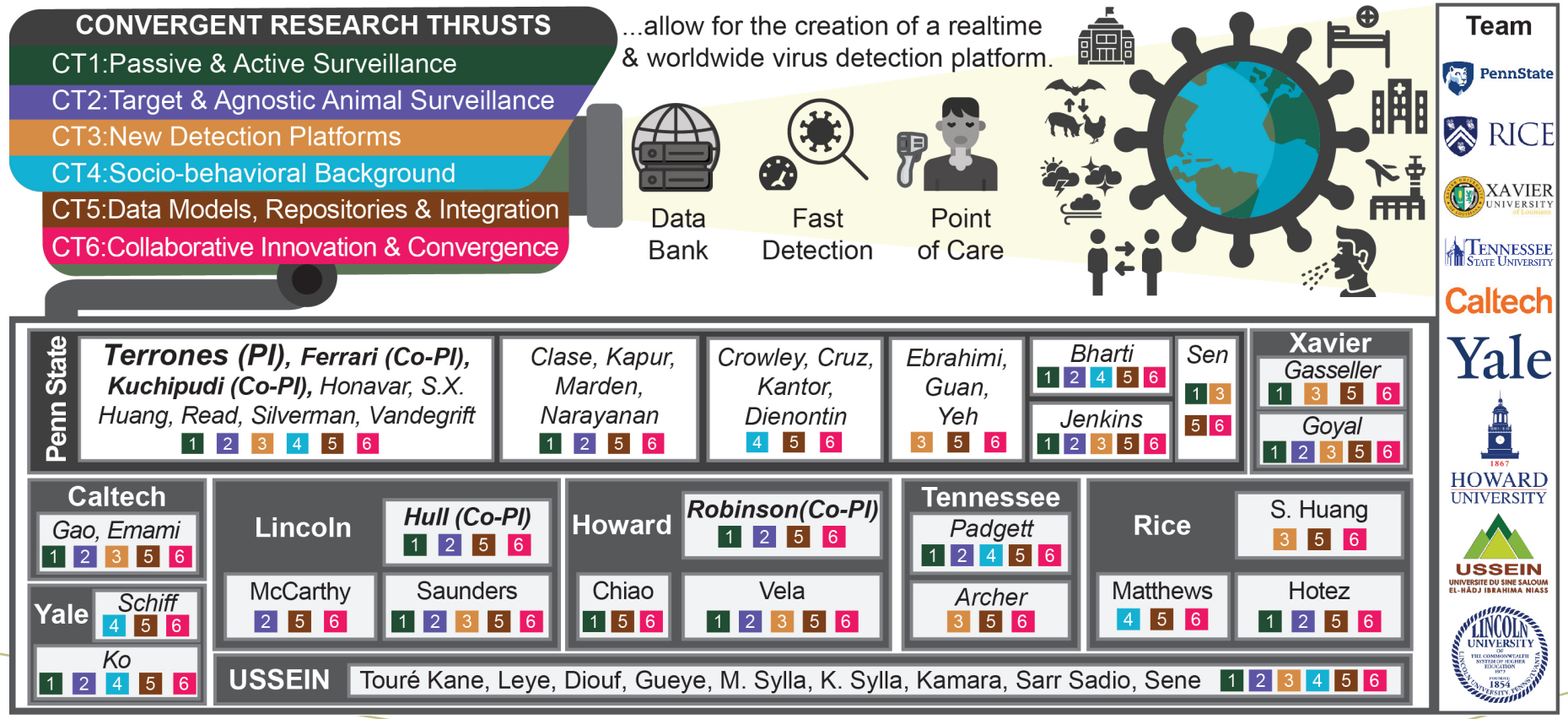
History of our convergence project



Next Steps for Growing Convergence Research: STC on virus surveillance

PennState Huck Institutes of the Life Sciences

PennState Materials Research Institute



Center for Fast Virus Detection, Surveillance and Response (VIDARE)

I/C/C GOVERNANCE & SUSTAINABILITY

NSF National Synthesis Center for Emergence in the Molecular and Cellular Sciences

Community-scale Science.
Data-driven Research.
Transformative Results.

The **U.S. National Science Foundation National Synthesis Center for Emergence in the Molecular and Cellular Sciences (NCEMS)** is catalyzing multidisciplinary scientific teams to synthesize a myriad of publicly available data to answer the most fundamental questions in molecular and cellular biology, stimulating novel questions, answering long-standing mysteries, recruiting diverse talent, and training the next-generation workforce of data savvy scientists.

https://ncems.psu.edu/

EXTERNALLY FUNDED I/C/C

Technology Licensing and Entrepreneurship

- http://KaloCyte.com
- https://www.innsightech.com/
- https://www.rnadiseasediagnostics.com/
- Vitruvian Bio, LLC.
- https://www.dipanjanpanlaboratory.org/

MISSION

Point-of-care diagnostics, Molecular imaging, Drug delivery

To develop next generation translatable technologies to improve human health by uniquely merging 'molecule making' and 'device making', and through innovations in nanomedicine tools.

Translational Nanomedicine from

MOLECULE MAKING to

DEVICE MAKING

CDC Centers for Disease Control and Prevention

DARPA

NSF

NIH NIAID

NIH NIBIB

ARPA-H

American Heart Association

NIH National Heart, Lung, and Blood Institute

CDMRP Department of Defense

KEY TAKEAWAYS

- Centers that prioritize well-defined roles, responsibilities, and communication channels tend to be more sustainable and impactful.
- Creating PSU research Institutes/Centers/Consortia falls under the RAG05 policy and requires OSVPR approvals.
- Long-tenured centers benefit from periodic external reviews and governance refinements.
- Proposal teams should establish governance frameworks during the planning phase to ensure seamless implementation if funded.
- Funders value clear, well-structured governance models, and weak governance plans can be a barrier to funding.
- Successful centers diversify funding sources, establish long-term partnerships, and develop models that persist beyond the initial grant cycle.
- First-time center leaders must balance leadership and learning. Leadership transitions should be planned in advance to ensure continuity.

Q&A

PLEASE LET US KNOW HOW WE DID HERE:

Post-webinar Survey - Institutes/Centers Organizational Structure and Governance Webinar

NEXT TRAINING ON BUDGETING:

Learn more about Huck Catalysis resources:

https://www.huck.psu.edu/seed-funding-large-proposal-catalysis/huck-catalysis