

I. OVERALL INTRODUCTION

A. *This draft plan is being developed to:*

- *enhance the INBRE experience for those participating;*
- *position the participating institutions and researchers in the network and NH-INBRE to be ready for renewal;*
- *develop ideas and programs for the next renewal.*

B. *INBRE Goals and purposes (from NIH INBRE FOA)*

... The purpose of the INBRE program is to augment and strengthen the biomedical research capacity of an IDeA-eligible state. The INBRE program represents a collaborative effort to sponsor research between research intensive institutions and institutes, primarily undergraduate institutions, community colleges, and Tribally Controlled Colleges and Universities (TCCUs), as appropriate.

The primary goals of the INBRE program are to:

- 1) build on the established multi-disciplinary research network with a scientific focus to strengthen the biomedical research expertise and infrastructure of the lead and partner institutions;
- 2) build and increase the research base and capacity by providing support to faculty, postdoctoral fellows and graduate students at the participating institutions;
- 3) provide research opportunities for students from primarily undergraduate institutions, community colleges and TCCUs as appropriate and serve as a "pipeline" for these students to continue in health research careers within IDeA states; and
- 4) enhance science and technology knowledge of the state's workforce.

<https://grants.nih.gov/grants/guide/pa-files/PAR-17-160.html>

Discussions regarding the plan have yielded two proposed levels of ideas/projects: first, for present timeframe consideration, approaches to strengthen NH-INBRE as a program in anticipation of the renewal application, and second, "strategic guidelines" to serve as the groundwork for the development of the NIH renewal application.

C. *Overall considerations*

In considering this plan, it is paramount to realize that within the NH-INBRE network, one size does not fit all. We represent 10 different schools ranging from the lead research institutions to the Community College system. Our goal was to suggest solutions consistent with our vision of the next generation of the NH-INBRE program, but to provide options that could be implemented selectively and/or differentially across the network.

Respectfully submitted,

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II. STRATEGIC PLANNING PROCESSES AND IMPLEMENTATION

A. Introduction

In anticipation of the upcoming renewal process, we propose the following in order to strengthen our network and better position the NH-INBRE for the renewal.

For the present, we suggest the following ideas, united by the theme of enhanced communication:

B. Communication

While communication is not classically considered a strategic area unto itself, improving and developing a strong communication model is essential to the initial buy-in of the plan determining the tactics by which to execute on the strategic planning and the continued implementation of the prioritized strategic approaches across the NH-INBRE network.

1. *Across the network – shared best practices*

Over the past 7 years, a number of relationships have developed across the members of the network, which serve as a critical strength of INBRE. We recommend increased opportunities for a sharing of information across the network to improve up this. Specifically discussing the questions “what works / what doesn’t” and “how do you do that.” Realizing the differences among institutions, and starting from the perspective of “adapt, don’t adopt,” this would help to serve as an idea exchange to help institutions consider new and next steps. Though this discussion, potentially new and creative ideas may emerge.

2. *Metrics for success*

We have collected significant amounts of data about our students, the network and our accomplishments; this needs to be communicated more extensively and consistently to help inform our actions.

3. *Infrastructure enhancement*

If institutions were to share listings of what equipment they might have available, it could provide opportunities for collaboration and interactions among schools.

4. *Bioinformatics*

Continued communication regarding developments in the program, both related to teaching and scholarship, development (of dissemination) of materials that will enhance the excellent workshop experiences and allow students and researchers to continue the work at their home institutions.

5. *Additional communication on potential external grant mechanisms*

Facilitate communication among partners on what potential funding mechanisms are available to faculty.

6. *Central list of major equipment and human resources/expertise available at Partners.*

There are a myriad of resources available to faculty and students as part of the INBRE network. Providing a centralized listing will serve all involved. Developing and maintaining the database will be a shared responsibility.

III. NH-INBRE DRAFT STRATEGIC PLAN 2017-

A. *Introduction*

Strategically, and for the future, we recommend three (3) distinct areas of focus in anticipation of and for inclusion in the renewal, with an indicated highlight in each area:

- **Enhancing Support for Research**
 - Develop new research support mechanisms
- **Enriching Student Training**
 - Collaborate with Industry to enhance student opportunities
- **Enhancing our network**
 - Develop a NH-INBRE *praxis* institute to provide enhanced trainings across the network.

B. *Specific Strategic Recommendations*

1. **Enhancing Support for Research**

Faculty-student research lies at the core of what we have done and will continue to do. Clearly, continuing to fund the types of fully reviewed funding mechanisms, and exploring and expanding other modalities are critical to the renewal effort.

Mechanisms for Research Support

A. **Currently employed research support mechanisms: major mechanisms to be continued without significant modification:**

- Including PI salary support: Full Projects and Pilot Projects
- Use of RSTG funds to support and develop new researchers.

B. **Expanded current mechanism(s)**

Hybrid postdoc teacher/researcher position, as can be arranged, potentially including a somewhat expanded budget line. To encourage wider PUI utilization of this mechanism, highlight, publicize, and trumpet successes of outside recruitments and internal placements.

C. New Mechanisms

These are intended to offer flexibility in two ways: 1) announced but opportunistic timing, relative to the existing major mechanisms, so that mid-year or continuing consideration can be afforded for new mechanism-funded award applications; and 2) although these new mechanisms will largely or entirely, not directly involve salary support for the faculty leader and co-investigators (if any), they will nonetheless provide opportunities for faculty to otherwise support their research programs. The tactical/implementation issues: e.g. the eligibility of previously NH-INBRE-funded faculty, the amount of funds and duration of support, etc, have intentionally not yet been determined. But in any event, these aspects will depend on the specific new mechanism; and for the faculty lead, the track record (if any) of accomplishment during/after any previous funding. These potential new funding mechanisms include, but may not be limited to:

- Seed grants – probably initially one-year awards to start, but potentially renewable, which set researchers up for subsequent project types (think R21).
- Collaborative grants – requiring participation across two institutions, potentially with Dartmouth or UNH participation as well.
- Research “Sabbaticals” at another PUI in the network – to allow work on a project or as an opportunity to learn and develop a new technique. Partners provide salary for faculty member, the network could provide supplies and student support.
- Support as Mentors – to allow senior INBRE faculty who are no longer eligible for project funding to mentor new faculty members.
- Other areas include expanded Nursing opportunities, collaborations with other INBRE’s.

2. Enriching Student Training

The Key is to view New Hampshire as a state with three different training modalities:

- Classroom
- Academic Research Laboratory
- Industry

The first two of which will involve partner to partner collaborative efforts.

Classroom

- Experiences could potentially be shared experiences through “crowd sourced” experimental data across institutions.
- A mode of sharing available equipment that might facilitate enhanced instruction – microscopy, Q-PCR...
- Examine ways to teach missing skills as a collaborative endeavor – especially for upper level students.
- Bioinformatics

Academic Research Laboratory

- Research (i.e. open ended) laboratory experiments model research behavior
- Bring experimental questions
- Look to see if students can move across institutions in the summer or contribute to research projects at other institutions while still at their home institution in order to gain new experiences – see Praxis Institute below
- Bioinformatics – collaboration/engagement with UNH Core.

Industry

Develop and expand academic-year/ summer internship programs to provide experiences in industrial settings

- Look to see if NHIRC might be of assistance for setting up sites
- Look to develop private partnerships between INBRE and those in need of a highly trained workforce.
 - Consider collaboration with the Advanced Regenerative Manufacturing Institute (ARMI.)

3. Enhancing our network

- January term/Summer *praxis* institute -
 - bring missing trainings to the network. Based on survey information from graduates, what are they missing? Could be provided at one or several sites, or remotely.
 - Expanded safety offerings to bring students what they are missing
- Look for synergies with EPSCoR and other NH institutions, potentially supporting the Advanced Regenerative Manufacturing Institute (ARMI).
- Engage state government to work to support INBRE and enhance opportunities