CPI Subcommittee 3 –Improving Core Labs and Resources

Purpose of this subcommittee:

-- What are the barriers to improving core labs and resources?

-- How do we overcome barriers to improve success of core labs?

NIH Definition of Core Facilities

• Core facilities are centralized shared research resources that provide access to instruments, technologies, services, as well as expert consultation and other services to scientific and clinical investigators.

• A core facility can share similar operating principles with other service (or recharge) centers, which may also provide resources necessary to support the research objectives of an institution.

• Institutions may determine that establishing a core facility is appropriate to address required services based on a variety of expected advantages. **Accordingly, these facilities can take many forms to address institution needs and objectives.**

• Core facilities may be fiscally supported by institutional funds, federal funds, external revenue, other funding, or any combination of these.

Definition of Core Facilities

• TAMU definition of core facilities and which facilities should we be paying attention to.
  -- https://tamu.corefacilities.org/
  -- Widely used facilities serving multiple users across campus verses smaller facilities.
  -- Focus on larger facilities
    -- Also, need to include smaller facilities (how small?)

• TAMU principles and additional considerations in defining core facilities
  -- Self sustaining
  -- Shared responsibility, University, College/s, Department/s, and PIs
  -- Participation in the iLab program will be part of the definition/requirement for University core
  -- Benefits of talking to an expert, method development, analytical innovation
    - Strict fee for service

Challenges to be Addressed

• **Should computing/IT be treated as a core?**
  -- High performance computing and data storage → Big important University core function
  -- Include networking and IT in discussion
  -- Strong connection to Genomic Cores (proteomics) and research
  -- Push towards centralized computing
  -- Significant IT resources
  -- Large datasets, data storage and data protection are integral to discussion
    - Research compliance issues are also part of the issue
  -- Role/impact of Big Data initiatives
  -- Support usually from indirect

  General consensus is that computing/IT issues are an integral part of the research enterprise but also central to overall University mission.
  E.g. leaning towards argument that it be not be treated as a core research core facility
    Should be its own separate discussion as part of several IT committees

Challenges to be Addressed

- **University wide Facilities**
  - Genomic sequencing as an example. There are multiple genomic sequencing facilities; Are they integrated? Should they be?
    - Link to high performance computing can be required to make full use of the genomic facilities.
    - Instrumentation required, how long before instruments become obsolete? Benefits from seed grants (RDF)
      - → Is it more cost effective to invest in off-campus analytical facilities.

    - Facilities can improve students/post-doc training

  - Virtual Core Facilities: Example Mass Spectrometry Core Facilities

- **Outsourcing analytical services verses building/maintain on campus facilities; cost effectiveness.**
  Example North Texas Genome Center (https://northtexasgenomecenter.com/)

Challenges to be Addressed

- **Technician support**
  -- Long term support is an central issue to address. RDF and other funding has allowed for the purchase of expensive equipment that require expert technical support.
  -- Service contract cost
  - Collective bargaining power?

  - ***Potentially being addressed in part by RDF***

Challenges to be Addressed

- **Graduate education**
  -- Hands on experience and training.
  -- No one to do training as educational benefits are not typically incorporated into the cost of doing business.
  -- No or limited technician support for those who are typically doing a lot of the training.

Challenges to be Addressed

- **Suggestions for addressing the challenges**
  -- Mechanism for review of existing core facilities.
    - Are the facilities servicing local needs?
    - Cost, turn around times, training……
  -- Reviews of facilities would better inform continued University support.
  -- What are the alternatives to local facilities?
  -- Establish Internal committee to review cores?
  -- Use an external advisory committee?
  -- Develop guidelines for core reviews to determine impact.

Subcommittee Members

- Kayla Bayless (Medicine)
- Mike Hall (Science)
- Brendan Roark (GEOS)
- Lee Tarpley (AgriLife Research)
- Candice Brinkmeyer-Langford (CVM)
- Craig Carpenter (AgriLife Extension)
- Christian Hilty (Science)
- Steve Maren
- Alexei Safonov (Science)
- Davis Stelly (COALS)
- Aaron Tarone (COALS)

Please email questions, comments and any additional input to Brendan Roark (broark@geos.tamu.edu) for inclusion into draft white paper.