GLOBAL RESEARCH INFRASTRUCTURES

GSO

International Collaboration Good Practice Framework Group of Senior Officials (GSO)

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About the Group of Senior Officials (GSO)

- 2008 - G8 Science Ministers agreed to explore international collaboration for Global Research Infrastructures (GRI)
  - Too expensive to “go it alone”
  - Maximize scientific & societal benefits
  - Minimize overlap and duplication
- 2011 - Group of Senior Officials established
  - Ministry or funding agency representatives initially from: Canada, France, Germany, Italy, Japan, Russia, United Kingdom, United States with a European Commission secretariat
  - Widened to: Australia, Brazil, China, India, Mexico, and South Africa

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About the Group of Senior Officials (GSO)

- 2013 – Framework endorsed by G7 Science Ministers encouraging:
  - Promotion of international collaboration particularly in addressing Global Challenges
  - Sharing information on priorities and prioritization
- 2017 – G7 Science Ministers acknowledged GSO's progress
  - Testing and refining the principles and exploring opportunities to further open GRIs to international partners

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https://ec.europa.eu/research/infrastructures/?pg=gso

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Mechanisms Used for Collaboration

- GSO Framework
  - 14 key principles of “good practice”
  - Merit-based access, open data policies, international mobility, socio-economic impact, etc.
- Global Research Infrastructures
  - Match-making exercise to accelerate partnerships
  - Identified 52 Research Infrastructures open to greater global cooperation
    - 11 Internationally based
    - 41 Nationally based
- Sharing knowledge and collaboration
  - Encouraging alignment with the Framework through real-world examples (case studies)
  - Inform Framework refinement effort by the GSO
  - Match-making now embedded in case study process

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Challenges Faced

- Differing national priorities and goals
- Diverse languages and lexicon
- Varied styles
  - Different approaches to national decision-making
  - Developing a “formal” agreement mechanism within a voluntary model
- Full participation and buy-in by all GSO members
- Making the “value add” real and apparent
- **Visibility** – no dedicated resource to champion and promote

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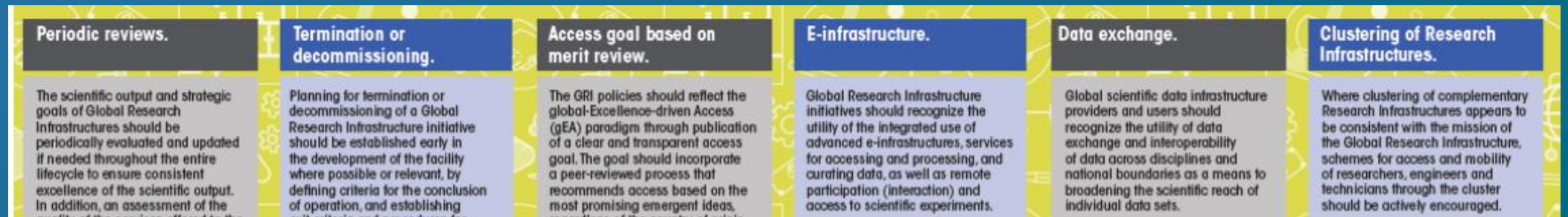
Success stories and things that work

- Increased GRI participation by showcasing alignment
- Greater GRI collaborations
  - Underground Laboratories, Mouse Phenotype Consortium, Global Ecological Observatory Network (GERI)
- Benefits to GRI and Science Users
  - Enhanced operations at national facilities using internationally recognized good practices
  - Augmented community-based international collaboration in identifying potential partners
  - **Reciprocal treatment** on areas such as data, access, etc.



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Next Steps

- Continue refining the Framework
- Increase transparency of the GSO's work
- Promote voluntary GRI alignment with the Framework

As a national RI or a GRI, how do you align with Framework?
How can you become more closely aligned?

Questions?

Back-up Slides

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GSO Framework Criteria

- Core purpose of the Infrastructure
- Partnership
- Scope/Schedule/Cost
- Project Management
- Funding
- Reviews
- Termination

- Global-Excellence-Driven-Access
- **E-infrastructure (11th GSO)**
- **Data exchange (11th GSO)**
- Clustering of Research Infrastructures
- International Mobility
- **Technology Transfer & IP (11th GSO)**
- Monitoring Socio-economic Impact

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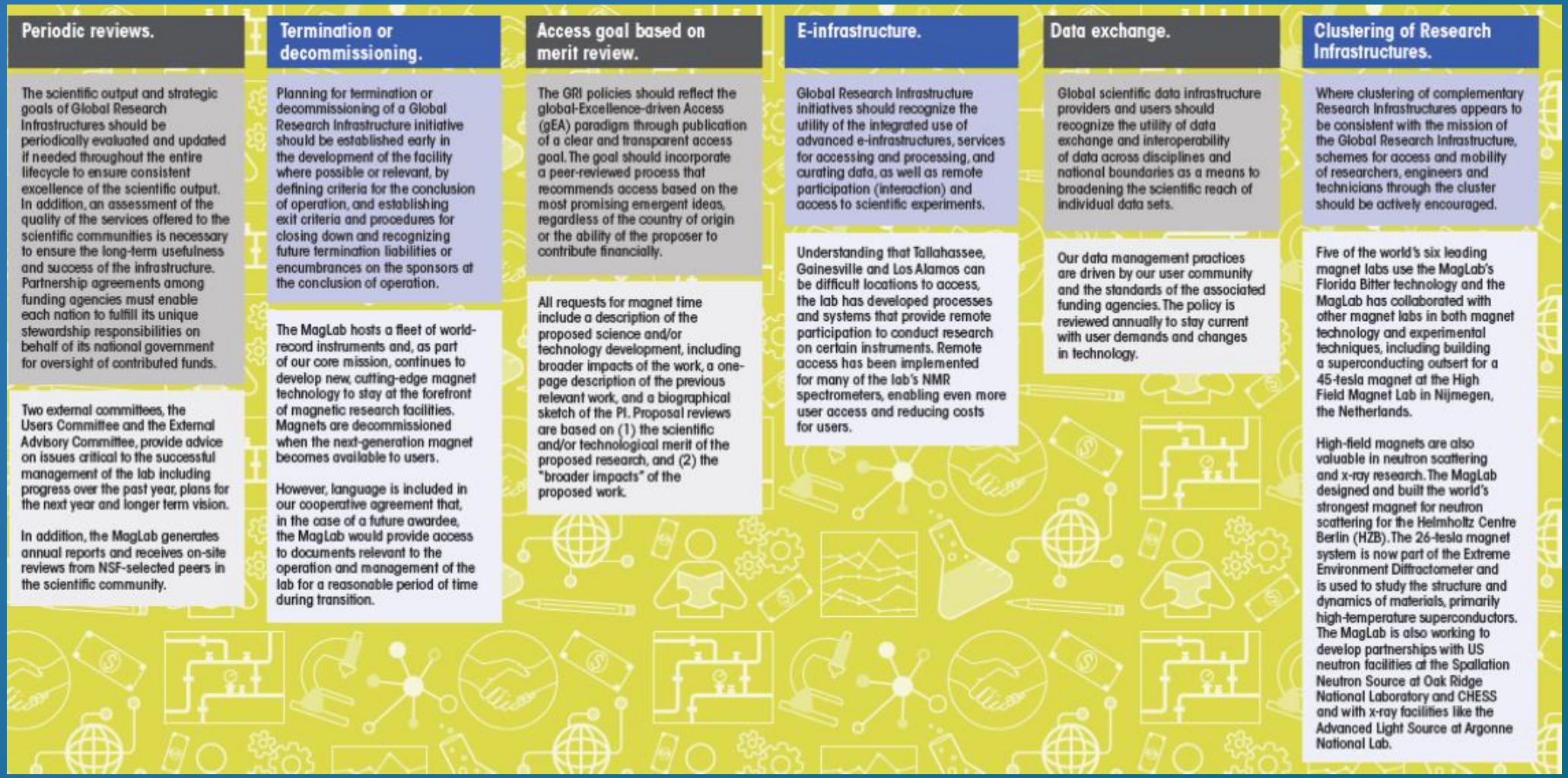
Showcasing Alignment



Periodic reviews.

The scientific output and strategic goals of Global Research Infrastructures should be periodically evaluated and updated if needed throughout the entire lifecycle to ensure consistent excellence of the scientific output. In addition, an assessment of the quality of the services offered to the scientific communities is necessary to ensure the long-term usefulness and success of the infrastructure. Partnership agreements among funding agencies must enable each nation to fulfill its unique stewardship responsibilities on behalf of its national government for oversight of contributed funds.

Two external committees, the Users Committee and the External Advisory Committee, provide advice on issues critical to the successful management of the lab including progress over the past year, plans for the next year and longer term vision.

In addition, the MagLab generates annual reports and receives on-site reviews from NSF-selected peers in the scientific community.

Termination or decommissioning.

Planning for termination or decommissioning of a Global Research Infrastructure initiative should be established early in the development of the facility where possible or relevant, by defining criteria for the conclusion of operation, and establishing exit criteria and procedures for closing down and recognizing future termination liabilities or encumbrances on the sponsors at the conclusion of operation.

The MagLab hosts a fleet of world-record instruments and, as part of our core mission, continues to develop new, cutting-edge magnet technology to stay at the forefront of magnetic research facilities. Magnets are decommissioned when the next-generation magnet becomes available to users.

However, language is included in our cooperative agreement that, in the case of a future awardee, the MagLab would provide access to documents relevant to the operation and management of the lab for a reasonable period of time during transition.

Access goal based on merit review.

The GRI policies should reflect the global-Excellence-driven Access (gEA) paradigm through publication of a clear and transparent access goal. The goal should incorporate a peer-reviewed process that recommends access based on the most promising emergent ideas, regardless of the country of origin or the ability of the proposer to contribute financially.

All requests for magnet time include a description of the proposed science and/or technology development, including broader impacts of the work, a one-page description of the previous relevant work, and a biographical sketch of the PI. Proposal reviews are based on (1) the scientific and/or technological merit of the proposed research, and (2) the "broader impacts" of the proposed work.

E-infrastructure.

Global Research Infrastructure initiatives should recognize the utility of the integrated use of advanced e-infrastructures, services for accessing and processing, and curating data, as well as remote participation (interaction) and access to scientific experiments.

Understanding that Tallahassee, Gainesville and Los Alamos can be difficult locations to access, the lab has developed processes and systems that provide remote participation to conduct research on certain instruments. Remote access has been implemented for many of the lab's NMR spectrometers, enabling even more user access and reducing costs for users.

Data exchange.

Global scientific data infrastructure providers and users should recognize the utility of data exchange and interoperability of data across disciplines and national boundaries as a means to broadening the scientific reach of individual data sets.

Our data management practices are driven by our user community and the standards of the associated funding agencies. The policy is reviewed annually to stay current with user demands and changes in technology.

Clustering of Research Infrastructures.

Where clustering of complementary Research Infrastructures appears to be consistent with the mission of the Global Research Infrastructure, schemes for access and mobility of researchers, engineers and technicians through the cluster should be actively encouraged.

Five of the world's six leading magnet labs use the MagLab's Florida Bitter technology and the MagLab has collaborated with other magnet labs in both magnet technology and experimental techniques, including building a superconducting outsert for a 45-tesla magnet at the High Field Magnet Lab in Nijmegen, the Netherlands.

High-field magnets are also valuable in neutron scattering and x-ray research. The MagLab designed and built the world's strongest magnet for neutron scattering for the Helmholtz Centre Berlin (HZB). The 26-tesla magnet system is now part of the Extreme Environment Diffractometer and is used to study the structure and dynamics of materials, primarily high-temperature superconductors. The MagLab is also working to develop partnerships with US neutron facilities at the Spallation Neutron Source at Oak Ridge National Laboratory and CHESS and with x-ray facilities like the Advanced Light Source at Argonne National Lab.