

REPORT TO THE BIOLOGICAL AND ENVIRONMENTAL RESEARCH ADVISORY COMMITTEE (BERAC)

**THE COMMITTEE OF VISITORS FOR THE REVIEW OF THE BIOLOGICAL
SYSTEMS SCIENCE DIVISION**

Review of Fiscal Years 2017, 2018, 2019, and 2020

Steven D. Allison, COV Chair

COV process

- 16 COV members, diverse across many dimensions
 - 11 BER-funded
 - 7 academics, 4 national lab
 - 3 previously served on COV
- Met July 27-29, 2021, via Zoom
- 3 subcommittees, each with a chair
 - FOA-funded programs (including BRC vice-chair)
 - National lab programs
 - Enabling capabilities

Bottom Line Up Front

- Portfolio is broad and generates many high-impact outcomes on the biological processes underpinning energy security
- Processes for reviewing and monitoring projects are good to excellent across the board
- FOA process sets the “gold standard”
- Higher complexity of national lab programs and enabling capabilities make standardization and transparency more challenging
- DOE needs to define its strategic mission in relation to DEI, community engagement, and workforce development

High-level recommendations

- Increase program office staffing to match portfolio needs and scope
- Implement policies, programs, and practices to support DEI
- Clarify the expectations and review criteria for education and outreach activities in BSSD projects
- Develop consistent metrics to evaluate project outputs and impacts
- Have mechanisms in place to make transparent decisions when opportunities arise suddenly
- Clarify merit review and eligibility criteria across programs
- Clarify/implement scoring rubrics for specific merit review criteria
- Create ways to export and scale up early-stage technology
- Continue providing guidance on JGI's program scope and direction

COV logistical recommendations

- Develop a single “README” COV reviewer guide
- Continue to improve organization of review materials
- Provide more background info in advance
- Develop and provide to COV metrics of long-term program impacts (e.g., citations per year, per \$\$)

Program office staffing

- Add up to 3 more program managers and one administrator
 - Expanded program scope and management need in Bioenergy
 - Support DEI efforts
- Reduce stress by getting timely budget guidance from the agency
- Provide resources for conference travel and time to engage with scientific outcomes of the portfolio

Community engagement and outreach

- DOE is often perceived as somewhat insular
- Provide training workshops on BSSD grant opportunities and proposal preparation
- Clarify the expectations for education and outreach in funded projects
- Increase the diversity and breadth of researchers applying for funding
- Consider requiring proposals and progress reports to address human resource development and community engagement

Overall review process

- Need more transparency in the process for standing up new enabling capabilities
- Develop fair, evidence-based process for sunseting large projects
- Make sure reviewers can see prior reviews
- Reward complementarity, quality, and service in user facilities

Portfolio balance and coordination

- Excellent coordination within BSSD
- Develop metrics to assess and compare impact of portfolio elements
- Consider new programs to bridge BSSD and EESSD
- Develop outreach and workshops targeted at cross-program integration

Diversity, equity, inclusion

- Collect anonymized demographic data for reviewers, PIs, and participants
- Implement best practices developed for other agencies/institutions
- Consult with experts to help with implementation
- Enact specific policies (e.g., on sexual misconduct)

FOA-supported programs

- Standardize review forms and sub-questions under different merit review criteria
 - Individual scoring for each criterion
- Require plans for scaling up FOA-funded technology
- Consider more stringent pre-application screening
- Create opportunities for early-career investigators (e.g., fellowships)
- Increase visibility of FOA programs (e.g., conference workshops)
- Improved/standardized biosafety requirements in proposals
- More intentional use of the “open call”
- Develop post-award assessment metrics for high risk/high reward projects

Bioenergy Research Centers

- Provide more structure and guidance to BRC reviewers
- Clarify education and outreach requirements
- Separate evaluation of new and renewal proposals
- Develop a planning grant and proposal preparation workshop program

National Laboratory Programs

- Provide consistent and specific information about review criteria in every funding call (including for pre-applications)
- Include justification for Lab-only eligibility
- Elevate annual PI meetings as a venue for assessing Lab Projects
- Require a sustainability/scaling plan for technology-focused projects
- Improve clarity and transparency on decisions to fund pilot SFAs

Enabling capabilities

- Improve standardization and transparency when establishing large new programs
- Have a process in place for when sudden opportunities arise
- More structured processes for community input and peer review of new opportunities
- Develop metrics of success for large, complex programs and facilities
- Consider new locations for CryoEM facilities
- More active oversight of JGI priorities, scope, and impact
- KBase: sub-panels for scientific and computational merit; track usage of individual widgets
- Strategize on how to invite proposals for new capabilities/facilities
- Coordinate user support during upgrades of APS-U and ALS-U

Thank you!

Questions?