Review of Bioengineering Grant Applications in the Center for Scientific Review, 2005.

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Review of bioengineering grant applications, update 2005

- Expanded review criteria
- BECON applications: BRP, BRG and EBRG.
- CSR Integrated Review Groups (IRGs): Clusters of study sections that review majority of bioengineering applications.
- Renewal applications

PHS 398 Grant Application Form (September 2004 revision)

Expanded Review Criteria:

Translational Research

Team Research

Clinical Research

- **Significance:** Does this study address an important problem? If the aims of the application are achieved, how will scientific knowledge **or *clinical practice*** be advanced? What will be the effect of these studies on the concepts**,** methods**,** ***technologies, treatments, services, or preventative interventions*** that drive this field?

- **Approach:** Are the conceptual ***or clinical*** framework, design**,** methods, and analyses adequately developed, well integrated, ***well reasoned*****,** and appropriate to the aims of the project? Does the applicant acknowledge potential problem areas and consider alternative tactics?

- **Innovation:** ***Is the project original and innovative? For example: Does the project challenge existing paradigms or clinical practice; address an innovative hypothesis or critical barrier to progress in the field? Does the project develop or employ novel concepts, approaches, methodologies, tools, or technologies for this area?***

- **Investigators:** ***Are*** the investigator**s** appropriately trained and well suited to carry out this work? Is the work proposed appropriate to the experience level of the principal investigator and other researchers? ***Does the investigative team bring complementary and integrated expertise to the project (if applicable)?***

- **Environment:** Does the scientific environment in which the work will be done contribute to the probability of success? Do the proposed ***studies benefit from*** unique features of the scientific environment**, *or subject populations*,** or employ useful collaborative arrangements? Is there evidence of institutional support?

- **OVERALL EVALUATION:** In one paragraph, briefly summarize the most important points of the Critique, addressing the strengths and weaknesses of the application in terms of the five review criteria. Recommend a score reflecting the overall impact of the project on the field, weighting the review criteria, as you feel appropriate for each application. An application does not need to be strong in all categories to be judged likely to have a major scientific impact and, thus, deserve a high merit rating. For example, an investigator may propose to carry out important work that by its nature is not innovative, but is essential to move a field forward ***or improve clinical decisions or outcomes*****.**

Bioengineering Applications

- BRP, 1999, -40 page plan, 2-5yr
- BRG, 1999, -25 page plan
- EBRG, 2003, 15 page plan, 2yr

Review of Bioengineering Applications:

- BRP: Special emphasis panels (SEP)
- BRG: Standing study sections or SEP
- EBRG: Standing study sections or SEP

Review of Bioengineering Applications in CSR

- Bioengineering Sciences & Technologies IRG (BST), Sally Amero, Chief
- Surgical Sciences, Biomedical Imaging & Bioengineering IRG (SBIB), Eileen Bradley, Chief
- Musculoskeletal, Oral & Skin Sciences IRG (MOSS), Daniel McDonald, Chief
- Other, organ specific, IRGs (e.g. CVS,BDCN)

Bioengineering Sciences and Technologies IRG [BST]

- BST IRG reviews applications that focus on fundamental aspects of bioengineering and technology development:
- Gene and Drug Delivery Systems Study Section [GDD]
- Microscopic Imaging Study Section [MI]
- Modeling and Analysis of Biological Systems [MABS]
- Biodata Management and Analysis Study Section [BDMA]
- Instrumentation and Systems Development [ISD]
- Biomaterials and Biointerfaces Study Section [BMBI]

Surgical Sciences,Biomedical Imaging &Bioengineering IRG

- SBIB IRG reviews applications that address topics at the interface between a physical science or engineering and biomedical or clinical research.
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- Biomedical Imaging Technology [BMIT]
- Medical Imaging [MEDI]
- Biomedical Computing and Health Informatics [BCHI]*
- Bioengineering, Technology, and Surgical Sciences [BTSS]
- Surgery, Anesthesiology, and Trauma [SAT]
- Small Business Biomedical Imaging [SBMI] (SBIR/STTR)
- Small Business Bioengineering, Surgical Sciences, and Technology [SBTS] (SBIR/STTR)*
- Small Business Bioelectromagnetics Special Emphasis Panel [SBIB 10]
- Small Business Biomedical Sensing, Measurement and Instrumentation [SSMI] (SBIR/STTR)*
- Small Business Novel Technologies for In Vivo Imaging and Image-guided Cancer Interventions [SBIB (13)]

Musculoskeletal, Oral & Skin Sciences IRG

- MOSS IRG reviews applications on structural systems prerequisite for physical form, mechanical function, movement, and integrity of the body.

- Oral, Dental and Craniofacial Sciences Study Section [ODCS]
- Skeletal Biology Development and Disease Study Section [SBDD]
- Skeletal Biology Structure and Regeneration Study Section [SBSR]
- Skeletal Muscle Biology and Exercise Physiology Study Section [SMEP]
- Musculoskeletal Rehabilitation Sciences Study Section [MRS]
- Arthritis, Connective Tissue and Skin Study Section [ACTS]
- Musculoskeletal Tissue Engineering Study Section [MTE]
- Chronic Fatigue Syndrome/ Fibromyalgia Syndrome Special Emphasis Panel [CFS SEP]
- Musculoskeletal, Oral and Skin Sciences Small Business Activities [SBIR/STTR] Special Emphasis Panels [MOSS Small Business SEPs]
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BRP Reviews, 2005 Council Cycles

- 172 applications received
  - 51-SBIB
  - 27-BST
  - 24-MOSS
  - 70- Other, organ based, IRGs
- Review is by special emphasis panel (SEP)
- Priority Scores are not ranked by percentile

BRG & EBRG (R21) Review

- BRG and EBRG applications are reviewed by standing study sections or by special emphasis panels.

- BRG priority scores are ranked by percentile relative to the standing study section or the CSR total base.

- EBRG priority scores are ranked according to specific institute practice.

Review of BRG & EBRG (R21) applications, 2005 Council Cycles

- 256 BRG applications
  - 77 SBIB
  - 59 BST
  - 35 MOSS
  - 71 other, organ specific, IRGs
- 543 EBRG (R21) applications
  - 161 BST
  - 122 SBIB
  - 60 MOSS
  - 200 other, organ specific, IRGs

Preparing a Competing Renewal BRP or BRG Grant Application

- Reviewers will apply the same standards, if not higher, than for original application.
- Don’t assume reviewers have seen original application (include PA on BRG renewals).
- Progress report – outstanding productivity, new directions, open up field.
- Re-emphasize innovation, impact on field, not same old, same old.
- Read instructions (FONT FONT); Clear Format.
- Obtain critical, substantive pre-review.