AAOS
American Academy of Orthopaedic Surgeons
American Association of Orthopaedic Surgeons

To: National Institutes of Health
From: The Clinical Orthopaedic Community
Re: Review and Funding of Clinically Impactful Research Grants
Date: May 20, 2016

There is increasing concern among orthopedic surgeons and associated practitioners treating musculoskeletal diseases that clinically relevant and translational research that ultimately impacts patient care is lacking. It is perceived that this is a consequence of underfunding of translational and clinically relevant research applications by the NIH in general and NIAMS in particular.

NIH-supported research has led to remarkable breakthroughs that improve health, save lives, and create jobs. Since 2003, the National Institutes of Health budget has failed to keep up with inflation, decreasing the purchasing power of the NIH by over twenty two percent, while our global competitors accelerate their research capabilities. Over the past four decades, the average age of a young researcher receiving his or her first NIH grant has increased from 38 to 45. During the same time period, the percentage of research grants with a principal investigator under age 36 has declined from 18 percent to 3 percent. This trend is devastating to our nation's young researchers and has contributed to a stagnation in our research workforce.

We propose that collaboration of the AAOS, OREF, and Board of Orthopaedic Specialty Societies with the NIH and NIAMS can remediate the dearth of patient-oriented orthopaedic research. We believe the inadequate support for these studies not only harms patients, but may also impact how individuals prioritize funding decisions; patient-oriented research has the potential to have an immediate impact on health and productivity, highlighting the importance of adequate support for the NIH. Foremost is recognition and support by NIAMS of the Unified Orthopaedic Research Agenda (URA) developed by the American Academy of Orthopaedic Surgeons and Board of Orthopaedic Specialty Societies. This research agenda represents the thoughtful collaboration and deliberation of clinicians and scientists to identify the salient issues affecting the musculoskeletal health of US citizens and to provide a roadmap for future research efforts.

Next is facilitating the preparation and submission of meritorious grant proposals to the NIH. The Orthopaedic Research and Education Foundation (OREF), the Orthopaedic Research Society (ORS), the AAOS education and research committees in concert with complimentary efforts by the allied specialty societies have sponsored grant writing workshops and educational symposia to encourage scholarship, promote innovation and assist in the development of worthy research proposals focused on accomplishing the goals advocated by the unified research agenda.

Lastly, the engagement and active participation of practicing clinicians involved in treating patients afflicted by musculoskeletal diseases in the grant peer review process is necessary. To provide an adequate diversity of clinical and scientific expertise, NIH study sections that review clinically relevant musculoskeletal grant applications should be comprised of at least 30% (one of three reviewers on a grant) practicing clinicians (Orthopaedic surgeons, plastic surgeons, neurosurgeons, rheumatologists, physiatrists, dental surgeons, and otorhinolaryngologists) with experience in conducting original research to adequately critique the significance and clinical feasibility of proposed research programs. We recognize that recruitment of such individuals has been a major challenge. Participation of qualified clinicians on NIH study panels is compromised by the significant time commitment required for service. Most practicing clinicians cannot give up two days, three times a year from their clinical responsibilities, thereby limiting the pool of capable clinician scientists able to participate as permanent panel members. To mitigate this situation, we are recommending that CSR

9400 West Higgins Road
Rosemont, Illinois 60018-4976
PHONE 847.823.7186
www.aaos.org

pilot a program that accommodates busy clinicians by encouraging ad hoc membership and reduced workloads (e.g. 50% less grants to review). The liberalization of ad hoc is meant to cut the work load to 50% of typical study section participant so only 4 or so grants, permit attendance for one day only, and not have to attend 3 study sections/year. Furthermore we are advocating that applications related to fracture healing should be reviewed by a traumatologist, spine related grants be reviewed by a spine surgeon, arthritis related grants reviewed by a rheumatologist, joint arthroplasty related grants reviewed by a total joint surgeon etc. We recognize that this will require a commitment on the part of the orthopaedic surgeons, and we welcome the opportunity to work with NIH staff to identify appropriate individuals and to enable their participation. Additionally early stage clinician scientists, who have successfully completed K-award, R03 and/or R21 research programs should be solicited to participate on study panels as so-called third reviewers. The experience of being on study section will provide first hand exposure as to the scientific rigor, logic and organizational skills required to develop a meritorious grant proposal. While CSR does have a program for "junior reviewers" in place, the enrollment of practicing clinicians is undersubscribed. Our societies would be pleased to work with CSR to disseminate information and encourage early stage surgeon-scientists to participate in review panels.

We welcome the opportunity to engage in a dialogue with NIH, NIAMS and CSR to develop mechanisms and pilot programs to facilitate the application, review and funding of clinically impactful research grants.

Sincerely,

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