I want to thank TheJournal of Bone and Joint Surgery for inviting the National Institute ofArthritis and Musculoskeletal and Skin Diseases (NIAMS) and other relevantinstitutes at the U.S. National Institutes of Health (NIH) to communicate toyou through these pages. We hope to provide two or three updates on informationof interest to the musculoskeletal communities annually. NIAMS, a part of theNIH, has long been a major contributor to musculoskeletal research in theUnited States. Thanks to our partnership with the musculoskeletal community,our program of research, training, and information dissemination continues tofare well in a climate of fiscal challenges. Reflecting today's economicrealities, the President's fiscal year 2009 budget request for NIAMS is$509,080,000, just a slight increase over the fiscal year 2008 appropriatedlevel of $508,586,000. Nevertheless, we are buoyed by our present successes,outlined below, and by the extraordinary opportunities we see for scientificprogress that promises to bring improved musculoskeletal health to our nation.NIAMS has taken its emphasis on musculoskeletal development and on tissueengineering and regeneration to a new level. In fiscal year 2007, we formallyreorganized portions of our bone biology, cartilage and connective tissue, andorthopaedics portfolios into a new Extramural Research Program forMusculoskeletal Development, Tissue Engineering, and Regenerative Medicine. Webelieve that musculoskeletal research will benefit from the increased coordinationprovided by this arrangement that will also provide a home for our involvementin trans-NIH bioengineering research efforts. We are confident that theresearch supported under the new program will improve the lives of millions ofAmericans with disabling conditions such as osteoarthritis, degenerative discdisease, fractures, bone defects, and sports injuries. Last year, NIAMS invitedrepresentatives from the scientific community and the public to discussmusculoskeletal injury and trauma as part of our annual series of researchroundtables designed to highlight research needs and inform the Institute'sscientific planning. Basic-science, clinical and epidemiological research, aswell as translational research and regenerative medicine were the main areasaddressed. The discussions touched on many topics, including animal models andoutcomes research, and emphasized the need for collaboration among basicscientists, bioengineers, and clinicians in the development and testing of newtherapies. A complete report on the roundtable can be viewed athttp://www.niams.nih.gov/News_and_Events/Meetings_and_Events/Roundtables/2007/roundtable_trauma.asp.This and other roundtable discussions about the importance of collaboration andmultidisciplinary approaches resulted in our issuing a request for applicationsemphasizing collaboration, entitled Building Interdisciplinary Research Team(BIRT). The BIRT initiative will promote collaborations among groups ofinvestigators who have not interacted in the past but who share an area ofscientific interest and opportunity in specific NIAMS fields. We will provideup to one year of research revision support (formerly termed supplements) toestablish high-risk and potentially high-impact

collaborations in pilot areas, suchas tissue engineering, autoimmunity, and soft-tissue biology.

More informationabout BIRT is available at Building on a memorandum of understanding that theNIAMS spearheaded in 2007 on behalf of NIH and in partnership with the NationalAeronautics and Space Administration, the Institute is leading a trans-NIHeffort to encourage researchers to develop projects that could be conducted inthe microgravity environment of the International Space Station. The spacestation will provide a unique setting where researchers can explore fundamentalquestions about human health issues, including how the body heals itself,fights infection, or develops diseases. Both bone loss and tissue regeneration,for example, are areas of potential investigation. Another excitingcollaboration links NIAMS to the Department of Defense's new Armed ForcesInstitute of Regenerative Medicine (AFIRM), which consists of two academicconsortia developing therapies for war-related wounds. Among the treatmentsunder study will be craniofacial and limb reconstruction, regeneration, andtransplantation; therapies developed by AFIRM will also serve trauma and burnpatients in the public at large. We have joined several other NIH Institutes,the departments of Defense and Veterans Affairs, and other partners to help tofund AFIRM's budget of more than $250 million over the first five years of itsoperation. In 2006, we launched a new research mechanism, Centers of ResearchTranslation (CORT), which brings together basic and clinical studies in a waythat helps to translate fundamental discoveries into new diagnostics andtreatments. One of the newest CORTs, at the University of Rochester, isinvestigating the biological basis of fracture-healing and the efficacy of apotential new treatment, teriparatide, for healing fragility fractures in theelderly. We look forward to the findings, which could impact this growingsegment of the U.S. population. Collaboration is also at the root of ourcommitment to public-private partnerships to address the research issues withscopes too great for one institution to engage. In the musculoskeletal area,the Osteoarthritis Initiative is designed to improve prevention and treatmentof osteoarthritis. The Osteoarthritis Initiative, a long-term collaborative effort,has created a publicly available research resource to identify and evaluatebiomarkers of osteoarthritis for use in clinical research. By the spring offiscal year 2008, approximately 900 researchers from forty-eight countries hadregistered to access Osteoarthritis Initiative data, and 1459 clinical datasetshad been downloaded for analysis. NIAMS has long been a driving force in theFederal Working Group on Bone Diseases. We and other Working Group members,including the American Academy of Orthopaedic Surgeons, share researchinformation on osteoporosis, Paget disease, and other bone disorders and helpin the early development of collaborative research activities. In 2007, weorganized three meetings of the Working Group, at which topics such as the roleof vitamin D in bone health and the value of genome-wide association studies inbone-related research were discussed. Scientific progress and the communicationof research results are central to the mission of NIAMS, and NIAMS remainscommitted to disseminating musculoskeletal health information. For example,people can now give their bones a checkup using an interactive web tool wedeveloped called "Check Up on Your Bones" (www.niams.nih.gov/bone). Based oninformation from "Bone Health and Osteoporosis: A Report of the SurgeonGeneral" , the tool reflects the value of personalized medicine, helping peopleto understand how the information in this important public health reportrelates to them as individuals. Visitors to the web site are invited to fill outa personal profile, which the tool uses to create individualized informationabout each person's risk factors for osteoporosis as well as the factors thatprotect his or her bones. We encourage patients to access the web site. We alsoendeavor to communicate what we do with regard to funding policies for varioustypes of applications that we receive. I encourage everyone to go to our website where we communicate this information as soon as we have a budget and afunding plan. More information about NIAMS' grants policy and guidance can befound at http://grants.nih.gov/grants/policy/policy.htm. We are now enteringwhat could become known as a golden age for musculoskeletal research. The U.S.population is at once becoming older

and more active. Imaging modalities arebecoming more sensitive, available, and cost-effective, and technologies forrepair, replacement, and regeneration of damaged bones, joints, cartilage, andmuscle are becoming increasingly sophisticated. With the help of themusculoskeletal research community, NIAMS is well positioned to help to bringabout the critical discoveries that will improve our nation’s health.

MUSCULOSKELETAL RESEARCH AT THE NATIONAL INSTITUTE OF ARTHRITIS AND MUSCULOSKELETAL AND SKIN DISEASES: A SNAPSHOT.