

**3F. Institutional Environment and Commitment to Training. (Schroeder NIAID)** In addition to providing support for training in the first clinical year, the University, School and Medical Center have provided substantial support for the development of a research training infrastructure as exemplified in the new Graduate Biomedical Sciences programs (Appendices A1, A2, A3, A4), in the Office of Postdoctoral Education (Appendix B), the Medical Scientist Training Program (Appendix A5), the UAB Howard Hughes Medical Institute (HHMI) MED-GRAD Fellowship (HMGF) (Appendix A6) and in the activities of the Department of Medicine's Mentors' Advisory Committee. Each of these efforts provides complementary support for research career development. The state-of-the-art Shelby Interdisciplinary Biomedical Research Building opened in March 2006. It stands 12 stories tall with 340,000 gross square feet of space. This building houses the laboratories of 27 of our 57 mentors, as well as the administrative offices of this T32 Training Program, the Graduate Program for Biomedical Sciences, the MSTP program, and the Office of Postdoctoral Education. For postdoctoral trainees with clinical credentials (MD and MD/PhD), the Center for Clinical and Translational Science (UAB's CTSA) has provided competitive funding for pilot research grants by physician/investigators to facilitate the transition to junior faculty positions. The Department of Medicine supports at least two physician/scientists each year, again on a competitive basis, through the Frommeyer Program which also helps in the transition to junior faculty positions.

**3.F. Institutional Environment and Commitment to T32 Training (K.Saag AHRQ)** UAB is a multidisciplinary research institution with 6 graduate schools in the health-related professions (Medicine, Nursing, Public Health, Health Professions, Dentistry, Optometry) and almost 100 research centers, which are the institutional infrastructure of its collaborative research enterprise. Research at UAB is well supported both by traditional extramural funding and is dramatically stimulated by a rich culture of interdisciplinary collaboration supported through a network of UWIRCs (see Section 2.B and Resources). The DOM faculty plays leading roles in federally-sponsored training such as the CCTS and 17 T32 training grants and 3 K12s. Letters of support from the University President and Provost, Deans of 5 UAB Schools (Medicine, Public Health, Health Professions, Nursing, College of Arts and Sciences), the Chair of the Council of Center Directors (representing 28 UWIRCs), and 4 Doctoral Program Directors provide unequivocal evidence of support for the competitive renewal of the T32 training program and guarantee adequate space, facilities and protected time for trainees and mentors. As part of UAB's commitment to all issues related to postdoctoral education and training, it created the UAB Council of Postdoctoral Education. The goals of the Council are to improve the environment for postdoctoral training and to facilitate the retention and recruitment of high quality postdoctoral scholars at UAB. Finally, UAB ranks first among public universities nationwide in "Best Places to Work for Postdocs," according to the 2012 Postdocs Rankings published by The Scientist.

**3G. Institutional Environment and Commitment to Training (Benveniste NINDS)**

The University, School of Medicine, and the Graduate School have provided substantial support for the development of a research training infrastructure as exemplified in the new GBS programs (APPENDIX A1-A6), in the Office of Postdoctoral Education (APPENDIX B), the Medical Scientist Training Program (APPENDIX A8), and the UAB Howard Hughes Medical Institute (HHMI) MED-GRAD Fellowship (HMGF) (APPENDIX A9). Each of these efforts provides complementary support for research career development. The SOM and the CCC have made a tremendous commitment to the Neuro-Oncology Program at UAB by performing a \$35 million renovation of research laboratories in the Wallace Tumor Institute. Ten of the 26 faculty members of the Neuro-Oncology Program in the Comprehensive Cancer Center relocated their labs and offices to the 7th floor of the newly renovated Wallace Tumor Institute in April 2012. The floor has 10 faculty offices, a fellows' suite, a conference room, and an open break area located in the center of the building around an open atrium. This design concept has resulted in new collaborations and numerous new interactions. Drs. Roth, Gillespie, Nabors and Griguer are in the new space, and there is additional lab space for new recruits in Neuro-Oncology. The 6th floor has a 10,000 ft<sup>2</sup> fully equipped (Opti-Mouse/Opti-Rat racks, biosafety hoods, Kimtron 320KV xray machine, cage wash, storage), self-contained Animal Research Facility to support rodent-based research with a capacity for over 7,500 fully ventilated cages (>37,000 mice).

## **INSTITUTIONAL ENVIRONMENT AND COMMITMENT (Bamman NICHD)**

### **Institutional Environment**

A truly translational research training program in pathobiology and rehabilitation medicine is only possible at an academic health center poised to meet the challenges of integrating basic biological sciences with clinical applications. Among the nation's leading biomedical research universities, UAB cultivates a long-standing, rich collaborative research environment ideal for comprehensive research training in the biology and clinical application of rehabilitation science. UAB offers an exceptionally rich combination of more than 80 state-of-the-art Scientific Core Facilities and 28 University-Wide Interdisciplinary Research Centers (UWIRCs) (see Facilities and Other Resources), over 75 pilot and departmental research centers, outstanding clinical research facilities capped by the CCTS, and a collective faculty that is world-renowned for its wealth and breadth of scholarly productivity. In essence, research training opportunities are limitless—any technology, experimental model system, or intellectual expertise sought by a burgeoning translational scientist can be found at UAB. UAB is the only four-year, public university in Birmingham—Alabama's largest metropolitan area. The University has grown from 15 blocks in 1969 to more than 80 blocks with some 225 buildings providing over 12 million square feet of assignable space. UAB's budget of \$49.9 million in 1969 has multiplied to a current level in excess of \$2 billion. The economic impact of UAB is unparalleled in the state. It is Alabama's largest employer with over 53,000 full-time equivalent jobs, translating as 8 out of every 100 jobs in the Birmingham metropolitan area, as well as 3 of every 100 in Alabama. Additionally, externally funded grants and contracts continue to increase. This funding has doubled every decade since 1969 when UAB was established, and now stands at more than \$433 million. In funding from the National Institutes of Health, UAB and the School of Medicine consistently rank among the top 25, with seven departments among the nation's top ten. Excellence in health care is recognized within the UAB Health System. UAB Hospital specialty programs consistently rank among the top 25 (e.g., from 2011 edition of US News and World Report's rankings of "America's Best Hospitals": Rheumatology 11th, Nephrology 22nd, Pulmonology 25th, Urology 24th, and Gynecology 20th). Our core of 31 enthusiastic and highly-productive faculty mentors are committed to advancing the field of rehabilitation medicine. These mentors, many of whom are united by long-standing research and mentoring collaborations, span 13 Departments and Divisions across the UAB Schools of Medicine, Health Professions, Public Health, and Arts and Sciences (see Data Table 1). Mentors direct active and well-funded research programs in an area of concentration highly relevant to this training program (see Data Table 2).

**Translational Rehabilitation Research Environment.** In addition to primary mentors' laboratories, numerous Center-affiliated basic and clinical core facilities and laboratories are utilized regularly by both trainees and mentors. Several of the primary mentors serve as Directors of Centers (Drs. Ball, Bamman, Dell'Italia, Garvey, Jackson, McMahon, Rimmer, Shalev, Standaert, and Zayzafoon) and Scientific Core Facilities (Drs. Ball, Ballinger, Bamman, Dell'Italia, Garvey, Gower, Jackson, and Nagy). Particularly advantageous to trainees in this program are the established collaborations among specific centers directed by program mentors: Spain Rehabilitation Center (Jackson); UAB Center for Exercise Medicine (Bamman); Comprehensive Neuroscience Center (McMahon); Center for Translational Research on Aging and Mobility (Ball); Comprehensive Diabetes Center (Shalev); Center for Heart Failure Research (Dell'Italia); and Center for Metabolic Bone Disease (Zayzafoon). University-wide Centers important to the cross-cutting themes of this program are also led by some of the primary mentors: Comprehensive Cancer Center (Assoc. Director Demark-Wahnefried); Center for Aging (Assoc. Directors Ball, Bamman, and McMahon). In addition, since the prior submission of this application (2011), Dr. Jim Rimmer was recruited to UAB and brought the CDC funded National Center on Health, Physical Activity and Disability (NCHPAD), and the NIDRR funded Rehabilitation Engineering Research Center on Interactive Exercise Technologies and Exercise Physiology for People with Disabilities (RERC Rec-Tech). These are indeed outstanding additions that significantly enhance even further the UAB research and training environment, particularly in the area of rehabilitation research training for persons with disabilities. Finally, Dr. Rimmer's appointment as Director of the Lakeshore Foundation/UAB Research Collaborative establishes a strong linkage between these two institutions. Lakeshore Foundation is one of the largest disability service providers in the U.S. that serves over 3500 people with disabilities on an annual basis in the areas of health promotion, sport and physical activity, and provides a strong base for conducting research on people with disabilities.

The environment for clinical and translational research and training is further enhanced by the programs and services provided by the CCTS. The CCTS was developed in response to the National Institutes of Health's

(NIH) request for applications for Clinical and Translational Science Awards (CTSAs). The Center was officially approved by the University of Alabama's Board of Trustees on February 3, 2006 and funded by the NIH on May 19, 2008 (5UL1 RR025777). Robert P. Kimberly, MD, directs the Center. UAB is one of 60 academic health centers nationwide that are member institutions of the CTSA Consortium. The mission of the CCTS is to enhance human health by driving scientific discovery and dialogue across the bench, bedside, and community continuum. The vision of the CCTS is to speed the translation of research into improved human health. The Center is comprised of nine Components [Biomedical Informatics; Pilots; Drug Discovery; Research Ethics, Regulatory Knowledge and Support; Research Education and Training; Biostatistics, Epidemiology and Research Design (BERD); the Clinical Research Unit (CRU); One Great Community; and Cores] and the Research Commons. Detailed descriptions of CCTS programs, that will be of great value to the trainees and mentors in the P&RMP, can be found in Facilities and Other Resources. The CCTS is well integrated into this training program and CCTS leaders are clearly committed to fostering the development of our trainees (see letters from Drs. Kimberly and Chaplin).

### **Commitment**

In addition to the outstanding facilities, trainees of this training program will benefit from significant institutional support in several ways: Major Financial Investments. We are very fortunate to have strong support from the major programs and Schools associated with this training program. The Schools of Medicine and Health Professions have each committed \$5000/yr to support the annual interdisciplinary symposium as well as recruitment expenses (see letters from Drs. Ray Watts and Harold Jones). Similarly, we are fortunate to have received a generous contribution from the Nutrition Obesity Research Center (\$4000/yr) to support trainee travel for obesity related rehabilitation research. Finally, the UAB Center for Exercise Medicine has committed \$13,000/yr to support a number of enrichment activities including the annual symposium, bi-weekly research roundtable, journal clubs, and the Exercise Medicine Distinguished Lecture Series. All of these programs and efforts will have a significant, positive impact on our trainees' development and on the overall success of P&RMP. These contributions total \$27,000 per year, or \$135,000 over five years—real value added to the P&RMP by institutional support. Clearly, UAB is behind this program.

**Administrative Support.** Recruitment, appointment, tracking, and other administrative functions will be supported by the directors of the GBS and Rehabilitation Science programs (see letters from Dr. Susan Rich and Dr. David Brown) and Office of Postdoctoral Education (see letter from Dr. Lisa Schwiebert). Each of these offices assisted in the preparation of this application, and will continue to provide invaluable support during operation of the program. **Supplementation of Stipends.** Mentors in this program have a lengthy history of supplementing NIH stipends for postdoctoral trainees. These supplements are typically 3-5K annually, and are usually funded by a Center closely affiliated with the trainee's research. The practice of supplementing NRSA stipends with state funds is one of the many factors contributing to UAB's remarkable success in recruiting competitive trainees on a national scale. **New Curriculum Development.** New course development is strongly encouraged at UAB. Each of the major programmatic entities involved in this program (GBS; Rehabilitation Science; OPE; and CCTS) is responsible for curriculum development and each has encouraged new course development to fill knowledge gaps for a particular program. For P&RMP trainees, program faculty will offer a workshop, The State of Exercise Science in Rehabilitation Medicine, which will also be available to faculty and residents (e.g., Physical Medicine and Rehabilitation residents). **Protected Time for Mentoring.** Institutional commitment for protected mentoring time is very clear (see letters from Drs. Ray Watts and Harold Jones). This is not trivial; rather, it is significant that the mentors on each trainee's Translational Mentoring Team will have ample protected time for working with the trainee, which will optimize his/her training experience. In addition, the PD's 10% effort will be fully supported by the Department (see letter from Dr. Benveniste, Chair).