

**Proposal to Establish
the
University of Kentucky Center for Muscle Biology**

Michael B Reid, PhD and Jay A Perman, MD
August, 2007

Executive Summary

This proposal to form a new Academic Center -- the University of Kentucky Center for Muscle Biology (the Center) -- is the product of ongoing interactions among a working group of independent investigators with common scientific interests. The goals of the Center are to foster collaboration among clinical and basic scientists, catalyze translational research, stimulate educational activities, and increase national recognition for the University in the field of muscle biology. To achieve these goals, the proposed Center will promote specific research- and education-related initiatives by integrating the activities of nineteen NIH-funded investigators from five colleges and centers.

Creation of the Center is expected to stimulate development of new institutional awards including program project grants, center grants, and T32-funded training grants. The Center will provide a nexus for promoting scientific collaboration and developing translational research. Clinical and basic scientists will work together to address muscle-related concerns ranging from cachexia to cardiomyopathy, from ventilatory insufficiency to sarcopenia of aging. The Center will promote national recognition of the University by affiliating with external scientists in academe and industry, by bringing prominent U.S. and international scientists to campus, and by sending University personnel abroad for research and study. Finally, the Center will create novel opportunities for University development efforts, broadening the research portfolio available for interested donors.

This proposal is structured according to University guidelines delineated in AR II-4.0-5 (<http://www.uky.edu/Regs/AR/ar071.pdf>). For simplicity, the term 'department' is used to describe departments and graduate centers in which Center members have primary academic appointments.

1. Goals and Significance.

The goal is to establish a new Academic Center that will catalyze innovative research, stimulate educational activities, foster collaboration among basic and clinical scientists, and increase national recognition for the University in the field of muscle biology.

Significance to the University of Center initiatives will be substantial. A University-wide, interdisciplinary center in muscle biology will build on existing strengths at UK to create a nationally-recognizable program that expands research, promotes educational activities, and enhances the University's progress toward Top 20 status. The proposed center will foster basic and translational research collaborations, expand training opportunities for graduate and professional students, provide an intellectual environment for new programmatic grants, enhance faculty recruitment, and give muscle biology at UK an identity for national recognition.

Structured correctly, the Center will benefit the academic units of member investigators, enhancing the success of participating faculty members and expanding the learning opportunities for trainees. This initiative will also compliment research activities in established centers at UK by providing muscle-specific expertise and new methodologies to address clinical problems of common concern.

2. Justification.

The University has a large community of research scientists and clinicians working on the biology of muscle – skeletal, cardiac, and smooth – in diseases that range from cancer to sarcopenia, from sepsis to heart failure, from lung disease to vocal disorders. The NIH CRISP website (<http://crisp.cit.nih.gov/>) lists these individuals as principal investigators on 28 grants awarded by ten different institutes in 2005-2006. These grants are worth an estimated \$25M in total NIH dollars. Supplementing NIH income, many investigators are also supported by other funding agencies, e.g., American Heart Association, NASA, and Kentucky Science and Technology Co., Inc.

At present, muscle biologists at UK are collaborating informally and their successes are widespread. New basic and translational research projects are underway, papers are being co-authored, joint grants are being submitted, a regular seminar series is in place, and a new graduate course in advanced muscle biology has been established. It is clear that the strengths in muscle biology at UK are considerable. However, the overall impact of muscle research at UK is hobbled by the diffuse nature of individual programs. Investigators are housed among ten departments in five colleges and centers. There is no integrated academic program for training in muscle biology. And institutional support for this area of biomedicine has been minimal.

We propose to address these concerns by establishing an interdisciplinary Center for Muscle Biology at the University. Key components of the Center are largely in place including personnel and facilities. Creation of the Center does not require additional faculty lines, dedicated space, or institution of new degree programs. Member investigators will remain in their current laboratories; technical staff and trainees will retain appointments in their current departments; and students will matriculate in established degree programs.

3. Governance and Membership.

3.a. Governance. Center activities will be overseen by the Director who will have overall administrative responsibility. The Director will be advised by a Co-Director, Executive Council, Translational Science Advisory Board (TSAB), and External Advisory Board (EAB). The specifics of appointment categories, leadership, and governing bodies are as follows:

3.a.1. Director: The Director has primary responsibility for administrative oversight of Center activities and finances. This individual approves new appointments to the Center and designates individuals to serve in leadership positions, including the Co-Director, Executive Council, Translational Science Advisory Board, and External Advisory Board. The Director chairs the Executive Council, sits *ex officio* on the Translational Science Advisory Board, reports on Center activities to the Dean of the College of Medicine, and represents the Center in external affairs.

The Director is appointed for a six-year term by the Dean of the College of Medicine with confirmation of the Provost, Board of Trustees, and President. The Director will be subject to annual performance reviews by the Dean. Overall performance of the Director will be evaluated externally as part of the formal institutional review of the Center (described below). This information will be made available to the Dean and University leadership for use in deliberations regarding possible re-appointment. The Director is eligible for reappointment upon recommendation of the Dean with institutional approval as above.

Michael B. Reid, Ph.D. (20% effort in years 1 and 2 to oversee Center start-up; 15% in subsequent years) is Professor and Chair in the Department of Physiology. Dr. Reid is an established investigator whose research addresses the cellular and molecular mechanisms of respiratory and limb muscle dysfunction. He has published 95 articles and maintained a 20-year record of continuous NIH funding. In prior leadership positions, Dr. Reid has chaired two NIH study sections, directed an NIH-supported training program, was

Associate Editor of *Physiological Reviews* and Consulting Editor for *Journal of Applied Physiology*, and has served on numerous editorial boards and on the Board of Directors of the American Thoracic Society.

3.a.2. Co-Director: The Co-Director works closely with the Director on administrative matters including Center policy, appointments, programs, and activities. The Co-Director is a permanent member of the Executive Council, chairs the Translational Science Advisory Board, and reports to the Director. The Co-Director is recruited by the Director with advice of the Center membership and the Deans of affiliated Colleges. The Co-Director is appointed for a 3-year term, is evaluated annually by the Director, and may be reappointed based on prior performance and the needs of the Center.

Charlotte Peterson, Ph.D. (15% effort during years 1 and 2; 10% in subsequent years) is Professor and Associate Dean for Research in the College of Health Sciences. Dr. Peterson is an internationally-recognized authority on stem cell biology in skeletal muscle and the sarcopenia of aging. She is principal investigator on three NIH-funded projects, past chair of multiple NIH study sections, recipient of numerous research awards, and the author of fifty-two peer-reviewed publications. Her expertise in translational research will strengthen Center initiatives and her knowledge of Medical Center activities will broaden opportunities for Center involvement. Dr. Peterson will work with Dr. Reid to administer the program and will directly oversee activities of the TSAB.

3.a.3. Administrator. The Center Administrator (100% effort) will assist Dr. Reid with finances, record keeping, and coordination of Center activities. Among other duties, this person will maintain Center accounts, oversee expenditures, record minutes of Center committees, monitor the annual budget, represent the Center with administrators in other academic units, assist in the preparation of institutional grant applications, maintain the Center website, distribute notices of Center activities, coordinate itineraries and travel arrangements for visiting scientists, integrate Center speakers with seminar series in other academic units, maintain documentation on the applicant pool for Center trainee programs, and organize the annual research retreat.

3.a.4. Executive Council: The Executive Council is the principal governing body of the Center. It comprises five voting members. The Director (Council chair) and Co-Director (co-chair) will be permanent members. Three Regular Members will serve three-year terms on a rotating basis. Members will be appointed by the Director. None will repeat until all have served; thus, Council governance will eventually benefit from direct input by all Regular Members. Comprehensive participation will strengthen ties of individual members to Center governance and will promote transparency in Council activities. Finally, the Center Administrator will attend Council meetings to consult on financial and administrative issues, take minutes, and record attendance. Minutes of Council deliberations will be vetted by attendees, edited, and archived for access by program participants and the External Advisory Board (below). The Council will meet monthly. In the interest of transparent governance, the time and place of meetings will be publicized among the Center membership. Proceedings will be open to all Regular and Associate Members except when issues of confidentiality require a closed session.

Responsibilities of the Council are to: 1.) evaluate nominees for Center appointments in all categories, 2.) advise the Director on appointments, 3.) provide oversight on Center programs and activities, 4.) advise the Director on new Center initiatives and on resolution of problems. Council activities provide an internal mechanism for ongoing improvement of the Center. Council will respond to concerns raised by individual members and will implement changes recommended by the External Advisory Board (below).

3.a.5. Translational Science Advisory Board (TSAB). A fundamental goal of the Center is to strengthen scientific interactions among basic and clinical investigators at the University. TSAB responsibilities include 1.) identifying translational opportunities relevant to the Center, 2.) facilitating interactions between basic and clinical scientists, 3.) providing a referral service for clinical investigators outside the Center who seek scientific collaboration in the field of muscle biology, and 4.) identifying funding opportunities and

promoting new grant applications for translational research. TSAB members comprise academic leaders from the UK Chandler Medical Center who are recruited by the Center Director for their commitment to translational research, their knowledge of research opportunities within the university, their knowledge of programmatic initiatives at NIH and other funding agencies, and their capacity to facilitate interactions between Center members and translational collaborators. The TSAB is chaired by the Center Co-Director. The Director serves *ex officio*. Members of the TSAB will include:

- Peterson, Charlotte, PhD, Professor and Associate Dean for Research, College of Health Sciences, and Chair of TSAB; see description above.
- Supinski, Gerald S, MD, Professor of Internal Medicine, is board-certified in Pulmonary Medicine and Intensive Care Medicine and an attending physician in the University of Kentucky Hospital. Dr. Supinski is an internationally-recognized expert on the mechanisms of respiratory and cardiac muscle dysfunction in chronic inflammatory disease and is a Regular Member of the Center. His credentials include over 100 publications, a 20-year record of NIH funding, and recent membership on the NIH Skeletal Muscle and Exercise Physiology study section.
- Balke, C William, MD is Professor of Internal Medicine and Senior Associate Dean for Research in the College of Medicine. A cardiologist by training, Dr. Balke directs the Institute for Molecular Medicine and supervises an NIH-funded research program in cardiac muscle biology. At the institutional level, Dr. Balke is currently directing the University's application for a Clinical and Translational Science Award from NIH and is intimately familiar with translational research activities across the Medical Center.
- Crofford, Leslie J, MD is Professor of Internal Medicine, Chief of the Rheumatology Division, and Director of the UK Center for Advancement of Women's Health. Her research focus includes patients with chronic fatigue syndrome, fibromyalgia, myositis, and other pathologic processes associated with muscular insufficiency. Dr. Crofford is Program Director of the UK General Clinical Research Center and has detailed knowledge of ongoing and planned projects that involve human research.
- Ebersole, Jeffrey L., PhD, is Professor of Dentistry, Director of the Center for Oral Health, and Associate Dean for Research and Graduate Studies in the College of Dentistry. Dr. Ebersole is involved in five NIH-funded research and training programs in oral health. He oversees all aspects of basic and translational research in the College of Dentistry.
- Mosier, Debra K, DNSc, RN is Professor and Chair of Nursing and a Regular Member of the Center. Dr. Mosier is a distinguished NIH-funded investigator and an acknowledged authority on nursing management of heart failure patients. She interacts extensively with other faculty in the College of Nursing, a nationally-ranked program with strong credentials in clinical research, and can facilitate research ties to investigators in this College.
- Bruce, Eugene, PhD is Professor in the Graduate Center for Biomedical Engineering. Dr. Bruce is an authority on modeling of pathophysiological processes in the human myocardium and is a senior member of the Biomedical Engineering faculty. His experience in this field will enable him to link interested clinicians and UK investigators with expertise in engineering and modeling.

TSAB members will primarily function as individual consultants, working one-on-one with Center investigators to identify translational collaborators and advise on translational research opportunities. Expertise of the entire TSAB membership will be available to each investigator in the Center, who can communicate directly with individual TSAB members by telephone, e-mail, or face-to-face meetings. Center investigators will be encouraged to develop working relationships with a subset of TSAB members whose expertise is most beneficial. Such personal relationships are expected to broaden the awareness of Center investigators regarding translational research opportunities and to promote new research and funding initiatives.

The TSAB will meet quarterly. Meetings will be chaired by the Co-Director and attended by all active TSAB members plus the Director and Administrator. TSAB meetings will be publicized and open to all Center investigators except when issues of confidentiality require a closed session (to be determined by the Chair). Meetings will provide a regular venue to discuss active translational research projects, evaluate

opportunities for new projects, and review potential mechanisms for extramural funding of translational research. Questions that arise between meetings will be addressed by the Chair in consultation with the affected Center investigator and individual TSAB members. Such interim activities and their resolution will be reported to the entire TSAB at the next scheduled meeting. Special sessions of the entire TSAB can be called by the Chair at any time to address programmatic issues that require immediate input. Activities of the TSAB and attendance of the members will be documented by the Center Administrator in the minutes of TSAB meetings. TSAB minutes will be distributed to the membership, filed for archival reference, and made available for annual review by the External Advisory Board (below).

3.a.6. External Advisory Board (EAB). The EAB is charged with providing expert, outside evaluation of Center governance and activities. The EAB comprises five senior scientists who currently direct successful research centers at the University of Kentucky and other institutions. The roster includes:

- Daugherty, Alan, PhD, DSc is Professor of Internal Medicine and founding Director of the Cardiovascular Research Center at UK.
- Hall, Edward D, PhD is Professor of Anatomy and Neurobiology and Director of the Spinal Cord and Brain Injury Research Center (SCoBIRC) at UK.
- Sweeney, H. Lee, PhD* is Professor and Chair, Department of Physiology, University of Pennsylvania. Dr. Sweeney is PI on an NIH-funded center grant on muscle growth and oversees a department recognized for expertise in muscle biology.
- Tidball, James PhD* is Professor of Physiology and Director of the UCLA Duchenne Muscular Dystrophy Research Center in Los Angeles.
- Puleo, David A, PhD is Professor of Biomedical Engineering and Director of the Graduate Center for Biomedical Engineering at UK.

**extramural memberships tentative; to be confirmed upon formalization of Center status.*

The EAB will meet annually for on-campus site visits of the Center. Two weeks before each visit, EAB members will receive copies of 1.) an executive summary of the year's activities, 2.) reprints of publications by Center investigators during the prior year; 3.) grant applications submitted by Center investigators and (if available) reviewer comments; 4.) monthly Council minutes, 5.) quarterly TSAB minutes, and 6.) the annual financial report. During the site visit, EAB members will meet on campus with the Director, Executive Council, TSAB, and Administrator. The EAB will meet with member investigators as a group and with individual investigators as appropriate.

After the visit, EAB members will develop a written report on the status of the Center. The report will include perceived strengths and weaknesses of the Center, will list suggestions for improvement, and will comment on responsiveness of the Center leadership to prior concerns. The EAB will forward this report to the Director and the Dean of the College of Medicine. Results of the EAB report will be used by the Director and Executive Council to refine and improve the Center in the succeeding year.

3.a.7. Institutional review. The Center will be subject to external review by the University at six-year intervals for the purpose of assessing the effectiveness of Center activities and Center administration. An external review panel will be organized and given its charge by the Dean of the College of Medicine. The panel will comprise four senior scientists from participating Colleges plus a minimum of one reviewer from outside the University. For purposes of evaluation, the panel will have full access to all Center documents, facilities, and personnel. The panel will convene on campus and meet personally with the Director, Co-Director, Regular Members, and Center-supported trainees. The panel will review documents provided to the EAB and prior EAB reports. The panel will also evaluate the Center budget, including financial statements for previous years, and the leadership of the Director. After the visit, the panel will prepare a formal report on their findings, including strengths and weaknesses of the Center and its leadership, and will make recommendations for improvement as appropriate. This report will be forwarded to the Director, the Dean of the College, and the Provost. These reports will be used to redirect and improve Center

activities and governance. Continued support of the Center by the institution will be subject to an acceptable outcome from the external review process.

3.b. Center membership. Qualified investigators with active involvement in a related area of research or education may affiliate with the Center by appointment in one of four categories (below). Appointment requires nomination by a Regular Member, approval by the Executive Council, and confirmation by the Director. Appointments are for three years' duration and may be renewed based on contributions of the individual toward Center objectives. Renewal requires approval of the Council and confirmation of the Director. General meetings of the entire membership will be held quarterly to review Center activities and discuss new initiatives.

3.b.1. Regular Members. University faculty members who are independent investigators, educators, or practicing clinicians with a specific interest in the field of skeletal, cardiac, or smooth muscle biology will be eligible for regular membership. The Center will be explicitly interdisciplinary, welcoming members from any academic unit and encouraging the participation of both basic and clinical faculty. The proposed roster of founding Regular Members comprises eighteen NIH-funded investigators who have academic affiliations in nine departments of four colleges and one graduate center (Table 1). This roster is open for additional Regular Members as opportunities arise.

3.b.2. Associate Members. Investigators, educators, clinicians, and others from outside the University whose expertise complements the objectives of the Center will be considered for associate membership. This category will enable Center affiliation for academics from other universities, community physicians in private practice, other health care professionals, and other individuals with specialized expertise.

3.b.3. International Affiliates. Senior scientists from outside the United States who have a record of outstanding scientific achievement in the field of muscle biology will be considered for appointment as an International Affiliate of the Center. The purpose of such appointments is to foster international research, to expand training opportunities at international institutions, and to broaden the recognition of the Center and the University.

3.b.4. Corporate Affiliates. Scientists from commercial firms that have explicit interest in muscle-related research will be considered for appointment as Corporate Affiliates of the Center. The purpose of such appointments is to promote collaboration with industry scientists and to create training opportunities in commercial laboratories, e.g., student externships or postdoctoral fellowships.

4. Reporting relationships. Members and affiliates report to the Director on issues pertaining to the Center. The Director reports to the Dean of the College of Medicine. The Dean reports to the Provost who reports to the President.

5. Staff and facilities. During start-up, the Center will have administrative support from a single individual (see Administrator, above) housed in office space within the Department of Physiology. Founding members of the Center already have adequate research staff, offices, laboratory space, and access to core facilities. No additional staff or facilities are requested for Center start-up. Future increases in personnel or facilities will derive from new initiatives, e.g. establishment of core facilities, center grants, etc. These will be overseen by the Director in consultation with the Executive Council and the Dean of Medicine.

6. Equipment and instrumentation. Initial requirements are limited to office equipment for administrative support. Future acquisitions of equipment and instrumentation will be funded internally from the Center budget.

7. Projected budget. The College of Medicine will provide start-up costs of \$75,000/yr in years 1 and 2. This supplement will drop to \$25,000/yr in year 3, a recurring contribution that will persist in subsequent

years. From the University, the Center will receive funds equal to 10% of the indirect costs from extramural grants on which Regular Members are the principal investigator. Center funds will be used to stimulate strategic research initiatives, establish new educational programs, and cover administrative costs. Table 2 depicts an estimated 3-year budget.

Center funds will reside in dedicated University accounts for exclusive expenditure toward Center-related initiatives. These funds will be administered by the Center Administrator under supervision of the Director. Fiscal oversight will be provided by the Office of the Dean. The Center budget will be integrated into the annual budget process of the College of Medicine for integration with University finances.

Note that extramural awards of Regular Members will continue to be administered by the academic unit of each investigator. Center membership will not alter existing financial commitments between members and their academic units (e.g., % support for research effort, Wethington awards, etc.) or between academic units and the University (e.g., salary reimbursement, return on indirect costs, etc.).

8. Potential for extramural funding. A primary incentive for creating this Center is to enhance the competitiveness of member investigators for extramural funding. The founding members are established investigators who have proven their ability to successfully compete for NIH support. All have active NIH grants and many have supplementary support from other extramural sources including the American Heart Association and NASA. We anticipate that Center-driven interactions in journal clubs, courses, and seminars will stimulate greater collaboration among member investigators and new ideas for individual grants. Greater interaction and more-frequent collaboration will further create the intellectual and scientific currency for institutional applications, e.g., center grants, program project grants, and training grants. We further expect that the concentrated expertise in muscle biology will attract funding from industry sources, especially pharmaceutical companies who seek academic partners to develop novel therapeutics for cachexia, sarcopenia, heart failure, and other muscle-related conditions.

9. Other proposed benefits. Sections below outline additional activities planned for the Center. These support the research and education efforts of the Center but also have collateral benefits to the broader University by stimulating collaboration, enhancing graduate education, supporting recruiting efforts, and increasing the national visibility of biomedical research at UK.

9.a. Referral service for translational research. The TSAB will coordinate a referral service for UK investigators who seek collaborators for translational research in the areas of muscle biology or pathophysiology. Basic scientists will be linked with relevant physician investigators and vice versa. Availability of this service will be promoted on the Center website and via other University research organizations including the UK Clinical Research Organization and the General Clinical Research Center. In future years, the new Center for Clinical and Translational Science (CCTS) will be a natural link for TSAB referrals within UK. The Center will coordinate with the proposed CCTS Concierge Service to broadly publicize translational research opportunities.

9.b. Funding for pilot research. The Center expects to establish a program for funding small projects needed to generate pilot data for new grant applications. Priority will be given to collaborative projects that link two or more laboratories and to translational research projects.

9.c. Outside speakers. The Center will regularly sponsor visits to campus by prominent muscle biologists from other U.S. institutions. These speakers will present public seminars and will meet with interested scientists and trainees from across campus. The Center will not establish a new, stand-alone seminar series for this purpose. Rather, the Center will coordinate with academic units of member investigators and with sister research centers at UK to integrate Center-sponsored visitors into existing seminar series. This strategy will broaden awareness of Center activities within the UK community and will defray the cost of outside speakers to other units.

9.d. Education: The Center will support graduate and professional education in muscle biology by a variety of mechanisms. NIH training grants can be used to support graduate student stipends and summer research training for professional students in medicine, dentistry, and nursing. One such T32 application was submitted in January, 2007 (M. Reid, P.I.) and will be reviewed in May. Additional training programs are being planned. A limiting factor in these applications is the inability of new programs to document a suitable applicant pool for postdoctoral fellowships. The Center will maintain a cumulative database on all postdoctoral applicants to member investigators, strengthening the justification for postdoctoral stipends in future T32 applications. Individual training grants from NIH, AHA, and other funding agencies will be supported by a tutoring program for graduate students and postdoctoral fellows who are affiliated with Center laboratories. The Center will develop graduate courses in muscle biology to compliment offerings in the current course catalogue. In a pilot program, a graduate-level course was instituted last year (PGY 630: Advanced Muscle Physiology) attracting 15 students from the Colleges of Medicine, Health Sciences, and Education. Many members of the Center lectured in last year's course, including Drs. Andrade, Esser, Campbell, Reid, and Moncman. Based on its success, the course was continued in an expanded form in Spring, 2007. Additional courses on related topics (e.g., biochemistry of molecular motors, stem cell biology in skeletal muscle, and translational methods for muscle research) are being considered for future years.

9.e. International activities. One goal of the Center is to foster research and educational activities between Center investigators and muscle biologists in other countries. A major component of this effort is the appointment of International Affiliates who will have formal ties to the Center and active interaction with one or more of our member investigators. The Center will support an annual visiting professorship for an International Affiliate. Such visits will enable prominent foreign scientists to present their research findings in a seminar setting open to all University personnel. Foreign visitors will also meet one-on-one with Center investigators to talk shop and explore collaborative projects. The Center will also accept requests for support of international mini-sabbaticals for member investigators with the goal of stimulating international collaboration and acquiring new technology. Finally, trainees mentored by member investigators – graduate students and postdoctoral fellows -- will be eligible for scholarships to support externships in foreign laboratories. These experiences will enhance the learning experience of affiliated trainees, enhance the success of ongoing collaborations, and strengthen relationships between the Center and its International Affiliates.

9.f. Annual research retreat. Every summer, the Center will hold an off-campus research retreat for member investigators, their trainees, outside speakers, and interested members of the University community. The initial retreat will be an all-day event at Spindletop Lodge, a University facility north of Lexington. Planning and program decisions will be made by the Center membership and participants from outside the Center will be invited to attend. These will include scientists and physicians from UK plus a distinguished visiting lecturer. The latter will be a senior scientist and respected authority in the field of muscle biology. This individual will participate in all aspects of retreat activities and will deliver the keynote address.

Oral presentations in the morning session will feature selected Center investigators. After lunch, a second oral session will allow presentations by University investigators from outside the training program. Outside speakers will be selected for expertise in areas of clinical or basic research that are of interest to the Center membership. The goal is to foster future collaborations, especially in the area of translational research. The afternoon will conclude with a poster discussion session for trainees, students and postdoctoral fellows, working in the laboratories of Center members. Posters will be judged for scientific excellence by a panel of member investigators and awards will be presented for best posters in the Predoctoral and Postdoctoral categories. After a reception and dinner, the annual Award for Excellence in Research (see below) will be presented and our distinguished lecturer will close the retreat with a keynote address.

9.g. Excellence in Research Award. Outstanding achievement in research by members of the Center will be recognized and rewarded by an annual award. The Executive Council will solicit nominations from the Center membership. Nominations will be in the form of letters to the Council who will select the awardee. This individual will receive public recognition of her or his talents at the annual research retreat plus a plaque and a \$500 honorarium.

9.h. Development opportunities. A center for muscle biology will broaden the research portfolio of the University and will create new opportunities for potential donors. The Center will increase the prominence of research at UK on muscle-specific diseases such as sarcopenia, cancer cachexia, and chronic fatigue syndrome. This area of scientific excellence will provide an option that does not currently exist at the University for donors who have a specific interest in muscle-related maladies.

TABLE 1. REGULAR MEMBERS OF UK CENTER FOR MUSCLE BIOLOGY

Investigator	Academic Unit ¹	Research Interest	NIH Awards ²
Andrade, Francisco	Medicine	Pharyngeal and extraocular eye muscles	R01EY012998
Bruce, Eugene	Biomedical Engineering	Modeling of hypoxia effects on the heart	R03OH008651 R03NS050289
Callahan, Leigh	Medicine	Diaphragm function in sepsis	R01HL069821 R01HL080609
Campbell, Kenneth	Medicine	Cardiac myofilament biophysics	R03AG028162
De Leeuw, Rinskje	Dentistry	Role of muscle in TMJ pain	K23DE015298
Dupont-Versteegden, Esther	Health Sciences	Musculoskeletal loss and restoration	R01AG028925
Esser, Karyn	Medicine	Circadian biology and regulation of muscle adaptation	R01AR045617
Hadley, Robert	Medicine	Anoxia effects on cardiac myocytes	R01HL056910
Lennie, Terry	Nursing	Modulators of heart failure outcome	R01NR009280
McMullen, Colleen	Medicine	Laryngeal muscles in aging	R03DC007983
Moncman, Carole	Medicine	Cytoskeletal/myofilament protein chemistry	R01HL073089
Moser, Debra	Nursing	Clinical management of heart failure	R01NR008567
Noonan, Daniel	Medicine	Smooth muscle in LAM disease	R01HL067321
Peterson, Charlotte	Health Sciences	Mechanisms of muscle adaptation to loading and aging	R01AR047577 R01AG020941 R01DK071349
Piascik, Michael	Medicine	Adrenergic subtypes in vascular smooth muscle	R01HL038120
Reid, Michael	Medicine	Free radical biology in muscle	R01HL059878 R01HL045721 R21DK066232
Satin, Jonathan	Medicine	Cardiac electrophysiology and stem cell biology	R01HL074091
St. Clair, Daret	Medicine	Cardiomyopathy in cancer chemotherapy	R01CA094853 R01CA073599 R01CA049797 T32DK07778
Supinski, Jerry	Medicine	Mechanisms of diaphragm and cardiac dysfunction	R01HL063698 R01HL080429 R01HL081525

¹ College or Graduate Center

² 2005-2006 awards obtained from NIH CRISP sites using 'muscle' or 'cardiac' as search terms; does not include awards or grants from other extramural sources.

TABLE 2. BUDGET OF THE UK CENTER FOR MUSCLE BIOLOGY (YEARS 1-3)

	Year 1	Year 2	Year 3
Income			
College of Medicine	75,000	75,000	25,000
University	0	0	200,000
Total income	75,000	75,000	225,000
Expenditures			
Personnel	46,360	47,751	49,183
Administration	20,000	8,500	7,000
Research	7,140	15,749	163,817
Education	1,500	3,000	10,000
Total expenditures	75,000	75,000	225,000
Balance	0	0	0

Budget Justification

Income

College of Medicine: Founding contributions in Years 1 and 2 will establish the Center. Smaller supplements in subsequent years will defray administrative costs.

University: Funds reflect a 10% return on indirect costs from grants on which Regular Members are principal investigators; based on an estimated \$2M in total indirect costs received in Year 1 and 10% return to the Center in Year 3.

Expenditures

Personnel: Salary and fringe benefits for Administrative Associate I estimated from current payroll costs in Department of Physiology; budget includes annual 3% increments. No support is requested for effort of Director or Co-Director.

Administration: Year 1 includes one time-only charges to create the Center website, establish the administrative office, and institute recurring activities. Completion of these tasks in Year 2 account for decrements that reach stable cost levels in Year 3. Ongoing expenditures include costs associated with office administration and visits to campus by members of the External Advisory Board.

Research: Costs in this category reflect the research-intensive focus of the Center. Year 1 expenditures are constrained by costs associated with administrative start-up. The research investment increases by 50% in Year 2 and jumps nine-fold in Year 3. The Year 3 budget is will enable substantial investments to stimulate Center research. Expenditures are expected to include visits to campus by external scientists, pilot research projects to support grant applications, purchase of essential shared equipment items, bridge funds for Center investigators, and recruitment of new muscle biologists to the UK faculty.

Education: Costs reflect progressive increases in educational initiatives as the Center is established. Year 1 reflects travel expenses for a visiting scholar to meet with Center-associated trainees and serve as keynote speaker at the inaugural research retreat. Incremental costs in Years 2 and 3 reflect broadening educational initiatives including sponsorship of an international externship for a Center-affiliated trainee in Year 3.

June 20, 2007

Dr. Perman,

The College of Medicine Faculty Council discussed the proposal to create a Center of Muscle Biology at our June 19, 2007 meeting. The proposal clearly articulated the advantages of a Muscle Biology Center to the faculty and the college. The efforts of Dr. Mike Reid and his colleagues to establish a forum whereby basic, translational, and clinical scientists can interact in a more productive manner is commendable. During the course of our discussion it became evident that the creation of this Center will have a major positive impact on the College of Medicine Faculty and our students. The College of Medicine Faculty Council unanimously approved support for the creation of a Center for Muscle Biology.

Best regards,

Eric J. Smart, PhD
Chair, COM Faculty Council



UNIVERSITY OF KENTUCKY

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Michael B. Reid
Chair, Department of Physiology

Jay A. Perman
Dean, the College of Medicine

Dear Dean Perman and Chairman Reid:

I am pleased to support the College of Medicine in proposing a Center for Muscle Biology. The Graduate Center for Biomedical Engineering, of which I am dean, will be an engaged partner in this Center. I look forward to this collaboration, and I approve the inclusion of Dr. Eugene Bruce as a Regular Member of this Center. He brings significant experience as both a researcher and an administrator to this initiative.

Sincerely,

A handwritten signature in cursive script that reads "Jeannine Blackwell".

Jeannine Blackwell, Dean
The Graduate School



UNIVERSITY OF KENTUCKY

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www.uky.edu

April 26, 2007

Drs. Michael B. Reid & Jay A. Perman
College of Medicine
Campus 1070

Dear Drs. Reid & Perman:

I am pleased to write a letter of support for the establishment of a Center for Muscle Biology. The goals of the Center are in alignment with one of the primary research areas in the College of Health Science. Dr. Charlotte Peterson, co-Director of the proposed Center, is working to grow translational research in the area of functional independence in the Department of Rehabilitation Sciences within our College. The Center for Muscle Biology will provide a platform for new researchers from the College of Health Sciences to interact with scientist colleagues in other colleges.

I view this Center as evidence of one of UK's greatest strengths: collaboration. We are able to join across department and college lines to create dynamic interactions that elevate the units involved. The proposal for a Center for Muscle Biology has my enthusiastic support. The College of Health Sciences looks forward to this new collaboration with the College of Medicine.

Sincerely,

Lori S. Gonzalez, Ph.D.
Dean & Professor



UNIVERSITY OF KENTUCKY

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April 30, 2007

Jay Perman, MD
Dean
Michael B. Reid, PhD
Chair of Physiology
College of Medicine
University of Kentucky
Lexington, KY

Dear Dean Perman and Dr. Reid:

I am writing in support of the proposed University of Kentucky Center for Muscle Biology. This initiative will benefit the research and educational missions of the College of Nursing and will strengthen interdisciplinary ties across campus. I consulted with Drs. Debra Moser and Terry Lennie regarding participation as Regular Members of the Center, and they are delighted to do so. Both are outstanding nurse scientists and will contribute to success of this new center. Thank you for including our faculty in the development of this center.

Yours truly,

A handwritten signature in cursive script that reads 'Jane M. Kirschling'.

Jane M. Kirschling, RN, DNS
Professor and Dean
College of Nursing



UNIVERSITY OF KENTUCKY

The Graduate School

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May 2, 2007

Jay Perman, M.D.

Dean

Michael B. Reid, Ph.D.

Chair of Physiology

College of Medicine

University of Kentucky

Lexington, KY 40536

Re: UK Center for Muscle Biology

Dear Dean Perman and ^{Mike}Dr. Reid:

I am writing in support of the proposed Center for Muscle Biology. This initiative can benefit the research and educational missions of the Center for Biomedical Engineering and will strengthen interdisciplinary ties across campus. I am pleased by the inclusion of Dr. Eugene Bruce as a Regular Member of the Center and endorse his participation. He is an excellent engineer and will contribute to success of the new enterprise.

Regards,

A handwritten signature in cursive script, appearing to read 'Dae'.

David Puleo, Ph.D.

Professor and Director



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COLLEGE OF DENTISTRY

April 24, 2007

Jay Perman, MD, Dean
Michael B Reid, PhD, Chair of Physiology
College of Medicine
University of Kentucky
Lexington, KY

RE: UK Center for Muscle Biology

Dear Dean Perman and Dr. Reid,

I am writing in support of the proposed Center for Muscle Biology at the University of Kentucky. This initiative will benefit both the research and educational missions of the College of Dentistry, particularly through enhancing opportunities for our junior and more senior faculty to engage in interdisciplinary research. As this type of activity is highly valued and recognized at UK, each unit of the institution continues to be encouraged to determine the "value added" of collaborative initiatives such as this. I specifically recommend and encourage the participation of Dr Rinskje De Leeuw, Division Chief of Orofacial Pain in the College, as a Regular Member of the Center. Reny is a DDS, PhD clinician scientist whose research interest in chronic pain and fMRI imaging approaches to determine underlying mechanisms of this process should be a good fit with the breadth of activities in the Center. Not only does she bring solid science to contribute, but continues to mentor orofacial pain residents in their research projects, some of whom would benefit by access to the faculty of the Center. We currently have a young clinician scientist in oral medicine, Dr. Juan Yepes, working the Dr. Leslie Crofford, Chair of Rheumatology and Director of the Women's Health Center at UK in studies of fibromyalgia and tempromandibular joint syndrome on an NIH grant. Finally, we have undertaken an initiative in the College of Dentistry to link faculty from oral surgery, oral medicine/radiology, and orofacial pain with investigators in the College of Health Sciences (CHS) targeting various neurological and musculoskeletal aspects of craniofacial structure and function, particularly related to childhood development and alterations with aging. With Dr. Peterson from the CHS as a major partner in the Center for Muscle Biology, I believe that we will be able to identify additional unique collaborative opportunities as the Center evolves.

Thank you for integrating us into this exciting new initiative at UK.

Yours truly,

A handwritten signature in cursive script that reads "Sharon P. Turner".

Sharon P Turner, DDS, JD
Dean, College of Dentistry

Office of the Dean

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November 28, 2007

The Academic Organization and Structure Committee approves the proposal for a new Center for Muscle Biology.