

Mentoring Policies in the Department of Regenerative Medicine and Cell Biology (2011)

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1. The Department's Vision for Mentoring Goals:

The overarching goal of mentoring in the Department of Regenerative Medicine and Cell Biology is to enhance, support and grow an academic environment in which our faculty can develop in their conduct of research and teaching skills. It is been a cornerstone of our philosophy that mentoring is critical to the ongoing success of our enterprise.

It is recognized that a strong, vibrant and motivated faculty is essential to the attainment of our Departmental objectives and mission. We are also aware that junior faculty at academic medical centers across the country identify mentoring as one of the most important factors in career progress. We thus make every effort to develop a customized mentoring plan for our individual faculty mentees and their personal goals.

Having an effective mentoring plan in place is as much about our growth as a Department as it is about the development of our individual faculty members. The best and brightest can be all too easily lured away to “greener pastures”, so we have made it our business to build an environment that both encourages faculty growth and retention.

By a number of objective measures, we believe that we have been successful in promoting a culture of effective mentoring and faculty development. In the last 18 years, all but one of our candidates achieved the promotion for which they were put up for. Our Department has retained some of the most productive and innovative researchers at MUSC and to this day retains a reputation as a internationally recognized center of excellence for research in Cardiovascular Development Biology and Regenerative Medicine.

2. The Departmental Promotion and Tenure Process

The Department has clearly defined milestones for Promotion and Tenure for each faculty rank and track based on the College of Medicine guidelines

see(<http://www.musc.edu/com/faculty/apt.htm>).

2a. Documenting Career Development (Adapted from the DOM guidelines)

In order to achieve promotion and tenure, the professional growth of the faculty member needs to be documented. This includes a curriculum vitae (CV) that is updated on annual basis in the format required by the College of Medicine. The CV serves as an ongoing portfolio, documenting research, teaching, and clinical accomplishments as the individual progresses through the academic ranks. Depending on the academic track on which the faculty is on, different emphasis will be placed on different aspects of their portfolio e.g., for academic investigators, the research portfolio is most important, whereas for a faculty member in an academic educator track, the teaching portfolio is of primary importance. There may also be faculty who do not fit into a defined track, and in such cases career development will be assessed individually. For example, as the Department is in the basic sciences we do not have the facility to assess faculty who undertake Clinical duties. However, in the past we have had clinical faculty that have carried out some significant portion of their scholarship in our Department. In such, cases we offer our assistance to the Clinical Department in which the faculty has their primary appointment in tracking of career of development. The overarching principle we abide to is to document the development of scholarship and record evidence of growth, productivity, and service.

The Portfolio as documents in an up-to-date CV should include:

2a1. Academic Researcher Track

1. Completion of educational requirements necessary for career in academic research
2. First authored original publications (with impact factor information and calculation of a current Hirsch Index if possible)
3. Senior authored original publications (indicate whether the first author was someone you mentored)
4. Co-authored original publications
5. Other publications, e.g., review papers, book chapters, textbooks
6. Career training grant awards
7. Independent grant awards as PI
8. Grant awards as Co-investigator
9. Presentations of research at national / international meetings
10. Peer recognition for research activities including invitations to present at national / international meetings and other universities

11. National recognition, as evidenced by election to specialty societies, editorial boards, service on national committees, NIH study sections, grant review panels of other funding agencies
12. Institutional or external research awards
13. Mentoring achievements: individuals mentored, achievements of mentees including grants received and important publications of mentees under your guidance, and where mentees are today
14. Membership and involvement in professional and scientific organizations
15. Contributions to research-oriented committees at department, college, university, community, state, regional, national and international levels
16. Leadership roles in research in appropriate department, college, or university

2a2. Academic Educator Track

1. Completion of educational requirements necessary for career in academic teaching
2. Philosophy of teaching and learning
3. Teaching goals for student accomplishment
4. Teaching methods and evaluation strategies
5. Participation in course and/or curriculum development
6. Engagement in the scholarship of teaching and learning (SoTL)
7. Evidence of teaching accomplishments
 - a. Description of types of different teaching activities such as formal courses, small group seminars, one-on one tutorials, supervision of student research projects, chairing thesis or doctoral committees, and coaching manuscript preparation for students, residents, and fellows
 - b. Course materials (syllabi, readings, handouts, assignments, examinations)
 - c. Documentation of teaching innovation (simulation, educational technology)
 - d. Manuscripts that are related to teaching and or educational activities
 - e. Student, resident and fellow evaluations of teaching
 - f. Peer evaluations of teaching
 - g. Audience evaluations of presentations at state or national meetings
 - h. Membership in departmental, college, university, society, community, state, regional, national and international committees or organizations related to teaching
 - i. First authored publications (papers, chapters, reviews, textbooks) related to teaching
 - j. Senior authored publications (papers, chapters, reviews, textbooks) related to teaching
 - k. Co- authored publications (papers, chapters, reviews, textbooks)

- related to teaching
 - l. Grant awards related to teaching
 - m. Presentations on teaching at national / international meetings
 - n. Leadership roles in teaching in appropriate department, college, or university
 - o. Honors and awards for teaching
8. Mentoring achievements in teaching: individuals mentored, achievements of mentees in teaching arena, and where mentees are today

2b. A detailed description of the steps of assessing Faculty Progress

The core method used for objective assessment of documented progress of faculty portfolios is the Departmental Promotion and Tenure Committee. Presently, the P&T committee comprises all tenured full Professors in the Department, including Drs Rob Gourdie (chair), Tim Fitzharris (chair emeritus), Scott Argraves, Tom Borg, David Bernanke, Mike Kern, Chris Drake, Andy Wessels, Dick Swaja, and Bryan Toole. The core of the Departments Promotion and Tenure process is a study section-like review. Nonetheless, each year every faculty member in the Department is subject to a review by the Chair Roger Markwald as part of his annual progress interview with individual faculty members. Additionally, the up-to-date CV/portfolio of each faculty member is separately and independently reviewed by the chair and co-chair of the P&T committee.

The steps of this dual review process can be summarized as follows

2b1. The chair of the P&T committee and the co-chair meet in early February. They consider candidates recommended by the Dept. chair based on his/her annual meetings with faculty from the previous year. The chair of the P&T committee and the co-chair also go through each faculty member in the Department in turn using CVs on file discussing their growth, progress and suitability for promotion.

2b2. A subset of individuals is identified who have been recommended by the chair or identified by the chair and the co-chair of the P&T committee. The names of these individuals are then forwarded to the Departmental chair and other committee members for comment. Other committee members are also invited to suggest faculty that may have been over looked by the Departmental chair or the chair and co-chair of the P&T committee. The goal is to cast the net as broadly in this initial step.

2b3. Once the subset of candidates has been identified (usually between 1-4 individuals), the P&T committee chair will convene a meeting of the full Departmental P&T committee in March. The meeting is structured like a study section. Each candidate for promotion is assigned a primary and secondary reviewer. Any committee member with a conflict of interest is excused.

2b4. At the face-to-face meeting the strengths and weaknesses of the candidate are presented and discussed in relation to the track on which they are on and the promotion guidelines of the COM. Any failures to meet specific COM policies (e.g., not enough peer reviewed publications) will be identified. It will be discussed on what time scale any issues are “fixable”. The committee tends to be less enthusiastic about candidates that just meet the COM guidelines, and tend to be much more enthusiastic about those that meet the guidelines and also excel in one or more areas.

One of the roles of the Promotions and Tenure committee is to discuss and assess mentor-mentee relationships of the promotion candidates. If things seem to be working well, then typically well enough is left alone. The committee does not micromanage nor does it wish to discourage creativity. The goal is to provide the tools needed to fulfill potential for becoming an outstanding educator, researcher or both. If issues are seen or brought to the attention of the committee, and occasionally this does occur – a note will be placed in the report forwarded to the chair. Examples might include a mentor who does not avail themselves sufficiently or appears to use the relationship for unwarranted authorship.

Based on the consideration of this information the committee then votes on whether to recommend this individual to the chair for forwarding to the COM P&T committee.

2b5. The P&T chair then writes a report summarizing each reviewer’s presentation and the committee’s discussion and recommendation for each candidate and forwards it to the Departmental Chair.

2b6. The Dept. chair uses the P&T committee report as an aid to his discussions with the candidate at their annual review of that year. If the Chair excepts the committees recommendation, the ball is turned back over to the P&T chair who seeks the necessary documents/letters from the candidate and their referees for the deadline of the January COM P&T committee. If there are fixable problems that require further attention, then the candidate may be deferred for the June deadline of COM P&T committee. Otherwise the potential faculty member will be deferred for a full re-review in a subsequent year.

The chair of the P&T committee fields questions from the candidate on the process or refers them to the department Departmental chair if they judge that the question is in his/her province.

In addition, there are other one-off circumstances that may or may not require convening of the Department P&T committee. This could include adjunct appointments, track changes and consideration of the qualifications of new recruits to the Department.

3. Examples of Approaches to Mentoring

We have taken advantage of multiple strategies for mentoring our “seed corn”.

These approaches include:

3a. Encouraging mentees to take the traditional route in actively seeking out a faculty mentor.

This is a time-tested approach that dates back to the Greek origins of the word “mentor”. There are at least half a dozen examples within our Department of current senior faculty who were themselves mentored in this manner. Key to the success of this approach is retaining a balance of individuals at differing levels of seniority within the Department. This balance in turn has been dependent on our ability over the last 18 years to nurture and retain long-term our most able faculty through to senior levels and to continue to talented junior recruits into our ranks.

3b. Encouraging senior faculty members to include junior faculty colleagues as Co-Is on their grants. Importantly, this mentoring relationship also provides important feedback on manuscripts and grant proposals before they are submitted.

This is obviously a winning combination for all concerned. The more junior faculty gets to participate in going after a grant with a seasoned hand. The more senior partner gets access to the energy and unique technical skills of the junior partner. In the case of PPGs, written by the Department this approach has taken on a semi-formal aspect in which Project leaders nearly always include percent effort as Co-I for a junior member of the Department. Indeed, we have pursued this strategy to our cost, sometimes being criticized for over-protecting junior faculty by study sections.

3c. Putting in place mentor-mentee relationships in a formal designated manner as dictated by a training grant.

This approach has in part flowed from the large programmatic faculty training grants that we have been successful in obtaining including COBRE, INBRE and NSF RII grants.

In the case of the COBRE and INBRE grants, faculty mentors are designated (targeted) to mentees who have projects. The targeted mentors are generally paid a small fraction of their salary (5-10%) by these grants for this and are expected to meet with the mentee on a regular basis and actively assist with their professional growth doing tasks that include reading of grants and papers and being available for advice on professional issues. Over

the past 10 years, almost all new faculty recruitments were made through these mentoring center grants supported by the NIH. For those few who are not COBRE or INBRE participants, the department has provided a small stipend for mentors in the form of salary support which has allowed us to develop strong teaching programs.

In addition, for INBRE and COBRE mentoring teams are assigned to review progress of the individual target faculty. In part this is done using a template that is included in this report.

Finally, all of the above programs have regular reviews by an intramural advisory committee and an annual review by extramural advisors at which junior faculty present their work and recommendations are made and then acted upon. In these reviews we include all early and mid-career faculty regardless of whether they are funded directly by these center-type grants

3d. As indicated above, tailoring the operation of our Departmental Faculty Promotion and Tenure Committee to include career mentoring to ensure that the progress of our faculty is monitored in a measured, fair and effective manner.

4. Metrics of Successful Mentoring

It is recognized that the Departmental chair is ultimately responsible for the success of the mentoring program. Nonetheless, a great deal of the responsibility for assessing the success of mentoring rests within the structure of Department mentoring plan. In addition to the Departmental P&T committee, a Departmental Champion will provide their perspectives concerning the mentoring process for each faculty member. The following criteria will be used to determine effectiveness of mentoring:

4a. Research-related metrics for determining the effectiveness of mentoring:

- Number of grants submitted by mentee under the mentor's guidance
- Number of these grants funded
- Number of original publications under the mentor's guidance
- Importance of original publications under the mentor's guidance (e.g., impact factor, editorial written on paper)
- Career development progress of mentee while guided by the mentor, e.g., presentation of research at national / international meetings, invited presentations at meetings or other universities, election to study sections or specialty societies, promotion of mentee
- Research awards of mentee under the mentor's guidance

4b Teaching related metrics for determining the effectiveness of mentoring:

- Teaching accomplishments of mentee under mentor's guidance, e.g., formal courses taught, course materials developed, innovative teaching methods developed
- Number of education publications under the mentor's guidance
- Importance of education publications under the mentor's guidance (e.g., impact factor, editorial written on paper)
- Number of education grants submitted by mentee under the mentor's guidance
- Number of these grants funded
- Career development progress of mentee while guided by the mentor, e.g., presentations at national / international meetings, invited presentations at meetings or other universities, membership in education committees in or outside of the institution, promotion of mentee
- Honors and awards for teaching to the mentee under the mentor's guidance

4c. Metrics to determine the overall effectiveness of the departmental mentoring plan could include:

- Surveys of faculty on their satisfaction with the plan and their job overall
- Attrition of faculty within the department, especially junior and mid-level faculty
- Promotion of faculty within the department
- Number of successful mid-career awards for trained mentors NIH
- Number of career development awards of mentees
- Total funding from all mentored activities
- Total number of publications overseen by mentors
- An external review of the mentoring program by a senior member of the College leadership designated by the Dean every 3-5 years.

5. Resources

5a. Research Support

There are a number of institutional resources that support basic science and translational research at MUSC of particular relevance to the Department of Regenerative Medicine and Cell Biology. These are listed on the MUSC Research and Discovery website (<http://research.musc.edu/index.html>). Some of these resources are described below:

5a1. Departmental Centers:

Cardiovascular Developmental Biology Center (CDBC)- <http://regmed.musc.edu/cdbc/cdbc.htm> MUSC/Departmental center focused on research on cardiovascular developmental and regenerative biology. Some 25 faculty are members of the center. Organizes the annual CDBC symposium which features key researchers from around the world, as well speakers from within MUSC. Administrative Offices and Laboratories are located on the sixth floor of the Charles P. Darby Children's Research Institute. ROGER R. MARKWALD - CDBC Director. Robert G. Gourdie - Co-Director. CDBC symposium organizer - Andy Wessels.

Center for Cardiac Cell Signaling - MUSC/Departmental center on research on cardiovascular electrical signaling, with particular focus on tissue engineering a sinoatrial node. Organizing the 2011 Cardiac Stem Cell and Regeneration Symposium which will feature key researchers from Israel, Europe and the USA, as well speakers from within MUSC. Martin Morad - Director

Josh Spruill Imaging Core - <http://mmi.musc.edu/> Main equipment core in the Department. Features 4 state of the art laser scanning confocal microscopes - including for live cell imaging. Tom Trusk- Director (truskt@musc.edu).

MUSC ProteoGenomics Facility - <http://proteogenomics.musc.edu/> based in the Department offers a range of proteomics and genomics services to the MUSC research community as well as to outside academic and corporate researchers. We perform multiplex bead array analysis (i.e., Bio-plex system), surface plasmon resonance based biomolecular interaction analysis (i.e., BIAcore), qualitative analysis of RNA (Agilent Lab-on-a-chip Bioanalyzer), DNA microarray screening (i.e., Affymetrix gene expression analysis), analysis of DNA microarray data and web-based archiving of array data. W Scott Argraves - Director (argraves@musc.edu).

5a2. MUSC Institutes and University Offices Assisting with Research:

Clemson-MUSC Bioengineering Alliance (BioE)-

<http://www.musc.edu/bioengineering/>

The CU-MUSC Bioengineering Program allows MS- and PhD-level bioengineering students at Clemson University to take classes and to conduct their graduate research at MUSC and enables MUSC students to access Clemson's nationally recognized bioengineering resources. A number of the key faculty on this program, including the Director are based in the Department of Regenerative Medicine. The BioE is an exciting and productive program that bridges the physical and life sciences to provide comprehensive translational research and education opportunities for Clemson bioengineering students and faculty, and expanded research and graduate degree opportunities for MUSC students and clinicians. BioE Director Richard Swaja (swajar@musc.edu).

The Office of Research Development (ORD)

(<http://research.musc.edu/ord/index.html>), which is funded through the Vice President for Academic Affairs & Provost's Office, focuses on program and proposal development, identifies funding opportunities, develops proposal concepts, networks faculty members with complementary interests, provides grant-writing consultation and workshops, offers pre-submission critiques, compiles institutional data, and prepares competitive proposals for research resources and research training. New faculty and trainees are encouraged to visit the office in 101 Basic Science Bldg to meet the ORD staff and learn about networking opportunities. The following are among the services offered by the Office of Research Development:

Research Project Grant (RPG) Retreats are held approximately 3 times / yr. These interactive half-day sessions give individual investigators the opportunity to gain constructive criticism on a specific research concept or proposal. Researchers at any phase of career development are encouraged to present or attend.

ORD Alerts mailing list is a service for MUSC faculty and trainees to receive research news and funding opportunities by email (<http://research.musc.edu/ordalerts.html>.)

Community of Science (COS) is an external web-based system, offered as an institutional subscription service, that provides a range of services including searchable databases for funding opportunities and expertise, as well as a personalized workbench from which to access and manage COS services.

Institutional "Boilerplate" is a compilation of information about MUSC, its components and programs, primarily used to assist MUSC faculty, staff, and

trainees in preparing institutional resources and environment sections for research grant and contract proposals.

Grantsmanship Workshops are held twice per year. Led by an external consultant, the workshop content focuses on the NIH organization, peer review system, grantsmanship tips, and the ABCs of an R01 or other NIH grant application. Individual and team consultations are also offered. The workshops and consultation opportunities are an institutional research support service, provided at no charge to investigators or programs.

MyPeerReview is an internal, on-line searchable database of information about MUSC faculty service on review panels and study sections for the NIH and other federal and non-federal sponsors, as well as journals for which MUSC faculty members have served or currently serve as an ad hoc reviewer, member, editorial board, etc.

The South Carolina Translational Research (SCTR) Institute.

The recently NIH funded MUSC Clinical Translational Science Award (CTSA) that is called the South Carolina Translational Research (SCTR) Institute (<http://sctr.musc.edu/>) provides research support to investigators across campus. Within SCTR is the SUCCESS Center, which provides research navigation support such as collaborator and mentor matching and links to institutional cores and programs. Additionally, the SUCCESS center (<https://sctr.musc.edu/index.php/programs/success-center>) provides consultation for regulatory submissions and study subject recruitment, lists studies on clinical trials registry, and helps with grant budget development. At SCTR there is a toolkit that can help the most inexperienced investigator navigate the process required to get clinical trials underway and much more. MAP-R is a web portal that identifies approvals needed for all types of grant submissions Visit https://sctrweb2.musc.edu/research_toolkit to find a wealth of information and pertinent advice about research at MUSC.

SCTR Vouchers can be requested for up to \$1,000 for research services and supplies per approved protocol every six months. Investigators are limited to two active vouchers in any one six month period as long as they are for two different protocols. For more information please visit <https://sctr.musc.edu/index.php/voucher>.

The Office of Scientific Editing and Publications (OSEP) which provides support to augment manuscript and grant writing skills for MUSC faculty, trainees, and staff <http://research.musc.edu/APR/OSEP.html>, and ii. through the SUCCESS center <https://sctr.musc.edu/index.php/programs/success-center>.

The Office of Research and Sponsored Programs (ORSP) and Office of Grants and Contracts Accounting (OGCA) provide the fundamental support

need to obtain and manage sponsor-supported research funding. In addition to individual support, their websites provide important information regarding basic information needed for submission, and management of grants and contracts.

Office of Research and Sponsored Programs
(<http://research.musc.edu/orsp/index.html>)

Office of Grants and Contracts Accounting
(<http://academicDepartments.musc.edu/vpfa/finance/gca/index.ht>)

The Foundation for Research Development - <http://academicdepartments.musc.edu/frd/> The MUSC Foundation for Research Development (FRD) is a non-profit foundation created to benefit The Medical University of South Carolina (MUSC) by establishing relationships which bring ideas, technology, and expertise of the faculty, staff, and students at MUSC to industry and ultimately into public use. FRD serves as the technology transfer office for MUSC and manages inventions, patenting, and licensing of MUSC discoveries. Director - Chip W Hood (hoodwc@musc.edu).

The MUSC Entrepreneur Center - This soon to be established center promotes practical translation of basic science to clinical and commercial applications. In particular, focusing on startup companies spun out of MUSC labs. The center is likely to be underway sometime in 2012.

5a3. Some Specific Resources for Basic Science Research:

Research Support (<http://research.musc.edu/researchresources.html>)
Shared Core Facilities. A number of core facilities are available to support basic research (see information of each of these facilities in Research Shared Facilities on this website). In addition, an annual EXPOsition of these facilities that enables meetings with core personnel occurs in the Fall each year.

College of Graduate Studies (CGS) Office of Postdoctoral Affairs. In addition to providing useful information regarding practical aspects of hiring and mentoring postdoctoral scientists, the office also offers services to enable recruitment of postdoctoral scientists.

Responsible Conduct of Research (RCR).
CGS RCR Retreat resources. All MUSC postdocs participate in a mandatory 2-day retreat focused on career development, conflict resolution, and compliance issues related to the responsible research practices. All lectures and handouts are available on the CGS website.(<http://www.musc.edu/grad/postdoc/rcr.html>)

The HHS Office of Research Integrity website has a wealth of educational resources on RCR practices with case scenarios, videos and tutorials for all stages of research professionals (<http://ori.dhhs.gov>)

Personnel/Trainees Relationships

College of Graduate Studies (<http://www.musc.edu/grad/>)

Graduate Faculty Resources – application for appointment to graduate faculty and conflict of interest forms.

Mentoring Compact – AAMC recommendations for mentoring graduate students and postdocs (<http://www.aamc.org/research/postdoccompact>).

Graduate Council Minutes – record of monthly meetings and policy discussions.

Graduate Faculty Research – web-based database of faculty research interests to aid students looking for potential mentors.

Training Grants – listing of MUSC training grants and career development programs for graduate students and postdocs.

Student Handbook – specifics of graduate programs, resources, dissertation requirement, and CGS policies.

Summer Research Programs for Undergraduates and Health Professional Students. These programs provide students the opportunity of a 10-week long internship with MUSC faculty. (<http://www.musc.edu/grad/summer/index.html>)

Howard Hughes Medical Institute. “Lab Management: Making the Right Moves” is an essential resource for postdocs and faculty, available free online. (<http://www.hhmi.org/resources/labmanagement/moves.html>)

“Entering Mentoring” provides guidance in mentoring individuals with diverse learning and personality styles. (<http://www.hhmi.org/catalog/main?action=product&itemId=272>)

Human Resources Career Development Courses and Seminars. MUSC HR provides a variety of professional development workshops and seminars to facilitate more effective lab management and hiring practices. (<http://academicDepartments.musc.edu/vpfa/hrm/training/trainingpage>)

International Scientific Presenters Toastmasters. This club provides a supportive environment for learning how to give effective scientific

presentations, and benefit from constructive feedback of peers and faculty sponsors.(<http://scientific.freetoasthost.us>)

CGS725 Teaching Techniques. This course is offered every Fall and Spring semester and is open to all students and postdocs. Contact the College of Graduate Studies office for registration information (weised@musc.edu)
CGS712 Grant writing course. is another "free" resource that PIs might want their postdocs to take, though faculty are also welcome. The course organizer is Dr Krug the COM Dean for post-doctoral affairs and welcomes questions concerning the course (krugel@musc.edu).

5a3. Networking Opportunities

Department of Regenerative Medicine and Cell Biology Seminar Series- Departmental Seminar series organizer - Andy Wessels (wesselsa@musc.edu).

The Cardiovascular Developmental Biology Center Annual Research Conference -The annual CDBC symposium within the Department is held in the spring semester and features key researchers from around the world and MUSC working in cardiac developmental and regenerative biology. CDBC symposium organizer - Andy Wessels (wesselsa@musc.edu).

The Ernest Just Symposium The annual EJS symposium within the Department honors the pioneering African American biologist from Charleston Ernest Just. It features key national researchers and science thought leaders. EJS symposium organizer – Titus Reaves (reaves@musc.edu).

“B & BS” (halushpv@musc.edu). The B & BS club provides an informal forum for faculty, postdoctoral and graduate students to present their research ideas, grant proposals or research problems to a mixed audience that can provide useful feedback and often potential collaborations or exchange of reagents

MUSC Core Facilities “Octoberfest” Reception. This is an annual event for core facility directors to highlight the services available.

Research INKlings (<http://research.musc.edu/inklings.html>). INKlings is a monthly on-line news letter of recent events of interest to MUSC researchers.

SACNAS promotes a diverse research academy by providing workshops and networking opportunities that encourage Chicano/Hispanic and Native American students and postdocs to pursue and persist in STEM fields. This is also an excellent recruitment resource. (<http://www.sacnas.org/>)

ABRCMS is an annual conference that brings underrepresented minority students and postdocs together to present their research in an environment that encourages their development into future STEM faculty. This is also an excellent recruitment venue. (<http://www.abrcms.org/index.html>)

www.MinorityPostdoc.org hosts a variety of career development resources for postdocs, including job listings and articles, with an emphasis on minority scholars.

5b. Resources for Education

5b1. Educational Technology

Tegrity - Tegrity is a lecture capture service that lets faculty automatically capture every class – on and off campus – for later review by every student, anytime, anywhere. <http://tegrity.musc.edu>

Adobe Connect - Adobe Connect is a Web conferencing software that securely shares presentations and multimedia right from a desktop computer, supporting feedback from hundreds of participants — all using a web browser and the Adobe Flash® Player runtime. <http://connect.musc.edu>

Moodle: is the Learning Management System in use at MUSC. Moodle is currently being adopted by all courses in all Colleges at MUSC. Within the Department it is used in the Dental Gross Anatomy and Neuroanatomy course, and the College of Medicine is using it in both first-year and second-year medical student curriculum programs.

Link is: <http://moodle.musc.edu>

Education Technology Services (ETS) Provides support in the areas of digital imaging, audio visual support in centrally scheduled classrooms and distance education technologies, and video production.

5b2. Other Resources for Education

Apple Tree Society - The Apple Tree Society exists to foster dialogue and activity related to the scholarship of health professions teaching through campus and national partnerships.
<http://www2.edserv.musc.edu/appletree/>

The following are the goals of the Society:

- Expand the faculty development opportunities related to teaching on campus.
- Initiate programs that recognize and enhance the value of teaching as a scholarly activity.

- Explore and support innovative methods and technologies for teaching and learning.
- Promote professional development of current and future educators.

Activities of the Society include:

- Monthly Brown Bags – noontime sessions on topics related to the Scholarship of teaching
- Workshops focused on development of teaching skills including lecture and presentation skills, case based discussions, evaluating learners, and using technology such as WebCT (see below)
- Collegiality – informal meetings to discuss teaching and learning

Copyright Toolkit - Understanding and complying with the laws governing the use of copyrighted materials is daunting. The information on this site is directed at teaching faculty, students, scientific writers, researchers, and others at MUSC who use copyrighted works. It includes Copyright @ MUSC: Policies, Forms, & Resources, forms, and information about Coursepacks, Plagiarism and How to Cite Sources, releases, Images and text, and print and digital/online resources. Many of the links lead to the excellent copyright Websites of other universities.

<http://copyright.library.musc.edu/page.php?id=1314>

Interprofessional Education - Creating Collaborative Care (C3) is a Quality Enhancement Plan (QEP) for the Medical University of South Carolina that focuses on inter-professional education.

<http://academicDepartments.musc.edu/c3/>

Faculty Teaching and Research Awards (College and University) - In recognition of faculty accomplishments the individual colleges, as well as the university, present annual awards in teaching, research, and service. These awards are very competitive underscoring the excellence of the faculty with respect to their achievements. Various groups sponsor the awards. The university annual awards include:

- Developing Scholar Awards
- Outstanding Clinician Awards
- Teaching Excellence Awards (Developing Teacher, Educator-Lecturer, Educator-Mentor)
- Distinguished Faculty Service Awards

Library resources - <http://www.library.musc.edu/>

- Computer labs – 4 computer labs are available for use by faculty for their classes. The labs host an average of 25 iMac computers that support the use of both Windows and Macintosh operating systems.

- Learning Commons – An initiative of the MUSC library currently under development designed to provide spaces for study and socialization and access to the latest technologies for teaching and learning.
- Center for Academic and Research Computing – Works with faculty and staff across the campus to design, develop and support interactive instructional programs.
- Journals the library currently provides access to approximately 17,498 e-journals and 34 current print-only subscriptions
<http://muscls.musc.edu/>

Center for Academic Excellence - The CAE is dedicated to improving learning and teaching on campus. Health care providers must learn and re-learn in order to adapt their practices to the latest advances in biomedical science. They also must collaborate with colleagues across professions to provide quality care and conduct groundbreaking research. That's why the CAE provides collaborative learning groups; and the effectiveness of these groups is why a majority of MUSC students choose to participate—in addition to their scheduled class time. Another vital part of the work of the CAE is teaching the material and the strategies necessary for success on national and state licensing board/certifying exams. Under the tutelage of CAE faculty and their fellow students, students approach these rigorous exams with confidence and exceed national performance averages.
<http://www.musc.edu/cae/>

The Writing Center - The Writing Center faculty members teach students to communicate effectively with their professors, their fellow students, and their patients. <http://www.musc.edu/writingcenter/>

Enrollment Services - Enrollment Services oversees student admissions, records and financial aid. <http://www.musc.edu/em>

6. State or National Resources

NSF RII – <http://www.scepscoridea.org/epscor/2009NSFRII.html> A \$22m statewide National Science Foundation grant with the goal of tissue engineering a vascular tree. Two of the five thrust leaders for research on this program are based in the Department. The program goals are to recruit and/or coordinate a set of 22 new, tenure-track faculty, to recruit and retain a diverse group of students and faculty, establish the shared Advanced Tissue Biofabrication Center at MUSC, establish degree-granting programs, acquire major pieces of shared equipment, train undergraduate/graduate students and postdoctoral fellows, expand knowledge and discovery with cyberinfrastructure in SC and develop regional, national, and international collaborations. Scientific Director – Roger Markwald, (markwald@musc.edu), Operational Director - Scott Little (little@scra.org).

Funding Agencies

By going to the MUSC Research and Discovery website <http://research.musc.edu/researchresources.html> and clicking on Funding Opportunities under the Office of Research Development, information on the following opportunities is available:

- Funding alerts
- Federal and state funding opportunities
- Sponsor opportunities (Corporate and Foundations)

- New Investigator Funding Opportunities
http://research.musc.edu/newinv_fund.html

- Postdoctoral Funding Opportunities
- Limited Submissions Competitions Opportunities

Associations

- American Association of Anatomists (AAA). The AAA has a variety of resources directed toward career development for both researchers and educators. The Association meets annually with the Experimental Biology meeting, jointly gathering with multiple scientific societies, providing a wide-range of networking opportunities. AAA supports research and educational development more directly with outreach grants for training, travel, regional meetings, and resources. The Association has a Training Program for new teachers of anatomy a Career Networking Program, Professional Development programs at the EB meeting, and publishing opportunities in the three well-respected journals published by the Association: The Anatomical Record, Developmental Dynamics, and Anatomical Sciences Education.
<http://www.anatomy.org>

- American Association of American Medical Colleges (AAMC). The AAMC represents all 133 accredited U.S. medical schools; approximately 400 major teaching hospitals and health systems, including 68 Department of Veterans Affairs medical centers; and nearly 90 academic and scientific societies. Through these institutions and organizations, the AAMC represents 125,000 faculty members, 75,000 medical students, and 106,000 resident physicians. Through its many programs and services, the AAMC strengthens the world's most advanced medical care by supporting the entire spectrum of education, research, and patient care activities conducted by member institutions.
<http://www.aamc.org/>
- Association of Women in Science (AWIS) is a national advocacy organization championing the interests of women in science across all disciplines and employment sectors. By breaking down barriers and creating opportunities, AWIS strives to ensure that women in these fields can achieve their full potential.
<http://www.awis.org/>
- National Postdoctoral Association. The NPA provides many resources useful for enriching the research environment, managing a research lab, and expectations of mentors and trainees. MUSC is an affiliate institution which provides membership to all faculty, postdocs, and students.
<http://www.nationalpostdoc.org/>

7. South Carolina COBRE for Cardiovascular Disease Mentoring Template (Target Investigator)

Target Investigator:

Mentors:

Please answer the following questions regarding your progress in the last three months and relationship with your mentors. Send your report to Ella Fabunan and retain a copy for your records. We should receive two reports annually (December 1 and June 1) from each target investigator.

Scientific Progress

1. Briefly describe your scientific progress.
2. Has the research led to any publications? Please supply citations for published or in press work, and provide date and location of invited presentations.

Abstracts presented (platform/poster) _____

Invited Presentations _____

Articles in preparation _____

Articles submitted _____

Articles in press or published _____

3. Are you planning to submit an application for peer-reviewed research project grant application in the next 6 months?

What is the funding organization, what is the target date for submission of the grant?

Academic Progress

4. How would you describe your academic progress?

- Exceeds Expectations
- Meets Expectations
- Below Expectations

5. How would you describe your institutional support (space, dedicated time for research activities, administrative support)? How would you improve your research environment?

Mentoring Relationships (Targeted Mentors: _____)

6. How frequently do you interact with your mentors? Who initiates the contact?

7. Mode of interaction:

E-mail:	_____daily	_____weekly	_____monthly	_____less
than once a month				
Telephone:	_____daily	_____weekly	_____monthly	_____less
than once a month				
Meeting:	_____daily	_____weekly	_____monthly	_____less
than once a month				
Other:	_____daily	_____weekly	_____monthly	_____less
than once a month				

We consider a mark of the effectiveness of our Departmental process that the COM P&T committee approved all but one (in 2011) Dept. faculty who were nominated for promotion and/or tenure in the past 18 years. The process nonetheless remains open and continues to adapt to these challenging times.