Department of Biochemistry and Molecular Biology

Faculty Mentoring and Career Development Plan

Statement of Department's Mentoring Goals

The goal is for all faculty of the department to achieve their individual full potential as members of the College of Medicine and Medical University of South Carolina and to be rewarded for that achievement. Since the University is a place where everyone is learning, it is vital that each member of the faculty see tangible evidence of that professional growth, whether it be in the easily measured domains of writing papers for publication, writing and receiving grants, or preparing and presenting lectures for students and trainees of our colleges, or in the less easily measured aspects of teaching students, residents and fellows, mentoring young investigators and junior faculty, or developing clinical expertise by specializing in some area of clinical medicine. It is incumbent on faculty members, their mentors, Department Chairs, and the university leadership to see that tangible progress is being made and documented. This mentoring plan is designed to assist in this process.

The Department of Biochemistry and Molecular Biology occupies a unique niche at MUSC by providing foundational sciences and research. These goals are especially critical at MUSC since there is no associated undergraduate campus with the essential departments of math and chemistry. Thus, the Department needs to provide essential features of basic sciences such as chemical biology, structural biology, bioinformatics and mathematical modeling, in addition to classical biochemistry domain aspects such as enzymology, molecular biology, nucleic acids, protein science, and lipidology. On the other hand, the Department needs to interface with translational research and thus needs to focus on pathobiologic mechanisms.

Given these considerations, a major he goal is for all faculty of the Department is to conduct basic research in one of the foundational domains as well as to adopt at least one translational and/or pathobiologic area of interest. As such, we expect our faculty to become internationally recognized leaders in basic research and critical players in biomedical and translational research. The Department's goals are then to recruit and/or develop faculty who excel in these domains. As such, mentoring becomes a critical component of the activities of the Department. Our faculty require various levels of mentoring in developing as scholars, in achieving international prominence, in evolving as outstanding educators, and in becoming productive citizens in the College of Medicine and in the University. This mentoring plan is designed to assist in this process.

Description of Promotion and Tenure Process Within The Department

The Department shares a joint APT committee with M&I and Pharmacology. The Department employs 1 faculty tenure track:
Academic Investigator

The department has 3 academic tracks for modified faculty(non tenure track):
Research Faculty
Adjunct Faculty
Visiting Faculty

The department also supports and encourages dual appointments and special appointments (emeritus)

Full details on faculty appointment, promotion and the granting of tenure in the College of Medicine can be found at: http://www.musc.edu/com1/faculty/index.htm
Note that promotion and tenure are considered separately by the University.

The Department follows the College guidelines, and these are articulated also in the Departmental Faculty Book.

Before submitting an application for promotion or tenure to the College of Medicine, the application must first be reviewed by the Appointments, Promotions and Tenure (APT) committee for Basic Sciences (Departments of Biochemistry and Molecular Biology, Microbiology and Immunology, and Cell and Molecular Pharmacology and Experimental Therapeutics), which will then pass on its recommendations to the department Chair.

For the College of Medicine, there are two promotion cycles per year with application deadlines on May 1st and December 1st, and one tenure cycle per year with an application deadline on May 1st.

The application deadlines for Basic Sciences APT committee review are February 15th and Sept. 15th (for May and December College of Medicine deadlines, respectively). In addition, it is recommended to submit a letter of intent and a note from the chair so that the committee can ensure all necessary documents are being prepared/procured.

How Faculty Should Document Their Career Development

To achieve promotion and tenure, the professional growth of the faculty member must be documented. For this purpose, an up-to-date CV in the format required by the College of Medicine must be kept (link for CV format can be found at http://www.musc.edu/com1/faculty/index.htm). In addition, portfolios of research and teaching accomplishments should be kept updated (can be incorporated into expanded College of Medicine format CV). To advance through the academic ranks, the quality of the faculty member's individual scholarship is of critical importance with emphasis on the research portfolio. Note College of Medicine CV's must be kept updated by all faculty for annual faculty evaluation by the Chairman.

Components of Research portfolio that should be included in the expanded College of Medicine CV are listed below.

Academic Researcher Portfolio

1. Completion of educational requirements necessary for career in academic research
2. First authored original publications (with impact factor information 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. Teaching and Mentoring achievements: Courses taught, 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

Departmental Resources Available for Faculty Development and Links to Institutional Resources

Departmental Resources

The department has its own Faculty Book as well as a mentoring plan for junior and mid-career faculty as well as senior faculty who require specific advice. These are detailed in the subsequent section.

The Department provided protected time for early career investigators so that they can focus on research. This implies protection from any teaching for 2 years and gradual introduction of teaching activities. Also, this implies protection from administrative activities (with the exception of participation in committees that the individual faculty may benefit from).

The Department also provides administrative support for grants submission, grants accounting, purchasing, personnel, IT, and other necessary services.

The Menten Group

The Menten Club is an informal career strategy working group for junior women faculty in the Basic Sciences. The Club is named in honor of Dr. Maud Menten who was the co-inventor of the Michaelis-Menten Equation that provides a means for determining the rate of an enzyme's reaction. Although Maud Menten earned both an MD and a PhD degree, made other important discoveries related to blood glucose levels, hemoglobin electrophoresis and kidney functions, published more than 70 papers and worked as a pathologist and lecturer at the

University of Pittsburgh School of Medicine for 24 years, she was only promoted to full Professor in 1948 at the age of sixty-nine (one year before retirement).

Currently, on the MUSC Faculty ~70% of Instructors are women. The representation of women falls to 45% at the Assistant Professor level, to 41% at Associate Professor and to 19% at the full Professor level. The goal of the Menten Club is to promote and support the advancement of women pursing academic careers in Basic Sciences at MUSC. The members meet monthly to discuss a variety of topics related to establishing a research laboratory, developing and expanding independent research programs, planning career goals and mechanisms for achieving short and long term career goals. In the past year, the group has examined a number of useful resources, such as the Burroughs Wellcome Fund and HHMI Guides "Training Scientists to Make the Right Moves" and "Making the Right Moves, A Practical Guide to Scientific Management".

Specific areas of discussion have included time management and prioritizing, integrating family life with the life of a scientist, networking and the importance of establishing collaborations, the importance of attending national and international meetings, mentoring and being mentored and guidelines for promotion. The Club has also discussed the 2007 Report of the National Academies Committee on "Fulfilling the Potential of Women in Academic Science and Engineering", which addressed issues that are hindering the access and advancement of women in science. At future meetings, senior women faculty at MUSC will be invited to meet with Club members to discuss their careers and provide insights into how they managed their career development; for example, describing obstacles they may have faced in their careers and strategies they used to overcome them.

College of Medicine Resources

Can be found at:
http://academicdepartments.musc.edu/com1/faculty/resources_faculty.htm
The faculty handbook can be found at:
http://academicdepartments.musc.edu/faculty_senate//handbook/handbook.pdf

In addition to the COM's and the department's resources, a detailed list of institutional and state and national resources for supporting clinical and translational research, basic science research, and education are provided in Appendix 1.

Other faculty groups that serve organizational, support and advocacy roles.

The Faculty Senate is the representative body of the Medical University of South Carolina faculty (http://academicDepartments.musc.edu/faculty_senate). The Senate's recommendations reflect and advocate the faculty's collective interests to further the university's mission. The mission of the MUSC Faculty Senate is to represent the views, needs, and interests of faculty in the educational, research, and service programs of the university. One of the important roles of the Faculty Senate is arranging the New Faculty Orientation Program. This is a biannual event that includes a general welcome from key leaders at MUSC and breakout sessions detailing clinical, research, and teaching resources specific to MUSC. The Faculty Senate also provides Town Hall Meetings and Workshops several times a year to update the faculty on University Initiatives, Tenure and Promotion, and other relevant topics.

The Women Scholars Initiative (WSI) is a joint initiative of the Office of Academic Affairs and the Office of the President with a long-term goal of promoting careers of women faculty. This organization provides a monthly workshop series (recent topics include promotion and tenure, work/life balance, contract negotiation, financial planning, and establishing good mentoring relationships). Other events sponsored by the WSI include the annual Eminent Scholar Seminar and Award, which brings an eminent scientist to MUSC to talk about his/her work and visit with MUSC faculty members. Past Eminent Scholars include members of the National Academy of Sciences and the Howard Hughes Medical Institute. WSI sponsors the John R. Raymond Fellowship, an annual award made to a junior faculty member to be used towards building a collaboration with a renowned expert (male or female) in her field. WSI also sponsors a number of peer mentoring events and roundtables. WSI events are open to all MUSC faculty. Learn more at http://academicDepartments.musc.edu/womenscholars/index.htm

Specifics of Departmental Mentoring Plan

Upon initial appointment, the Chair will discuss with the new faculty the overall efforts in research, education, administration, and other activities. The discussion will include defining track and rank.

Specific Goals of Mentoring:
The senior mentor and/or mentoring team and faculty member together develop an individual mentoring plan. The mentoring plan will provide guidance in several different areas including:

1. What it takes to succeed as an academic basic science investigator
2. advice in area of research focus and how to develop a cutting edge program in research
3. how to develop and succeed in grants.
4. professional development. These include: how to acquire visibility nationally; inviting leaders in the field as speakers, how to participate in grant review panels (for example, all our associate professor faculty have become permanent members of NIH study sections); monitoring the progress of the mentee; helping to ensure academic promotion of the mentee; academic career guidance; and psychosocial support.

Mechanisms of Mentoring:
The Chair and the individual faculty member decide on the most suitable form of mentoring. In general, we have adopted one or both of the following:
1. Identification of a senior mentor that takes charge of the bulk of mentoring for the junior faculty. Often, but not always, this is the Chair of the Department.

2. Identifying a mentoring team. This team usually consists of a lead mentor and 2-3 other faculty mentors (from the Department or other Departments). The members of the team are chosen based on desired research expertise as well as solid experience in faculty development. We have not been turned down by any faculty from outside the Department for this activity; a clear reflection of the importance afforded to mentoring by all faculty in the basic sciences.

In many cases, we use a combination of the above 2 approaches, focusing the mentoring team activities on research and grant development.

In addition, we have the following activities:
3. annual strategic evaluation by the chair. This is to assure progress in research development and career development.

4. monthly meeting of junior faculty with the Chair. A variety of topics are discussed with emphasis on issues important for lab management, career development, but not specific focus on research per se.

5. biweekly faculty seminars. The emphasis here is on presentation by faculty who require input on grants and/or research development. This is followed by a meeting with either the chair and/or the mentoring committee.

6. Specific mentoring in education. Dr. Bill Stillway has served as senior mentor for education for all junior faculty teaching medical students. Dr. Lee Chao serves as senior mentor for education for our faculty teaching dental students.

7. the Menten group for junior women faculty as discussed in the previous section.

8. Recommending faculty for teaching and research awards. The Vice Chair for Education is in charge of identifying the most suitable candidates for recommendations for awards.

The faculty member provides the committee an updated and extended CV and an updated career development plan. The mentee and the mentoring team will meet twice per year to discuss the mentees goals and review progress with focus on development of an outstanding research program and securing extramural funding. The mentoring team will also assess the mentee's career development in terms of what is missing in the faculty members portfolio for promotion, and make specific recommendations about how to achieve promotion.

The career development plan is to consist of:

1. Planned time allocation:
_____% Teaching/training/providing mentoring
_____% Research
_____% Patient Care
_____% Administration
_____% Other Creative Professional Activity

2. Actual time allocation:
_____% Teaching/training/providing mentoring
_____% Research
_____% Patient Care
_____% Administration
_____% Other Creative Professional Activity

3. Professional Goals
Short Term Goals (coming year)
Long term (3-5 years)

4. Previously stated goals and progress toward those goals

Developing, Training and Rewarding Mentors Within the Department

While the skills required for effective mentoring come naturally to some faculty, even those mentors could benefit from mentoring training programs (Refs. 1 and 2 below). MUSC is currently looking into developing such a program. Junior faculty tend to gravitate to successful mentors. This presents a challenge for the successful mentor in terms of providing sufficient time to mentor several mentees. One way to do this for mid-career or senior scientists is to apply for mentoring awards from NIH (K05, K07, or K24 grants) that can provide up to 50% salary support for 5 years (renewable for another 5 years in some NIH institutes). Some members of the Mentor Leadership Council and other faculty members at MUSC are current or past recipients of these awards and can help other faculty apply for these awards. Contact the Office of Research Development if you are interested in applying for a K05, K07, or K24 award, and their staff will connect you with a current or past recipient of one of these awards.

1. Feldman MD, Huang L, Guglielmo BJ, Jordan R, Kahn J, Creasman JM, Wiener-Kronish JP, Lee KA, Tehrani A, Yaffe K, Brown JS. Training the next generation of research mentors: the University of California, San Francisco, Clinical & Translational Science Institute Mentor Development Program. ClinTransl Sci. 2009 Jun;2(3):216-21.

2. Morahan PS, Kasperbauer D, McDade SA, Aschenbrener CA, Triolo PK, Monteleone PL, Counte M, Meyer MJ. Training future leaders of academic medicine: internal programs at three academic health centers. Acad Med. 1998 Nov;73(11):1159-68.

Description of How the Departmental Mentoring Plan is Monitored for Effectiveness

Metrics of Successful Mentoring:
The effectiveness of the mentoring plan is best monitored by how well specific goals are accomplished. The Department of Biochemistry and Molecular Biology has an outstanding record in these areas. The specifics include:

1. Achievement of extramural peer-reviewed funding (type and number of awards). Most of our junior faculty have secured substantial funding (usually R01s) within first 3 years of appointment as assistant professors.
2. Publications: quality and number. Documentation of activity and productivity.
3. meeting and exceeding criteria for promotion and tenure. The Department has not had a single rejection or even questions in regards to any of our faculty who have gone up for promotion and/or tenure.
4. Gaining national visibility. Many criteria can be used here as discussed above. In our Department, all associate professors have been asked to serve as permanent members of NIH study sections.

5. Develop a teaching portfolio. Nature and quality of teaching activities. All our faculty have so far succeeded in becoming recognized effective teachers.
6. Achieving awards and special recognitions.

The operation of the mentoring group and plan is monitored by the following:

1. the mentoring group will provide a short write up after each meeting with the designated faculty member. This will be reviewed by the Chair and/or Vice Chair.
2. The progress of the individual faculty on the above key activities is monitored by the chair in the annual faculty evaluation. If problems are detected, the mentoring plan is then re-evaluated.
3. The faculty satisfaction with the plan are monitored annually.

Appendix 1. Institutional, State and National Resources for Supporting Faculty Development at MUSC

1. Institutional Resources

1.1 Research Support

There are a number of institutional resources that support clinical, translational, and basic science research. These are listed on the MUSC Research and Discovery website (**http://research.musc.edu/index.html**). Some of these resources are described below:

- **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.

- **Funding Opportunities** are available through the KL2 and Pilot Project Program of SCTR and the University Research Committee.
  https://sctr.musc.edu/index.php/education/k12
  https://sctr.musc.edu/index.php/programs/pilot-projects
  http://research.musc.edu/urc/home.htm

- **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.

  If you think that applying for a SCTR Voucher could be beneficial to your research study, please visit http://sctr.musc.edu and fill out a Service Request Form. The SUCCESS Center staff reviews all voucher requests and a decision of award is made within two business days of application.

- **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.

- **Grant Writing Help** is provided by: i. 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.

- **Grant Administrative Support**. 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.htm)

Some Specific Resources for Clinical and Translational Research:

- **Clinical & Translational Research Center (CTRC)**. The primary purpose of the CTRC is to support clinical and translational research projects within the institution and SCTR affiliate members as well as pilot studies that may lead to future NIH or other sources of peer-reviewed clinical/translational research grant support. The specialized staff of the CTRC consist of research nurses, laboratory personnel, nutritionists, IT specialists, and professional/administrative personnel. A core laboratory, fully-equipped outpatient clinic, dental suite, and imaging suite comprise the highly-technical physical facilities that are on hand to support your research. https://sctr.musc.edu/index.php/programs/clinical-a-translational-research-center

- **Biostatistics Consultation** through the SCTR Biostatistics & Epidemiology Program.
  Services offered are:
  - Biostatistical Education: Consultation and assistance in understanding one or more biostatistical concepts
  - Methodology/Study Design: Guidance with selecting an appropriate study design or developing a statistical analysis plan
  - Power Analysis / Sample Size Calculation: Assistance with determining the statistical power or sample size required for a proposed study
  - Data Analysis: Assistance with analyzing data collected for a research study
  - Other: (e.g. help with presentations, manuscripts, etc.)

  These services are offered for several different settings:
  Assistance Preparing Grants (Federal, Foundation, Other)
  Assistance Preparing CTRC Protocols
  Assistance with Current CTRC Funded Project
  Unfunded Research Project (e.g. Abstract/Manuscript Preparation)

  Links to these services are http://sctr.musc.edu/index.php/programs/biostats and http://sctrweb2.musc.edu/research_toolkit/preaward/grantproposal/statistic

  - **Master of Science in Clinical Research Program (MSCR)** degree is offered by MUSC. This program teaches core competencies in clinical research methods, fosters development of a sustainable research focus, and provides the participant with the skills to compete for extramural support. https://sctr.musc.edu/index.php/education/mscr-masters-of-science-in-clinical-research

  - **Society of Clinical Research and Translational Early Scientists (SOCRATES)** provides a forum for junior faculty to present their research projects in front of peers, senior researchers and statisticians, foster collaboration across multiple subspecialties

at MUSC, and trouble shoot about ways to improve mentoring across campus https://sctr.musc.edu/index.php/programs/teach/133

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 on-line. (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)

- **Networking Opportunities**
  - "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.

1.2 Resources for Education

1.2.1. Types of Educational Technology

a. 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
b. 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
c. WebCT - WebCT is MUSC's current Learning Management System. A Learning Management System is a software package that enables the management and delivery of learning content and resources to students. http://webct.musc.edu

1.2.2 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.

1.2.3. 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 **c**ampus.
• 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

1.2.4. 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

1.2.5. Creating Collaborative Care/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/

1.2.6. Faculty teaching 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. The awards are sponsored by various groups. The university annual awards include:

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

1.2.7. Library resources - http://www.library.musc.edu/

a. 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
b. 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.
c. Center for Academic and Research Computing – Works with faculty and staff across the campus to design, develop and support interactive instructional programs.
d. Journals The library currently provides access to approximately 17,498 e-journals and 34 current print-only subscriptions http://muscls.musc.edu/

1.2.8. 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/

1.2.9. 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/

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

2. State or National Resources

2.1. Funding Agencies

By going to the MUSC Research and Discovery website (**http://research.musc.edu/researchresources.html**) and clicking on Funding Opportunites 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

2.2. Associations

- **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/