



UNIVERSITY OF
SOUTH CAROLINA

School of Medicine
Greenville

**Blueprint for Academic Excellence
in the University of South Carolina
School of Medicine Greenville
(USCSOMG)**

Revised: 30 April 2013

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Mission

Improve the health of the people and diverse communities we serve by educating health professionals who will care compassionately, teach innovatively, and improve constantly.

Vision

Transform health care for the benefit of the people and communities we serve.

Guiding Principles

1. USCSOM Greenville will be responsive to the changing health care needs of our society.
2. USCSOM Greenville will strive to consider the needs of the students, faculty, and administration in a manner which enhances the stature of both USC and GHS.
3. USCSOM Greenville understands that health care delivery is constantly evolving and that its physician graduates should facilitate and advocate transformation that improves care provision.
4. USCSOM Greenville will be integrated with all aspects of the GHS delivery system.
5. USCSOM Greenville will graduate physicians who understand and participate in research that compares the relative clinical effectiveness and outcomes of various treatments.
6. USCSOM Greenville supports development of a health care workforce that reflects future societal needs and the diversity of the communities served.
7. USCSOM Greenville will educate physicians to be champions for patient safety, standardization, evidenced based care, and quality; responsible to the medical needs of their community; sensitive to the societal cost of medicine; activists for the education of the future health care workforce; and practitioners that care for all patients regardless of race, social stature, or ability to pay.
8. USCSOM Greenville students will practice patient centered care that values the interdependent roles of health care providers and facilities in service to their patients.
9. USCSOM Greenville will produce physicians competent not only in medical knowledge, technical skill, and patient care, but also in compassion, collaborative interpersonal communication, professional responsibility and ethical behavior.
10. USCSOM Greenville believes that candidates for medical school who value professionalism and possess exceptional interpersonal communication skills can be prepared, identified, and selected to become successful practicing physicians.
11. USCSOM Greenville will establish a learning environment that emphasizes the relationship between undergraduate medical education and the real world of patient care.
12. USCSOM Greenville strives to alleviate the cost of medical education as a significant barrier to student matriculation and graduation, or as a factor in the selection of a career specialty.
13. USCSOM Greenville utilizes policies and procedures that synergistically combine the academic virtues of USC with the operational efficiencies of the GHS health system to the benefit of its students, faculty and staff.
14. USCSOM Greenville faculty will emphasize and demonstrate the clinical import of the materials that they teach.
15. USCSOM Greenville faculty selection, development, and promotion processes will favor those committed to their profession as a calling; who view their teaching ability as a gift and privilege.
16. USCSOM Greenville graduates will be fully prepared and highly competitive to enter graduate medical education.

17. USCSOM Greenville appreciates that access to medical information is constantly changing and that educational focus must continually emphasize methods to optimally acquire the most current knowledge.
18. USCSOM Greenville will utilize educational resources, infrastructure and technology in a fiscally responsible manner, incorporating external resources in the education of health care students when advantageous.

Institutional Comparisons

Top 10 Public Medical Schools (*Primary Care*) 2013 US News & World Report:
University of North Carolina-Chapel Hill, University of Washington, Oregon Health and Science University, University of California-San Francisco, University of Colorado – Denver, University of Nebraska Medical Center, University of Minnesota, University of Michigan – Ann Arbor, University of Massachusetts - Worcester, University of Alabama - Birmingham.

5 Peer Institutions: Our peer group is called the Macy Schools. These are the schools initiated in this century and currently under study by the AAMC through a grant from the Macy Foundation. Of the 19 Macy Schools, the five listed below are most similar to USCSOMG in both the stage of their development and in their focus on innovative curriculum design based upon a close working relationship between the parent university and its affiliated delivery system.

- Oakland University William Beaumont School of Medicine
- Cooper Medical School of Rowan University
- Hofstra North Shore – Long Island Jewish School of Medicine at Hofstra University
- Virginia Tech Carilion School of Medicine
- Western Michigan University School of Medicine

Goals

Five-Year Goals

Goal 1: Recruit a full contingent of Biomedical Sciences Faculty (24) and transition four Clinical Department Chairs (Family Medicine, Medicine, Orthopaedics and Pediatrics).

Progress: Eighteen Biomedical Sciences faculty members have been recruited. We anticipate another six faculty members will be recruited in AY 2013-2014. The new Family Medicine Chair begins in April, 2013, and a search has been initiated for the new Medicine Chair. The Orthopaedic Chair is currently filled with an interim, with the search anticipated to follow the completion of the Medicine Chair search.

- Goal 2:** **Graduate the first class in 2016 and achieve 95% residency placement in the National Residency Match Program.**
Progress: The inaugural class of fifty-three students matriculated in July, 2012. One student has taken a leave of absence in order to revisit her commitment to the pursuit of an MD degree. The 95% placement goal exceeds the 2013 national match rate of 93.5%.
- Goal 3:** **Achieve provisional LCME accreditation in 2014 and full accreditation in 2016.**
Progress: Under the direction of the Dean and Senior Associate Dean, work has begun on the institutional self-study for the July, 2014, provisional accreditation site visit.
- Goal 4:** **Achieve 95% three year pass rate for eligible students on the USMLE.**
Progress: The first year medical students will take Step 1 of the USMLE in the summer of 2014. Historical national pass rates for USMLE Step 1 range from 94% - 95%. In preparation for this exam, currently all assessment items that the students encounter throughout the first two years (formative and summative assessments) are written to National Board Standards and Guidelines. In addition, all medical students participate in Progress testing, i.e., we administer a National Board produced Integrated Basic Science exam that mirrors Step 1 of the USMLE. Students take this exam upon matriculation, mid-Year 1, end of Year 1, mid-Year 2, and end of Year 2 before taking the USMLE. This allows continuous monitoring of individual student progress, as well as effectiveness of the curriculum in preparation for National Boards. Online test preparation resources are also available to the students through our Information Resources and include Exam Master and USMLE World.
- Goal 5:** **Complete \$80 million capital campaign.**
Progress: USCSOMG hopes to record philanthropic support of \$26.9 million through summer, 2013. In addition to current available funds, this amount includes \$1million from an individual donor; \$600,000 from the Macy Foundation for programmatic dollars; \$300,000 from other donors, grants and direct mail; and \$25 million from Patrick Soon-Shiong.

2012-2013 Academic Year Goals

- Goal 1:** **Complete recruitment of 75% of Biomedical Sciences faculty (18).**
Results: Eighteen Biomedical Sciences faculty members have been recruited and will be in place by June 1, 2013.

- Goal 2:** **Matriculate highly qualified inaugural class in accord with USCSOMG admissions standards.**
Results: Fifty-three students matriculated in the inaugural class in July, 2012.
- Goal 3:** **Develop and deliver year one integrated, modular curriculum; develop year two curriculum.**
Results: An integrated, case-based curriculum was delivered to the Charter Class. The curriculum was innovative with first year medical students undergoing EMT training and certification prior to classroom learning and ongoing clinical experiences through required monthly EMT shifts. The faculty employed small-group, case-based student centered learning as the primary pedagogy for biomedical and clinical science learning. Interprofessional activities also punctuated the academic year and included nursing, pharmacy and pastoral care students. Clinical skills are taught and practiced weekly in the Clinical Skills and Simulation Center. Faculty from the first year are currently working with second year faculty to ensure longitudinal continuity and integration of the program. First year knowledge and skills will be reinforced within the second year, with increasing emphasis on application of knowledge, expanded clinical skills and responsibility, and use of diagnostic tools and laboratory medicine.
- Goal 4:** **Establish USCSOMG policies, procedures, handbooks and unit criteria.**
Results: Policies and procedures have been developed for students, faculty and staff including the student handbook, faculty handbook, and financial policies. Unit criteria for non-tenure track faculty are active, with promotion files currently being processed by the Office of Faculty Affairs. Tenure track criteria are currently under development. The committee has been assembled and has begun meeting. We anticipate that we will have a draft for submission to the Provost and the UCTP by the end of the spring semester.
- Goal 5:** **Recruit USC IAHC Director and SmartState Chairs in Reconstruction and Rehabilitative Sciences (CRRS) and Childhood Translational Neurotherapeutics.**
Results: Dr. Ronnie Horner has been recruited to serve as the interim USC IAHC Director on a contract basis, and begins full time on the Columbia School of Public Health campus in spring 2013. Recruiting efforts are ongoing for both of the SmartState Chairs (Childhood Translational Neurotherapeutics and Reconstructive and Rehabilitative Services) with Martin Baker and Associates serving as the recruiting firm. On-site interviews are ongoing and we anticipate a list of finalists for consideration by the end of April for both positions. Dr. Robert Best is serving as the Search Committee Chair for the Novel Neurotherapeutics Chair search, and Dr. Russ Pate is leading the search for the Reconstructive and Rehabilitative Services position.

2013-2014 Academic Year Goals

- Goal 1:** Recruit four additional biomedical sciences faculty in the disciplines of pharmacology, microbiology, nutrition sciences/public health, and clinical anatomy/embryology.
- Goal 2:** Submit Provisional Accreditation documents and complete LCME site visit.
- Goal 3:** Revise first year curriculum, deliver curriculum for years one and two, and develop curriculum for years three and four.
- Goal 4:** Complete unit criteria for promotion and tenure, establish Faculty Senate representation, and finalize Conflict of Interest/Conflict of Commitment Policy.
- Goal 5:** Activate Institute for Advancement of Health Care with defined research interests for Biomedical Sciences faculty.

Proposed Academic Dashboard Measures for USCSOMG

1. 50 highly qualified students (+/- 10%) to matriculate in July 2013
2. Maintain a minimum of 350 clinical faculty in seven clinical departments
3. Biomedical Sciences Faculty:

Brian Tobin, PhD	Department Chair; Professor	Physiology
Sergio Arce, PhD	Clinical Associate Professor	Immunology
Cyrus Banan, PhD	Clinical Professor and Director of Student Research	Physiology
Kirk Baston, MD	Clinical Assistant Professor	Pathology
Robert Best, PhD	Professor	Cytogenetics
Andrew Binks, PhD (6/1/13)	Research Associate Professor	Cardio Pulmonary Physiology
Asa Black, PhD	Clinical Professor	Neuro Anatomy
James Buggy, PhD	Associate Professor	Neuroscience
Andrea Deyrup, MD, PhD	Clinical Associate Professor	Pathology
Mo Khalil, PhD	Clinical Associate Professor	Histology/Anatomy
Renee LeClair, PhD (6/1/13)	Clinical Associate Professor	Biochemistry
Thomas Nathaniel, PhD	Clinical Assistant Professor	Neuroscience
Dennis Peffley, PhD	Clinical Professor	Biochemistry
Jayne Reuben, PhD	Clinical Associate Professor	Pharmacology
William Roudebush, PhD	Clinical Associate Professor	Reproductive Physiology
Jennifer Trilk, PhD	Clinical Assistant Professor	Physiology
Shanna Williams, PhD	Clinical Assistant Professor	Anatomy

Dennis Wolff, PhD	Clinical Associate Professor	Pharmacology
William Wright, PhD	Clinical Assistant Professor	Physiology
Peggy Wagner, PhD	Research Professor	Research

4. Clinical Faculty:

Clinical Professor	Clinical Professor of Practice	Clinical Associate Professor	Clinical Assistant Professor	Clinical Instructor	Emeritus Clinical Professor	Emeritus Clinical Associate Professor
33	1	47	401	12	3	1

5. Contract Faculty:

Steven Blair, PhD	Adjunct Professor (USC – Arnold School of Public Health)	Exercise Science, Epidemiology, and Biostatistics
Neena L. Champaigne, MD	Adjunct Assistant Professor (Greenwood Genetics)	Clinical Faculty
Barbara DuPont, PhD	Adjunct Associate Professor (Greenwood Genetics)	Cytogenetics
Michael J. Friez, PhD	Adjunct Associate Professor (Greenwood Genetics)	Director, Diagnostic Laboratory
Tamara McNealy, PhD	Adjunct Assistant Professor (Clemson University)	Microbiology
Patricia Mickelsen, PhD	Adjunct Assistant Professor (Clemson University)	Microbiology
Leta M. Tribble, PhD	Adjunct Assistant Professor (Greenwood Genetics)	Education
Tim Wood, PhD	Adjunct Assistant Professor (Greenwood Genetics)	Biochemical Laboratory

Scholarship, Research, and Creative Accomplishments

- USCSOMG was accredited as a medical school on October 4, 2011. It was the only applicant medical school to achieve preliminary accreditation in 2011.
- The \$39.5 million Health Sciences Education Building was designed to facilitate curriculum and promote inter-professional education. The facility includes a state of the art simulation center, simulated patient education areas, and health sciences library (see **Attachment 1**), which will allow it to serve as a regional health science education resource. The building was completed on budget and ahead of schedule in time to welcome the inaugural class.

- During the 2012-2013 Academic Year, the primary focus for USCSOMG was building curriculum for the inaugural class. While most scholarly work from our Biomedical Sciences faculty was from efforts prior to joining USCSOMG, we do have some projects under review or in preparation. USCSOMG plans to put forward more research and scholarly activities in the year ahead. We will also focus on developing an operational and structural infrastructure that can support the kinds of research to which we are committed in our institutional goals and which was contemplated in the foundational agreement between the University and GHS. The hiring of campus scholars (including the IAHC Director and the two SmartState Chairs) is an important aspect of bringing the intellectual capital to USCSOMG that will drive our research activities. In the course of fulfilling our institutional goals, we expect to establish significant research in quality improvement that will become the focus of many of our clinical faculty. See **Attachment 2** for an explanation of the institutional setting of USCSOMG.
- GHS has established a goal of 160 published articles for the fiscal year of October 1, 2012, through September 30, 2013. As of April 30, 2013, 72 journal articles and presentations had been published from the areas of Biomedical Sciences, Pediatrics, Nursing, Obstetrics, Orthopaedics Surgery, Pathology, Surgery, Institute for Advancement of Health Care Scholars, Institute for Translational Oncology Research, and Proaxis Therapy. See **Attachment 8** for a complete listing of articles and presentations.
- The Department of Biomedical Sciences (BMS) has four initiatives designed to enhance the development of scholarship and research consistent with institutional mission and vision.
 - The recruitment strategy supports the expectation of scholarly activity for all BMS faculty, who are intentionally recruited “with a passion for teaching; enthusiasm for building new programs; commitment to excellence in research/scholarship; and interest and experience that enhances our educational and research endeavors.”
 - All BMS faculty have been tasked by the Chair to identify a clinical colleague and to engage in patient care rounds for the purpose of developing and understanding of the patient care and clinical delivery aspects of our partner institution, GHS.
 - All BMS faculty participated in the Student Scholarship Mentor’s Day, which provided an opportunity for them to meet faculty within our institutional environment who already engage actively and productively in research and scholarship. This engagement has allowed the faculty to begin linking collaboratively and strategically to ongoing research projects consistent with the institutional mission and vision.
 - The Chair’s Advisory Group on Unit Criteria was formed for BMS faculty to engage in discussions aimed at creating rigorous unit criteria consistent with institutional mission and vision, and which are parallel to the needs of USC.

Academic Health Center (USCSOMG and GHS) CME/CE Report (Fiscal Year Ended September 30, 2012):

	Activities	Hours of Instruction	Physician Participants	Non-Physician Participants
Directly Sponsored	86	1,038.5	5,024	1,811
Jointly Sponsored	0	0.0	0	0
Total, All Activities	86	1,038.5	5,024	1,811

Academic Year 2014 Budget:

The proposed budget is included as **Attachment 3** and includes \$4.1 million in tuition funding and \$12.6 million in funding support from GHS. This amount includes \$1.3 million to establish the 90-day contingency fund approved by the Joint Board Liaison Committee in February, 2013.

Research Plan:

GHS is actively involved in a collaborative strategic planning process for academics that includes education and research. As a part of the GHS Academic Health System, USCSOMG is party to that process. It is anticipated that there will emerge five research cluster areas consonant with the overall direction of the Academic Health System. USCSOMG faculty will be encouraged to align their research interests and initiatives with one or more of the following clusters.

1. Health Services Research under the aegis of the Institute for Advancement of Heath Care (IAHC). The IAHC is a key research entity for USCSOMG with a vision for “innovative research, training, and dissemination of discoveries promoting health and transforming health care delivery” and a mission to:
 - a. Compare effectiveness of interventions and inform policy.
 - b. Investigate patient centered models of care.
 - c. Study methods to build workforce capacity.

See **attachment 4** for a list of IAHC scholars and Seed Grant awards. IAHC Scholars will serve as research mentors for students with an emphasis on health services research.

2. Oncology translational research within the following four programmatic pillars of ITOR:
 - a. Phase I Clinical Research Unit with 20 clinical trials open at any given time (see **attachment 5**).
 - b. Biorepository as a component of the USC Cancer Center Tissue Bank (see **attachment 6**).
 - c. Innovation Zone and research laboratories (Selah, Kyatek, and NuBad).
 - d. Clinical Genomics Center in association with Lab21 and anchored by a Life Technologies Ion Torrent next generation gene sequencer; GHS ITOR has been selected as one of the 10 initial global network partners to participate in Life Technologies’ Genetic Care Interchange (GCI).

Additional GHS oncology translation research opportunities are found in the 270 active oncology clinical trials at GHS; the Integrative Cancer Therapy Rehabilitative Science

Program with active research proceeding in collaboration with Mark Davis, PhD; and the FACT-accredited Bone Marrow Transplant Program.

3. Orthopaedic and cardiovascular translational research in collaboration with the Clemson University BioEngineering Department on the GHS Patewood Campus (CUBEInc – See **Attachment 7**).
4. Education research to be developed as a collaborative initiative between USCSOMG, the GHS Center for Teaching and Learning (CTL), and the USC College of Education. The CTL provides resources to support the USCSOMG in the areas of faculty development opportunities, simulation education, strategic financial planning, student orientation, and assessment and evaluation. A focus of the CTL is to foster an environment that enhances academic experiences for learners on the GHS campuses.
5. Health Care Technology Cluster; to be developed.

Greenville Hospital System Health Sciences Library

Annual Report 2012

Attachment 1



Overview

The services at the Health Sciences Library at the Greenville Hospital System are available to anyone associated with GHS, whether they be physicians, teaching faculty, residents, interns, students, or support staff. With over 10,000 people employed by GHS, the Health Sciences Library has a large number of people to support in patient care, education, and research. The library currently has two locations – one in Greenville Memorial Hospital and the other in the Health Sciences Education Building on GMH campus. The Patewood campus houses an archive for historical material.

This is the first year the library has published an annual report. Within is an overview of what the Health Sciences Library accomplished in 2012, along with statistics and charts giving a snapshot of the services the library provides. The statistics were taken from both the Greenville Memorial Hospital library and the University of South Carolina School of Medicine Greenville library. With this report, the Health Sciences Library plans to demonstrate the educational value it offers not just to the Greenville Hospital System, but also to the community overall. As Mike Riordan said at the 2012 Experience the Dream Gala in November, “Our vision is to transform health care for the benefit of the people and communities we serve, and now we’re transforming the way we think about the pipeline to careers in health care.” The Health Sciences Library is in the unique position to be a part of that transformation, by helping to shape the education of all those people who are a part of the Greenville Hospital System.

Attachment 1



Notable Points

They say that change is one of the few things you can depend on in life, and there is nowhere else where that is as true as in the Health Sciences Library at the Greenville Hospital System. In 2012, the library experienced a lot of change, starting in January with plans to integrate the Shriners Hospital for Children library into the GHS collection. Over 500 textbooks, 300 bound journals, and 250 unbound journals from Shriners library became part of the GHS collection. The move and collaboration was completed in May, and along with inheriting the materials, the library also inherited a librarian, Joye Edmonds.

In addition to the Shriners merger, the Greenville Hospital System saw the partnership with the University of South Carolina School of Medicine come to fruition with a Medical School opening here on the GHS campus. The partnership isn't new – USC and GHS have worked together since 1991 – but on July 30th, the Medical School opened with 53 students in the charter class. The Medical School's Health Sciences Education Building includes a new Library Commons area, which is a part of the hospital's existing Health Sciences Library, and includes two new staff members, Thomas Gore and Peggy Zabel.

The Library Commons area in the Health Sciences Education Building includes a small collection of print textbooks, but the bulk of the collection is electronic. In addition to the thousands of journals and hundreds of books available through the electronic providers, the students also have access to electronic versions of their textbooks. The textbooks include interactive charts and diagrams where students can hide the labels and test themselves on their knowledge of the diagrams. The ability to highlight, underline, and take notes in the books is also available. In addition, notes can be shared among students as they participate in a virtual study group.

The Health Sciences Library grew in many directions in 2012, with the collection, staff, and patrons expanding through new projects and partnerships. Let's look forward to 2013 bringing as much growth and potential to the Greenville Hospital System Health Sciences Library!

Attachment 1



3

Staff



From left to right, top to bottom: Loretta Westcott, Medical Librarian; Fay Towell, Library Director / Archivist; Debbie Douglas, Senior Library Assistant; Deanna Handley, Medical Librarian; Teresa Head, Library Assistant; Peggy Zabel, Senior Library Assistant; Thomas Gore, Medical Librarian; Joye Edmonds, Medical Librarian

Attachment 1



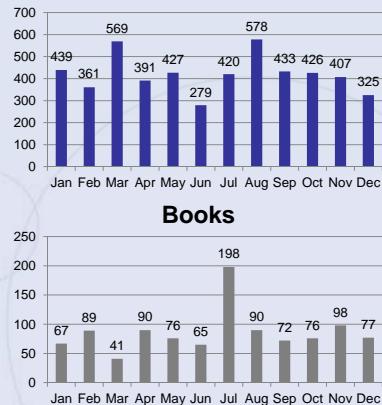
4

Material Utilization

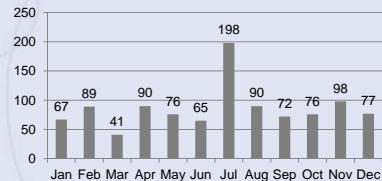
Though many of the library materials are available online, the library still has an extensive collection of physical materials. The collection currently contains over 10,000 books and 900 journal titles for a total of over 35,000 volumes, all of which support the diverse needs of the GHS staff. In 2012, **1,039** individual books and **5,055** journals were accessed by patrons using the Health Sciences Library. These materials were checked out or used in-house.

The University of South Carolina School of Medicine Greenville students have proven to be avid users of print materials, as well. In addition to the use of physical copies of their electronic textbooks, they have also shown interest in studying in the more traditional library located in the Greenville Memorial Hospital.

Journals



Books



Attachment 1

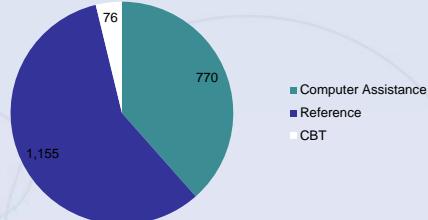


5

Reference Assistance

Library staff are available to assist patrons however they need it. They offer advice on how to best locate materials in the library, direct patrons to other locations in the hospital system, assist patrons with their computers, show patrons how to search the electronic resources, and assist staff with their Computer Based Training (CBT). The library staff serve as the point of contact for the library overall, and this is the most direct service they offer to the GHS community.

Providing reference assistance is one of the most important responsibilities of the library staff. They serve not just the physicians and the allied health staff, but also the support staff and even the general public.



Attachment 1



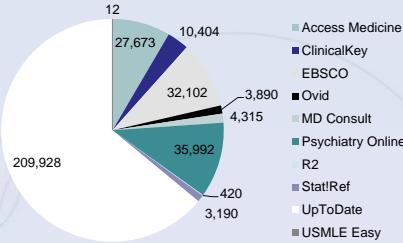
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Electronic Databases

It has been decades since a library has been restricted by its physical space, and the Health Sciences Library is certainly no exception. With access to ten databases and millions of articles, the electronic databases comprised a large percentage of the library's collection in 2012. UpToDate is still a clinician's favorite tool, with over **200,000** topic reviews accessed over the entire year. That's over 500 viewed every day!

ClinicalKey is a new resource for 2012. It went live in August and quickly became a popular resource among the clinicians, faculty, and students alike.

USMLE Easy is another new resource for 2012. Available for use in December, the product offers study guides for the medical students. Nevertheless, students showed an interest in keeping up with their studies over the holiday, as we saw a small amount of use during this time.

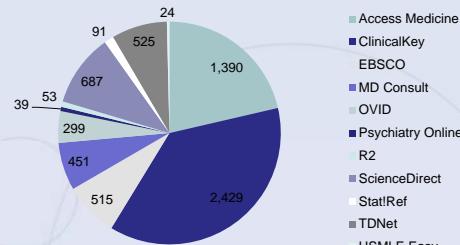


7

Off-Campus Access

The main benefit to having electronic resources is the ability to access them from anywhere the patron has Internet access. The Health Sciences Library offers access to its resources on or away from Greenville Hospital System facilities through a proxy service known as Athens. Users have to register from a computer on GHS, but once registered, they have access to most of the resources the library offers.

ClinicalKey is the most-used library resource from outside of GHS. On-campus, students have to use Athens to access the materials in ClinicalKey since they are on the USC network.

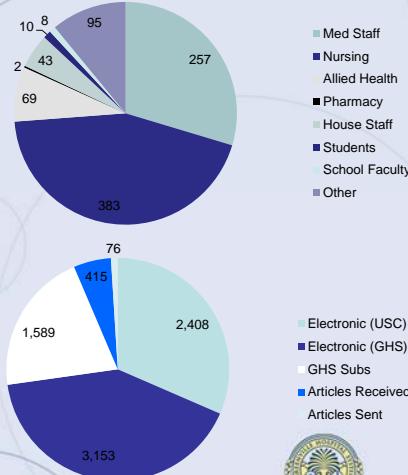


8

Literature Searching

Whether for patient care, education, publication, or speaking at a convention, research is the heart of what the staff do in the Health Sciences Library. They receive hundreds of requests from Greenville Hospital System staff each year, most of which are completed and returned within a day.

In 2012, the Health Sciences Library received nearly **900** requests and sent out over **7000** articles related to those requests. Over half of those articles came from print subscriptions and electronic databases to which the library subscribes directly. The remaining articles were acquired through a lending agreement with the University of South Carolina, or other medical libraries across the country.



Attachment 1



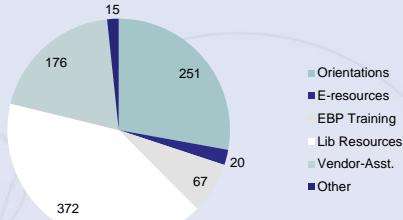
9

Instructional Assistance

With access to a dozen databases, hundreds of journals, and thousands of books, it's no surprise that patrons want to know how to best find materials among all those resources. For that reason, the Health Sciences Library offers instructional assistance to teach users how to access all resources.

The bulk of the classes taught by the library staff is through orientations or general library resources classes. The orientations are used to introduce all of the library's resources to new staff of the Greenville Hospital System, and the general library resources classes are a more in-depth look at each database.

In September, the staff provided instructional assistance to the charter class of the University of South Carolina School of Medicine Greenville. The instruction took two sessions, covered eight hours, and introduced the students to all of the resources the library offers.



Attachment 1



10

Conclusion

The GHS vision states that we "Transform health care for the benefit of the people and communities we serve." The Health Sciences Library is a part of that transformation as we assist GHS staff with their research, and are a part of the learning process for the upcoming physicians in the University of South Carolina School of Medicine Greenville.

The GHS mission states that we "Heal compassionately, teach innovatively, improve constantly." By assisting physicians with their patient research, finding new resources to help the staff and students stay on top of their education, and always looking for resources that will make the Greenville Hospital System become more efficient and more effective, the Health Sciences Library adheres to that mission.

The GHS values state that "Together we serve with integrity, respect, trust, and openness." By providing services that support the medical staff and students at the Greenville Hospital System and ensuring timely delivery of services, the Health Sciences Library is a part of the team that supports the community.

Health Sciences Library
Greenville Hospital System
701 Grove Road
Greenville SC 29605
864-455-7176
library@ghs.org

Attachment 1



USC School of Medicine Greenville

Institutional Setting

The Institutional Setting section of the LCME document articulates the mission, vision and guiding principles for the USCSOM Greenville. The **vision** is to transform health care for the benefit of the people and communities we serve; and the **mission** is improve the health of the people and diverse communities we serve by educating health professionals who will care compassionately, teach innovatively, and improve constantly. The USCSOM Greenville has resources via the GHS delivery system that strengthen the institutional support for faculty, students and administrators.

Specific institutional requirements that must be addressed are identified in the following sections:

IS-13. A medical education program must be conducted in an **environment** that fosters the intellectual challenge and spirit of inquiry appropriate to a community of scholars.

IS-14. An institution that offers a medical education program should make available sufficient opportunities for medical students to participate in **research and other scholarly activities** of its faculty and encourage and support medical student participation.

IS-16. An institution that offers a medical education program must have policies and practices to achieve appropriate **diversity** among its students, faculty, staff, and other members of its academic community, and must engage in ongoing, systematic, and focused efforts to attract and retain students, faculty, staff, and others from demographically diverse backgrounds.

The following GHS entities are in place to respond to these requirements and aligned with USCSOM Greenville guiding principles.

Ramage Center for Teaching and Learning (RCTL)

Guiding Principle: USCSOM Greenville will be integrated with all aspects of the **GHS delivery system**.

Guiding Principle: USCSOM Greenville will utilize **educational resources**, infrastructure and technology in a fiscally responsible manner, incorporating external resources in the education of health care students when advantageous.

USCSOM Greenville's graduates' learning experiences are integrated into the GHS delivery system. This health care environment equips students to address contemporary issues that challenge clinical care delivery such as variation in quality, inadequate access, and uncontrolled cost. Specific guiding principles listed above articulate the importance of aligning GHS via the **Ramage Center for Teaching and Learning** as a resource that integrates USCSOM Greenville with the delivery system.

Institute for Advancement of Health Care (IAHC)

Guiding Principle: USCSOM Greenville will graduate physicians who understand and participate in **research** that compares the relative clinical effectiveness and outcomes of various treatments.

The **IAHC** is a key research entity for the USCSOM Greenville with a vision for "innovative research, training, and dissemination of discoveries promoting health and transforming health care delivery" and a mission "to investigate patient-centered models of care; compare effectiveness of interventions and inform policy; study methods to build workforce capacity." IAHC Scholars will serve as research mentors for students with an emphasis on health services research.

Medical Experience (MedEx) Academy

Guiding Principle: USCSOM Greenville supports development of a health care workforce that reflects future societal needs and the **diversity** of the communities served.

Guiding Principle: USCSOM Greenville will educate physicians to be champions for patient safety, standardization, evidenced based care, and quality; responsible to the medical needs of their community; sensitive to the societal cost of medicine; activists for the education of the **future health care workforce**; and practitioners that care for all patients regardless of race, social stature, or ability to pay.

The **MedEx Academy** is a substantial and growing pipeline to the USCSOM Greenville. While initial engagement has begun with numerous colleges/universities, plans are underway to establish strategic partnerships with historically black colleges and universities (HBCUs) in South Carolina and surrounding states. These partnerships will seek to cultivate interest in medical school among students at HBCUs, as well as offer guidance and assistance to HBCUs in preparing students for medical school. Initial discussions are underway with Furman University and Claflin University. Plans are to explore this model with USC Upstate and USC Regional Campuses.

USC School of Medicine Greenville													
Proposed Unrestricted Current Funds Summary													
		AY 2012 - 2013 Projected						AY 2013 - 2014 Budget					
		A Funds	E Funds	Total				A Funds	E Funds	Total			
RESOURCES:													
Revenue:													
Tuition and Fees	\$ 1,983,714	\$ -	\$ 1,983,714		\$ 4,087,804	\$ -	\$ 4,087,804						
State Appropriations	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -						
Grants, Contracts and Gifts	\$ -	\$ 8,514,084	\$ 8,514,084		\$ -	\$ 12,552,771	\$ 12,552,771						
Sales & Service of Educ and Other Sources	\$ 118,810	\$ -	\$ 118,810		\$ 115,000	\$ -	\$ 115,000						
Sales & Service of Auxiliary Enterprise	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -						
Total	\$ 2,102,524	\$ 8,514,084	\$ 10,616,608		\$ 4,202,804	\$ 12,552,771	\$ 16,755,575						
Transfers:													
Transfers-In	\$ 11,745,589	\$ -	\$ 11,745,589		\$ 15,422,992	\$ -	\$ 15,422,992						
Transfers-Out	\$ (111,381)	\$ (11,745,589)	\$ (11,856,970)		\$ -	\$ (15,422,992)	\$ (15,422,992)						
Net Transfers	\$ 11,634,208	\$ (11,745,589)	\$ (111,381)		\$ 15,422,992	\$ (15,422,992)	\$ -						
Prior Year's Fund Balance	\$ 83,885	\$ 7,425,731	\$ 7,509,616		\$ -	\$ 4,194,226	\$ 4,194,226						
TOTAL RESOURCES	\$ 13,820,617	\$ 4,194,226	\$ 18,014,843		\$ 19,625,796	\$ 1,324,005	\$ 20,949,801						
USES:													
Education and General Expenditures:													
Instruction	\$ 518,492	\$ -	\$ 518,492		\$ 2,957,780	\$ -	\$ 2,957,780						
Research	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -						
Public Service	\$ 150,000	\$ -	\$ 150,000		\$ 150,000	\$ -	\$ 150,000						
Academic Support	\$ 1,717,210	\$ -	\$ 1,717,210		\$ 2,145,891	\$ -	\$ 2,145,891						
Student Services	\$ 107,377	\$ -	\$ 107,377		\$ 470,955	\$ -	\$ 470,955						
Institutional Support	\$ 10,529,679	\$ -	\$ 10,529,679		\$ 12,945,856	\$ -	\$ 12,945,856						
Operation and Maintenance of Plant	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -						
Scholarships and Fellowships	\$ 797,859	\$ -	\$ 797,859		\$ 955,314	\$ -	\$ 955,314						
Total	\$ 13,820,617	\$ -	\$ 13,820,617		\$ 19,625,796	\$ -	\$ 19,625,796						
Auxiliary Expenditures	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -						
TOTAL USES	\$ 13,820,617	\$ -	\$ 13,820,617		\$ 19,625,796	\$ -	\$ 19,625,796						
Fund Balance	\$ -	\$ 4,194,226	\$ 4,194,226		\$ -	\$ 1,324,005	\$ 1,324,005						
Note:													

E Fund Balance of \$1,324,005 in AY 2013 - 2014 equates to the 90 Day Reserve Fund approved by the JBLC and the appropriate Board Committees of USC and GHS.

GHS					
Name	Email address	Department	Area of Research Expertise	Brief Description of Scholarly Interests	Seed Grant Funding (PI)
Best, Robert	rbest@ghs.org	Biomedical Sciences/ Dean's Administration	Genetics, faculty governance, social/ethical/legal issues in emerging technologies, genetic counseling, screening	Healthcare transformation through medical education, genetics and genomics in medicine, philosophy and practice of medical laboratory diagnosis and communication of results, prevention/characterization of neural tube defects	
Bethel, Susan	sbethel@ghs.org	Nursing Clinical Programs & Research	Nursing Practice	Use of research and evidence to improve patient outcomes affecting quality and safety; effectiveness of technology on nursing practice at the bedside; innovative methods for providing education for nurses and collaborative partners	
Blackhurst, Dawn	dblackhurst@ghs.org	Quality Management	Epidemiology and biostatistics	Application of epidemiologic and biostatistical methods to the evaluation of programs and interventions aimed at improving clinical outcomes, patient safety, equity and cost-effectiveness of healthcare	
Cass, Anna	acass@ghs.org	Quality Management	Epidemiology	Investigating questions raised in the course of clinical practice at GHS in collaboration with clinicians across specialty and discipline, partnered with my background in epidemiology as a field that seeks to understand the distribution and determinants of health conditions through systematic inquiry, has shaped my current scholarly interests. The opportunity to investigate research questions in a variety of disciplines and to teach and guide individuals through the research process has given me an appreciation for the varying types of research conducted within this system and has been personally rewarding. Additionally, conducting research out of the Quality Management department of the hospital system has focused my research perspective on seeking to answer questions regarding how to maximize the quality of healthcare delivery. As I work to develop my personal research agenda, I find myself drawn toward questions related to both clinical and social determinants of health as well as the investigation of ways that we can better provide health services for our population. At the same time, I am interested in addressing the challenge of adapting rigorous epidemiologic methods to those situations that do not fit the traditional model those methods were developed to address.	
Coltman, Kinneil	kcoltman@ghs.org	Diversity	Health Equity, Health Disparities, Cultural Competence in Clinical Care, Diversity in Health Services Administration	Health Equity, Health Disparities, Cultural Competence in Clinical Care, Diversity in Health Services Administration	
Crespo, Lynn	lcrespo@ghs.org	Medicine	Medical Education	Enhancing learning outcomes through innovative teaching and learning pedagogies, including use of technology, early clinical experiences, and interprofessional students teams. A primary focus is the importance of defining objectives, identifying cognitive level of learning, and determining outcome measures as criteria for selecting learning modality.	
Diller, Thomas	tdiller@ghs.org	Corporate Office	Quality and Patient Safety	Development and research regarding a core quality and safety curriculum; research into quality and patient safety; how to choose culture; how to improve outcomes	
Higdon, Lee	lhigdon@ghs.org	OB/GYN UMG	Reproductive endocrinology/ infertility; also research development/study design/statistics	Improvement in cell culturing to benefit mammalian embryo production, education delivery systems, workforce development concepts	
Hudson, Matthew	mfhudson@ghs.org	Academics	Health care system aptitude for Comparative Effectiveness Research (CER), Medical Decision Making, Behavioral Science	Identifying resources and novel methods facilitating CER, racial disparities research, chronic care improvement, enhancing shared decision making between patients and health care teams	
Hughes, Mary	mhughes@ghs.org	Medicine - Division of Neurology	Multiple Sclerosis	Have been involved in a range of projects from pharmaceutical trials to investigator initiated trials in genetics, depression, wellness, patients centered care	\$27,079 - Awarded June 22, 2011
Kelly, Desmond	dkelly@ghs.org	Pediatrics - Children's Hospital, Division of Developmental-Behavioral Pediatrics	Health Service Delivery	Earlier in my career I carried out descriptive research on attention and learning problems in children with hearing impairment. More recently I have published on survey results regarding workforce needs in developmental-behavioral pediatrics and been funded (Commonwealth Fund) to study a model of "Midlevel developmental-behavioral pediatrics assessment" and outcomes of a program to promote early identification of developmental delays (PRIDE - Duke Endowment).	

Pham, Hiep	hpham@ghs.org	Division of Geriatrics and Palliative Medicine	Innovative interdisciplinary healthcare delivery and educational models based on intensive care integration and coordination.	Implementing and demonstrating efficiency and effectiveness of Holistic and Patient-Centered Interdisciplinary Team Based Care Models to targeted population of frail and vulnerable elders.	
Picklesimer, Amy	apicklesimer@ghs.org	Obstetrics and Gynecology, Division of Maternal-Fetal Medicine	Prenatal care, preterm birth, breastfeeding, racial disparities in birth outcomes, access to care	My primary research focus relates to innovative models of prenatal care, specifically CenteringPregnancy group prenatal care. In our experience, group care has shown promise in reducing rates of prematurity, increasing rates of breastfeeding, improving patient education and satisfaction with care. We are also evaluating its role in medical student and resident education.	\$29,972 - Awarded June 22, 2011
Reeves, Cara	creeves@ghs.org	Surgery/Pediatrics	Clinical/Pediatric Psychology	Prevention and treatment of pediatric obesity; factory associated with treatment compliance; psychological factors associated with obesity.	
Russ-Sellers, Rebecca	rruss-sellers2@ghs.org	Office of Research Support/Department of Total Health	Health Policy	My research interests are aligned with the examination of models of care both as an influence and a response to system, state, and national health policy initiatives. Particularly, I am interested in exploring the influence of Total Health initiatives on access, cost, and improved clinical outcomes within a macro policy context.	
Sease, Kerry	ksease@ghs.org	Pediatrics	Pediatric Obesity	Development of comprehensive treatment for pediatric obesity	\$15,782.54 - Awarded June 22, 2011
Tobin, Brian	btobin@ghs.org	Biomedical Sciences	Diabetes, cardiovascular disease, insulin secretion, islet transplantation	1) Interdisciplinary research in nutrition science, nutritional determinants of human pancreatic islets of Langerhans and the interaction of endocrine, metabolic, and immunologic systems during pancreatic stress. 2) Interdisciplinary medical education programs focused upon the prevention and management of nutritionally-related metabolic diseases, such as diabetes, obesity, and cardiovascular disease.	
Trilk, Jennifer	itrlk@ghs.org	Biomedical Sciences		Physical activity and healthy lifestyle interventions for non-communicable diseases in pediatrics, adults, and geriatrics; assessing physician self-efficacy in prescribing exercise.	

USC

Name	Email address	Department	Area of Research Expertise	Brief Description of Scholarly Interests	Seed Grant Funding (PI)
Adams, Swann	swann.adams@sc.edu	Epidemiology & Biostatistics and the College of Nursing (joint faculty appt)	Cancer epidemiology; health disparities; mammography; breast cancer	The vast majority of my work has focused on mammography and breast cancer disparities experienced by African American women. Specific areas of focus have included abnormal mammography follow-up time, breast cancer survival, and healthy lifestyle interventions.	
Bennett, Charles	bennettc@sccp.sc.edu	Clinical Pharmacy and Outcomes Sciences		Identification of new ADRs; Human factors as a cause of medication errors.	
Billings, Deborah	billndl@mailbox.sc.edu	Health Promotion, Education and Behavior	Maternal and women's health, sexual and reproductive health	Qualitative and quantitative research that examines innovative ways of delivering care, including prenatal care and overall sexual and reproductive health care. The impact of interventions that foster social support on women's health and maternal-child health.	
Bookstaver, Brandon	bookstaver@sccp.sc.edu	Clinical Pharmacy and Outcomes Sciences	Infectious diseases; pharmacokinetics	Research areas focus primarily in the clinical arena to include hospital-acquired infections, specifically Clostridium difficile infections and central line associated bloodstream infections; antimicrobial lock therapy; antimicrobial dosing and clinical outcomes in obese adults and children; and antimicrobial stewardship outcomes. In addition, currently serving as PI of a statewide collaborative to develop a cumulative 5-year antibiogram.	
Browne, Teri	browne@sc.edu	College of Social Work	Psychosocial barrier to health outcomes; health disparity	Psychosocial barrier to health outcomes; health disparity; transdisciplinary health teams; kidney disease; kidney transplant disparity; oral medication self management; chronic illness; quality of life; racialized context of health disparities research	
Chen, Brian	bchen@mailbox.sc.edu	Health Service Policy and Management	Health economics, health policy, health law, health management	I am broadly interested in applying my econometric and legal analytical skills to translate empirical research findings in medicine to inform policy in chronic illnesses and pharmaceutical safety	2012 - \$28,234
Chou, Rita	rjchou@sc.edu	College of Social Work	Research methods (both quantitative and qualitative); Program and Practice Evaluation; Aging; Long-Term Care; Elder Support; Quality of Life; Older Workers	Health Disparities; Quality of Life; Psychological Well-Being of Older Adults; Elder Support; Caregiving; Older workers; Social Policy	

Davis, Mark	markd@mailbox.sc.edu	Dept of Exercise Science, Arnold School of Public Health	Exercise Physiology/Immunology	Biological mechanisms of mental and physical fatigue, and the role of exercise in nutrition in prevention and treatment of infection and cancer.	2011 - \$29,980
Gillam, Pamela	gillamps@mailbox.sc.edu	Center for Health Services and Policy Research (CHSPR)	Quality improvement in Healthcare systems	Use of quality improvement methodologies to improve patient care. Relationship between organizational culture/change/readiness and use of QI methods. Interested in looking at use of QI to develop Accountable Care Organizations/Medical Homes.	
Hale, Nathan	halen@mailbox.sc.edu	Health Service Policy and Management	Health services research, maternal and child health	Engaging in research focused on the organizational and management health care delivery systems and the impact on quality of care and outcomes among mothers and children.	
Hock, Robert	rroberth@sc.edu	College of Social Work	Autism Spectrum Disorders and Family Functioning	I am interested in developing and evaluating family system interventions for families who have members with an autism spectrum disorder. The focus of these interventions is to improve family adaptability as well as adherence to behavioral and medical interventions.	2011 - \$29,442
Pate, Russell	rpage@mailbox.sc.edu	Exercise Science	Physical activity and physical fitness in children	Exercise physiologist with interests in physical activity and physical fitness in children and the health implications of physical activity	
Schulz, Richard	schulz@sccp.sc.edu	SC College of Pharmacy	Medication adherence, quality of life, pharmacoepidemiology	Examines how and why people take medicines, and tests interventions to improve adherence and outcomes	
Sen, Souvik	souvik.sen@uscmed.sc.edu	Neurology	Stroke and Cardiovascular Epidemiology	1) Aortic arch atheroma and stroke; 2) Inflammation and stroke; 3) Stroke trials; 4) Alternative methods to test comparative effectiveness; 5) HIV and stroke	2011 - \$28,300
Turner-McGrievy, Brie	brie@sc.edu	Health Promotion, Education and Behavior	Nutrition, obesity, and chronic disease prevention and treatment through diet and physical activity	My current collaboration with GHS involves work with the Reproductive Endocrinology Department where we are exploring two different dietary approaches for managing PCOS and promoting weight loss among overweight women. Additionally, I have interests in using mobile technology to deliver health behavior interventions and exploring different diet approaches for diabetes and weight loss.	2012 - \$28,687
Wagner, Peggy	pwagner@ghs.org	Department of Family and Community Medicine, School of Medicine	Patient-centered care, health information technology, clinical practice change	Primary research interests include: innovations that improve patient-centered care; patient safety and quality, use of practice-based research networks for discovery and clinical practice redesign, elements of individual patient and physician behavior change, and health information technology innovations	
Wu, Jun	wujun@sccp.sc.edu	College of Pharmacy	Health outcomes, medication adherence, pharmaceutical sciences	1) Develop patient-centered outcomes research relevant to medication use in disadvantaged populations to improve pharmaceutical health services. 2) Evaluate medication use and associated health and economic outcomes using large claims database to provide evidence to healthcare professionals and policymakers. 3) Develop novel drug delivery system using nanotechnology in chemotherapy to reduce adverse drug events and to improve drug effectiveness and patient quality of life.	2011 - \$21,944

Name	Email address	Department	Area of Research Expertise	Brief Description of Scholarly Interests	Seed Grant Funding (PI)
Alley, Thomas	alley@clemson.edu	Psychology	Psychology and anthropology of food and eating	Food choice and avoidance; obesity; food neophobia	
Britt, Thomas	twbritt@clemson.edu	Psychology	Organizational stress, mental health, and treatment seeking	Individual and organizational factors that promote employee resilience under stress, the determinants of whether individuals seek treatment for mental health problems before the problems require emergency care, recognizing mental health symptoms in combat veterans.	
Brooks, Johnell	jobrook@clemson.edu	Campbell Graduate Engineering Program	Human Factors - Transportation & Aging	Enable population to drive as long as safely possible; development and integration of new clinical tools to aid mobility and transportion	
Burg, Karen	kburg@clemson.edu	Bioengineering	Tissue engineering, absorbable biomaterials	Interdisciplinary research initiatives with focus on personalized medicine; training students in interdisciplinary setting	
Burg, Timothy	tburg@clemson.edu	Electrical & Computer Engineering	Robotics, Control Systems, Haptics, Education	Applying basic control theory to applications where computer monitoring and control could enhance performance of the system. One application is the use of computer control to apply an optimal dose of an anti-angiogenic treatment to shrink a tumor. The growth of vasculature and tumor co-develop in a nonlinear fashion and a standard, constant dose may not be the most cost effective or cheapest approach to shrink the tumor. A second project is the design of a haptic device, an interaction device to a comptuer game where the user "feels" the virtual world through sense of touch, to help train laparoscopic surgeons. Finally, I have been buildign a machine to build 3D cellular constructs (cell printing and biomaterials deposition) for tissue engineering applications.	
Daily, Shaundra	sdaily@clemson.edu	School of Computing	Affective (Emotion recognizing) Computing; empathy development; K-12 education outreach	Understanding physiological response to interventions; virtual worlds; project-based learning environments; physician-patient relationships	

Desjardins, John	jdesjar@clemson.edu	Bioengineering	Orthopaedic Biomechanics, Rehabilitation, Biomaterials	Dr. DesJardins received his Ph.D. in Bioengineering from Clemson University in December 2006, and he has worked for over 20 years as a biomechanical research engineer. He has co-authored over 150 peer-reviewed conference or journal publications in the areas of biomechanics, biomaterials tribology, engineering education and mechanical testing, and he directs the Laboratory of Orthopaedics Design and Engineering on the main campus of Clemson University. He currently leads or is a co-PI on multi-disciplinary research teams funded through NASA, DoT, NSF, the Gates Foundation, biomedical industry and other regional non-profit foundations. His research interests lie in Orthopaedic Biomechanics, physical rehabilitation and sports engineering, total joint biomaterials, biomedical device design and total joint biomechanics.	
Duggan, Lisa	duggan@clemson.edu	School of Nursing	Women's Health, Obstetrics/Gynecology	I have been involved in research with GHS for several years both with nursing students and physicians. My areas of interest include: women's health, vulnerable populations, birth outcomes, needs and care; prenatal care, maternal transitions and adaptations both physical and psychosocial; infant health and bonding; and policy related to maternal/child health. I have just begun my career as a researcher, recently graduating from the University of South Carolina with a PhD in Nursing. I also obtain a Graduate Certificate in Women's Studies while pursuing my PhD. I have presented poster and podium presentations locally and have recently been invited to present at the International Congress of Women's Health in Bangkok Thailand in November of this year. My presentation will be concerning my recently completed research at the OB Center at GHS concerning maternal transitions in vulnerable populations.	
Dye, Cheryl	tcheryl@clemson.edu	Public Health Sciences	Chronic disease self-management and health promotion of older adults	Use of health coaches to promote chronic disease self-management and lifestyle changes.	\$29,922 - Awarded December 2012
Eggert, Julia	jaegger@clemson.edu	School of Nursing	Geriatrics; Genetics; Oncology	Impact of simple early life experience interventions on cognition in the elderly; Engagement in LTC; Healthcare genetics (HCG) as it relates to healthcare provider and patient literacy; Healthcare genetics molecular translation to the bedside/environment/prevention.	
Fredendall, Lawrence	flawren@clemson.edu	Management	Operations Management / Process Flows	Scheduling, inter-departmental coordination, implementing quality improvement, lean operations, using technology to improve quality and process flows in clinical and non-clinical departments.	\$29,988 - Awarded December 2012
Granberg, Ellen	granber@clemson.edu	Sociology & Anthropology	Obesity & Weight Loss; Mental Health	1) Social, self, and identity impacts of sustained weight loss; 2) Body image and self esteem among African American girls; 3) The impact of racial discrimination on health and mental health.	
Haley-Zitlin, Vivian	vivianh@clemson.edu	Food, Nutrition and Packaging Science			
Hoover, Adam	ahoover@clemson.edu	Electrical & Computer Engineering	Tracking, embedded systems	Obesity; automated tools for measuring energy intake	
King, Bruce	bking2@clemson.edu	New per Windsor 2/7/13			
Kowalski, Robin	rkowals@clemson.edu	Psychology	Bullying/Cyberbullying	Previously I conducted research in the area of organ donation as well as cervical cancer screening. Currently, I do research on bully/cyberbullying among youth and adults. This research also looks at prevention and intervention efforts. Finally, I conduct research in the area of sports psychology.	
Kwartowitz, David	robodoc@clemson.edu	Bioengineering	Medical Imaging, Image-processing, and image-guided procedures	My current interests include the development of new medical technologies and procedures using medical imaging as the basis for navigation, visualization, and diagnostics. Within this work, we are exploring ways of reducing the need for ionizing radiation while maintaining minimal collateral damage to healthy tissues, through computing and image processing.	\$30,000 - Awarded December 2012
Mayo, Rachel	rmayo@clemson.edu	Public Health Sciences			
Mayorga, Maria	mayorga@clemson.edu	Industrial Engineering	Decision Sciences, Modeling, Operations Management	Predictive modeling of diseases, CER Systems Engineering, resource allocation in emergency departments (EMS Systems)	
McCubbin, James	jmccubb@clemson.edu	Psychology	Cardiovascular Disease, Hypertension, CHD, Diabetes	I am currently studying changes in CNS and autonomic function in the early stages of development of essential hypertension. I also study mechanisms of acute and chronic pain sensitivity.	
Mroz, Tom	tmroz@clemson.edu	Economics	Health and demographic economics; labor economics	Analysis of intervention programs and statistical analysis	
Neyens, David	dneyens@clemson.edu	Industrial Engineering	Patient Safety and Quality, Human Factors, Driver Safety	Assessing patient safety and quality improvement projects that lead to more effective and safer experiences for patients	

Parker, Veronica	veronic@clemson.edu	School of Nursing	Health disparities/inequities; obesity & obesity related illnesses; asset mapping; community-based and faith-based initiatives/interventions	My interests involve the conduct of cutting edge research focusing on chronic conditions and the dissemination of findings, thereof, that promote health in an effort to improve health care and health outcomes among populations and sub-populations of people. I have a particular interest in the reduction and ultimate elimination of ill health conditions that disproportionately plague a variety of sub-groups of individuals in the state and in the nation.	\$30,000 - Awarded December 2012
Pilcher, June	jpilche@clemson.edu	Psychology	stress, fatigue, sleep deprivation, sleep habits	My research examines the effects of stress and fatigue on performance, social functioning, health, and well-being. My sleep deprivation research simulates shiftwork and provides information on how persons perform while working at night. I'm interested in the effects of sleep habits and shiftwork in health-care settings and their effects on the health-care practitioner and the patients.	
Pury, Cynthia	cpury@clemson.edu	Psychology	Positive Psychology, Emotions, Subjective Experience	I am developing an empirically-based psychological theory of courage and using it to develop assessments and interventions. I am also developing taxonomy of situational factors that influence behavior in a wide range of settings; we envision this as a complement to the Big 5 model of personality.	
Rodriguez, Joy	rodrig7@clemson.edu	Industrial Engineering	Human Factors (i.e., Macroergonomics) in Healthcare	I study the interactions clinicians have with each other and with their patients keeping in mind the organizational and environmental context in which they work in. These interactions include, but are not limited to, communication, problem solving, teamwork, decision making, etc. I also study how these interactions are affected (in both positive and negative ways) by Health Information Technologies. The end goal is to redesign the system to make clinicians work easier and more efficient, all while increasing the quality of patient care and patient and worker safety.	
Sherrill, Windsor	wsherri@clemson.edu	Public Health Sciences	Health services evaluation, medical education, health care finance	health delivery system structure and innovation, medical education and physician executive education, cultural competence and impact on health disparities	
Shi, Lu	lus@clemson.edu	Public Health Sciences	Behavioral economics, health communication, quantitative methods	Long-term model-based evaluation of health intervention for a given population; Modeling population health trends and individual health behavior, especially interested in the state of human mind when a health-related decision is made.	\$29,990 - Awarded December 2012
Smith, Kelly	kcs@clemson.edu	Philosophy & Religion	Bioethics, Philosophy of Medicine	Ethics education and assessment, empirical studies of ethical reasoning	
Taaffe, Kevin	taaffe@clemson.edu	Industrial Engineering	Patient flow, OR capacity planning, scheduling, staffing, data-driven decision making	I have been conducting health care-related research to improve the ability of a health care facility to provide quality care, paying special attention to the logistics of enabling staff to accomplish their tasks with minimal delays. I have also investigated the use of engineering management intervention tools to enhance the communication and coordination I have been conducting health care-related research to improve the ability of a health care facility to provide quality care, paying special attention to the logistics of enabling staff to accomplish their tasks with minimal delays. I have also investigated the use of engineering management intervention tools to enhance the communication and coordination of medical staff by understanding the impact of various actions that cause ripple effects in the system and lead to patient and surgeon delays. Please see the Working Papers section of my CV for the pipeline of current health care-related research contributions.	
Truong, Khoa	ktruong@clemson.edu	Public Health Sciences	Statistics, modeling, cost-effectiveness analysis, economic impact evaluation, and research design	Healthcare delivery systems, treatment modalities, healthcare costs and benefits, preventive healthcare, and health policies	
Whitcomb, John	iwhitco@clemson.edu	School of Nursing	Critical Care, Resuscitative Outcomes, Ethics, Military Nursing, Leadership	I support the learning, knowledge, and professional development of nurses committed to making a difference in health worldwide and advance quality nursing education that prepares the nursing workforce to meet the needs of diverse populations in an ever changing healthcare environment. I have demonstrated this as evidence by publications in scholarly journals such as Nursing Research, Advances in Nursing Science and Critical Care Nursing Clinics of North America. I have presented locally, nationally and internationally in such places as Belfast Ireland, Yokosuka Japan and Montreal Canada. My commitment to lifelong learning has led to many opportunities where I have been able to make a difference for nursing worldwide. I am a Fellow of Critical Care Medicine (FCCM) becoming the 3rd nurse in South Carolina to hold this distinction.	

Zinzow, Heidi	hzinzow@clemson.edu	Psychology	trauma-related mental and physical health outcomes: risk factors, PTSD, substance use, marginalized populations, military, clinical interventions, health service-seeking	I would like to collaborate on projects that involve identifying and connecting trauma victims with needed mental health and medical services. I would also be interested in developing and evaluating interdisciplinary interventions that allow medical providers to identify and address trauma-related mental health needs. Trauma victims are often more likely to seek medical care than mental health treatment; therefore, medical clinics represent important points of entry into the healthcare system. Furthermore, trauma victims frequently suffer comorbid medical and psychiatric diagnoses and would benefit from improvements in interdisciplinary care. I am particularly interested in research that focuses on racial/ethnic minorities, women, sexual assault victims, and individuals who have lost a loved one to homicide.	
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ACTIVE TRIALS

Trials Currently Enrolling Patients:

1. Sponsor: **Alipine Oncomed** OMP-59R5 in Pancreatic
2. Sponsor: **Amgen** AMG232 in Solid Tumors (**First in Human**)
3. Sponsor: **Amgen** Denosumab in Giant Cell Tumor of Bone
4. Sponsor: **Amgen** AMG386 + Pemetrexed + Carboplatin in NSCLC
5. Sponsor: **Amgen** AMG820 in Solid Tumors
6. Sponsor: **Boston Biomedical** BBI608-101 in Solid Tumors
7. Sponsor: **Boston Biomedical** BBI608-201 + Taxol in Solid Tumors
8. Sponsor: **Boston Biomedical** BBI503-101 in Solid Tumors
9. Sponsor: **Boston Biomedical** BBI608-224 + Xeloda, or Erbitux, or Vectibix in Colorectal Cancer
10. Sponsor: **Celgene** CC486 +/- Carboplatin + ABI007 in Solid Tumors
11. Sponsor: **Celgene** Lenolidamide + Azacitidine in AML
12. Sponsor: **Celgene** CC-223 + Erlotinib or Azacitidine in NSCLC
13. Sponsor: **Chorus & Sarah Cannon Research Institute** -LY2510924 in met. Renal ca
14. Sponsor: **Chorus & Sarah Cannon Research Institute** -LY2510924 + Carbo/VP-16 in SCLC

Attachment 5

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ACTIVE TRIALS (con't)

Trials Currently Enrolling Patients:

15. Sponsor: **GSK** GSK2118436 in BRAF mutated cancers
16. Sponsor: **Immunomedics USO** 12-030 Y-hPAM4 +/- Gemzar in Pancreas
17. Sponsor: **Investigator Initiated-** THC in AML & ALL
18. Sponsor: **Lilly USO** 11-102 LY2812176 in Solid Tumor
19. Sponsor: **Lilly/Novella USO** 11-231 LY2940680 in Advanced Basal Cell
20. Sponsor: **Merrimack USO** 10-190 MM-111 + CDDP,Tykerb,or Taxol + Herceptin in Her2+ Solid Tumors
21. Sponsor: **Merrimack** - MM398 vs. 5FU, Leucovorin in Pancreas
22. Sponsor: **Momenta** M402 + Gemzar in Pancreas
23. Sponsor: **Novartis** MEK162X2101- BKM120 + MEK162 in Solid Tumors
24. Sponsor: **Novartis** LBH589 + Vidaza in MDS, CML, AML
25. Sponsor: **Pfizer** Crizotinib in Solids (excluding lung and lymphoma)
26. Sponsor: **Sarah Cannon Research Institute** AZD2014 + Fulvestrant in Breast
27. Sponsor: **Tokai** TOK-001 (Galeterone) in Prostate

Attachment 5

2



TRIAL OPPORTUNITIES

1. Sponsor: **Argos** AGS 003007 Autologous Vaccine in Renal Cell (**SIV TBD**)
2. Sponsor: **Bayer USO** 12132 PI3K in Colorectal (**IRB TBD**)
3. Sponsor: **Eli Lilly USO** 12089 Carbo / Etoposide +/- LY2940680 in SCLC (**IRB TBD**)
4. Sponsor: **Esperance USO** 12075 in CLL and NHL (**IRB TBD**)
5. Sponsor: **GCS 100-CS-1-001** in Solid Tumors with renal insufficiency (**submitted interest**)
6. Sponsor: **Genentech USO** 12008 MPDL3280A in Solid Tumors (**SIV TBD**)
7. Sponsor: **Medimmune USO** 12029 in Solid Tumors (**IRB TBD**)
8. Sponsor: **Millennium USO** 12031 MLN9708 in Solid Tumors w/ elevated p65/FFkb (**SIV TBD**)
9. Sponsor: **Rexahn** RX-5902 in Solid Tumors (**submitted interest**)

GRAND TOTAL: 36 Current Clinical Trials / New Opportunities

Note: *Alipine, Argos, Bayer, Esperance, Immunomedics, and Rexahn are new iTOR pharma sponsors*

Attachment 5

3



ITOR CRU Review

Trial Enrollment Summary

		FY10	FY11	FY12
Referrals		*	132	174
Enrollment	Independent	53	47	53
	USO	12	29	15
	TOTAL	65	76	68

FY12 Summary

	FY12 Referrals	FY12 Enrollment
ITOR MDs	33	29
GHS Oncologists	108	27
Outside GHS	33	12
Totals	174	68

Attachment 5

4



Newly Activated Trials

	FY10	FY11	FY12
Independent	7	10	11
USO	10	11	13
TOTAL	17	21	24

Per Patient Study Revenue

	FY10	FY11	FY12
Independent	\$10,670	\$8,951	\$12,316
USO	\$7,116	\$9,815	\$12,228

Attachment 5

5

Institute for Translational Oncology Research (ITOR)
Status Report
FY13 YTD

Clinical Research Unit (08-7167):

Sponsor	Trials Open to Enrollment	Trials Open to Follow-Up	Patients on Treatment	Patients in Follow-Up
Independent	27	2	33	2
USO TOP	8	0	3	0
Total:	37	2	36	2

Trial Sponsor	FY13 Enrollment to Date
Independent Industry	35
US Oncology (TOP)	1
Totals	36

	FY13 YTD Referrals	FY13 YTD Enrollment by Referral
ITOR MDs	18	13
GHS Oncologists	32	19
Outside GHS	8	4
Totals	58	36

Biorepository Services (08-7166):

Sponsor	FY 13 to Date	Overall Totals
Total Cancer Care Patient Consents	0	2353
ITOR Tissue Bank Pts in REDCap	84	114
Caris Registry Patients	2	143
Intervention Insights Cases	0	7
New Patient Enrollment	84	2617
TCC Daily Path Prep	0	374
TCC Weekly Tissue Shipment	0	245
ITOR Tissue Bank - Kit Prep for Pathology	70	120
ITOR New Patient Surgeries Tissue Banked	70	110
Target Now Surgeries / Tissue Blocks	26/25	435 (surgeries)

CUBE INC (GHS/Clemson)				
Name	Email address	Department	Area of Research Expertise	Brief Description of Scholarly Interests
Alexis, Frank	falexis@clemson.edu	Laboratory of Nanomedicine	Polymeric Nanoparticles, Targeting, Controlled Release	Biodegradable Polymers - Design and synthesize advanced polymers; Polymer-drug conjugates; High-throughput synthesis / <u>Targeted Drug Delivery</u> - Nanoparticle in the biological environment; therapeutic applications; Imaging applications / <u>Nanoparticles</u> - Hybrid nanoparticles; multifunctional nanoparticles
Benson, Lisa	lbenson@clemson.edu	Engineering and Science Education	Student Motivation, Engineering Problem Solving, Biomechanics	Student Motivation - Retention, major, and learning; Engineering problem solving; Assessment methods / <u>Active Learning</u> - classroom activity design; Tablet PCs; First-year engineering / <u>Human Motion</u> - Design, Quantification, Assessment
Black, Jonathan	black.jonathan1@gmail.com	A Founder of Our Field	Orthopaedic Research, Biological Performance of Implant Materials	Physical factors in cell-substrate interactions/Micromechanical behavior of tissue/Organometallic-implant corrosion products/Wear debris: production, biological sequelae/ Surgical implants: retrieval, analysis
Blob, Richard W.	rblob@clemson.edu	Biomechanics	Biomechanics, Locomotion, Bone, Biomaterials	<u>Skeletal loading in vertebrate locomotion</u> - Measurement: load and safety factors; Integrated video, force-platform recordings / <u>Comparative mechanical properties</u> - Characterization: structure, material; Evaluation of skeletal safety factors; Comparisons: age, sex, and species / <u>Modeling musculoskeletal function</u> - Hypotheses of performance; Intractable systems: predicting performance; Diverse system components
Burg, Karen J.L.	kburg@clemson.edu	Cellular Biomaterials Education	Absorbable Polymers, Biofabrication, Tissue Engineering	Advanced Biomaterials - Tissue reconstruction: injectable composites; Tissue systems: polymeric materials; Complex materials for transition tissues / <u>Bioreactors</u> - Engineered tissue growth: modular systems; Units for coculture and drug discovery; Systems with biomechanical inputs / <u>Tissue Fabrication and Test Systems</u> - 3D engineered tissues for benchtop analysis; Biofabrication methods for 3D tissue; Orthopaedic, soft tissue, disease applications
Dean, Delphine	finou@clemson.edu	Biology from Nanoneutons to Microvolts	AFM, Multiscale, Modeling	Nano- and Micromechanics - Cardiovascular cell mechanics and interactions; Dental cell and tissue characterization; Characterizing small tissue samples / <u>Nanoparticle-Cell Interactions</u> - Evaluating the cytotoxicity of nanoparticles; Modulation of muscle-cell function; Stem cell differentiation and nanomaterials / <u>Multiscale Modeling of Cells and Tissues</u> - Modeling heterogeneity across length scales; Converting image data to model geometries
DesJardins, John	jdesjar@clemson.edu	Designing Orthopaedic Implants	Total Joint Replacement, Orthopaedic Biomechanics	<u>Total-Joint Replacement Design</u> -Kinematic and kinetic performance; Biomaterials tribology, friction, and wear; Knee-joint anatomy and function / <u>Translational Orthopaedic Research</u> - Novel surgical techniques: quantifying effectiveness; Evaluating fracture-fixation design; Orthopaedic rehabilitation / <u>Implant Retrieval Analysis</u> -Implant design and material longevity; Designing new implant surfaces; Biomaterials surface characterization
Dooley, Larry R.	dooley@clemson.edu	College of Engineering and Science	Advanced Manufacturing Techniques	Scientific visualization; Computational modeling; Advanced manufacturing techniques; Microstructural engineering of materials
Figliola, Richard	fgliola@clemson.edu	Modeling Physiology	Modeling, Simulation, Fontan	<u>Simulation with patient-specific anatomy</u> - In vitro circuits of altered anatomy; Flow studies for geometry-flow interactions; Respiration and exercise on efficiency / <u>Ventricular-arterial coupling mismatches</u> - In vitro modeling of neoaortic reconstruction; Vascular property effects on ventricular efficiency; Validation of MRI and clinical measurements / <u>Regulating congenital heart disease circulations</u> - Novel valve solutions; Patient-specific in vitro validations; Numerical simulation of altered anatomy
Foulger, Stephen H.	foulger@clemson.edu	Optoelectronic Colloids	Colloid Synthesis, Nanostructured Materials	<u>Applications of multifunctional nanoparticles</u> - Protein inhibition: enhanced cancer-cell apoptosis; Protein-activated fluoroprobes: imaging, therapy; Enzyme harvesting: rational design of ligands
Gao, Bruce Z.	zgao@clemson.edu	Imaging Cell Interactions	Optical Imaging, Microfabrication, Cell-ECM Interaction	<u>Biophotonics</u> -Coherence-based optical imaging; Nonlinear optics-based imaging; Laser tweezers, laser cell micropatterning / <u>Microfabrication</u> - Cell culture: engineered microenvironments; Lab-on-a-chip cell and tissue culture; Microfluidics-based laser cell-sorting / <u>Cell-cell and cell-ECM interactions</u> - Cardiac-cell electrical, mechanical coupling; Microniche: Stem- and cancer-cells

Guiseppi-Elie, Anthony	aguisep@clemson.edu	C3B Laboratories	Biosensors, Trauma, Wounds	<u>Implantable biosensors for continuous monitoring</u> - Bioelectrochemistry; Nanobio interfaces; Enzyme-nano conjugates / <u>Physiologic status monitoring</u> - Trauma and hemorrhagic shock; Molecular markers; Animal studies / <u>Would healing</u> - Programmed release of bioactive agents; Bioactive hydrogels; Animal studies
Harcum, Sarah	harcum@clemson.edu	Bioreactor control	Recombinant DNA, Bioreactor Control, Gene Expression	<u>Gene Expression in Escherichia coli</u> - Effects of protein solubility; Improving protein expression; Fed-batch protocols; Bioreactor control: process control / <u>Chinese Hamster Ovary (CHO) Cell</u> - Glycosylation quality; Protein aggregation prevention; Sequencing the genome of CHO cells / <u>Biofuels Production</u> - Using <i>Saccharomyces bayanus</i> ; Oleaginous yeast: lipids for biodiesel
Harman, Melinda K.	harman2@clemson.edu	Medical Device Reprocessing	Orthopaedic-Implant Performance, Recycling, Reuse	<u>Orthopaedic Implant Performance</u> - Analyze retrieved implants, devices; Joint replacements: Preclinical testing, simulations; Bearing surfaces, bone-biomaterial interface / <u>Innovation for Reprocessing, Reuse</u> - Medical device designs: Optimizing for reprocessing; Reprocessing protocols: Verificaiton, validation; Reusable technology for low-resource settings / <u>Translational Orthopaedic Research</u> - Implant registries, postmarketing surveillance; Musculoskeletal biomechanics, functional assessments; Novel surgical instruments, operative techniques
Hermes, Matthew	hermes@clemson.edu	Commercial Clinical Outcomes	Biomaterials, Commercial Clinical Outcomes	<u>Biomaterials Development</u> : Commercial Clinical Outcomes / <u>Absorbable Implants</u> - Synthesis, Manufacture and Quality Maintenance; High-risk surgical-implant candidates; Implant retrieval and evaluation; Presurgical patient-evaluation systems
Kwartowitz, David M.	robodoc@clemson.edu	Personalized Medicine	Image-Guided Surgery, Robotics, Medical Imaging	<u>Image-Guided Surgery</u> -Analysis of localization and tracking systems; visualization techniques; registration accuracy / <u>Robotic-Assisted Surgery</u> -Analysis of accuracy and precision; Integration of pre-and intra-operative data; New applications / <u>Medical Imaging and Image Processing</u> -Novel applications of medical imaging; Disease measurement and therapeutics
LaBerge, Martine	laberge@clemson.edu	Medical Tribology	Total Knee Implant, Tribology, Endovascular Stent	<u>Orthopaedic Bearing Materials</u> -Material synthesis and characterization; Total knee replacement friction, wear, and lubrication; Lubricant development for simulation and in vivo use / <u>Endovascular Stent Restenosis</u> - Implant design and modeling; Contact mechanics and tribology; In vitro experimentation and animal modeling / <u>Vascular Smooth Muscle Response</u> - Implant-contact experimental simulation
Latour, Robert	latourr@clemson.edu	Protein-Surface Interactions	Proteins, Adsorption, Simulation	<u>Molecular Simulation Methods for Biomaterials</u> - Force-field parameterization for protein adsorption simulation; Advanced sampling methods for large molecular systems; Biomaterials design at the atomic level / <u>Molecular Structure of Adsorbed Proteins</u> - Experimental methods to measure adsorbed protein structure - Orientation, Conformation, Bioactivity / <u>Biomaterials Design to Control Cellular Response</u> - Blood contact materials; Platelet adhesion and thrombogenicity
Lee, Jeoung Soo	lispia@clemson.edu	Biomaterials for Drug/Gene Delivery	Target-Specific Polymeric Nanotherapeutics	<u>Colon-specific bi-functional polymeric prodrug for treatment of amebiasis</u> - Polymeric prodrug synthesis and characterization; Active drug release kinetics; Amebicidal activity and inhibition of parasite-host cell interaction / <u>Neuron-specific polymeric nanotherapeutics for CNS regeneration</u> -Neuronal targeting; Combinatorial drug/siRNA delivery; Axonal regeneration and functional recovery / <u>Target-specific mixed polymeric micelle for metastatic breast cancer</u> - Mixed polymeric micelle as drug/gene delivery carrier; Transfection efficiency, specificity, and cytotoxicity; Gene knockdown efficiency and biological activity
Mei, Ying	mei@clemson.edu	Biomaterials and Cell and Tissue Engineering	Biomaterials, Stem Cell/Tissue Engineering	<u>Biomaterials</u> -Combinatorial biomaterials development; Surface engineering of biomaterials; Smart biomaterials / <u>Stem Cell Engineering</u> - Cell reprogramming, Substrate-stem-cell interactions; Artificial stem cell niche / <u>Tissue Engineering</u> - 3D printing; stem cells for tissue engineering
Nagatomi, Jiro	jnagato@clemson.edu	Cell Mechanics and Mechanobiology	Mechanotransduction, Tissue Engineering	<u>Cellular mechanotransduction of hydrostatic pressure</u> - Mechanosensitive ion channels of bladder urothelial cells; Intracellular signal transduction pathways; Bone-marrow stem cell differentiation under pressure / <u>Mechanically guided urological tissue regeneration</u> - Novel tissue engineering scaffold materials; Bioreactors for mechanical stimulation; Mechanical characterization of engineered tissue / <u>Hydrogel-based smart tissue adhesive</u> - Thermal crosslinking polymer; Mechanical properties tailored for urological organs; Drug-delivery for scar inhibition

Reukov, Vladimir	reukov@clemson.edu	Bioimaging, Nanoparticles	Imaging, Drug Delivery, Nanoparticles	<u>Cell imaging by SPM</u> - Bacteria recognition based on dynamic electromechanical response; Live cell band excitation piezo-response force microscopy; Electromechanical properties of cells / <u>Enzyme-nanoparticles conjugates for drug delivery</u> - Nasal delivery of anti-inflammatory agents; Cholesterol-lowering therapeutics during hyperlipidemia; Targeted delivery of free-radical scavengers through BBB / <u>Fiber-based materials for diagnostic applications</u> - Nanocoated fibers for self-diagnosis of bacterial vaginosis; Fast tests for viral infections (flu, HIV, etc.); Nanofibers for single cell analysis
Simionescu, Agneta	agneta@clemson.edu	Tissue Regeneration Laboratory	Translational Tissue Engineering	<u>Diabetes-related modifications of biomaterials</u> -Irreversible chemical modifications: collagen and elastin scaffolds; Cardiovascular biomaterial stiffness in diabetes; Diabetes-resistant scaffolds treated with antioxidant agents / <u>Stem cells derived from diabetic subjects</u> - Diabetic stem cell characterization and differentiation; Stem cell responses to biochemical, mechanical cues; Matrix remodeling in diabetic subjects / <u>Microvascular network formation in diabetes</u> - Proangiogenic peptide immobilization to 3D tissue constructs; Biomaterial-stiffness adjustment; Testing in diabetic animal models
Simionescu, Dan	dsimion@clemson.edu	Tissue Regeneration Laboratory	Tissue Regeneration	<u>Biomaterials: Cardiovascular and Orthopaedic Applications</u> - Artificial heart valves, vascular grafts, myocardial patches; Engineered intervertebral disc components; Biocompatibility testing in vitro and in vivo / <u>Patient-Tailored Tissue Regeneration</u> - Tissue and organ 3D reconstruction; Human mesenchymal stem cells; Organ-specific bioreactors / <u>Tissue Engineering</u> - Biological scaffolds with controlled degradation; Cues for stem cell differentiation; Living heart valves, arteries, veins, heart muscle
Snyder, James	jsnyde2@clemson.edu	Surface-Adsorption Studies	Biomolecule-Surface Interactions, Proteins	<u>Molecular Simulation Methods for Biomaterials</u> - Force-field parameterization for protein adsorption simulation / <u>Molecular Structure of Adsorbed Proteins</u> - Molecular-modeling-simulation methods to determine adsorbed protein structure; Orientation; Conformation; Influence of protein-surface interaction on mechanism of enzyme catalysis / <u>Computational Studies of Reactions Subject to Confinement</u> - Reactions confined to a nanotube interior
Swaja, Richard	swajar@musc.edu	Bioengineering Leadership and Regenerative Medicine	Bioengineering Leadership, Regenerative Medicine	<u>Regenerative Medicine</u> - Stem cell sources and differentiation; Tissue and organ biofabrication; Engineering the vascular tree / <u>Bioengineering Leadership</u> - Clemson-MUSC Joint Bioengineering Program; South Carolina Bioengineering Alliance; South Carolina Centers of Economic Excellence
Vanden Berg-Foels, Wendy S.	wendyvf@clemson.edu	The Articular Surface	Cartilage Development, Remodeling, Regeneration	<u>Cartilage development and remodeling</u> - Cartilage-collagen network characterization; Collagen network differences with age, among joints; Helium-ion microscopy / <u>Mesenchymal Stromal Cells</u> -Characterization local to the articular joint space; Signaling molecules: Induce in vivo tissue regeneration; In vitro, in vivo responses to signaling molecules / <u>Cartilage regeneration</u> - Biomaterials for controlled signaling molecule delivery; Temporal signal sequences for robust chondrogenesis in vivo; Characterization of regenerated tissue structure
Vertegal, Alexey	vertege@clemson.edu	Surface Bioengineering	Biosurface Engineering, Scanning Probe Microscopy	<u>Nanoparticles for targeted drug delivery</u> - Antioxidant nanoparticles for respiratory-tract protection; Thrombolytic nanodevices; Nanoparticles for neuroprotection; Antibacterial enzyme-nanoparticles conjugates / <u>Fiber-based biosensors and biodevices</u> - Biosensors for self-diagnosis of bacterial vaginosis; Biosensors embeddable in ordinary household items; Artificial proboscis for probing individual cells / <u>Advanced scanning-probe-microscopy techniques</u> - Mapping mechanical properties of cells and tissues; Bacterial recognition using piezoresponse force microscopy
Vyahavahare, Naren	narenv@clemson.edu	Cardiovascular Disease Therapy	Extracellular Matrix, Heart Valve, Elastin	<u>Cardiovascular Calcification: Mechanisms, Therapies</u> - Elastin degradation and stabilization; Prevention of enzyme activities; Suppression of bone proteins; Demineralization / <u>Aortic Aneurysms: Mechanisms, Therapies</u> - ECM stabilization, regeneration; Animal models; Site-specific delivery / <u>Heart valve Implants</u> - Durable materials; Functional role of glycosaminoglycans in heart valves

Webb, Ken	kwebb@clemson.edu	Redirecting the Wound-Healing Process	Mechanotransduction, Extracellular-Matrix, Hydrogels	<u>Vibratory Mechanotransduction</u> - Extracellular-matrix metabolism; Cytokine expression; Activation of signaling pathways / <u>Scaffolds for Spinal Cord Regeneration</u> - Polymer fibers with micrometer-scale surface channels; Expression and immobilization of neural cell adhesion molecules; Controlled neurotrophin release / <u>Bioactive Tissue Adhesives</u> - Elastic hydrogels with variable degradation rates; Localized, sustained release of nonviral vectors
Yao, Hai	haiyao@clemson.edu	Cartilage Regeneration	Cartilage Mechanics, Tissue Engineering	<u>Cartilaginous Tissue Mechanics</u> - Constitutive modeling and numerical simulation; Structure-Function relationship: biomechanical characterization; Fluid and solute transport: tissue nutrition / <u>Cartilage-Cell Mechanobiology</u> - Single-cell mechanics: Characterization and modeling; effects of physical stimuli: mechanotransduction; Cartilage-cell energy metabolism / <u>Functional Imaging</u> - In vivo cartilaginous tissue imaging; Fluorescent imaging for solute transport; radiation dosimetry: Monte Carlo simulation
Zhang, Guigen	guigen@clemson.edu	Novel Biosensors: Nanoscience and Engineering	Biosensors, Micro/Nanotechnology, Multiphysics Modeling	<u>Integrated structures and biosensors</u> - Fabrication of nanostructures; Integration of nanostructures into microdevices; Development and evaluation of novel biosensors / <u>Characterization of structures</u> - Surface binding of peptides and proteins; Structural characterization of macromolecules / <u>Modeling of multidisciplinary problems</u> - Multiphysics, multiscale simulation of complex problems; Holistic, interdisciplinary approach to biomedical systems



**GREENVILLE HEALTH SYSTEM
SCHOLARLY ACTIVITY: OCT 2012-SEPT 2013**

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updated 5/1/2013 CY

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BIOMEDICAL SCIENCES FACULTY

PEER REVIEWED JOURNAL ARTICLES AND ABSTRACTS

A.T. Deyrup, F. Chibon, L. Guillou, P. Lagarde, J-M. Coindre and S.W. Weiss. Fibrosarcoma-like lipomatous neoplasm: a reappraisal of so-called spindle cell liposarcoma. *Am J Surg Pathol.* (in press).

Liese, A.D., Ma, X., Maahs, D.M., and **Trilk, J.L.**, (2013) Physical activity, sedentary behaviors, physical fitness, and their relations to health outcomes in youth with type 1 and type 2 diabetes: A review of the epidemiologic literature. *Journal of Sports and Health Science*, 2:21-38.

Trilk, J.L., Ortaglia, A., Blair, S.N., Bottai, M., Church, T.S., and Pate, R.R. (2013) Cardiorespiratory Fitness, Waist Circumference, and Alanine Aminotransferase in Youth. *Medicine and Science in Sports and Exercise*, 45(4):722-727.

Julius O. Soyinka , Cyprian O. Onyeji , **Thomas I. Nathaniel** , Olugbenga O. Odunfa, Benjamin U. Ebeshi (2013). Effects of concurrent administration of efavirenz on the disposition kinetics of amodiaquine in healthy volunteers. *Journ. Pharmacy. Research.* 275-279.

Khalil, M.K., Kirkley, D.L., and Kibble J.D. Development and evaluation of an electronic laboratory manual for cooperative learning of medical histology. *Anatomical Sciences Education*. April 2013.

Sundin, T., **Peffley, DM**, Gauthier, D, and Hentosh, P. The isoprenoid perillyl alcohol inhibits telomerase activity in prostate cancer cells. *Biochimie*, Vol. 94, Issue 12; Dec 2012.

Sundin T., **Peffley DM**, and Hentosh P. Disruption of an hTERT-mTOR-RAPTOR protein complex by a phytochemical perillyl alcohol and rapamycin. *Molecular Cell Biochemistry*, Vol 375, Issue 1-2, Mar 2013, 97-104.

Archer S, **Roudebush WE**. Enhancement of sperm motility using pentoxifylline and platelet-activating factor. *Methods Mol Biol* Vol 927, April 2013.

Xie Y, Abel PW, Kirui JK, Deng C, Sharma P, **Wolff DW**, Toews ML, Tu Y. Identification of upregulated phosphoinositide 3-kinase ? as a target to suppress breast cancer cell migration and invasion. *Biochem Pharmacol* March 2013.

Zhao J, Zhang J, Yu M, Xie Y, Huang Y, **Wolff DW**, Abel PW, Tu Y. Mitochondrial dynamics regulates migration and invasion of breast cancer cells. *Oncogene*, November 2012.

Zhao K, Zhou H, Zhao X, **Wolff DW**, Tu Y, Liu H, Wei T, Yang F. Phosphatidic acid mediates the targeting of tBid to induce lysosomal membrane permeabilization and apoptosis. *J Lipid Res*, Vol 53, Issue 10, Oct 2012.

Xie Y, Jiang H, Nguyen H, Jia S, Berro A, Panettieri RA Jr, **Wolff DW**, Abel PW, Casale TB, Tu Y. Regulator of G protein signaling 2 is a key modulator of airway hyperresponsiveness. *J Allergy Clin Immunol*, Vol 130, Issue 4, Oct 2012.

ARTICLES UNDER REVIEW

Effiong E. Otokonyong, Nathaniel I. Thomas, Brittany Moore Kevin F. Breuel (2013). Intracerebroventricular recombinant leptin blocks High-Fat Diet-induced adiposity, hyperleptinemia, hyperinsulinemia and hypoadiponectinemia, and upregulates Brown adipose tissue Uncoupling proteins (UCP-1) in obesity prone rats. Neuroscience research. Under review.

Nathaniel I.T. (2013). The Crayfish Model and cocaine sensitive reward : A novel path in drug addiction research. Submitted. Journal of drug addiction research and Therapy

Thomas I Nathaniel, Mathew Hudson, Jayne Reuben, Alfred Squire and Kinneil Coltman (2013) Effect of increasing diversity of physician workforce on patients' satisfaction. Archives of Public Health. Under review

Nathaniel, I.T. Otokonyong, E., and Soyinka, J.O (2013) Metabolic regulatory approach for surviving tissue hypoxia during stroke: clues from the naked mole rat. Neuroscience Research. Under review.

CHILDREN'S HOSPITAL

BOOK CHAPTERS

Glascoe FP, Marks KP, Poon JK, Macias MM (Eds). *Identifying and Addressing Developmental-Behavioral Problems: A Practical Guide for Medical and Non-medical Professionals, Trainees, Researchers and Advocates*. Nolesnville, TN: PEDSTest.com, LLC, 2013. (Contributing author: **Dr. Desmond Kelly, MD**)

DEPARTMENT OF NURSING

PEER REVIEWED JOURNAL ARTICLES

Seitz, Susan MSN RN CNOR Clinical Nurse Specialist Perioperative Services (2013)
Perspectives of a Clinical Nurse Specialist About Improving the Quality of Nursing Services; Quality Management Journal, Vol 20 (2): 8-11

O'Rourke, M; Denham, N; Trilk, JL; Franco, R; Hudson, M; Blackhurst, D; Gluck, L. Supervised exercise for cancer survivors during and after active therapy. *Oncology Practice*. J Clin Oncol 30, 2012.

Leighton, Patricia MSN Ed, OCN / Center for Integrative Oncology and Survivorship Nurse Navigator (Date: in peer review) *Cancer Survivorship; American Nurse Today*.

Smith, Michelle Taylor, MSN, RN, GHS Chief Nursing Officer: "Coaching for Organization Success; Strategies on How to Lead Teams," *American College of Healthcare Executive Journal: Healthcare Executive*.

Bethel, Sue, MS, RN, GHS Director of Nursing Clinical Programs & Research; **Sue Seitz, MSN, RN, GHS Perioperative CNS; Cathie Osika-Landreth**, MS, RN, GHS Emergency Services CNS; Lynette Gibson, PhD, RN, University of South Carolina Upstate; John Whitcomb, PhD, RN, Clemson University: "Energize Staff to Create a Research Agenda," Clinical Nurse Specialist.

MacIntyre, Richard; Victoria Niederhauser; **Catherine Garner**, DrPH, MSN, RN, GHS Interim Administrator, Nursing Practice & Academics; Teri Murray; Cynthia Teel: "Transformational Partnerships in Nursing Education," *Institute of Medicine Report, The Future of Nursing: Leading Change, Advancing Health*.

Woods, Landance W. RN BSN MSN NEA-BC, GHS Home Health ; **Susan Snow** RN BSN Hcs-D , GHS Home Health (2013) "The Impact of Telehealth Monitoring on Acute Care Hospitalization Rates and Emergency Department Visit Rates for Patients Using Home Health Skilled Nursing Care; Home Healthcare Nurse.

Wittmann-Price, Ruth, PhD, RN, CNS, CNE; Brenda Reap Thompson, MSN, RN, CNE Suzanne M. Sutton, MSN, RN; **Sidney Ritts Eskew, BSN, RN**, Greer OR (2012) Nursing Concept Care Maps for Safe Patient Care; F.A. Davis Publisher.

BOOKS AND BOOK CHAPTERS

Wittman-Price, Ruth; Thompson, Brenda Reap; Sutton, Suzanne; Eskew, Sidney Ritts. Nursing Concept Care Maps for Safe Patient Care. Published October 2012.

DEPARTMENT OF OBSTETRICS

PEER REVIEWED JOURNAL ARTICLES

Matteson KA, Rahn DD, **Wheeler TL**, Casiano E, Siddiqui NY, Harvie HS, et al. Nonsurgical management of heavy menstrual bleeding. A systematic review. Am Col Obstet Gynecol. 2013;1-12.

Forstein DA, Bernardini C, Cole RE, Harris ST, Singer A. Before the breaking point: reducing the risk of osteoporotic fracture. J Am Osteo Assoc 2013. 113(2):S5-S27.

Gill SE, Ruple SM, Wolff CM, Puls LE. Simultaneous occurrence of well-differentiated papillary mesothelioma and endometrioid ovarian cancer: A case report. Gynecologic Oncology: Case Reports. 2013;4:53-55.

Gill SE, Mills BB. Physician opinions regarding bilateral salpingectomy with hysterectomy and for sterilization. J Minim Invasive Gynecol. 2013. In press.

Shrum KJ, Gill SE, Thompson LK, Blackhurst DW, Puls LE. New onset congestive heart failure with gemcitabine in ovarian and other solid cancers. Am J Clin Oncol. 2013:Jan 24. Published online ahead of print. DOI: 10.1097/COC.0b013e31827b459a

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Picklesimer AH, Dorman K. Maternal obesity: effects on pregnancy. In: Troiano N, Harvey C, Chez B, eds. High risk and critical care obstetrics. Philadelphia: Lippincott Williams and Wilkins. 2012:357-70.

PRESENTATIONS

Picklesimer AH. CenteringPregnancy: Improving the standard of care with an innovative, evidence-based approach. North Carolina and South Carolina Perinatal Assoc 19th Annual Perinatal Partnership Conference. Myrtle Beach, South Carolina. October 1, 2012.

Picklesimer AH. Update on gestational diabetes. American Assoc of Birth Centers 6th Annual Birth Institute. St. Pete Beach, Florida. October 5, 2012.

Lessey BA, Nagarkatti M, Zhou J, Young SL, Adur MK, Nowak RA. Peripheral and local cytokines including IL-8, IL-9 and IL-17 are elevated in endometriosis: an in vivo and in vitro analysis before and after surgery suggests a mechanism for endometrial dysfunction. 68th Annual Meeting ASRM. San Diego, California. October 20-24, 2012.

Picklesimer AH. Update on gestational diabetes. Upper Piedmont Assoc of Diabetic Educators 25th Annual Conference. Greenville, South Carolina. November 1, 2012.

DEPARTMENT OF ORTHOPAEDIC SURGERY

PEER REVIEWED JOURNAL ARTICLES

Bush CA, **Hawkins RJ**. Prevention of complications in shoulder arthroplasty: understanding options and critical steps. Instr Course Lect. 2013;62:115-33. PubMed PMID: 23395019

Hart ND, Clark JC, Wade Krause FR, **Kissenberth MJ**, Bragg WE, **Hawkins RJ**. Glenoid screw position in the Encore Reverse Shoulder Prosthesis: an anatomic dissection study of screw relationship to surrounding structures. J Shoulder Elbow Surg. 2012 Nov 13. doi:pii: S1058-2746(12)00359-X. 10.1016/j.jse.2012.08.013. [Epub ahead of print] PubMed PMID: 23158042.

Jackson LT, Schaller, TM. Surgery for Morton Neuroma.

<http://emedicine.medscape.com/article/1237552-overview>. Updated Nov. 9, 2012.

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GREENVILLE
HEALTH SYSTEM

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ITOR

PRESENTATIONS

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