Today’s Topics

- Update from the MUSC Foundation for Research Devel.
- REEF Instrument Fund
- Clinical Research Taskforce Update
- New Office of External Research Relations
- Indirect Cost Rate – Sharing, PI flow-down
- Research Updates from the Colleges
College of Pharmacy Research Update

- Separating academically from USC, Research collaborations will continue
- Dr. Patrick Woster named Interim Vice Chair for Research
- New partnership with Bristol-Myers Squibb
FRD Missions

**Facilitate the translation of all MUSC discoveries** into products and services for the public’s benefit by being the service center to faculty, staff, and students for all matters related to IP

**Create a climate of innovation** at MUSC that attracts and retains world-class faculty by providing efficient and effective technology transfer services for MUSC

**Generate revenue** for FRD operations, inventors, and the University to support research, education, and patient care

**Engage strategic partners** for MUSC thereby producing groundbreaking discoveries that would not be achieved alone

**Contribute to economic development** by providing streamlined access to MUSC intellectual property for South Carolina startup and technology-based companies
## FY15 Activity Report

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## Patent Power 2014

This year’s roundup of the companies and organizations with the strongest U.S. patent portfolios

| Company/Organization                     | Country of Headquarters | 2013 US Patents | Pipeline Growth Index | Pipeline Impact | % Self-Citations | Adjusted Pipeline Impact | Pipeline Generality | Pipeline Originality | Pipeline Power® |
|-----------------------------------------|-------------------------|-----------------|-----------------------|----------------|-------------------|-------------------------|-------------------|-------------------|-----------------
| Massachusetts Institute of Technology  | United States           | 317             | 1.24                  | 2.1            | 0.24              | 2.1                     | 2.73              | 1.12              | 2724.84         |
| University of California                | United States           | 460             | 1.11                  | 1.34           | 0.14              | 1.34                    | 1.72              | 1.07              | 1261.26         |
| Harvard University                      | United States           | 78              | 1.28                  | 2.22           | 0.31              | 2.19                    | 3.37              | 1.17              | 805.11           |
| Medical University of South Carolina    | United States           | 14              | 3.2                   | 2.94           | 0.25              | 2.94                    | 5                 | 1.12              | 694.47           |
| University of Illinois                  | United States           | 102             | 1.11                  | 2.54           | 0.2              | 2.24                    | 2.66              | 1.02              | 681.88           |
| California Institute of Technology      | United States           | 122             | 1.09                  | 1.5            | 0.22              | 1.5                     | 2.23              | 1.13              | 608.21           |

Medical University of South Carolina patents hit new high
FY15 Commercialization Highlights

• Royalty ↑ 30% $0.44 to 0.59 MM

• Implemented shift in FRD approach to licensing to startups pursuing SBIR/STTR funding

• Supported 14 SBIR/STTR applications from MUSC and based on MUSC IP

• 3 product launches
FY15 Beyond the Numbers

• Facilitate the translation of all MUSC discoveries
  • Established a Prototyping Fund
  • Initiated and running eCommerce license site
  • Co-Directing the Therapeutics Translation Program in CTSA renewal

• Create Culture of Innovation
  • Founded local NAI chapter and organized kick off event
  • Organized statewide Student Innovation Day held at MUSC
  • B.I.G Innovation Seminar Series re-established
  • Created Guide to NIH SBIR/STTR Programs & Inventors Guide
  • Initiated and pushing for IP and startup policy changes

• Generate revenue
  • $0.59MM in FY15 with goal of $0.65MM in FY16

• Engage strategic partners
  • Leveraged BOD to organize a biotech/pharma Hub Visit in Boston, promoting Drug Discovery to 8 companies

• Contribute to economic development
  • Startup licensing changes & SBIR/STTR initiatives
FY 2015
FY16 FRD Purpose Statement

Add, Extract, and Retain Value for the MUSC Enterprise

- Intellectual Property
- Research Dollars
- Collaborations
- Startups
- Best Faculty
- Education Enhancement
- More Assets

MUSC Assets
FY16 Add, Extract, Retain

- **ADD Funding**
  - **Gap Funding** RFAs through SCTR Therapeutics Translation Program
  - Build devices through **Prototype Fund**

- **ADD Partnerships**
  - Organizing 2 **Hub Visits**

- **ADD Education**
  - Develop Innovator and Entrepreneur **on-line courses**

- **ADD to the Culture of Innovation**
  - **Quarterly symposium** to build culture of innovation
  - Received approval for building a “**Patent Garden**” on campus

- **EXTRACT Ideas**
  - Explore untapped **pockets of innovation** on campus
  - **Shift 80/20** rule

- **RETAIN Value**
  - Standard FRD – **Only Better**
Research Equipment Enhancement Fund (REEF)

“to allow active investigators and/or departments to replace aging, obsolete or damaged research equipment, or to acquire new research equipment that represents the latest technology”

- $250,000 allocated by Associate Provost for Research for FY16
- 2 opportunities per year – deadlines 1st September and 1st March
- Maximum award is $50,000
- Applications with matching funds and those benefiting multiple faculty will receive higher priority

- 20 applications received for Sept 1 deadline
- Review ongoing
- Decisions early October
REEF review group

Jamie Barth (Regenerative Medicine)
Mark Eckert (Otolaryngology)
Tilman Heise (Biochemistry)
Ed Jauch (Medicine)
Shannon Jones (Library)
Steve Rosenzweig (Pharmacology)
Pat Woster (Drug Discovery) (Chair)
Caroline Westwater (Oral Health Sciences)

Admin support:
Laura Walters (STB Building Manager)
Clinical Research Taskforce
Progress and Reorganization

Patrick Flume, MD

September 18, 2015
Office of External Research Relations

Joseph Helpern, PhD

September 18, 2015
Indirect Cost Rate – Sharing, PI flow-down

September 18, 2015
Graduate Students Reaching Out With Science (GROWS)

Student-run initiative designed to:

- Increase awareness and excitement surrounding scientific research in Charleston County middle schools
- Provide graduate students with an opportunity to share their work with the community and gain a teaching experience

45-50 minute interactive modules
- Heart health and exercise
- Brain health
- Bacteria, viruses and immunity
- Cancer
- Genetics
- Nutrition
- Marine Biology
MUSC Post-baccalaureate Research Education Program (PREP)

Newly funded NIH grant for the development of a diverse research workforce:

2-year intensive program for individuals with interest in pursuing a PhD or MD/PhD in the biomedical sciences

Components

❖ Research
  ★ Hands-on intro to benchwork techniques
  ★ Hypothesis-driven lab project

❖ Professional Development
  ★ Individualized plans and coaching
  ★ Workshops to improve scientific communication skills
  ★ Travel to national conference
  ★ Prep for GRE, applications and interviews
  ★ Coursework and research ethics training

❖ Community
  ★ Monthly research meetings with current PhD students
  ★ Career exploration and networking with PhD's

Changing What’s Possible
College of Dental Medicine

Keith Kirkwood, DDS, PhD

September 18, 2015
Oral Health Research: Impact to South Carolina

- The COHR has generated >50 NIH funded grants totally >$25 Million in since 2006.
- Currently employs >60 faculty, staff and students with $5,451,145 in 2014 expenditures
- MUSC CDM currently ranked 23 in US out of >60 dental schools
- Focused on oral health disparities including oral cancer, periodontal diseases, oral infections, and bioengineering.
- Recognized national leader in training program
- Fostered ability to recruit best and brightest investigators to SC including U of Michigan, UCLA, UAB, and U Florida
- Synergy with MUSC campus-wide, Clemson Bioengineering
Five Integrated Cores

C-COHR
- Fosters clinical and translational research
- Community-based participatory research
- Biostatistical support

L-COHR
- Laboratory-based facilities
- Mineralized Tissue Facility
- Oral Cancer Research Facility

G-COHR
- Gnotobiotic Animal Research Facility
- Offers germ-free mice and expertise to investigations

T-COHR
- Comprehensive integrated research training programs based in CDM
- DSTP, PhD, MS, Postdoc, SURP

Pilot Program
- Provides support for pilot projects that interact with and utilize the COHR core facilities

Medical University of South Carolina
http://academicdepartments.musc.edu/cohr/index.htm
College of Nursing

Ron Acieno, PhD

September 18, 2015
College of Nursing Research
Recent NIH Successes

Community Partnerships & Technology - Enhanced Interventions
Community

Gayenell Magwood
• Novel Intervention Linking Public Housing with Primary Care to Prevent Diabetes NIDDK R34
• Community-based Intervention under nurse guidance after Stroke (CINGS) AHA

Ida Spruill
• Ethno-Cultural Barriers to Health Literacy/Disease Management in AAs
  NINR R01
Technology Enhanced Interventions

- Kathleen Cartmell
  - Reducing Hospital Readmission Rates by Implementing an Inpatient Tobacco Cessation Service Driven by Interactive-Voice Recognition Technology

- Ken Ruggiero
  - Technology-based Tools to Enhance Quality of Care in Mental Health Treatment NIMH R34
  - Bounce Back Now: A Low Cost Intervention of Facilitate Post-Disaster Recovery NIMH R01

- Teresa Kelechi
  - Monitoring and Managing Newly Healed Chronic Leg and Foot Ulcer Skin Temperature: A Cooling Intervention (MUSTCOOL) to Prevent Ulcer Recurrence NINR R01
  - Physical Activity Interventions for Leg Ulcer Patients NINR R21

- Frank Treiber
  - Enhancing Kidney Donation Through Live Organ Video Educated Donors (LOVED) NIDDK R01
  - Smartphone Medication Adherence Stops Hypertension (SMASH) Among Hispanics NHLBI R21
  - Smartphone Delivered Meditation for BP Control among Prehypertensives NIDDK R01
Value of Grants Awarded
This center is a collaboration between CHP and COM and is part of the new NIH National Rehabilitations Research Infrastructure network. We have proposed to provide training, collaborations, and pilot funding for investigators nationwide who are interested in non-invasive brain stimulation and operant conditioning of brain and spinal networks integrated with rehabilitation principles. We will provide support to researchers in both clinical and animal models of neuromodulation.

**Leadership**
- Program Director: Steve Kautz (CHP-Health Sciences & Research)
- Education Director Rick Segal (CHP-Health Professions)
- Science Director: Mark George (COM-Psychiatry)
- Executive Committee member: Aiko Thompson (CHP-HS&R)
- Executive Committee member: DeAnna Adkins (COM-Neuroscience).

In total, 14 investigators from CHP-HS&R (5), CHP-HP (1), COM-Psychiatry (3), COM-Radiology (2), COM-Neurology (1), COM-Neuroscience (1), and COM-Public Health Sciences.