Operationalizing Clemson’s Strategic Plan

Health Innovation Research Innovation Cluster

- Biomedical Devices
- Regenerative Medicine
- Biomaterials
- Mobile Health Technologies
- Health Informatics

- Healthcare Access and Delivery
- Health Predictors
- Health Disparities
- Genetic Disorders & Personalized Medicine
2:00 – 2:05 Welcome
   • Windsor Westbrook Sherrill, PhD

2:05 – 2:25 College Spotlight: SCIENCE
   • Cynthia Young, PhD, College of Science Founding Dean
   • Trudy Mackay, PhD, Professor, Genetics and Biochemistry

2:25 – 2:30 SCIENCE Health Research Highlights
   • Apparao Rao, PhD, Associate Dean for Discovery

2:30 – 2:50 Prisma Health Collaboration Spotlight
   • Des Kelly, MD, Chief Medical Research Officer, Prisma Health–Upstate
   • Mike Devane, MD Vice Chair of Academics, Department of Radiology

2:50-2:55 Brief and Spectacular: Faculty Fellowship Spotlight
   • Kristin Scott, PhD, Associate Professor, Management

2:55 - 3:10 CUSHR Appointment Committee Update and Announcements
   • Larry Fredendall, PhD, Chair, CUSHR Appointment Committee
   • J. Cole Smith, PhD, Associate Provost for Academic Initiatives

3:10 – 3:30 Refreshments and Conversation
Dr. Windsor Westbrook Sherrill
Associate Vice President for Health Research
Provost’s Distinguished Professor, Public Health Sciences
Chief Science Officer, Prisma Health–Upstate
Dr. Cynthia Young
Founding Dean, College of Science

Dr. Trudy Mackay
Self Family Endowed Chair in Human Genetics
Professor, Genetics and Biochemistry
Director, Center for Human Genetics
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75% human disease genes have fly ortholog

Control and manipulate genetic background, gene expression, environmental exposure

Economical to rear large numbers

Fly models of:
- Glaucoma
- Heart disease
- Longevity and senescence
- Alcohol and drug sensitivity
- Food consumption
- Ataxia
- Sleep, circadian rhythm
Understand how genetic variation in human populations causes variation in health and disease

Use this knowledge for improved diagnostics, therapeutics, precision medicine

**Requires interdisciplinary approach:**
Statistical and computational genetics
Bioinformatics
Genomics
Animal models, patient avatars
CRISPR/Cas9 gene editing
**Illumina NovaSeq 6000**

Up to 6 Tb ($6 \times 10^{12}$ base pairs!) data in two days

- 48 human genomes
- 500 human exomes
- 400 human transcriptomes at 30X coverage

Scalable for smaller genomes (flies)

**Chromium 10X single cell transcriptomic and epigenetic profiling capability**
Cluster Hire: Five Assistant Professors
   2 computational
   3 molecular biologists

We are seeking collaborators
SCIENCE Health Research Highlights

Dr. Apparao Rao
Associate Dean for Discovery
R. A. Bowen Professor of Physics
Director, Clemson Nanomaterials Institute
CUSHR Faculty Fellows:

**Prof. Jeff Anker**, Chemistry, Spring/Summer 2018
Area of focus: Cancer biomarkers, implantable sensors to monitor bone healing

**Prof. Dev Arya**, Chemistry, Spring/Summer 2019
Area of focus: Drug design and development

SC Translational Research Improving Musculoskeletal Health (SC TRIMH)
Junior Investigator: **Prof. Hugo Sanabria**, Physics and Astronomy
Area of focus: Bone loss, therapeutics, cell/molecular level

Medical Enrichment Through Opportunities in Research (MEnTOR)
NIH T35 Training Grant: **Profs. Kerry Smith, Lesly Temesvari**

Wallace R. Roy Functional Radiology Symposium (Saturday, March 16 at Greenville Memorial Hospital, Greenville, SC)
Contact: **Prof. Jeff Anker**
Prisma Health Collaboration Spotlight

Dr. Desmond Kelly
Chief Medical Research Officer
Health Sciences Center, Prisma Health–Upstate

Dr. Mike Devane
Vice Chair of Academic Affairs
Department of Radiology
Radiology Research 2019
Current Clinical Trials

Collaboration with the Oncology department
Current Clinical Trials

• EPOCH 5.1
Phase III trial sponsored by BTG International. Prospective, multi-center, randomized Phase III trial evaluating the efficacy and safety of Theraspheres (yttrium 90) in patients with metastatic colorectal cancer of the liver who have progressed with first line chemotherapy.

• RenovoRx TIGER-PAC
Prospective, multi-center, randomized trial evaluating intra-arterial gemcitabine versus intravenous gemcitabine and nab-paclitaxel in patients treated with radiation therapy for locally advanced, unresectable pancreatic cancer.
Current Clinical Trials

Collaboration with the GI department
Current Clinical Trials

• Protocol Title: “A Phase 3 Randomized, Double-Blind, Placebo-Controlled Study Evaluating the Safety and Efficacy of Selonsertib in Subjects with Nonalcoholic Steatohepatitis (NASH) with Bridging (F3) Fibrosis” Sponsor: Gilead Protocol # GS-US-384-1943

• Protocol Title: “A Phase, Randomized, Double-Blind, Placebo-Controlled Study Evaluating the Safety and Efficacy of Selonsertib in Subjects with Compensated Cirrhosis due to Nonalcoholic Steatohepatitis (NASH)” Sponsor: Gilead Protocol # GS-US-384-1944

• Protocol Title: “A Phase 3, Double-Blind, Randomized, Long-Term, Placebo-Controlled, Multicenter Study Evaluating the Safety and Efficacy of Obeticholic Acid in Subjects with Nonalcoholic Steatohepatitis” Sponsor: Intercept Protocol # 747-303
Future Clinical Trials

• Grant submission in progress: Multi-center, prospective, randomized trial evaluating drug coated balloon vs non-drug coated balloon in treatment of TIPS stenosis. Involving UAB, GHS, and Mayo Jacksonville.

• We would like to pursue additional clinical trials in Interventional Radiology, primarily regarding Interventional Oncology.
• Radiology department working with Dr. Ron Gimbel with Clemson University Department of Public Heath.
• Several research projects underway
• Two transformative seed grants
Clemson collaboration


• Gimbel, Tyler, Devane. IR vs Surgical ports. Retrospective analysis of cost effectiveness and patient outcome of surgical vs IR ports.

• Gimbel, Tyler, Hanna. Lung cancer screening accessibility in Greenville area.
Clemson collaboration

Collaborative project with Clemson, GHS Radiology, and GHS Orthopedics with Dr. Jeffrey Anker “Augmenting Plain Radiographs with Chemical Indicators.” The purpose of the project is to develop a novel technique to detect and measure local chemical concentrations on the surface of implanted medical devices using plain radiography.

• Hood M, Sprunger H, Collins J, Schammel C, Young A, Devane AM. Usefulness of Nephrometry Scoring Systems for Predicting Outcomes and Complications of Percutaneous Cryotherapy and Microwave Ablation Therapy at a Regional Medical Center. World Congress of Interventional Oncology. Poster Presentation. Boston MA. June 2017

• Borem RA, Walters JD; Madeline AL, Madeline LA, Mercuri JJ. *Characterization of Chemonucleolysis-Induced Disc Degeneration in an Ovine Model: A Pilot Study*. Poster Presentation at the Orthopedic Research Society 2018 Annual Meeting at the Hyatt Regency New Orleans in New Orleans, Louisiana, March 10-13

• A J Gunn, MD, J A McFarland, MD; S Dhand, MD; N W Ertel, MD; A K Abdel Aal, MD, PhD; M Devane, MD. Lessons Learned About Diagnostic Radiology Reporting from Practicing Interventional Radiology. RSNA Exhibit 11/25/18.
Publications 2017-2018


• Lawson T, Wienke JR. American College of Radiology: Case in Point; Juvenile Dermatomyositis. Online Publication date 6/19/2017.
Publications 2017-2018


- Roop, BA; Wienke, JR. MD; American College of Radiology: Case in Point; ”Biker’s Nodule.” Online Publication date 5/10/2018.

Dr. Mike Devane:
• Speaker for Ethicon, Inc.
• Consultant for BTG, Inc.
• Advisory Board for Dova Pharmaceuticals 10/2018.

Research Topics of Interest

• Hepatic fibrosis and portal hypertension
• Treatment of hepatocellular carcinoma and hepatic metastatic disease
• Lung cancer screening
• Imaging cost effectiveness
• Artificial intelligence in imaging
• Computerized tumor measurement
• Pancreatic cancer treatment
Dr. Kristin Scott
Associate Professor, Management
CUSHR Faculty Fellow Summer/Fall 2018
MY PROJECT

New Employee Orientation (NEO) Program redesigned from a 2 day (16 hour) to a 1 day (8 hour) program with half the content converted to an online format.

- Change occurred August 27, 2018
- Longitudinal study of 112 new employees (all occupations); half were surveyed in the 4 weeks prior and the other half in the 4 weeks after the redesign transition.
  - Assess pre, during and post burnout
  - Evaluate employee and organizational factors that enhance or detract from new hire experience
  - Project currently in phase 3 (wrap up April)

Thank you Sharon Wilson!
Director, Conscious Leadership
Lessons Learned

• There are many opportunities for collaboration!
• Be persistent, inquisitive
• Continually changing environment – presents challenges but mostly opportunities

Benefits

• Many positive relationships established
• On going research projects
• Meaningful impact (professionally, personally)

Thank you Terrie Long!
Director, Learning and Development
Dr. Larry Fredendall
Trevillian Distinguished Professor, Department of Management
Clemson Campus Research Director, Health Sciences
Center, Prisma Health-Upstate
The Faculty Fellows program is a research quasi-sabbatical. Selected Fellows spend at least 3 days per week on site in a Prisma Health Department during the Fellowship semesters conducting research with a Prisma Health host. This exciting opportunity offers senior faculty an opportunity to increase research connections within the health care system.

The application window is OPEN!!!

Application Deadline: **February 15, 2019**

**Application Timeline**

*Call released: January 15, 2019*
*Application due: February 15, 2019*
*Fellowship semesters: Summer/Fall 2019*
Clinical Faculty Appointments occur in the FALL of each year
• These appointments are for our health system partners

CUSHR Faculty Scholar Appointments occur in the SPRING of each year
• These appointments are for Clemson faculty in recognition of leadership in collaborative health research.
Prisma Health

John Absher, MD
Melissa Bailey-Taylor, MD
Brian Burnikel, MD
Ki Chung, MD
John Cull, MD
Meredith Eicken, MD
Alex Ewing, PhD
Sudha Garimella, MD
William Hand, MD
Meenu Jindal, MD

Bill Kelly, MD
Julie Linton, MD
Enrique Urrea Mendoza, MD
Thomas Pace, MD
Stephan Pill, MD
Fredy Revilla, MD
Prerana Roth, MD
Kerry Sease, MD
Michael Sridhar, MD
Antine Stenbit, MD
Faculty Scholars are Clemson Faculty who are recognized for their leadership in implementing Clemson’s collaborative health-related research agenda.

The application window is now OPEN!!

Application Deadline: March 4, 2019

Completed applications are to be sent to CUSHR cushr@clemson.edu

CUSHR Faculty are profiled on the CUSHR website by College at http://www.clemson.edu/health-research/faculty/

Faculty Scholars are found across a wide range of disciplines at the University, and their research is moving ClemsonFORWARD. Health Innovation research is addressing a diverse spectrum of issues to improve health and health care.
Hollings Cancer Center in conjunction with LOWVELO

Projects must include Clemson & MUSC investigator

- Pre-Clinical & Clinical Concept Award ($50K, 1 year)
- Idea Award ($50K, 1 year)
- Team Science (up to $150K per year for up to 2 years and must include at least 3 investigators)
Announcements (Funding Opportunity): SC-TRIMH Pilot Projects

Goal: Enhance and expand the Biomedical Research capacity at Clemson University

SC-TRIMH is pleased to announce that it will fund multiple pilot projects grants to expand the pool of investigators at Clemson University working on musculoskeletal diseases.

- The SC Translational Research Improving Musculoskeletal Health (SC TRIMH) is a newly established National Institutes of Health Center of Biomedical Research Excellence.
- The submission deadline is February 15, 2019.

More info is available under Limited Submissions on the Office of Research Development website: https://www.clemson.edu/research/development/funding-opportunities/
Applications for funding under the Faculty SUCCEEDS R-Initiative program are due on Feb. 27. The grants provide funding to help multi-disciplinary teams compete for significant external funding. Additionally, the Division of Research is accepting proposals for Major Research Instrumentation grants that help fund equipment purchases and upgrades. MRI applications are due March 27.

For more information, visit the Clemson Faculty SUCCEEDS page on the Clemson Research Initiatives webpage (http://www.clemson.edu/research/r-initiatives/CU-SUCCEEDS.html)
Announcements (Awards): 2019 Seed Grant Awardees

**Innovative Teaching and Learning: Key Metrics of an Undergraduate Nursing Academic and Clinical Learning Environments**
Lori Stanley, DNP  
Chief Nursing Officer  
Clemson University

**Transformative Seed Grants**

**Forehead temperature-regulating device for insomnia in children with ADHD: a pilot study**
Jonathan Hintze, MD  
Goutam Koley, PhD  
Department of Pediatrics  
Clemson University

**Identifying Risk Factors and Barriers to Substance Use Disorder Recovery**
Prerana Roth, MD  
Kaileigh Byrne, PhD  
Department of Internal Medicine  
Clemson University

**Feasibility, acceptability, and preliminary efficacy of a cognitive behavioral therapy for opioid use disorder**
Alain Litwin, MD  
Irene Pericot-Valverde, PhD  
Department of Medicine  
Clemson University

**The Impact of Remote Telepresence on Interprofessional Healthcare Team Collaboration and Satisfaction**
Kenneth Becker, MD  
Department of Family Medicine  
Clemson University

**The Use of Patient-Specific 3D Printed Anatomic Models in Pre-Operative Planning and Patient Engagement to Improve Hip Arthroscopy Outcomes**
Jason Folk, MD  
John DesJardins, PhD  
Department of Orthopaedics  
Clemson University

**Understanding the perspectives and needs of African-American and Latino caregivers of persons with Alzheimer’s Disease in Upstate South Carolina**
Melissa Bailey-Taylor, DO, MPH  
Nicole Davis, PhD, APRN  
Department of Geriatrics  
Clemson University

**Diabetes Seed Grants**

**The Effects of Resistance Exercise on Post-prandial Glycemic Control in Obese or Elderly Patients with Type 2 Diabetes: A Pilot Study**
Stephen Franks, DNP  
Kim Pickett, PhD  
Department of Medicine  
Clemson University

**Cancer Care Delivery Research**

**A Longitudinal Study to Assess the Efficacy of Virtual Reality for Pain and Anxiety Management in Autologous and Allogeneic Stem Cell Transplant Patients.**
Elizabeth Cull, MD  
Laura Stanley, PhD  
Department of Medicine  
Clemson University
### Dempsey Conference

The 3rd Annual Harriet and Jerry Dempsey Research Conference is presented in association with the Regional Conference of the Society of Academic Emergency Medicine (SAEM) Feb 22-23.

**When:** Friday, Feb. 22, 2019, 8:30 a.m. - 1:30 p.m.

**Where:** Auditorium, CU Nursing Building, 605 Grove Road

**RSVP:** Kevin Taaffe: taaffe@clemson.edu

* Lunch will be served.

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### Society for Academic Emergency Medicine (SAEM) Southeastern Announcement and Invitation

Full-day Saturday conference, a CPC competition, Simulation Olympics, and LLSA Review opportunities. Showcase your residency, fellowship, and/or department in our exhibitor fair.

**When:** February 22nd and 23rd, 2019

**Where:** USCSOM-G building, CU Nursing Building, and Greenville One Center

**For More Information:** Please visit saemsoutheast.com. Further questions can be directed to info@saemsoutheast.com
Announcements (Upcoming Events): Dempsey Conference and SAEM Conference

Speakers:

• Tom Borg, PhD, MUSC: Extracellular Matrix in Heart Development & Regeneration

• Arash Kheradvar, MD, PhD, UC Irvine: Mitochondrial Transplantation for Cardiac Diseases

• Brian Denton, PhD, University of Michigan: Data Analytics for Optimal Detection of Metastatic Prostate Cancer

• Raj Ratwani, PhD, MedStar Health: Understanding Physician Stress, Workflow, and Task Interruptions
Announcements (Upcoming Event): CU FoodFORWARD Research Symposium

Clemson University FoodFORWARD Research Symposium

Hosted jointly by
College of Behavioral, Social and Health Sciences and College of Agriculture, Forestry and Life Sciences

**When:** Friday, March 1, 9-11:30 a.m.

**Where:** Watt Family Innovation Center, Clemson University

**For More Information Contact:**
Dean Leslie Hossfield at lhossfe@clemson.edu or Dr. Michelle Parisi at mparisi@clemson.edu
2019 NURTURING DEVELOPING MINDS CONFERENCE AND RESEARCH SYMPOSIUM

"Creating Environments in Which Children and Families can Flourish"

• In partnership with the Institute for Child Success, and the Bradshaw Institute for Community Child Health & Advocacy

• Plenary sessions feature national experts on brain development and function, the impact of adversity, and interventions to support developmental resilience.

• February 28 – March 1 at the Embassy Suites (670 Verdae Blvd., Greenville, SC)

For more information:
https://ghscme.ethosce.com/content/2019NDM#group-tabs-node-course-default1
Announcements (Upcoming Event): Wallace R. Roy Functional Radiology Symposium

• The Wallace R. Roy Functional Radiology Symposium brings together scientists, engineers, nurses, clinicians and students for a one-day symposium on functional radiology research.
  • **WHEN:** Saturday, March 16, 2019
  • **WHERE:** Greenville Memorial Hospital campus

More information can be found here:
https://www.clemson.edu/science/departments/chemistry/news-events/symposium.html
Health Sciences Center
Research Showcase

**WHEN:** Friday, April 12, 2019

**WHERE:** Clemson Nursing building, Greenville Memorial Hospital campus
Reminder

our 2nd Spring CUSHR meeting is held in collaboration with the University Research Day

2019 Clemson University Research Research Symposium: Moving Clemson Forward Through Research

WHEN: Wednesday, May 8, 2019
WHERE: Watt Family Innovation Center
Clemson University