

# Endocrinology

2022 NEWS & NOTES

Division of Endocrinology, Diabetes, and Metabolic Diseases Annual Newsletter



## INSIDE:

New Diabetes Prevention Program for Women  
IDEAL Diabetes Education Program  
Endocrine Neoplasia Program is Thriving

 **MUSC**  
Medical University  
of South Carolina





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The MUSC Division of Endocrinology, Diabetes and Metabolic Diseases strives to improve the quality of life for patients through clinical and lab-based research discoveries, multi-faceted patient services, and training of new generations of physicians and providers. We see the full spectrum of clinical endocrinological disorders, including diabetes, thyroid, adrenal, pituitary, bone, gonadal, lipid and metabolic disorders. We offer intensive specialty services for patients with diabetes, endocrine tumors, and lipid disorders. Our professional educational programs are aimed not only at training medical students, residents, and fellows, but also at the broad spectrum of health care providers in hospitals and in the community who must work in teams to provide first class clinical care.

We also place a major emphasis on education of communities, patients, their families, the general public, and makers of policies that affect community health. Our clinical fellowship program, with five ACGME-approved positions, seeks academically oriented physicians for two- and three-year training programs.

Research areas of greatest interest in the division are in diabetes and its vascular complications, diabetes in pregnancy, and lipidology. We conduct clinical and basic science research with strong emphasis on collaboration between clinicians and basic scientists on linking different disciplines that are relevant to diabetes. The collaboration also extends to building partnerships with communities. In particular, we are interested to work with minority communities that are severely afflicted by diabetes to address health disparities, and to involve trainees in research.



Marc-Andre Cornier, M.D.  
Division Director

In November 2021, Marc-Andre Cornier, M.D., was appointed as the new director of the Division of Endocrinology, Diabetes, and Metabolic Diseases. Dr. Cornier is a nationally recognized physician and researcher with expertise in diabetes, complex lipid disorders, metabolic syndrome, and obesity. He has been continuously funded by the National Institutes of Health for the past 20 years.

# Message from the Director

As the director of the Division of Endocrinology, Diabetes & Metabolic Diseases, I am proud of the unwavering commitment to patient care exhibited by the division faculty members, fellows, and clinical staff over the past year. This report highlights our most important breakthroughs and accomplishments of 2022 and the outcomes and innovations that make us a national leader in the treatment of endocrine and metabolic disorders.

### HIGHLIGHTS OF THE PAST YEAR INCLUDE:

- Hiring of several new endocrinologists and advanced practice providers (PA's and NP's) to meet the high demand for endocrine-related clinical services.
- Expanding our IDEAL clinic which cares for patients with diabetes who need more intensive multidisciplinary care.
- Creating a multidisciplinary metabolic bone clinic.
- Adding a lipid clinic with emphasis on hard-to-treat lipid disorders, cardiovascular disease prevention, and other metabolic disorders. In fact, we are in the process of establishing and growing a program in cardiometabolic health.
- Expanding our weight management services.
- Expanding our multidisciplinary care of patients with endocrine tumors such as thyroid cancer and pituitary and adrenal tumors.
- Initiating a community-based women's health initiative to prevent diabetes in high-risk young women.
- Expansion of our clinical and translational research portfolio with several new multicenter clinical trials.
- Recruiting an associate director for research for the cardiometabolic health program.

I hope you find this issue informative and are able to get a sense of our team's passion and excitement. We're proud of our accomplishments and the people behind them working as a team of teams to take care of the patients of today as well as the patients of tomorrow.

With profound gratitude,

**Marc-Andre Cornier, M.D.**

Director, MUSC Division of Endocrinology, Diabetes, and Metabolic Diseases



# Outreach Clinics Increase Access

The Division of Endocrinology at MUSC has a team of highly trained endocrinologists that treat patients in various facilities in the Charleston area and across South Carolina, and provide specialized clinics to meet the individual needs of our patients.



**IDEAL Diabetes Education Clinic**  
Intensive Diabetes Education and Awareness Lifestyle clinic focuses on patients with difficult to manage type 1 and type 2 diabetes.



**Management of Maternal (MOMs) Diabetes Program** provides comprehensive care for moms with diabetes, including those who develop diabetes during pregnancy (gestational diabetes).



**Diabetes Initiative of South Carolina** provides diabetes management tools and educational programs to patients and providers across S.C.

The division is focused on strategic growth and recruitment activities. With five new faculty and several advanced practice providers joining our team over the past two years and clinic expansion across the state, the division experienced steady clinical growth.



Over the past year, the division's clinical programs have continued to evolve to provide the best possible patient-centered approach. In FY22, our ambulatory services together cared for 16,251 outpatient encounters, representing a 25% increase over last fiscal year. Additionally, new patient visits increased 64% to approximately 3,026.



## MUSC, Fetter Partner to Start New Diabetes Prevention Program for Women

The MUSC Division of Endocrinology, Diabetes & Metabolic Diseases recently established a partnership with Fetter Health Care Network to start a diabetes prevention program for women. Fetter, a federally qualified health care center (FQHC) that serves Charleston, Berkeley, Colleton, and Dorchester counties, provides comprehensive services for insured, uninsured, and underserved residents.

The partnership, made possible through grant funding from the BlueCross BlueShield of South Carolina Foundation (Diabetes Free South Carolina), seeks to offer improved access to care and to eliminate health disparities in the community.

The new program is open to women who receive care at Fetter and are between ages 18 and 35, with overweight/obesity or prediabetes and/or have a family history of diabetes. Women at risk of developing diabetes will receive group-based virtual and tailored diabetes prevention program intervention and/or one-on-one care via telehealth with MUSC specialists in nutrition, weight management, and obesity medicine.

Patients may receive MUSC telehealth services at Charleston-area Fetter locations or from the comfort of their home. Through Fetter, the program is aligned with Lowcountry Street Grocery (LSG), which will give patients access to fresh food through the Grocery Rx program.

"This prevention program will increase access to specialized care for women at high risk of developing diabetes," said **Marc-Andre Cornier, M.D.**, director of the Division of

Endocrinology. "Ultimately, this program has the potential to impact the quality of health across many generations, especially in communities with little to no access to fresh food or health care. We are grateful to the Fetter Health Care Network for their partnership, and to the BlueCross BlueShield of South Carolina Foundation for making it possible."

The affiliation will include opportunities for care coordination when Fetter patients need MUSC specialty or hospital-based services as well as other community initiatives to increase access to high-quality health care for all residents.

"We will use a multidisciplinary and culturally tailored model of diabetes prevention involving education and empowerment of patients, and partnership with primary care teams and stakeholders to enhance screening, recruitment, and retention, while reducing health care inequities," said **Harsha Karanchi, M.D.**, program director of the new Women's Health Initiative.

As of now, the program is available at Charleston-area Fetter locations with the goal to expand throughout South Carolina.

## OUR REACH

### Caring for South Carolinians

The Division of Endocrinology provides care in 10 locations throughout South Carolina

- 1 Rutledge Tower  
Hollings Cancer Center
- 2 West Ashley
- 3 East Cooper
- 4 Columbia
- 5 Nexton
- 6 Murrells Inlet Tidelands
- 7 Florence County
- 8 Lancaster County
- 9 Greenville County
- 10 Beaufort | Okatie







## MUSC's Endocrine Neoplasia Program is Thriving

Patients with malignant and benign thyroid, parathyroid, pancreas and adrenal tumors require specialized care for optimal endocrine neoplasia treatment. Due to the complexity of the endocrine system, it's important to seek out oncology experts that specialize in disorders of the endocrine system.

The MUSC Multidisciplinary Endocrine Neoplasia and Hormonal Disorder Clinic at Hollings Cancer Center (HCC) provides comprehensive diagnostic and treatment services for patients with benign or malignant tumors of the endocrine organs.

Under the leadership of **Jyotika Fernandes, M.D.**, the clinic has continued to thrive and expand over the past two decades. MUSC's multidisciplinary team of experts, including **Mary Geddings, PA-C**, have years of experience in treating these complex and sometimes rare conditions.

### Some of the conditions we treat include:

- Thyroid cancer and nodules
- Cancers and benign tumors of the adrenals
- Hyperparathyroidism and parathyroid tumors
- Hereditary paraganglioma/pheochromocytoma syndromes
- Pituitary tumors
- Pancreatic neuroendocrine tumors
- Multiple endocrine neoplasia (MEN) I and II
- Other inherited endocrine tumors

"Our unique clinic brings together specialists in endocrinology, endocrine surgery, head and neck surgery, neurosurgery, medical oncology, nuclear medicine, radiology, radiation oncology, pathology and other fields," Dr. Fernandes said. "We work closely with our surgical team to ensure optimal treatment pre-operatively, during surgery, and post-operatively."

Team members meet regularly at endocrine and head and neck tumor boards to discuss difficult cases and formulate a treatment plan designed for each individual patient.

Hollings Cancer Center includes a thyroid biopsy clinic led by **Soon Ho Kwon, M.D.** - which allows patients to get a consultation as well as a timely biopsy of their thyroid nodules - one of the most common endocrine conditions.

Established in 2005, MUSC's clinic is the only one of its kind in South Carolina focused exclusively on the treatment of endocrine tumors.

"We offer something that no other center in South Carolina can - comprehensive, collaborative and streamlined care, drawing on

the expertise of multiple departments," said Dr. Fernandes.

As a leading research center, MUSC is always exploring new and innovative treatment options. MUSC currently offers endocrine neoplasia clinical trials providing eligible patients with access to new treatments not available elsewhere.

"Moving forward, we plan to expand our research and clinical trials program even further," Dr. Fernandes said.

According to Dr. Fernandes, education of both patients and other medical professionals is essential. "We have a very strong teaching component with endocrine fellows, medical residents and students rotating in our clinics," said Dr. Fernandes. "This, in combination with our tumor board, provides trainees with broad exposure to the multidisciplinary approach to care that is so important these days for successful patient outcomes."

Since the clinic is growing at such a rapid pace, Dr. Fernandes says they intend to recruit more endocrine tumor specialists in the future. The team has also added a second tumor clinic at MUSC Health in Mount Pleasant in addition to the main clinic at Hollings Cancer Center (in downtown Charleston) to provide better access to local patients.

Opposite (L-R): Jyotika Fernandes, M.D., Lindsey McCoy, PharmD, Mary Geddings, PA-C, and Eliana Milazzo D'Attoma, M.D., 2nd year endocrinology fellow.

### TO MAKE A REFERRAL:

Hollings Cancer Center:  
843-792-9300

MUSC Endocrinology:  
843-792-2529

SCAN FOR MORE  
ON OUR PROGRAM



Jyotika Fernandes, M.D., with patient.

## Selected Faculty Publications

Li Y, Lu Z, Zhang L, Kirkwood CL, Kirkwood KL, Lopes-Virella MF, Huang Y. Inhibition of acid sphingomyelinase by imipramine abolishes the synergy between metabolic syndrome and periodontitis on alveolar bone loss. *J Periodontol Res.* 2022 Jan;57(1):173-185.

Hammad SM, Hunt KJ, Baker NL, Klein RL, Lopes-Virella MF. Diabetes and kidney dysfunction markedly alter the content of sphingolipids carried by circulating lipoproteins. *J Clin Lipidol.* 2022 Mar-Apr;16(2):173-183.

Tobin SY, Cornier MA, White MH, Hild AK, Simonsen SE, Melanson EL, Halliday TM. Corrigendum to "The effects of acute exercise on appetite and energy intake in Men and Women". *Physiol Behav.* 2022 Mar 11:113774.

Jaffa MA, Gebregziabher M, Jaffa AA. Shared parameter and copula models for analysis of semicontinuous longitudinal data with nonrandom dropout and informative censoring. *Stat Methods Med Res.* 2022 Mar;31(3):451-474.

Connell AR, Hookham MB, Fu D, Brazil DP, Lyons TJ, Yu JY. Comparisons of  $\alpha$ 2-Adrenergic Agents, Medetomidine and Xylazine, with Pentobarbital for Anesthesia: Important Pitfalls in Diabetic and Nondiabetic Rats. *J Ocul Pharmacol Ther.* 2022 Mar;38(2):156-166.

Baker NL, Hammad SM, Hunt KJ, Semler A, Klein RL, Lopes-Virella MF. Plasma apoM Levels and Progression to Kidney Dysfunction in Patients With Type 1 Diabetes. *Diabetes.* 2022 Aug 1;71(8):1795-1799.

Semler A, Hammad S, Lopes-Virella MF, Klein RL, Huang Y. Deoxysphingolipids Upregulate MMP-1, Downregulate TIMP-1, and Induce Cytotoxicity in Human Schwann Cells. *Neuromolecular Med.* 2022 Sep;24(3):352-362.

Lu Z, Li Y, Li AJ, Syn WK, Wank SA, Lopes-Virella MF, Huang Y. Loss of GPR40 in LDL receptor-deficient mice exacerbates high-fat diet-induced hyperlipidemia and nonalcoholic steatohepatitis. *PLoS One.* 2022 Nov 4;17(11):e0277251.

Purcell SA, Legget KT, Halliday TM, Pan Z, Creasy SA, Blankenship JM, Hild A, Tregellas JR, Melanson EL, Cornier MA. Appetite and Metabolic Responses to an Exercise versus Dietary Intervention in Adults with Obesity. *Transl J Am Coll Sports Med.* 2022 Fall;7(4):e000211.

Purcell SA, Melanson EL, Afghahi A, Borges VF, Sinelli I, Cornier MA. The effects of resistance exercise on appetite sensations, appetite related hormones and energy intake in hormone receptor-positive breast cancer survivors. *Appetite.* 2022 Dec 17:106426.





# DIABETES EDUCATION

Helping Patients with Diabetes Live a Long and Healthy Life

**M**USC's adult diabetes education program continues to expand its staff, services, and outreach in response to the growing population of adults facing a diagnosis of type 1, type 2, or gestational diabetes.

In 2021, South Carolina had the 8th highest prevalence of diabetes among adults in the nation and diabetes was the 8th leading cause of death for South Carolina residents, according to the South Carolina Department of Health and Environmental Control (SC DHEC).

A diagnosis of diabetes or prediabetes can be daunting. But patients can learn to successfully manage diabetes. The diabetes education program at MUSC Health empowers patients to thrive with the disease — and even teaches how to prevent or delay some of the serious health problems diabetes can cause.

The **MUSC Intensive Diabetes Education and Awareness Lifestyle (IDEAL)** program offers a personalized approach to diabetes care to help patients and their families manage the condition over long term. Certified by the American Diabetes Association, the program offers comprehensive services to patients with type 1, type 2, and pre-diabetes and addresses all aspects of diabetes self-management.

Under the leadership of **Rani Shayto, M.D.**, the IDEAL program recently expanded its care to include a dedicated pharmacist alongside endocrinology fellows in training and a certified diabetic educator, allowing for greater access to patient care.

"We hope to continue expanding the clinic, with respect to staffing and to other outreach locations outside of downtown Charleston in the near future," said Dr. Shayto.

According to Dr. Shayto, IDEAL patients are provided with a 1-hour visitation for both new and follow-up cases. "This ensures all aspects of complex diabetic care are addressed with sufficient time and dedication," notes Dr. Shayto.

In addition, every patient is assessed for their current level of knowledge and offered lifestyle, dietary, and diabetic technology education during every visit to maximize treatment success. Patients are seen by the same treatment team (MD, PharmD and CDE) to ensure a growing patient rapport.

"Our team is well experienced with advanced diabetes therapies such as insulin pumps and continuous glucose monitoring, with full access to therapy reporting that is reviewed at each visit to optimize our patients' experiences," said Dr. Shayto.



*"Our team is well experienced with advanced diabetes therapies such as insulin pumps and continuous glucose monitoring, with full access to therapy reporting that is reviewed at each visit to optimize our patients' experiences."*

- Rani Shayto, M.D.

## Our outpatient diabetes services include:

- A comprehensive education program including individual and group classes
- Instructors who are Certified Diabetes Educators
- Medical and nutrition education provided to meet patients' individual needs
- Fingertick blood glucose monitoring education
- Insulin pump education
- Insulin injection instruction
- Continuous glucose sensor education and services
- Telehealth care is available for remote patients

All patients must have an MUSC endocrinology provider to refer to the IDEAL clinic. Patients in need of diabetes education classes without diabetic management can be referred by any provider to our certified diabetic educators.

**Please call 843-792-9200 for more information or to schedule an appointment.**

Learn more about diabetes patient care services at MUSC Health



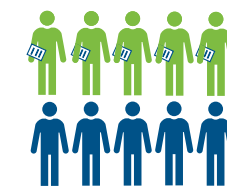
## DIABETES IN SOUTH CAROLINA

### Diabetes Disparities Exist

The prevalence of diabetes is higher among non-Hispanic Black adults (16.2%) than among non-Hispanic Whites (12.9%), and non-Hispanic Blacks had **2.4X** higher age-adjusted death rate compared to non-Hispanic Whites.

Diabetes is the **8th** leading cause of death in South Carolina.

**1,943** South Carolina residents died from diabetes in 2020.



For every **10** adults diagnosed with diabetes, only **5** have taken a class to manage their diabetes.

More than **561,000** adults in South Carolina are estimated to have been diagnosed with diabetes.



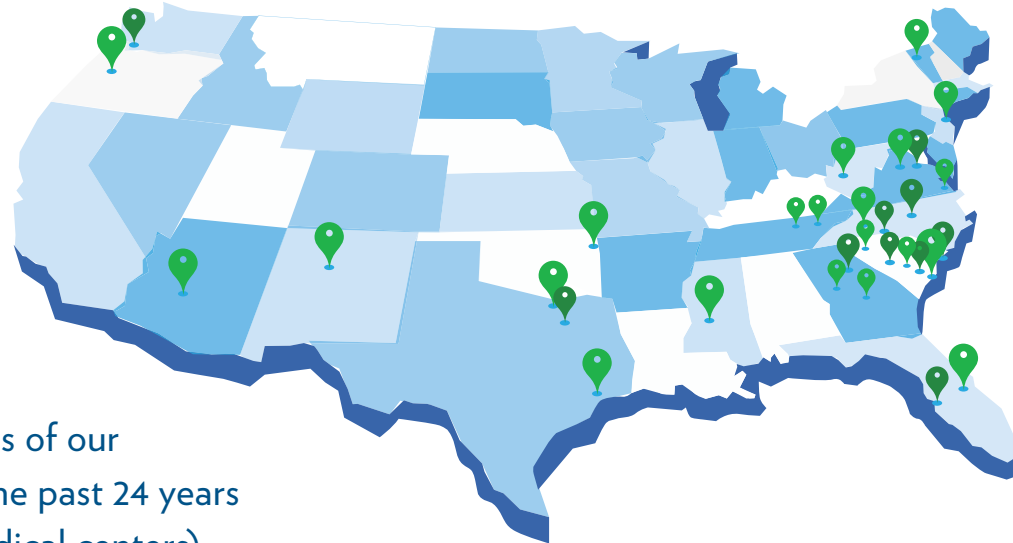
Source: SC DHEC BRFSS, 2021



# Fellowship Notes

## WHERE ARE THEY NOW?

This map depicts locations of our graduating fellows from the past 24 years (majority in academic medical centers).



The Endocrinology Fellowship Training Program is fully accredited and comprised of five clinical and research fellows selected from a competitive pool of candidates. The program exposes fellows to a broad spectrum of endocrine disorders, lipid, bone metabolism, reproductive endocrinology, diabetes mellitus, obesity, pituitary and adrenal disorders. The high volume and complexity of cases in our institute provide fellows with an optimal environment to gain the highest level of training and expertise. Fellows also have the chance to participate in clinical and basic research, and to obtain advanced training leading to a master's degree in clinical research.

### 2022-2023 FELLOWS:

- ▶ Gowtham Gannamani, M.D.
- ▶ Otto T. Gibbs, M.D.
- ▶ Eliana D'Attoma, M.D.
- ▶ Khaled Alhbshi, M.D.
- ▶ Darell Caesario, M.D.

## NEW FACULTY *Hired in FY23*

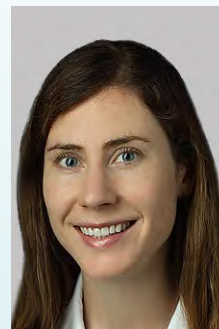


### Rashmi Dhakal, M.D.

Assistant Professor, Division of Endocrinology, Diabetes, and Metabolic Diseases, MUSC

Dr. Dhakal is a clinician-investigator focused on improving long term outcomes in diabetes and obesity. Her

main interests are clinical endocrinology and clinical research. Dr. Dhakal enjoys seeing patients with a variety of endocrine-related disorders including diabetes and obesity. She sees patients at MUSC Health East Cooper Medical Pavilion. After receiving her medical degree from Walter Sisulu University, she served an internship at East London Hospital Complex. Dr. Dhakal completed her residency training at Charleston Area Medical Center, Inc., and subsequently completed her fellowship training in endocrinology, diabetes, and metabolic diseases at University at Buffalo State University of New York School of Medicine & Biomedical Sciences.



### Colleen Gavigan, M.D.

Assistant Professor, Division of Endocrinology, Diabetes, and Metabolic Diseases, MUSC

Dr. Gavigan is a clinician-investigator focused on helping patients manage diabetes, obesity, bone health, and

disorders of the thyroid, pituitary, and adrenal glands. Her clinical practice focuses on weight management, diabetes, diabetes in pregnancy, and transgender medicine. Her main interests are clinical endocrinology and clinical research. She sees patients at MUSC Health Nexton Medical Park and MUSC Health West Ashley Medical Pavilion. After receiving her medical degree from the University of Virginia School of Medicine, she completed her residency training at University of Pittsburgh School of Medicine, and subsequently completed her fellowship training in endocrinology, diabetes, and metabolic diseases at Johns Hopkins University School of Medicine.

## ENDOCRINOLOGY FACULTY & ADVANCED PRACTICE PROVIDERS

### ENDOCRINOLOGY FACULTY



**Marc-Andre Cornier, M.D.**  
Professor  
Special Interests: Lipid disorders, obesity, diabetes



**Rashmi Dhakal, M.D.**  
Assistant Professor  
Special Interests: general endocrinology



**Jyotika Fernandes, M.D.**  
Professor  
Special Interests: Endocrine Tumors, Thyroid disorders, Osteoporosis



**Colleen Gavigan, M.D.**  
Assistant Professor  
Special Interests: metabolic bone disease, general endocrinology



**Kathie Hermayer, M.D., MS**  
Professor  
Special Interests: Diabetes and Hospital Diabetes Management. Thyroid disorders, Endocrine Disorders



**Yan Huang, M.D., Ph.D.**  
Professor  
Special Interests: Pathogenesis of diabetic cardiovascular complications, Inflammation-associated gene expression, pathogenesis of periodontal disease in diabetes



**Ayad A. Jaffa, Ph.D.**  
Professor  
Special Interests: research in cardiometabolic disease and diabetes



**Harsha Karanchi, M.D.**  
Associate Professor  
Special Interests: diabetes, obesity, transgender care

### ENDOCRINOLOGY FACULTY



**Soonho Kwon, M.D., MS**  
Professor  
Special Interests: Thyroid disorders, Diabetes mellitus



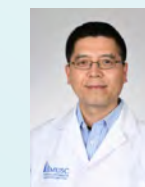
**Aundrea S. Loftley, M.D.**  
Associate Professor  
Special Interests: general endocrinology



**Timothy Lyons, M.D.**  
Professor  
Special Interests: diabetes



**Rani Shayto, M.D.**  
Assistant Professor  
Special Interests: diabetes, obesity, general endocrinology



**Jeremy Yongxin Yu, M.D., Ph.D.**  
Associate Professor  
Special Interests: research in diabetes and cardiovascular disease

### ENDOCRINOLOGY APPs



**Matthew Bogart, APRN, FNP-C**  
Nurse Practitioner



**Alison Bull, MMS-PAS, PA-C**  
Physician Assistant

### ENDOCRINOLOGY APPs



**Jessica Dial, DNP**  
Family Nurse Practitioner



**Mary Geddings, MS-PAS**  
Physician Assistant



**Mary Goodman, DNP, APRN, FNP-C, CCRN**  
Family Nurse Practitioner



**Leah Hopkins, NP**  
Nurse Practitioner



**Jessica Langton, MSN, APRN, FNP-C**  
Family Nurse Practitioner



**Maegan Manson, MSN, FNP-C, CDE**  
Family Nurse Practitioner



**Stephanie Neary, MPA, MMSc, PA-C**  
Physician Assistant



**Lindsey Willis, MSN, FNP-BC**  
Family Nurse Practitioner



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The MUSC Department of Medicine

# ENDOCRINOLOGY

**3,026**  
FY22  
NEW PATIENT  
VISITS

**16,251** Division faculty and  
advanced practice  
providers cared for 16,251 patients at  
nine outpatient clinics across the state of  
South Carolina in FY22.

**\$1.1M**  
FY22  
RESEARCH  
AWARDS

Changing What's Possible