

GW

SCHOOL OF MEDICINE & HEALTH SCIENCES

RESEARCH

ANNUAL REPORT

FY2024

Alison Hall, PhD, Senior Associate Dean for Research

The George Washington University (GW) School of Medicine and Health Sciences (SMHS) is the vibrant home for the next generation of discovery. We bring together existing strengths in fundamental basic science and deepen our growing translational capabilities with our clinical enterprise, The GW Medical Faculty Associates (MFA), soon to be known as [GW Medicine](#).

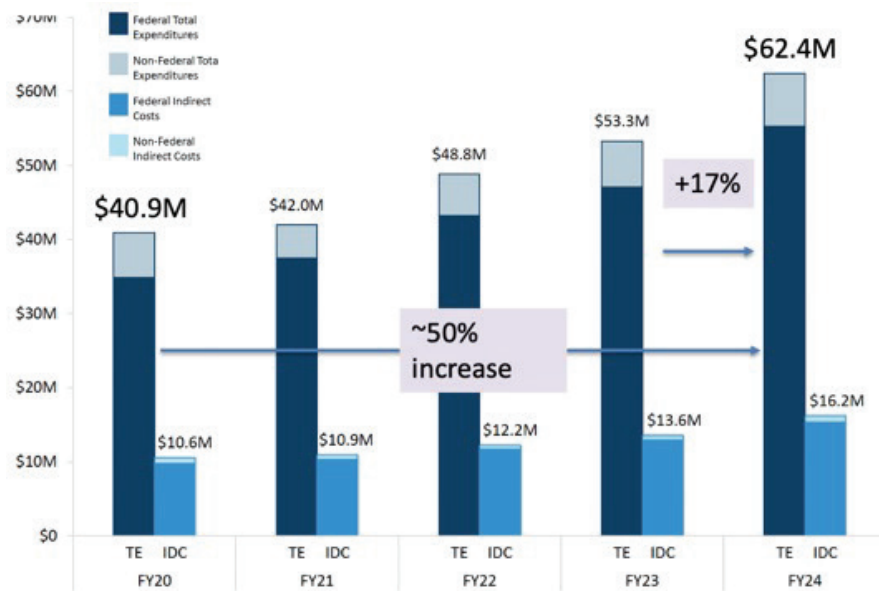
Research is a Foundational Pillar

We are a community of investigators, and our strategic plan supports the school's research mission. Our path forward will enhance the research workforce; grow multi-PI programs; expand enabling facilities; partner to recruit and sustain diverse faculty, staff, and students; and increase school-university collaborations. These endeavors place an emphasis on excellence to promote our mission, vision, and core values as an institution.

[The SMHS Research Strategic Plan](#) outlines our continued research goals for Collaborative Research, the 21st Century Workforce, Effective Institutional Structures, and Innovation and Impact in Research, and reports our metrics.

RESEARCH GOALS IN SMHS STRATEGIC PLAN

- **Cross-Disciplinary Research**
Promote innovative and impactful cross-disciplinary research programs.
- **Prepare the 21st Century Research Workforce**
Enhance career pathways for the future biomedical research workforce.
- **Effective Institutional Structures and Shared Resources**
Catalyze productivity through supportive administration and shared resources.
- **Innovation in Research**
Conduct innovative science, medicine, and health science research and scholarship.



SMHS research expenditures have increased 50% from 5 years ago

SMHS Researchers Had a Banner Year



At the conclusion of 2024, SMHS researchers had research expenditures of 62.4M for FY24 – a sum representing a 17% increase from the previous year, and a 50% increase from five years ago. Expenditures are an important way to look at research activity. The NIH will release its official compilation of awards in late December, and they will contribute to [BRIMR 2024](#) rankings expected in February 2025.

The majority of these funds (89%) were from federal sources, and SMHS research expenditures represented 26% of those for the whole university. Competitively funded federal research support is a key indicator for membership in the Association of American Universities.

Funded research at SMHS reflects the hard work of almost 150 investigators, with 60% holding a primary appointment in the basic sciences and 40% investigators with a primary appointment in a clinical department.

Our investigators are winning larger grants. Overall, the number of proposal submissions was lower than “the COVID-19 years.” In light of increased research funding from fewer proposals, it is clear that investigators are writing and winning larger grants.

“ We need to be building not simply individual investigator support, but also building programmatic support that builds research communities.”

Alison K. Hall, PhD
Senior Associate Dean for Research
Professor of Neurology and Rehabilitation Medicine



Research Highlights at SMHS

NIH R01 Research Project Awards

Faculty won these prestigious independent research awards to pursue specific research projects in a variety of fields, with 52 “prime” awards led by our investigators, and about 30 “sub” awards led by our collaborators in FY24. Awards were won from NIH Institutes that reflect the breadth of our investigator interests in, Cancer (15); Neuroscience and Mental Health (10); Heart/Lung/Blood (6); Allergy/Infectious Disease (5); Digestive/Kidney (4); Health care Research (2); Eye (2); Deafness/ Communication (2); Arthritis (1); Gen Med (1); and Aging (1). These are complemented by numerous R21 exploratory/developmental awards, and other NIH and Foundation awards.

SMHS new awards are profiled at [SMHS New Awards](#) and publicized on the SMHS digital signage in the month of award. We are proud of our vibrant and healthy research programs.



Julie Bauman, MD, MPH, joined GW in 2022 as Director of the GWCC. She leads multiple national clinical trials for the treatment of head and neck cancer, with dedicated expertise in precision medicine and immunotherapy.



Aileen Chang, MD, is chair of the Committee on Research and promoting discussion of new strategies to accomplish strategic plan goals. Dr. Chang is an active clinician investigator who studies treatments for Chikinguynya arthritis as well as Dengue fever, in Colombia.



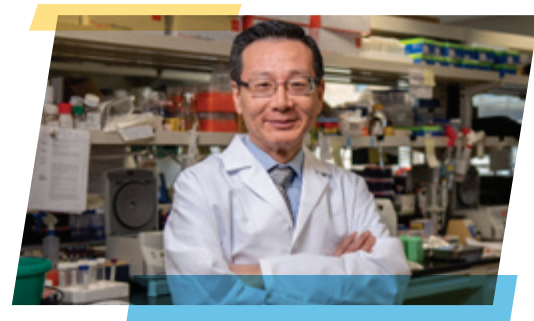
Kate Chiappinelli, PhD, focuses on the epigenetic regulation of immune signaling in cancer. Her research group studies how drugs can alter noncoding regions of the genome and the tumor cell immune response. Dr. Chiappinelli won a large NIH grant in cancer immunology with collaborators at Dana Farber in 2024.



Anne Chiaramello, PhD, founding director the Mito-EpiGen Program received FDA approval for the first basket clinical trial in the U.S. for two ultra-rare inherited mitochondrial diseases. Her research was the focus of a 2024 [American Neurological Association talk](#).



Brandon Kohrt, MD, PhD, director of the Center for Global Mental Health Equity, leads programs to training community members to provide mental health care, [offering support that relies on local culture](#) and an intimate understanding of what people need to heal.



Rong Li, PhD, chair of the Department of Biochemistry and Molecular Medicine received the [2024 GW Inventor of the Year](#) award for his research addressing triple-negative breast cancer treatment and prevention.



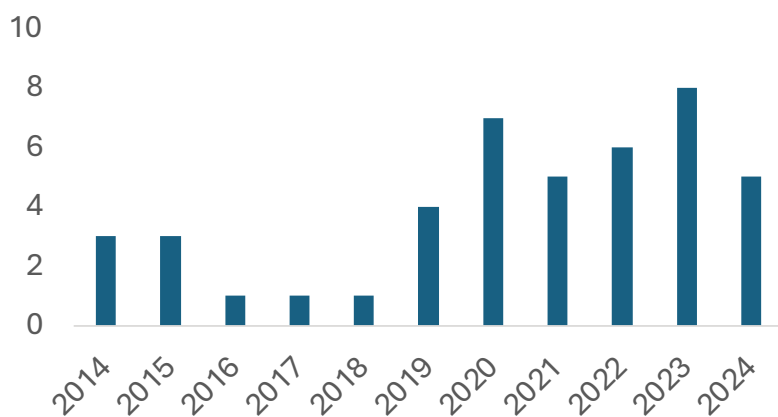
Vsevolod "Seva" Polotsky, MD, vice chair for research in the Department of Anesthesiology and Critical Care Medicine, focuses on [restorative sleep and opioid use disorder](#). Polotsky is now working, supported by multiple grants, to better understand the role of leptin in sleep-disordered breathing associated with both obesity and opioid use.

Training Grants and Fellowships

SMHS is proud to have three federal institutional training grants to support training the next generation of biomedical scientists, including the T32 Cancer Biology (Edward Seto, PhD, and Norman Lee, PhD), T32 HIV Persistence (Sanjay Maggirwar, PhD, MBA and Alberto Bosque, PhD, MBA), and T32 Primary Care Research (Trudy Mallinson, PhD).

These awards are complemented by *individual F31 fellowships* won by biomedical doctoral students. These F31 awards showed a sharp increase after 2019, following a change to a grant-style qualifier and new fellowship-writing courses.

F31 Pre-Doc Awards, 2014-2024



F31 awards showed a sharp increase following changes in 2019 to a grant-style qualifier and new fellowship-writing courses

Collaborative Research Programs

The Cancer Center (GWCC) led by Julie Bauman, MD, MPH, includes more than 175 members engaged in highly integrated, patient-centered cancer-related research and clinical activities. We recently celebrated the completion of the new, state-of-the-art [GMP Cellular Processing and Manufacturing Facility](#) in 2024. This new lab supports the clinical requirements for the GW Cancer Center’s bone marrow transplant program, enabling the program to expand to meet the needs of the community.

The longstanding **District of Columbia Center for AIDS Research (DC-CFAR)** represents a unique “city-wide” model of universities in partnership with the local government and community. A multi-institutional effort to support research that contributes to ending the HIV epidemic in Washington, D.C., includes projects led by SMHS in Scientific Working Group (Rebecca Lynch, PhD); Basic Science Core (Sanjay Maggirwar, PhD, MBA), and Developmental Core (Michael Bukrinsky, MD, PhD).

The [Biorepository-AIDs and Cancer Specimen Resource](#) led by Jeffrey Bethony, PhD was established by the National Cancer Institute (NCI) in 1994 as part of the National AIDS and Cancer Specimen Resource (ACSR). In addition to securely housing historical biospecimens, it actively acquires new biospecimens to serve the research community dedicated to the development of novel diagnostic and therapeutic advances in HIV-associated malignancies.



Henry Kaminski, MD, leads the **Myasthenia Gravis Rare Disease Network (MGNet)** established in 2019. Kaminski partnered with Marc Garbey, PhD, president and founder of Care Constitution, a telehealth platform, to develop a hybrid application that combines deep learning with computer vision for [MG symptom evaluation](#).

Raja Mazumder, PhD, is co-principal investigator on an [Advanced Research Projects Agency for Health \(ARPA-H\)](#) project, partnering with big data analytics platform DNA-HIVE to develop the Federated Ecosystem for Analytics and Standardization Technologies, an infrastructure that would enable secure internal database query into cancer health records, medical device data, and more while protecting the privacy of patients and their health data.



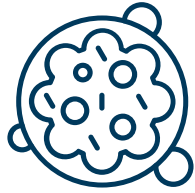
	OCR	Oncology	Total
Active	58	17	75
Total, Including those in negotiation	77	41	118

The statistics above do not include the many active clinical trials that advance our medical knowledge and support a healthier world. The [Office of Clinical Research \(OCR\)](#) reported a total of 118 active clinical trials at GW SMHS in December 2024. Our SMHS strategic plan calls for increases in both industry-sponsored as well as investigator-initiated trials.

A Reputation For Research

A recent bibliometric study revealed how well GW SMHS researchers are being recognized by leaders and peers in their fields. An exploratory approach using the scientific research database Dimensions Analytics was used to look at the papers and topics published by SMHS faculty from 2018-22 that garnered the most attention. About half of our highly cited publications were collaborative studies – often with many authors from around the nation – that resulted in clinical guidelines or other practice-related advances. Faculty discoveries were clustered in cancer, neurosciences, physiology, immune/vaccine, psycho-social and telemedicine/ AI. These citations demonstrate the dissemination and impact of our cutting-edge discoveries, particularly when our talented faculty collaborate in and across departments.

SMHS resources for faculty include the searchable [SMHS faculty research database](#), [shared cores and facilities](#), and “push” emails to faculty to provide funding alerts in 25 [themes](#). A new Grants Library will be introduced soon.



20%
Cancer

(mechanisms; biomarkers; cancer immunology; tumor invasion; chemotherapies; tumor surveillance; genomics)



20%
Neurosciences

(connectivity; epilepsy, headache; injury; neuroimaging; neural diseases; development)



20%
Physiology

(muscle physiology, cardiac physiology, maternal/fetal health; diabetes; hypertension; cell biology)



15%
Immune/Vaccine

(Covid-19; HIV; vaccine development; immune responses; viral infections)



9%
Psycho/Social

(autism, mental health; food disorders; treatments spiritual; social determ health)



6%
Telemed/Ai

(machine learning; telemedicine; virtual reality; mobile app; remote patient monitoring; risk prediction)

The Next Generation of Scientists

GW’s **Integrated Biomedical Sciences (IBS)** PhD program continues to shine. This past August, Norman Lee, PhD, was named the new IBS Director. Outcomes from the IBS PhD students remain robust and are the foundation for our NIH T32 training grants.



IBS PhD Graduates 2019-23

53#



Time to degree

5.25 years



Published with mentor

5.8 publications
2.2 as first author

The **Translational Health Sciences** PhD program led by Samar Nasser, PhD, MPH, and Trudy Mallinson, PhD investigates processes influencing implementation of evidence-based health care. Training a new generation of researchers continues to be an important goal at SMHS.



THS PhD Graduates 2019-23

35#



Time to degree

4.4 years



Published with mentor

3.7 publications
2.1 as first author

Our faculty lead a variety of programs aimed at students at all levels of the research education spectrum: Pre-College, College, Graduate/ Medical school, and Postdoc/ Resident/Fellow candidates ([Research Pathway and Training Programs](#)).

Late-Breaking Research Initiatives

This fall has brought excitement in research, with new initiatives.

Health Services Research has come into focus for our clinician investigators with the inauguration of our digital course, "*Introduction to Health Services Research*," as well as a new monthly journal club on the same topic.

Brain Research Retreat, held Oct. 15, 2024, brought together more than 150 researchers, medical staff, and trainees to highlight collaborative strengths and identify focal areas for growth in neuroscience. Participants attended a series of lightning talks given by neuroscientists, engaged with new and familiar colleagues, and viewed poster presentations during a networking reception.

Bioinformatics Retreat, held Oct. 31, 2024, convened scientists to share research interests, and to explore potential collaborations, leveraging participants' expertise to develop new projects, proposals, and training ideas.

We are proud of our achievements earned by researchers who are in the earliest stages of their careers as well as those who are the most seasoned investigators. Their accomplishments in 2024 serve as a springboard for the innovations and advancements we look forward to in 2025.