

Geisinger research directory

Geisinger College of Health Sciences

July 2026

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Abbreviations

Abdominal aortic aneurysm (AAA)
Acute coronary syndrome (ACS)
Advanced practice provider (APP)
Agency for Healthcare Research and Quality (AHRQ)
American Pharmacists Association (APhA)
American Urological Association (AUA)
Anterior cruciate ligament (ACL)
Antiproliferative factor (APF)
Artificial intelligence (AI)
Atherosclerotic cardiovascular disease (ASCVD)
Autosomal dominant polycystic kidney disease (ADPKD)
Cancer care delivery research (CCDR)
Center for Advanced Therapeutic Endoscopy (ACE)
Center for Community Environment Health (CCEH)
Centers for Disease Control (CDC)
Children's Oncology Group (COG)
Chronic kidney disease (CKD)
Community Clinical Oncology Program (CCOP)
Computed tomography (CT)
Coronary artery disease (CAD)
Cytoskeleton-associated protein 4 (CKAP4)
Electronic health record(s) (EHR)
Emergency medical services (EMS)
Gastrointestinal (GI)
Geisinger College of Health Sciences (GCHS)
Geisinger Commonwealth School of Medicine (GCSOM)
Geisinger Community Medical Center (GCMC)
Geisinger Medical Center (GMC)
Geisinger Wyoming Valley (GWV)
Genome-Wide Association Studies (GWAS)
Gynecology (GYN)
Health Resources and Services Administration (HRSA)
Hypertension (HTN)
Internal Medicine (IM)
Intravascular ultrasound (IVUS)
Magnetic resonance imaging (MRI)
Maternal-Fetal Medicine (MFM)
Multi-Cancer detection tests (MCD)
Multicenter trials (MCTs)
Musculoskeletal Institute (MSKI)
National Database of Nursing Quality Indicators (NDNQI)
National Institutes of Health (NIH)
National Kidney Foundation (NKF)
NCI Community Oncology Research Program (NCORP)
Obstetrics (OB)
Obtuse marginal (coronary artery) (OM)
Optical coherence tomography (OCT)
Patient-Centered Outcomes Research Institute (PCORI)

Abbreviations

Pediatric advanced life support (PALS)
Pediatric intensive care unit (PICU)
Percutaneous coronary intervention (PCI)
Peripheral artery disease (PAD)
Polycystic ovarian syndrome (PCOS)
Principal investigator (PI)
Quality improvement (QI)
Rat sarcoma viral oncogene (RAS)
Sex chromosome aneuploidy (SCA)
Transcarotid artery revascularization (TCAR)
Ulnar collateral ligament (UCL)
Undergraduate medical education (UME)
US Food and Drug Administration (FDA)
Ventricular assist device (VAD)
Vertebral heart score (VHS)
Virtual reality (VR)
Women, infants, and children (WIC)
Women & Children's Institute (WOCHI)

Behavioral Health Institute



Crystal Weiss
LCSW, CCTP, CDP, CGP

Clinical Social Worker, Memory and Cognition Program
Institute of Psychiatry and Behavioral Health

Keywords
dementia, cognitive impairment, memory, cognition

Research interests
Crystal Weiss's research interests focus on memory and cognitive concerns, with an emphasis on dementia care, early identification and psychosocial interventions that support the quality of life for patients and families. As the clinical social worker for the Memory and Cognition Program, she is interested in caregiver burden, coping, and resilience; behavioral and emotional changes associated with cognitive decline; and interdisciplinary approaches to care that promote caregiver support and access to community resources.

Social media

Scan for publications

Cancer Institute



Christian Adonizio
MD, MBA, MLA, FACP

Professor of Medicine
Department of Hematology/Oncology
Department of Investigational Medicine

Keywords
cancer, hematology, cancer care delivery research, oncology, MCD

Research interests
Dr. Adonizio's primary research interests are CCDR and MCDs. Dr. Adonizio is also an investigator on Geisinger's NCI-NCORP grant. He serves on the ECOG-ACRIN CCDR committee for this cooperative group. Dr. Adonizio also serves as the program director for the Hematology/Medical Oncology Fellowship Program for Geisinger Northeast and has an interest in graduate medical education. He has an interest in data and analytics and has worked as the medical director for oncology innovation and analytics after completing a certificate program in data and analytics at the University of California, Berkeley a few years ago.

Social media

ORCID
0000-0002-4861-0188

Scan for publications



Erika Bross
PA-C

Advanced Practice Provider
Department of Hematology/Oncology

Keywords
advanced practice provider, hematology, oncology, neuro-oncology

Research interests
Erika Bross is a physician assistant with research interests centered on neuro-oncology, medical oncology and survivorship-focused care delivery. Ericka Bross's work integrates clinical practice with clinical trials aimed at improving functional outcomes, quality of life and long-term recovery for patients with complex neurologic and oncologic diseases. As a non-physician investigator and trained interventionist on multiple NRG and NCORP studies, her research has emphasized intervention implementation, functional recovery, and survivorship models, including contributions to the GEMS and HN-STAR trials. She is particularly interested in APP-led research, multidisciplinary care models and advancing the role of advanced practitioners in oncology research. Through mentorship, publications, and national presentations, she seeks to strengthen the evidence base supporting innovative, patient-centered cancer care.

Scan for publications



James Dolezal
MD

Assistant Professor of Medicine, Medical Oncology
Department of Investigational Medicine

Keywords
oncology, lung cancer, artificial intelligence, machine learning, digital pathology, computer vision

Research interests
Dr. Dolezal's research applies deep learning to digital pathology to develop clinically translatable AI biomarkers in oncology, with particular emphasis on the safety, reliability, and interpretability of models intended for real-world deployment. Methodologically, his work spans uncertainty quantification, mitigation of site-specific batch effects, and generative approaches to explainability and synthetic histology. Dr. Dolezal is the primary developer of Slideflow, an open-source deep learning pipeline for computational pathology used across multiple institutions. At Geisinger, he is building a digital pathology data repository and computational infrastructure supporting two distinct aims: validation of externally developed AI biomarkers and selective primary biomarker development. His primary development work at Geisinger focuses on lung cancer, while the repository will support validation studies of biomarkers developed elsewhere.

ORCID
0000-0002-6788-7203

Scan for publications



Carlos Fernandez

MD

Associate, Palliative Medicine (GMC)

Associate Program Director, Palliative Medicine Fellowship (GMC)

Professor, Palliative Medicine

Keywords

fatigue, delirium, pain, palliative care

Research interests

Dr. Fernandez's research focuses on the study of symptoms and palliative care outcomes in serious illness. He has examined fatigue in patients with cancer and chronic kidney disease by studying the relationship between subjective fatigue, perceived effort, and objective measures of muscle fatigue, including finger-tapping speed, to better understand central and peripheral mechanisms. Dr. Fernandez is also interested in delirium in hospitalized patients, including the use of valproic acid for agitated delirium, as well as pain management, the influence of palliative medicine on hospital length of stay- and patterns of aggressive care at the end of life.

ORCID

0000-0002-5561-6211

Scan for publications



Austin Iovoli
MD

Attending Radiation Oncologist
Department of Radiation Oncology

Keywords
radiation, oncology, cancer, breast, GI, GYN, palliative

Research interests
Dr. Iovoli's research focuses on improving cancer outcomes and quality of life for patients undergoing radiation therapy. Dr. Iovoli is particularly interested in evaluating treatment-related toxicities, patient-reported outcomes and survivorship issues across disease sites. His work aims to integrate clinical, dosimetric and patient-centered data to better understand how radiation techniques, fractionation and combined-modality therapy influence tumor control and short- and long-term quality of life. Through outcomes research and pragmatic study designs, he seeks to inform evidence-based, patient-centered decision-making and to optimize radiation oncology care to maximize therapeutic benefit while minimizing morbidity.

ORCID
0000-0003-2089-8789

Scan for publications



Julie Jiang
MD, PhD

Assistant Professor
Department of Radiation Oncology
Department of Investigational Medicine

Keywords
radiation oncology, stress, VR, patient quality of life, mixed methods

Research interests
Dr. Jiang is interested in improving the quality of life and patient education for patients with cancer. Dr. Jiang is the local PI for multi-center studies on financial toxicity and on improving the quality of life among older adults after cancer treatment. Her current research project investigates how to use VR to improve patient education about radiation. Her clinical focus is on gastrointestinal, genitourinary and gynecological cancers.

Scan for publications



Heath Mackley
MD, MBA, FACRO

Chair of Radiation Oncology
Department of Radiation Oncology

Keywords
radiation oncology

Research interests
Dr. Mackley is interested in population health and patterns-of-care studies in cancer care, although he has also been involved in clinical trials, retrospective clinical research and basic science research related to radiation.

Scan for publications

Diagnostic Medicine Institute



Deborah Novak

MD, FCAP, FASCP, MT(ASCP)

Staff Scientist
Laboratory Medicine

Keywords

laboratory medicine, diagnostic testing utilization, test optimization, clinical pathology, data curation, data analysis, transfusion medicine, health services research, laboratory operations, clinical decision support

Research interests

Dr. Novak is a staff scientist and retired pathologist who serves as a medical consultant for data curation and analysis. Dr. Novak's work is grounded in extensive leadership experience, including roles as a hospital general laboratory medical director and medical director of transfusion medicine. Her primary research interest focuses on promoting the productive and efficient use of laboratory testing. Through her expertise in clinical pathology and data analysis, Dr. Novak aims to enhance laboratory utilization, improve diagnostic decision-making and support more effective and data-driven healthcare delivery.

ORCID

0000-0001-9154-9696

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Donna Wolk
MHA, PhD, D(ABMM)

Professor and Division Chief
Laboratory Medicine

Professor
Department of Investigational Medicine

Keywords
diagnostics, evidence-based laboratory medicine, value-based care, clinical microbiology, infections

Research interests
Dr. Wolk's research focuses on improving diagnostics for patients with infections while also advancing strategies to prevent infections. Dr. Wolk leads a team that contributes to infectious disease diagnostics globally, developing clinical laboratory innovations and diagnostic algorithms that impact patient care worldwide. Her team has led or participated in clinical trials supporting FDA approval of more than 35 *in vitro* diagnostic devices and has secured millions in translational research funding.
Dr. Wolk's group also maintains a sample biorepository and the LOGIC© analytic datasets, which integrate clinical, operational, financial and social data to address key medical and quality-based research questions. A distinguished microbiologist and national leader in laboratory medicine and healthcare strategy, Dr. Wolk's work emphasizes population health and value-based care to improve diagnosis and outcomes for life-threatening infections.

Social media

ORCID
0000-0003-2828-5135

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Emergency Medicine



Douglas Kupas
MD, NRP

Medical Director, Geisinger Mobile Integrated Healthcare

Associate Medical Director, Geisinger EMS

EMS Medical Director, several local EMS agencies

Director, Resuscitation Programs

Keywords

emergency medical services, EMS safety, cardiac arrest, resuscitation, end-of-life, breaking bad news, trauma triage

Research interests

Dr. Kupas is an EMS and emergency physician with over 30 years of experience focusing on academic issues related to safety for EMS practitioners and EMS patients, including risks associated with lights and siren use, EMS vehicle crashes, medication errors, and fatigue. Additionally, Dr. Kupas has interests in cardiac arrest care and survival, field termination of cardiac arrests and death notification. Other interests include trauma triage, mechanisms of injury, EMS procedures like emergency hysterotomy, cricothyrotomy and chest escharotomy.

Social media

ORCID

0000-0002-2183-4018

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Kyle Marshall
MD, MBI

Associate Chief Medical Informatics Officer
Clinical Informatics
Emergency Medicine

Keywords
clinical informatics, emergency medicine

Research interests
Dr. Marshall is a physician informatician with a clinical background in emergency medicine and experience across multiple integrated care delivery systems.
Dr. Marshall's research interests include leveraging informatics to improve clinical care and user experience. One area of recent focus is on reducing documentation burden for clinicians. Dr. Marshall enjoys collaborating with others to use informatics to solve real-world problems.

ORCID
0000-0003-2254-2727

Scan for publications



Eric Melnychuk
DO

Vice Chair of Research for Emergency Medicine

Associate Professor of Emergency and Critical Care Medicine

Keywords
emergency medicine, critical care medicine

Research interests
Dr. Melnychuk's research interests focus on topics at the intersection of emergency medicine and critical care, including trauma, cardiac arrest, sepsis and shock.

ORCID
0000-0003-1466-6834

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Mark Olaf
DO

System Director, Quality for Emergency Medicine

Vice Chair, Emergency Medicine Education
Department of Emergency Medicine

Keywords
emergency medicine, quality, patient safety, education, undergraduate medical education, graduate medical education

Research interests
Dr. Olaf's research interests focus on medical education, resuscitation and clinical quality and safety in emergency medicine

ORCID
0000-0003-2301-6227

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Keith Willner
MD, FACEP

Associate Program Director, Emergency Medicine Residency, Geisinger NE Department of Emergency Medicine

Assistant Professor

Keywords
emergency medicine, health system science, medical education, patient experience

Research interests
Dr. Willner's research interests include undergraduate and graduate medical education as well as clinical research focusing on the interaction between clinician and patient experience. Dr. Willner is particularly interested in understanding why we care for patients the way we do and how to move that closer to the ideal.

Social media

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Heart & Vascular Institute



Autumn Anthony
PhD

Staff Scientist
Department of Investigational Medicine
Heart and Vascular Institute

Keywords
single ventricle congenital heart disease, artificial circulation, von Willebrand factor, angiogenesis, microfluidics, shear stress, endothelial cell biology, confocal microscopy

Research interests
Dr. Anthony is a biophysicist who specializes in microfluidics and endothelial cell biology and has experience with the design and operation of microfluidic systems to study endothelial cell biology, multiple cell culture techniques, confocal microscopy and image analysis, electrophoresis and immunoblotting and other standard molecular biology assays. Dr. Anthony's goal is to advance mechanistic understanding of endothelial cell biology and improve care of patients with single ventricle congenital heart disease.

ORCID
0000-0002-0757-1231

Scan for publications



Rohini Desetty
PhD

Staff Scientist
Department of Investigational Medicine
Heart and Vascular Institute

Keywords
single ventricle congenital heart disease, von Willebrand factor, Angiogenesis, Endothelial cell biology, Human Cell Culture, Molecular Biology, Protein Biochemistry, Confocal Microscopy

Research interests
Dr. Desetty is a research scientist with more than 20 years of scientific research experience across basic molecular biology and biochemical techniques, as well as a proficient end user of biological software. Her current research projects examine novel therapies for abnormal angiogenesis in children with single ventricle heart disease, VAD design and development, mechanisms of VAD-associated bleeding and thrombosis, and novel VAD therapies. In her previous positions, Dr. Desetty gained experience in enzymology, molecular biology, human cell culture, fluorescence microscopy and protein biochemistry. Dr. Desetty published peer-reviewed research articles in internationally reputed journals such as *Nature Genetics, Nature Communications, Molecular Cell and Biophysical Journal*.
She has been involved in poster presentations, multiple grant submissions, preparing data for presentations and manuscripts and proofreading grants and articles. For her outstanding work done at Rockefeller, she was also awarded a discovery award for identifying a new gene involved in Fanconi anemia.

Social media

ORCID
0009-0009-7593-934X

Scan for publications



James Elmore
MD

Chair, Vascular Surgery
Department of Vascular Surgery

Keywords
AAA, carotid disease, PAD, aneurysm, abdominal aortic aneurysm

Research interests
Dr. Elmore focuses his research within vascular surgery, with particular emphasis on the diagnosis, treatment and prevention of complex vascular conditions. Dr. Elmore's work centers on abdominal aortic aneurysm, carotid disease and PAD, aiming to improve clinical outcomes through advanced surgical and endovascular approaches. Dr. Elmore integrates expertise in managing aneurysm disease and peripheral artery disease with a strong commitment to evidence-based care, enhancing both procedural techniques and long-term patient management. Dr. Elmore is dedicated to advancing the field of vascular surgery by optimizing treatment strategies for patients with abdominal aortic aneurysms and other forms of vascular disease.

ORCID
0000-0002-5142-4204

Scan for publications



Matthew Facktor
MD, FACS

System Chief, Thoracic Surgery

Associate Professor of Surgery, Department of Clinical Sciences (Education)

Keywords
general thoracic surgery, thoracic oncology, lung cancer, lung cancer screening, esophageal cancer, mediastinal tumors, thymoma, chest wall tumors, robotic surgery, reliable cancer care delivery.

Research interests
Dr. Facktor is interested in clinical research involving all aspects of thoracic oncology (lung, esophagus, mediastinum, pleura, and chest wall), especially lung cancer, lung cancer screening, esophageal cancer, robotic and other minimally invasive surgical techniques and the reliable delivery of guideline-compliant cancer care.
Dr. Facktor is particularly interested in large multisystem and/or national clinical trials.

ORCID

0000-0002-8128-1996

Scan for publications



Shuping Ge

MD, FAHA, FACC, FASE

Professor of Cardiovascular Medicine, Pediatrics, and OB/GYN

Pediatric and Adult Congenital Cardiology

Keywords

pediatric cardiology, cardiovascular imaging, fetal cardiology, preventive cardiology

Research interests

Dr. Ge's research focuses on advancing fetal cardiology and artificial intelligence in medical imaging. Dr. Ge develops, validates and applies innovative fetal echocardiography techniques, computational flow dynamics and AI-driven methodologies to enhance the screening, diagnosis, prognosis and management of congenital heart defects such as coarctation of the aorta and hypoplastic left heart syndrome. Dr. Ge also collaborates with interdisciplinary experts to design and implement advanced AI algorithms in medical imaging, including applications in endoscopy and radiology, with the goal of improving diagnostic accuracy, efficiency and patient-centered care.

ORCID

0000-0002-7280-4329

Scan for publications



Arav Jhand
MD

Interventional Cardiologist
Department of Cardiovascular Medicine

Keywords
interventional cardiology, structural cardiology

Research interests
Dr. Jhand focuses on outcomes in interventional and structural cardiology, with a key focus on transcatheter treatment of valvular heart disease. His work also encompasses percutaneous coronary intervention, cardiogenic shock and the use of mechanical circulatory support.

Scan for publications



Yasser Khalil
MD

Director, Preventive Cardiology and Advanced Lipidology
Department of Cardiology (GWV)

Keywords
preventive cardiology, cardiac CT, transesophageal echocardiogram, nuclear cardiology

Research interests
Dr. Khalil focuses on preventive cardiology & advanced lipidology clinical research, with an emphasis on improving early detection and risk stratification of cardiovascular disease. Dr. Khalil's work integrates key modalities such as cardiac CT, transesophageal echocardiogram and nuclear cardiology to enhance diagnostic precision and guide preventive strategies. Dr. Khalil is particularly interested in leveraging advanced imaging techniques alongside lipid management to better understand atherosclerotic disease progression and optimize individualized patient care within the field of preventive cardiology.

Scan for publications



Osama Mukarram
MD

Associate Program Director, Interventional Cardiology Fellowship Program
Interventional Cardiology (GMC)

Keywords
interventional cardiology, CAD, PCI, heart failure, mechanical circulatory support

Research interests
Dr. Mukarram's research interests center on advancing the care of patients with complex CAD and cardiogenic shock through innovation in interventional cardiology, intracoronary imaging and hemodynamic support. Dr. Mukarram focuses on optimizing outcomes in complex and high-risk PCI (CHiPCI) by integrating physiology-guided strategies with high-resolution imaging modalities, such as OCT and IVUS, to refine lesion assessment and stent optimization. A key area of interest includes the appropriate selection and utilization of mechanical circulatory support devices to improve survival while minimizing complications, alongside the development of regionalized systems of care for cardiogenic shock. He is also actively exploring novel therapies and treatment strategies, including drug-coated balloon technology, coronary lithotripsy and assessment of coronary microvascular dysfunction using emerging platforms. Through clinical research, program development and multidisciplinary collaboration, his goal is to translate evidence-based, technology-driven approaches into standardized, high-quality care that improves patient outcomes at the institutional and national levels.

Scan for publications



Evan Ryer

MD, MBA, FACS, FSVS, RPVI

Professor of Surgery

Vice Chair, Vascular and Endovascular Surgery, Heart & Vascular Institute

Program Director, Vascular Surgery Residency

Keywords

abdominal aortic aneurysm, thoracic aortic aneurysm, aortic dissection, genomic screening, pathogenic variants, machine learning, risk prediction, AAA screening, carotid revascularization, TCAR, carotid artery stenting, mesenteric revascularization, chronic limb-threatening ischemia, conditional survival

Research interests

Dr. Ryer's research focuses on the genomic, clinical, and outcomes-based foundations of aortic and vascular disease, with an emphasis on translating discovery into improved patient care. Dr. Ryer's work uses population-based genomic screening to study rare pathogenic variants associated with thoracic and abdominal aortic aneurysms. He also applies machine learning to clinical and imaging data to identify patients at risk for aneurysm and dissection, including validated screening models with clinical and health-system impact. Additional areas of investigation include carotid revascularization, mesenteric revascularization, chronic limb-threatening ischemia and conditional survival analysis to better inform long-term clinical decision-making.

Social media

ORCID

0000-0001-6763-7960

Scan for publications



Gregory Salzler
MD, MSc

Associate Professor
Department of Vascular Surgery

Keywords
vascular surgery, aorta, peripheral vascular disease, carotid, venous disease

Research interests
Dr. Salzler's research focuses on the diagnosis, management and outcomes of peripheral and aortic vascular disease, spanning a broad range of topics including abdominal aortic aneurysm screening (notably applying machine learning to improve detection), thoracic aortic aneurysm genetics, chronic limb-threatening ischemia, carotid artery disease and complex vascular interventions. Dr. Salzler contributes to studies on novel anticoagulation strategies, innovative endovascular techniques and rare vascular conditions. His publications reflect a dual commitment to clinical outcomes research and the integration of emerging technologies, including predictive modeling and genomic approaches, to advance the care of patients with serious vascular conditions.

ORCID
0000-0001-9696-0855

Scan for publications



Gregory Yost
DO

Interventional Cardiologist
Department of Cardiology

Associate Regional Chief of Cardiology
Central Region

Keywords
CAD, PCI, HTN, dyslipidemia, antiplatelet

Research interests
Dr. Yost has spent much of his early research focused on antiplatelet and anticoagulation, particularly when used in the cardiac catheterization laboratory for treatment during acute coronary syndromes and following percutaneous coronary interventions. Dr. Yost has also done research on quality improvement strategies, looking at the length of stay following acute myocardial infarctions. More recently, he has been involved in randomized controlled trials for CAD in the cath lab as well as drug therapies for management post-ACS, HTN and dyslipidemia.

ORCID
0000-0001-6093-580X

Scan for publications

Medical Education



Tanja Adonizio
MD, MHPE

Vice Provost for Student Affairs
Department of Medical Education

Keywords
professional identity formation, professionalism, career advising

Research interests
Dr. Adonizio's primary area of scholarly interest is in the professional identity formation of health professions learners and faculty. Dr. Adonizio co-developed the professionalism curriculum at her institution with her colleague, Michelle Schmude, EdD, MBA, in 2017. Dr. Adonizio has published and presented on this topic and related fields of specialty advising and selection, including Geisinger's novel service commitment program, professionalism curriculum and assessment, and most recently on "Educating for uncertainty in the undergraduate medical programme" in the journal *Medical Education*.

ORCID
0000-0001-7576-3203

Scan for publications



John A. Arnott
PhD

Professor of Cellular Biology and **Chair**
Department of Medical Education

Keywords
medical education, curriculum design, assessment and remediation, active learning and simulation, academic progress monitoring

Research interests
Dr. Arnott's scholarship spans both basic science and medical education, with a primary focus on the design, implementation and evaluation of integrated, competency-based medical curricula. His work emphasizes assessment systems, early identification and remediation of struggling learners and the development of longitudinal progress monitoring frameworks. Dr. Arnott has also contributed to innovations in active learning, simulation-based education and virtual anatomy instruction. In parallel, his earlier basic science research investigated molecular signaling pathways regulating osteoblast differentiation and bone formation. Across both domains, his work is characterized by a translational approach, applying scientific rigor to improve educational outcomes, learner development and institutional effectiveness in health professions education.

ORCID
0000-0002-8659-4502

Scan for publications



Amanda Caleb
PhD, MPH

Professor, Medical Humanities
Department of Medical Education
Center for Medical Humanities

Keywords
medical/health humanities, medical education, historical practices and contemporary impacts, epistemic justice

Research interests
Dr. Caleb conducts research at the intersection of medical and public health humanities, narrative medicine and health communication, with a strong emphasis on ethics, equity and global health. Dr. Caleb's research primarily examines how narrative, rhetoric and metaphor shape experiences of illness, care, and health policy, particularly in relation to disability, pandemics and historical injustices such as eugenics and the Holocaust. Drawing on qualitative and interdisciplinary methods—including narrative analysis and ethnography—she explores how patients, clinicians, and communities make meaning in contexts of uncertainty and structural vulnerability. Dr. Caleb is especially interested in advancing narrative humility, epistemic justice and more humane, culturally responsive approaches to medical education, clinical practice and public health worldwide.

Scan for publications



Sarah Greene
PhD

Professor
Department of Medical Education

Keywords
anatomy, embryology, neuroscience, medical education, humanities, accommodations, accessibility, American sign language

Research interests
Dr. Greene has interests in training students and faculty to work effectively with Deaf and hard-of-hearing patients and students, as well as addressing the challenges they face in healthcare and education. Drawing on her experience as a sign language interpreter and curriculum developer, in collaboration with Deaf colleagues to train students, she aims to expand this work to include DeafBlind, neurodiverse, mobility-challenged and other differences. Her work also focuses on developing and evaluating the effectiveness of educational media, including the implementation of universal design in media. Additionally, she studies students' responses, coping mechanisms and adaptation to anatomical dissection using human body donors, as well as the impact of providing students with donor identity and life history (with donor/family consent). This includes evaluating activities, such as orientation to the anatomy lab and the memorial ceremony, assessing their impact on students' emotions and responses, and exploring interactions with and responses from registered anatomical donors and donor family members.

ORCID

0000-0002-9469-0772

Scan for publications



Sonia Lobo
PhD, E-RYT

Professor and **Associate Dean** of Student Research & Scholarship
Department of Medical Education

Keywords
interstitial cystitis, biochemistry, wellness, nutrition, lifestyle medicine

Research interests
Dr. Lobo integrates a foundation in molecular biochemistry with a growing emphasis on medical education, wellness and nutrition. Early in her career, she focused on the molecular mechanisms underlying cancer biology and bladder disorders, particularly protein palmitoylation and its regulation of cellular signaling, proliferation and metastasis. This work advanced understanding of CKAP4 and APF signaling in cancer and interstitial cystitis, with implications for diagnostics and therapeutics. More recently, Dr. Lobo's research has shifted toward advancing medical education and student scholarship, promoting wellness and integrating nutrition and preventive health into the curriculum, with the goal of preparing physicians to deliver more holistic, patient-centered care.

Social media

ORCID
0000-0002-7406-6956

Scan for publications



Ian McCoog
EdD

Assistant Professor of Medical Education
Department of Medical Education

Keywords
leadership development, medical education, qualitative research, narrative storytelling

Research interests
Dr. McCoog's scholarship reflects the intersection of medical education, leadership development, qualitative inquiry, and the health humanities. Across peer-reviewed publications, student-mentored scholarship, creative work and public-facing dissemination, his work is unified by a central commitment to understanding how professionals learn, lead and construct meaning across their careers, particularly within undergraduate medical education.

Social media

ORCID
0009-0008-0864-8465

Scan for publications



Natasha Morales-Ghinaglia PhD

Assistant Professor of Anatomy & Embryology
Department of Medical Education

Keywords
sleep, obesity, cardiometabolic, disparities, anatomy, embryology

Research interests
Dr. Ghinaglia conducts research on the complex interactions among sleep, obesity, and cardiometabolic health across the lifespan. Dr. Ghinaglia is also interested in how socioeconomic factors and health disparities shape these outcomes, with a focus on identifying mechanisms that contribute to unequal health trajectories. Her work integrates interdisciplinary approaches to better understand risk factors and inform prevention and intervention strategies. Through her scholarship, she aims to advance equitable health outcomes and improve population health, and she has contributed to this field through publications in multiple peer-reviewed journals.

Social media

ORCID
0000-0002-5312-2509

Scan for publications



Kiran Pandit
MD, MPH

Associate Professor of Medical Education
Department of Medical Education

Assistant Dean for Faculty Development (GCHS)

Keywords
medical education, qualitative research, faculty development, feedback, assessment of teaching, curriculum development, professional identity formation

Research interests
Dr. Pandit's research interests include qualitative studies and reviews on topics in medical education and faculty development, specifically feedback, teaching assessment, curriculum development and professional identity formation.

Social media

ORCID
0000-0001-8380-0254

Scan for publications



Mary Pelkowski
MD

Assistant Professor of Pathophysiology
Department of Medical Education (GCHS)

Keywords
undergraduate medical education, physiology core concepts, physiology education, integrated medical school curriculum

Research interests
Dr. Pelkowski focuses on undergraduate medical education and curricular advancement. Dr. Pelkowski's ultimate research goals are to improve the student learning experience and to support students' ability to become excellent physicians by enhancing conceptual understanding and the integration of foundational and clinical sciences. As a physiology educator, an area of particular interest to her is the physiology curriculum, where her research thus far has focused on using core physiology concepts to aid student learning and knowledge transfer. Other areas of interest include student strategies for academic success and integration of various foundational and clinical sciences throughout the preclinical and clinical phases of medical school.

ORCID
0009-0007-8905-7503

Scan for publications



Mathangi Rajaram-Gilkes MD

Associate Professor of Anatomical Sciences
School of Medicine (GCHS)

Keywords

medical education, gross anatomy, cadaveric research, virtual microscopy, histopathology

Research interests

Being both a physician and a medical educator, Dr. Rajaram-Gilkes conducts research in areas that integrate basic sciences and clinical correlation. Dr. Rajaram-Gilkes conducts research through cadaveric dissection and exploratory procedures from Geisinger clinicians, as well as by using Sectra VHS, a platform that offers hands-on tools to explore normal anatomical structures across multiple dimensions and depths, and provides a comprehensive radiological imaging bank, virtual histopathology resources, and clinically oriented case discussions. Dr. Rajaram-Gilkes also encourages student engagement in scholarly inquiry by identifying anatomical variations and surgical and pathological findings in cadaveric specimens, by exploring histological features of underreported regions of the human body. Dr. Rajaram-Gilkes' research involves collaboration with Geisinger clinicians across diverse specialties and with educators and clinicians affiliated with the American Association of Clinical Anatomists.

Social media

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Michelle Schmude
EdD, MBA

Vice Provost for Enrollment Management and
Professor of Medical Education
Department of Medical Education

Keywords
AI in health professions education, AI in medical education, professionalism, professional identity formation, coaching, advising, mentoring, emotional intelligence

Research interests
Dr. Schmude's work is guided by an interest in thoughtful, responsible uses of AI in health professions and medical education. Dr. Schmude explores ways AI might support recruitment, teaching, assessment, and research while remaining grounded in human values. Dr. Schmude is also passionate about professionalism and the development of professional identity across the educational continuum. Dr. Schmude is particularly drawn to coaching, advising and mentoring relationships that encourage reflection, self-awareness and ethical growth, and to the role emotional intelligence plays in fostering connection, resilience and effective professional practice.

Social media

ORCID
0000-0002-0837-5355

Scan for publications



Gregory Shanower
PhD, MS

Assistant Professor and **Assistant Dean**
Department of Medical Education

Keywords
epigenetics, lncRNAs, developmental gene regulation, chromatin modifications, drosophila

Research interests
Dr. Shanower's lab investigates the functional roles of long noncoding RNAs (lncRNAs) in epigenetic gene regulation during development using *Drosophila melanogaster* as a model system. Dr. Shanower and his team study an intronic lncRNA within the grappa (gpp) histone methyltransferase gene, testing its potential role as a cis-acting regulatory element. Using CRISPR-Cas9–mediated deletions, they demonstrate that disruption of the lncRNA produces severe developmental phenotypes exceeding those of gpp loss-of-function mutations, suggesting regulatory control over gpp expression. Ongoing studies in their lab examine cell-cycle effects and transcriptional outputs to further define the mechanistic role of the lncRNA in coordinating chromatin regulation and the developmental gene expression of gpp.

ORCID
0000-0003-1584-6300

Scan for publications



Sarah Triano
MS, NCC, LPC

Director, Center for Learning Excellence
Division of Student Affairs

Keywords
disability resource professionals, disability inclusion, health professions education, disability justice, accessibility in higher education, inclusive learning

Research interests
Dr. Triano's research focuses on advancing disability equity and inclusion in medical and health professions education through policy, practice, and inclusive design. She examines systemic and structural barriers affecting students with disabilities, with particular attention to accommodations, technical standards, and access to high-stakes assessments and clinical training. Ms. Triano's work includes national studies on disability resource professionals, the development of evidence-informed guides for licensing and clinical accommodations, and scholarship on universal design and inclusive pedagogy. Grounded in disability justice and learning sciences, her research aims to translate empirical findings into institutional strategies that promote student success, well-being, and equity across the health professions education continuum.

Social media

ORCID
0009-0003-9077-0390

Scan for publications



Ryan Weber
PhD

Professor of Medical Humanities
Center for Medical Humanities
Department of Medical Education

Keywords
disability studies, uncertainty, medical humanities, eugenics, art and medicine, professional identity formation, professionalism, medical education, social construction of pain, interdisciplinary studies

Research interests
Dr. Weber's research examines how medicine understands difference and uncertainty across diverse contexts. Dr. Weber integrates cross-cultural and historical analysis to explore concepts of illness and identity, with particular attention to public policy and approaches in the Nordic region. His work includes studying how pain is socially constructed and unevenly recognized in clinical settings, as well as how autism and autistic aesthetics can serve as critical lenses for rethinking perception and communication. In parallel, Dr. Weber advances pedagogical approaches that position uncertainty and emotion as central to professional identity formation. By incorporating humanities-based methods, his work develops practical strategies to support reflective practice and foster more responsive, relationship-centered care while promoting interdisciplinary collaboration.

ORCID
0000-0001-9115-1565

Scan for publications



Eric Wengert
PhD

Assistant Professor of Neuroscience Department of Medical Education

Director of AI
Department of Medical Education

Keywords
AI, physiology, ion channel, epilepsy, computational modeling, model-based learning,

Research interests

Dr. Wengert is an assistant professor of neuroscience and director of AI in the Department of Medical Education at GCHS. Dr. Wengert's research bridges 2 complementary domains. As a neuroscientist, he studies the basic mechanisms of severe genetic epilepsy syndromes, with prior work on Dravet syndrome, SCN8A epileptic encephalopathy, and KCNC1 epilepsy. His current interests apply computational approaches to harmonize the biophysical properties of ion channel variants with patient clinical trajectories. As director of AI, Dr. Wengert investigates how emerging AI tools can support teaching and learning in medical education. Among several active projects, he is exploring how AI-assisted programming can enable hands-on engagement with complex physiological concepts through the model-based learning framework.

Social media

ORCID
0000-0001-7679-4183

Scan for publications

Medicine Institute



Rose Barham
MD, MS

Med-Peds Hospitalist; Assistant Chair for UME, Internal Medicine; **Associate Program Director,** Med-Peds Residency
Department of Hospital Medicine
Faculty, Personal and Professional Development (GCSOM)

Keywords
qualitative research, professional development, leadership, teaming, teams, teamwork, ad hoc teams

Research interests
Dr. Barham is interested in understanding how leadership and professional development happen in clinical care in order to improve the experience of healthcare for patients and healthcare workers. Dr. Barham mostly utilizes this through the lens of improving medical education, but is interested in all applications of the work.



Alexander Chang
MD, MS

Associate Professor
Department of Nephrology
Department of Population Health Sciences

Keywords
kidney, nephrology, hypertension, genetics, cardiovascular-kidney-metabolic health, epidemiology, clinical trials

Research interests
Dr. Chang is a nephrologist, clinician-scientist, and professor in nephrology and population health sciences at Geisinger, where he co-directs the Center for Kidney Health Research. His work centers on a precision medicine approach that integrates clinical, EHR and genomic data to optimize care for patients with CKD and cardiometabolic conditions. He aims to tailor prevention and treatment strategies to individual risk profiles through epidemiology, health services research, and clinical trials.
His NIH-, PCORI-, CDC-, NKF- and industry-funded research focuses on clinical decision support, identification of care gaps and implementation of data-driven tools. Current projects include CKD care optimization, Alport syndrome research, and clinical trials in diabetes, CKD and ADPKD.

Social media

ORCID
0000-0002-8114-7447

Scan for publications



Thomas Davis
MD

Director, Comprehensive Care Clinic Program

Director, Internal Medicine-Pediatrics Residency Program

Associate Director, General Internal Medicine

Keywords
transitions of care, intellectual disabilities, complex care, medical technology, medical education, growth mindset

Research interests
Dr. Davis is a dual-board-certified physician in internal medicine and pediatrics with over a decade of experience in academic medicine, clinical leadership and healthcare transitions. As director of the Comprehensive Care Clinic and program director for the Internal Medicine-Pediatrics Residency Program at GMC, he leads initiatives that improve care delivery for medically complex patients and trains the next generation of physicians. Dr. Davis' career has been defined by a commitment to advancing healthcare transitions for adolescents and young adults with special healthcare needs. He has led national and international presentations, published extensively in peer-reviewed journals and secured multimillion-dollar grants, including as site PI for a $5.6M PCORI-funded project focused on future planning for individuals with intellectual disabilities. He is passionate about integrating evidence-based medicine, QI and compassionate care into both clinical practice and medical education. He welcomes collaboration in research, curriculum development and advancing transitional care models.

Social media

ORCID
0000-0002-2653-1382

Scan for publications



David Diehl
MD

Professor of Medicine and Pathology
Department of Gastroenterology

Keywords
gastroenterology, endoscopy, GI pathology

Research interests
Dr. Diehl's research interests include various subjects related to gastroenterology, endoscopy and therapeutic (advanced) endoscopy.

Social media

ORCID
0000-0003-4128-3839

Scan for publications



Jamie Green
MD, MS

Associate Professor
Department of Population Health Sciences
Department of Nephrology
Center for Kidney Health Research

Keywords
CKD, shared decision-making, patient engagement, informatics

Research interests
Dr. Green is a nephrologist and clinical investigator whose research focuses on improving care for patients with CKD, particularly around treatment preparation and decision-making. Her work emphasizes patient engagement, shared decision-making, and enhancing readiness for kidney failure therapies such as dialysis and transplantation. Dr. Green also studies the implementation of health-system interventions, including electronic health record–based clinical decision support tools, to improve screening, quality of care and outcomes. A key theme across her research is aligning clinical care with patient preferences and values while using pragmatic trials and real-world data to optimize kidney disease management at scale.

ORCID
0009-0006-5834-8255

Scan for publications



Danial Shaikh

MD

Assistant Professor of Medicine

Associate Interventional Endoscopist, Center for Advanced Endoscopy (ACE), Gastroenterology

Core Faculty, Internal Medicine Residency and Gastroenterology Fellowship Program

Keywords

gastroenterology, endoscopy, colon cancer

Research interests

Dr. Shaikh has research interests in advanced and third-space endoscopy and gastrointestinal oncology.

Social media

ORCID

0000-0002-5798-9046

Scan for publications



Christopher Still
DO, FACP, FTOS

Director, Center for Obesity and Metabolic Research

Director, Center for Nutrition and Weight Management

Professor, Department of Investigational Medicine

Keywords

clinical research or studies, clinical trials, metabolic syndrome, obesity, incretin, nutrition or dietetics, liver diseases, liver elastography, clinical medicine, genomics, aging, data models, data management or analysis (medical)

Research interests

Dr. Still is a fellowship-trained obesity medicine physician and clinical researcher with nearly 30 years of experience advancing the care of patients with obesity and related conditions, including diabetes and metabolic-associated fatty liver disease (MASLD/MASH). Dr. Still has served as director of the Center for Obesity & Metabolic Research since 2008, a multidisciplinary program that supports system-wide obesity research and interventions across Geisinger. The center focuses on preventive lifestyle strategies, pharmacologic and surgical treatments for obesity and state-of-the-art molecular approaches to obesity-related conditions, supported by strong partnerships with academic and healthcare institutions. Dr. Still's team maintains one of the world's largest clinical databases and biobanks for patients with morbid obesity and liver disease. Dr. Still has established a distinct program in metabolic health, with over 20 years of research on the relationship between nutrition, aging and disease. He also leads research on genetic predictors of treatment response and long-term outcomes.

ORCID

0000-0001-8006-8483

Scan for publications



Waleed Zafar
MD, ScD

Associate
Hospital Medicine

Investigator
Center for Kidney Health Research
Department of Investigational Medicine

Keywords
CKD, clinical decision support, HTN

Research interests
Dr. Zafar's research interests have focused on identifying risk factors for the progression of CKD and narrowing care gaps in primary care. This has included working with large datasets to examine clinical research questions with direct impact on patients with kidney diseases. Dr. Zafar's work aims to improve clinical decision support tools and digital interventions (e.g., nudges and alerts delivered via EHRs; use of smartphone applications; automated reminders and messages; curation of information visible to patients and providers during health encounters) that improve outcomes among at risk for kidney diseases.

ORCID
0000-0003-3678-695X

Scan for publications

Musculoskeletal Institute



Juan Bernate
MD

Postdoctoral Research Fellow, Orthopaedic Trauma
Department of Orthopaedics

Keywords
orthopaedics, trauma research

Research interests
Dr. Bernate's research interests include fracture management and outcomes, with a focus on lower extremity injuries and postoperative complications. Dr. Bernate is particularly interested in risk factors for reoperation, nonunion, infection and functional recovery following orthopaedic trauma surgery, as well as in optimizing perioperative care pathways and pain management strategies.

Social media

ORCID
0000-0002-7627-3668

Scan for publications



Brian Campfield
MD

Assistant Professor of Orthopaedics

Orthopaedic Trauma Site Director (GCMC)

Keywords
fracture, trauma, bone

Research interests
Dr. Campfield has research interests in fracture care, nonunion and orthopaedic trauma surgery. Dr. Campfield is particularly focused on improving outcomes in trauma care, as well as optimizing orthopaedic health system efficiency and performance. His work also explores the economics of orthopaedics and trauma, with an emphasis on cost-effectiveness and value-based care.

ORCID
0000-0003-4542-3181

Scan for publications



Ian Darragh
PhD

Research Fellow
Department of Orthopaedics

Keywords
orthopaedics, statistics, data science, exercise science, musculoskeletal

Research interests
Dr. Darragh's work spans from molecular to applied sciences, with additional expertise in data science and biostatistics. Dr. Darragh is broadly interested in how lifestyle factors such as nutrition, sleep and exercise influence health, well-being and performance. In his current role, he develops models using EHR data to predict clinical outcomes for orthopaedic surgery patients, with a focus on translating real-world data into tools that support research, risk stratification and clinical decision-making. In parallel, Dr. Darragh contributes to international collaborations in sport science and human physiology and maintains ongoing research projects in these areas.

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Louis C. Grandizio
DO

Chief of Shoulder and Elbow Surgery
Department of Orthopaedics

Regional Director (Central Region)
Department of Orthopaedics

Keywords
elbow, shoulder, wrist, hand, trauma, throwing injuries, genetics, trainee education, compressive neuropathy, carpal tunnel syndrome, elbow instability

Research interests
Dr. Grandizio is a professor of orthopaedic surgery at GCSOM and serves as the chief of Shoulder & Elbow Division for the Geisinger MSKI. Dr. Grandizio founded the Geisinger Upper-Extremity Research Fellowship in 2018, which has included numerous international and U.S. research fellows. He serves as an associate editor for the *Journal of Hand Surgery* and chair of the Clinical Research and Grantsmanship Committee for the ASSH. Dr. Grandizio's research interests include carpal tunnel syndrome and peripheral compressive neuropathy, as well as studying the outcomes of complex elbow instability. Many of his projects have focused on resident/trainee education as well as the use of technology in healthcare delivery. He is also interested in genetic associations in common upper-extremity conditions. Recently, he and his team have started a throwing biomechanics laboratory in collaboration with Bucknell University, which will focus on throwing mechanics in youth and adolescent athletes, as well as UCL injury prevention.

ORCID
0000-0002-3551-3266

Scan for publications



Mohit Kukreja
MD

Orthopaedic Surgeon
Department of Orthopaedics

Keywords
adult reconstruction (knee/hip/shoulder), arthroplasty, sports medicine, trauma (fracture surgery)

Research interests
Dr. Kukreja focuses on orthopaedic surgical procedures, including Mako-assisted robotic hip, knee and shoulder arthroplasty. Dr. Kukreja is also interested in ACL and meniscus surgery, rotator cuff repair and fracture surgery. His work aims to advance surgical techniques and improve patient outcomes across these areas of orthopaedic care.

Social media

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Tripp Leavitt
MD

Hand Surgeon
Department of Orthopaedics

Keywords
QI, patient-reported outcomes, hand surgery

Research interests
Dr. Leavitt's research focuses on improving care and outcomes in hand surgery. Dr. Leavitt is particularly interested in QI initiatives and the use of patient-reported outcomes to evaluate and enhance surgical care. His work emphasizes integrating patient perspectives into clinical practice to support evidence-based decision-making and optimize treatment results in hand surgery.

ORCID
0000-0001-7829-2646

Scan for publications



John Mercuri
MD, MA

Director, Adult Reconstruction Fellowship

Associate Director, Northeast Orthopaedic Surgery Residency

Associate Professor (GCSOM)

Keywords
adult reconstruction, hip replacement, knee replacement, total joint arthroplasty, revision arthroplasty, complex revision surgery, kinematic alignment, subvastus kinematic alignment, personalized implant positioning, computer navigation, augmented reality, robotics, pain management, opioid-sparing protocols, accelerated recovery, arthroplasty outcomes, value-based care, bioethics, surgical education, patient education

Research interests
Dr. Mercuri's research focuses on adult reconstruction and total joint arthroplasty, particularly hip and knee replacement, complex revision surgery and the use of enabling technologies such as computer navigation, augmented reality, robotics and kinematic alignment to improve surgical precision and patient outcomes. Dr. Mercuri is also interested in perioperative optimization, including protocols that reduce pain, swelling, and opioid use while supporting accelerated recovery after surgery. Beyond clinical outcomes research, his work extends to value-based care, health economics, implant utilization and care pathway design in orthopaedics. Dr. Mercuri also explores orthopaedic bioethics and policy, including professionalism, cost-sharing, implant pricing, and the ethical implications of evolving technologies and system-level decision-making in joint replacement care.

Social media

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Scan for publications



Ellianne Nasser
DPM

Associate Podiatry Program Director, Podiatric Medicine and Surgery Residency

Keywords
limb salvage, foot and ankle surgery, residency education

Research interests
Dr. Nasser’s research interests include limb salvage, foot and ankle surgery and residency education.

Social media

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0000-0003-1637-4253

Scan for publications



Mark Pallis
DO, MBA

Chair
MSKI and Department of Orthopaedic Surgery, Geisinger

Professor of Orthopaedic Surgery

Keywords
sport medicine, shoulder arthroplasty

Research interests
Dr. Pallis's research focuses on sports medicine procedures, with particular expertise in hip arthroscopy, shoulder arthroscopy and shoulder replacement surgery.
Dr. Pallis is interested in improving surgical techniques and patient outcomes across these areas, with an emphasis on evidence-based approaches to optimize recovery and long-term function.

ORCID
0000-0002-3904-8808

Scan for publications



Ryan Sutton
MD

Assistant Professor
Geisinger Orthopaedics and Sports Medicine

Keywords
hip replacement, knee replacement, prosthetic joint infection, hip and knee revision arthroplasty, unicompartment knee arthroplasty

Research interests
Dr. Sutton's research focuses on adult hip reconstruction and joint preservation, with particular expertise in direct anterior hip replacement and extensile direct anterior revision techniques. Dr. Sutton's interests include the management of periprosthetic fractures, hip preservation strategies and the optimization of outcomes in hip and knee arthroplasty. He is also focused on improving patient preoperative optimization, surgical efficiency, and the management of prosthetic joint infection, including single-stage exchange arthroplasty. Beyond clinical practice, Dr. Sutton is interested in health policy and advancing evidence-based approaches to improve surgical outcomes and quality of care in orthopaedics.

ORCID
0000-0001-9158-1282

Scan for publications



Olcay Yavuz
MD

Postdoctoral Research Fellow
Department of Orthopaedics

Keywords
orthopedic surgery, sports injuries, hand and upper extremity injuries, evidence-based medicine

Research interests
Dr. Yavuz's research focuses on orthopaedic surgery, particularly the evaluation of surgical outcomes, complications and the optimization of operative techniques. Dr. Yavuz is especially interested in hand and upper extremity surgery, with an emphasis on improving efficiency, patient outcomes and perioperative decision-making. His work also examines factors influencing surgical success, including patient- and system-level variables. In addition, Dr. Yavuz has an interest in evidence-based orthopaedics and clinical research methodologies aimed at generating practical, real-world insights that directly improve patient care.

Social media

ORCID
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Neuroscience Institute



Ahmed Aljuboori
MD

Otolaryngology Resident
Department of Neurosurgery

Keywords
neurosurgery, otolaryngology, skull base

Research interests
Dr. Aljuboori is interested in skull base tumors and different access approaches that require a multidisciplinary team effort.

Scan for publications



Kwadwo Darko
MBChB

Postdoctoral Fellow
Department of Neurosurgery

Keywords
neurosurgery, stroke, aneurysm

Research interests
Dr. Darko is a neurosurgery postdoctoral research fellow whose work focuses on cerebrovascular disease, including stroke and intracranial aneurysms.
Dr. Darko conducts clinical and data-driven research to study patient outcomes related to these conditions. He also has research interests in neuro-oncology and in advocacy.

Social media

ORCID
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Scan for publications



Rachel Dragano
DNP, CRNP

Chief Nurse Practitioner
Department of Neurology

Keywords
functional medicine, alternative pain treatments for neuropathic pain and migraine, diets for neurologic disease, migraine, headache

Research interests
Rachel Dragano is interested in doing research on diet changes, lifestyle modifications and functional med involvement for neurologic issues such as migraine and neuropathic pain.

Scan for publications



Scott Greene
MD, MA, FACS

Associate, Otolaryngology – Head and Neck Surgery
Facial Plastics and Reconstructive Surgery

Keywords
ears, hearing loss, tracheotomy, tracheostomy, sinusitis, thyroid eye disease, dacryocystitis

Research interests
Dr. Greene's research interests have spanned a variety of projects throughout his career, with a primary focus on working with and supporting residents in their required research experiences. Dr. Greene frequently contributes to the development of research ideas and plays an active role in guiding project design, implementation and follow-up. His work emphasizes mentorship and fostering trainee engagement in meaningful research activities.

ORCID
0000-0001-9161-9463

Scan for publications



Oded Goren
MD

Attending Physician
Department of Neurosurgery

Keywords
cerebrovascular neurosurgery, brain aneurysms, arteriovenous malformations, endovascular stroke therapy, venous disorders

Research interests
Dr. Goren is a cerebrovascular neurosurgeon at GMC. His clinical specialty and interests are brain aneurysms, arteriovenous malformations and fistulas. Dr. Goren is also interested in idiopathic venous hypertension, spontaneous intracranial hypotension, pulsatile tinnitus and moyamoya disease.

Scan for publications



Philipp Hendrix
MD, PhD

Attending Neurosurgeon, Endovascular & Cerebrovascular Neurosurgery (GMC)

Assistant Professor, Neurosurgery

Director, Cerebrovascular Research; Director, Cerebrovascular Research Fellowship Program (GMC)

Keywords

cerebrovascular disease, large vessel occlusion stroke, intravenous thrombolysis, mechanical thrombectomy, stroke systems of care; cerebral aneurysms, endovascular neurosurgery, cerebrovascular malformations, cerebrovascular genetics, precision cerebrovascular care

Research interests

Dr. Hendrix's research interests center first on cerebrovascular disease, including large vessel occlusion stroke and its treatment with intravenous thrombolysis and mechanical thrombectomy. Dr. Hendrix is particularly interested in real-world treatment effectiveness, treatment safety, workflow optimization, systems of care, and the scalability of advanced stroke care across rural and suburban health systems. A second major focus of his is cerebral aneurysm disease, including open and endovascular treatment strategies, emerging devices, procedural safety, antiplatelet management and long-term clinical outcomes. Dr. Hendrix's interests extend to other complex cerebrovascular lesions, including brain arteriovenous malformations and dural arteriovenous fistulas. He is also interested in further pursuing translational and genetic research in cerebrovascular disease, with the goal of better defining disease mechanisms, improving risk stratification and developing biologically informed approaches to individualized treatment.

ORCID

0000-0003-0017-5049

Scan for publications



Randy Lesh
MD

Resident Physician
Otolaryngology, Head and Neck Surgery

Keywords
head and neck cancer, otolaryngology

Research interests
Dr. Lesh has research interests in germline and somatic tumor mutations and how these genetic alterations influence thyroid cancer risk, tumor biology and clinical behavior. Dr. Lesh is particularly interested in how inherited gene variants and acquired driver mutations, including RAS and other key signaling pathway alterations, contribute to tumor development, progression and behavior. By integrating molecular profiling with detailed clinicopathologic data, he aims to improve risk stratification and refine prognostic models for patients with thyroid cancer. Ultimately, his goal is to translate genomic insights into more personalized approaches to diagnosis, surveillance and treatment in thyroid malignancies.

ORCID
0000-0001-5475-5941

Scan for publications



Maya Lichtenstein
MD, MHSc

Associate Neurologist
Assistant Professor, Medicine
Associate Director, Research
Assistant Director, Memory and Cognition Program
Department of Neurology

Keywords
dementia

Research interests
Dr. Lichtenstein's research focuses on the clinical and epidemiological recognition of neurodegenerative diseases, with the goal of enabling earlier detection and informing treatment strategies.

ORCID
0000-0001-6270-575X

Scan for publications



Mihai Cosmin Sandulescu MD, MS

Assistant Professor
Department of Neurology
Department of Investigational Medicine

Movement Disorders Director
Department of Neurology

Keywords
Parkinson's disease, essential tremor, epidemiology

Research interests
Dr. Sandulescu’s research focuses on movement disorders, particularly Parkinson’s disease and essential tremor, using large-scale EHR data to improve diagnostic accuracy, enhance epidemiologic understanding and identify modifiable risk factors. Dr. Sandulescu’s work includes validating Parkinson’s disease and essential tremor diagnostic phenotypes within EHR systems assessing prevalence and disease patterns across healthcare populations and investigating clinical, metabolic and medication-related predictors of neurodegenerative outcomes. Dr. Sandulescu is also interested in biomarker-driven approaches, including studies of lithium concentrations and their potential relationship to neuroprotection and neurodegeneration. Dr. Sandulescu’s broader goal is to integrate clinical neurology, epidemiology and biostatistics to advance earlier diagnosis and more personalized approaches to movement disorders research and care.

ORCID
0000-0001-7468-6074

Scan for publications



Clemens Schirmer

MD, PhD, MBA, FAANS, FACS, FAHA

Professor of Neuroscience and **Interim Chair**
Department of Neurosurgery

Keywords

cerebrovascular neurosurgery, endovascular/neurointerventional surgery, intracranial aneurysms and arteriovenous malformations, stroke (ischemic and hemorrhagic), machine learning, deep learning and artificial intelligence, quality metrics and variation of care, patient-centered outcomes, shared decision-making, genomics and stroke biomarkers, predictive analytics, neurosurgical education and simulation, health policy in neurosurgery, coding and billing

Research interests

Dr. Schirmer is a professor and interim chair of neurosurgery at Geisinger, whose research spans cerebrovascular and endovascular neurosurgery, stroke biology, and data-driven medicine. His work addresses quality metrics, variation of care, shared decision-making and patient-centered outcomes in the management of intracranial aneurysms, arteriovenous malformations and acute ischemic and hemorrhagic stroke. A prominent investigator in translational neuroscience, Dr. Schirmer applies machine learning, deep learning and predictive analytics to clinical neurosurgical problems and explores genomics and biomarkers of stroke. He contributes actively to neurosurgical education, simulation-based training, residency program leadership, and health policy at the regional and national levels.

ORCID

0000-0003-1743-8781

Scan for publications



Aileen Wertz
MD

Program Director, Otolaryngology Residency

Associate Professor of Otolaryngology
Department of Otolaryngology

Keywords
pediatric otolaryngology, resident education, barriers to care, tonsillectomy, ear tube placement, quality improvement

Research interests
Dr. Wertz is interested in researching ways to reduce barriers to care within pediatric otolaryngology. Dr. Wertz is also interested in comparing the efficacy of varied treatment modalities as well as measuring ways to improve trainee learning.

Scan for publications



Ruta Yardi Andress
MD

Assistant Professor, Epilepsy
Department of Neurology
Department of Investigational Medicine

Keywords
neurotechnology, epilepsy care, acute symptomatic seizures, epilepsy surgery outcomes

Research interests
Dr. Yardi Andress's research interests focus on improving care and outcomes for individuals with epilepsy. Dr. Andress is particularly interested in the use of neurotechnology to support epilepsy care, as well as in bridging healthcare gaps and promoting equitable access to epilepsy services. Her work also addresses acute symptomatic seizures and examines outcomes following epilepsy surgery. Through these areas of inquiry, Dr. Yardi Andress aims to advance more effective, equitable and patient-centered approaches to epilepsy care.

ORCID
0000-0001-7914-9585

Scan for publications

Nursing Institute



Samantha Cottrill
MSN, CRNP, WHNP-BC, CNE

Faculty
Geisinger School of Nursing

Keywords
nursing education, maternal newborn nursing, active learning

Research interests
Samantha Cottrill centers her work on the student experience, with particular emphasis on identifying predictors of student success and early indicators of the need for targeted interventions. She is also interested in trauma-informed nursing care and its application to nursing education, especially in maternal-newborn nursing. In addition, she develops active learning strategies designed to simulate high-stress healthcare environments while maintaining a safe and supportive learning setting.

Scan for publications



Lindsey Ford

DNP, RN, NPD-BC

System Senior Director of Nursing Excellence and Nurse Residency/Fellowship Programs

Faculty Member
Center for Nursing Excellence, Nursing Institute

Keywords

shared governance, magnet, nurse residency, nurse fellowships, nursing practice, workplace violence, nursing quality, professional practice model, shared-decision making, nursing leadership development

Research interests

Dr. Ford is interested in qualitative and quantitative research to advance nursing practice and patient outcomes, both in the classroom settings.

Social media

ORCID

0000-0001-7885-5074

Scan for publications



Lauren Murphy
DNP, RN, ACNS-BC, NEA-BC

Manager, Nursing Quality
System Nursing Operations & Quality Department
Nursing Institute

Keywords
nursing quality, patient safety, performance improvement, nursing sensitive quality outcomes

Research interests
Dr. Murphy's research interests center on advancing nursing quality and patient safety through evidence-based practice, robust measurement and system-level improvement strategies. Dr. Murphy is particularly focused on the use of nursing-sensitive indicators (including NDNQI), infection prevention outcomes, fall and harm reduction, and safety culture to drive sustained improvements in clinical care. Her scholarly work emphasizes translating evidence into practice across complex health systems, aligning professional practice models, Magnet© principles, and regulatory standards with measurable outcomes. She is also interested in implementation science, workforce engagement and leadership behaviors that strengthen reliability, accountability and excellence in nursing practice at the organizational and enterprise level.

Social media

ORCID
0000-0002-8987-3160

Scan for publications



Gale Shalongo

DNP, RN, NEA-BC, NPD-BC

System Director of Nursing Research, Evidence-Based Practice and Policy

Assistant Professor of Nursing
Department of Nursing Education (GCHS)
Center for Nursing Excellence

Keywords

nursing, evidence-based practice, nursing policy, nursing leadership, teaching

Research interests

Dr. Shalongo is interested in nursing research focused on nursing leadership, compassion fatigue and the effectiveness of educational and teaching methods. She supports the advancement of nursing research knowledge across the organization by providing education, leading a nursing research fellowship and serving as a resource for nurses who wish to explore and engage in research projects.

Social media

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Perioperative Institute



Niloufar Masoudi
MD, MPH

Staff Anesthesiologist (GMC)
Department of Anesthesiology

Keywords
anesthesiology, airway management, public health, epidemiology, study design

Research interests
Dr. Masoudi previously served as an associate professor of anesthesiology overseas, where she led an active research portfolio. Dr. Masoudi further strengthened her research expertise by earning a Master of Public Health in Epidemiology from the Johns Hopkins Bloomberg School of Public Health. She is interested in advancing her research portfolio in both malignant hypothermia and education research that would benefit anesthesiology residents.

Social media

ORCID
0000-0002-0670-4338

Scan for publications

Primary Care Institute



Thomas Morland
MD

Assistant Professor
Department of Population Health Sciences

Associate
Department of General Internal Medicine

Keywords
lifestyle, implementation science, primary care, clinical trials, evaluation

Research interests
Dr. Morland is an outpatient general internist with more than 10 years of primary care experience. His research focuses on early detection and treatment of cardiometabolic syndrome through lifestyle and pharmacotherapies. Focusing on the intersection of medicine with community, psychological well-being, and health-related social needs, Dr. Morland uses an implementation science approach to understand what is driving uncontrolled cardiometabolic syndrome and devise strategies to overcome barriers to achieving optimal risk factor control. He is a co-investigator on the Healthy Hearts Luzerne County program (part of the CDC Innovative Cardiovascular Health Initiative) (Annemarie Hirsh, PI), the GRAIL REACH trial (Adam Buchanan, PI) and an NIH-funded study of the effects of extreme heat on acute cardiovascular and pulmonary events (Melissa Poulsen, PI). Future directions include developing a lifestyle medicine program at Geisinger and conducting clinical trials evaluating lifestyle medicine programming for specific populations and disease states.

ORCID
0009-0003-2723-9791

Scan for publications



Jason Woloski
MD, FAAFP, FCPP

Chair
Family Medicine (GCHS)
Department of Family Medicine
Population Health Institute

Keywords
family medicine, population health, medical education

Research interests
Dr. Woloski’s clinical/research interests include resident/medical student education, primary care, access to care, women's health, continuity of care and population health.

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Surgery Institute



Joseph Blansfield
MD, FACS

Professor of Surgery

Section Head, Surgical Oncology and Endocrine Surgery (GMC)

Department of General Surgery

Keywords
pancreas, melanoma, surgical oncology, general surgery

Research interests
Dr. Blansfield's clinical research is dedicated to advancing and optimizing surgical quality outcomes.

Scan for publications



Tullika Garg
MD, MPH, FACS

Associate Professor
Department of Urology
Department of Population Health Sciences

Keywords
aging, frailty, multimorbidity, bladder cancer, rural health

Research interests
Dr. Garg is a urologic oncologist and health services researcher focused on designing age-friendly and goal-aligned care for older adults with bladder cancer and other malignancies. Dr. Garg works on shared decision-making and communication tools to align cancer treatment with personalized goals within the larger context of aging and treatment burden. Dr. Garg also works on initiatives to implement frailty screening into surgical clinics. Outside of cancer and aging, she conducts research on rural urology workforce issues and advocates for surgeon-scientists in urology. Dr. Garg is the Mid-Atlantic Representative to the AUA's Research Council. She serves on the AUA's steering committee for age-friendly care.

Social media

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Scan for publications



Rebecca Hoffman
MD, MSCE

Vice Chair of Education and Research
Surgery Institute

Assistant Professor of Surgery, Colon & Rectal Surgery
Department of Colon & Rectal Surgery

Keywords
colorectal, education

Research interests
Dr. Hoffman's clinical research focuses on decision-making and the genetics of diverticular disease, as well as patient outcomes in other benign colorectal conditions. Dr. Hoffman's education research centers on understanding the psychological components of the clinical learning environment and how these factors influence learning motivation and outcomes, with a particular emphasis on growth mindset.

Social media

ORCID
0000-0002-7924-3544

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Christian Kauffman
MD

Chair
Department of Plastic Surgery

Keywords
plastic surgery

Research interests
Dr. Kauffman is interested in plastic surgery research, including cleft lip/palate, breast reconstruction, abdominal contouring and craniosynostosis.

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Monty Littlejohn
MD, FACS

Trauma, Acute Care and **Burn Surgeon** (GCMC)
Department of Trauma and Acute Care Surgery

Keywords
burns, MCTs, wounds, trauma, skin and soft tissue, population research

Research interests
Dr. Littlejohn heads the research efforts in the Department of Trauma and Acute Care Surgery at GCMC, Geisinger's Level 2 trauma center. Dr. Littlejohn is also a fellowship-trained burn surgeon. His interests include trauma and acute care surgery, burns, skin and soft tissue and research on social determinants of health.

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ORCID
0009-0008-2544-6072

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Gayatri Malik
DMD, PhD

Associate Program Director and **Clinical Assistant Professor**, Pediatric Dentistry
Department of Oral Medicine and Maxillofacial Surgery

Keywords
molar incisor hypomineralization, virtual reality, nitrous oxide, oral sedation, pulp therapy, minimally invasive dentistry

Research interests
Dr. Malik aims to advance preventive strategies and screening tools within pediatric dentistry that support holistic patient care and collaboration with medical and social services to improve outcomes for vulnerable pediatric populations.

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ORCID
0009-0004-6106-9527

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Anthony Petrick
MD

Chief Quality Officer
Geisinger Clinic

Division Chief
Bariatric and Foregut Surgery

Keywords
bariatric, foregut, esophageal, quality, endoscopy

Research interests
Dr. Petrick's research focuses on the optimal management of obesity, with a particular emphasis on surgical care. Dr. Petrick is also interested in esophageal surgery, surgical endoscopy and the cost-effective use of technology in the operating room. In addition, his work addresses quality and quality improvement in healthcare, as well as the development and evaluation of value-based care models to enhance patient outcomes and system efficiency.

ORCID
0000-0002-5072-9161

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Research Institute



Lisa Bailey-Davis
DEd, RD

Professor
Department of Population Health Sciences

Director
Center for Women's and Children's Research

Keywords
systems science, nutrition, community engagement, prevention, food security, obesity, maternal

Research interests
Dr. Bailey-Davis is dedicated to advancing maternal and child health through integrated, evidence-based interventions that address prevention, nutrition and health equity. Dr. Bailey-Davis specializes in designing and evaluating pragmatic trials and implementation strategies that connect clinical care with community resources. Her work emphasizes early-life interventions during pregnancy and the first 1,000 days, leveraging approaches such as Food Is Medicine and WIC integration to improve dietary quality, enhance food security, reduce obesity risk, and promote cardiovascular health. Dr. Bailey-Davis also examines behavioral and environmental determinants of health, applies mixed-methods and implementation science frameworks, and aims to reduce disparities among rural and lower-income populations through patient-centered, multi-sector strategies.

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ORCID
0000-0002-8781-1521

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Alexander Berry
PhD

Senior Staff Scientist
Department of Developmental Medicine

Keywords
familial hypercholesterolemia, sex chromosome aneuploidy, population genetics, computational genomics

Research interests
Dr. Berry focuses on applying genome-first approaches in large, EHR-linked biobanks to understand the genetic architecture of human disease. He studies SCA to define how variation in X and Y chromosome dosage influences human traits and disease risk, including neurodevelopmental and cardiometabolic outcomes. Dr. Berry is also interested in the genetic basis of ASCVD, with an emphasis on identifying rare, monogenic contributors to severe dyslipidemia and refining risk stratification through integration of genomic and clinical data. Overall, his work aims to translate population-scale genomic insights into clinically meaningful advances in disease classification and precision medicine.

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ORCID
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Adam Buchanan
MS, MPH, CGC

Professor and **Chair**
Department of Genomic Health

Keywords
genetic counseling, cancer, genomic screening, cancer surveillance, implementation science

Research interests
Adam Buchanan has 20 years of research experience in assessing genetic counseling outcomes and cancer risk management behaviors. He has clinical expertise in genetic counseling among, and genomic screening for, individuals at increased risk of hereditary cancer and inherited cardiovascular disease. He is a master's-trained behavioral scientist who has completed mentored training in implementation science methodology at the National Cancer Institute. His research interests include implementation and outcomes of population genomic screening, genetic services delivery, risk management among individuals at increased of cancer and heart disease, and multi-cancer detection testing.

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ORCID
0000-0002-6518-2453

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Nick Byrd
MA, PhD

Assistant Professor of Cognitive Science
Department of Bioethics and Decision Sciences

Keywords
decision-making, learning science, survey methods (such as process tracing), statistics, open science, philosophy of science, dual process theory

Research interests
Dr. Byrd develops methods to improve decisions, education, science, and well-being. He studies how individuals, pairs of people and human-AI teams overcome reasoning errors, how people resolve dilemmas, how people overcome polarization and misinformation and how technology can help or hinder our goals.

Social media

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Eric Carruth
PhD

Assistant Professor
Department of Genomic Health

Keywords
cardiomyopathy, genetics, advanced cardiac MRI

Research interests
Dr. Carruth advances precision cardiovascular health through the study of lifestyle behaviors, clinical factors, and genetic risk in heritable cardiac disease. His interdisciplinary background spans cardiac mechanics, electrophysiology, medical imaging, computational modeling, and cardiac genetics. Dr. Carruth has contributed to the development of advanced cardiac MRI techniques and clarified genotype-phenotype relationships in arrhythmogenic cardiomyopathy using large-scale genomic datasets. Leveraging cross-institutional and internal collaborations, his work aims to inform precision clinical care and improve outcomes for individuals and families at risk for inherited cardiac conditions.

ORCID
0000-0001-8184-8676

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Geetha Chittoor
MSc, PhD

Bioinformatics Staff Scientist
Department of Population Health Sciences

Keywords
genetic epidemiology, genomics, bioinformatics, statistical genetics

Research interests
Dr. Chittoor specializes in applying advanced bioinformatic and statistical genetic tools to dissect the genetic architecture of complex traits in large family- and population-based cohort studies and consortia, including CHARGE, GIANT, MyCode, and TOPMed. Dr. Chittoor's work includes quantitative genetic analyses of family data using pedigree-based variance component techniques; statistical genetic approaches involving large-scale candidate-gene, genome-wide, resequencing, multi-omics, and epigenetic datasets; and the use of healthcare system–based EHR biobanks for common disease research. Her research maintains a strong global focus, investigating chronic diseases and biomarkers across European, Hispanic/Latino, American Indian, Asian and African-descent populations, with the goal of directly addressing health disparities in diverse U.S. populations.

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Antoinette DiCriscio PhD

Senior Staff Scientist
Department of Developmental Medicine

Associate Director
Center for Substance Use Research and Education (SURE)

Keywords

pediatrics, neurodevelopment, phenotyping, informatics, analysis, pupillometry

Research interests

Dr. DiCriscio's research focuses on the intersection of clinical informatics, pediatric health, and substance use, with particular emphasis on improving the identification, measurement, and documentation of cannabis exposure and related outcomes in clinical populations. She leverages large-scale EHR data, administrative datasets, and linked research databases to characterize patterns of use, assess phenotypic and functional outcomes and evaluate documentation practices across healthcare systems. Dr. DiCriscio's work integrates data science methods, including natural language processing and structured data harmonization, to enhance data quality and support learning health system approaches. Broadly, her research aims to inform evidence-based clinical guidelines, improve communication and documentation practices and advance health system strategies for addressing substance use in pediatric and neurodevelopmental populations.

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Jazmine Gabriel
PhD, MS, CGC

Staff Scientist
Department of Population Health Sciences

Keywords
implementation science, human-centered design, qualitative research methods, genomic medicine

Research interests
Dr. Gabriel integrates implementation science, qualitative methods and human-centered design to develop patient-centered healthcare innovations that address clinical challenges and improve patient outcomes. Dr. Gabriel draws on her background in clinical genetic counseling and doctoral training in philosophy to take a systems-oriented approach that examines the interplay between clinical effectiveness, the lived experiences of patients and clinicians and the practical realities of healthcare delivery. Her work spans oncology, cardiology and genomics, with a focus on improving clinical workflows, communication, and care delivery for individuals and families with inherited disease risk. Dr. Gabriel also collaborates on broader healthcare challenges that benefit from qualitative and mixed-methods approaches, including healthcare decision-making in the context of multiple comorbidities, life-stage informed care across the lifespan and counseling in settings of scientific uncertainty or limited evidence.

ORCID
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Hridya Gardner
PhD

Staff Scientist, Bioinformatics
Department of Developmental Medicine

Keywords
genomics, chronic disease, polygenic, genetic epidemiology, major depressive disorder, PCOS, cardiometabolic disease

Research interests
Dr. Gardner is a genetic epidemiologist interested in the genetic architecture of polygenic disorders, such as PCOS, type 2 diabetes, obesity and psychiatric conditions such as major depressive disorder, bipolar disorder, post-traumatic stress disorder and schizophrenia. She uses bioinformatics tools to analyze large-scale OMICs (genomic, methylome, transcriptome) data in conjunction with EHRs and longitudinal phenotype data to identify genetic and environmental factors influencing disease across the life course. Past research has also included investigations into the biopsychosocial factors affecting age at menarche, age at natural menopause and the development of cardiometabolic risk in PCOS.

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Samuel Gidding
MD

Professor
Department of Genomic Health

Keywords
cholesterol, HTN, epidemiology, pediatrics, cardiovascular risk, familial hypercholesterolemia

Research interests
Dr. Gidding is a professor in the Department of Genomic Health. His current research interests focus primarily on familial hypercholesterolemia. At Geisinger, he is pursuing genomic and implementation science approaches to identify undiagnosed cases and improve risk stratification. Dr. Gidding's longstanding interests in atherosclerosis development and HTN continue through projects focused on community-based identification of HTN, improving HTN control and incorporating genomics into early-life cardiovascular risk assessment.

ORCID
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Michael Gionfriddo
PharmD, PhD

Staff Scientist Senior
Center for Pharmacy Innovation and Outcomes

Keywords
pharmacy, qualitative, mixed methods, systematic review, shared decision making

Research interests
Dr. Gionfriddo is a pharmacist and health services researcher with expertise in evidence synthesis, qualitative and mixed methods and shared decision-making. Dr. Gionfriddo's research focuses on optimizing medication use and promoting patient-centered care through shared decision-making and minimally disruptive medicine.

ORCID
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Miranda Hallquist
MSc, CGC

Assistant Professor of Genetics and Genomics
Department of Genomic Health

Assistant Director of Research
Genetic Counseling Master's Program

Keywords
genetic counseling, implementation science, genomic screening

Research interests
Miranda L. G. Hallquist is a genetic counselor by training with over a decade of clinical practice in cancer genetics. Over the past 10 years, her career has progressed from direct clinical work with patients to supervisory leadership of a clinical team, and most recently to a research role as an assistant professor. Hallquist's research focuses on communication surrounding genetic testing and results, implementation of genomic screening and the characterization of clinical outcomes and experiences of individuals who receive actionable genomic screening results. She has a particular interest in leading research that supports the equitable expansion of access to genetic testing to guide clinical care recommendations and improve outcomes for individuals with genetic risk for disease.

ORCID
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Paul Han
MD, MA, MPH

Associate Professor
Department of Bioethics and Decision Sciences

Keywords
medical decision making, medical uncertainty, risk communication

Research interests
Dr. Han is an associate professor in the Department of Bioethics and Decision Sciences. His broad scientific interest is in risk communication and medical decision making, and his specific interest is in understanding and improving the communication and management of uncertainty in healthcare. He conducts both conceptual and empirical research, using both qualitative and quantitative methods, to examine the types of uncertainties experienced by clinicians, patients and the public; the strategies used to communicate and manage these uncertainties; and the goals and outcomes of these efforts. Dr. Han's past work has focused on understanding how people respond to uncertainty in various clinical contexts, including cancer prevention and treatment, genomic medicine and palliative and end-of-life care. His more recent work has focused on understanding what responses to uncertainty are appropriate from a normative standpoint, and how to promote "uncertainty tolerance" in medical practice and education.

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Jing Hao
PhD, MD, MS, MPH

Associate Professor
Department of Population Health Sciences
Department of Genomic Health

Keywords
health economics, economic evaluation, precision health, disease screening and prevention, disease risk prediction, genomic screening, cancer, cardiovascular disease

Research interests
Dr. Hao conducts research on health services and economic evaluation of healthcare programs designed to improve patient outcomes by promoting precision health in disease screening and prevention, particularly for cancer and cardiovascular disease. Dr. Hao's work includes economic evaluations of population genomic screening and risk-stratified disease screening, as well as EHR–based deep phenotyping and real-world data analysis for disease risk prediction. She also conducts cost analyses to estimate disease burden and assess the impact of clinical innovations on healthcare costs and utilization, and applies economic evaluation methods within implementation science to support local health system decision-making. Dr. Hao serves as a multi-PI, site PI, and co-investigator on NIH-funded R01 and U01 projects, as well as global collaborative and industry-funded studies.

ORCID
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Kirstie Herb Neff
PhD, LP

Staff Scientist and **Staff Psychologist**
Institute of Psychiatry and Behavioral Health
Department of Population Health Sciences

Keywords
obesity, eating disorders, food insecurity

Research interests
Dr. Herb Neff is a clinician-scientist with expertise in eating and weight-related conditions. Dr. Herb Neff's research focuses on improving the understanding and treatment of these conditions through mixed-methods research and meaningful patient engagement. Her current research program aims to optimize obesity treatment across the lifespan using behavioral science approaches. In particular, Dr. Herb Neff emphasizes addressing eating disorders and food insecurity within the context of obesity treatment to improve patient outcomes.

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Annemarie Hirsch
PhD, MPH

Director
Center for Community Environment and Health

Professor
Department of Population Health Sciences

Keywords

epidemiology, environment, surveillance, diabetes, cardiometabolic disease, Lyme disease, electronic health record-based research

Research interests

Dr. Hirsch is an epidemiologist and the director of the Geisinger–Johns Hopkins Bloomberg School of Public Health Center for Community Environment and Health, where research focuses on how social, socioeconomic, built and natural environments, including extreme weather events, influence human health and inform healthcare and community-based interventions. With nearly two decades of experience using electronic health record (EHR) and geospatial data, she has advanced methods for studying social and environmental determinants of health and for disease surveillance. Dr. Hirsch recently served as co-PI and co-chair of the CDC-funded Diabetes LEAD Network, a first-of-its-kind multicohort collaboration examining neighborhood pathways to Type 2 diabetes. Dr. Hirsch is the PI of the CDC-funded Innovative Cardiovascular Disease Program and works on multiple federally funded networks developing EHR-based strategies for disease surveillance. Her research is funded by the CDC, NIH institutes and industry.

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0000-0001-7699-2171

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Bobbie Johannes
PhD, MPH

Assistant Professor
Department of Population Health Sciences

Keywords
rural health disparities, primary care continuity, preventive screening, social determinants of health, health-related social needs

Research interests
Dr. Johannes conducts research aimed at addressing rural health disparities through primary care delivery and prevention. Dr. Johannes investigates how continuity of care and patient–clinician relationships influence screening and management of conditions such as prediabetes, hypertension and colorectal cancer, particularly in underserved rural populations. A central component of her work examines health-related social needs and social determinants of health—including housing, transportation, and social support—and their effects on chronic disease outcomes and access to care. By leveraging electronic health record data, geospatial analyses and mixed-methods approaches, Dr. Johannes aims to inform evidence-based interventions that strengthen primary care systems and reduce inequities in population health.

ORCID
0000-0002-1649-7141

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Anne Justice
PhD, MA

Associate Professor
Department of Population Health Sciences

Keywords
genetics, bioinformatics, epidemiology, obesity, sleep, cardiometabolic disease

Research interests
Dr. Justice is an associate professor at Geisinger in the Department of Population Health Sciences. Dr. Justice applies expertise in genetic epidemiology, anthropological genetics, and bioinformatics to integrate bio-cultural, genetic, and public health perspectives in studying the genomic underpinnings of complex disease risk across the life course. Her team develops and refines EHR–derived complex disease traits for genomic discovery, with a focus on obesity and cardiometabolic diseases. Dr. Justice is actively involved in multiple national and international consortia, including GIANT, CHARGE, ORAcLE, the PCOS Consortium and TOPMed. Through these collaborations, Dr. Justice investigates how genetic, other 'omic and environmental factors jointly influence complex disease risk in diverse global populations.

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H. Lester Kirchner
PhD

Professor and **Chair**
Department of Population Health Sciences

Keywords
biostatistics, predictive modeling, comparative effectiveness trials, EHR

Research interests
Since joining Geisinger, Dr. Kirchner has served as senior biostatistician in the Medicine Institute, chaired the Institutional Review Board (2011–2022, 2025–present), and served on multiple committees, including the GCHS Appointment and Promotion Committee. He also serves as co-faculty advisor for the Geisinger Program Evaluation team. In January 2020, Dr. Kirchner was appointed chair of the Department of Population Health Sciences, a multidisciplinary group of epidemiologists, biostatisticians and health services researchers. His training is in biostatistics, with experience analyzing EHR, longitudinal and observational data, and designing pragmatic clustered randomized trials. Dr. Kirchner applies these methods to diabetes surveillance, familial hypercholesterolemia screening and pediatric obesity research. He is the site PI for the PaTH Clinical Data Research Network (PCORnet) and co-project lead for Geisinger's Health System Implementation Initiative, serving as a dual PI on an Oncology ePROs project.

ORCID
0000-0002-2557-6749

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Stephanie Kraft
JD

Associate Professor
Department of Bioethics and Decision Sciences

Keywords
bioethics, research ethics, informed consent, qualitative methods, community engagement, pediatrics

Research interests
Stephanie Kraft conducts research on ethical issues in clinical and translational research and the clinical implementation of biomedical technologies. Kraft's overarching aim is to better align clinical and research practices with patient, participant and community values and real-world needs. To achieve this, she uses a combination of empirical social science methods and conceptual analyses. Her areas of focus include improving communication during informed consent and assent, evaluating the balance of risks and benefits in pragmatic clinical trials, and engaging patients, families, and communities around the potential use of health technologies, including genomics, digital health, and AI.

ORCID
0000-0002-2862-7601

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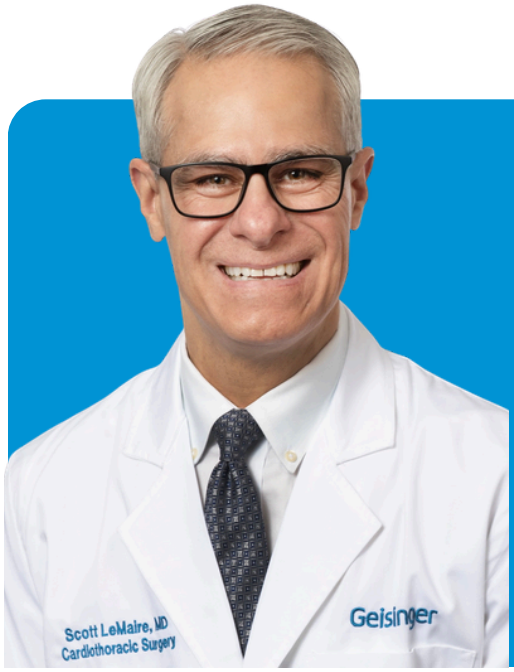
Max Kramer
PhD

Assistant Professor and **Clinical Ethicist**
Department of Bioethics and Decision Sciences

Keywords
clinical ethics, bioethics, emotions, surrogate decision-making

Research interests
Dr. Kramer's work focuses on clinical ethics, bioethics and the philosophy of psychiatry, drawing on an empirically informed philosophical approach. Dr. Kramer is particularly interested in the relationship between emotions and reasoning, especially in the context of medical decision-making, including surrogate decision-making. Much of his recent scholarship is informed by cases encountered through his practice on the Clinical Ethics Advice and Consultation Service across the health system. He also contributes to collaborative empirical research that incorporates a strong normative and ethical dimension.

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Scott LeMaire
MD

Associate Chief Scientific Officer, Geisinger
Associate Dean for Research, GCHS
Professor of Cardiothoracic Surgery

Chair, Department of Investigational Medicine

Keywords
aortopathy, aortic aneurysm, aortic dissection, thoracic aortic surgery

Research interests
Dr. LeMaire's research focuses on outcomes after thoracic aortic repair, prevention of perioperative complications, genetic factors in aortic disease and the pathobiology of aortic wall degeneration. Dr. LeMaire has a long-standing interest in analyzing outcomes following aortic surgery and has led randomized clinical trials comparing techniques to prevent ischemic complications. In 2002, he founded the Thoracic Aortic Disease Tissue Bank at Baylor College of Medicine, which includes samples and phenotypic data from more than 4,500 patients and supports numerous collaborative studies on thoracic aortic aneurysms and dissections. Working with the Aortic Disease Research Laboratory, Dr. LeMaire applies a bedside-to-bench approach to identify disease mechanisms and potential pharmacologic targets through patient tissue analysis and animal models.

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Qianqian Liang
PhD

Staff Scientist Bioinformatics
Department of Population Health Sciences

Keywords
genetic epidemiology, machine learning, variant prioritization, scoliosis, sleep apnea, obesity

Research interests
With training in human genetics, machine learning, and bioinformatics, Dr. Liang's, research interests focus on characterizing the genetic architecture of complex musculoskeletal and cardiometabolic traits, including scoliosis, hypermobility, sleep apnea and obesity. Leveraging population-scale biobank resources such as Geisinger's MyCode® Community Health Initiative, Dr. Liang applies statistical genetics and computational methods to integrate genomic, phenotypic and longitudinal clinical data to better understand disease etiology and heterogeneity. Dr. Liang's prior work has involved developing tools to prioritize functional non-coding variation across common diseases, with an emphasis on translating genomic signals into biological insight. Her long-term goal is to build integrative and scalable frameworks that combine multimodal EHR data—such as imaging and clinical text—to improve disease characterization, risk prediction and ultimately advance clinical care.

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Christa L. Martin
PhD, FACMG

Chief Scientific Officer, Geisinger

Vice Dean for Research, GCHS

Professor, Departments of Developmental Medicine and Genomic Health

Keywords
precision health, genomic medicine, developmental brain disorders, copy number variation, laboratory genomics

Research interests
Dr. Martin is a human geneticist and board-certified clinical genetics laboratory director whose research focuses on the rapid translation of genomic technologies and research discoveries into clinical care. Dr. Martin's work includes identifying and characterizing genomic variants in individuals with neurodevelopmental and neuropsychiatric disorders, such as autism, intellectual disability, epilepsy and schizophrenia. Her research aims to determine the frequency of these variants, understand their disease mechanisms, correlate genotype with phenotype through broad data sharing and improve patient outcomes. A second major focus of Dr. Martin's research is the broader application of genomics in healthcare, with an emphasis on integrating, interpreting and maximizing the clinical utility of genomics within precision health initiatives, with the goal of incorporating genomics into routine clinical practice.

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ORCID
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Carly McCabe
PhD, MS

Staff Scientist
Department of Population Health Sciences, Center for Women's and Children's Research,
Center for Obesity and Metabolic Research

Keywords
environmental epidemiology, nutritional epidemiology, life-course science, developmental origins of health and disease

Research interests
As an environmental epidemiologist and biochemical and molecular nutritional scientist, Dr. McCabe's research agenda prioritizes a life course perspective. Her current research and vision for the long-term center around examining "exposures" broadly—as those through one's environment, like chemicals or diet—and their relationship with the developmental origins of health and disease in early life and across the lifespan.
Dr. McCabe's work is heavily influenced by the population health framework that aims to integrate family and individual engagement and empowerment, care delivery and community systems. She is deeply invested in a multidimensional approach to research that considers the social, behavioral, physiological and environmental determinants of health.

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Scan for publications



Michelle N. Meyer
PhD, JD, HEC-C

Chief Bioethics Officer, Geisinger

Chair and **Associate Professor**, Department of Bioethics and Decision Sciences

Faculty Co-Director, Behavioral Insights Team

Keywords
research ethics, bioethics, surveys, experiments, decision science, nudges

Research Interests
Dr. Meyer's research falls into four broad methodological areas with cross-cutting themes. First, Dr. Meyer uses survey experiments, qualitative methods and retrospective data analysis to study stakeholder judgment and decision-making related to medicine, science and technology. Recent work has examined beliefs, moral attitudes and behavioral intentions regarding polygenic scores, randomized experiments, unproven medical interventions, health AI and polygenic embryo selection. Second, she leads pragmatic trials of nudges and other behavioral science-informed, patient- and provider-facing interventions to improve health outcomes and access; this research can often also be described as implementation science or health services research. Recent and current trials have targeted vaccination, cancer screening, hypertension management and AI-assisted "precision" nudging. Third, Dr. Meyer conducts empirical legal research analyzing laws and regulations across jurisdictions. Fourth, she conducts normative scholarship exploring ethical, legal and policy dimensions of topics like medical research and learning health system activities, genetics and genomics, AI, clinical care and public health.

Website
michellenmeyer.com

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Tooraj Mirshahi
PhD

Professor
Department of Genomic Health

Keywords
precision medicine, AI-enabled disease modeling, genetics, chronic liver disease, kidney disease, aortopathies

Research interests
Dr. Mirshahi is a professor in the Department of Genomic Health at Geisinger, where he leads a multidisciplinary precision medicine research program that applies advanced methods, including AI and machine learning. His work integrates genomic, metabolomic, imaging and longitudinal EHR data to develop multimodal predictive frameworks, with a central focus on cardiometabolic, cardiovascular and kidney disease. His portfolio includes population-scale CT imaging AI for automated anatomical segmentation, enabling tasks such as aortic aneurysm detection across over 1 million CT images, multi-omic biomarker discovery in chronic liver disease, and rare-variant and polygenic risk analyses in kidney and cardiovascular diseases. His research is deeply transdisciplinary and focuses on clinical translation. He is PI and co-PI on multiple NIH-funded projects leveraging Geisinger's EHR and genomic biobank (MyCode/DiscovEHR).

ORCID
0000-0002-0754-3820

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Uyenlinh Mirshahi
PhD

Assistant Professor
Department of Genomic Health

Keywords
genetic risk scores, machine learning, EHR data modeling, diabetes, type 1 diabetes screening, autoimmune conditions, population screening

Research interests
Dr. Mirshahi is an assistant professor in the Department of Genomic Health. Dr. Mirshahi's research focuses on understanding how genomics influences rare and common diseases to elucidate disease etiology and identify at-risk populations. Leveraging Geisinger's MyCode resources, her long-term goal is to translate genomic insights into clinical practice to improve patient surveillance, quality of care and outcomes. With a background in molecular biology and more than 15 years of experience in translational research, bioinformatics, statistical genetics, and big data analysis, Dr. Mirshahi brings a broad skill set to this work. Her research centers on the genetic contributions to metabolic diseases and diabetes, including studies of monogenic diabetes penetrance to inform genetic counseling and screening, investigations of adult-onset Type 1 diabetes and analyses of how polygenic risk interacts with rare monogenic forms.

Social media

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0000-0003-4972-5451

Scan for publications



Ana Morales
MS, CGC, LGC

Associate Professor
Department of Genomic Health

Keywords
cardiovascular genetics and genomics, genetic counseling, implementation science

Research interests
Ana Morales' research focuses on cardiovascular genetics and genetic counseling, particularly the clinical adoption of genetic testing for cardiomyopathy and familial hypercholesterolemia. Morales studies phenotype characterization, variant interpretation and real-world implementation of genetic testing in clinical care.
She applies implementation science methods to design, evaluate and scale evidence-based interventions. While her clinical expertise is grounded in cardiovascular genetics, Morales's methodological approach is broadly applicable, and she collaborates across clinical and research specialties to support the translation of evidence into routine practice.

Social media

ORCID
0009-0004-3493-0895

Scan for publications



Michelle Nixon
PhD

Biostatistician
Department of Population Health Sciences

Keywords
statistics, uncertainty quantification, decision theory, statistical data privacy

Research interests
Dr. Nixon is a statistician with broad interests in applied problems, including genomics, health economics, laboratory medicine, and sequence count data analysis.
Dr. Nixon particularly enjoys projects involving uncertainty quantification, unmeasured bias, uncertainty in decision-making and statistical data privacy.

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Matthew Oetjens
PhD

Associate Professor
Department of Developmental Medicine

Keywords
genetics, neurodevelopmental disorders, Turner syndrome, Klinefelter syndrome, cholesterol, sex differences

Research interests
Dr. Oetjens' research centers on studying individuals with genetic disorders and how their health outcomes differ from those of the general population. Dr. Oetjens' work at Geisinger has shown that many individuals with medically significant genetic variants are underdiagnosed, undertreated and at high risk for developing preventable disease. His research uses genetic and epidemiological analyses to evaluate disease risks associated with genetic disorders. One aim of this work is to identify the benefits of genetic diagnosis and areas where genetic information can improve patient care. A second aim is to integrate clinical and genetic data to enhance disease risk stratification and inform care. Dr. Oetjens leads research in familial hypercholesterolemia and sex chromosome aneuploidies and also collaborates with clinicians and scientists within developmental medicine to study the genetic causes of neuropsychiatric disorders.

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ORCID
0000-0003-0955-9356

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Anthony Olson
PharmD, PhD, FAPhA

Associate Professor
Department of Investigational Medicine
Department of Pharmacy
Center for Pharmacy Innovation and Outcomes
Center for Kidney Health Research

Keywords
practice-based research, medication use process, person-centered care, mixed methods

Research interests

Dr. Olson is an associate professor with appointments in the Departments of Investigational Medicine and Pharmacy of Geisinger's COHS. He is also the Associate Director of Geisinger's Center for Pharmacy Innovation and Outcomes. Dr. Olson's T3/T4 translational research investigates team-based, person-centered care approaches and interventions for tailoring outpatient pharmacist care and services to optimize the medication use process. His work has been supported by the AHRQ, the CDC Foundation, the HRSA, and the NIH. He is a fellow of the APhA, where he's served as an officer and executive committee member for the Academy of Pharmaceutical Research & Science as well as associate editor for the *Journal of the American Pharmacists Association*.

Social media

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Melissa Poulsen
PhD, MPH

Associate Professor
Department of Population Health Sciences
Center for Community Environment and Health

Keywords
environmental epidemiology, implementation science, qualitative research, community engagement, EHR data, environment, substance use disorders, Lyme disease

Research interests
Dr. Poulsen conducts research that advances population health through the integration of EHR-based epidemiology, qualitative and mixed-methods research and community-engaged care design. Her work examines how environmental, community, social and clinical factors jointly shape health outcomes, including the roles of the built, natural and socioeconomic environment, as well as extreme weather exposures. She leverages large-scale EHR data to characterize patterns of care and health outcomes, and to support disease surveillance, including for conditions such as Lyme disease. Her research pairs these analyses with qualitative and mixed methods approaches to understand the contexts and lived experiences underlying observed patterns. She emphasizes translating insight into action through stakeholder-engaged, patient-centered intervention design, particularly in areas such as substance use disorder treatment and maternal health. By combining rigorous epidemiologic analysis with community-engaged implementation strategies, her work aims to develop scalable solutions that improve care delivery and outcomes.

Social media

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0000-0002-5915-371X

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Apoorva Milind Pradhan

BAMS, MPH

Staff Scientist Senior
Center for Pharmacy Innovation and Outcomes
Department of Pharmacy

Keywords

health economics & outcomes research, real-world evidence & EHR Analytics, comparative effectiveness & implementation science, machine learning & predictive modeling in healthcare, pharmacoepidemiology & health services research

Research interests

Dr. Pradhan's research focuses on health economics and outcomes research, leveraging real-world data to evaluate healthcare interventions, policies, and system-level innovations. Dr. Pradhan's work integrates comparative effectiveness research, implementation science and advanced analytics—including machine learning and natural language processing—to generate actionable insights from electronic health records and claims data. She is particularly interested in cost-effectiveness modeling, pharmacoepidemiology and the impact of clinical and policy interventions on quality, utilization and cost of care. Her research aims to inform evidence-based decision-making and improve healthcare delivery and patient outcomes at scale.

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Katrina Romagnoli
PhD, MS, MLIS

Associate Professor
Department of Population Health Sciences

Keywords
biomedical informatics, clinical informatics, human-centered design, qualitative research, pharmacy informatics, genomics

Research interests
Dr. Romagnoli's research centers on applying human-centered design and design thinking methodologies to address complex healthcare challenges. Dr. Romagnoli prioritizes user needs while integrating scientific and design approaches, including qualitative and mixed methods, to inform a wide range of clinical informatics problems. Her work involves developing a deep understanding of current systems, clearly defining problems and identifying opportunities for improvement and innovation. By leveraging both scientific rigor and design practice, Dr. Romagnoli leads and collaborates with multidisciplinary teams to develop solutions that exceed individual efforts and are guided by rich qualitative insights.

ORCID
0000-0001-8473-2126

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Kate Saylor
PhD

Assistant Professor of Bioethics and Health & Research Policy
Department of Bioethics and Decision Sciences
Department of Genomic Health

Keywords
cost-effectiveness analysis, value of population screening, fairness, health equity, genetic screening, hereditary breast and ovarian cancer

Research interests
Dr. Saylor's research focuses on evaluating the value of population screening to improve long-term health outcomes and reduce health disparities related to unequal access to early intervention. Dr. Saylor primarily uses published and publicly available data to develop simulation models that estimate the long-term health benefits, costs and cost-effectiveness of genetic screening. She is particularly interested in how screening impacts different population subgroups and how best to communicate the value of screening. Her work also examines patient-level factors associated with completing genetic testing or screening using quantitative analyses of health records and survey data, including regression-based approaches to identify predictors of screening uptake.

Social media

ORCID
0000-0002-7092-7739

Scan for publications



Juliann Savatt
MS, CGC

Assistant Professor and **Co-director MyCode Genomic Screening and Counseling program**
Department of Genomic Health

Keywords
genomics, population screening

Research interests
Juliann M. Savatt's research focuses on using genomic and health data from patients and population cohorts to advance understanding of genomic conditions and improve care for patients and their families. Savatt completed her MS in Genetic Counseling at the University of North Carolina at Greensboro and has practiced as a certified genetic counselor in cancer and pediatric neurodevelopmental clinical settings. She is an assistant professor in the Department of Genomic Health at Geisinger and co-directs the Geisinger MyCode Community Health Initiative Genomic Screening and Counseling Program, which returns clinically actionable results to participants. Ms. Savatt's research centers on evaluating outcomes of population-based genomic screening, establishing variant prevalence, penetrance and expressivity for Mendelian conditions, and enabling patient-centered data sharing through patient registries.

Social media

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0000-0001-6444-1962

Scan for publications



Lena Schaefer
PhD

Staff Scientist
Behavioral Insights Team

Keywords
behavioral science, cognitive psychology, judgment and decision making, behavioral economics

Research interests
Dr. Schaefer is a staff scientist on the Behavioral Insights Team with a background in statistical modeling, psychology and behavioral economics. Dr. Schaefer's work focuses on the cognitive mechanisms underlying decision-making, particularly in contexts involving risk and persistence. Her training enables her to conduct rigorous research that translates behavioral science into impactful, scalable interventions by integrating insights from psychology, behavioral economics and public health to improve health outcomes.

ORCID
0000-0001-8607-5094

Scan for publications



Brian S. Schwartz
MD, MS

Professor, Environmental Health & Engineering, Epidemiology, and Medicine, Johns Hopkins Bloomberg School of Public Health & School of Medicine

Professor, Department of Population Health Sciences, Geisinger

Keywords

built environment, diabetes epidemiology and surveillance, environmental epidemiology, environmental health sciences, health effects of extreme weather, Lyme disease, natural environment

Research interests

Dr. Schwartz is a physician (board-certified in Internal Medicine and Occupational and Environmental Medicine), epidemiologist and environmental health scientist. Dr. Schwartz is a co-director of the Geisinger CCEH. He has been working on environmental epidemiologic studies using EHRs since 2007, when he helped to establish the predecessor of the CCEH. Dr. Schwartz and his team have used EHR data to identify a range of health conditions, including asthma exacerbations, congestive heart failure hospitalizations, chronic rhinosinusitis, infectious diseases, and other pulmonary and cardiovascular diseases. They have linked these health outcomes to a variety of community and environmental conditions, including air pollution; natural, social, and built environments; temperature, precipitation, and humidity; unconventional natural gas development; and industrial animal operations. The CCEH now has over 90 peer-reviewed publications. The work has received grants from the NIH, CDC, the Pennsylvania Department of Health, and foundations (e.g., Robert Wood Johnson, Steven and Alexandra Cohen, Degenstein).

Website

Brian Schwartz | Johns Hopkins | Bloomberg School of Public Health

ORCID

0000-0002-0739-9865

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Hermela Shimelis
PhD, MS

Staff Scientist
Department of Developmental Medicine

Keywords
research, clinical

Research interests
Dr. Shimelis focuses on translational research to improve patient outcomes, leveraging large-scale clinical and genomic datasets to better understand disease mechanisms, refine patient stratification, and identify opportunities for earlier diagnosis and personalized care. Dr. Shimelis is particularly interested in applying quantitative and computational approaches to integrate and analyze complex biomedical data and translate these findings into clinically actionable insights. Her work informs therapeutic development and clinical decision-making across a range of disease areas, including neurodevelopmental disorders, cardiovascular disease, obesity and cancer.

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ORCID
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Diane Smelser
PhD

Staff Scientist Senior
Department of Genomic Health

Keywords
genetic epidemiology, MyCode/DiscovEHR studies, population genetics, study design, rare variant analysis, GWAS / PheWAS, bioinformatics

Research interests
Dr. Smelser is a staff scientist working in genomics, bioinformatics and clinical data science. Dr. Smelser's research centers on using data from the MyCode biobank and EHRs to better understand the genetics of complex diseases. Her work includes genetic association analyses such as GWAS and PheWAS, rare-variant analysis, phenotype development and cohort and case/control analyses. Dr. Smelser works closely with clinical collaborators across cancer, vascular and surgical specialties to help translate genomic findings into clinically meaningful insights and supports study design, analysis and manuscript development.

ORCID
0000-0002-3925-8864

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Cora Taylor
PhD

Associate Professor
Department of Developmental Medicine

Keywords
developmental disabilities, autism, genetics, psychology, behavioral health

Research interests
Dr. Taylor's research focuses on advancing the assessment and understanding of neurodevelopmental disorders, including autism spectrum disorder, intellectual disability and related behavioral phenotypes. Dr. Taylor has clinical training grounded in gold-standard diagnostic practices and continues to provide evaluations as a clinical psychologist while leading and contributing to large-scale research initiatives. Her work emphasizes the integration and refinement of phenotypic assessment methods, particularly in the context of rare genetic conditions. Dr. Taylor serves as PI for a national research registry and has collaborated on multiple federally funded projects that apply dimensional approaches to mental health and neurodevelopment. These efforts include multi-site collaborations designed to harmonize phenotypic data collection and promote integration across research, clinical and operational domains.

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Vanessa Troiani
PhD

Director
Center for Substance Use Research & Education

Associate Professor
Department of Developmental Medicine

Keywords
EHR phenotyping, psychiatric genetics, substance use disorders, neurobiology, informatics

Research interests
Dr. Troiani's research focuses on understanding the trans-diagnostic phenotypic architecture of brain disorders, with an anatomical emphasis on vision and reward stimulus-processing pathways. Dr. Troiani's laboratory applies neuroscience methods to large-scale data using approaches such as EHR data mining and scalable neurobiological assessments, including pupillometry and brain imaging features. Her work includes developing and harmonizing biomarker pipelines for brain imaging, visual assessment and individual-difference phenotyping across diverse populations. Overall, Dr. Troiani's research addresses clinically relevant questions across multiple domains with the goal of improving patient diagnosis and treatment through a deeper understanding of underlying biological mechanisms.

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Michelle Truong
PhD, MPH

Postdoctoral Fellow
Department of Population Health Sciences
Center for Community Environment and Health

Keywords
health services research, epidemiology, health policy, behavioral health

Research interests
Dr. Truong's training and background are in health services research, epidemiology, and health policy. Her research interests include social, structural and health system factors that influence health outcomes, access to care and service utilization. Dr. Truong is interested in integrating diverse data sources, including EHRs, surveys, geospatial, qualitative and population-level data, to better understand and improve interventions and health care delivery. Her current projects focus on substance use prevention and treatment, Lyme disease surveillance, environmental exposures, and rural health policy.

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Ryley Uber
PharmD

Pharmacogenomics Program Director
Enterprise Pharmacy

Assistant Professor
Center for Pharmacy Innovations and Outcomes
Department of Investigational Medicine

Keywords
pharmacogenomics, pharmacogenetics, precision medicine, pharmacy, genomics, clinical informatics

Research interests
Dr. Uber's research centers on the clinical implementation and health system integration of pharmacogenomics to optimize medication therapy, particularly for populations with complex comorbidities and high medication burden. Dr. Uber is especially focused on leveraging pharmacogenomic testing to improve outcomes for patients with major depressive disorder who have failed prior treatments, as well as for aging populations. His work aims to generate real-world evidence that supports sustainable models for precision medicine adoption, reduces adverse drug reactions, enhances medication effectiveness and informs payer strategies through cost-effectiveness and value-based care frameworks.

Social media

ORCID
0000-0003-0448-7584

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Erin VanEnkevort PhD

Assistant Professor
Department of Population Health Sciences

Keywords
dyadic data, well-being, interpersonal relationships, community-engaged, child maltreatment, protective factors

Research Interests
Dr. VanEnkevort's research examines how interpersonal relationships shape health outcomes across individual, family and community contexts. Trained as an experimental psychologist with a quantitative focus, Dr. VanEnkevort studies how relational quality influences well-being, with particular attention to health trajectories within families. In addition to this work, she is engaged in community-based research aimed at translating evidence into practice. This includes leading clinical initiatives that integrate healthcare and community responses to prevent child maltreatment and strengthen protective factors for families through coordinated, data-driven approaches. Dr. VanEnkevort's overarching goal is to advance relational and community-engaged frameworks that promote improved health, resilience and equity.

ORCID
0000-0003-3133-9480

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Emily Van Syoc
MS, PhD

Staff Scientist
Department of Genomic Health

Keywords
cardiogenetics, cardiomyopathy, arrhythmias

Research interests
Dr. Van Syoc is a staff scientist in the Carruth group, where their research focuses on understanding the genetic basis of cardiac disease in population-scale cohorts, identifying early manifestations of disease in individuals with genetic risk and determining how clinical and lifestyle factors influence disease expression. In the Carruth group, Dr. Van Syoc leverages large, deeply phenotyped resources—including MyCode, the UK Biobank and All of Us—to study these relationships at scale. In parallel, they use advanced cardiac imaging to detect subtle, subclinical changes in individuals who carry disease-associated variants but do not yet exhibit observable clinical phenotypes. Their long-term goal is to improve risk stratification and inform disease management strategies for individuals and families with inherited risk for cardiovascular disease.

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ORCID
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Marc Williams
MD

Professor and **Director Emeritus**
Department of Genomic Health

Keywords
genomics, genetics, informatics, implementation science, economics of healthcare delivery

Research Interests
Dr. Williams is a board-certified clinical geneticist and clinical informaticist who brings a strong clinical perspective to genomics and precision medicine research. Dr. Williams has led studies that integrate genomic and phenotypic data for both discovery and clinical implementation, including during his more than 8 years as director of the Genomic Medicine Institute. He led the National Human Genome Research Institute's participation in the NIH Dissemination and Implementation initiative, culminating in a national workshop on individualized medicine. Dr. Williams has extensive experience leading and collaborating with multidisciplinary, multi-center teams across academic medicine, government and industry. His recent work in the Department of Genomic Health applies implementation science to evaluate precision health outcomes and advance learning health systems, including projects using large language models and other AI approaches to extract phenotypes from EHR data and enable in silico, indication-based genetic analysis.

Social media

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Alexandra Winters
PhD

Staff Scientist Bioinformatics
Department of Developmental Medicine

Keywords
genomic data analysis, population biobanks, familial hypercholesterolemia, cardiomyopathy

Research interests
Dr. Winters' research focuses on leveraging large-scale genomic and EHR data to investigate the genetic architecture of cardiovascular and metabolic disease and evaluating ancestry-related differences in rare and common variant associations.

Social media

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Matthew Woll
PhD, MBA

Staff Scientist
Center for Substance Use Research and Education

Keywords
health systems research, translational research, pharmacology, medical marijuana, cannabis

Research interests
Dr. Woll's current research focuses on substance use within the healthcare system, with particular emphasis on cannabis-related documentation in EHRs, associated clinical outcomes, and policy-relevant aspects of patient use. Dr. Woll is especially interested in leveraging real-world data to generate clinically actionable insights, including the integration of pharmacologic, genomic, and documentation-based data. Dr. Woll values meaningful collaborations and views interdisciplinary partnerships as a pathway to innovative and impactful discoveries.

ORCID
0009-0005-5598-4857

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Eric Wright
PharmD, MPH

System Director
Department of Pharmacy

Professor
Department of Investigational Medicine

Keywords
pharmacy, pharmacy services, medication use, heart failure, opioid use disorder, adverse drug events, mixed methods, implementation science, evaluation, pragmatic clinical trials

Research interests
Dr. Wright is a pharmacist and health services researcher whose work focuses on improving medication use through advanced pharmacy services, behavioral nudges and care redesign. Dr. Wright applies implementation science approaches to translate evidence into routine clinical practice and evaluates outcomes using mixed-methods research, pragmatic trials and observational studies based on EHR and claims data.

Social media

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Women & Children's Institute



Justin Azar
MD

Pediatric Critical Care Medicine Physician and
Clinical Informatician
Department of Pediatrics

Keywords
pediatrics, PICU, critical care, informatics, implementation

Research interests
Dr. Azar has research interests at the intersection of pediatric critical care, clinical informatics, and implementation science. Dr. Azar focuses on embedding evidence-based practices into sustainable workflows to improve care delivery and the provider experience, with particular attention to sepsis recognition and management, ICU liberation and the care of patients requiring chronic ventilation.

Social media

ORCID
0000-0003-2209-9817

Scan for publications



Robin Craig
DO

Attending, Pediatric Critical Care
Department of Pediatric Critical Care

Pediatric Clerkship Director
Central Region

Keywords
simulation, pediatric resuscitation, education

Research interests
Dr. Craig's research focuses on the use of simulation-based education and human factors–informed interventions to improve performance during high-risk, low-frequency pediatric resuscitation events. Dr. Craig is particularly interested in how structured cognitive aids, digital documentation tools and shared visual displays can enhance adherence to PALS algorithms, improve documentation accuracy, and reduce clinician cognitive load. Through *in situ* simulation, her work seeks to better understand the cognitive and workflow challenges faced by multidisciplinary pediatric resuscitation teams and to evaluate educational and technological strategies that promote situational awareness; team communication; and consistent, guideline-based care. Ultimately, this research aims to translate simulation-driven insights into real-world improvements in resuscitation education, team performance and patient safety.



A. Dhanya Mackeen
MD, MPH, CPE

Professor of Obstetrics and Gynecology

Director of Quality and Safety (GMC)

Assistant Chair of Research and Academic Affairs, WOCHI

Keywords
MFM, OB

Research interests
Dr. Mackeen is a professor of obstetrics and gynecology at GCSOM. Dr. Mackeen's research focuses on improving maternal and infant health outcomes through evidence-based clinical practice. She has an established track record in developing best practices for the care of pregnant patients. Her research includes promoting appropriate gestational weight gain to reduce pregnancy morbidity, decreasing postpartum opioid use, reducing wound complications after cesarean delivery, lowering infectious morbidity in prelabor rupture of membranes, and optimizing evaluation of growth-restricted fetuses to reduce fetal loss. Dr. Mackeen is an editor for *American Journal of Obstetrics and Gynecology Maternal-Fetal Medicine* and the *American Journal of Medical Quality*. She also directs OB-GYN residency and maternal-fetal medicine fellowship research curricula focused on advancing trainee engagement and improving patient outcomes.

ORCID
0000000273982063

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Scott Myers
MD

Neurodevelopmental Pediatrician
Professor of Pediatrics
Department of Developmental Medicine

Keywords
neurodevelopmental disorders, autism, intellectual disability, cerebral palsy, motor speech disorders, genetics, genomics

Research interests
Dr. Myers' research focuses on advancing understanding of neurodevelopmental disorders and the role of genomic variation in typical and atypical development, with the goal of improving outcomes for affected individuals. Dr. Myers participates in collaborative research using both phenotype-first and genetics-first approaches to elucidate relationships between genetic changes and clinical features. His work uses phenotype-first strategies to study the epidemiology, natural history and genetic architecture of conditions such as autism spectrum disorder, cerebral palsy, intellectual disability and motor speech disorders. Genetics-first approaches in his research involve detailed characterization of cognitive, behavioral and medical phenotypes in individuals with known pathogenic variants.
Dr. Myers' research emphasizes the impact of deleterious rare variants, including copy number variants, sequence variants and aneuploidies, and examines how background rare variation and polygenic risk influence phenotypic expression.

ORCID
0000-0001-7614-6338

Scan for publications



Matthew Nelson
DO, FAAP

Core Faculty, Pediatric Residency

Associate Professor of Pediatrics
Department of Pediatrics

Keywords
familial hypercholesterolemia, lipids, implementation science, preventative health, Type 1 diabetes screening, Type 1 diabetes, general pediatrics, newborn

Research interests
Dr. Nelson's research focuses on translating evidence-based screening programs for under-recognized/underdiagnosed heritable and chronic diseases from specialty settings into primary care within integrated health systems. Dr. Nelson works with implementation science teams focused on population health and early screening strategies, with the goal of maximizing generalizability. Central themes of his research have been familial hypercholesterolemia and Type 1 diabetes auto-antibody detection; and how to improve system healthcare delivery. His work examines barriers and facilitators that shape acceptability, appropriateness, and feasibility to patients, clinicians and health insurers.

ORCID
0009-0004-2163-435X

Scan for publications



Michael J. Paglia
MD, PhD

Associate Designated Institutional Official and
Associate Professor, MFM
Clinical Education Institute
WOCHI

Keywords
graduate medical education, pregnancy, diabetes, HTN, obstructive sleep apnea

Research interests
Dr. Paglia holds multiple roles at Geisinger, and his research interests are equally diverse. The bulk of his research has been in the area of high-risk pregnancy, including the impact of diabetes, sleep problems and hypertensive disorders on pregnancy outcomes.
Dr. Paglia also participates in research related to graduate medical education. He works primarily with fellows and residents, providing them mentorship and guidance on their projects.

ORCID
0009-0008-8817-6014

Scan for publications



Karina Phang
MD, MPH, FAAP

Assistant Professor
Department of Pediatrics
Department of Investigational Medicine

Keywords
pediatric medication safety, dosing errors

Research interests
Dr. Phang has clinical and academic interests focused on delivering high-value pediatric care in primary care settings and improving pediatric medication safety. Dr. Phang has clinical expertise in general pediatrics, pediatric hospital medicine and pediatric quality improvement science. Her research centers on pediatric medication stewardship, with particular emphasis on high-risk medications such as opioids, as well as commonly prescribed medications including antibiotics and over-the-counter therapies.
Dr. Phang is especially interested in identifying and reducing dosing errors and inappropriate medication prescribing in pediatric populations.

ORCID
0009-0009-4504-5396

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Jagadeesh Ramdas
MD

Director, Pediatric Hematology/Oncology
Department of Pediatrics

Hematology/Oncology
Geisinger Janet Weis Children's Hospital

Keywords
pediatric oncology

Research interests
Dr. Ramdas has worked as a pediatric oncologist since completing his training and board certification in 2002, providing compassionate care to children with cancer while recognizing the long-term late effects of treatment. Dr. Ramdas has been deeply involved in COG cancer control research, with a particular focus on improving survivorship outcomes. Dr. Ramdas actively participated in CCOP activities beginning in 2003 and served as vice chair of the CCOP within COG from 2007 to 2010. Dr. Ramdas later chaired the ACCL0431 clinical trial evaluating sodium thiosulfate for prevention of cisplatin-induced hearing loss, overseeing its conduct across 207 institutions.
Dr. Ramdas serves as PI for more than 40 COG clinical trials at Geisinger.

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Eric Strong
MD

Division Chief, Pediatric Neurology
Department of Pediatrics

Program Director, Pediatric Neurology Residency
Department of Pediatrics

Keywords
pediatric neurology, child neurology, neurology

Research interests
Dr. Strong has specific clinical and research interests in pediatric headache, pediatric epilepsy, pediatric neuromuscular disorders and pediatric neurodevelopmental conditions. He is interested in clinical, educational and QI research.

ORCID
0000-0002-3154-4137

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Mahmoud Sabri
MD

Pediatric Gastroenterologist and **Hepatologist**
Department of Pediatrics

Keywords
nutrition

Research interests
Dr. Sabri focuses on identifying risk factors and implementing modified therapeutic strategies in pediatric gastroenterology and nutrition to minimize unnecessary procedures and surgeries and to provide targeted nutritional recommendations that help children and teenagers.

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Research Cores

Research cores:
Biostatistics Core (BC)

Biostatistics Core

The Biostatistics Core (BC) serves as a collaborative research resource, supporting research initiatives across Geisinger. Our core members work closely with Geisinger investigators, physicians-scientists, clinicians and learners throughout all phases of epidemiological, clinical and health services research providing biostatistical expertise.

An important part of the Biostatistics Core mission is to provide biostatistical support for research studies initiated by fellows and residents.

The Biostatistics Core offers support in 3 key areas:

- **Collaboration for proposal development and research design**: We assist study teams in refining research questions, specifying hypotheses, designing studies, selecting variables, estimating sample sizes and statistical power and planning data collection.
- **Analysis, data visualization and publication**: Our team provides expertise in statistical analysis, data visualization and interpretation. We help researchers analyze and interpret data collected from their research questions, ensuring robust and meaningful results.
- **Research and statistical methods education**: The BC also plays a vital role in educating researchers, clinicians, and learners on statistical and research methodologies. Knowledge of research and statistical methods is required for all residency programs and part of board exams. We offer lectures and courses to enhance understanding and application of statistical techniques

Our Biostatistics Core offers a wide range of expertise that spans both traditional and modern approaches. We support foundational methods like study design, data management and classical statistical analyses, as well as advanced techniques such as multilevel modeling, survival analysis and Bayesian inference. In addition, we incorporate cutting-edge tools like machine learning and clinical data science. This breadth ensures we can meet the needs of diverse research projects from standard clinical studies to innovative, data-driven investigations.

Expertise of the Biostatistics Core
Study Design & Data Collection

- Study design
- Randomization and sampling methods (including response-adaptive and other randomization procedures)
- Survey development

Data Management & Privacy

- Complex data management
- Utilization of community-level data, geographic data and Geisinger’s social needs screening data
- Understanding use of population-based databases in research
- Data privacy, synthetic data, differential privacy

Biostatistics Core

Expertise of the Biostatistics Core
Descriptive & Inferential Statistics

- Inferential statistics
- ROC analysis
- Non-inferiority analysis
- Optimal cut-point analysis
- Data Visualization

Regression & Modeling

- Logistic regression
- General and generalized linear models
- Linear and non-linear mixed-effects models
- Generalized estimating equation models (GEEs)
- Restricted cubic splines
- Penalized regression (including LASSO), propensity score methods and matching mechanisms
- Structural equation modeling & mediation analysis
- Hierarchical models & clustering analysis

Survival Analysis

- Kaplan-Meier methods
- Cox regression
- Conditional survival analysis
- Competing risk survival analysis
- Cure-rate models

Advanced Statistical Methods

- Meta-analysis
- Sampling design-weighted analyses
- Multilevel longitudinal data analysis
- Dyadic data analysis
- Sequence count data analysis (e.g., differential abundance, correlation)
- Time series analysis
- Principal component analysis (PCA)
- Latent class analysis
- Gaussian networks
- Simulation studies
- Bootstrapping and jackknifing
- Bayesian inference

Modern Methods

- Machine learning
- Clinical data science

Education

- Statistical methods
- Research methods
- Data management

Biostatistics Core Contact List

The Biostatistics Core (BC) is located on the first floor of the Henry Hood Center for Health Research building at Geisinger Main Campus in Danville, PA.

Core Contact Information

For questions about the Biostatistics Core contact: biostatistics@geisinger.edu

- SharePoint Page: Biostatistics Core (BC) (sharepoint.com)

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Research cores:
Clinical Research Resources Support Core

Clinical Research Resources Support Core

The Clinical Research Resources Support Core provides centralized infrastructure and expertise to support the planning, conduct, and management of high-quality clinical research. The Core offers integrated services across study start-up, regulatory and compliance support, participant recruitment and retention, data collection and management, and operational coordination. By standardizing processes, leveraging experienced clinical research professionals, and promoting best practices, the Core enhances efficiency, ensures regulatory adherence, and enables investigators to focus on scientific innovation while accelerating the successful execution of the following types of research:

- Phase II, III and IV Clinical Trials
    - Both drug & device
    - Investigator Initiated Trials
    - Behavior Health Studies
    - Tissue Bank and Repositories
- Retrospective Chart Review Studies
- Compassionate, Expanded Access & Emergency Use of drug/devices

Core Contact Information

For questions about the Clinical Research Resources Support Core contact the following centralized core email inboxes:

- Project Management: crrprojectmanagementt@geisinger.edu
- Clinical Trials: crrclinicaltrials@geisinger.edu
- Finance: crrfinance@geisinger.edu
- Feasibility: crrfeasibility@geisinger.edu
- Regulatory: crrregulatory@geisinger.edu

Composed of over 50 clinical research professionals with diverse backgrounds and expertise, available on a full-time, part-time or ad-hoc basis through a fee-for-service model:

- Clinical research coordinators (RNs)
- Project managers
- Study coordinators (CVRCs, Project Coordinators)
- Research assistants
- Regulatory specialists
- Feasibility specialists
- Clinical trial finance specialists
- System analysts

Research cores:
Data Core

Data Core

The Data Core supports the use of shared data assets in research, including genomic data from MyCode and secondary use of clinical data. The Data Core develops and maintains research data warehouses for both genomic and secondary-use clinical data ("PIDB"). Data Core staff provide a range of services related to extracting and deriving meaning from this data including data analytics, data science, phenotyping, and genetics/genomics domain expertise. In addition to the internal research data warehouse, the Data Core also maintains and supports multiple common data models (HCSRN VDW, PCORnet, and [under development] OHDSI OMOP), disease-specific “datamarts,” and a pipeline for deidentification of clinical imaging studies.

Typical projects include building cohorts based on clinical and/or genomic inclusion/exclusion criteria, phenotype extraction and characterization, Honest Broker data deidentification, and classification and analysis of genomic variants. Data Core scientists are also able to assist investigators with genomic study design and complex analyses such as GWAS, PheWAS, NLP/LLM, and ML/AI. The Data Core also includes board-certified genetics professionals to curate gene and variant lists, including genetic variant interpretation.

Core Contact Information

For questions related to data science, genomics, imaging, or general inquires contact Kyle Retterer, chief research data officer: kretterer1@geisinger.edu

For questions related to clinical/phenomic data services contact Jackie Blank, senior director analytics: jblank1@geisinger.edu

Data Core Contact List

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Research cores: Survey Research and Recruitment Core (SRRC)

Survey Research and Recruitment Core (SRRC)

The Survey Research and Recruitment Core (SRRC) assists study teams with survey design, recruitment planning, and the telephone administration of surveys. The SRRC employs a pool of highly trained research interviewers, 12 computerized workstations, and a dedicated focus group room. Staff perform computer-assisted telephone interviewing (CATI) utilizing WinCATI software and/or REDCap, recruit and facilitate focus groups, and field web surveys across a wide range of projects.

The SRRC offers the following services:

- Assistance in planning recruitment, survey, and focus group strategies
- Assistance with developing a survey or recruitment script from concept or initial draft (including electronic/self-administered surveys, telephone-administered surveys, and qualitative/focus group interviewing schedules)
- Assistance with editing and proofreading surveys for language, clarity, reduction of respondent fatigue, and improved response rates
- Telephone administration of surveys by an experienced pool of SRRC research interviewers utilizing a Windows-based Computer Aided Telephone interview system (WinCATI)
- Coding of a survey or recruitment script into a platform that allows for telephone administration and data collection (via RedCap and/or WINCATI)
- Management of the recruitment or survey sample, including the management of call attempts, call metrics, and return calls from SRRC staff
- Scheduling of study team visits, appointments, or consent procedures connected to the research study
- Management and reporting of data collected through call attempts

Core Contact Information
For questions about the SRRC, contact Alex Skitolsky, manager of the Research Survey Unit: askitolsky@geisinger.edu

Survey Research and Recruitment Core Contact List

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