



COMMITTED  
TO EXCELLENCE

Yale Department of Internal Medicine



# Mission

**The Yale Department of Internal Medicine strives to provide** outstanding, compassionate, and equitable care to our patients.

**We are dedicated to the development of new knowledge** through innovative basic biomedical discovery and rigorous clinical research, and to translating these discoveries into novel therapies.

**We aspire to train and inspire the next generation of leaders in medicine** through education that fosters creativity and a personal commitment to excellence, and that equips our trainees with exemplary skills and attitudes for a life's work in medicine.

**We are committed to cultivating an inclusive, collaborative, and professional culture** that respects individual differences, recognizes and rewards diverse talents, and helps each person reach their full potential.

Department of Internal Medicine faculty members participate in a variety of programs, clinics, and centers throughout Yale University, Yale School of Medicine, Yale New Haven Health, and Yale Medicine.

**For more information, visit**  
[medicine.yale.edu/intmed/](http://medicine.yale.edu/intmed/)

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# Message from the Chair



Life before the pandemic seems distant. When this report is released, we will have passed the two-year mark from the start of the COVID-19 pandemic.

You may recall that last year's Department of Internal Medicine report focused primarily on our response to the pandemic. In this year's book, we focus on the evolving circumstances of managing numerous COVID-19 waves; and at the same time, minimizing delays for non-COVID care, expanding scientific knowledge, and fulfilling our educational missions.

This year's annual report begins in the fall of 2020, when Connecticut experienced its second wave of the COVID-19 pandemic, and shares our accomplishments through the fall of 2021.

While we don't know whether or when the pandemic will end, what I do know is that every single person continues to play a vital role in the success of the department. What we have outlined in this annual report is a magnificent team effort from everyone across the department—from those providing clinical care; to others in the labs conducting research; the educators teaching the future health care workers; and all the support staff behind the scenes.

Thank you for taking the time to review this report. I would love to hear from you. Please contact me with any questions.

Sincerely,

A handwritten signature in black ink that reads "Gary Désir".

Gary V. Désir, MD  
Paul B. Beeson Professor of Medicine  
Vice Provost for Faculty Development and Diversity  
Chair, Internal Medicine, Yale School of Medicine  
Chief, Internal Medicine, Yale New Haven Hospital



# Diversity, Equity & Inclusion



Inginia Genao, MD

In November 2020, Inginia Genao, MD, and other department leaders received the strategic plan prepared by the Barthwell Group, which included input from 67 faculty and trainees in addition to Diversity Committee members and department leadership. This report was presented at the November 9, 2020 faculty meeting.

**The goals of the plan are:**

|                                   |   |   |  |
|-----------------------------------|---|---|--|
| Enhance recruitment and retention | Recognize the importance of DEI activities in terms of professional recognition | Increase long-term DEI education and professional development efforts | Ensure DEI accountability and transparency |
|-----------------------------------|---|---|--|

In December 2020, in support of the strategic plan, the department leadership announced the creation of the Office of Diversity, Equity and Inclusion in Internal Medicine (ODEIM). As part of the new office, each section designated a vice chief of DEI. Three new staff were hired in support of the new office in the summer and fall of 2021. Johanna Elumn, MSW, PhD, associate research scientist, joined the ODEIM to assist with qualitative and quantitative research on our DEI-related activities. The new Program Manager, Cayetana Navarro, MBA, PMP, immediately began to support the work to restructure the overall department's Diversity Committee with the creation of individual working groups focused on specific areas of the strategic plan. Shivhan Allen joined the department as a senior administrative assistant in October 2021.

**Working Groups**

- **Innovation**  
led by George Agyapong, MD
- **Early Pipeline**  
led by Carmen Canales
- **Faculty Recruitment**  
led by David Fiellin, MD, and Laura Whitley
- **Trainee Recruitment**  
led by Jorge Moreno, MD, and Ricardo Avendaño, MD
- **Retention**  
led by Lydia Aoun-Barakat, MD, and Rosa Munoz Xicola, PhD
- **Funding & Resources**  
led by Jaimie Meyer, MD, MS, and E. Jennifer Edelman, MD, MHS
- **Data & Metrics**  
led by Edward Manning, MD, PhD, and Johanna Elumn, MSW, PhD
- **PR/Marketing**  
led by Hillary Drumm, APRN, RN, MPH, and Lauren Tobias, MD
- **Education & Scholarship**  
led by Isabel Bazan, MD

In July, the newly appointed vice chiefs (pictured on pages 8 and 9) met for the first time, facilitated by Doug McKinley, a leadership coach and clinical psychologist, to discuss how to move forward as a group supporting the department's DEI strategic plan. Since September, the working groups have started to meet and map their mission, goals, and objectives. The search for staff representatives to further enhance this task has begun. They will join the two current members, Rebecca Cardone and Helen Siuzdak.





LAUREN BALDASSARRE, MD



VANDANA KHUNGAR, MD, MSC



RENATA BELFORT DE AGUIAR, MD, PHD

## COMMUNICATIONS

In September 2020, a monthly department-wide message, “Diversity, Equity & Inclusion Update,” was launched with support from the department communications team to keep the department informed about DEI activities. To further highlight the department’s DEI efforts, the monthly column “Voices of DEI” was created in May 2021 to give department faculty and staff an opportunity to share their thoughts on the importance of DEI.

In August 2021, Navarro launched a new diversity website with updates and all new content, including an intranet, a list of papers published by Yale faculty on DEI topics, and News and Events pages. In addition, all new sections were created for each of the working groups.

To support the communication, coordination, and collaboration of these groups with the broader at-large committee and the vice chiefs, a Microsoft Teams group has been created with individual channels for all the working groups.

## EDUCATION & TRAINING

The Section of Infectious Diseases launched its ID2EA curriculum at its November 16, 2020 section retreat with a presentation titled “Stronger Together.” The ID2EA team has designed their curriculum with trainings called roadstops. The section has completed eight roadstops to date.

The new Race, Bias, and Advocacy (RBAM) Distinction Pathway was launched in the fall term of 2021. This pathway includes a curriculum for PGY-2 residents to help them understand, combat, and reflect on racism and structural / cultural bias experienced through the health care system, medical education, and physician practice. In addition, residents will partner with the Greater New Haven community. RBAM is co-directed by Aba Black, MD, MHS, and Stephen Holt, MD, MS.



ABA BLACK, MD, MHS



MARCIA MECCA, MD



BRIENNE MINER, MD, MHS

## RECRUITMENT AND LOOKING FORWARD

On January 28, 2021, Yale New Haven Hospital’s Office of Graduate Medical Education (GME), Yale School of Medicine’s Office of Diversity, Equity and Inclusion, Yale New Haven Health’s Office of Diversity and Inclusion, and Yale School of Medicine’s Minority Organization for Recruitment & Expansion and Diversity, Inclusion, Community, Engagement, and Equity co-sponsored the fourth annual recruitment dinner for future potential underrepresented in medicine (URiM) residents. Interested potential residents across 20 residency programs within the GME participated in the virtual dinner, which drew 370 participants. Efforts to increase total URiM residency matching like this event proved successful, with the incoming intern class rising from 11% to 24% URiM.

In April, the first Medical Morning was held on Zoom. Medical Mornings is an outreach series encouraging New Haven children in grades 6 - 12 to pursue careers in health care. Mahalia Desruisseaux, MD; David Smith, MD; and Heidi Zapata, MD, PhD,

shared their pathways to their current careers. Participants were able to interact with these physicians and ask questions about their work and lives.

Collecting and analyzing DEI data for the department as well as individual sections has begun. This work will support benchmarking and efforts to focus on the greatest need going forward.

In order to include fellowship applicants in our recruitment efforts, we launched virtually the inaugural Fall 2021 URiM Recruitment Dinner for Pediatric and Internal Medicine URiM fellowship applicants. This event was attended by 110 people, of which 47 were applicants. Our plan is to extend this event to other fellowship applicants across GME.

The fifth annual URiM recruitment event was in January 2022. The ODEIM team, in conjunction with the GME office and other collaborators, worked to make the virtual event more interactive.



IRIS ISUFI, MD



MAHALIA DESRUISSEAUX, MD



PAMELA KUNZ, MD



NAMRATA KRISHNAN, MBBS



VIVIAN ASARE, MD



LISA SUTER, MD



# A Prayer for These Hands

By Anita Vasudevan, MD from the Writers' Workshop



Getty Images

## *K*araagre Vasate Lakshmi, Karamadhye Saraswati Karamoole Tu Govinda, Prabhaate Karadarshanam

I learned this daily prayer from my grandmother, a mantra to start the day, chanted looking at your hands as soon as you open your eyes in the liminal space between conscious and subconscious.

The prayer is a pilgrimage around the palm, naming the presence of three Hindu deities at each aspect: Goddess Lakshmi in the fingers, Goddess Saraswati at the palm; and Lord Vishnu at the base of the hand. By drawing upon their energies with the focus on my hands, the organs of action, I set an intention to myself and the universe at large: May these hands do something good today.

A code in the hospital is short for code blue: a code for a heart that has stopped beating without warning. It is a call to action for the designated team of doctors, nurses, and pharmacists to resuscitate this heart, ideally before the owner of the heart truly turns blue.

The overhead system at my hospital is primed with the grating screech of a microphone caught by surprise when it is about to announce such a code. The shrillness of that sustained alarm silences the whole hospital and steals my breath.

There is a brief pause, a moment to exhale while my hands reflexively check for my stethoscope before the speaker blares, "ADULT MEDICAL EMERGENCY;" ...followed by exactly where in the building I'm supposed to appear.

On my second day as a senior resident in the intensive care unit, that dreaded alarm rang, and I took off to the stairwell, running the code algorithm in my mind. Was it two rounds of chest compressions before the epinephrine? Or three?

I arrived at the patient's room, the curtains in front of the doorway already drawn back, the drapes of the windows pulled up. Light from every direction poured onto an elderly woman, the snaps of her patient gown hastily undone, exposing her bare body as she lay on the hospital bed, the sheets crumpled and stained with unabashed shades of brown bodily fluid. The putrid stench of fecal matter wove through the fine mesh of my respirator mask, slightly delayed like thunder after lightning.

"What's going on? Does the patient have a pulse?" This was the opening line at the mock code I had attended three months prior.

"None," her nurse reported. Another was

starting chest compressions. I got out my timer, ready to issue commands, when a voice from behind me called out, "She's DNR! No code!" *Do Not Resuscitate.*

A fist clenched my stomach. No code? Why were we resuscitating her? I could sense the arrival of others on the code team: more doctors, nurses, and the pharmacist filing in behind me.

"Oh...so let's stop compressions?" I had forgotten to announce myself as code leader, maybe in part because I felt like an imposter giving myself that title. I had only seen a handful of code situations, and never had I led one. But I was the first doctor in the room, and apparently was issuing enough authority that two others were looking to me for direction.

Then from behind, outside the room, another voice: "No! They switched! She's full code now! Continue CPR!"

Codes are somewhat of an "act first, ask after" situation. You show up to the room with the intent of reviving a pulseless patient. You aren't privy to their name, age, medical history, or what even drove them to a pulseless state, much less their hopes, dreams, or fears. I was once given the advice that anxiety about doing something wrong

had no place in a code — the patient without a pulse is effectively dead, after all.

No time for questions. If the patient is full code, the code must continue. I take my position at the foot of the bed, the first step in my mental rehearsals. My hands grip the plastic edge of the bed, knuckles white with tension. A more experienced colleague steps in beside me a few seconds later, quietly offering guidance as I announced the orders, at once quelling my apprehension and affirming my authority as the code leader.

*Resume compressions!* A pair of powerful hands take to her sternum, fingertips interlaced, elbows locked to generate more force on each compression. A rib cracks with the snap of a twig. The squelch of her excretion dancing raucously around the creases of the plastic mattress with each compression draws the remnants of my own lunch upward. I swallow.

*Airway.* Do we have a secure airway, a reliable port to move oxygen into her body and carbon dioxide out? The anesthesiologist is directly across from me, gripping a face mask securely to her jaw with one hand, while his other hand rhythmically squeezes a bag, a breath of air. Inhale and exhale.

*Time for a pulse check!* A purple-gloved hand invades the woman's groin, searching behind a fold of flesh, probing deep with two fingers, then with a small ultrasound for a femoral pulse. No pulse.

*Access.* It is time for a dose of epinephrine to jumpstart the heart. A surgical resident appears at the bedside, expertly disinfecting an area on the patient's leg before getting out his equipment, and planting his hand on her right knee to hold it steady. The brief sound of a drill boring through bone sounds eerily similar to one driven through drywall. He blandly plugs an intravenous access site into the new opening; fastens it in place with a clear plastic adhesive; and promptly leaves.

For four minutes, I watch the hands on her heart, the hands on her head, the hands in her groin, and my own hands gripping the foot of her bed. Four minutes to suspend the time between life and death.

Two rounds of compressions, one dose of epinephrine, and three pulse checks later, the voice from outside the room breaks my trance. "They reversed the decision! She's DNR!" *Do Not Resuscitate* is a command in the negative, characterized by what we, the medical team will not do. Perhaps a directive in the affirmative could be just as fitting: *Allow peaceful death.*

The compressions stop abruptly, and the many hands on the patient disappear. A nurse has the presence of mind to quickly drape a sheet over the woman's body, reinstating some vestige of dignity. Somehow the frenzied crowd at the scene disperses without fuss, and the fist clenching my stomach loosens its grip.

Outside the room, I see a distraught middle-aged woman in a chair, a social worker crouching at her side. I glean more background from others on my team: here was a woman in her mid-nineties with advance directives filed away for years, consistently sure she did not want cardiopulmonary resuscitation, no heroic measures to save her life.

Her family member was visiting that afternoon, chatting and taking selfies just moments before the patient had a large bowel movement and subsequently became unresponsive. Of course, the instinct when asked by a staff member, "Do you want us to attempt reviving her?" was to answer yes, and reverse the code status.

*Revive* is a word born of good intention. To give back life: so full of hope. Intentions, however, cannot predict outcomes, and sometimes the process cuts deeper than the product. In this case, the process took away

our patient's well-documented agency, and thrust a slippery decision into the hands of an overwhelmed family member and the orchestration of this code into my own.

I know that I don't own the blame for this play of events. I don't think anyone does. But that doesn't change the fact that this patient, against her wishes, was denied a dignified death; and I too was complicit in that.

As a physician, I am fortunate to have a job in which, more often than not, my hands have done something good on any given day. Some days that means manipulating a patient's body with precise physical exam maneuvers to deduce a diagnosis. Other days it is draining an abscess. Sometimes it is offering a hand to hold in the midst of someone's fear, loneliness, or grief.

But there are some days, like the days of that misguided code, that I wonder whether the good that comes of some actions cancels out the harm inflicted by others. It would certainly be easier for me to reconcile if they did, but the human conscience is not a calculator. It is on these days that I find myself at home after work with my palms pressed together in prayer: a prayer for my patients and their families, a prayer for myself, a prayer for forgiveness.





# Overviews from Vice Chairs



## CLINICAL AFFAIRS

**Lynn Tanoue, MD, MBA**  
Vice Chair, Clinical Affairs

During this challenging year, the department demonstrated its resilience with strong clinical growth despite the challenges of a protracted second COVID-19 wave. Inpatient teams developed nimble and collaborative approaches to the enormous task of caring for far more hospitalized patients than usual, and ambulatory sites flexibly innovated to rapidly and effectively incorporate telehealth and other new approaches to ensure robust and reliable outpatient care. Maintaining clinical excellence in the face of the pandemic has reinforced the department's commitment to providing the highest quality of care and equal access to all patients, informed by evidence grounded in science, and delivered with compassion.

### Clinical Care

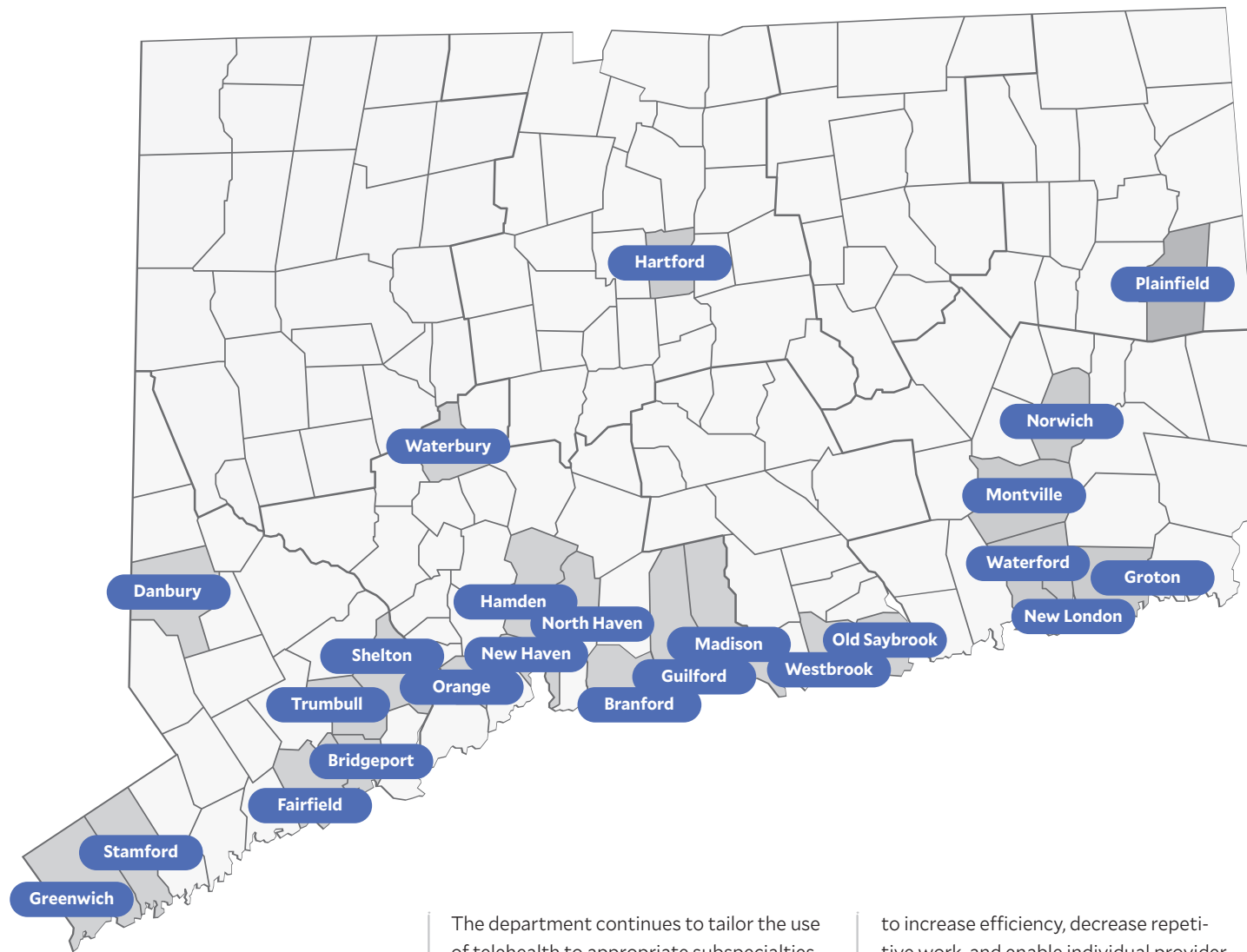
#### Inpatient

Inside Yale New Haven Hospital (YNHH), the Medicine service was characterized by a substantial increase in inpatient census persistent throughout the entire year, and was particularly exaggerated during the six months of the second COVID-19 wave (November 2020 – April 2021). Effective collaboration and open communication between all departments and service lines have always been key to YNHH successfully navigating through usual busy times and have been critical during the pandemic. The Medicine service, inclusive of department educational and subspecialty firms and the hospitalist program, is the backbone of the inpatient front line. Our ability to provide superb care for an inpatient Medicine census routinely running 150-200 inpatients in excess of the usual 550 was accomplished by strong partnership with all members of patient care teams - nursing, JDAT, engineering, environmental health, information technology, food services, and countless others. The remarkable efforts by our teams contributed to YNHH having the lowest COVID-19 mortality of all hospitals in Connecticut, and most importantly, resulted in many lives saved. The department particularly acknowledges the contributions of our inpatient teams and their leaderships to this collaborative achievement: the Medical ICU (Jonathan Siner, MD; Shyoko Honiden, MD, MS; and Margaret Pisani, MD, MPH), the hospitalist program (Thomas Donohue, MD, and Will Cushing, PA-C), the educational firms (Vincent Quagliarello, MD; Lloyd Friedman,



RACHEL LAMPERT, MD





MD; and the firm chiefs), and our Internal Medicine residency training programs (Mark Siegel, MD; John Moriarty, MD; and Benjamin Doolittle, MD, MDiv).

**Ambulatory**

During 2020-2021, the ambulatory practice of the department continued its trajectory of expansion and diversification. Remarkably, the ambulatory practice has grown substantially during the two years of the pandemic despite the multitude of challenges posed. The Department of Medicine ambulatory footprint now includes 46 unique practice sites across the state, bringing the expertise of our talented subspecialty faculty within reach of more patients. The ambulatory practice flexibly responded to overcome barriers to care caused by the pandemic. Intensive efforts to help patients maintain access to care quickly enabled telehealth capability for the majority of our patient population.

The department continues to tailor the use of telehealth to appropriate subspecialties and to match patient preferences. Our outpatient sites seamlessly adjusted to provide safe in-person care with proper screening, planning, and PPE while nimbly and consistently following protocols and procedures that evolved in response to the changing prevalence of COVID-19 in the community. For more detailed descriptions of development and expansion of individual ambulatory programs, see Section reports.

**Clinical Affairs Team**

In 2020-2021, the Department Clinical Affairs team, led by Lynn Tanoue, MD, MBA, and Jennifer Lacerda, launched a multi-pronged effort to improve physician/APP interaction with Epic, our electronic health record (EHR). Prompted by studies consistently demonstrating the EHR to be a major contributor to provider dissatisfaction and burnout, Sinead McKernan's EHR Utilization team, under Clinical Affairs, developed department specific workflows and videos that provided quick and practical training

to increase efficiency, decrease repetitive work, and enable individual provider customization. These are disseminated by the department each Monday as the "Weekly Wizard." Collaborating with the department communications team led by Julie Parry, a robust array of content related to Epic efficiencies, billing and compliance, and COVID-19 updates is now housed on the Department Intranet site, accessible to all members of the department. The intranet site also offers ready access to one-on-one tutoring by the team wizards (Epic experts). The Clinical Affairs team also successfully piloted the EpicSTARS program, which will assess individual providers' Epic proficiency, and design personalized training to improve interaction with the EHR. In addition to these initiatives, the team coordinated Yale Medicine credentialing and performed documentation/coding training for over 60 new incoming faculty and APPs; recredentialled over 100 current providers; and developed section-specific quarterly clinical effort and productivity reports to enable assessment of established and new clinical practices.

# EDUCATION & ACADEMIC AFFAIRS

**Vincent Quagliarello, MD**  
Vice Chair,  
Education & Academic Affairs

**Dana Dunne, MD, MHS**  
Associate Chair,  
Education & Academic Affairs

**Faculty Development**

Several faculty development initiatives took place over the past year. The Department of Internal Medicine initiated a monthly Zoom faculty development series called [IM]Educators open to all members of the faculty. After four successful pilot sessions were held in the spring of 2021, this academic year has 10 sessions planned, with such topics as establishing a positive learning climate; giving more effective verbal and/or written feedback; bystander training for harassment and mistreatment; and more. These are advertised monthly through the department calendar, email announcements, and individual sections. Department faculty who led the sessions included Dana Dunne, MD, MHS; Vincent Quagliarello, MD; Katie Gielissen, MD, MHS; Matthew Grant, MD; Seonaid Hay, MD; Susan Kashaf, MD, MPH; Laura Morrison, MD; Sarita Soares, MD; Shaili Gupta, MBBS; Darin Latimore, MD; and Donna Windish, MD, MPH.

In addition to these faculty, other members of the [IM]Educator faculty development group include Benjamin Doolittle, MD, MDiv; Naseema Merchant, MBBS; John P. Moriarty, MD; Chris Sankey, MD; Mark D. Siegel, MD; and Thilan Wijesekera, MD, MHS.

The Office of Education provided access to intense clinical teaching faculty development courses offered by Dunne through the Teaching and Learning Center. Yale offered its second annual Yale-ACGME course on "Improving Faculty Competency in Assessment," directed by Dunne, Soares,

and Michael Green, MD. Serving as one of fourteen regional ACGME faculty development hubs, the Yale ACGME course was offered virtually in February- March of 2021 with capacity enrollment of faculty across GME. A one-day version was offered in November 2021. Under the leadership of Windish, the department's Advancement of Clinician-Educator Scholarship Faculty Development Program welcomed the latest cohort. This year, 14 fellows from the Departments of Internal Medicine and Pediatrics participated in a one-year Fellows as Medical Educators certificate program.

**Office of Education Priorities**

A major initiative within the department this year involves timely and effective written and verbal feedback. Strategies are in place to increase the proportion of med hub evaluations submitted by faculty on trainees within 14 days; and "Feedback Fridays" have been reintroduced to routinize face-to-face bidirectional feedback between faculty and trainees. Working toward a culture of psychological safety throughout all levels of the department will generate honest and effective feedback.

**Teaching Awards**

- **Traditional Residency Teaching Awards**  
Lydia Aoun-Barakat, MD, and Gretchen Berland, MD, won the Fred S. Kantor Teacher of the Year Award. Berland also won the Primary Care Center Humanism Award. Jurgen Holleck, MD, won the Asghar Rastegar Teacher of the Year Award. Benjamin Gallagher, MD, won the PCC Teaching Award. Jana Christian, MD, won the Marcella Nunez Smith Award for Achievements in Antiracism in Medicine.
- **Primary Care Program Teaching Awards**  
Gielissen was awarded the Yale Primary Care Core Faculty Teaching Award. Sankey was awarded the Edwin C. Cadman Teacher of the Year Award for Yale New Haven Hospital-based non-core faculty. Nicole Altorelli, MD, received the George Thornton Primary Care Community Teacher Award.





SILVIA VILARINHO, MD, PHD



- **Med-Peds Program Teaching Awards**  
Jaideep Talwalkar, MD, was awarded the Brendan Kelly Award for APDs from the Medicine-Pediatrics Program Director Award.
- **Medical School Teaching Awardees**  
This year included several faculty: Stephen Huot, MD, PhD (Francis Gilman Blake Award); Sarah Hull, MD, MBE (Charles Bohmfalk Award); Talwalkar (Alvan Feinstein Award); Silvia Vilarinho, MD, PhD (John N. Forrest, Jr. Prize for Mentorship in Student Research); Anna Reisman, MD, (Leah Lowenstein Award); and Matthew Grant, MD (PA Program Outstanding Didactic Course Award).

### Clerkships

The clerkship experience for the Yale School of Medicine Classes of 2022 and 2023 continued to be affected by the COVID-19 pandemic. While all clerkship students resumed clinical activities in July 2020 after a three-month hiatus, the duration of clerkships, including inpatient and primary care medicine, was shortened and grading changed to pass/fail. Student-specific didactics for all 100 students per class were accomplished via Zoom over a two-week period with some remaining embedded in the clerkship rotation. One such embedded experience included the simulations during which students are exposed to a 'sim' patient with a variety of presentations. They work through a focused history and physical to arrive at a tentative diagnosis that they start

to manage. The 30-minute simulated experience is followed by a teaching session given by a resident in any of our department residency programs, most typically as part of the residency Clinician-Educator Distinction. The entire simulation was successfully moved to the virtual space between July 2020 and July 2021, thanks to significant collaboration with the Yale Center for Medical Simulation.

### Residency Updates

#### Primary Care Program Innovations

- A novel curriculum for nutrition and lifestyle medicine was added to our ambulatory curriculum.
- The Point of Care Ultrasound Curriculum was expanded so that all primary care residents now have training in point-of-care ultrasound.

- All PGY-2 residents received an ambulatory block rotation focused on innovations in practice design and payments models for primary care.

#### Medicine-Pediatrics Program Innovations

- Our innovative Quality Improvement initiatives have resulted in several panel management projects, resulting in two published papers; two papers under review; and several poster presentations.

#### Traditional Program Innovations

- Journal club was reinstated under the leadership of Joseph Vinetz, MD; Rupak Datta, MD/PhD, MPH; and Guangyu Tong, PhD.

- Morning Report was moved to the noon hour to expand access to a greater portion of the residency.
- The Noon Conference Schedule was moved to a 3 p.m. afternoon didactics section.
- The new Race, Bias, and Advocacy in Medicine (RBAM) Distinction Pathway was developed under the leadership of our recent chief resident, Jana Christian, MD. The RBAM Distinction open to all residents in the department is now under the leadership of Aba Black, MD, MHS. See page 33 for more information on RBAM).
- An advocacy and equity curriculum for first- and third-year residents was introduced into our ambulatory block.

### Medical Grand Rounds

#### Major initiatives this year include:

- Second Century of Women in Medicine Medical Grand Rounds (MGR) to honor junior and mid-level women faculty who are emerging leaders in their fields.
- Dr. Jackie Satchell MGR to honor the late Jacqueline Satchell, MD, a faculty member in the Section of General Internal Medicine and attending physician at VA Connecticut Healthcare System.
- Creation of a new honorary lecture, the Sperling Foundation MGR, focused on health economics.
- Continuation of the highly popular "Stories of Yale Internal Medicine Grand Rounds," in which trainees and faculty present 1,200-word stories about the human aspect of training or patient care.
- Continuation of "Discovery of the Week" five-minute vignettes at the beginning of MGR by faculty or trainees to highlight recent seminal contributions to biomedical discovery in our department. These are meant to complement the "Case of the Week" vignettes given by our chief residents.
- Continuation of the Research-in-Residency MGR to highlight three original research projects completed by our residents participating in the Research-in-Residency Program. This event included a virtual poster presentation created by Amy Anderson on the department's communications team.
- Creation of a "DEI Case of the Week," in which chief residents describe a case in which an important lesson related to diversity, equity, and inclusion was learned.

## FACULTY AFFAIRS

**Lawrence Young, MD**  
Vice Chair, Faculty Affairs

The Department of Internal Medicine Faculty Affairs, led by Vice Chair Lawrence Young, MD, is committed to fostering the successful career development of our faculty. Faculty Affairs oversees new faculty appointments; the faculty mentoring program; and all aspects of the promotions process. Academic fiscal year 2021 (FY21), efforts focused on enhancing the mentoring program; expediting the faculty appointment and promotions process; developing a standard operating procedure (SOP) for new faculty recruitment; and revising the voluntary faculty guidelines.

### Mentoring Program

The Department of Medicine faculty mentoring program was launched in 2016. Almost all ladder track faculty now participate in the program, which strives to provide ladder track faculty with insight into the opportunities and expectations of an academic career at Yale. The mentoring program provides guidance and feedback on research, clinical program development, education, and professionalism.

Mentoring started at the new faculty orientation in September, when Young introduced the mentoring program; provided career guidance; and explained the metrics for promotion in each of the tracks. Each junior faculty member selects a mentor and has the option to also assemble a formal mentoring committee. Mentee and mentor(s) meet at least twice a year, and subsequently the mentors, senior faculty

and section chiefs review the mentoring progress reports and provide additional feedback. Following this model, a school-wide mentoring program has started and other departments are using the structure established in the Department of Medicine.

### Faculty Appointments/Promotions

In FY21, the Department of Internal Medicine Appointment and Promotions (A&P) Committee reviewed over 100 faculty applications for promotion, appointment, or reappointment. The Committee is

chaired by Young. Committee members include Peter S. Aronson, MD; Lori Bastian, MD, MPH; Richard Bucala, MD, PhD; Gary V. Désir, MD, Auguste Fortin, VI, MD, MPH; Rachel Lampert, MD; Richard Marottoli, MD, MPH; Vahid Mohsenin, MD; Deborah Proctor, MD; Carrie Redlich, MD, MPH; and Michal Rose, MD.

In FY21, the A&P Committee recommended approval of 40 promotions and new appointments for Department of Medicine faculty, all of whom were approved by the senior/tenured faculty of the department, and subsequently by Yale School of Medicine (YSM) and the university.

Ten faculty were promoted or appointed to the rank of professor, including:

- **Benjamin Doolittle, MD, MDiv**  
CLINICIAN-EDUCATOR TRACK
- **Lloyd Friedman, MD**  
CLINICAL TRACK
- **Shuta Ishibe, MD**  
TRADITIONAL TRACK
- **Yasuko Iwakiri, PhD**  
INVESTIGATOR TRACK
- **Marcella Nunez-Smith, MD, MHS**  
CLINICIAN-SCIENTIST TRACK
- **Margaret Pisani, MD, MPH**  
CLINICIAN-EDUCATOR TRACK
- **Deborah Rhodes, MD**  
CLINICIAN-EDUCATOR TRACK
- **Tamar Taddei, MD**  
CLINICIAN-EDUCATOR TRACK
- **Li Wen, MD, PhD**  
INVESTIGATOR TRACK
- **Klar Yaggi, MD**  
CLINICIAN-SCIENTIST TRACK

KLAR YAGGI, MD





ALDO PEIXOTO, MD



**21 faculty were promoted or appointed to associate professor:**

- 11 clinician-educators
- Six clinical faculty
- Three clinician-scientists
- One investigator

The ladder track promotions and new appointments included 6 women and 4 men at the professor rank; 11 women and 10 men at the associate professor rank; including four underrepresented in medicine faculty members.

There were also 68 ladder track reappointments approved at the assistant and associate professor ranks, as required at the end of their three- and five-year terms respectively.

Faculty Affairs developed and implemented a new and accelerated timeline for its review of fiscal year 2022 appointment and promotion applications. The A&P Committee meets weekly throughout much of the year. It performs initial evaluations during the summer; reviews referee letters for each application for promotion or appointment in the fall; and issues final recommendations to the senior/tenured faculty prior to formal department voting scheduled in the early winter. The goal is to achieve earlier submission of final materials to the YSM committee so that faculty will receive final notification on their applications before the end of the academic year.

**Voluntary Faculty Guidelines**

The voluntary faculty guidelines were revised this year by a voluntary faculty committee directed by Young in conjunction with Adam Mayerson, MD, associate chief, community & voluntary faculty, with the goal of updating the requirements for promotion and appointment in the voluntary faculty to achieve better alignment with the recently established clinical track. The committee included Barry Wu, MD; Bastian; Proctor; and Laura Whitley. Additional input was provided by Silvio Inzucchi, MD, director of the Affiliated Hospital Program; and Steve Huot, MD, PhD, senior associate dean for Graduate Medical Education (YSM) and prior chair of the voluntary faculty committee. The new guidelines emphasize the requirement for excellence in education and dedication to teaching as role models for Yale trainees and students. In accordance with the clinical track policies, the requirement for publications was removed. Promotion in the voluntary faculty requires regional recognition for clinical excellence and teaching at the associate professor level; and national recognition as an outstanding physician and educator at the professor level. The guidelines were revised for clarification of the ranks, letter requirements, definitions of appropriate referees, and expectations for reappointment and promotion. The finalized guidelines were distributed to the faculty and departmental leadership, and were also posted on the YSM Office of Academic and Professional Development's voluntary faculty website.

**Faculty Search Standard Operating Procedure**

Faculty Affairs developed a detailed SOP for the recruitment and hiring of new faculty members. The goal of the SOP is to provide a clear, standardized, and equitable protocol compliant with university policies governing the submission of applications, evaluation of candidates, and offering of positions. These policies exist to guide and foster recruitment of outstanding and diverse faculty to the department. The SOP defines standard procedures for requesting approval of a position; posting and publicizing the position; evaluating applicants by the faculty search committee; and ultimately for recruitment and credentialing. The SOP provides a flow diagram with detailed instructions to assist section chiefs, program leaders, human resources staff, and faculty search committee members to recruit new faculty to the department in compliance with Yale University policies.

**Faculty Affairs Team Updates**

In February 2021, Laura Whitley was promoted to Manager of Faculty Affairs in the Department of Medicine. Mansi Ahuja joined the team as a new senior administrative assistant. Ahuja and Catherine Severino provide support for Whitley in managing faculty A&P applications, faculty leave of absences, and voluntary faculty appointments; and serve as resources for faculty affairs matters across the department.



# FINANCE & ADMINISTRATION

**Mark A. Holter, CMPE, CPA**  
Vice Chair, Finance & Administration

**Finance**

The Department of Internal Medicine includes 782 faculty, 283 postdoctoral fellows/associates, 53 post-graduates, 232 residents, and 402 staff.

The department has a total operating budget of over \$340 million, which has increased significantly over the past several years.

The clinical track continues to grow as a result of the department's partnership with Yale New Haven Health. The clinical practice represents approximately half of the department's operating revenue. Work RVUs increased to over 1 million units this past fiscal year.

According to the Blue Ridge Institute for Medical Research, the department continues to rank in the top 10 for research funding from the National Institutes of Health (NIH), with over \$136 million provided by the organization.

Traditionally, most of the department's research funding comes from the NIH, but during 2021, industry funding increased significantly, along with an increase in funds from charitable foundations. On an annual basis, clinicians, researchers, and educators across the department submit between 800 and 900 new proposals. The department generated \$142 million in sponsored awards. Our pre- and post-award teams have done a tremendous job staying on top of this volume and providing support to our faculty.

**Administration**

The 402 department staff consists of 249 managerial & professional and 153 clerical & technical employees. Due to the COVID-19 pandemic, many of the staff maintained a virtual working environment until the summer of 2021, when they began to return to New Haven for hybrid work.

Under Holter's direction, the central department organizational unit underwent restructuring to create new associate director-level positions. The new roles and promotions are as follows:

- **Julie Jennings:**  
Associate Director, Research & Compliance
- **Jennifer Lacerda:**  
Associate Director, Clinical Affairs
- **Stephanie Santore:**  
Associate Director, Academic & Administrative Affairs
- **Joseph Velasco:**  
Associate Director, Finance

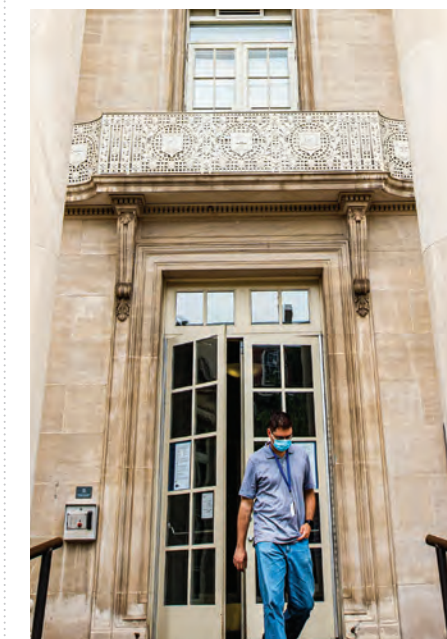
In April 2021, the department's business office relocated into a new office suite at 100 Church Street South in New Haven. Santore led the massive move into the technically advanced workplace. All department-level staff are now under one roof to maximize collaboration.

**Administration Workplace Survey Committee**

At the university level, the Workplace Survey is administered every few years to gain an understanding of the current level of staff well-being and satisfaction, and to identify areas of room for improvement and continued growth. The results of the survey are then broken down by unit hierarchy in order to gain an understanding of where those areas may vary at the university, school, department, and section levels. The Administration Workplace Survey Committee, based out of the internal medicine business office, reviews the results, identifies areas for improvement; and gathers additional input from staff to best determine next steps.

The group had to adopt new tactics due to the ongoing COVID-19 pandemic. They conducted their own survey to reassess the well-being and concerns of the business office staff during the pandemic, and then revised their actions based on those results. They brought feedback to the office leadership to address concerns around return to campus work.

In the fall of 2021, the team started an office community library, a place for colleagues to borrow or donate books and start conversations, in addition to adding three new members to the committee. Most recently, a fundraiser was held for the Columbus House in New Haven, an organization that provides welcome kits for families to help them get started in new homes.





Communications

The department communications team, Julie Parry and Amy Anderson, handled department communications surrounding COVID-19 throughout the fall of 2020 into the spring of 2021, in addition to producing three newsletters and managing three social media accounts. In December 2020, the team added Jane Dee from the Department of Radiology & Biomedical Imaging. With the addition of Dee, along with the contributions of Elisabeth Reitman, cardiovascular medicine specialist, this team produces a total of 10 publications for both internal and external audiences, along with this report.

Department of Internal Medicine Service Excellence Awards

In April 2021, the department presented its Department of Internal Medicine Service Excellence awards.

Mary Geda, associate director, Claude D. Pepper Center/Program on Aging; and Alyssa Carboni, post-award research manager, were given the honor.

Work is also underway to continue to highlight the contributions of staff across the department.

# Geda and Carboni Win Service Excellence Awards



Mary Geda, associate director, PEPPER Center/Program on Aging; and Alyssa Carboni, post-award research manager, were honored with Department of Internal Medicine Service Excellence awards. The awards, given on an annual basis, acknowledge and honors the outstanding attributes of two department staff whose work and behaviors support and promote the goals, values, and mission of the department. Nominations were received and two individuals were identified by selection committee.

"Mary and Alyssa represent the best of the best within the department," said Mark Holter, CMPE, CPA, vice chair, Finance & Administration. "This year, the selection committee received 20 nominations across the department and they had a tough decision to make. The nominees represented an assorted mixture of both positions and length of service within the department. Ultimately, the committee selected two individuals that I am truly honored to say reflect the essence of this award."

Geda was shocked to win the prize. "I had no idea," said Geda. "When Dr. Désir made the announcement, it was just extremely humbling and complimentary, because I know how hard it is to get those awards and the type of work that is involved to be nominated. The people nominating you obviously care an awful lot because it is a lot of work to compile all the information they ask for. So that was wonderful."

Since coming to Yale School of Medicine in 2008, Geda worked in the Sections of Cardiovascular Medicine and General Medicine before landing in her current role in Geriatrics. Nominated by Mary Tinetti, MD; Thomas Gill, MD; Terri Fried, MD; and Denise Acampora, MPH; Mary's organization skills, mentorship, and training were highlighted. "Mary has the remarkable ability to under-



stand issues from multiple perspectives and to communicate effectively so that others are able to do this as well. Those who work with her are given the gift of confidence that the work will get done, problems will be solved, and the environment will always be one of enthusiasm and cooperation," they wrote in their nomination letter.

Carboni was also surprised to be recognized. "I was really honored and I was shocked too. I have been managing faculty financials, which I could easily be giving them a very good news or very bad news. So it really means a lot that they not only respect what I do, but took the time to go above and beyond and nominate me for the award," she said.

Carboni started with the department in 2017. Her nominators, Stefan Somlo, MD; Lloyd Cantley, MD; and Richard Bucala, MD, PhD, noted Carboni's positive attitude, attention to detail, and communications skills. In their nomination, they wrote that Carboni, "singlehandedly resolved a two-year impasse between one investigator and the sub-award grant oversight team at a different institution, resulting in the award of the funds to our investigator. Achieving this took over six months of her continuing efforts, independent of our investigator, to contact their sub-award team and steadily move the request through their system."

The Service Excellence Awards were created in 2016 as a way to honor department staff on their excellence in the following pillars: understands the organization, demonstrates personal motivation, customer service and communication, university citizen/leadership, and teamwork. Previous winners include Laura Whitley, Laura Crawford, Lynn Gambardella, and Tracy Crosby.

## QUALITY & SAFETY

Aldo Peixoto, MD  
Vice Chair, Quality & Safety

To demonstrate the department's commitment to fostering a culture of quality improvement, the department's Quality & Safety Process Improvement Project grant program was launched in the spring of 2021. Led by Aldo Peixoto, MD, this initiative provided a total of \$50,000 to support eight quality and safety projects in both inpatient and ambulatory settings. Of the many outstanding submissions, the following eight projects were selected for funding:

"Febrile Neutropenia Management in the Extended Care Clinic (ECC): Determination of Suitability for Outpatient Therapy." (Project Leads: Maricar Malinis, MD; Jeff Topal MD; Scott Huntington, MD; and Sarah Mougalian, MD; Infectious Diseases / Hematology / Medical Oncology)

"Promoting Compassionate Care at the End of Life: Implementation of a 3 Wishes Project in the Medical ICU." (Project Lead: Shyoko Honiden, MD, Pulmonary, Critical Care & Sleep Medicine)

"Standardization and Improvement of Rheumatology Biologic Infusion Orders." (Project Lead: Vaidehi Chowdhary, MD, Rheumatology)

"Optimization of Laboratory Monitoring of Home Self-administered Therapy with Erythropoiesis-stimulating Agents." (Project Lead: Ravi Kodali, MD, Nephrology)

"Implementation of Video Media for Educational Quality Improvement in Primary Care." (Project Leads: Janelle Duah, MD; Yetunde Asiedu, MD, General Internal Medicine)

"Deprescription of Aspirin Prescribed for Primary Prophylaxis in Hospitalized Patients Presenting with Gastrointestinal Bleeding." (Project Lead: Darrick Li, MD, Digestive Diseases)

"Mitigating Delirium Upstream – ED Delirium (ED-DEL) Prevention." (Project Lead: James Lai, MD, Geriatrics)

"VitalTalk Training to Improve Serious Illness Communication Skills on Smilow Inpatient Services." (Project Lead: Jensa Morris, MD, General Internal Medicine)

"Acute Hemodialysis Catheter Registry." (Project Lead: Jeffrey Turner, MD Nephrology)

These grants will be offered yearly and will be paired with the recently developed Quality Improvement Bootcamp, a four-session course developed to train departmental faculty in quality improvement (first class will be completing it in the winter of 2022). In addition, our residency programs have seen steady growth in the number of residents joining the Quality & Safety Distinction Pathway led by Naseema Merchant, MD, and Jeremy Schwartz, MD. These innovative approaches are leading to necessary capacity building in quality and safety, placing our department as leader in the field.





# RESEARCH

**Lloyd Cantley, MD**  
Vice Chair, Basic Research

During the last academic year, there was an expansion of the Department of Internal Medicine research portfolio with recruitment of 11 new researchers across its 11 sections. Our research scope has expanded during COVID-19 despite the increased clinical demands and social/regulatory concerns associated with research across a variety of settings. Despite the constraints imposed by the pandemic, research productivity has been tremendous during this period, with an overall increase of 7.7% in National Institutes of Health (NIH) grant funding from fiscal year 2020 to fiscal year 2021. This sum is predicted to increase even further as the virtual programs identified during two department-wide research retreats described herein create new opportunities for basic scientists to interact with clinical researchers and educators to identify treatment targets of clinical disease presentations.

The challenges to medical research in the COVID era have provided opportunities for the faculty in our department to shine, with high publication and grant productivity despite the increased stress. In turn, department leaders have deepened commitments to research growth, with emphasis on providing junior faculty with the guidance, tools, and opportunities to address large biomedical domains.

To advance the department's research, the leadership sought detailed written feedback regarding the experience of conducting research across campuses. The unedited feedback was collated and shared in department-wide forums to develop appropriate responses and directions. These discussions predominantly occurred during the course of two research retreats.

**Robert Soufer, MD**  
Vice Chair, Clinical Research

The goal of Retreat 1 (June 2021) was to outline the department's vision for future research directions, particularly with the goal of aligning departmental research growth with the University Science Strategy Committee's top scientific priorities for the next decade. This outline led to a selection of the highest priorities with subcommittees created to discuss implementation and business plans. Retreat 2 (July 2021) sought to identify the long-standing infrastructural concerns within the clinical research domain and the steps needed to make the future department research initiatives chosen in Retreat 1 a reality.

## Basic Research

In the fall of 2020, labs across the school reopened with social distancing regulations to prevent the on-site spread of COVID-19. Although personnel were initially limited to one person per bay, basic researchers were again able to collaborate with their colleagues and reactivate their most critical research portfolios. These guidelines stayed in place through the spring of 2021.

In the first department research retreat, faculty from all sections representing the full spectrum of rank and research expertise shared their vision for future research growth and collaborative interactions within their sections as well as across sections, departments, and schools at the University. Department Chair Gary V. Désir MD, began with an overview of the department and school of medicine, followed by presentations by each of the department's 11 section chiefs highlighting the current research achievements and future opportunities for

research growth and collaborations. During the second session, Cantley and Soufer, along with subject matter experts, led discussions of integration opportunities across the department, university, and school.

To further support the department's research infrastructure, several major themes emerged from these discussions as important department-level initiatives: a biostatistics core; a biostatistics program; an integrated electronic health record (EHR) / genomic / biospecimen collection; and improved clinical research infrastructure.

The biostatistics core would support a group of statisticians who would be available to department faculty. The bioinformatics program would provide faculty, trainees, and staff across all sections interested in analysis of large datasets with leadership, supervision, teaching, and camaraderie to support analytical pipelines and best practices in analyzing large datasets. Leadership would be recruited for this role.

The goal of the EHR / genomic / biospecimen collection would be to fully integrate the three systems for research use. This might include an expansion of JDAT and the COVID Data Explorer (DOM-CovX), as well as genomic collaboration at YSM and Yale New Haven Health levels. For biospecimens, the department would partner more closely with the school biobanking initiative led by the Department of Pathology. An approach was recommended that would provide department members with access to research coordinators when available, along with improved post-award grant management.

Thematic program development was an integral part of the meeting. Existing research strengths across all sections were identified in order to develop virtual programs to align with Yale's top research priorities of integrative data science and ITS mathematical foundations; environmental and evolutionary sciences; quantum science, engineering, and materials; neuroscience from molecules to mind; and inflammation science.

The four-hour virtual retreat concluded with a general discussion of the advantages and disadvantages of prioritizing a finite number of the multiple initiatives proposed. It was agreed that those research faculty interested in specific initiatives should be supported in the development of a virtual program in their area of interest, and then

approach the department for additional resources that might be needed. Several of the initiatives that received the greatest interest included:

- Applied Data Science and Precision Medicine: proposed by Naftali Kaminski, MD; F. Perry Wilson, MD; Jose Villalobos, MD.
- Metabolic Contributions to Disease States: proposed by John Wysolmerski, MD; Richard Kibbey, MD/PhD.
- Translational Geroscience: proposed by Thomas M. Gill, MD; Terri Fried, MD; Mary Tinetti, MD.
- Cognitive Neuroscience: proposed by Robert Soufer, MD.
- Inflammation and Fibrosis: proposed by Lloyd Cantley, MD; Wajahat Mehal, PhD, MD; Erica Herzog, MD, PhD; Andrew Wang, MD/PhD; Kevan Herold, MD.
- Health Disparities: proposed by Marcella Nunez-Smith, MD.
- Global Biomedicine: proposed by Erol Fikrig, MD.
- Translational Cardiovascular Biomedicine: proposed by Eric Velazquez, MD.

## Clinical Research

While the department's basic science labs were back to full staff, much clinical research was limited by not allowing face-to-face contact for an additional six months. Despite these global setbacks, the Department of Internal Medicine was proactive in establishing its scientific focus and strength through its two retreats. The first retreat was organized to discuss a basis for developing programs in domains that connect researchers across multiple sections and interface with school and university initiatives. This event served to focus priorities and concerns for the second research gathering, held on July 9. With over 200+ department faculty attending the virtual event, participants discussed infrastructure and collaboration, community, and intellectual interests. The key infrastructure concerns were identified by a survey with detailed feedback prior to the retreat. The top three priorities chosen were related to data access and biostatistical support. The topics chosen were presented, discussed, and prioritized:

- Data Access
- Biostatistical Science
- Patient-Reported Outcomes
- Hospital Research Unit (HRU)
- Biorepository

Feedback regarding infrastructure converged upon the increased importance of data access, informatics, and biostatistics because patient-reported outcome measures (PROM) are unfolding as determinative variables in the global clinical research enterprise. The need to learn from other colleagues was repeated in several feedback sessions. The latter may be interpreted as a call to enhance our esteem for others' intellectual interests as well as promote collaboration and community. There are also calls for an accounting of resources within appropriate domains within the department and evaluate circumstances where centralization to scale to a broader number of investigators was also mentioned. This information could be used for growth within a particular group, (e.g., Biostatistics) or growth outside those groups as a resource within the department. Regarding informatics and biostatistics, many thought that data management and biostatistics support infrastructure should be explicitly available to faculty and general consultative support available to all investigators early in project development (e.g., particularly for those who may have limited questions or need direction). Levels of engagement for such resources from the preliminary to methodological integration should be determined. An accounting of available data science working groups within the department should be completed, along with considering strategies as consolidation and/or additional expansion for department faculty outside such working groups.

The feedback regarding data access centered upon the expansion of the DOM-CovX in concert with the development of patient-centered outcomes to support various aspect of disease presentations in internal medicine. The importance of integrating non-Epic database sources and exploring crossover with the database of the Department of Veterans Affairs were set as goals. Comments regarding data access as a key tool in translational science with a positive impact on basic science, in that promising signals can be rapidly evaluated in human populations.

The expansion of data access would enhance collaboration with stakeholders throughout and beyond the medical school within the priorities for Department of Internal Medicine research that are aligned with the university strategic science initiatives.

The importance of PROMs in relationship to scholarship in clinical research, funding and phenotype tracking was reinforced. The expansion of the discussion from a portion of committed faculty to a greater number of peers was helpful in fostering a discussion that identified key determinants of quality control and standardization of PROMs: validation, consistency, and implementation. There is support for greater efforts to work with hospital to integrate PROMs into Epic.

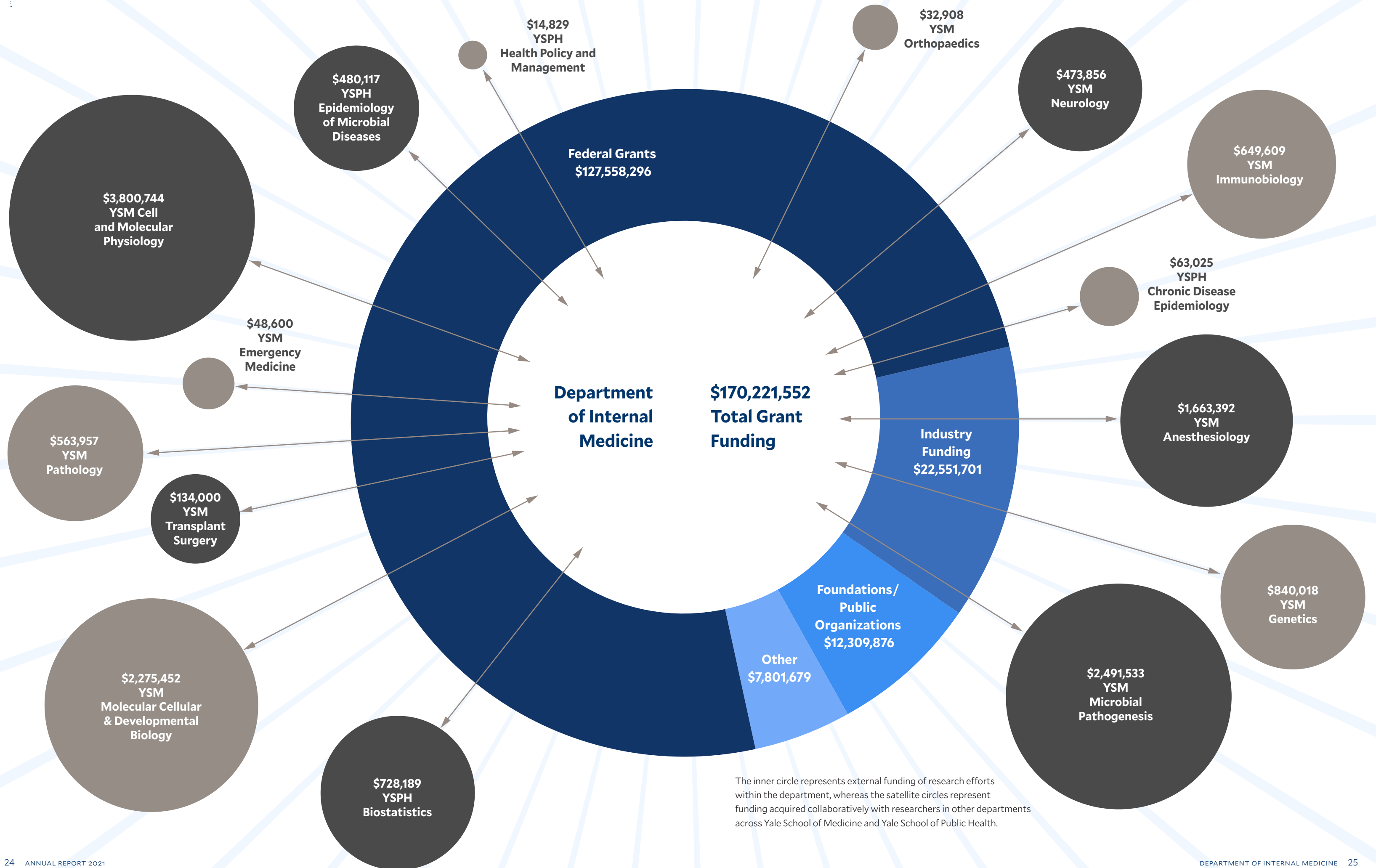
NIH funding for HRU facilities from the Clinical and Translational Science Award (CTSA) did not recur; thus financial liabilities for such units has increased. Plans for inpatient and outpatient HRUs are currently moving forward from the Dean's Office. Comments regarding a needed culture shift of research offices (Yale University Institutional Review Board, Yale Center for Clinical Investigation (YCCI), Office of Sponsored Projects, business offices) from an "enforcement mindset" to a "service mindset" to help investigators complete requirements in a timely and efficient manner was mentioned by several faculty.

Last, the implementation of a biorepository with a common system to barcode and manage samples so they can be easily tracked was discussed. The interplay between disease-specific versus global information could be centrally curated, stored, and sample located if needed was discussed.

Since this retreat, a group of faculty was organized for prioritization and strategy for research infrastructure. The group has met several times and is in the process of crafting recommendations for Department Chair Gary V. Désir, MD.



**Department Funding Sources and Interdepartmental Collaborations  
Across Yale School of Medicine and Yale School of Public Health**





# VETERANS AFFAIRS

**Daniel Federman, MD**  
Vice Chair, Veterans Affairs

At the VA Connecticut Healthcare System (VACHS) in West Haven, Department of Internal Medicine faculty care for patients; train residents and fellows; and perform research across the following subspecialty sections: general medicine, infectious diseases, kidney medicine, pulmonary, cardiology, gastroenterology / liver, allergy and immunology, rheumatology, occupational health, endocrinology, hospital medicine, hematology/oncology, and geriatrics. In addition to the West Haven location, internal medicine faculty care for patients at seven other Community-Based Outpatient Clinics (CBOCs) across Connecticut. Of the 571 total ladder track faculty, 100+ perform patient care full- or part-time at VACHS.

In January 2021, Daniel Federman, MD, was named chief of medicine at VACHS and vice chair, Veterans Affairs, for the Department of Internal Medicine. In this role, Federman is working toward more widespread adoption of integrative medicine and whole health. In addition, he is collaborating with other VA leaders to increase veteran enrollment in VACHS.

## Allergy and Immunology

Led by Christina Price, MD, the Allergy and Immunology Section has one faculty member (Price) along with a nurse practitioner, Janina Gilo-Tompkins, APRN, who together support four clinics in West Haven,

CHRISTINA PRICE, MD



including inpatient consultations. The team oversees immunotherapy services at each of the CBOCs via telehealth. This past year, an educational program was developed for immunotherapy to expand service across the region. In the coming year, the Allergy and Immunology section seeks to expand its role nationally to provide telehealth service for areas outside the region, in particular with clinical immunology.

## Cardiology

The cardiology section has 20 faculty (10 full-time and 10 part-time) serving Connecticut VA patients at two campuses, in West Haven and Newington. In addition to general outpatient cardiology, the section provides subspecialty care in electrophysiology, heart failure, and peripheral vascular disease, for a total of over 16,000 outpatient visits per year. Outpatient general cardiology will expand to the New London location in the spring of 2022.

The section has been designated as a VACHS Clinical Resource Hub for the New England Region in cardiology specialty care. This service provides virtual care in cardiology to smaller VA facilities in Northampton, Massachusetts, and Manchester, New Hampshire. Other clinical initiatives include the opening of a structural program for percutaneous valve replacements, and the expansion of cardiac rehabilitation to include cardiac wellness and primary prevention.

Recently, West Haven was designated a Cooperative Studies Program Network of Dedicated Enrollment Sites (CSP-NODES). This designation is the culmination of a comprehensive application submitted by Judith Meadows, MD, MPH, from cardiology and Mehmet Sofuoglu, MD, PhD, from psychiatry. West Haven is one of only three VA sites to have the three pillars of the VA CSP program: a CSP NODES site, a CSP Coordinating Center (CSPCC), and a Clinical Epidemiology Research Center (CERC). As a NODES site, cardiology will have expanded resources and opportunity for clinical trials and investigator mentoring.

Complementary to clinical research, basic research includes the Cardiovascular Molecular Imaging Laboratory. This lab, run by Mehran Sadeghi, MD, is funded by four federal grants (two R01, one VA Merit, and one DOD). It consists of 1400 sq. ft. fully equipped wet lab space, as well as a chemistry laboratory for SOP-based synthesis of

radiotracers for eventual clinical testing. In FY21, the lab published five manuscripts. Azmi Ahmad, PhD, a postdoctoral fellow, was the winner of the American Society of Nuclear Cardiology's 2021 Young Investigator Award. The Cardiovascular Molecular Imaging Laboratory currently trains four postdoctoral associates at the VA in molecular imaging and vascular biology research.

Daniel Jane-Wit, MD/PhD, has a large program in understanding the role of endothelial cells in solid organ transplant rejection. His lab is funded in part by a VA Merit Review Award specific to hedgehog signaling in the activation of T-cells involved in vascular rejection.

## Endocrinology

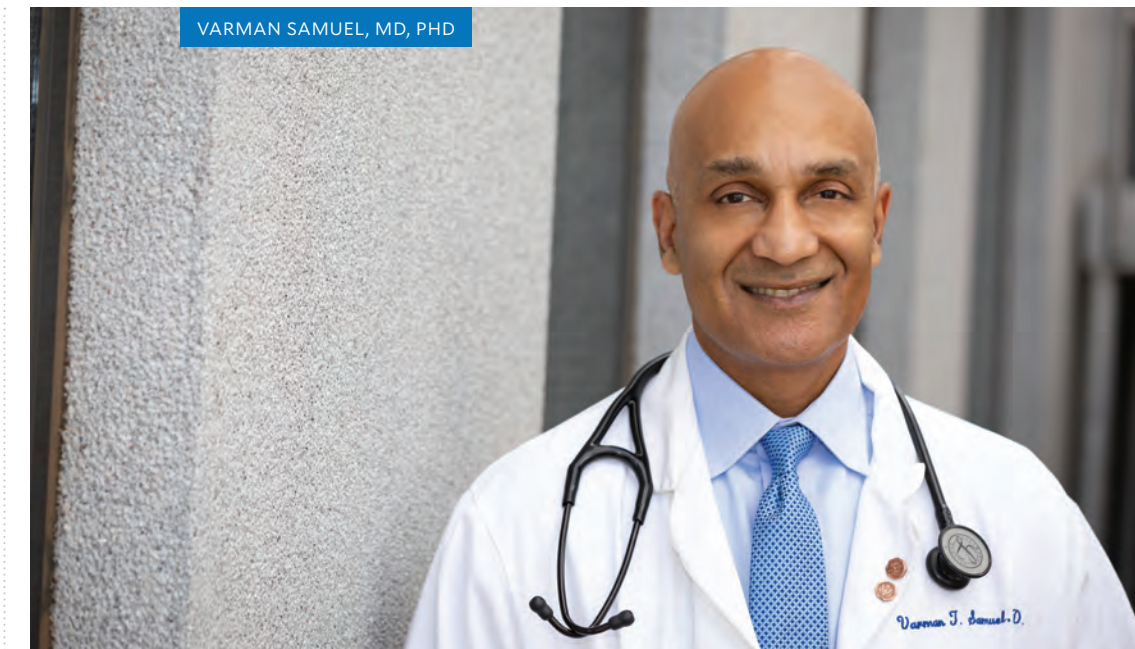
The Endocrinology Section has six faculty members and six fellows who support endocrine clinics in the West Haven and Newington campuses under the direction of Varman Samuel, MD, PhD. Samuel currently has a basic research program in his lab at the West Haven Campus. Barbara Gulanski, MD, MPH, has been the site's principal investigator of the recently completed Glycemia Reduction Approaches in Diabetes: A Comparative Effectiveness Study (GRADE).

In the coming year, the endocrine section seeks to expand its role in medical weight management as adjunctive to the VA's behavioral weight loss program (MOVE!) and also develop clinical programs in the VACHS Clinical Resource Hub for the New England region.

## Gastroenterology / Liver

Six of the department's digestive diseases faculty work, teach, and train fellows and residents at VACHS. Led by chief Guadalupe Garcia-Tsao, MD, FRCP, this group published 80 peer-reviewed original research studies, three editorials, and five separate society guidelines, along with 10 funded grants during fiscal year 2020. Three faculty members serve as associate editors of the following high-impact journals: Garcia-Tsao: *New England Journal of Medicine*; Wajahat Mehal, MD: *Journal of Hepatology*; and Tamar Taddei, MD: *American Journal of Gastroenterology*.

Throughout the year, this section racked up honors and awards. Garcia-Tsao earned lectureship honors from the University of



VARMAN SAMUEL, MD, PHD

Pittsburgh, the American Association for the Study of Liver Diseases (AASLD), and the University of Florida. Loren Laine, MD, was named section chief of Digestive Diseases and Medical Chief, Digestive Health at Yale New Haven Health in March 2021. He was also honored in April with the Elliot Weser Lectureship by the University of Texas, San Antonio. Fred S. Gorelick, MD, earned the VA Senior Clinical Investigator award in 2021. Taddei was named vice chief, Development, for the Section of Digestive Diseases and became an executive committee member in Yale's Committee on the Status of Women in Medicine (SWIM).

In addition to these honors, many of the VA faculty serve in diverse leadership positions globally.

Garcia-Tsao serves as a member of the AASLD Foundation Board. Laine serves as chair of the Fecal Microbiota Transplantation National Registry Steering Committee, and of the Digestive Disease Week Council.

Throughout the pandemic, faculty were flexible to ensure patients received necessary care. Mehal assisted in the adaptation of patient care in the liver clinic to increase the availability of tele-consultations.

## General Medicine

The general medicine section has 26 physician faculty members in primary care and 11 in hospital medicine (see below), and three PhD researchers on the West Haven campus under the direction of Lori Bastian, MD, MPH.

Several important transitions have

occurred in 2021, including:

- **Seonaid Hay, MD**, was appointed as director of Graduate Medical Education.
- **Christopher Ruser, MD**, was appointed associate chief of Medicine.
- **Jeffrey Kravetz, MD**, was appointed chief of Primary Care.
- **Juliette Spelman, MD**, was appointed chief of Firm B.
- **Rebecca Brienza, MD, MPH**, was appointed acting chief of Firm A.
- **Caroline Falck, MD**, was hired to direct the VA Connecticut's Homeless Patient Aligned Care team (H-PACT).

As a new faculty member, Falck also has expertise in addiction medicine and has conducted research in medical therapy for opioid use disorder.

Under the direction of Bastian, the Pain Research, Informatics, Multimorbidities, and Education Center (PRIME) has four focus areas:

- **Pain & Opioids:** Conduct research to improve pain care for veterans.
- **Women's Health:** Conduct research to improve women veterans' health.
- **LGBTQ Health:** Conduct research to improve LGBTQ veterans' health.
- **Emerging Areas:** Headache, violence prevention, eating disorders, HIV/AIDS, COVID-19, insomnia, nursing, pulmonary and cardiology.

The PRIME Center includes 25 investigators and supports 43 funded studies with total funding in FY21 of over \$32M. More than 50 manuscripts from general medicine





WILLIAM BECKER, MD

faculty were published this year. Recently funded studies include:

- **Role of Nonpharmacological Pain Treatments in Safe and Effective Opioid Tapering in Chronic Pain.** Investigators: Anne Black, PhD, and William Becker, MD; Funding: VA Health Services Research and Development Service (HSR&D)
- **National Mortality Study and Disrupted Care Research Coordination:** Investigators: Louise Davies, MD, and Amy Justice, MD, PhD. Funding: VA HSR&D
- **The HIV and Alcohol Research Center Focused on Polypharmacy:** Principal investigator: Justice. Funding: National Institutes of Health, National Institute on Alcohol Abuse and Alcoholism
- **VA Advanced Fellowship in HSR&D:** Investigators: Bastian and Rani Hoff, MPH, PhD. Funding: VA

Current VA HSR&D fellows include:

- **Kathryn Min, PhD**
- **Danielle Wesolowicz, PhD**
- **Minhee Sung, MD [General Medicine]\***
- **Jacob Eleazer, PhD**
- **Vu-Thuy Nguyen, PhD**

### Geriatrics

Geriatrics at the VA is multifaceted and encompasses Yale faculty on the Geriatrics Consult Service, Home Based Primary Care Program, and Community Living Center. In all

aspects of clinical, educational, and research efforts at the VA, providers focus on the 4M Framework of Age-Friendly Health Systems to include Mentation, Medication, Mobility, and what Matters. Yale Geriatrics works collaboratively across VA and Yale campuses under the leadership of section chief Terri Fried, MD. Please see the Yale Geriatrics section on page 48 for more information.

VACHS welcomed Gregory Ouellet, MD, MHS, to the Geriatric Consult Service and to expand geriatric services through the VA's Clinical Resource Hub. The Geriatric Consult Service is working with the VA's Geriatric Surgical Verification Program leadership to provide best practices in perioperative management of older veterans. Marcia Mecca, MD, continues deprescribing efforts within the VA Center of Education in Inter-professional Primary Care with new adaptations to virtual care. Fried and Mecca received funding to participate in a HSR&D-funded multi-site trial to implement the Patient Priorities Care approach in primary care. The Home Based Primary Care Program, under the medical direction of Maura Singh, MD, has developed innovative initiatives to meet the needs of homebound veterans in the face of the COVID-19 pandemic. Singh and Mecca have worked collaboratively on a new deprescribing project for older homebound veterans with polypharmacy and received funding from the VA Patient Safety Center of Inquiry on Medication Safety in Older Adults. Singh also became the primary care geriatrician for the interprofessional clinic devoted to veterans with amyotrophic lateral sclerosis. The

Community Living Center, directed by Chandrika Kumar, MD, maintains its five-star rating and serves veterans needing short-term rehabilitation or inpatient hospice services with numerous quality improvement efforts. Kumar developed an interprofessional fellow rotation for the Community Living Center; and Shin Lin, MD, developed a pre-clerkship hospice training for medical students.

### Hematology / Medical Oncology

Eight faculty members care for patients with cancer and hematologic disorders at VACHS.

The VACT Hematology/Medical Oncology clinical trials program is very active within the National Cancer Institute's National Cancer Clinical Trials Network (NCTN) of the National Cancer Institute. Since 2019, this section has been the top-enrolling site for NCTN studies across the Department of Veterans Affairs. Among NCTN studies, the program is one of the top enrolling sites to the National Myelodysplastic Syndromes (MDS) Natural History Study; the Lung-MAP Clinical Trial; the ALCHEMIST Chemo-IO Study; and the Pancreatic Cyst Surveillance Program.

VACHS was selected as a hub site for the Lung Precision Oncology Program, a partnership between the National Oncology Program Office and the Office of Research and Development to optimize lung cancer care. The primary investigators are Hilary Cain, MD, and Michal Rose, MD.

Over the past year, hematology and medical oncology faculty were recognized for their excellence. In June 2021, Herta Chao, MD, PhD, was awarded the 2021 David S. Fischer Oncology Teaching Award. In addition, Rose was chosen as co-chair of the American Society of Clinical Oncology hepatocellular cancer guidelines committee.

### Hospital Medicine

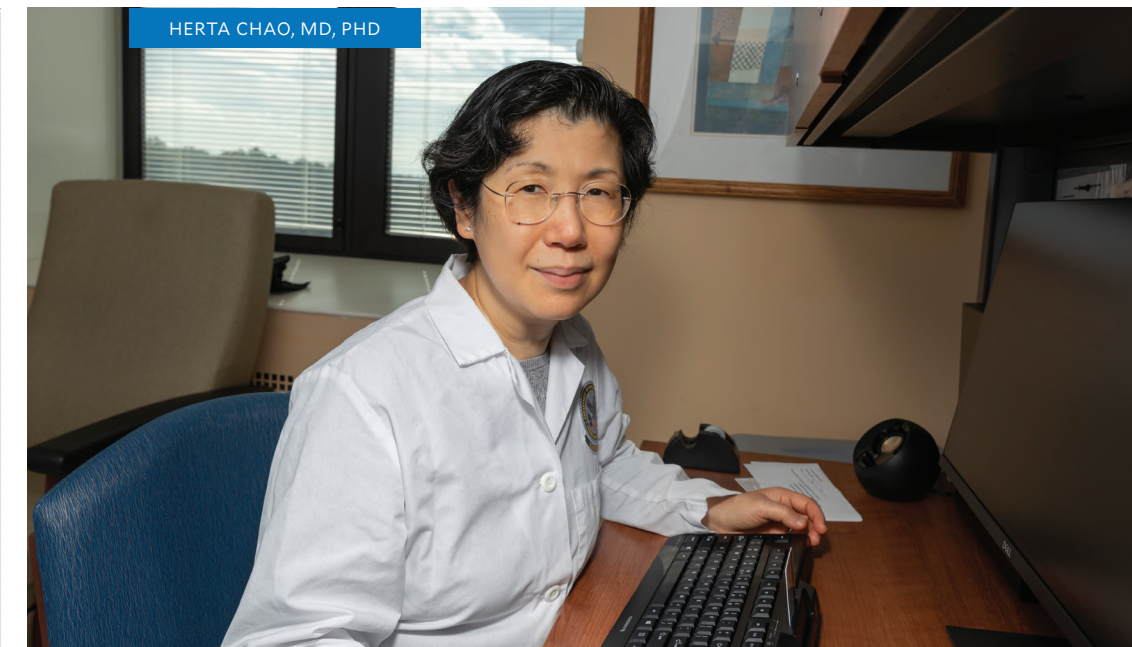
The Hospital Medicine section launched in 2010 with two hospitalists. Since then, the team has grown to 11 physicians. Since 2018, Craig Gunderson, MD, has been section chief. 2021 was the first year that all medical inpatients were managed or co-managed by hospitalists.

All VA hospitalists attend on one of the inpatient services for a total of 32 weeks per year. Along with patient care, these

hospitalists serve in a variety of educational roles, such as teaching through the medical coach educator and professional responsibility courses, and as the clerkship directors for internal medicine and physician assistant student internal medicine rotations. Benjamin Rodwin, MD, serves as associate program director for preliminary residents.

In the past year, this team produced 17 publications in journals ranging from the *Journal of General Internal Medicine* to *BMJ Quality & Safety*, presented at four national conferences; and were awarded two Veterans Health Administration (VHA) grants. In 2021, Jurgen Holleck, MD, won the Asghar Rastegar Award for Teacher of the Year at VACHS, marking the fourth year in a row that this award went to members of the hospital medicine group.

In addition to the clinical, educational, and research duties, the hospital medicine group is very involved in VACHS hospital operations, including serving as chairs of three hospital committees (Flow, Patient Safety and Ethics); chairs of two national hospital medicine VHA committees (Hospital Medicine Field Advisory Board and National Hospital Medicine Research Collaboration); and service as local safety champion for the VHA high-reliability organization initiative.



HERTA CHAO, MD, PHD

### Infectious Diseases

The Section of Infectious Diseases (ID) has nearly 20 faculty at VACHS, including full-time, part-time, and voluntary faculty, led by Richard Sutton, MD/PhD. They have a relatively busy inpatient consultative service, with an increasing number of e-consults each year, and three clinic days (general ID, HIV, and outpatient parenteral antibiotic therapy; the latter is run by Ann Fisher, MD).

This year, Sutton participated in four Data and Safety Monitoring Boards (DSMBs), including one for a Moderna mRNA influenza vaccine. Sutton also

performed research with other VA staff on post-vaccine immune responses against SARS-CoV-2. He is NIH-funded for work on HIV elite control.

Sheela Sheno, MD, MPH, served on the Infectious Diseases Society of America's Mentorship Program, in addition to its GERM (Grants for Emerging Researchers/Clinicians Mentorship) Program in 2020 – 2021. In December, Sheno was appointed associate director of the Department of Internal Medicine's Office of Global Health.

In October 2020, Sandra Springer, MD, and her collaborators were awarded a \$11.5M grant from the National Institute on Drug Abuse for 'Addressing Risk Through Community Treatment for Infectious Disease and Opioid Use Disorder Now (ACTION)' among justice-involved individuals. This initiative is a multi-site collaboration with Texas Christian University, the University of Texas Southwestern, and Yale University, along with their community and Department of Corrections partners. The five-year project will compare Patient Navigation to Mobile Health Unit service delivery for people who are released from prisons and jails with a history of pre-incarceration opioid use and/or injection drug use who are either living with HIV or at risk of acquiring HIV.

In September 2021, Springer became director of the new Justice Center for Opioid Research at YSM, and was invited to be a new member of the IAS-USA Antiretroviral Guidelines Panel.

Rupak Datta, MD/PhD, MPH; Fisher; and Louise-Marie Dembry, MD, continue to be frontline workers against COVID-19 as part



HILARY CAIN, MD, MICHAL ROSE, MD

\*Sung recently received a two-year career development award for her study 'Factors that impact long-term buprenorphine adherence among veterans with opioid use disorder: A mixed-methods study.'



SANDRA SPRINGER, MD



of Infection Control and Hospital Epidemiology, as the VACHS numbers are on the rise (as of the publication date) and Omicron is the dominant variant, displacing Delta.

Joseph Vinetz, MD, has an active National Institutes of Health-funded malaria research program based at the Yale School of Medicine campus. Brinda Emu, MD, is similarly funded to investigate links between HIV and common cancers that afflict our veterans.

### Kidney Medicine

The Section of Kidney Medicine has seven faculty at VACHS (six at Yale and one at the University of Connecticut), an experienced physician's assistant, and is led by Susan T. Crowley, MD, MBA.

The VACHS kidney medicine section provides crucial leadership to local and national clinical, educational, and professional service committees. Faculty have been recognized nationally as chairpersons for research oversight committees and have been asked to serve as subject matter experts for the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK); public health (Centers for Disease Control and Prevention), and medical regulatory (U.S. Food and Drug Administration) committees, as well as on the educational committees of such professional societies, as the American Society of Nephrology.

Faculty serve as the executive director of the Veterans Health Administration's Kidney Medicine Program; co-chair of Yale School of Medicine's Homeostasis course; medical

director of YSM's Physician Assistant program; and as Yale Department of Internal Medicine's diversity, equity, and inclusion committee representative. The VACHS kidney medicine faculty have recently been recognized by awards bestowed by the ASN for Innovation in Medical Education, and by the National Kidney Foundation (NSF) for excellence in medical education (Seldin Award) and by its highest award, for scholarship and humanism (David M. Hume Memorial Award).

The faculty have demonstrated academic excellence by pursuing advanced degrees in related fields (MBA, PhD); executive medical journal editorial service; substantial peer-reviewed publications; and the publication of federal health policy to advance population kidney health.

The team has successfully piloted a novel national Telenephrology Clinical Resource Hub (CRH) to deliver subspecialty nephrology care to underserved regions of the United States, resulting in demonstrable improvements in kidney health outcomes for patients served. The faculty have also ensured uninterrupted local outpatient dialysis services throughout the COVID-19 pandemic and established an array of inpatient kidney replacement therapies to provide the agility needed to meet the pandemic's surging demands for such care.

The section continues to be productive in research at the VA. In collaboration with VA general medicine and VA PRIME Center investigators, kidney medicine investigators secured multi-year NIH/NIDDK-funding to study the impact of novel non-pharmaco-

logic and pharmacologic interventions to reduce pain and chronic opiate use in patients with end-stage renal disease. They have also partnered with VA primary care and the NSF to pilot the use of the NKF's virtual kidney score platform to advance patient and provider awareness of kidney disease and its treatment. They also conduct bench research to discover the genesis of kidney fibrosis and acute kidney injury and its repair mechanisms.

### Occupational Medicine

VACHS Occupational Medicine focused its energies on innovative oversight of our COVID-19 response. Brian Linde, MD, MPH, Louis Fazen, MD, PhD, and their team worked tirelessly on two fronts: clinical COVID response and oversight of more than 3,000 employees during waves of the pandemic, as well as planning, implementation, and oversight of the employee COVID vaccination program. Employee-focused clinical COVID response, this work entailed 24-hour coverage for screening and testing, creation and oversight of increasingly sophisticated testing programs, key roles in infection prevention, and VACHS's COVID-related incident command and strategic planning.

For employee vaccination, Linde and Fazen devised an operational plan as early as December 2020, as well as a distribution hierarchy and self-scheduling app, leading to one of the earliest and most successful employee vaccination programs in the national VA system. Linde and the occupational medicine department became the de facto professional communication clearinghouse for consistent anxiety-relieving messaging during trying times. In addition, Efiya James, MD, MPH, while serving as VISN1 Employee Health Lead, provided invaluable assistance to clinical sites throughout New England with subject matter expertise on pandemic response.

### Pulmonary, Critical Care, & Sleep Medicine (PCCSM)

Hilary Cain, MD, has served as co-lead PI for the Lung Precision Oncology Program (LPOP) with Rose (hematology/oncology chief at VACHS) since November 2020. Brett Bade, MD, served as assistant director for VACHS LPOP with Kathryn Lerz, APRN,

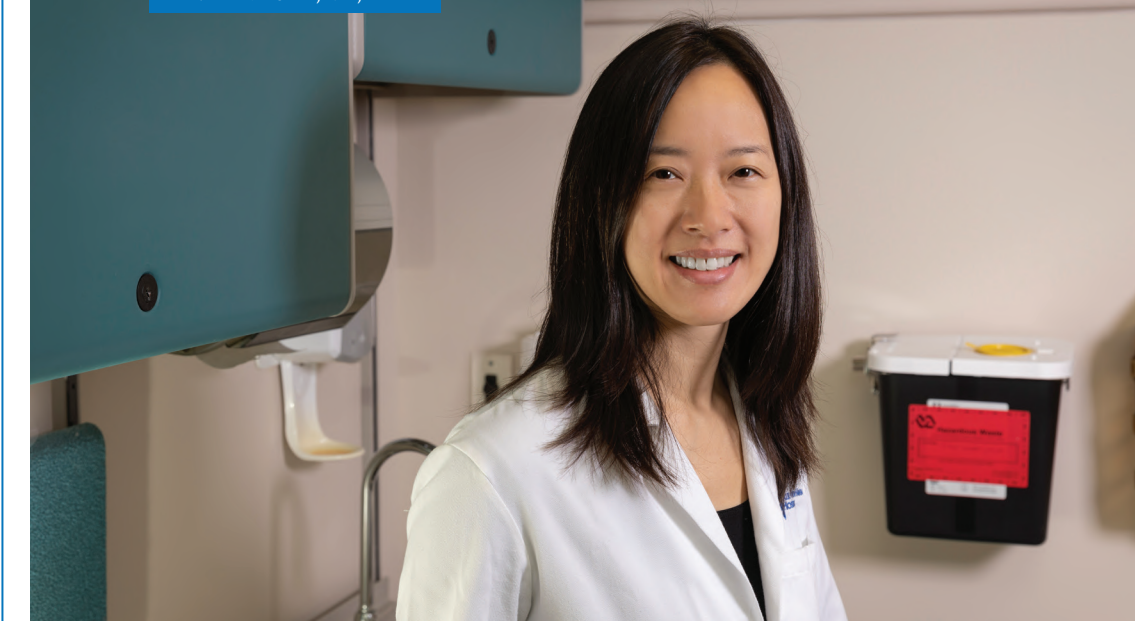
serving as the clinical coordinator. The VA's goal is to transform itself into a system of excellence in precision oncology. Priorities include increasing access to lung cancer screening, clinical trials, and biomarker testing. The award was a joint application between pulmonology and oncology (Cain, Rose) and provides support for a clinical core (clinical coordinator, nurse) and research core (research coordinator, technician) for up to five years.

Lauren Cohn, MD, continues to serve as the director of the Biologics and Advanced Therapeutics in Airway Diseases program. All asthmatic veterans being considered for biologic therapy by a pulmonary provider in the VACHS are referred for evaluation using the electronic(e)-consult process. Through this process faculty and fellows are educated about severe asthma, therapeutic options, and safety and monitoring of biologics for asthma; and this oversight ensures appropriate use of these therapies. Oversight of the asthma biologics program at the VACHS ensures that the pulmonary team works closely with the clinical pharmacists and nursing staff to educate them about various therapeutic options and indications, and to review protocols for drug delivery and monitoring.

Shortly after his academic appointment to instructor at YSM and joining the PCCSM section for VACHS, Edward Manning, MD, PhD, was received multiple awards and honors, including a three-year, \$600,000 grand from the Additional Ventures Single Ventricle Research Fund mechanism; National Institute on Aging Butler-Williams Scholar Award; Yale Pepper Center grant recipient and scholar; and a RCCN/AFAR Measuring Biologic Aging Workshop travel award. Manning also successfully published his findings on the novel mechanisms of proximal pulmonary artery stiffening due to chronic hypoxia in *Frontiers in Physiology* (PMID: 34594238) and passed his critical care and advanced critical care echocardiography boards.

Kathleen Akgün, MD, MS, served as co-PI with Kristina Crothers, MD, (VA Puget Sound and University of Washington) for the VA-funded award "Associations of steroid exposure with severity and outcomes of hospitalized Veterans with COVID-19" (C19 20-406). She continues to collaborate with Shelli Feder, PhD, APRN, from Yale School of Nursing as co-PIs for the VHA Health Services Research and Development Service award "Facility-level variation in palliative

EVELYN HSIEH, MD, PHD



care consultation and patient quality outcomes among heart failure decedents" (CIN 13-407, LIPS 96-062). Akgün was also appointed chair of the Ethics and Conflict of Interest (ECOI) for the American Thoracic Society.

### Rheumatology

Over the past year, the section's faculty have worked to expand educational programs for trainees both from Yale School of Medicine and University of Connecticut (UConn). Led by chief Evelyn Hsieh, MD, PhD, the section established and expanded educational training for Yale rheumatology fellows in both musculoskeletal ultrasound and the musculoskeletal exam. Deepa Chandrasekaran, MD, was named the new course director of the musculoskeletal ultrasound course. Carmen Pagan, MD, assists Chandrasekaran as course faculty in conjunction with the VACHS Psychiatry department. John Waterman, MD, serves as site director for UConn's rheumatology fellowship program.

In September, Joshua Bilsborrow, MD, MHS, joined the VACT rheumatology team and provides outpatient and inpatient care along with supervising and educating YSM rheumatology fellows.

The six section faculty continue to serve in local clinical leadership roles, and are recognized nationally as chairpersons for committees and sub-committees of the American College of Rheumatology (ACR).

Hsieh works as chair of the ACR's Global Engagement Special Committee, in addition to serving as co-chair of the organization's Strategic Planning Task Force. Lisa Suter, MD, continues to serve as co-chair of ACR's Quality Measures Sub-Committee, a committee she joined in February 2018. Suter also directs a federal quality measurement contract with non-VA effort, which includes supporting inclusion of VA data in the Centers for Medicare and Medicaid Services Hospital Inpatient Quality Reporting Program. Chandrasekaran chairs the VACHS medical management committee, which discusses the appropriate need for assistive devices for veterans with different medical issues.

Finally, the section has continued to be productive in research both at the VA and beyond, with new NIH funding obtained within the past year for VA-related projects.



# DEPARTMENT VITAL STATS



## #10 NIH Funding in Internal Medicine

7.65% increase from FY20 to FY21

**\$142M**  
in Sponsored Funding

**\$340M+**  
Total Operating Budget

**100+**  
faculty perform patient care at VACHS

**571**  
Ladder Track Faculty

**144**  
Research Faculty

**58**  
Instructors

**25**  
Lecturers

**232**  
Hospital Residents

**283**  
Postdoctoral Associates / Fellows  
*Includes Clinical Fellows*

**53**  
Postgraduate Associates / Fellows

**402**  
Staff  
*Medical Oncology, Hematology, and PA Program staff not included*

**532**  
Other  
*Voluntary, Adjunct, Visiting, Emeritus*

**418**  
Voluntary

**78**  
Adjunct

**29**  
Emeritus  
**7**  
Visiting

## News

# New Distinction Pathway Available in Fall 2021\*

The new Race, Bias, and Advocacy in Medicine (RBAM) Distinction Pathway officially launches for the 2021 fall semester. Interested residents should apply for the two-year program in the fall of their PGY-2 year.

Created by former chief residents Jana Christian, MD, and Rachel Schrier, MD, the new pathway offers residents a rigorous and comprehensive curriculum, arming them with tools to understand, combat, and reflect on racism and structural / cultural bias experienced through the healthcare system, medical education, and physician practice. Residents will partner with the greater New Haven community to better understand disparities in access, intensity, and quality of healthcare and improve healthcare delivery.

Christian recalled the origination of the pathway as part of her April 22, 2021 Medical Grand Rounds. She shared the devastation and outrage she felt after the murder of George Floyd in Minnesota. "And with George Floyd and the horror of that video, it felt like enough was enough. And so over the summer of 2020, my co-chiefs and I attended protests, spoke openly with each other about race and racism, and brainstormed together about what we could do to contribute to being anti-racists and bringing these principles into the medical sphere. And what I wanted so desperately was to create a space for our residents to discuss, process, and develop an understanding of the pervasive nature of racism and bias, and brainstorm ways to combat it as physicians. So I led a working group of dedicated residents, interested in talking about racism in our own medical system, education, and practice. And my co-chiefs and I met with experts on race and medicine throughout our own department and in other departments throughout our medical center," she explained. Watch her Medical Grand Rounds on the website.

Christian, and four other residents approached Department Chair Gary V. Désir, MD; Associate Chair for Diversity, Equity, and Inclusion Inginia Genao, MD, FACP; Traditional Residency Program Director Mark D. Siegel, MD; and others, and were given full support, which led to the creation of RBAM.

"Jana and other residents reaching out to Dr. [Gary] Désir and I with the excellent idea of a distinction pathway on anti-racism is

music to our ears and undoubtedly have our full support," said Genao. "With the support of Dr. [Vincent] Quagliarello, the resources were made available and restructured to benefit not only RBAM, but all the distinction pathways in our residency programs. We are thrilled to see our future physicians leading the way to break the cycle of racism and other forms of discrimination."

Aba Black, MD, MHS, assistant professor (general medicine); and vice chief for diversity & inclusion (general medicine) will serve as co-director of RBAM. She met with the residents early in the process and helped frame the coursework.

"I have a background in Sociology and African-American studies, so I tend to think about things in that framework, and so we chatted about some ideas for moving forward, people to get involved, and how to move forward with leadership to make sure that this is something that sticks," said Black. "But this was the chiefs' initiative, and they did a lot of great work talking to a lot of key players in our department at the institution to make sure that this is something that can work."

"The overarching goal is to engage a select group of residents more deeply in issues surrounding diversity, equity and inclusion. I always think of these issues in a number of different ways; there's certainly direct community engagement. One of the goals is to enhance our awareness of issues at pertain to the greater New Haven community. And then thinking about some of the larger social injustices that exist, whether we are thinking about the criminal justice system, education, healthcare. There are a number of different ways that we can take those issues and then intersect them with race and identity," Black continued.

Stephen Holt, MD, MD, FACP, co-director, was a founder and core faculty member for the Clinician Educator Distinction Pathway and felt compelled to participate in RBAM.

"I wanted to be a part of something new, something that was forward-thinking, and

something that I felt I could contribute in some meaningful way, simply by virtue of the fact that I had run a distinction for seven years, and so I know the like the mechanics of it," said Holt. "And Aba, who I have been an admirer of since she arrived as an intern seven or so years ago, was going to be the faculty lead for this? I was compelled to send her and Inginia [Genao] an email saying that I wanted to help out."

Christian, Schrier, and their fellow chief residents outlined how credits would be earned, and what didactics would be available for learners. Five department faculty members have signed on thus far, and the curriculum is being outlined for the fall 2021 start. Resident leaders for the pathway are Ashley Demory, MD; Zina Huxley-Reicher, MD; Raksha Madhavan, MD; and William Santiago, MD.

"This pathway will provide a highly visible and sustainable infrastructure by which our residents can discuss and unpack issues of race, racism, and bias, especially as it interacts with our own healthcare system," said Christian.

While Christian has returned to her home state of Maryland to work as a hospitalist at The Johns Hopkins Hospital, she was impressed with Yale School of Medicine's commitment to the project. "It's been a privilege to be able to see an idea come to fruition as something that has been embraced by a full Internal Medicine Department at your institution, that feels amazing. It says a lot about Yale as an institution, that they are so willing to listen to good ideas, and willing to then put resources in a good idea too. The fact that our leadership, Dr. Genao and Dr. Desir, were so quick and eager, and followed through on their statements, so they would support us with resources, it's just incredibly meaningful, because that is what will allow it to be sustained," she said.

RBAM is the fifth Distinction Pathway available within the Department of Internal Medicine.

\*Originally published July 1, 2021



# CARDIOVASCULAR MEDICINE



The Section of Cardiovascular Medicine is a diverse and integrated community that includes clinicians, investigators, and educators. The section's 193 faculty provide world-class patient-centered care and transform cardiovascular medicine through innovative research, scholarship, and training. The section strives to expand dynamic collaborations among clinicians and investigators within the section, the larger Yale community, and Yale New Haven Health.

Over the past year, the section has focused on recruiting outstanding faculty and the development of our early-career faculty and trainees. Under the leadership of Eric J. Velazquez, MD, the section has established an administrative and leadership team to expand support for clinical and research operations. To fully realize these ambitions, Nihar Desai, MD, MPH, vice chief for Clinical Operations; Daniel Price, MD, vice chief for

Ambulatory Programs; Lauren Baldassarre, MD, vice chief for Faculty Life; Jeffrey Bender, MD, senior vice chief for Academic Development; and Edward Miller, MD, PhD, vice chief for Education; along with clinical program and research center leadership working towards developing strategic goals and are focusing on opportunities for integration between the section's expansive areas of research and clinical activities, and in con-

cert with colleagues across the department, health system, school, and university. The clinical programs within cardiovascular medicine include 15 faculty-led inpatient services, five general services, and subspecialty services at Yale New Haven Health and also at the VA Connecticut Healthcare System. The section's faculty group practice sees patients at 21 ambulatory sites with approximately 300 ambulatory sessions

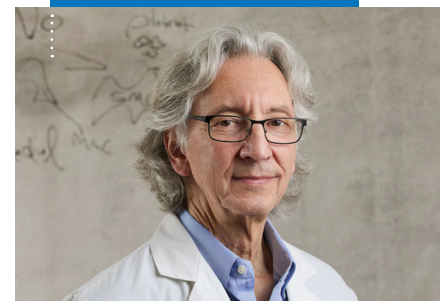
RACHEL LAMPERT, MD; JOHN STENDAHL, MD, PHD; SOUNOK SEN, MD; ARNAR GEIRSSON, MD; SARAH BELSKY



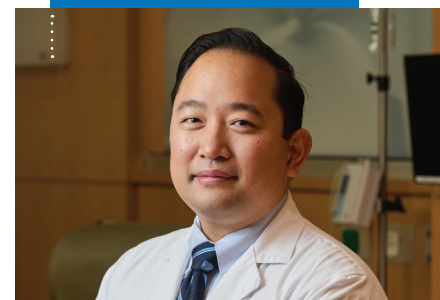
YALE CARDIOVASCULAR RESEARCH CENTER (YCVRC) CO-DIRECTORS: (L-R) STEFANIA NICOLI, PHD; DANIEL GREIF, MD; KATHLEEN MARTIN, PHD; ANNE EICHMANN, PHD



JEFFREY BENDER, MD



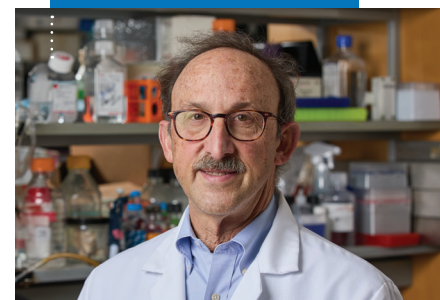
CHRISTOPHER MAULION, MD



SOUNOK SEN, MD



LAWRENCE YOUNG, MD



weekly. The section also runs a robust cardiovascular imaging program, including high-volume expertise in echocardiography, nuclear, cardiac CT and cardiovascular MRI across multiple laboratories at different hospital and clinic-based sites; and invasive laboratory programs in electrophysiology, coronary interventional, endovascular, and structural heart disease, serving not only patients in the Greater New Haven region but also in New London and Fairfield Counties.

The section has outstanding programs that span the translational continuum from scientific discovery to population health, and have had a remarkable presence at meetings with multiple abstracts over the last year led by early-career faculty who have garnered over a dozen awards. The section's internationally recognized NIH-supported laboratory-based research programs are led by investigators working in vascular biology, inflammation, myocardial and stem cell biology, molecular imaging, genetics, and cardiorenal physiology. Recent investments and new faculty recruitments have strengthened excellence in clinical trials, outcomes, and computational/data science research programs. The current research portfolio of Cardiovascular Medicine includes over three hundred active grant awards supported by more than \$183 million in total funding.

The Yale Cardiovascular Medicine fellowship program, the largest at Yale New Haven Hospital, has the privilege of training over 50 physicians in advanced subspecialty and general cardiology programs each year. Our laboratories also support the training of graduate students, post-doctoral and early-career PhD investigators.

The section is committed to the dissemination of knowledge. We are excited to continue to bolster a vibrant CME program that includes a new series called Giants in

Cardiovascular Medicine, which celebrates the section's history.

The Section of Cardiovascular Medicine is fortunate to be part of one of the world's leading universities. We are committed to leveraging partnerships across the university. The section will align itself through clinical subspecialty areas and invest in translational laboratories to link the clinic and our strengths in the biological mechanisms of health and disease. These programs will lead to preliminary data that can be used to launch new NIH-funded research proposals and pilot programs. To do so, the section intends to recruit mid-career faculty and increase opportunities for women and under-represented minorities to expand the section's reputation in human and translational cardiovascular research.

The section has identified key areas of scholarship and inquiry for the future:

- Facilitate research synergies at the department and university levels in cardiometabolic, thrombosis, inflammation and immunity, precision medicine, and biomedical engineering.
- Advance the understanding of social, economic, and environmental factors that influence patient life expectancy and outcomes.
- Invest in biostatistics, computational biology, and informatics to improve how we measure, test, and interpret clinical, translational, and mechanistic research.
- Ensure that the section's care and research programs incorporate our emerging understanding of lifestyle and lifespan factors.

The Section of Cardiovascular Medicine has nearly seven decades of clinical and academic excellence. To learn more, visit [cardiology.yale.edu](http://cardiology.yale.edu).



# DIGESTIVE DISEASES

MICHAEL NATHANSON, MD, PHD



Since forming one of the nation's first sections of hepatology and gastroenterology over 50 years ago, the Yale Digestive Diseases section has had an enduring impact on fundamental and clinical investigation in digestive and liver disorders.

We offer comprehensive clinical and research programs in a broad array of gastrointestinal and liver diseases. We also provide training to 18 fellows in our ACGME-accredited GI fellowship program (including clinical and NIH-sponsored research fellows) and advanced fellows in liver transplantation and interventional endoscopy.

## Clinical Care

Such functional gastrointestinal disorders as irritable bowel syndrome are among the most common and challenging gastroentero-

logical conditions. The section has recently established a new program specializing in the multidisciplinary care of these patients, with a variety of pharmacological and nonpharmacological options available. Jill Deutsch, MD, who has great expertise in patients with functional gastrointestinal disorders, is director of the program.

The section's advanced endoscopic physicians are experts in performing highly complex procedures not done elsewhere in Connecticut; some are available at a few select centers worldwide. Thiruvengadam Muniraj, MD, director, Yale Center for

Pancreatitis, performs novel endoscopic ultrasound-guided interventions, including EDGE ERCP for gastric bypass patients; gallbladder and bile duct drainage; hepatic-pancreatic gastric anastomoses and gastro-jejunostomy; and pancreatic necrosectomy. Harry Aslanian, MD, director, Endoscopic Ultrasound, has established programs in cutting-edge therapies that may obviate the need for surgery, such as endoscopic submucosal dissection for GI tract tumors, and per-oral endoscopic myotomy (POEM) for achalasia.

The Digestive Diseases Section recently opened a clinic beyond Connecticut in New

Rochelle, New York, to expand its ability to treat patients with Gaucher disease, a rare inherited disease. The clinic's skilled medical team is internationally known for its expertise in Gaucher disease, and is led by Pramod Mistry, MD, PhD.

Yale also is one of the few institutions in the country with an Undiagnosed Liver Disease Clinic. Silvia Vilarinho, MD, PhD, is interested in discovering new liver diseases. For almost 30% of people diagnosed with advanced liver disease, the cause of their disease is undetermined. By applying human genomics and genetics approaches, this team has been successful in finding the causes of liver disease in patients who have been undiagnosed for many years. A team led by Vilarinho recently performed genomic analysis to determine the cause of unexplained portal hypertension in four unrelated families.

The section recently launched a GI hospitalist service, consisting of outstanding gastroenterologists who are dedicated to inpatient GI care. They aim to improve clinical care and efficiency as well as the education of section fellows.

DAVID ASSIS, MD



The hospitalists are Michelle Hughes, MD; Kenneth Hung, MD; and Darrick K. Li, MD, PhD.

## Faculty Expertise

The Digestive Diseases section has some of the most renowned physicians and scientists in the world, including recent presidents of the major U.S. gastroenterology and hepatology organizations (American Gastroenterological Association, American College of Gastroenterology, and American Association for the Study

of Liver Diseases). Currently, Section Chief Loren Laine, MD, serves as a chair of the Fecal Microbiota Transplantation National Registry Steering Committee, a National Institutes of Health-supported registry through the American Gastroenterological Association (AGA).

Several of the department's 60 full-time faculty have created guidelines for the treatment of digestive ailments ranging from gastrointestinal bleeding to fatty liver disease.

- **Harry Aslanian, MD**, Endoscopic Resection and Pancreatic Cancer Screening
- **David N. Assis, MD**: Autoimmune Hepatitis and Primary Sclerosing Cholangitis
- **Guadalupe Garcia-Tsao, MD**: Cirrhosis, Portal Hypertension, and Variceal Hemorrhage
- **Vandana Khungar, MD, MSc**: Reproductive Health in Liver Disease
- **Loren Laine, MD**, Gastrointestinal Bleeding
- **Joseph Lim, MD**: Cirrhosis, COVID, Hepatitis B & C, Liver Elastography, and Liver Function Test
- **Xavier Llor, MD, PhD**, Colorectal Cancer Screening
- **Deborah Proctor, MD**, Crohn's Disease
- **Michael Schilsky, MD**, Wilson's Disease and Liver Transplant during COVID-19
- **Tamar Taddei, MD**: Advanced Hepatocellular Carcinoma (HCC), Hepatocellular Carcinoma, and Non-Invasive Liver Disease Assessment

JILL DEUTSCH, MD





## Education

After nine years of service as fellowship program director, Avlin Imaeda, MD, PhD, stepped down from the position, and David Assis, MD, assumed the role as of July 1, 2021, overseeing the 18 fellows in the ACGME-accredited gastroenterology-hepatology fellowship. The section owes Imaeda a debt of gratitude for her excellent stewardship of the fellowship program.

The section currently has advanced fellowships in transplant hepatology and advanced endoscopy, and beginning next year, it will offer an advanced fellowship in inflammatory bowel diseases with supervised clinical training in both the outpatient and inpatient care of patients with IBD. Badr Al Bawardy, MD, will lead the initiative as the IBD Fellowship Program Director.

The section launched the Digestive Health Virtual CME Series in 2021. The well-attended monthly live Zoom series is designed to provide world-class digestive health educational programming, professional development, and networking opportunities for physicians and advanced practice providers. In addition, the section hosts two annual CME courses for community gastroenterologists, including the Yale Digestive Diseases Week (DDW) Review in May following the DDW conference, and the Yale Liver Update in December following the AASLD Liver Meeting. The goal of these

SIMONA JAKAB, MD



conference series is to provide up-to-date and evidence-based education in diagnosis and management of gastrointestinal and liver diseases.

## Research

The Yale Liver Center, led by Director Michael Nathanson, MD, PhD, and Co-Director Mario Strazzabosco, MD, PhD, is the jewel of the Digestive Diseases Section's research program. Established in 1984,

it is one of only three NIH-sponsored liver centers in the United States. In 2021, its grant was renewed for another five years. The Liver Center includes 86 members from across 24 sections and departments, and has been responsible for 395 papers in the previous five years, including articles in such high-impact journals as *Nature* and *Science*. In the past year, Liver Center investigators have characterized the role of integrin B1 (ITGB1)-mediated neutrophil-cholangiocyte interactions in the pathogenesis of cholestasis in patients with alcoholic hepatitis (*Gut* 2021); elucidated the role of inositol triphosphate receptor 1 (INSP3R1)-mediated hepatic lipolysis in hepatic gluconeogenesis as a target for non-alcoholic fatty liver disease and type 2 diabetes (*Nature* 2020); and described the hypocoagulable and hypercoagulable features of acute kidney injury in patients with decompensated liver cirrhosis (*Hepatology* 2020).

The Section of Digestive Diseases also performs important clinical research in gastrointestinal and liver diseases. Members of the section seek to improve the care of patients with gastrointestinal bleeding with methods that include machine learning. In the United States, gastrointestinal bleeding is the most common gastroenterological diagnosis requiring hospitalization, but formal risk stratification of patients is infrequently performed at the time of presentation. Dennis Shung, MD, MHS, Loren Laine, MD, and colleagues have been working to develop mechanisms to quickly identify and then risk-stratify patients presenting to the emergency room with

gastrointestinal bleeding. In "Early identification of patients with acute gastrointestinal bleeding using natural language processing and decision rules," an article published in the *Journal of Gastroenterology and Hepatology* in June 2021, they created electronic health record phenotypes to identify patients suffering from gastrointestinal bleeding in real time and compared them to other phenotypes derived by natural language processing and neural networks.

The section also is active in the area of gastrointestinal oncology, including screening and cancer genetics. Xavier Llor, MD, PhD, medical director of the Colorectal Cancer Screening Program, is internationally known for his research in colorectal cancer genetics. A marked increase in early-onset colorectal cancer has been identified recently, and Llor has NIH funding to study this trend. Llor also studies health disparities related to colorectal cancer and has partnerships with New Haven's Fair Haven Community Health Care and the Cornell Scott Hill Health Center to improve cancer screening and prevention among underserved populations.

James Farrell, MBChB, director of the Yale Center for Pancreatic Diseases, is known for his development of personalized therapy approaches for pancreatic cancer and early detection biomarkers for pancreatic cancer. His clinical research has focused on early detection of pancreatic cancer including studying high-risk individuals; for example, those with inherited mutations, family history, pancreatitis, and pancreatic cysts.

Active clinical research programs offering evaluation of cutting-edge interventions are also taking place in IBD, autoimmune and cholestatic liver diseases, fatty liver, cirrhosis, viral hepatitis, advanced endoscopy, Gaucher disease, and Wilson disease.

## Faculty Awards and Additions

Several junior faculty members received NIH-sponsored career development (K) awards in 2021: Vikas Gupta, MD/PhD; Dennis Shung, MD, MHS; Matthew McConnell, MD; and Lamia Y.K. Haque, MD, MPH.

David N. Assis, MD, received the Colton Award from the Colton Center for Autoimmunity, to further his research on primary sclerosing cholangitis.

James Boyer, MD, FACEP, Ensign Professor of Medicine (Digestive Diseases) and Director Emeritus, Yale Liver Center, received the International Recognition Award from the European Association for the Study of the Liver during the 2020 Digital International Liver Congress.

Rosemarie L. Fisher, MD, professor emerita of medicine (digestive diseases), was the inaugural recipient of the American College of Physicians (ACP) Connecticut Chapter Female Physician Leadership Award.

The section welcomed the following new faculty to our section this year: Vikas Gupta, MD/PhD; Lamia Y.K. Haque, MD, MPH; Ariel Jaffe, MD; Vandana Khungar, MD, MSc; and Dennis Shung, MD, MPH.

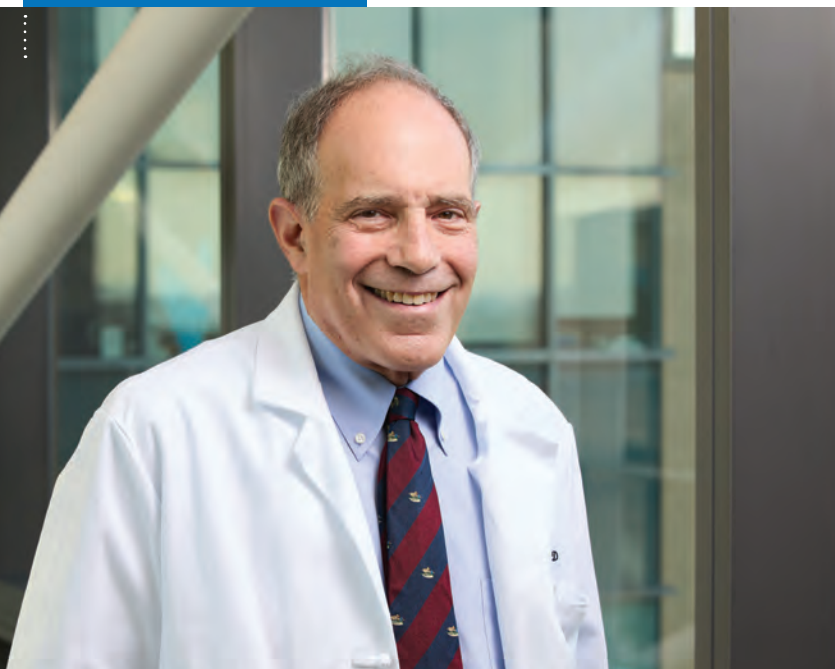
The section looks to another year of continued success and growth in our mission of clinical care, research and education.

To learn more about the Section of Digestive Diseases, visit [medicine.yale.edu/intmed/digestivediseases/](http://medicine.yale.edu/intmed/digestivediseases/)

THIRUVENGADAM MUNIRAJ, MD; HARRY ASLANIAN, MD



MICHAEL NATHANSON, MD, PHD





# ENDOCRINOLOGY & METABOLISM



After a year-long nationwide search, John Wysolmerski, MD, was appointed chief of the Section of Endocrinology & Metabolism in June 2021.

Wysolmerski and section leadership have remained true to the mission of the Section of Endocrinology and Metabolism throughout the years: to improve the health and well-being of patients with endocrine and metabolic diseases by advancing scientific knowledge; by skillfully applying new knowledge to the care of patients; and by training the next generation of physician-scientists.

After Robert Sherwin, MD, retired as section chief, faculty members developed

a five-year plan to expand the section's clinical practice with these goals in mind: to better capitalize on new educational and research opportunities within the growing Yale New Haven Health System; to enhance its educational programs with a better organized curriculum and new fellowship training opportunities; and to grow and broaden its research base by recruiting new physician-scientists. As section chief, Wysolmerski has brought together a leadership team to help the

section accomplish its collective goals. The leadership team members are Silvio Inzucchi, MD, who continues to serve as clinical chief; Renata Belfort de Aguiar, MD, PhD, who serves as associate chief for Diversity, Equity and Inclusion; Richard Kibbey, MD, PhD, and Jonathan Bogan, MD, who are co-associate chiefs for research; and Barbara Gulanski, MD, MPH, who serves as associate chief for education.

## Faculty Highlights

Section faculty focus on type 1 diabetes and complications of hypoglycemia; type 2 diabetes and insulin resistance/obesity; and metabolic bone disease and calcium metabolism.

The section welcomed two new clinical faculty members in 2021. Anika K. Anam, MD, joined the faculty in the clinician-educator track. Anam will work with Gulanski on curriculum development for residents and medical students. Also contributing to the curriculum initiative are Brian Wojeck, MD, and Lisa Parikh, MD.

Kavya Mekala, MD, also joined the faculty in 2021. Her focus is on the development of a thyroid nodule biopsy program working with endocrine surgery and radiology. Mekala also will help to develop a secondary practice site in Stamford, Connecticut. The section also is partnering with Endocrine Associates of Connecticut to increase its coverage at Yale New Haven Hospital Saint Raphael Campus, where a new diabetes consultation service is under development. Despite the pandemic, the section's



ELIZABETH JONAS, MD

clinical practice has seen more patients than ever before, and its faculty have been publishing papers, collecting awards, and securing grants. Here are some highlights of the faculty's recent achievements.

**Ana Louisa Perdigoto, MD, PhD**, was named the winner of the 2021 Iva Dostanic, MD, PhD, Physician-Scientist Trainee Award by the Yale School of Medicine Department of Internal Medicine. See story on page 80.

**Karl L. Insogna, MD, FACP**, received the 2021 Frederic C. Bartter Award, an esteemed award from the American Society for Bone and Mineral Research.

**Elizabeth Jonas, MD**, was nominated for her second Javits Award by the National Institute of Neurological Disorders and Stroke in recognition of her leadership and scientific contributions. She first received the Javits Award in 2013.

**Kevan C. Herold, MD, the C.N.H. Long Professor of Immunobiology and of Medicine**, has been named chair of Type 1 Diabetes (T1D) TrialNet, an international consortium dedicated to finding ways to prevent, delay, and slow progression of the disease.

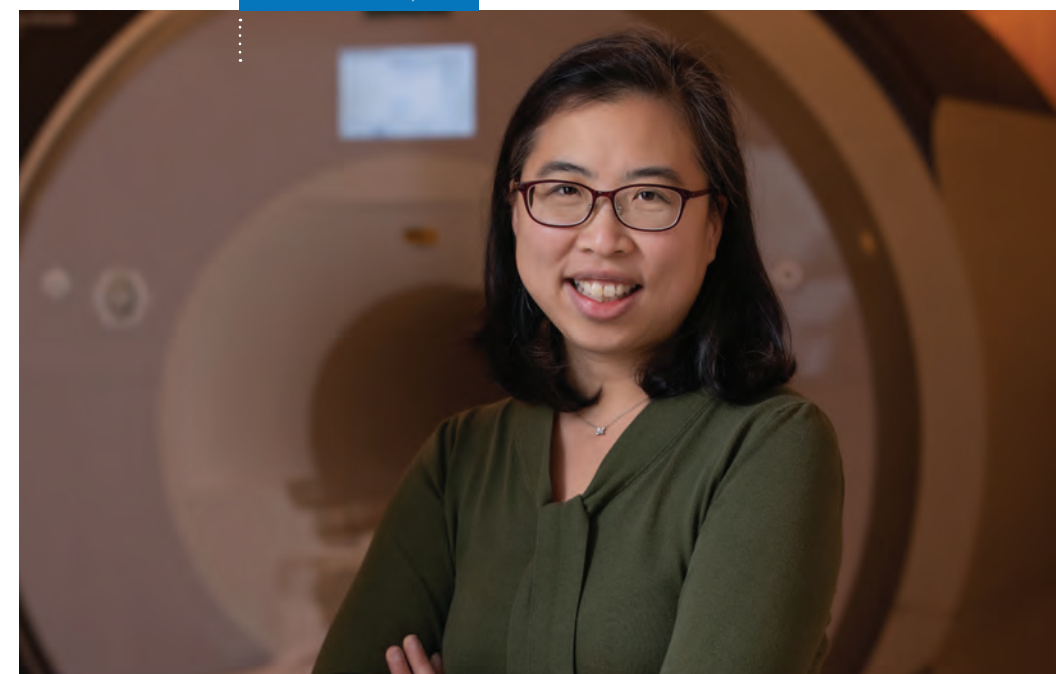
**Gerald I. Shulman, MD, PhD**, was elected to a three-year term as chair of a section of the National Academy of Sciences. He will lead Section 42: Medical Physiology and Metabolism of the National Academy of Sciences (NAS) from May 1, 2022, to April 30, 2025.

## Recent Research

### Endocrinology & Metabolism and Pulmonary, Critical Care, & Sleep Medicine

Although there's a well-documented bidirectional connection between obesity and mood- and stress-related psychiatric

JANICE HWANG, MD





KASIA LIPSKA, MD, MHS



disorders, the molecular mechanisms altered in obesity have not been fully explained. Yale researchers investigated relationships between obesity and synaptic density using the radioligand [11C]UCB-J, which binds to synaptic glycoprotein SV2A, together with positron emission tomography (PET) in individuals with obesity with or without stress-related psychiatric disorders. Stephen Baldassarri, MD, MHS, and Ania Jastreboff, MD, PhD, and colleagues published their findings in *Nature*.

**Endocrinology & Metabolism**

In a *JAMA Internal Medicine* research letter, Joseph Ross, MD, MHS, and Kasia Lipska, MD, MHS, and colleagues performed a retrospective analysis of new levothyroxine prescriptions between 2008 and 2018. They found that levothyroxine was commonly prescribed for patients with mildly increased thyrotropin levels, a pattern at odds with clinical practice guidelines, as 60% had subclinical hypothyroidism and 30% normal thyroid function.

**Endocrinology & Metabolism, Neuroscience and Cell Biology**

Fragile X Syndrome is a devastating X-linked genetic disorder, and the most common inherited cause of intellectual disability. It has also been associated with metabolic abnormalities indicative of uncoupled oxidative phosphorylation in mitochondria.

In a continuation of its study of the mitochondrial ATP synthase function, the Jonas laboratory has reported that neurons in a mouse model of Fragile X syndrome have a mitochondrial membrane leak that explains both the abnormalities in intellectual function and systemic metabolism. A key finding was that closing this ATP synthase c-subunit leak could attenuate the metabolic abnormalities and improve brain function, suggesting a novel treatment approach for the otherwise untreatable condition.

**Endocrinology & Metabolism and Cell Biology**

Jonathan Bogan's laboratory is interested in the mechanisms by which insulin stimulates glucose uptake into muscle and fat after a meal. In elegant work over the years, he has identified a pathway by which cleavage of a protein called TUG results in the relocation of glucose transporters from inside the cell onto the cell surface, allowing glucose to enter muscle and fat cells. In new work published in *Nature Metabolism*, Bogan's lab showed that upon insulin stimulation, a fragment of the TUG protein enters the nucleus to increase oxidate metabolism and heat production. This finding demonstrates that insulin can stimulate energy expenditure, and may explain the long-standing observation that our temperature rises after eating. Alterations in sensitivity to this process are associated with risk of developing diabetes and may also be important in the development of obesity.

**Endocrinology & Metabolism and Pediatric Endocrinology**

Karl L. Insogna, MD, FACP, has had a long-standing interest in disorders of phosphate wasting. Together with Thomas Carpenter, MD, in pediatrics, Insogna performed clinical studies that were instrumental in the approval of burosumab (an anti-FGF23 antibody) for the treatment of X-linked hypophosphatemic rickets, which is caused by genetic overproduction of the phosphaturic hormone FGF23. Tumor-induced osteomalacia is another disorder of renal phosphate wasting caused by the

overproduction of FGF23 by a variety of tumors. In a multicenter study published in the *Journal of Bone and Mineral Research*, Insogna, Carpenter, and colleagues at other institutions demonstrated that burosumab is effective in raising phosphate levels, healing osteomalacia and fractures, and improving quality of life in patients with tumor-induced osteomalacia, providing the first effective medical therapy for this condition.

**Endocrinology & Metabolism, Digestive Diseases, Cellular and Molecular Physiology and Pharmacology**

All medical students learn that glucagon counters the actions of insulin and stimulates the liver to release glucose. In fact, glucagon is used to treat severe hypoglycemia in diabetics, and alterations in the ratio of glucagon to insulin in the portal vein are thought to lead to the increased hepatic gluconeogenesis that contributes to the development of hyperglycemia in type 2 diabetes. Despite these important observations, the molecular mechanisms by which glucagon stimulates hepatic glucose production have been poorly understood. In a paper published in *Nature*, Rachel Perry, PhD, Gerald Shulman, MD, PhD, and their colleagues across YSM demonstrated that glucagon stimulates hepatic glucose production primarily by stimulating intrahepatic lipolysis through the actions of the inositol triphosphate receptor 1 (INSP3R1). These important basic observations on the regulation of hepatic glucose production by glucagon have implications for the pathogenesis of diabetes; and also suggest that INSP3R1 may represent a drug target for nonalcoholic fatty liver disease and type 2 diabetes.

**A Retirement and a Farewell**

The academic year also saw the retirement of one of the field's most important researchers. Gary Cline, PhD, professor (endocrinology); director, Analytical Core, Mouse Metabolic Phenotyping Center; and co-director, Clinical Metabolism Core, Yale Diabetes Research Center, retired effective July 1, 2021.

Cline has been an important member of the metabolism research community at Yale and across the world. He has had longstanding partnerships with members

of the Endocrine Section to develop innovative techniques combining classical and novel metabolic tracers with advanced imaging techniques. These new methods in turn, have allowed detailed study of metabolic pathways in animal models and in people. Cline's efforts have helped us better understand basic processes of carbohydrate and fat metabolism and how normal physiology becomes dysregulated in such diseases as diabetes and obesity. Ultimately, these studies will be key building blocks toward better therapies for patients, says Section Chief Wysolmerski.

The section also mourned the loss of Arthur Broadus, MD, PhD, who helped

train scores of endocrinology fellows over the years and launched the careers of many junior faculty who have gone on to their own leadership positions in academic medicine, industry, and clinical practice. Of all his scientific accomplishments, Broadus was perhaps best known for solving a longstanding mystery: why patients with certain types of cancer develop dangerously elevated blood calcium levels, a syndrome known as malignancy-associated hypercalcemia. His investigations led in 1987 to the isolation from tumor samples of a new hormone named parathyroid hormone-related protein or PTHrP.

RACHEL PERRY, PHD



**Future Outlook**

The past months encompassing the COVID-19 pandemic have been challenging for academic medicine; the Endocrine & Metabolism Section met those challenges and thrived in many ways despite the physical and social isolation that kept the faculty and staff from interacting in their usual ways. Traditionally, the community has gathered together at Friday conferences to share in the solving of Clinical Dilemmas and to learn about the latest science related to

endocrinology and metabolism at Endocrine Grand Rounds. After being completely online for the last academic year, in September 2021 we marked the return of a hybrid version of these conferences that includes a small in-person masked gathering with simultaneous and interactive Zoom-casting to a wider audience. Small steps but happy progress back towards normal.

To learn more about the Section of Endocrinology & Metabolism, visit [medicine.yale.edu/intmed/endocrin/](http://medicine.yale.edu/intmed/endocrin/).

RICHARD KIBBEY, MD/PHD





# GENERAL INTERNAL MEDICINE

MARCELLA NUNEZ-SMITH, MD, MHS



Led by Section Chief Patrick G. O'Connor, MD, MPH, a world-renowned expert on the interface between general internal medicine and addiction medicine, the faculty within the Section of General Internal Medicine (GIM) is committed to its core missions of clinical patient care, education, research, community care, and equity throughout health care.

**Yale General Internal Medicine** has seen unprecedented growth in its research, clinical and teaching programs over the past decade, and now includes nearly 160 faculty who contribute in many thoughtful, creative, and innovative ways to its core missions. To more effectively support this growth, eight vice chiefs were named in 2021: Aba Black, MD, MHS (Diversity, Equity, and Inclusion); Lori Bastian, MD, MPH (Veterans Affairs); Karen Brown, MD

(Community Affairs); Matthew Ellman, MD (Clinical Affairs); David Fiellin, MD (Faculty Affairs); Cary Gross, MD (Research); Jeanette Tetrault, MD (Education); and Joseph Velasco (Finance and Administration). The vice chiefs, along with the directors of Yale GIM's many clinical, educational, and research programs, represent an exceptional leadership team that will enhance and guide Yale GIM's future development.

## Diversity, Equity and Inclusion

Marcella Nunez-Smith, MD, MHS, is one of the country's foremost experts on disparities in health care access. Since the earliest days of the COVID-19 pandemic, she has called attention to the unequal burden carried by communities of color. In 2020, Nunez-Smith was tapped to serve as chair of the COVID-19 Health Equity Task Force for the Biden-Harris Administration in the Department of Health and Human Services. The task force is

spearheading numerous efforts to make health care more equitable, starting with its response to COVID-19. Nunez-Smith previously served as co-chair of the Biden-Harris Transition COVID-19 Advisory Board. She was recently appointed as director of the newly formed Center for Community Engagement and Health Equity (CEHE) within Smilow Cancer Hospital and Yale Cancer Center, with the mission of ensuring cancer health equity and improving outcomes in traditionally marginalized communities.

Inginia Genao, MD, is the associate chair for diversity and inclusion, and graduate medical education (GME) director for diversity, equity, and inclusion, internal medicine. Genao has dedicated her career to ensuring that providers reflect the communities they serve, and that those communities have access to quality care.

The appointment of Aba Black, MD, MHS, to the role of vice chief of DEI represents an opportunity to further advance Yale GIM's DEI agenda. As a first step in the process, Black instituted an annual DEI retreat for GIM faculty which will be accompanied by a series of activities to assure that DEI are a high priority on the daily agenda of Yale GIM faculty.

## Clinical

GIM physicians provide comprehensive patient care in both inpatient and outpatient settings.

BRITA ROY, MD, MPH, MHS



The New Haven Primary Care Consortium (NHPCC) was established in November 2020 to provide collaborative care to New Haven residents. NHPCC is a partnership of Yale New Haven Hospital (YNHH); Cornell Scott Hill Health Center; and Fair Haven Community Health Center, with leadership from Yale School of Medicine (YSM). The NHPCC internal medicine program is led by Daniel Tobin, MD, and Laura M. Whitman, MD.

At Yale Internal Medicine Associates (YIMA) in New Haven, physicians provide general medical care for adults. The director, Matthew Ellman, MD, expanded YIMA's primary care practice by recruiting three

faculty from underrepresented backgrounds. YIMA emphasizes a patient-centered medical home approach to personalized and comprehensive care.

Under the leadership of Melissa Weimer, DO, the Addiction Medicine Consult service that was established three years ago at the St. Raphael campus of YNHH, has provided patient-centered care for ever-increasing numbers of patients. An expansion of the program to provide comprehensive care across both campuses of YNHH was approved this year.

Daniel Federman, MD, was named chief of medicine at the VA Connecticut Healthcare System; and vice chair, Veterans Affairs, for the Department of Internal Medicine. Federman replaces Michael Kozal, MD, who served in this role for more than six years.

The Department of Internal Medicine hosted the inaugural Dr. Jackie Satchell Honorary Grand Rounds in November 2021, memorializing the life and work of Jacqueline Rosemarie Satchell, MD, a clinician-educator in GIM and the VA Connecticut Healthcare System, who died unexpectedly in 2020. The lecture was followed by the dedication of the VA Center for Women Veterans as the Dr. Jacqueline Satchell Women's Center, with the keynote address by Nunez-Smith.

## Education

### Training Future Leaders

The National Clinician Scholars Program (NCSP) at YSM is a multidisciplinary

MATTHEW ELLMAN, MD





fellowship training program for physicians and nurses with PhDs who want to go into leadership positions, research academic medicine, and community health. It is directed by Cary Gross, MD. GIM has 25 graduates of the program, formerly known as Robert Wood Johnson Clinical Scholars, including O'Connor and Gross.

Jeanette Tetrault, MD, director of the Addiction Medicine Fellowship Program, oversaw the expansion of the program with the acquisition of an HRSA-funded grant to support three additional fellowship slots each year. Expansion of the program supports ongoing implementation of the Collaborative Behavioral Health and Addiction Medicine in Primary Care Program (CHAMP), another HRSA-funded initiative training future primary care providers to care for patients with substance use disorders. Tetrault and CHAMP Director, Kenneth Morford, MD, and colleagues aim to reach patients from medically underserved backgrounds by training future primary care providers to address the opioid crisis and addiction more broadly.

Donna Windish, MD, MPH, directs the GIM Medical Education Fellowship program for people coming out of residency. Windish also is the director of the Advancement of Clinician-Educator Scholarship (ACES) Faculty Development Program, a year-long program in which junior faculty learn how to conduct educational scholarship and carry out a research project.

Aba Black, MD, MHS, was named co-director of Race, Bias, and Advocacy in

LAURA WHITMAN, MD, AND DANIEL TOBIN, MD



Medicine (RBAM), which aims to provide residents with the tools to understand and combat the impact of racism and bias on the health care system, medical education, and physician practice. Residents will partner with the New Haven community to better understand disparities in access to and quality of health care and improve care delivery. Inpatient GIM firm chiefs and leaders at YNH (Gretchen Berland, MD; Christopher Sankey, MD; Jeremy I. Schwartz, MD; Andre N. Sofair, MD, MPH) and at the VA (Craig Gunderson, MD; Daniel Federman, MD) all made major contributions to assuring a robust response to the COVID pandemic.

### Education Awards

- Tetrault received the 2021 ASAM Training Directors Award for outstanding training in the evaluation, treatment, research, and teaching of substance use disorders.
- Gross received the Yale Cancer Center Award for Mentorship Excellence for accomplishments in 2020.
- Jaideep S. Talwalkar, MD, received the Alvan Feinstein Teaching Award during YSM graduation ceremonies in 2021.

### COVID-19

Faculty from GIM provided vital services and information during the COVID-19 pandemic, and served as attending physicians for patients with COVID on teaching services at YNH and the VA. Their YNH Hospital Medicine colleagues provided expert care to thousands of inpatients, going above and beyond to assure the best possible care under challenging circumstances. Inpatient GIM firm chiefs and leaders at YNH (Gretchen Berland, MD; Christopher Sankey, MD; Jeremy I. Schwartz, MD; Andre N. Sofair, MD, MPH) and at the VA (Craig Gunderson, MD; Daniel Federman, MD) all made major contributions to assuring a robust response to the COVID pandemic.

Yale GIM outpatient practices provided care for hundreds of patients suffering from COVID-19 infection along with providing screening and testing for thousands of other patients. COVID-related research was conducted by several GIM faculty.

Brita Roy, MD, MPH, MHS, director of

Population Health for Yale Medicine, helped to lead Yale's COVID-19 vaccination efforts by serving as a liaison between Yale New Haven Health (YNHHS) and Yale University.

Concern about vaccine hesitancy among communities that have been disproportionately affected by COVID-19 convinced Jorge Moreno, MD, to post a video about his vaccination experience in Spanish.

Supporting the households of health care professionals during COVID-19 was the theme of an invited commentary in *Academic Medicine*, authored by Joseph H. Donroe, MD, MPH; Tracy L. Rabin, MD, SM; and Jeremy I. Schwartz, MD.

### Research

Carol Oladele, PhD, MPH, was a lead author of a Yale-led study that suggests that the protocol known as SOFA (Sequential Organ Failure Assessment) could promote racial disparities in treatment outcomes. The GIM Section's Equity Research and Innovation Center (ERIC) provided resources for the study under the guidance of Oladele and Saria Hassan, MD.

As part of a new program by the Center for Community Engagement and Health Equity (CEHE), directed by Nunez-Smith, and in partnership with the Community Alliance for Research and Engagement, community members from New Haven joined research groups at Yale Cancer Center for a fellowship in 2021 to bring community perspectives to cancer research.

Will Becker, MD, translated his groundbreaking research on the complex needs of veterans with chronic pain on long-term opioid therapy into an innovative clinical program - VA Connecticut's Opioid Reassessment Clinic (ORC), an interdisciplinary referral clinic. Through evidence-based and team-based care, including collaborations among internal medicine, psychiatry, psychology, pharmacy, and nursing, the ORC strives to use patient-centered approaches to improving pain relief, function, and overall wellness among veterans with chronic pain.

Ilana Richman, MD, MHS, published papers on the comparative effectiveness of digital breast tomosynthesis and 2-dimensional mammography, and health care costs associated with tomosynthesis.

Paul Joudrey, MD, MPH, published a paper with faculty colleagues and Yale medical students in *JAMA Network Open* that examined the impact of COVID-19 on access to opioid use disorder treatment.

A study found that many seniors get unnecessary cancer tests. The report was published in the journal *JAMA Internal Medicine* with an accompanying editorial by Cary Gross, MD.

Jennifer Miller, PhD, Cary Gross, MD, and Joseph Ross, MD, MHS, collaborated on two studies of pivotal trials leading to FDA approval assessing racial and sex-based equity and access to therapies in lower- and middle-income countries where drugs are tested. Both studies were published in *JAMA Network Open*.

In a *New England Journal of Medicine* commentary, "Bringing Harm Reduction into Health Policy — Combating the Overdose Crisis," Kimberly Sue, MD, PhD, and David Fiellin, MD, urged the Biden Administration to implement harm reduction programs.

Amy Justice, MD, PhD, was senior author of a VA study, "Genome-wide association study of smoking trajectory and meta-analysis of smoking status in 842,000 individuals," in *Nature Communications*.

### Grants

Marcella Nunez-Smith, MD, MHS, and Emily Wang, MD, received funding through the NIH RADx Underserved Populations (RADx-UP) program to study COVID-19 population health disparities.

Nunez-Smith is the principal investigator of a project funded by a research grant from the biotechnology company Genentech that was awarded to Yale Cancer Center and Smilow Cancer Hospital to measure, address, and create accountability around cancer health inequities.

A team from YSM and YNHHS, including Jeremy Schwartz, MD, with colleagues from other institutions, will evaluate the impact of Real-Time Prescription Benefit (RTPB) tools so that prescribers can address costs of and barriers to medication adherence with patients.

Schwartz and colleagues at Yale's Center for Methods in Implementation and Prevention Science (CHIPS) and other institutions received a grant from the National Heart, Lung, and Blood Institute for their project, "Strengthening the Blood Pressure Care and Treatment Cascade for Ugandans Living with HIV - Implementation Strategies to Save Lives."

Faculty from the Yale Institute for Global Health Global Addictions Network, in partnership with faculty from The University of Jordan, received a two-year grant from

the U.S. Department of State to create a joint addiction training program. Jeanette Tetrault, MD, is the principal investigator; Ryan McNeil, PhD, is contributing.

Amy Justice, MD, PhD, is the principal investigator of a newly funded 5-year NIAAA P01 award for her project, "The HIV and Alcohol Research center focused on Polypharmacy."

Kristina Talbert-Slagle, PhD, and colleagues celebrated as 86 students in Liberia, West Africa, completed an inaugural four-week science camp in 2021. The Camp xSel program grew out of a \$15 million, five-year U.S. Agency for International Development (USAID) award to advance the use of research in Liberia's health sector. The funded project is BRIDGE-U: Applying Research for a Healthy Liberia.

### Distinctions

- Patrick O'Connor, MD, MPH, was elected treasurer of the Society of General Internal Medicine (SGIM).
- Patrick O'Connor MD, MPH, chosen as a mastership recipient by the American College of Physicians.
- Marcella Nunez-Smith, MD, MHS, was elected to the National Academy of Medicine.
- Inginia Genao, MD, received the American College of Physicians Connecticut Chapter Diversity, Equity and Inclusion Award.
- Inginia Genao, MD, was recognized in 2021 with the Herbert W. Nickens Minority and Representation in Medicine Award, one of SGIM's highest honors.
- Jeanette Tetrault, MD, was elected president of the American Association for Academic Addiction Medicine (ACAAM).
- Shaili Gupta, MD, and Christopher Ruser, MD, received Coins of Recognition from VA Secretary Robert Wilkie.
- Lynn E. Fiellin, MD, recognized as a Science Breakthroughs of the Year winner at the 2020 Falling Walls World Science Summit.
- Nancy Angoff, MD, MPH, completed her 23-year term as Associate Dean of Student Affairs, which was celebrated at an event sponsored by the Dean's Office.
- John Francis, MD, PhD, was recruited back to Yale as the new Associate Dean for Student Affairs.
- Program Manager Angela Consorte marked 45 years with Yale in 2021.

To learn more about the Section of General Internal Medicine, visit [medicine.yale.edu/intmed/genmed/](http://medicine.yale.edu/intmed/genmed/).

EMILY WANG, MD





# GERIATRICS

RICHARD MAROTTOLI, MD, MPH



The Section of Geriatrics cares for the most vulnerable patients—older adults who have multiple chronic medical conditions or are living with such problems as cognitive impairment or physical disability. For these patients, the use of standard therapies may cause as much harm as good. Geriatricians have the complicated job of weighing different approaches to care, and considering not just whether a treatment is likely to be life-prolonging but also its effects on other outcomes, like physical and cognitive function. All this must be done in the context of patients’ individual risk factors, social circumstances, and care goals.

**Named section chief in June 2021,** Terri Fried, MD, will continue the clinical, educational, and research work of the section, organized around the “4Ms” of geriatrics: Mentation, Mobility,

Medications, and what Matters most. These “Ms” are key aspects of care that cut across all diseases and specialties. The following highlights show how the section brings the 4Ms to patient care;

educates the next generation of clinicians about, and provides new knowledge to continue to improve our understanding of the 4Ms and their role in the care of older persons.

TERRI FRIED, MD



## Clinical: 4Ms and the Geriatrics Home Visit Program

One of the best ways to assess the 4Ms is in the patient’s home. Home-based primary care not only decreases the burden of health care for frail and disabled older persons for whom travel to a clinic or the hospital can be difficult, but also allows the clinician to understand how patients function in their own environments. The section is helping to advance the practice of house calls. At the VA Connecticut Healthcare System (VACT) location in North Haven, the Home-Based Primary Care service continues under the leadership of Maura Singh, MD. Through the interdisciplinary team at VACT, pharmacists review medications and provide recommendations, and physical therapists assess mobility and provide modifications to the patient’s home. This newer Yale-based program is expanding through the team-based leadership of Ann Datunashvili, MD, and James Lai, MD, MHS. Through its participation in the National Home-Based Primary Care Learning Network, the program is contributing to national quality improvement initiatives for homecare.

## Education: 4Ms for Interprofessional Learners

Over the past year, the section expanded its educational activities to provide training in the 4Ms to an interdisciplinary group of clinicians at all stages of training. Under the direction of Richard Marottoli, MD, MPH,

and supported through a grant from the U.S. Health Resources and Services Administration, the Connecticut Older Adult Collaboration for Health (COACH 4M) is working to increase the number of health care professionals with experience in the principles of geriatric care. With the support of COACH 4M, an in-person learning experience for medical, nursing, and physician associate students was successfully converted to a virtual teaching session, as reported by Barry Wu, MD, FACP, and co-authors, in the *Journal of the American Geriatrics Society*. With a

return to in-person learning, 144 medical and physician associate students in the 2021 Interprofessional Longitudinal Clinical Experience course received pocket cards to reinforce their 4Ms education. Chandrika Kumar, MD, is the co-leader of “Across the Lifespan,” one of the master courses for first- and second-year medical students, and she has integrated the 4Ms throughout this curriculum.

All primary care and traditional residents participate in a series of eight workshops as part of a three-year rotating 4M curriculum.

## Research: Adding to 4M Knowledge across Disciplines

The Yale Claude D. Pepper Older Americans Independence Center is directed by Thomas Gill, MD. Under his leadership, two resource cores, the Operations Core, composed of field and data management staff, and the Biostatistics Core provide support to investigators from a wide range of disciplines whose research lies at the intersection of their own specialty or subspecialty and one or more of the 4Ms. The excellence of the staff was highlighted this year with the receipt of a Department of Internal Medicine Service Excellence Award by the center’s associate director, Mary Geda. See page 20 to learn more about Geda’s recognition.

The Pepper Center also provides an important source of support to members of the section. Over this past year, Gregory Ouellet, MD, mentored by Andrew Cohen, MD, published a paper in *JAMA Internal Medicine* examining the use of anticoagu-

L-R: MARY GEDA; THOMAS GILL, MD; TERRENCE MURPHY, PHD





lants among nursing home residents with advanced dementia. This work incorporates three of the 4Ms, highlighting how dementia alters the benefits and harms of this class of medications, and considering whether they provide outcomes that matter most. Mary Tinetti, MD, continues her work developing and disseminating Patient Priorities Care (PPC), an innovative set of tools to align decision making around what matters most, with a publication in the *Journal of the American Geriatrics Society* reporting on clinicians' perspectives regarding the benefits and challenges of using PPC.

**The Future of the 4Ms: Accomplishments of Junior Faculty**

The many accomplishments among Geriatrics' junior faculty members provide assurance that the section will continue to provide key contributions to the 4Ms. Brienne Miner, MD, MHS, received two prestigious career development awards, the GEMSSTAR (Grants for Early Medical/ Surgical Specialists' Transition to Aging Research) and the Paul B. Beeson Emerging Leaders Career Development Award, both from the National Institute of Aging (NIA). These awards will support Miner's work evaluating sleep disorders in the older adult, which are associated with both the mentation and mobility of the 4Ms. Gregory Ouellet MD, MHS, also received a GEMSSTAR award for his work on the use of anticoagulants in dementia. Cohen, along with

JENNIFER OUELLET, MD



Alexandra Hajduk, PhD, MPH, and Lauren Ferrante, MD, MHS, from the Section of Pulmonary, Critical Care, and Sleep Medicine, received funding through the NIA to conduct a longitudinal cohort study of older patients who survive hospitalization with COVID-19. This study brings the 4Ms to the evaluation of COVID-19 by assessing function, cognition, and symptoms. Cohen was also named the 2020 Junior Investigator of the Year by the American Geriatrics Society.

The clinician-educators within the section continue their work to promote

robust dissemination of the innovative educational programs they have developed focused on one or more aspects of the 4Ms. Marcia Mecca, MD, received funding from the VA Patient Safety Center of Inquiry to continue her development of the IMPROVE (Initiative to Minimize Pharmaceutical Risk in Older Veterans) Polypharmacy Clinic. Jennifer Ouellet, MD, was the first author on a publication describing the development of virtual and targeted geriatric medicine and palliative care consults for older persons with COVID-19 to align care with patients' goals.

In March 2021, Miner and Mecca were named co-vice chiefs for Diversity, Equity, and Inclusion (DEI) for the section. They serve as a vital source of information of DEI initiatives within the department and school.

To learn more about the Section of Geriatrics, visit [medicine.yale.edu/intmed/geriatrics/](https://medicine.yale.edu/intmed/geriatrics/).

THOMAS GILL, MD





# HEMATOLOGY



The Section of Hematology members provide evidence-based compassionate care to patients and families; conduct basic, translational, population, and clinical research; design programs to promote public health; and train the next generation of experts in hematological malignancies and classical hematology patient care and research.

**Under the leadership** of Section Chief Stephanie Halene, MD, PhD, the section has grown to 25 physicians, 29 advanced practice providers, 23 clinical staff, seven researchers, and eight support staff. Halene was officially named section chief in December 2020 after serving as interim chief for 16 months.

## Patient Care / Clinical Services

Along with staffing the Duffy Firm, Stem Cell Transplant and Cell Therapy Service, and Hematology Consult Services at both campuses of Yale New Haven Hospital, the “Red Team” Hematology Hospitalist Service was added in the summer of 2021 to expand the team’s service for inpatient care.

The section also staffs outpatient centers for myeloid malignancies, lymphoma, and sickle cell therapies in Smilow

Cancer Hospital; myeloma and classical hematology at North Haven Medical Center, where program management is supervised by Terri Parker, MD; and through the Smilow Care Centers throughout Connecticut and Rhode Island. Efforts to harmonize care where possible and expand research are under way.

Robert Bona, MD, joined the section in July 2020 and became the director of the Classical Hematology Program, which has expanded under his leadership. In July 2021, Cece Calhoun, MD, MSPH, MBA,

joined the program. Calhoun’s work as director of the Adolescent-Young Adult Sickle Cell Program at Yale Cancer Center and Smilow Cancer Hospital focuses on the relationship between health literacy, self-management, and cognition in adolescent and young adult patients with sickle cell disease. Calhoun is developing a transition program for people living with sickle cell disease that smoothly transitions them from pediatric to adult care. In August 2020, the Sickle Cell Programs began to administer a new treatment, crizanlizumab, a monoclonal antibody (P-selectin inhibitor) given monthly in the Smilow adult and pediatric outpatient infusion facilities to reduce the frequency and severity of pain crises that characterize sickle cell disease.

## Research

Through the support of the Frederick A. DeLuca Foundation, the section created the DeLuca pilot grant program, which provides an opportunity to launch innovative research. During the first year of the program, the section focused its recruitment on faculty within the Section of Hematology with the goal to leverage Yale basic science for the treatment of hematologic disorders.

Over the past year, Amer Zeidan, MBBS, MHS, started to investigate targeted



approaches and immunotherapies for patients with myelodysplastic syndromes (MDS) and leukemia. In addition, Nikolai Podoltsev, MD, PhD, and Xiaomei Ma, PhD, began a case control study to understand the etiology of myeloproliferative neoplasms in order to develop prevention strategies. Section-wide research in multiple myeloma and gammopathies also continues.

Early in the COVID-19 pandemic, Natalia Neparidze, MD, and Scott Huntington, MD, MPH, evaluated nationwide changes in

multiple myeloma treatment patterns in the early period of the COVID-19 pandemic. Terri Parker, MD, launched a myeloma precursor clinic to explore early preventive intervention. A new pilot study from the Adolescent-Young Adult Sickle Cell Program will train adults living with the disease to meditate in order to reduce pain and will evaluate meditation’s effect with the correlation of changes in EEG wave patterns. Also, the Sickle Cell Program became a member of the American Society for Hematology Sickle Cell Network for clinical trials of new drugs and concepts for the management of sickle cell disease.

In addition to this work, members of the section collaborated across the Department of Internal Medicine and beyond to research coagulation issues, ischemic stroke, thrombocytopeny and endotheliopathy, and neutrophil activation in patients with COVID-19. Their work has been published in journals ranging from *The Lancet* to *Blood Advances to Stroke*. Other areas of ongoing/planned research include investigation of outcomes in patients with iron deficiency anemia; a project to further evaluate the coagulopathy in advanced liver disease; and TTP with a recent publication in *Blood* representing the first cost effectiveness analysis in TTP and one of very few in classical hematology.

Through the support of the DeLuca Center for Innovation in Hematology Research, the section advanced the hematology tissue bank and upgraded

MARKUS MÜSCHEN, MD, PHD





its electronic database to the Freezerworks Pinnacle version; increased access to novel technologies; and created technical support for correlative studies and data analysis. The tissue bank has accrued over 5000 samples from 2500+ patients with all hematologic disorders. Samples include bone marrow, peripheral blood, lymph nodes, and tissue biopsies. This center has also awarded 12 pilot grants to advance hematology research and one career development award to provide protected research time for two years to a junior faculty member.

Markus Müschen, MD, PhD, Arthur H. and Isabel Bunker Professor of Medicine and Professor of Immunobiology, became the inaugural director of the Center of Molecular and Cellular Oncology at Yale Cancer Center and Smilow Cancer Hospital in 2020. The new center serves to foster and mentor physician-scientists as they advance their laboratory-based research programs to bridge fundamental cancer biology with clinical translation and investigation.

## Education

The Yale Hematology/Oncology Fellowship, with joint ownership by the Sections of Medical Oncology and Hematology, and led by a newly appointed director, Alfred Lee, MD, PhD, adds eight fellows annually, trained through 18 months of clinical practice and

NIKOLAI PODOLTSEV, MD



18 months of research. For 2021/2022, the program named its first chief fellows: Anna Kress, MD, and Benjamin Lu, MD. In 2022, the program will expand to host 10 fellows, offering a path to single boarding in oncology and as one of only three programs in the country to include boarding in hematology. Nikolai Podoltsev, MD; Sarah Goldberg, MD, MPH; and Michael Hurwitz, MD, PhD, serve as associate fellowship program directors. Core program faculty are working under the direction of the program leadership to ensure a first-rate educational program.

The DeLuca Center for Innovation in Hematology Research Seminar Series launched in 2020. This monthly seminar series seeks to share knowledge, foster ideas, and grow collaborations among clinicians, physician scientists, and basic scientists across YSM. Since the series started, the talks have reached a larger audience on Zoom. While the section hopes to host talks in person, a virtual component will be maintained to allow for greater accessibility and flexibility.

## Faculty Highlights

The hematology faculty has grown from 24 to 38 over the past year. Along with Bona and Calhoun, newly added faculty include Francesca Montanari, MD; Alexander B. Pine, MD, PhD; Rory Shallis, MD; Sabrina Browning, MD; Tarsheen Sethi, MD, MSCI; and Catherine Wei, MD. Along with longtime faculty member Francine Foss, MD, Sethi and Montanari are providing expertise in T-cell lymphomas; Montanari extends cutting-edge hematology treatments to patients in Greenwich and surrounding areas.

In March 2021, as part of the department's ongoing efforts surrounding diversity, equity, and inclusion (DEI), Iris Isufi, MD, was named the section's vice chief for DEI.

In March 2021, the section was grateful to receive a gift from Mary Alice and Thomas O'Malley to support Yale's

Bernard G. Forget Hematology Scholars Program, which provides junior faculty and trainees with additional protected time to pursue research. The 2020-2021 Forget Scholar, Sabrina Browning, MD, is the third person awarded the distinction since the program was founded in 2016. Browning's clinical and research interests include evaluating new treatments and their effectiveness on quality of life in patients with multiple myeloma and AL amyloidosis. She also investigates inherited risk factors for developing the disorders, as well as how to manage classical hematology issues that occur in patients with these diseases.

To learn more about the Section of Hematology, visit [medicine.yale.edu/intmed/hematology/](https://medicine.yale.edu/intmed/hematology/).



ALFRED LEE, MD, PHD





# INFECTIOUS DISEASES

MAUDRY LAURENT-ROLLE, MD, PHD



The Section of Infectious Diseases played a leading role in COVID-19 research and clinical trials while continuing its work in HIV/AIDS, Lyme, and other infectious diseases. Seventy-four faculty, 51 staff, and 57 postdocs, postgrads, and clinical fellows make up the section, led by Section Chief Erol Fikrig, MD, and Clinical Chief Vincent Quagliarello, MD.

### Clinical Updates

**COVID-19**  
Maricar Malinis, MD; Jeffrey Topal, MD; Marwan Azar, MD; and Shana Gleeson, MD, led the Yale New Haven Health (YNHHS) COVID-19 treatment team. This multidisciplinary team of pharmacists, pulmonologists, allergists/immunologists, hematologists, OB/GYN specialists, and pathologists created treatment

algorithms for people infected by the disease in inpatient and outpatient settings. Since the beginning of the pandemic, the inpatient treatment guidelines have been updated over 30 times, and recently were converted to an EPIC pathway to reflect rapidly evolving guidance. Due to multiple waves of COVID-19 infections and the immune-evasive Omicron variant, infectious disease and pharmacy faculty have been working tirelessly to

adapt current guidance to incorporate newly available therapeutics.

Topal, Malinis, and Azar also have led hospital and university-wide efforts to devise and update COVID-19 vaccination guidelines and testing strategies, including guidelines for immunocompromised patients for whom national guidance is scarce.

Richard A. Martinello, MD; Scott Roberts, MD; and pediatric infectious diseases

physician Thomas Murray, MD, PhD; lead the Infection Prevention efforts at YNHHS hospitals and ambulatory sites in Connecticut, New York, and Rhode Island. When the second wave of the COVID-19 pandemic began in the fall of 2020, the team managed the protection of patients, clinicians, and staff through the coordination of personal protective equipment (PPE). When vaccinations became available in December 2020, the team partnered with Yale School of Medicine (YSM), Yale Medicine (YM), and YNHHS to outline each organization's vaccination policy. They also advised on policies around exposed patients and health care workers. As vaccination centers opened throughout Connecticut, the team ensured that each location followed protocols for infection prevention. They worked with counterparts in infectious diseases and infection prevention across YNHHS to ensure standardization.

Roberts and Martinello collaborated with Michael J. Aniskiewicz, infection prevention manager at YNHHS; Steven J. Choi, MD; and Christian M. Pettker, MD, on research that supported a vaccination mandate for health care workers. The study, "Correlation of healthcare worker vaccination with inpatient healthcare-associated coronavirus disease 2019 (COVID-19)," published in *Infection Control & Hospital Epidemiology*, sought

AMIT ACHHRA, MD, PHD, MPH



to determine whether there is a correlation between the vaccination of health care workers and COVID-19 infection. They found that units with health care workers with lower vaccination rates had more instances of health care-associated COVID-19 in patients.

Infectious diseases fellows responded to an unprecedented demand for expert consultation at Yale New Haven Hospital and the VA Connecticut Healthcare System while caring for patients. Clinical Fellow Shiv Gandhi, MD, PhD, worked with Albert Ko,

MD, to describe the first *de novo* emergence of a remdesivir-resistant SARS-CoV-2 virus mutation in an immunocompromised patient with persistent COVID.

### Yale New Haven Transplantation Center

In the 2021-22 academic year, the Yale New Haven Transplantation Center performed the first liver transplant in Connecticut from a deceased donor who had tested HIV-positive to an HIV-positive patient as part of the HOPE act study led by Malinis. The patient, a male in his late 40's, returned home within 10 days of the successful surgery.

### Project Commit

Project Commit is testing a new model of care in which opioid use disorder (OUD) is managed by infectious disease specialists concurrent with the management of OUD-related infections. The model uses injectable buprenorphine followed by referral after hospital discharge to community resources for OUD treatment. Led by Sandra Springer, MD, and Nikhil Seval, MD, the study began in August 2020 with plans to recruit 200 participants with OUD and addiction-related infections from hospitals across three sites in Connecticut, South Carolina, and Pennsylvania.

### Appointment

Lydia Aoun-Barakat, MD, was appointed director of the Yale Infectious Disease Ambulatory Services Program in November 2021. Aoun-Barakat will oversee infectious

SHELLI FARHADIAN, MD, PHD





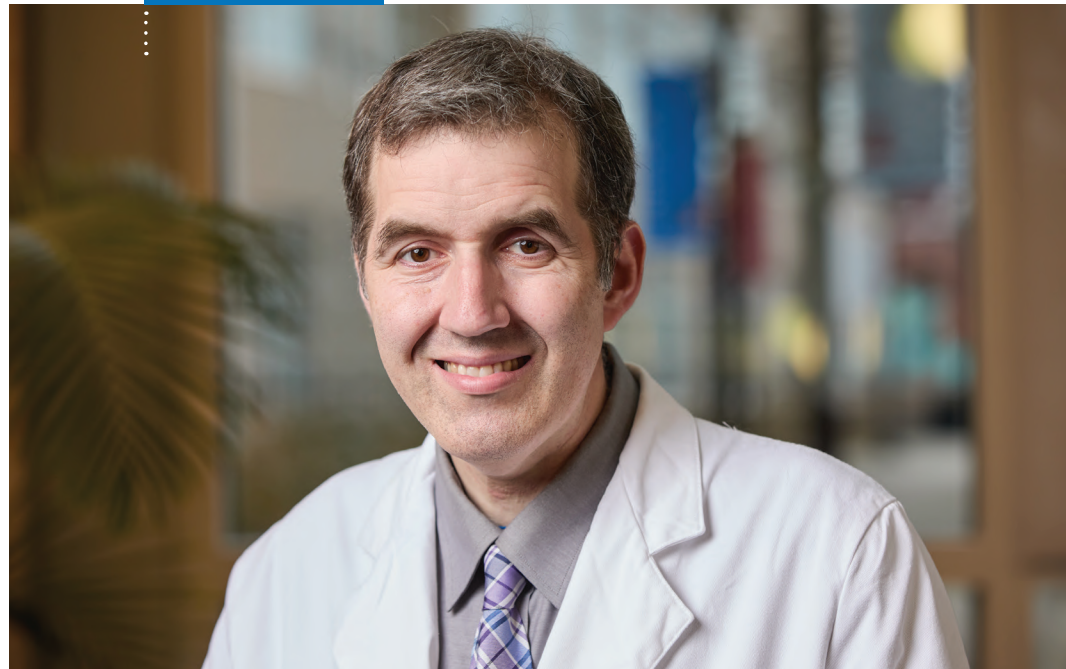
disease ambulatory services at both campuses of YNHH, including the Nathan Smith Clinic; the Haelen Center ID Clinic; and the Yale Physicians Building outpatient ID clinic, and supervise the medical directors of each area.

## Research

YNHHS and YSM were among 150 testing centers around the world to host COVID Phase 3 vaccine clinical trials, which contributed to the establishment of the vaccine's 95% efficacy rate against the original virus. Onyema Ogbuagu, MBCh, was Yale's principal investigator for—and one of the earliest recipients of—the COVID vaccine, the first to be administered in the United States in December 2020. In addition to the trials for adults over age 18, Ogbuagu led the trials that evaluated the safety and efficacy of the vaccine for adolescents between 12 and 17 years, and for children aged 5 to 12, 2 to 5, and under 2 years to 6 months of age. He also is directing Phase 2 trials for an adjuvanted recombinant protein-based vaccine similar to influenza vaccines. Ogbuagu also conducted clinical trials for remdesivir. Yale has also been the site for studies of other treatments, including convalescent plasma, led by Mahalia S. Desruisseaux, MD.

Shelli Farhadian, MD, PhD, expanded her research to study the neurologic effects in

MARK LUSTBERG, MD



COVID-19 patients, guided by what she had seen in those with HIV. In the spring of 2020, Farhadian and colleagues saw patients with neurological complaints but no other COVID-19 symptoms who later tested positive for the disease. Farhadian and collaborators launched a study to look at cerebrospinal fluid. The study, published in *Cell Reports Medicine* in the spring of 2021, found that unique immune responses were seen in the spinal fluid compared to what was going on in the rest of the body, including higher levels of antibody-producing cells than what would typically be

expected. They also found a high level of autoantibodies in the spinal fluid, which suggests that these brain-targeting antibodies are a potential contributor for the neurological complications. The COVID Mind Study at Yale is ongoing.

Sunil Parikh, MD, MPH, served as senior author of the *Morbidity and Mortality Weekly Report*, "Effectiveness of the Pfizer-BioNTech COVID-19 Vaccine Among Residents of Two Skilled Nursing Facilities Experiencing COVID-19 Outbreaks - Connecticut, December 2020-February 2021." The retrospective cohort analysis concluded that even with partial vaccination, the Pfizer-BioNTech COVID-19 vaccine provided protection, but recommended completing the two-dose series.

How and why genetically identical cells adopt different behaviors is a fundamental question in biology. Barbara Kazmierczak, PhD, MD, and Christina Lin, an MD/PhD student, wondered why only a subset of *Pseudomonas aeruginosa* bacteria express a specialized secretion system that allows this human pathogen to inject toxins into host cells, including neutrophils. By tracing gene expression patterns over many generations of growing bacteria, Lin et al. discovered that a subset of bacteria is poised to respond to danger signals by expressing this secretion system, and by doing so, protects their "non-producing" kin from neutrophil-mediated killing. The team published its findings in June 2021 in *mBio*. The Kazmierczak lab continues to study other situations in which bacteria cooperate or set up a

division of labor, and how this pattern leads to increased virulence, or antibiotic resistance and tolerance.

*Pneumocystis jirovecii* is a fungal infection that causes pneumonia, often in immunocompromised patients. In 2019, physicians within the transplant and infectious disease service at YNHH saw many cases of *Pneumocystis* pneumonia among their kidney transplant patients. After six patients were diagnosed with *Pneumocystis* pneumonia, a team led by Marwan Azar, MD, and Maricar Malinis, MD, created an ad hoc committee for an epidemiological investigation. In collaboration with scientists at the National Institutes of Health, Yale physicians identified multiple clusters of *Pneumocystis* transmission among kidney transplant patients, and antimicrobial prophylaxis was used to mitigate the outbreak. Azar, Malinis, Gleeson, Grant, and Topal published their findings in "Genetic and Epidemiologic Analyses of an Outbreak of *Pneumocystis jirovecii* Pneumonia among Kidney Transplant Recipients in the United States," in *Clinical Infectious Diseases* in June 2021.

Published in the November 11, 2020, issue of *PLOS Pathogens*, Yale researchers discovered a protein that helps protect hosts from infection with the tick-borne spirochete that causes Lyme disease, a finding that may help diagnose and treat this infection.

Lyme disease is the most common vector-borne disease in North America and is transmitted by ticks infected with the spirochete *Borrelia burgdorferi*. The course of the disease varies among individuals, with the majority experiencing mild symptoms easily treated by antibiotics. However, in some cases of untreated Lyme, the infection can spread to the heart, joints, nervous system, and other organs. For the study, the Yale team, led by Erol Fikrig, MD, expressed more than 1,000 human genes in yeast and analyzed their interactions with 36 samples of *B. burgdorferi*. They found that one protein, peptidoglycan recognition protein 1 (PGLYRP1), acts like an early-warning signal to the immune system when exposed to the bacteria. Fikrig and colleagues are also investigating whether people with higher levels of PGLYRP1 may be less susceptible to infection by *B. burgdorferi*, which would help explain why some infected individuals have better outcomes.

## Education

- Maricar Malinis, MD, Jeff Topal, MD, and Marwan Azar, MD, with pediatric infectious diseases specialist Inci Yildirim, MD, PhD, and Hematologist Stuart Seropian, MD, led the COVID-19 symposium, "SARS-CoV-2 Vaccination in Immunocompromised Patients: What We Know & What We Don't Know," which provided an overview of vaccine data for immunocompromised patients and the role of antibody testing.
- Matthew Grant, MD, was named an associate program director for the Internal Medicine Traditional Residency Program. Grant also participated as

Feedback: How to Create a Culture of Psychological Safety to Promote Learning and Growth," at Medical Grand Rounds. Emphasizing the crucial role that feedback plays in the mastery learning cycle and after reviewing the barriers for both teachers and learners, Dunne said that behaviors that promote psychological safety (the blending of trust and respect) could support a more robust and honest feedback culture. She concluded her presentation with action steps for culture change and adaptation of behaviors that promote psychological safety at all levels of leadership.

- Section faculty and experts from Yale's Poorvu Center for Teaching and Learning

JOSEPH VINETZ, MD



core faculty in the [IM]Educators training, created by Dana Dunne, MD, MHS. See page 15 for more information.

- Mahalia Desruisseaux, MD, joined the Yale Institute for Global Health as an affiliated faculty member.
- Marwan Azar, MD, was named the new fellowship program director. Jaimie Meyer, MD, MS, became the associate program director for research. Also, the National Institute of Health institutional training grant (T32), overseen by Albert Shaw, MD, PhD, was renewed for another five years.
- Dunne, the associate chair for education & academic affairs, presented, "Embracing

launched an Infectious Disease Diversity, Equity, and Anti-Racism (ID2EA) curriculum for faculty and fellows in 2020. Lydia Aoun-Barakat, MD; Mahalia Desruisseaux, MD; Gerald Friedland, MD; Shana Gleeson, MD; Marjorie Golden, MD; Jaimie Meyer, MD, MS; Albert Shaw, MD, PhD; Sheela Sheno, MD, MPH; Paul Trubin, MD; Michael Virata, MD; and Heidi Zapata, MD, PhD, participated.

- The adult and pediatric transplant infectious diseases teams launched a new educational conference series for the 2021-2022 academic year that will cover core concepts in transplant infectious diseases for trainees and faculty from

JAIMIE MEYER, MD, MS





pediatric and adult infectious diseases, transplant hepatology, transplant nephrology, transplant cardiology, and hematology/oncology. Maricar Malinis, MD; Inci Yildirim, MD, PhD, MSc; and Paul Trubin, MD, lead the initiative.

#### Community Advocacy

Manisha Juthani, MD; Albert Ko, MD; Onyema Ogbuagu, MBBCh; Saad Omer, MBBS, MPH, PhD; Richard A. Martinello, MD; Jaimie Meyer, MD, MS; and Scott Roberts, MD, took to the airwaves and social media to inform the public about COVID-19 transmission, treatments, and vaccinations, and to combat myths about the virus. They were facilitated by public relations teams at Yale School of Medicine, Yale Medicine, and Yale New Haven Health.

Rick Altice, MD, and Sharon Joslin, APRN, FNP, led efforts to bring COVID-19 testing and vaccinations to New Haven neighborhoods with the Yale Community Health Care Van.

Lydia Aoun-Barakat, MD, and Michael Virata, MD, members of the New Haven Mayor's Taskforce on AIDS (MTFA), work on efforts to enhance prevention, treatment, and advocacy services. The MTFA planned four days of events in New Haven in honor of World AIDS Day, with 10 free events. The events culminated with the Elise Cofield Awards. Cofield was a local trailblazer in the fight against AIDS. Sharon Joslin, APRN, FNP, was nominated for the 2020 award.

LYDIA AOUN-BARAKAT, MD



CHOUKRI BEN MAMOUN, PHD



#### Faculty Updates & Honors

In June 2021, Manisha Juthani, MD, was nominated by Governor Ned Lamont to be the commissioner of the Connecticut Department of Public Health. She assumed her new role on September 20, taking a public service leave of absence as Yale faculty.

Mahalia Desruisseaux, MD, received the Bailey K. Ashford Medal in 2020 for her work in cerebral malaria. Desruisseaux's lab focuses on the brain's microvascular and neural cell responses to parasitic infections that lead to debilitating

neurological sequelae and mortality. Desruisseaux was also included on a list of 1,000 inspiring Black scientists in America in *Cell Mentor* in January 2021. She also was named the section's vice chief for diversity, equity, and inclusion.

The following new faculty joined the section, focusing on clinical care: Associate Professor Mark Lustberg, MD; Assistant Professor Amit Achhra, MPH, MD, PhD; and new instructors Benjamin Goldman-Israelow, MD, PhD; and Paul Trubin, MD.

To learn more about the Section of Infectious Diseases, visit [medicine.yale.edu/intmed/infdis/](https://medicine.yale.edu/intmed/infdis/).





# MEDICAL ONCOLOGY

BARBARA BURTNESS, MD



The Section of Medical Oncology has 100+ full-time faculty focused on advancing therapy from the lab to the clinic and back. The section is led by Section Chief Roy S. Herbst, MD, PhD, and Clinical Chief Harriet Kluger, MD.

## Patient Care / Clinical Services

The Section of Medical Oncology had to adapt its locations to care for COVID-19 patients, relocating some patients from Smilow Cancer Hospital's York Street Campus to Yale New Haven Hospital's Saint Raphael Campus. Care was also relocated from New Haven to North Haven Medical Center.

The section works within the following disease-aligned research teams (DARTs) of breast, gastroenterology, genitourinary, head & neck, melanoma, Phase I trials, and thoracic.

Clinical volume continues to grow at Smilow's main campus and across the care centers. Yale's medical oncologists care for patients across Smilow Care Centers across Connecticut and Rhode Island. In

total, the section's faculty provides patient care at 15 practice sites, and is committed to offering patients innovative clinical care that stems from laboratory science into treatment options, delivered with compassion at their local care site. In March 2020, new North Pavilion 12 firm chiefs were named: Paul Eder, MD (Education and Oncology Practice); and Elizabeth Prsic, MD (Operations and Quality). In June 2021, Sarah

ROY S. HERBST, MD, PHD



Mougalian, MD, was appointed as the chief ambulatory officer for Smilow Cancer Hospital.

The Smilow Hospitalist Co-Management Program was launched in July 2021, led by Jensa Morris, MD, program director. Five hospitalists have been hired, and the team is determining the co-management model for the program. The inpatient consult service has been led by Hari Deshpande, MD, who has been adding APRNs to support the service going forward.

The faculty also care for patients at the VA Connecticut Healthcare System (VACHS), led by Michal Rose, MD, section chief; and Herta Chao, MD, PhD, director of clinical trials. See page 26.

## Research

The number of clinical trials grew consistently since Herbst took the reins of the section, but dipped in FY20 due to the COVID-19 pandemic. In FY21, the team has regrouped to continue to bring the industry, institutional, and national trials to its patients.

The Translational-Targeted Areas of Research Excellence (T-TARES) program continues to grow. Started in 2011, the work of T-TARES has resulted in multiple R01/U01 grants and three SPOREs, with a 25:1 return on investment. In 2020, the T-TARES transitioned to start supporting

such investigator-initiated trials as the optimization of cellular immunotherapy for melanoma; mechanisms and biomarkers for combinatorial treatment of solid tumors with BETi and HDACi; and CXCR5-targeted CAR T for aggressive T Cell lymphomas. In 2021, an additional T-TARE award was given to a team led by Donna Spiegelman, PhD, to lead a study to increase adherence to cervical cancer early detection and treatment recommendations.

Investigators of the Section of Medical Oncology lead three active Specialized

Programs of Research Excellence (SPORE) programs in skin, head & neck, and lung cancer. These transdisciplinary teams are led by Marcus Bosenberg, MD, PhD, and Harriet Kluger, MD (Skin); Barbara Burtness, MD (Head & Neck); and Roy Herbst, MD, PhD (Lung).

The Skin SPORE have taken their  $\alpha$ PD1 with CD40 agonists and  $\alpha$ CSF1R trial back to the lab after seeing modest activity in patients and evaluated the dosing to optimize the  $\alpha$ CSF1R agonist. The work has gone back to clinical trials this year.

The Head & Neck SPORE earned funding in September 2020 for a five-year period. Three projects are under way with scientists across Yale School of Medicine led by Barbara Burtness, MD, PhD.

For the Lung SPORE researchers, work in Siglec-15 as a potential immunotherapy option for cancer patients continues. Scott Gettinger, MD, is leading the clinical trial to evaluate Siglec-15's effectiveness for patients with prior PD-1 inhibitors and concurrently looking for potential biomarkers for this treatment option. Sarah Goldberg, MD, MPH, leads the clinical development for a research project focused on combating resistance to EGFR-targeted therapies.

The AstraZeneca-Yale Alliance continues strong with renewal of our collaborative projects between the Yale investigators and AstraZeneca, much of which complements the research aims of the Yale SPORE in Lung Cancer.

JOSEPH CONTESSA, MD, PHD; BARBARA BURTNESS, MD





VICKtOrY Early Clinical Trial Consortium continues to thrive with new sites included in the consortium. Several early-phase trials have gone through this UM1 mechanism with the most recent ones led by Patricia LoRusso, DO, and Kurt Schalper, MD, PhD, investigating a PARP inhibitor, olaparib alone or in combination with anti-PD-L1 therapy for metastatic breast cancer.

## Education

Under the leadership of Harriet Kluger, MD, the Immuno-Oncology K12 Training Program continues to thrive. Three scholars: Michael Cecchini, MD; Thuy Tran, MD, PhD; and Sarah Weiss, MD, are from the section, and the remaining nine scholars are from other sections and departments across Yale School of Medicine. Throughout 2021, Cecchini received an NCI K08 grant; Weiss was promoted to associate professor; and Tran received a Yale Skin Cancer SPORE Career Enhancement Award.

The Yale Hematology/Oncology Fellowship, led by new director Alfred Lee, MD, PhD, adds eight fellows annually, trained through 18 months of clinical practice and 18 months of research. For 2021 - 2022, the program named its first chief fellows Benjamin Lu, MD, and Anna Kress, MD. In 2022, the program will expand to host 10 fellows. Sarah Goldberg, MD, MPH, is the

MICHAL ROSE, MD; HERTA CHAO, MD, PHD; EDWARD PERRY JR., MD; ELSEY SHEEHAN, MD; ALEXANDER PINE, MD, PHD; ELLICE WONG, MD; TALIB DOSANI, MD



new associate fellowship program director, working closely with the other associate directors Michael Hurwitz, MD, PhD, and Nikolai Podoltsev, MD, PhD (Hematology).

## Faculty Highlights

Numerous medical oncology faculty were recognized on local, regional, and national levels this year. Pamela Kunz, MD, was named vice chief for diversity, equity, and inclusion for the section.

Joseph W. Kim, MD, received a 2021 Cancer Clinical Investigator Team Leadership Award from the National Cancer Institute (NCI). The award recognizes and supports outstanding mid-career clinical investigators at NCI-designated cancer centers who are working to improve the lives of people with cancer through NCI-funded collaborative clinical trials; and whose leadership, participation, and activities promote clinical trials and research.

Jill Lacy, MD, was named a Fellow of the American Society of Clinical Oncology (ASCO). The FASCO distinction honors members of the American Society of Clinical Oncology (ASCO) for extraordinary volunteer service, commitment, and dedication to the organization. In addition, Lacy was awarded a Yale Medicine Distinguished Clinical Career Award, which recognizes and honors the careers of physicians marked by significant accomplishments, exemplary dedication, and important contributions in advancing Yale Medicine, the overall medical profession, and the community.

Lieping Chen, MD, PhD, United Technologies Corporation Professor in Cancer Research, Professor of Immunobiology, Dermatology, and of Medical Oncology, was elected to the National Academy of Sciences (NAS). He was also elected a Fellow of the American Association for Cancer Research (AACR) Academy.

Jeremy Kortmansky, MD, was named associate chief medical officer for Network Medical Services and chief network officer

at Smilow Cancer Hospital. Kortmansky will partner with the Smilow Cancer Hospital leadership team to further expand multidisciplinary cancer services across the Smilow Care Center Network, and supervise the Medical Specialty Services for Smilow Cancer Hospital Care Centers with oversight over recruitment and onboarding of new medical oncology and hematology faculty. He will focus on mentorship, clinical operations, market assessment, and strategic planning for the medical specialty services within the Care Centers.

Anne Chiang, MD, PhD, was named Deputy Chief Medical Officer and Chief Integration Officer at Smilow Cancer Hospital. Chiang will work with the Smilow Cancer Hospital leadership team to further expand multidisciplinary cancer services across the Care Center Network. She also won the 2020 Joseph V. Simone Award

and Lecture, given by the American Society of Clinical Oncology. The award is given annually to an oncologist to recognize innovation and excellence in the field of quality in cancer care. Chiang was also appointed an executive officer of the Southwest Oncology Group Cancer Research Network. In this role, she will oversee the SWOG portfolio of clinical trials in lung and breast cancers. Other important honors include: Edward Kaftan, PhD, appointed assistant cancer center director for translational science at YCC; and Stacey Stein, MD, and Neal Fischbach, MD, being named assistant medical directors for YCC's Clinical Trials Office.

To learn more about the Section of Medical Oncology, visit [medicine.yale.edu/intmed/medonc/](http://medicine.yale.edu/intmed/medonc/).

DAVID RIMM, MD, PHD; EDWARD KAFTAN, PHD; KATERINA POLITI, PHD; LIEPING CHEN, MD, PHD; SARAH GOLDBERG, MD, MPH; ROY S. HERBST, MD, PHD



MARIO SZNOL, MD; HARRIET KLUGER, MD; AND MARCUS BOSENBERG, MD





# NEPHROLOGY

WILLIAM ASCH, MD/PHD



The Section of Nephrology has extensive programs in patient care, research, and education. Led by Stefan Somlo, MD, and Clinical Chief Aldo Peixoto, MD, the section is committed to excellence with the expectation that both its faculty and trainees will be national and international leaders in academic nephrology.

## Clinical Care

### New Program

The section launched a new program in lower Fairfield County in the spring of 2021. Tinika Montgomery, MD, and Marcelo Orias, MD, PhD, provide outpatient services at Long Ridge Medical Center in Stamford, and inpatient care at Greenwich Hospital in Greenwich. With this recent expansion, Yale Nephrology brings its high-level care to people

in three counties in coastal Connecticut: Fairfield, New Haven, and Middlesex.

Both Montgomery and Orias are general nephrologists, treating patients with kidney diseases and disorders. Montgomery specializes in chronic and end-stage kidney disease, and also sees patients in the Kidney Stones Program, a collaboration with the Section of Urology. Orias, an internationally recognized hypertension specialist, specializes in treating high blood pressure and is vice president of the World Hypertension League.

### Renal Transplantation

Yale has the largest kidney transplant program in New England. Since the program began in the mid-1960s, 3,272 kidney transplants have been performed, of which 1,276 have been living donor transplants. The program, with clinics in New Haven, Stamford, Hartford, and Old Saybrook, is involved in research sponsored by industry and by the National Institutes of Health.

Richard N. Formica Jr., MD, is director of Transplant Medicine. Formica was elected

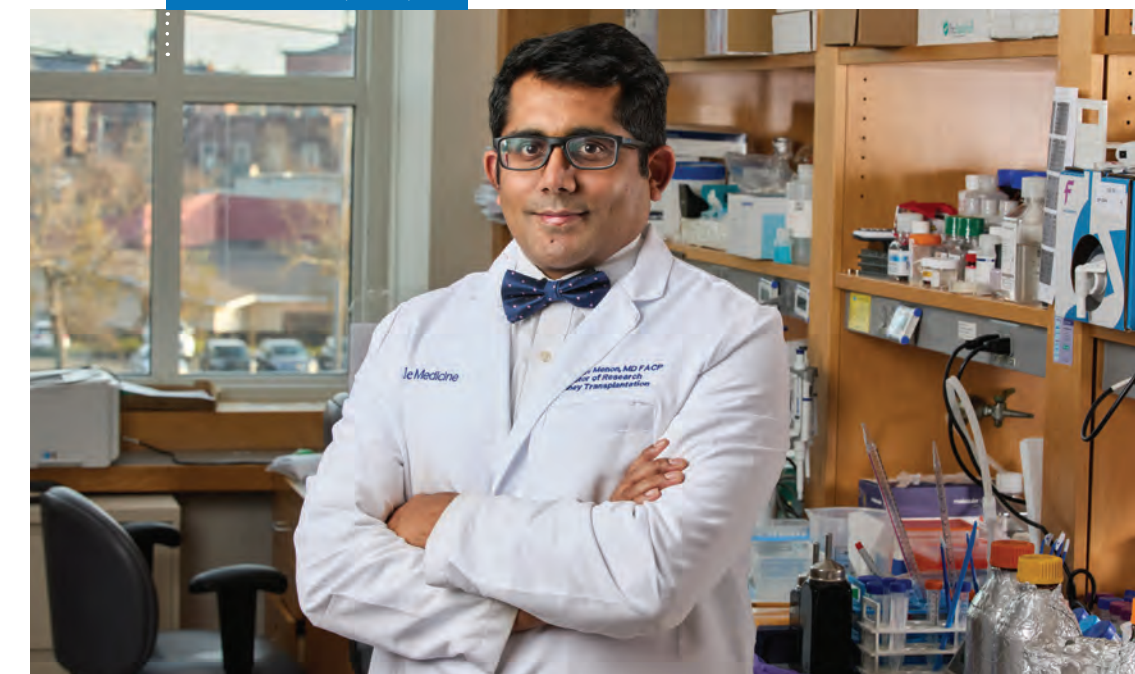
president of the American Society of Transplantation (AST) in 2020 and is currently the AST's past president. He also serves on the board of directors of the Organ Procurement and Transplantation Network. Nationally, the waitlist for kidney transplantation is almost 100,000 people. While the number of deceased donor transplants increases every year, there are still a significant number of people who die waiting (approximately one person every two hours). Because of this situation, there are initiatives to expand living kidney donation safely and ethically, Formica says.

William Asch, MD, PhD, director of the transplant fellowship program, has served on the education committee of the American Society of Transplantation since 2020. Asch, who is also director of pre-transplant operations, was selected in the spring of 2021 to lead the Yale committee in reviewing the use of the eGFR race modifier, a modifier formerly used in estimated glomerular filtration rate calculations of kidney function.

## Diversity, Equity, and Inclusion

Namrata Krishnan, MBBS, is the vice chief for Diversity, Equity, and Inclusion (DEI) in the Section of Nephrology. She works closely with the section leadership and the Office of Diversity, Equity & Inclusion in Medicine to

MADHAV MENON, MBBS, MD



advance workforce diversity, education, and ongoing DEI conversations in the section and the residency training programs.

## Education

Lloyd G. Cantley, MD, received the Charles W. Bohmfalk Prize for teaching in the basic sciences during Yale School of Medicine's (YSM) virtual commencement ceremony in 2020. The Charles W. Bohmfalk Teaching

Prize is one of YSM's highest faculty awards. This is the second time Cantley has received the prize, having been honored with the Bohmfalk Prize for teaching in the clinical sciences in 2012, making him the only Yale physician to have won the Bohmfalk Prize for both basic sciences and clinical sciences.

Nephrology's Fellowship Director, Ursula Brewster, MD, received the 2021 American Society of Nephrology (ASN) Distinguished Educator Award. Brewster has a national role in supporting and training more junior fellowship directors, while working with ASN leadership to set policy for fellowship programs across the country.

For Namrata Krishnan, MBBS, the key to enhancing academic interest in nephrology and addressing the notable decline in internal medicine residents applying to the specialty lies in developing innovative ways to deliver nephrology education. In the last three years, Krishnan has focused on e-learning and developed two online interactive learning modules in hemodialysis.

## Research

Several important studies were published recently in high-impact journals:

Autosomal dominant polycystic kidney disease (ADPKD), a genetic disorder, causes fluid-filled cysts to develop in the kidneys, which can impair their function. The cysts cause the kidneys to become inflamed and develop fibrosis (scar tissue). The disease is most often caused by a mutation in one of

URSULA BREWSTER, MD





two genes, *PKD1* or *PKD2*, which can be passed down from parent to child. Stefan Somlo, MD, and his research team published a study in *Nature Genetics* showing that the damage caused by ADPKD can be reversed, demonstrating the surprising plasticity of the kidney. The study was also featured as a research highlight in *Nature Reviews Nephrology*, and was the subject of an accompanying News & Views editorial in the December 2021 issue of *Nature Genetics*.

In a new paper published in the *Journal of the American Society of Nephrology*, researchers led by Gary V. Désir, MD, share findings that indicate that for the first time, there is a potential targeted treatment for kidney injury caused by cisplatin, a widely used anticancer drug. One in four patients treated with cisplatin develop chronic kidney disease. Désir and colleagues found that by using an agonist peptide derived from the secreted survival protein renalase and encapsulated in nanoparticles specifically designed to be taken up by the proximal tubules of the kidney, the principal site of cisplatin cytotoxicity, they could mitigate cisplatin-induced chronic kidney disease in mice.

*APOL1 G1* and *G2* variants are established risk factors for nondiabetic kidney disease. The presence of two *APOL1* risk variants in donor kidneys has a negative effect on kidney allograft survival. However, the role



LLOYD G. CANTLEY, MD

of *APOL1-G1/G2* in kidney transplant recipients was not known. An important study led by Madhav Menon, MBBS, MD, in *The Journal of Clinical Investigation* showed that these genetic variants in transplant recipients increase the rate of kidney rejection and lower transplant kidney life. The study is also featured in *Nature Reviews Nephrology* as a research highlight and was the focus of a commentary in the *American Journal of Kidney Diseases*. The paper was also named editor's pick in the *JCI* for December 2021.

### The Yale Kidney BioBank

The Yale Kidney BioBank began enrolling participants undergoing kidney biopsies in August 2020, with samples included from a previous study from 2015-2018. The goal of the BioBank is to create a data and biological sample bank to support research in kidney diseases. To date, 594 participants are enrolled in the study.

The BioBank is a program of the George M. O'Brien Kidney Center at Yale, which was established to facilitate translational and clinical research to advance the understanding and treatment of kidney diseases.

"Our goal is to create a resource whereby interested investigators may obtain access to human samples and clinical data for use in sound biomedical research in order to advance our understanding of the pathophysiology of and develop therapies for various kidney diseases," said Dennis Moledina, MBBS, PhD, the BioBank's director.

### Grants

Lloyd G. Cantley, MD, has long had a scientific interest in polycystic kidney disease (PKD). Now he is taking this work to the next level. He is principal investigator of a \$11.577 million multidisciplinary study funded by the U.S. Department of Defense (DoD). The study, titled "Polycystic kidney disease: a disorder of glomerulotubular synchronization," brings together five senior investigators at Yale, including Nephrology

Section Chief Stefan Somlo, MD, to develop effective therapies for PKD.

Section faculty were among the winners of the Department of Internal Medicine's Quality & Safety Process grants:

- Acute Hemodialysis Catheter Registry" (Nephrology). Project lead: Jeffrey Turner, MD.
- Optimization of Laboratory Monitoring of Home Self-administered Therapy with Erythropoiesis-stimulating Agents." Project lead: Ravi Kodali, MD.
- Improving Pre-transplantation Immunization for Solid Organ Transplantation Candidates through the Implementation of a Novel Pre-transplantation Immunizations Review Process" (Infectious Diseases, Cardiology, Hepatology, Nephrology, YNH Pharmacy).

### New Faculty

The Section of Nephrology welcomed several new faculty members:

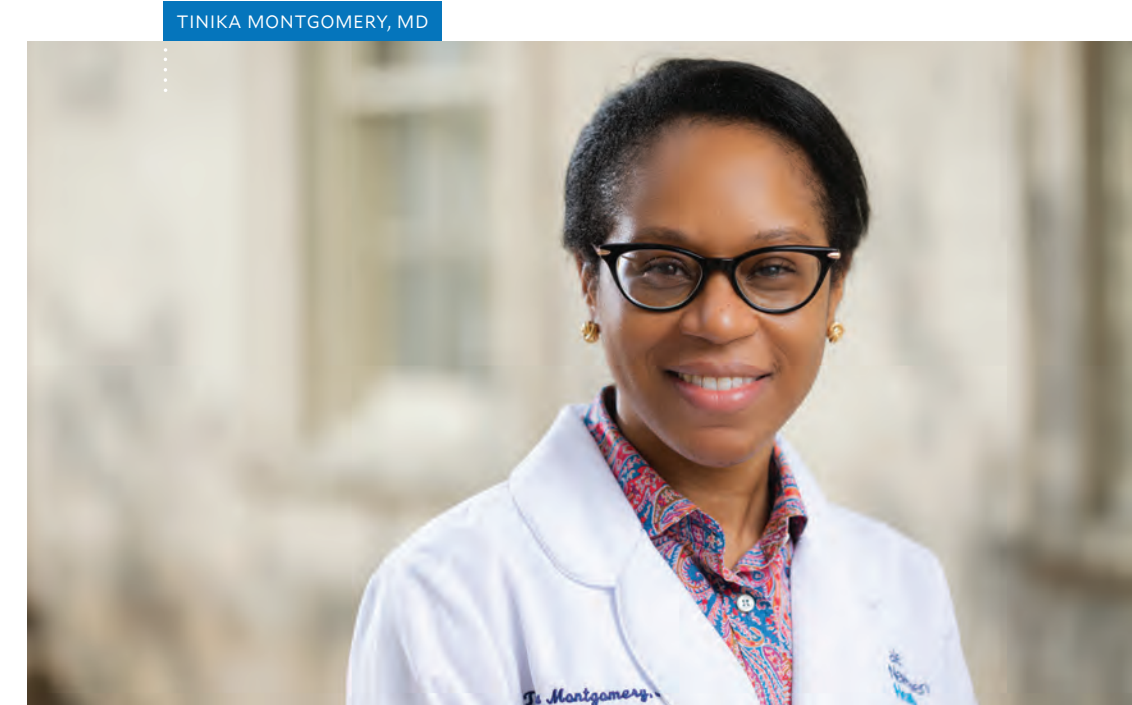
- Madhav Menon, MBBS, MD, is director of research in kidney transplantation. An important recent study by Menon and colleagues showed that genetic variants *APOL1-G1/G2*, in transplant recipients increase the rate of kidney rejection and shorten transplant kidney life.
- Tinika Montgomery, MD, specializes in chronic and end-stage kidney disease; she also sees patients in the Kidney Stones Program, a collaboration with the Section of Urology.
- Marcelo Orias, MD, PhD, specializes in chronic and end-stage kidney disease and is an internationally recognized hypertension specialist.

### COVID-19

F. Perry Wilson, MD, has discussed the COVID-19 pandemic on social media, during media appearances, and on his regular series of educational videos on Medscape (*The Impact Factor*), where he analyzes the strengths and weaknesses of a variety of published studies with real-life implications. Wilson believes that science and the scientific method can help push back against popular misconceptions, especially during a pandemic. Wilson, the director of Yale's Clinical and Translational Research Accelerator (CTRA), has been featured during the pandemic on PBS's *Amanpour & Co.*, CNN,



MARCELO ORIAS, MD, PHD



TINIKA MONTGOMERY, MD

Healthline, the PBS News Hour, PolitiFact, Vox, WebMD, WTNH, Yahoo! News, and *YaleNews*.

### Awards

Congratulations to the Yale Nephrology faculty for receiving the following awards:

- Mark A. Perazella, MD, won the 2021 Donald W. Seldin Award from the National Kidney Foundation (NKF).
- Shuta Ishibe, MD, won the 2020 Distinguished Researcher Award from the American Society of Nephrology (ASN).

- Whitney Besse, MD, won a Clinical Scientist Development Award from the Doris Duke Charitable Foundation.
- Madhav Menon, MBBS, received the Kidney International Early Career Researcher Award from the International Society of Nephrology in 2021, and the AST Award for Achievement in Basic Science, Early Career, from the American Society of Transplantation.

To learn more about the Section of Nephrology, visit [medicine.yale.edu/intmed/nephrol/](http://medicine.yale.edu/intmed/nephrol/).

RICHARD N. FORMICA JR., MD





# PULMONARY, CRITICAL CARE AND SLEEP MEDICINE

JON KOFF, MD



The Section of Pulmonary, Critical Care, and Sleep Medicine (Yale-PCCSM) believes its strength comes from its people. The section's mission is to provide compassionate and effective patient care; to perform cutting-edge and innovative clinical and translational research; and to provide rigorous but tailored training for future leaders in academic medicine and science.

**Yale-PCCSM faculty** aims to fulfill this mission in the best atmosphere possible with a focus on community, diversity, equity, engagement, and work-life balance, says Naftali Kaminski, MD, chief of the Section of Pulmonary, Critical Care & Sleep Medicine. He and other section faculty members discuss the culture of Yale-PCCSM in a video featured in a docuseries created by the American Thoracic Society in 2021. Watch the video at <https://m.yale.edu/ypn7>.

## Team

Yale-PCCSM has grown from about 38 faculty members in 2013 to 75 in 2021. The section has two professors emeritus, nine professors, 20 associate professors, 28 assistant professors, and 12 instructors. The section, which traditionally has benefitted from strong female leadership, has an equal number of men and women professors. Eleven associate professors are women,

and nine are men; 46% of ladder faculty are female, 54% of senior faculty are female, and 55% of clinical educators are female. Of the ladder faculty, 13% are from groups that have been underrepresented in medicine.

A new cabinet of vice chiefs and directors reflects the section's size and stature: Jonathan Siner, MD, clinical chief; Hilary Cain, MD, VA section chief; Charles Dela Cruz, MD, PhD, and Klar Yaggi, MD, MPH, vice chiefs of research, basic and translational;

Margaret Pisani, MD, MPH, vice chief, faculty development and mentoring; Jennifer Possick, MD, director, ambulatory services; Shyoko Honiden, MD, director, critical care services; Lynn Tanoue, MD, MBA, senior strategic advisor; Vivian Asare, MD, vice chief, Diversity, Equity and Inclusion; and Carolyn D'Ambrosio, MD, vice chief for fellowship training and fellowship program director.

New faculty include Samir Gautam, MD/PhD, Brett Gerstenhaber, MD; Zack Harris, MD; and Sandra Zaeh, MD, MS. Newly promoted faculty are Assistant Professor Denyse Lutchmansingh, MD, and Associate Professor Jose Gomez Villalobos, MD, MS. Pisani and Yaggi, both alumni of Yale-PCCSM fellowship programs, were promoted to full professor.

Kaminski says the pipeline is working, explaining that Gomez, like Pisani and Yaggi, trained at the section as a fellow. Another thing that tells us a lot about the section's appeal is that people like to stay here, Kaminski said, adding that 40% of early-career faculty were Yale-PCCSM fellows.

In 2021, the National Institutes of Health awarded R01 grants to former fellows who are members of this new generation of physician-scientists: Gomez, and Maor Sauler, MD. Gomez will study neutrophilic asthma, while Sauler will investigate the pathobiology of COPD. Lauren Ferrante, MD, MHS, also a former fellow, received the 2021 American Geriatrics Society Outstanding Junior Investigator of the Year Award for her studies of geriatric factors in intensive care.

KATHLEEN LUCEY; MEIR KRYGER, MD; LAUREN POLLIO; DEREK LESTER; LAURIE SKINGER



## COVID-19

The COVID-19 pandemic required team cohesion and resilience, with faculty safety and wellness a priority. Through 2021, the section treated 1,500 COVID-positive patients who required critical care. Their average stay in the MICU was two days longer than for a non-COVID patient, although some required extended stays. Also, 49 patients received ECMO for respiratory indications, many of them young. Providing these services to the section's patients requires resources, time, and resiliency along with skill, knowledge, 24-hour stamina, and commitment, says Kaminski.

## Education

The section recruited D'Ambrosio from Brigham and Women's Hospital to be vice chief for fellowship programs and program director for the Pulmonary, Critical Care Medicine (PCCM) Fellowship. Brian Clark, MD, is the fellowship director; Jon Koff, MD, is associate director, fellowship research.

Kaminski noted the extremely strong pool of candidates in 2021; the Pulmonary and Critical Care fellowship alone had 400 applicants. In addition to PCCM, the section offers fellowships in Sleep Medicine, Interventional Pulmonary Medicine, and Critical Care.

## Faculty Development

Yale-PCCSM appointed Margaret Pisani, MD, MPH, as vice chief of Faculty Development and Mentoring. She will work with senior faculty who are devoted to providing mentorship and sponsorship to all Yale-PCCSM faculty. The section also developed a structured process for supporting mentors and mentees. Pisani met with mentors about their mentees to identify successes and challenges. The mentees provide a written report that is presented to the section chief and the senior faculty committee to approve career plans and target academic metrics for the coming year, which allows the leadership to support the mentors in guiding the faculty and set a process in place to ensure

LAUREN FERRANTE, MD, MHS





faculty are getting appropriate mentorship. The current focus is on clinicians and clinician educators, as the metrics for researchers are relatively clear, says Pisani.

## Diversity, Equity, and Inclusion

As part of the section's mission to focus on community, diversity, equity, and inclusion, Vivian Asare, MD, vice chief for DEI, together with the section's DEI committee, set up a series of events that included multiple DEI-related Yale-PCCSM Grand Rounds; a screening of *Black Men in White Coats* with the documentary's creator; and Pride events in June. The commitment to recruit fellows from diverse backgrounds has led to such initiatives as participation in the Yale GME office-sponsored inaugural Under-represented in Medicine recruitment fellowship dinner. The section also organized several events benefiting local foodbanks, including virtual 5K and a Thanksgiving food drive for a community soup kitchen.

## Clinical

Yale-PCCSM clinical programs are committed to providing the best, most compassionate, and up-to-date clinical care to patients with lung disease in inpatient or outpatient settings. They also provide cutting-edge

CHRISTINE WON, MD, MSC



clinical research, and rigorous education with the goal for both faculty and trainees to be national and international leaders in their subspecialties.

## Critical Care

The Critical Care program includes the inpatient Medical Intensive Care and Step Down Units, the Tele-ICU and access to outpatient consultations. Shyoko Honiden, MD, MS, recently was named director of Yale-PCCSM Critical Care Services, replacing

Jonathan Siner, MD. In addition to Siner's role as the section's clinical chief, he was named Yale New Haven Health ICU director in 2021. The team managed the Medical Intensive Care Unit on two campuses through an unprecedented period of growth from 24 beds to 60; expansion of the step-down unit; and creation of first Tele-ICU unit in the EPIC environment that allows remote treatment of critically ill patients. During COVID surges, the number of beds increased to as many as 130, and Tele-ICU was expanded.

## Outpatient Care

The Winchester Center for Lung Disease, (WCLD), a multidisciplinary center for the diagnosis and care of patients with lung disease, opened in 2021. Jennifer Possick, MD, is its medical director; Denyse Lutchmansingh, MD, is the associate director. WCLD is a partnership with Yale New Haven Hospital (YNHH), Yale Medicine, and Yale-PCCSM. Negative-pressure exam rooms prevent the spread of contagious illnesses from one area to another. The new space triples the capacity to treat patients with asthma, COPD, pulmonary fibrosis, sarcoidosis, pulmonary hypertension, cystic fibrosis, bronchiectasis, and tuberculosis; and houses all the outpatient services of Yale-PCCSM centers and programs. The Post-COVID-19 Recovery Program, which saw 692 post-COVID patients in 2021, is also located at WCLD.

SHYOKO HONIDEN, MD, MS



## Centers of Excellence

### Center for Asthma and Airway Disease

A national and regional leader in asthma care, YCAAD is led by Geoffrey Chupp, MD, and Lauren Cohn, MD, who were able to minimize the impact of COVID-19 on their patients. Chupp recently described how new data show that people with asthma at YNHH were relatively protected from severe COVID-19.

### Yale-ILD Center

The Yale-ILD Center has a nationally recognized multidisciplinary team. Erica Herzog, MD, PhD, is the director, and Danielle Antin-Ozerkis, MD, is the medical director. Interstitial lung diseases are difficult to diagnose and treat, and often require referral from community physicians, including pulmonologists. The center has world-renowned experts in pulmonary fibrosis, connective tissue-associated ILD, hypersensitivity pneumonitis, sarcoidosis and other ILDs; and is actively recruiting patients to participate in clinical trials of novel therapeutics.

### Adult Cystic Fibrosis

Yale-PCCSM has one of the top cystic fibrosis programs in the country, specializing in the diagnosis, management, treatment and research of cystic fibrosis. Jon Koff, MD, is the director. Koff is also the medical director of the Yale Center for Phage Biology and Therapy, which aims to use phages to combat the increasing prevalence of antibiotic-resistant bacteria in cystic fibrosis and other conditions.

### Yale Sleep Centers

The Centers for Sleep Medicine is led by Klar Yaggi, MD, MPH, and Christine Won, MD, MSc. It has three locations in North Haven, Madison, and at the VA Connecticut Healthcare System location in West Haven, and 21 beds for sleep testing, as well as renowned experts in obstructive sleep apnea, insomnia, narcolepsy, and other sleep disorders.

## Programs

### Comprehensive Pulmonary Care Program at WCLD

As described earlier under outpatient services, Yale-PCCSM master clinicians evaluate and treat patients with a wide

range of lung disorders as well as undiagnosed respiratory complaints. They provide the best current diagnosis and treatment based on their vast experience. The team is led by Jennifer Possick, MD.

### Pulmonary Vascular Disease Program

Led by Director Inderjit Singh, MBChB, and Associate Director Philip Joseph, MD, the Pulmonary Vascular Disease Program (PVDP) is a comprehensive center for the evaluation and treatment of pulmonary hypertension, acute and chronic pulmonary embolism, and unexplained shortness of breath. The PVDP has ongoing research studies as well as such clinical and diagnostic services as right-heart catheterization, and highly specialized services that are offered in only a few sites nationwide. These services include advanced cardiopulmonary testing that allows evaluation of shortness of breath not otherwise explained by such routine tests as pulmonary function tests,

deteriorations, including the most complex COPD patients. The COPD sleep clinic for the management of COPD-related sleep disordered breathing and chronic respiratory failure opened in July 2021. The program is led by Carolyn Rochester, MD.

### Nontuberculous Mycobacterium (NTM) Pulmonary Infections and Bronchiectasis Program

This program evaluates and manages patients with bronchiectasis and chronic infections, including nontuberculous mycobacteria (NTM) as part of the Yale Chronic Pulmonary Infection and Non-Cystic Fibrosis Bronchiectasis Program. The interdisciplinary group provides workup and non-antibiotic and antibiotic management of difficult-to-treat chronic lung infections, patient support and education and access to research. It is led by Charles Dela Cruz, MD, PhD, and Ashley Losier, MD.

JOSE GOMEZ VILLALOBOS, MD



echocardiogram, chest imaging, or standard exercise tests. In collaboration with cardiothoracic surgery, the PVDP also offers pulmonary thromboendarterectomy for the treatment of chronic thromboembolic disease. This is a specialized and complex surgery with few expert practitioners nationwide.

### COPD

A growing number of patients are treated to prevent repeat hospitalizations and

### Interventional Pulmonary

Among the procedures performed are advanced diagnostic and therapeutic bronchoscopy. The first bronchoscopic lung volume reduction surgery at Yale was performed in 2021; it involved an endobronchial valve placement on a patient for treatment of COPD.

### Thoracic Oncology

The Yale Cancer Center Thoracic Oncology Program (TOP) is a multidisciplinary



program for the evaluation and treatment of patients with thoracic malignancies, and for advancing scientific discovery in lung cancer biology and treatment. It is led by Lynn Tanoue, MD, MBA, and Jennifer Possick, MD.

#### **Tuberculosis (TB) Clinic**

Directed by Tanoue, the Tuberculosis Clinic is the regional referral center for tuberculosis and non-tuberculous mycobacterial diseases. Its faculty are engaged in outreach in adult education centers in the Greater New Haven area, screening and treating high-risk people who often have limited access to health care.

#### **VA Connecticut Healthcare System**

Yale-PCCSM at VA Connecticut Healthcare System, directed by Hilary Cain, MD, has clinical, educational, and research programs. Six faculty members spend most of their clinical and academic efforts at the VA campus, while other section faculty make additional contributions to the program. The Sleep Medicine Program is shared equally between the Yale and VA campuses. See page 26 for more information.

#### **Research**

##### **Published Papers**

The section's clinical programs translate into significant scientific productivity. Annual research publications averaged around 20 to 50 until 2014, and then doubled in 2015. Over 230 papers were published per year in 2020 and 2021 by Yale-PCCSM physician-scientists, clinician educators, trainees and PhD investigators. Kaminski notes that these publications showcase high-quality multidisciplinary research and clinical observations, and are published in high-impact journals.

##### **Single-cell Atlases**

The section published several manuscripts describing single-cell profiling of IPF, COPD, cystic fibrosis, COVID-19, as well as the largest and most detailed characterization of normal lung endothelial cells. All the papers are accompanied by data sharing, mining, and dissemination portals that allow free exploration of the data without the

need for expertise in bioinformatics or computational biology. Yale-PCCSM cell atlases can be accessed at <https://medicine.yale.edu/lab/kaminski/research/atlas/>.

#### **Research Centers**

##### **Yale Center for Pulmonary Infection Research**

Led by Charles Dela Cruz, MD, PhD, the Center for Pulmonary Infection Research (CPRIT) and Treatment advances cutting-edge basic, translational, and clinical research that will lead to improved understanding of pulmonary infections and more effective diagnoses and treatments, while providing enhanced preparedness for future outbreaks of such respiratory infections as COVID-19.

Faculty in the newly established comprehensive multidisciplinary Yale Chronic Pulmonary Infection and Non-Cystic Fibrosis Bronchiectasis (CPNB) Center have significant expertise in the treatment of complex lung diseases. CPNB houses clinical and translational studies and offers experimental therapy and a comprehensive approach to disease management.

##### **Precision Pulmonary Medicine (P2MED)**

This center facilitates the application of precision medicine approaches to pulmonary, critical care, and sleep medicine. It applies technologies to improve the diagnosis and management of human lung disease, with a focus on identifying a patient's molecular characteristics. The center provides access to cutting-edge RNA and protein profiling technologies. Gomez is the center director. P2Med has a dedicated analytic team that provides quantitative approaches, from traditional statistics to robotic-assisted technology. Xiting Yan, PhD, is director of its data analysis and bioinformatics hub.

##### **Funding**

The section's research funding has doubled from eight years ago. The section makes a major effort to train their researchers and their clinician-educators in submitting grants and supporting them, Kaminski says. The increase in funding is reflected in research productivity as mentioned above, as well in the quality and impact of research published. Section members published in the top medical and scientific journals in areas as diverse as single-cell multi-omics

in nearly every lung disease; geriatric outcomes in the MICU; the contributions of socioeconomic status to mortality; novel mechanisms of infection; sleep-disordered breathing phenotyping; palliative care; novel therapies and mechanisms in sarcoidosis; and women physicians' perceptions of breastfeeding and pumping.

Three Lakes Foundation selected Yale School of Medicine and the University of Pittsburgh School of Medicine to join the Three Lakes Consortium for Pulmonary Fibrosis. The researchers will focus on advancing disease understanding with the goal to speed new treatments and find a cure for this devastating lung condition. The section's work in pulmonary fibrosis is showcased in a new video by the American Thoracic Society, "Mapping Technology Supports Pulmonary Fibrosis Patients."

To learn more about the Section of Pulmonary, Critical Care, and Sleep Medicine, visit [medicine.yale.edu/intmed/pulmonary/](https://medicine.yale.edu/intmed/pulmonary/).





# RHEUMATOLOGY, ALLERGY & IMMUNOLOGY



During the COVID-19 pandemic, the Section of Rheumatology, Allergy & Immunology contributed its expertise to further our understanding of the many manifestations of SARS-CoV-2 infection.

Rheumatologists have much expertise with inflammatory and autoimmune diseases that they can offer in diagnosing and treating the diverse manifestations of COVID, as well as to post-COVID or long-hauler syndrome, says Richard Bucala, MD, PhD, chief of Rheumatology, Allergy, &

Immunology). The knowledge is derived from the section's experience with diseases associated with such long-term immunologic sequelae as postinfectious arthritis, Lyme disease, fibromyalgia, and the antiphospholipid syndrome.

During the vaccine rollouts in Connecticut,

the section's allergy & immunology faculty worked closely with community physicians and Governor Ned Lamont's COVID-19 Vaccine Advisory Team to study patients who appeared to have allergic reactions to vaccination. Several faculty contributed to a study of patients from U.S. hospitals,

including Yale New Haven Hospital, that was published in *JAMA Internal Medicine*, which evaluated the safety of second vaccinations in those with apparent first-dose reactions.

Although the pandemic precluded in-person gatherings, Bucala and Robert Schoen, MD, MBA, convened a virtual international meeting to inaugurate what will become the annual Yale Rheumatology State-of-the-Art Symposium. The first meeting on May 19, 2021, was titled Pre-autoimmunity and the Prevention of Rheumatic Diseases, with multidisciplinary research and clinical experts reviewing the conceptual basis and available clinical data for implementing preventive strategies in rheumatoid arthritis and systemic lupus erythematosus.

Authorities in type 1 diabetes and multiple sclerosis also contributed their experience with similar approaches to those autoimmune conditions. Recent progress in understanding the development of autoimmunity suggests the potential benefit of intervening in the earliest preclinical phase of autoimmune rheumatic diseases to prevent progression to symptomatic and tissue-destructive disease, Bucala said.

Almost no one had heard of mRNA vaccines until the Pfizer-BioNTech and Moderna vaccines were developed. The timing was fortuitous for the approval of a Yale patent of an mRNA-based vaccine against malaria. Work on this vaccine has

DEBORAH DYETT DÉSIR MD



been under way since 2012, but the entire landscape has changed in the last six months because of the success of COVID RNA vaccines, said Bucala, an inventor of the malaria vaccine. Bucala also received three generous philanthropic donations to advance this work toward an effective human vaccine, which utilizes a more advanced self-amplifying RNA, against future coronavirus outbreaks as well as for malaria; the latter is now getting under way in collaboration with Oxford's Jenner Institute.

Because the COVID-19 pandemic exacerbated wide disparities that currently exist in the U.S. health care system, the clinical practice in the Section of Rheumatology, Allergy & Immunology rapidly adapted from face-to-face visits to telehealth to keep patients and providers safe. Many patients quickly adapted and were thankful to still be able to 'see' their doctors; discuss their concerns; and talk about disease management during the pandemic.

COVID-19 also underscored many glaring disparities in access to care for minority and underserved populations. A cover story published in *The Rheumatologist* in October 2021 highlighted the section's work in this area. In "Yale Rheumatologist Makes Health Care Accessible for People with Lupus and Rheumatic Diseases," the career dedication of faculty member, Lenore Buckley, MD, MPH, to the underserved patients at the Cornell Scott Hill Health Center in New Haven is richly described.

## Recognition

Linda Bockenstedt, MD, was appointed to the Council of the National Institute of Allergy and Infectious Diseases (NIAID) for a three-year term, where she will advise on the Institute's research programs.

Insoo Kang, MD, director of Immunology & Allergy, received the Innovative Research Award from the Rheumatology Research Foundation to investigate the role of innate

INSOO KANG, MD





immunity in central nervous system lupus. The goal is to investigate the effects of lupus immune complex-driven inflammation on neuronal cells. Kang and Bucala also received an award from Quest Diagnostics to investigate the cellular immune response to current COVID-19 vaccines.

Monique Hinchcliff, MD, MS, director of the Yale Scleroderma Program, received a grant from Kadmon Pharmaceuticals to study the drug KD025-215 in diffuse cutaneous systemic sclerosis, a debilitating disease with few treatment options.

Abhijeet Danve, MBBS, MD, was awarded funding by the Spondyloarthritis Research and Treatment Network (SPARTAN) to lead treatment and guideline development for axial spondyloarthritis.

Deborah Dyett Désir, MD, joined the American College of Rheumatology's Executive Committee as secretary. She will also chair the Committee on Corporate Relations.

VA Chief Evelyn Hsieh, MD, PhD, was awarded an R01 research award from the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) for the development of a novel and HIV-relevant prediction model for fracture.

Carmen Yolanda Pagan, MD, received the 2021 Rheumatology Fellows Teaching Award in recognition of excellence in fellow education.

David Podell, MD, PhD, chair of medicine at Waterbury Hospital, was inducted as a Fellow of the Royal College

FOTIOS KOUMPOURAS, MD



of Physicians. Podell's interests lie in patient-centered care and in general clinical rheumatology. Podell is a Master in the American College of Physicians, and Fellow in the American College of Rheumatology.

Lisa Suter, MD, was named vice chief in Rheumatology, Allergy & Immunology for Diversity, Equity, and Inclusion.

The 6th edition of *Lahita's Systemic Lupus Erythematosus* (Academic Press) was published with contributions by Richard Bucala, MD, PhD, who is also an editor; Insoo Kang, MD; and Fotios Koumpouras, MD, FACR.

### Allergy & Immunology

Jason Kwah, MD, was awarded the Department of Internal Medicine's Medical Education Fellowship to address penicillin allergy reduction in pregnancy.

Christina Price, MD, clinical chief of allergy and immunology, and VA Connecticut Healthcare System section chief, allergy and clinical immunology, received a grant from Genentech, Inc. to perform genomic sequence analysis of patients with immunotherapy-related adverse events. The broad innovative grant will help define which patients are at risk of autoimmune complications after receiving lifesaving cancer therapy so that they can be more effectively treated.

Junghee Jenny Shin, MD, PhD, received a KL-2 award from the Yale Center for Clinical Investigation (YCCI). Shin received the Scholar Award for her project, "Studying Alteration of T-cell Immune Response in the 17q12 Deletion Syndrome."

To learn more about the Section of Rheumatology, Allergy and Immunology, visit [medicine.yale.edu/intmed/raci/](http://medicine.yale.edu/intmed/raci/).

CHRISTINA PRICE, MD



## PHILANTHROPY

### A Gift for the Community Health Care Van

On Friday, February 12, the New England Chapter of the March of Dimes (MOD) and the Real Estate Foundation collectively delivered a \$30,000 check to Yale School of Medicine's Community Health Care Van's Mobile Health Unit. March of Dimes also secured a \$30,000 matching gift from its partner, the Anthem Blue Cross and Blue Shield Foundation in Connecticut, totaling \$60,000 to help the Mobile Health Unit expand its capacity.

In April 2020, the van was quickly repurposed to serve neighborhoods in New Haven by helping combat COVID-19 and providing postpartum visits for mothers and their infants, coordinated with telehealth visits with their doctor. Since then, the Community Health Care Van's Mobile Health Unit has made more than 600 visits to patients, focusing on new mothers and babies, by helping them avoid unnecessary use of public transit or extra travel to doctor appointments during the pandemic.

The March of Dimes Fairfield County Real Estate Award Breakfast has been raising funds for 25 years, totaling more than \$8 million, to benefit the March of Dimes and research, programs, and local initiatives like this one, said Keely McMullin of MOD. In addition to financial support, March of Dimes has donated breast pumps, baby monitors, onesies, maxi-pads, toiletries, books, knit hats, reusable totes, and other newborn and new mom essentials to provide additional care and support to patient families.

Katherine Kohari, MD, FACOG, said of the donation and partnership with MOD, "The March of Dimes has a long history of supporting healthy moms and strong babies. In no time in our recent history has this support been more needed than during the COVID-19 pandemic. When I first learned of the initiative, led by Leslie Sude and Rick Altice, to repurpose the Mobile Health Van to serve postpartum moms and newborns in our local community, I knew it was something the March of Dimes would want to be a part of. Bringing care right to the patient in their own environment helped to remove fear and anxiety about traveling to the office and increasing the risk for contracting COVID. Newly postpartum moms can get blood pressure checks and be screened for postpartum depression, newborns can get weight checks and examinations, all right there on the van. It seemed like a no-brainer to help support this initiative. We are so lucky that the Connecticut March of Dimes has an active group in Fairfield County that hosts the annual Real Estate Breakfast."

Ted Ferrarone of the Real Estate Foundation presented the donation to Drs. Altice and Sude in front of a small crowd in New Haven.

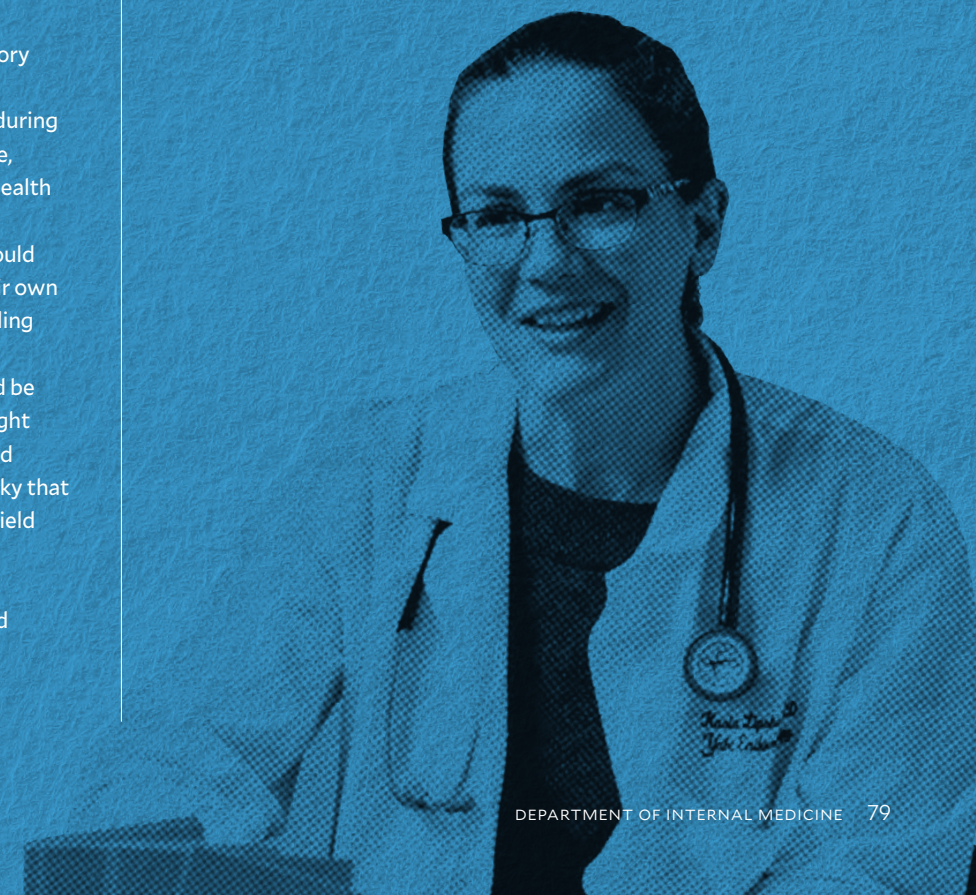
### Orloff Gift to Fund Lectureship, Education

Yale School of Medicine's Endocrine & Metabolism Section in the Department of Internal Medicine thanks John Orloff, MD, a former Yale endocrine fellow and faculty member, for his very generous donation to the Broadus Fund in the Endocrine Section.

The fund was established in memory of former Section Chief Arthur Broadus, MD, PhD. "The Broadus Fund helps to support a named lectureship in Arthur's honor as well as supporting, more generally, the section's educational activities," Section Chief John Wysolmerski, MD, said.

Since leaving Yale, Orloff has had a successful career in pharma, with stints at Merck Research Laboratories, Novartis, Merck Serono, Baxter International, and Novelion. He served as the global head of research and development and chief scientific officer at Baxalta; and most recently was executive vice president and global head of R&D for Alexion Pharmaceuticals until it was purchased by AstraZeneca.

Orloff currently is a venture partner at Agent Capital in Boston. "In his career, Dr. Orloff has helped develop and champion new science and innovative treatments for metabolic and other diseases. We truly appreciate his wonderful contributions to medicine and his support of the education programs that serve endocrine fellows and members of the endocrine faculty and community at Yale," Wysolmerski added.





# Datta, Perdigoto Present Research In Dostanic Lecture



L-R: Gary V. Désir, MD; Rupak Datta, MD/PhD; Ana Luisa Perdigoto, MD, PhD; Peter Aronson, MD

The June 24, 2021 Medical Grand Rounds featured presentations by both the 2020 and 2021 Iva Dostanic, MD, PhD, Physician-Scientist Trainee Award winners Rupak Datta, MD/PhD, MPH, instructor (infectious diseases); and Ana Luisa Perdigoto, MD, PhD, instructor (endocrinology).

Peter Aronson, MD, C.N.H. Long Professor of Medicine (Nephrology) and professor of cellular and molecular physiology, introduced the lecture. “This is a special medical grand rounds in which we celebrate the life and legacy of Iva Dostanic, who came to Yale as a member of our residency program. Today marks the tenth time we are presenting the award in Iva’s name to an outstanding physician-scientist trainee in our department. The first recipient was Iva herself, who received the award in the 2011-2012 academic year,” he said.

“Iva’s parents have become devoted friends of Yale and we are very grateful that they established an endowed fund in Iva’s name to support physician-scientist career development in our department. Due to their generous donations, the endowment has

grown very rapidly and will provide support for future generations of physician-scientists in the Yale Department of Medicine,” continued Aronson.

In his presentation, Datta, the 2020 award winner, discussed “Antibiotic Stewardship to Promote Palliative Care in Older Adults Near the End of Life.” He started his lecture by sharing the real-world case of a 72-year-old woman with metastatic non-small-cell lung cancer who had bacteremia. He explained that the best course of treatment was antibiotic stewardship and palliative care.

Datta explained that “much of the literature on antibiotic use during end-of-life care is focused on two key populations: older adults with advanced cancer and older adults with advanced dementia.” In patients

with advanced cancer, antibiotic exposure is common due to the possible high risks of infection in this population resulting from a variety of patient-associated and treatment-associated factors. In those patients with advanced dementia, comfort is a goal of care, but antimicrobial use is extensive.

He cited numerous studies that show strong evidence that antibiotic use during end of life care may cause harm. “Antibiotic resistance is one of the greatest health threats of the 21st century,” said Datta.

“There is little evidence of benefit,” he said. The potential of prolonged survival and relief of symptoms may motivate physicians to prescribe antibiotics, but no trials have been conducted to determine outcomes in terminally ill patients, and there is a lack of guidance from professional societies.

Datta discussed the 2019 publication, “Perspectives on Antimicrobial Use at the End of Life among Antibiotic Stewardship Programs: A Survey of the Society for Healthcare Epidemiology of America Research Network” which described a survey of antibiotic stewardship programs. They found that among the 36 hospitals that responded, 92% had a palliative care service but only 9% of them had formal collaborations between palliative care and antimicrobial stewardship programs. In addition, approval of antibiotics appeared to vary across facilities according to patient goals of care.

Through this work, Datta and team proposed a framework “through which antibiotic stewardship may promote palliative care.” In the 2017 “Burden and Management of Multidrug-Resistant Organisms in Palliative Care” publication, the authors acknowledged the challenge of infections during palliative care and urged further research into infections due to multidrug-resistant organisms in these settings. Datta circled back to the patient, who was treated with oritavancin for the infection symptoms, remained fever-free, and died in hospice care two weeks later.

Through his current research, Datta hopes to bring attention to and evaluate the “important and understudied population” of homebound older adults and evaluate antibiotic prescribing through the VA Home-Based Primary Care Program. His multidisciplinary team will look at national data from veterans receiving home-based primary care, and may “offer one potential platform to promote antibiotic stewardship,” he said.

Datta’s research is supported by the NIA IMPACT Collaboratory CDA; NIA IMPACT Collaboratory Pilot Grant; Yale Physician-Scientist Development Award; and the Yale Pepper Center REC Small Grant Award. Datta won the Dostanic Award in 2020, but his lecture was delayed due to the COVID-19 pandemic.

The second speaker was Ana Luisa Perdigoto, MD, PhD, instructor (endocrinology), the 2021 Iva Dostanic Award winner, who discussed her research in “Clinical and Preclinical Insights into the Mechanisms of Checkpoint Inhibitor-induced Diabetes.”

Perdigoto began her talk by reviewing the immunological equilibrium. On the activation end, effector T cells and stimulatory ligands (e.g., CD28) “play an

important role in reactions against pathogens,” but when uncontrolled, can cause inflammatory diseases. The opposite side is tolerance, in which regulatory T cells and such inhibitory ligands as CTLA-4 and PD-1 are important for controlled responses to self. Immunotherapies that target such inhibitory molecules as CTLA-4, PD-1, and PD-L1, have revolutionized cancer therapy but have led to immune-related adverse events, with one of the most common being endocrinopathies.

Perdigoto’s research focuses on checkpoint inhibitor-induced diabetes (CPI-DM), which has “no definitive criteria for this emerging form of diabetes, but we typically describe it as new-onset hyperglycemia requiring insulin treatment and evidence of insulin deficiency in patients following checkpoint inhibitor treatment (CPI),” explained Perdigoto. Incidents of CPI-DM are caused primarily with anti-PD-1 or anti-PD-L1 and occur between five days and 228 weeks after treatment.

In a 2019 paper in *The Lancet Diabetes & Endocrinology*, the team reported that progression to hyperglycemia and beta cell loss occurs rapidly in these patients. In addition, some patients present with elevated pancreatic enzymes and evidence of pancreatic inflammation. Curious about the effects on human beta cells, the researchers performed single-cell RNA sequencing, and found that cells that were exposed to interferon-gamma were potentially more susceptible to be killed by immune cells. To further understand the connection, the researchers tested their hypothesis in mice models, which mirrored their clinical experience. Through the mouse models, they were able to identify pathways in islet and immune cells activated after anti-PD-L1 treatment that could explain the development of CPI-DM.

To understand the beta cell responses, the team accessed differentially expressed genes and found differences in genes involved in various pathways. They partnered with medical oncology to determine whether there is a benefit to blocking TNF $\alpha$  in an CPI-DM afflicted patient using infliximab. The patient retained beta cell function and was able to stop using insulin due to improved glucose control.

Perdigoto’s work has been supported by the K12 Calabresi Immuno-Oncology Training Program; JDRF Advanced Postdoctoral Fellowship Award; Endocrine Fellows Foundation Grant; T32 Grant (Endocrinology Section); NCI R01; NIAID R21; and the Helmsley/Parker Institute.

Datta and Perdigoto are the ninth and tenth recipients of this prestigious award. Aronson spoke about the creation of the award in Dostanic’s honor. “She [Iva] brought passion, energy, elegance, playfulness, humor, and joy to all aspects of her life. Even during the last phase of her illness, Iva dismissed her physical ailments and her face literally glowed with joy describing her exciting research ideas. Iva’s passion and love for science and medicine despite the most adverse circumstances possible were awe-inspiring. Iva’s passion, commitment and optimism despite all odds represented the very ideal of what it means to be a physician-scientist.”

“To students and trainees in the audience, we wish to emphasize that in creating this award, we do not ask you to strive to be another Iva Dostanic, as Iva’s accomplishments even before starting her residency were uniquely exceptional. She was a true force of nature. What we do hope is that you will be inspired by Iva’s love of science and medicine, and especially by the enormous joy she found in her work right up until her last days. And we hope that imbued with Iva’s spirit, you each will also find joy and fulfillment as you apply your own special gifts and talents to advance the science or practice or teaching of medicine,” said Aronson.

Due to COVID-19 restrictions, Iva’s parents, Dragana and Predrag, watched the presentations virtually. Those with a Yale ID can watch the presentations on the website.



# Department Leadership

## CHAIR



**Gary V. Désir, MD**  
Chair, Internal Medicine

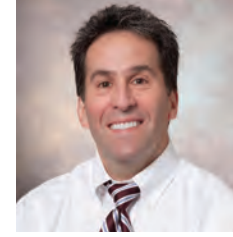
## VICE CHAIRS



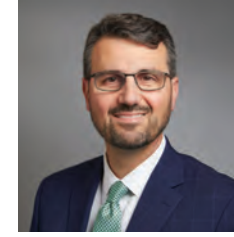
**Lloyd G. Cantley, MD**  
Vice Chair, Basic Research



**Mark Holter, CMPE, CPA**  
Vice Chair, Finance and Administration



**Daniel Federman, MD**  
Vice Chair, Veteran Affairs



**Aldo Peixoto, MD**  
Vice Chair, Quality & Safety



**Vincent Quagliariello, MD**  
Vice Chair, Education and Academic Affairs



**Robert Soufer, MD**  
Vice Chair, Clinical Research



**Lynn Tanoue, MD, MBA**  
Vice Chair, Clinical Affairs



**Lawrence Young, MD**  
Vice Chair, Faculty Affairs

## ASSOCIATE CHAIRS



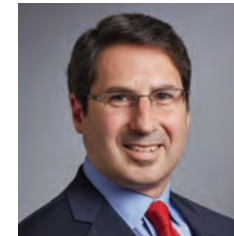
**Dana Dunne, MD, MHS**  
Associate Chair for Education and Academic Affairs



**Inginia Genao, MD**  
Associate Chair for Diversity, Equity and Inclusion



**Thomas Donohue, MD**  
Chief of Medicine Services, Saint Raphael Campus



**Adam Mayerson, MD**  
Associate Chief for Community and Voluntary Faculty

## CLINICAL CHIEFS



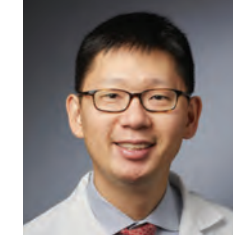
**Christina Price, MD**  
Allergy & Immunology



**Nihar Desai, MD, MPH**  
Cardiovascular Medicine



**Daniel Price, MD**  
Cardiovascular Medicine



**Joseph Lim, MD**  
Digestive Diseases (Liver)



**Hamita Sachar, MD**  
Digestive Diseases



**Silvio Inzucchi, MD**  
Endocrinology and Metabolism



**Matthew Ellman, MD**  
General Medicine



**James M. Lai, MD, MHS, MSc**  
Geriatrics



**Vincent Quagliariello, MD**  
Infectious Diseases



**Harriet Kluger, MD**  
Medical Oncology



**Aldo Peixoto, MD**  
Nephrology

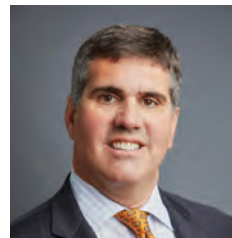


**Jonathan Siner, MD**  
Pulmonary, Critical Care, and Sleep Medicine

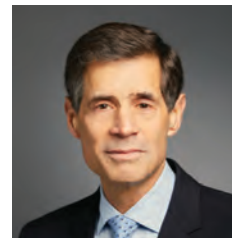


**Vaidehi Chowdhary, MBBS, MD**  
Rheumatology

## SECTION CHIEFS



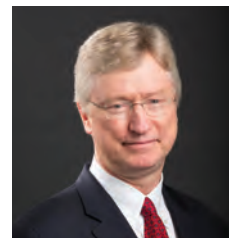
**Eric Velazquez, MD**  
Cardiovascular Medicine



**Loren Laine, MD**  
Digestive Diseases



**John Wysolmerski, MD**  
Endocrinology and Metabolism



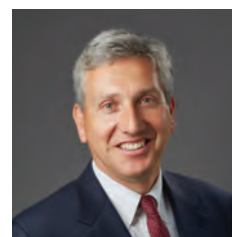
**Patrick O'Connor, MD, MPH**  
General Medicine



**Terri Fried, MD**  
Geriatrics



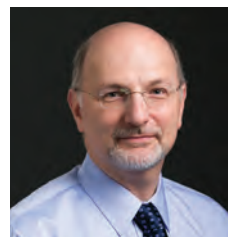
**Stephanie Halene, MD, PhD**  
Hematology



**Erol Fikrig, MD**  
Infectious Diseases



**Roy S. Herbst, MD, PhD**  
Medical Oncology



**Stefan Somlo, MD**  
Nephrology



**Naftali Kaminski, MD**  
Pulmonary, Critical Care and Sleep Medicine



**Richard Bucala, MD, PhD**  
Rheumatology, Allergy and Immunology

## PROGRAM DIRECTORS



**Mercedes Villanueva, MD**  
AIDS Program



**Cary Gross, MD**  
National Clinician Scholars Program



**Carrie Redlich, MD, MPH**  
Occupational & Environmental Medicine



**Tracy Rabin, MD, SM**  
Office of Global Health



**Matthew Ellman, MD**  
Yale Internal Medicine Associates



## POST-GRADUATE EDUCATION & TRAINING PROGRAMS

### Medicine–Pediatrics Residency Program



**Benjamin Doolittle, MD, MA, MDiv**  
Program Director



**Jaideep Talwalkar, MD**  
Associate Program Director



**Joanna Whitehead**  
Project Manager, Internal Medicine Education

### Primary Care Residency Program



**John Moriarty, MD**  
Program Director



**Aba Black, MD, MHS**  
Associate Program Director



**Stephen Holt, MD, MS**  
Associate Program Director, Ambulatory



**Tracy Rabin, MD, SM**  
Associate Program Director



**Sarita Soares, MD**  
Associate Program Director



**Joanna Whitehead**  
Project Manager, Internal Medicine Education

### Traditional Residency Program



**Mark Siegel, MD**  
Program Director



**Paul Bernstein, MD**  
Associate Program Director



**Matthew Grant, MD**  
Associate Program Director



**Cynthia Fray McNamara, MD**  
Associate Program Director



**Benjamin Rodwin, MD**  
Associate Program Director



**Christopher Sankey, MD**  
Associate Program Director



**Mahalia S. Desruisseaux, MD**  
Advisor to the Physician-Scientists



**Joanna Whitehead**  
Project Manager, Internal Medicine Education

### Yale-Waterbury Residency Program

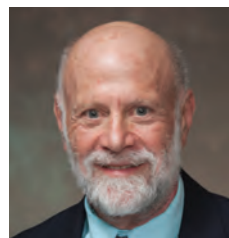


**Ruth Weissberger, MD**  
Program Director

### Investigative Medicine Program



**Joseph Craft, MD**  
Program Director



**Eugene Shapiro, MD**  
Deputy Director

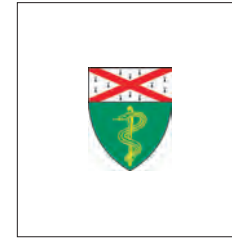
*Not pictured: Pamela Fucci, Registrar*

### Yale Affiliated Hospitals Program



**Silvio Inzucchi, MD**  
Program Director

## 2020–2021 CHIEF RESIDENTS



**Andrew Abovian, MD**  
VACHS



**Ami Belmont, MD**  
YNHH



**Aneil Bhalla, MD**  
VACHS



**Jana Christian, MD**  
YNHH



**Chad Gier, MD**  
YNHH



**Jadry Gruen, MD**  
VACHS



**Mary Higgins-Chen, MPH, MD**  
YNHH



**Fatjon Hoxda, MD**  
VACHS



**John Huston, MD**  
YNHH



**Sameer Khan, MD**  
YNHH



**Katelyn Norman, MD**  
VACHS



**Rachel Schrier, MD**  
YNHH



**Lindsey Scierka, MD, MPH**  
YNHH



**Thejal Srikumar, MD**  
YNHH

## STAFF LEADERSHIP



**Ben Geertz**  
Operations Manager (Infectious Diseases)



**Sarah Hagans**  
Associate Director, Administration



**Andrea Hart**  
Operations Manager (Digestive Diseases)



**Mark Holter, CMPE, CPA**  
Vice Chair, Finance and Administration



**Julie Jennings**  
Associate Director, Research & Compliance



**Nancy Kravitz**  
Manager, Office of the Chair



**Jennifer Lacerda**  
Associate Director, Clinical Affairs



**Dina Lanteri**  
Operations Manager (Cardiovascular Medicine)



**James Martone**  
Operations Manager (Occupational Medicine)



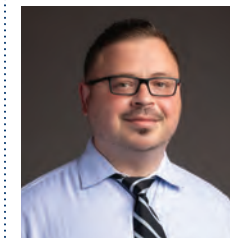
**Julie Parry**  
Associate Director, Communications



**Stephanie Santore**  
Associate Director, Academic & Administrative Affairs



**Helen Siuzdak**  
Operations Manager (Pulmonary, Critical Care & Sleep Medicine, Rheumatology, Allergy & Immunology)



**Joseph Velasco**  
Associate Director, Finance, Operations Manager (General Internal Medicine, Education, Global Health, Geriatrics)



**Maria White**  
Operations Manager (Endocrinology & Metabolism, Nephrology)



**Michael Yonkers, MBA, MS**  
Associate Director, Finance & Administration



## OFFICE OF DIVERSITY, EQUITY & INCLUSION IN MEDICINE



**Inginia Genao, MD**  
Associate Chair for Diversity,  
Equity and Inclusion



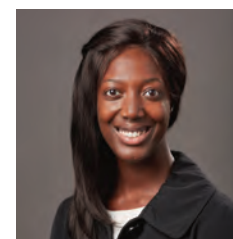
**Lauren A. Baldassarre, MD**  
Vice Chief, Cardiovascular  
Medicine



**Vandana Khungar, MD, MSc**  
Vice Chief, Digestive Diseases



**Renata Belfort De Aguiar,  
MD, PhD**  
Vice Chief, Endocrinology &  
Metabolism



**Aba Black, MD, MHS**  
Vice Chief, General Internal  
Medicine



**Marcia C. Mecca, MD**  
Vice Chief, Geriatrics / VA



**Brienne Miner, MD, MHS**  
Vice Chief, Geriatrics



**Iris Isufi, MD**  
Vice Chief, Hematology



**Mahalia S. Desruisseaux, MD**  
Vice Chief, Infectious Diseases



**Pamela Kunz, MD**  
Vice Chief, Medical Oncology



**Namrata Krishnan, MBBS**  
Vice Chief, Nephrology



**Vivian Asare, MD**  
Vice Chief, Pulmonary,  
Critical Care, and Sleep  
Medicine



**Lisa Suter, MD**  
Vice Chief, Rheumatology,  
Allergy & Immunology



**Rebecca Cardone, MSc**  
Staff Representative



**Helen Siuzdak**  
Staff Representative



**Cayetana C. Navarro, MBA, PMP**  
Program Manager



**Johanna Elumn, MSW, PhD**  
Instructor, Associate  
Research Scientist



**Shivhan Allen**  
Senior Administrative  
Assistant



**Julie Parry**  
Associate Director,  
Communications



**Amy Anderson**  
Web & Social Media Strategist

## HONORING THOSE WE LOST THIS YEAR

Arthur Eastwood Broadus, MD, PhD  
Kristen Joy Cushing, PA  
Roberto J. Groszmann, MD

Robert Levine, MD  
Marjorie Rosenthal, MD, MPH

Jacqueline R. Satchell, MD  
Jerry Smart, Jr.

## Yale New Haven Hospital “Leading Hospital” in Early COVID Care

In March 2022, Connecticut marked the two-year mark of the start of the pandemic. Healthgrades analyzed patient volume and mortality rates from CMS data between January to September 2020, and recently identified the 24 leading hospitals in early COVID care in the United States. Yale New Haven Hospital made the list. We deeply appreciate the tireless efforts of so many to provide the best care for our patients. Each one of you has made a positive impact — thank you.

Sincerely,

Gary V. Désir, MD  
Paul B. Beeson Professor of Medicine  
Vice Provost for Faculty Development and Diversity  
Chair, Internal Medicine, Yale School of Medicine  
Chief, Internal Medicine, Yale New Haven Hospital



Yale SCHOOL OF MEDICINE  
*Department of Internal Medicine*

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