

The Newsletter of the UC Departments of Radiology, Biomedical Imaging, and Radiological Sciences

## Diversity, Equity, Inclusion in UC Radiology

### IN THIS ISSUE:

- 3 Welcome from the Chairs
- 4 **UCD:** Reflections on Leadership and DEI in a Pandemic Year
- 5 **UCD:** School of Medicine I-DARE Initiative
- 5 **UCLA:** Committee to Address Equity, Diversity and Inclusion
- 7 **UCLA:** New Project to Increase Lung Cancer Screening Adherence
- 8 **UCI:** Change through Action
- 9 **UCSD:** New to Antiracism? Start a Journal Club
- 14 **UCSF:** Remaining Focused on Diversity and Inclusion in Pandemic
- 15 **UCSF:** RADWomen UCSF: Supporting Women in Radiology
- 16 **UCI:** Machine Learning and COVID-19 Treatment

# DIVERSITY





# UC RADIOLOGY

## PARTNERS:

### UCD

Elizabeth Anne Morris, MD  
*Chair, Department of Radiology*  
[health.ucdavis.edu/radiology](http://health.ucdavis.edu/radiology)

### UCLA

Dieter Enzmann, MD  
*Chair, Radiology*  
[www.uclahealth.org/radiology](http://www.uclahealth.org/radiology)

### UCI

Vahid Yaghmai, MD  
*Chair, Department of Radiological Sciences*  
[www.radiology.uci.edu](http://www.radiology.uci.edu)

### UCSD

Alexander Norbash, MD  
*Chair, Radiology Department*  
[health.ucsd.edu/specialties/radiology/Pages/default.aspx](http://health.ucsd.edu/specialties/radiology/Pages/default.aspx)

### UCSF

Christopher Hess, MD, PhD  
*Chair, Department of Radiology and Biomedical Imaging*  
[radiology.ucsf.edu](http://radiology.ucsf.edu)

*UC Radiology is produced by UC Departments of Radiology, Biomedical Imaging, and Radiological Sciences*

Managing Editor:  
Christopher Laubenthal, MBA  
[Christopher.Laubenthal@ucsf.edu](mailto:Christopher.Laubenthal@ucsf.edu)  
Design: Laura Myers Design

© 2021, The Regents of the University of California



Dieter Enzmann, MD



Christopher Hess, MD, PhD



Elizabeth Anne Morris, MD



Alexander Norbash, MD



Vahid Yaghmai, MD

# Welcome from the Chairs

Dear Friends,

**In these pages, we are pleased to highlight some of the Diversity, Equity, and Inclusion (DEI) work our people are leading in our profession and across our departments and health systems. As department chairs at five University of California campuses – UC Davis, UCLA, UC Irvine, UC San Diego, and UC San Francisco – we invite you to learn more about us in this second issue of our joint newsletter.**

Known nationally and around the world for continuous innovation in imaging research, education, and clinical care, our departments also aspire to leadership in DEI. As we gathered the articles for this newsletter, several common themes emerged, notably that *DEI is central to the mission and vision* of each department. Though we articulate this in language and practice unique to our sites, we share these common tenets:

- diversity, equity, and inclusion are **strategic imperatives** for improved performance and sustained excellence;
- we strive to have our people **reflect the broad diversity** of the populations we serve;
- our researchers and clinicians are leaders in **improving health disparities** and **expanding access** to imaging care;
- we are focused on **our profession’s present and future**, demonstrated through a variety of initiatives to remove barriers, recruit, mentor, sponsor, and sustain a pipeline of underrepresented trainees, faculty, and staff;
- as **learning organizations**, ongoing professional development informs our approach to cultural competence, unconscious bias, and leadership;
- situated as we are in public universities, it is a **privilege to serve** the communities in which we practice, our professional organizations, and project sites around the world.

You will see evidence of these tenets in the articles collected here. A few highlights...

Our colleague Shadi Aminololama-Shakeri, MD, from UC Davis contributes a personal reflection on leadership during crisis and the opportunities that presented for catalyzing institutional change.

Daniel S. Chow, MD at UC Irvine highlights his team’s deployment of machine learning to identify the pandemic’s most vulnerable patients, now expanded to identify lower risk patients and guide treatment selection for developing therapies.

At UC San Diego, Dorathy Tamayo-Murrillo, MD, Isabel Newton, MD, PhD, and Peter Abraham, MD, MAS, provide a terrific, practical resource on starting a journal club to understand and dismantle structural racism in academic medicine.

Kathleen Brown, MD, FACR, is leading a new Equity, Diversity, Inclusion Committee at UCLA with ambitious goals, including health disparities research, curriculum development, a lecture series, pipeline programs to diversify the profession, and more.

Kimberly Kallianos, MD, and Priyanka Jha, MBBS, from UC San Francisco are spearheading a new advocacy initiative for women staff, trainees, and faculty with the goal of improving career advancement opportunities.

We are incredibly proud of the many ways our people are creating a more equitable and inclusive profession and acknowledge that this will be a continuous “works-in-progress.” As our DEI journey proceeds, our goal and strong commitment is to fulfill our mission through innovation, working to improve health outcomes for the people and communities we serve.

Sincerely,

Dieter Enzmann  
Christopher Hess  
Elizabeth Morris  
Alexander Norbash  
Vahid Yaghmai

“Diversity, equity, and inclusion in medicine, not just radiology, is one of my passions as we not only become better physicians, but better human beings in the process.”

— Elizabeth Morris, MD

## Reflections on Leadership and DEI in a Pandemic Year

By Shadi Aminololama-Shakeri, MD; Associate Chair for Clinical Affairs; Chief, Breast Imaging Section

**On April 1, 2020, I took on the role of interim chair for the department of radiology at the University of California Davis. Months earlier when I accepted the position, I could have never imagined the unprecedented circumstances under which I would be navigating this immense new responsibility.**

The initiation of my term coincided with the onset of the COVID-19 pandemic. Daily huddles allowed us to perform tasks we do well as physicians: analyze the situation at hand, prescribe a course of action, make back up plans, and alternatives to those back up plans. We did our best to be present for our trainees and find ways to avoid lapses in their education, even if at a distance. These routine huddles performed over video conference were effective for developing DEFCON-like planning but were not conducive to having delicate conversations or providing each other with emotional support. The growing numbers of lives lost in the pandemic made it clear that this was not only a public health crisis, but one which was also accentuating the existing disparities in our healthcare with disproportionately poor outcomes in our minoritized communities.

Simultaneously, our societal crisis of conscience emerged with the public outcry against systemic racism in our country following the killings of George Floyd, Ahmaud Arbery and Breonna Taylor. Recognizing that ending an epidemic of discrimination requires introspection, education, and action, we formed the inaugural Department

of Radiology Anti-Racism Coalition as a first step.

In my role as the chair of the admissions committee I have seen firsthand that change is possible through a holistic approach by people committed to honoring diversity, equity and inclusion in any process. While I take immense pride in our ranking of fourth most diverse medical school in the country, I am discouraged by the persistently low numbers of women in our field of radiology. This is despite the fact that medical schools are now comprised of greater than 50% women and that in radiology, women are well represented at national leadership levels.

In parallel to our departmental efforts, our institution was moved to action against the epidemic of discrimination. The Inclusion, Diversity, Anti-racism, and Equity (I-DARE) Taskforce Initiative was mobilized by UC Davis leadership to catalyze the formation of departmental DEI taskforces, address immediate diversity, equity, and inclusion (DEI) needs and train future leaders. To kick off a plan of action, all departments were asked to complete a standardized needs assessment to develop sustainable action plans to advance the UC Davis DEI Strategic Vision. This program was formed so that we can bring change and end injustices starting with our micro-environments and grow these changes into macro-movements for our community. We hope to accomplish these goals by actively supporting agents of change and empowering them to follow their vision to end racism in medicine and society at large.

I was privileged to be in the position of forming the inaugural Department of Radiology Anti-Racism Coalition which we were able to swiftly transition into our I-DARE team. This active group is invested in nurturing change in our department which will be echoed hopefully for generations to come.

As the first woman interim chair of our department, I felt the burden that any failures in this brief time may have negative connotations for my female colleagues and their potential future leadership roles. I am enormously grateful for and indebted to the members of my department who contributed to the evolution of our department through this time. The gift of my colleagues' thoughts, feedback and criticisms invariably led to my personal growth as a leader by providing tremendous learning opportunities. I could not have gained these lessons in any course or program. I'm grateful for all of the mentorship and sponsorship I've received throughout my career and during this time. But most of all, I am thrilled that our chair selection committee astutely chose Dr. Elizabeth Morris, a world-class leader and expert radiologist who is passionate about DEI initiatives to lead our department into the future. ■

**“ In my role as the chair of the admissions committee I have seen firsthand that change is possible through a holistic approach by people committed to honoring diversity, equity and inclusion in any process. ”**

—Shadi Aminololama-Shakeri, MD





## UCD

### UC Davis School of Medicine I-DARE Initiative

**Diversity, equity, and inclusion initiatives are driven centrally by the UC Davis School of Medicine and cascaded to departments and centers.**

Aligned with the UC Davis Principles of Community, the UC Davis SOM established the Inclusion, Diversity, Anti-Racism, and Equity (I-DARE) initiative in 2020. The purpose of I-DARE is to catalyze a health system wide effort to advance goals outlined in the UC Davis Diversity, Equity and Inclusion Strategic Vision.

I-DARE is led by Associate Vice Chancellor Hendry Ton, MD, MS,

through the Health Office for Equity, Diversity and Inclusion (HEDI). I-DARE is a framework for data collection, reflection, and program planning at the department level. I-DARE's goals:

- Identify, attract, retain and graduate a diverse student body
- Identify, attract and retain a diverse faculty and staff
- Advance a climate that fosters inclusion excellent
- Promote diversity and inclusion in research, teaching, public service
- Ensure accountability to diversity and inclusion at UC Davis Health and in the community.

Each SOM department has a representative who leads DEI initiatives in concert with HEDI to evaluate areas such as hiring and promotion practices, climate pre- and post-surveys, institution diversity readiness, and faculty DEI training. Building on these baseline activities, each department will create an action plan to serve as the foundation for department-led DEI initiatives. A related goal is enhanced cultural awareness, with the ultimate goals of reducing implicit bias and addressing health and other disparities. ■

**To learn more, visit: <https://health.ucdavis.edu/diversity-inclusion/PDFs/IDARE-Taskforce-SOM-toolkit.pdf>**

## UCLA

### UCLA Committee to Address Equity, Diversity and Inclusion

**The David Geffen School of Medicine (DGSOM) at UCLA is committed to the core values of diversity and inclusion, and considers them to be inseparable from its goals of excellence in health care education, research, community engagement and clinical care.**

Recognizing that a diverse workforce is an intrinsic element of providing high-quality, equitable health care and eliminating health disparities, the UCLA Department of Radiological Sciences has created an Equity, Diversity and Inclusion (EDI) Committee to lead

efforts to recruit, retain and support resident and faculty physicians that reflect the diversity of the Los Angeles community.

The EDI Committee is also charged with helping to create and maintain an academic environment, culture and clinical workplace that values diversity and inclusion. The committee plans to collaborate with the American College of Radiology (ACR) Commission for Women and Diversity and the RSNA (Radiological Society of North America) Committee on Diversity, Equity and Inclusion to help shape an academic curriculum that promotes principles of health equity and community responsibility.

The new committee's leadership will include Kathleen Brown, MD, FACR, professor of radiology, section chief of thoracic imaging and assistant dean of Equity, Diversity and Inclusion at the DGSOM at UCLA.

"The year 2020 has been marked by grief, frustration, anger, and for many, despair and overwhelming fatigue," says Dr. Brown. When UCLA Health began seeing its first cases of COVID-19 in early 2020, Dr. Brown's focus as a thoracic radiologist was on understanding the radiographic appearance of COVID, both on chest radiograph and CT. As Dr. Brown continued to keep abreast of the

*Continued on next page*

Continued from previous page

most current science on the disease's pathophysiology, researchers also began publishing data on the impact of social determinants of health and the disproportionate impact that COVID was having on communities of color.

"Then in the midst of the COVID pandemic, Ahmaud Arbery was fatally shot while jogging, Breonna Taylor was killed in her home by police and George Floyd was brutally murdered — and that incited peaceful protests and demonstrations across the world," recalls Dr. Brown. "These tragic acts



Kathleen Brown, MD, FACR

of racism have compelled us to use our collective voice as physicians and radiologists to address health and health care disparities and structural racism."

Radiology's EDI

Committee will focus on issues of race, gender and identity, inclusive of the LGBTQ community and individuals with disability.

Following are some examples of the efforts to promote equity, diversity and inclusion that include the UCLA Department of Radiological Sciences. The Radiology EDI Committee will coordinate with other initiatives at UCLA that promote equity, diversity and inclusion.

- The School of Medicine is developing an Anti-racism Roadmap, whose tenants the Department of Radiological Sciences will be incorporating in its own EDI plans.
- Dr. Brown anticipates launching a lecture series to inform department members on matters of diversity and inclusion in collaboration with Robert Suh, MD, professor of radiology and director of the Diagnostic Radiology Residency Program.
- As part of their introduction to the medical profession, UCLA medical students recently spent a week focusing on racial justice and health equity, which included presentations on structural determinants of health, racial justice, implicit bias and the impact



UCLA Health workers come together for Black Lives Matter Movement

of bias on patient care. These topics will be included in the EDI curriculum to be introduced to the Radiology Department. Dr. Brown also hopes that radiology faculty and residents will engage in upcoming discussions of the DGSOM common book, "How to Be an Antiracist" by Ibram X. Kendi.

- The DGSOM Office of EDI is making information on the diversity of School of Medicine faculty available in dashboards showing the gender, ethnicity and racial makeup of individual departments. This information can help the Radiology EDI Committee focus its efforts and keep the entire department apprised of its progress in these areas.
- UCLA Radiology will continue to pursue research opportunities to impact health care disparities. See page 7 for information on a project to increase the use of low dose computed tomography (LDCT) lung cancer screening for some vulnerable populations.
- The department is working to improve the pipeline for underrepresented minorities in the field of radiology by participating in programs like the American College of Radiology PIER program — the Pipeline Initiative for the Enrichment of Radiology — which aims to increase the number of women, Hispanic and Black medical students and trainees who choose to pursue radiology. Relative to the population of medical students and trainees, the proportion of all three

groups choosing the field of radiology is low. As part of the PIER program, UCLA radiologists Hannah Milch, MD, and Ashley Prosper, MD, served as mentors to a second-year medical student, helping her as she developed an ACR Case-in-Point and gave lectures to the ACR PIER scholars to foster their interest in radiology.

- The Department of Radiological Sciences will continue to engage with extramural EDI speakers invited to DGSOM and UCLA Health. For example, following the visit of Kimani Paul-Emile, JD, PhD and Alicia Fernández, MD who presented their work on dealing with racist patients, Anne Hoyt, MD, professor of radiology and director of the Santa Monica Women's Imaging Center, gave a presentation on responding to hospital patients who express racism. In response to these leadership engagements, UCLA Health has since implemented policies regarding patients who demonstrate bias to health care workers and is developing an action plan to further address this issue.

Dr. Brown intends for the EDI Committee and the Department of Radiological Sciences to seize the current moment in history to act in advocacy of justice and equality. She makes her point by quoting Dr. Martin Luther King, Jr., saying, "The ultimate tragedy is not the oppression and cruelty by the bad people, but the silence over that by the good people." ■

## New Project to Increase Lung Cancer Screening Adherence

**Despite the fact that both breast cancer screening with mammography and lung cancer screening with low dose computed tomography (LDCT) scanning can lead to early cancer detection and significant reductions in mortality**

— ranging from 20 to 40 percent in those who meet screening criteria — mammography is well utilized by patients (76 to 81 percent), while adherence to lung cancer screening guidelines is woefully low (5 to 12 percent).

Several factors contribute to this, including smoking stigma, lack of familiarity with recommendations and the complexity of qualification criteria. African American/Black current and former smokers derive the greatest mortality benefits from regular LDCT screening for lung cancer, yet underserved populations generally receive fewer medical screening services and suffer worse outcomes from cancer and other diseases.

### Education and Networking to Improve Compliance

A group of UCLA radiologists and informaticists — led by Ashley Prosper, MD; Hannah Milch, MD; William Hsu, PhD; and Cheryce Fischer, MD — have been granted \$2.7 million over three years to carry out research aimed at increasing guidelines-based utilization of LDCT lung cancer screening. The team intends to leverage the high adherence to breast cancer screening guidelines to improve adherence to lung cancer screening guidelines. The new study — the Mammosphere Project — will recruit women who receive regular mammograms and assess their eligibility for lung cancer screening and other image-based screening services. In addition, women recruited to participate in the study will be provided with tools to serve as health advocates for people around them (including family and friends) who are less likely to participate in screening due to fear, stigma, lack of knowledge and other factors. The researchers hypothesize that eligible women undergoing breast cancer screening will be more likely to



Ashley Prosper, MD



Hannah Milch, MD



William Hsu, PhD



Cheryce Fischer, MD

participate in lung cancer screening and can utilize their influence over family and friends in their social networks to increase overall screening adherence in their communities.

Recognizing the significance of psychological barriers to cancer screening, the team aims to measure participants' levels of fear, fatalism and concern for future consequences, tracking their changes over time. The project will uniquely track referrals by women within their social networks and provide educational materials via a patient portal and a patient navigator who can connect patients with available screening resources. To improve convenience, efforts will be made to schedule multiple screening imaging exams at one time. The research will provide a patient-centered, personalized report of cancer risk at the completion of the initial visit based on personal and family history using current risk models to inform screening recommendations.

The researchers will track differential health outcomes and adherence to screening between the study group and a non-participant age-matched control group after three years; the effectiveness of the referral/influence model; and changes in levels of anxiety, fear, stigma and other psychological factors that may be associated with reduced screening adherence.

Hannah Milch, MD, assistant clinical professor of radiology at UCLA, already completed a pilot study in which over 800 women seen for breast cancer screening at UCLA were surveyed to determine their eligibility for lung cancer screening,

their awareness of lung cancer screening and their adherence to lung cancer screening guidelines. Dr. Milch found that the majority (63 percent) of the women eligible for lung cancer screening had never heard of lung cancer screening with LDCT. "There is an opportunity here to inform and offer lung cancer screening services to these eligible women who have already shown an interest in cancer screening by receiving routine mammograms. These women may also be in position to influence family and friends who may also be eligible for screening," explains Dr. Milch.

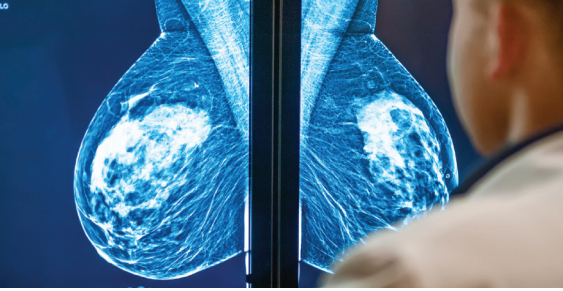
### Screening and Health Disparities

Dr. Milch is collaborating in the new research with Ashley Prosper, MD, assistant professor of radiology at UCLA, to build on the earlier survey and attempt to increase awareness of lung cancer screening with LDCT and adherence to screening guidelines, especially in historically underserved populations. One way the study aims to reach patients from across a range of socioeconomic and cultural backgrounds will be to recruit women receiving screening mammograms through local safety net primary care clinics.

The grant includes funding for screening exams and blood work required for risk assessment. Recognizing potential transportation barriers to screening adherence, the study will work to provide transportation to participants in need.

In a subanalysis of National Lung Screening Trial (NLST) data by race, African Americans reported higher rates of characteristics associated with poorer lung cancer outcomes, including being current smokers (though with lower overall cigarette consumption) and having higher rates of comorbidities. In spite of this, African Americans undergoing lung cancer screening with LDCT experienced the greatest reduction in lung cancer mortality of any racial or ethnic group, in addition to a greater reduction in all-cause mortality than white participants. Yet in reports from clinical screening programs, African Americans who meet the eligibility criteria for lung cancer screening are less likely to receive lung cancer screening and to have longer

*Continued on next page*



Continued from previous page

times to follow-up than white patients. In addition, studies showed the United States Preventive Services Taskforce (USPST)'s original lung screening criteria to be insufficiently inclusive, with African American/Black smokers developing lung cancer at younger ages and with smoking histories below the original 30 pack-year cutoff.

"I am greatly encouraged by the revised USPSTF lung screening criteria released in March 2021. By decreasing the required age to 50 and lowering the smoking history to 20 pack-years, we anticipate the number of individuals eligible for lung screening with low dose CT to double, with a notable increase in eligibility for African American/Black smokers who have been shown to develop lung cancer before reaching eligibility under the old guidelines," says Dr. Prosper. "The timing of this project —

receiving funding to improve screening services at a time when lung screening eligibility is expanding — is ideal."

### The COVID-19 Pandemic

Patients eligible for lung cancer screening have smoking histories and comorbidities that put them at increased risk of infection and of severe complications of COVID-19. In late April of 2020, the Radiological Society of North America COVID-19 Task Force suggested postponing nonurgent outpatient imaging, including lung cancer screening.

One study from the University of Cincinnati found that after screenings at their hospital resumed, the percentage of patients with lung nodules suspicious for malignancy had increased significantly (from 8 percent to 29 percent), and referrals for intervention by thoracic surgery or interventional pulmonology among tumor board patients had also notably increased (from 21.2 percent to 44 percent).

Of particular concern is the role that COVID-19 could play in exacerbating

existing inequities in lung cancer screening.

"It is entirely possible that the COVID-19 pandemic could make disparities in screening worse, given underserved communities have clearly been hit harder in many ways by this pandemic. Proactive strategies are needed to address the possible worsening of health care disparities in cancer screening," explains Dr. Milch.

The disruption of lung cancer screening caused by COVID-19 may further hamper efforts to improve compliance with screening guidelines as health advocates struggle to increase utilization of a screening exam that is underrecognized by those whom it could benefit most.

Funds for the new study come from a \$200 million settlement paid by Wyeth Inc. to resolve claims that it misled women about the cancer risks associated with its hormone replacement therapy products. UCLA is one of six institutions in California to share in settlement money donated to medical research after the plaintiff group and lawyers had claimed their shares. ■

## UCI

# Change through Action

**The UCI Department of Radiological Sciences and the Susan and Henry Samueli College of Health Sciences at UC Irvine support faculty and trainee involvement in several initiatives to promote and enact diversity and inclusion on campus and in service to the profession.**

Dr. Nadine Abi-Jaoudeh serves on the annual meeting committee of the Society of Interventional Radiology (SIR), the largest gathering for interventional radiologists, with 5,000+ attendees each year. As scientific chair of the SIR annual meeting committee and a member of the diversity and inclusion initiative, Dr. Abi-Jaoudeh has focused on increasing the number of women interventional radiologists on the program. Prior to Dr. Abi-Jaoudeh's tenure, 10 or fewer women were

moderators in 40+ scientific sessions; at the most recent meeting, 23 women moderated scientific sessions. As workshop chair, Dr. Abi-Jaoudeh worked to increase the percentage of women speakers from 18% to 42% and women



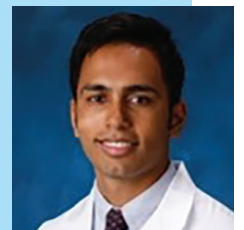
Nadine Abi-Jaoudeh, MD

workshop coordinators from 20% to 30%. The Grants for Education of Medical Students (GEMS) Program, another major SIR initiative for which Dr. Abi-Jaoudeh has served as lecturer, provides funding for clerkships to students who identify as underrepresented minorities (URM), female, or LGBTQ as well as from socioeconomically disadvantaged backgrounds and are seeking to be first generation physicians in their families. Prior to the COVID-19 pandemic, GEMS was an in-person experience. For 2021, the GEMS clerkships are adapted to a virtual format of lectures on various IR topics to immerse the students with the specialty. ■

### Health Disparities Research:

Previous literature has shown that Black and Hispanic patients are less likely to receive minimally invasive procedures than white patients. Medical student Khwaja Hamzah Ahmed is studying a variety of conditions and whether racial, ethnic, and socioeconomic factors affect access

to interventional radiology, costs of, and outcomes of interventions. Mr. Ahmed's research is supervised by Dr. Abi-Jaoudeh and supported by a UCI Department



Khwaja Hamzah Ahmed

of Radiological Sciences grant. Dr. Abi-Jaoudeh's co-authored health disparities research, forthcoming in *The Journal of Vascular and Interventional Radiology*, is supported by the UCI Department of Radiological Sciences and UCI College of Health Sciences. ■



# New to Antiracism? Start a Journal Club:

*Understanding and Dismantling Structural Racism in Academic Medicine (Excerpt)*

AUTHORS:

**Dorothy Tamayo-Murillo, MD**

Assistant Clinical Professor of Radiology, Body Imaging Equity, Diversity and Inclusion Committee Chair

Corresponding author:

dtamayomurillo@health.ucsd.edu

**Isabel Newton, MD, PhD**

Associate Clinical Professor of Interventional Radiology

**Peter Abraham, MD, MAS**

Radiology Resident

## Tools for Promoting Antiracism in Medicine

Establishing an open forum to address racism at medical institutions is a necessary though challenging step towards catalyzing real and lasting improvements. Such initiatives are commonly met with responses ranging from performative but insubstantial support, reluctance, skepticism, disbelief, lack of support, and outright offense. Instead of folding under the weight of resistance, now is the time to lean into these conversations. We propose that establishing an Equity, Diversity, and Inclusion (EDI) committee and an Antiracism Journal Club represent important first steps to addressing structural racism in medicine.

The purpose of an EDI committee is to increase awareness of structural racism, identify its manifestations, and develop strategies to dismantle it. A vision statement can help to articulate these values and goals in order to guide initiatives. For example, our institution's vision statement is below:

"The Department of Radiology strives to include faculty, house officers, researchers and staff as diverse as the populations we serve. We strive to support initiatives to decrease health disparities and increase access to



**Figure 1: The Critical Role of Leadership in EDI**

Leadership plays a central role in ensuring success in EDI measures. By requiring departments and institutions to undergo appropriate education and training in antiracism and implicit bias, securing and allocating appropriate resources to EDI goals, and evaluating performance honestly and consistently, leadership can effect equitable change in EDI.

radiology locally and internationally. We commit to support the education and development of underrepresented and disadvantaged students, faculty and staff.”

Setting goals, identifying obstacles, and defining deliverables help to determine which resources are necessary to be productive and successful. Achieving demonstrable gains mitigates against the sense of helplessness when confronting the magnitude of systemic racism. Leadership can elevate these wins by drawing attention to them, such as in a department newsletter, on the department website, or through awards that act as both recognition and incentive for EDI efforts, which have historically not been given due credit.

Membership of the EDI committee should be diverse, inclusive, and representative of the local community. At academic centers, the EDI committee ideally includes representatives from medical center and departmental leadership, faculty, staff, researchers, and trainees. In a private practice setting, the EDI committee draws members from leadership, physicians,

medical and administrative staff. Actively inviting a broad range of members helps to ensure a diversity of thought, experiences and abilities and broad buy-in to initiatives. Involvement by leadership is critical for effecting change in policy. Leaders can underscore the importance of the EDI committee by providing protected time and space for meetings. Leadership can advance initiatives by providing resources and facilitating their implementation. Without the support of leadership, EDI efforts will be undermined or construed as fringe or performative.

EDI committee meetings should be recurrent (e.g. monthly), defined by an agenda, and goal oriented. Suggested agenda items include short talks by invited speakers, plans for educational initiatives, examination of existing policies and tools for potential implicit bias, strategies for improving institutional diversity, outreach opportunities, and discussions of personal experiences of structural racism. A monthly focused Antiracism Journal Club can be introduced

*Continued on next page*

Continued from previous page

during the EDI committee meetings but ideally would evolve into free-standing educational opportunities that inform topics of future EDI committee meetings. Leaders are poised to underscore the value of the Antiracism Journal Club by modeling and incentivizing participation and highlighting the discourse in broader communications within the institution. The critical role of leadership in ensuring the success of EDI initiatives is summarized in Figure 1.

In order to effect change, EDI meetings must be characterized by open-mindedness and tolerance. By amplifying willing Black and Brown voices on topics related to institutional racism, institutional leadership and members will have frequent opportunities to hear, believe, validate, and act on minority faculty and trainee experiences of racism.<sup>16</sup> By the same token, members must not be ostracized or discouraged from articulating dissenting opinions, even if they are expressions of bias or unconscious racism. These moments offer welcome opportunities for re-education. When met with patience and generosity, members will shed impressions that such discussions are taboo or unprofessional and, instead, will be encouraged to engage in frank and open-minded conversations about race and other structural biases.<sup>13, 17, 18</sup> By encouraging honest dialogue, EDI committee meetings will drive institutional policy changes and social advocacy efforts<sup>14, 19</sup> to effect lasting change.

### **Suggested Antiracism Journal Club Curriculum**

The purpose of an Antiracism Journal Club is to draw from published research and perspectives in order to improve understanding of racism in medicine. At first, introductory meetings can focus on the history of racism in our community and country, implicit bias, and structural racism within one's own institution. The role of leadership in recognizing and validating this history is critical to defining the scope and severity of the problem. Later meetings can focus on recruiting a diverse physician, staff and



From left: Dorothy Tamayo-Murillo, MD; Isabel Newton, MD, PhD; Peter Abraham, MD, MAS

trainee workforce by understanding the hardships of non-prototypical trainee and leadership applicants, the racial and economic biases implicit to the application process, and the need for equitable financial support of minority physicians.<sup>16</sup> With time, the EDI committee will be positioned to lead initiatives to reverse the structural racism within the department and institution. Some examples include promoting continuing education for under-represented minority faculty, scheduling in-depth anti-racism training for leadership, garnering departmental support for under-represented minority-specific local and national opportunities,<sup>20</sup> and supporting investigation into the institution's policies on race-based calculations or race-based allocation of resources.

The formation of an EDI committee and the launching of an Antiracism Journal Club should represent the beginning of true systemic change and not ends unto themselves. Passive membership or involvement without tangible advancements should not be misconstrued as satisfactorily addressing systemic racism. Authentic engagement includes broad recognition of systemic racism in its local manifestations, collaborative advocacy, and a tangible commitment to change. The particular focus of the EDI committee and Antiracism Journal Club will differ by location and culture and will benefit from coordinated efforts to tailor the initiatives to local needs. As a starting point for the Antiracism Journal Club, we propose a structure, topics and articles to serve as primers on systemic racism and to inspire introspection and critical thinking about systems-level policies. Table 1 (*pages 11 and 13*) provides categorized references with corresponding suggested questions to guide general discussion.

Overcoming Potential Pitfalls Associated with forming an EDI

Committee and Holding an Antiracism Journal Club.

The successful implementation of the initiatives outlined here depends on navigating a variety of challenges, many of which are common across departments and institutions. Awareness of these barriers can aid in surmounting them and facilitate the success that is critical for the momentum of antiracism initiatives. Common pitfalls of initiatives to overcome systemic injustice and related journal clubs are summarized in Table 2 (*page 13*) alongside potential solutions.

### **Conclusion**

Dismantling systemic racism in medicine is an ambitious goal that requires widespread buy-in and cooperation across institutions and generations. Rather than allow the magnitude of this effort to overwhelm and paralyze us, we must embrace the momentum of wider social change to address the issues that plague us locally. Important potential first steps include the establishment of an EDI committee and formation of an Antiracism Journal Club to amplify the voices of those who have been historically silenced, encourage honest dialogue, and serve as a platform to facilitate new policies to support equity, diversity and inclusion. Defensiveness or silence are expected responses but cannot be permitted to discourage the clear naming of racism or plans to dismantle it. Leadership can encourage frank discourse surrounding racism by favoring constructive solutions over punitive corrections. Research and policy changes are possible through honest assessment of the issues, broad cooperation, strong support of institutional leadership, and engagement with the local community.<sup>21</sup> ■

[See References on page 12](#)

**TABLE 1: Suggested Questions to Facilitate Early EDI Committee Journal Club Discussions**

See References on page 12

### Recognizing Structural Racism

- What has been your experience of racism in medicine?
- What are examples of hierarchy based on race, education, and privilege?
- What does it mean to “play the race card” and to what extent does it happen?
- What hardships must non-prototypical applicants overcome to pursue careers in medicine?
- What must be done to recruit, train, and retain minority faculty?
- What do you think makes it difficult for some people to believe, validate, and act on Black people’s experiences of racism?

\*2, 3, 15, 16, 22

### Structural Racism and Health Inequity

- How does race factor into patient assessment and care?
- Why do you think health outcomes differ by race?
- What do you think contributes to race-based disparities in access to quality health care?
- To what extent do you think racial inequities are unique to your community, region or country?
- How can we in medicine help to dismantle the foundations underlying such disparities?

\* 8, 23, 24, 25, 26, 27

### Structural Racism and Imaging and Treatment Disparities in Radiology

- How does race factor into patient assessment and care in radiology?
- How can we in radiology help to dismantle the foundations underlying such disparities?
- What are concrete steps radiology practices can take to improve patient compliance with screening imaging and image-guided interventions?
- What is the role of diversity in radiology?
- What do equity, diversity, and inclusion look like within radiology?

\* 1, 10, 12, 31, 32

### Structural Inequity in the COVID-19 Pandemic

- How has the COVID-19 pandemic impacted health disparities in America?
- How does the perception of patient culpability in disease impact their care?
- How can resources be allocated fairly during crisis situations?

\* 1, 10, 12, 31, 32

### Health “Corrections” in American Medicine

- What race-based corrections are used at your institution?
- What role do these corrections play in the allocation of life-saving therapies?
- Are these tools validated scientifically or historically utilized?

\*4, 6, 11

### Structural Racism and Representation in Academia

- What is the value of diversity among healthcare providers?
- How can we increase representation of Black and Brown physicians in medicine, particularly, academic medicine?
- What challenges exist in recruiting and retaining minority faculty?
- What barriers to medical school and residency do Black and Brown students face?

\*18, 20, 33, 34

### Creating Real Change at Academic Medical Centers

- At your institution, how likely is someone to call out racism aloud?
- How open is your institution to changing racist systems or policies?
- How can our own bias prevent us from considering the external validity of data from our medical centers?
- What role does shame play in our refusal to consider data that clashes with our worldview?

References 13, 21, 35

### Medicine and Black Lives Matter: Medical Advocacy for Social Change

- What is the goal of the Black Lives Matter movement?
- What role can medical institutions play in social change?
- What unique challenges do Black physicians face during this movement?
- What is the role of personal experience in igniting a desire for social change?
- How can those without lived experiences related to BLM relate to and amplify the voices of those who do?

\*14, 17, 19, 36

## Table 1 References

- Egede LE, Walker RJ. Structural Racism, Social Risk Factors, and Covid-19 — A Dangerous Convergence for Black Americans. *N Engl J Med* 2020. doi: 10.1056/NEJMp2023616
- Ncube N. The Conversations We've Been Having. *New England Journal of Medicine* 2020:e51. doi: 10.1056/NEJMp2023963
- Mensah MO. Majority Taxes — Toward Antiracist Allyship in Medicine. *N Engl J Med* 2020;383(4):e23. doi: 10.1056/NEJMp2022964
- Vyas DA, Eisenstein LG, Jones DS. Hidden in Plain Sight — Reconsidering the Use of Race Correction in Clinical Algorithms. *New England Journal of Medicine* 2020. doi: 10.1056/NEJMms2004740
- Smedley A, Smedley BD. Race as biology is fiction, racism as a social problem is real: Anthropological and historical perspectives on the social construction of race. *Am Psychol* 2005;60(1):16-26. doi: 10.1037/0003-066x.60.1.16
- Obermeyer Z, Powers B, Vogeli C, Mullainathan S. Dissecting racial bias in an algorithm used to manage the health of populations. *Science* 2019;366(6464):447-453. doi: 10.1126/science.aax2342
- Lujan HL, DiCarlo SE. Science reflects history as society influences science: brief history of “race,” “race correction,” and the spirometer. *Adv Physiol Educ* 2018;42(2):163-165. doi: 10.1152/advan.00196.2017
- (US) NRC, (US) IoM, Woolf SH, Aron L. *U.S. Health in International Perspective: Shorter Lives, Poorer Health.*: National Academies Press (US), 2013.
- National Academies of Sciences E, and Medicine, Division HaM, Practice BoPHaPH, States CoC-BStPHEitU, Baciu A, Negussie Y, Geller A, Weinstein JN. *The State of Health Disparities in the United States.* National Academies Press (US), 2017.
- Chowkwanyun M, Reed AL, Jr. Racial Health Disparities and Covid-19 — Caution and Context. *N Engl J Med* 2020. doi: 10.1056/NEJMp2012910
- Cleveland Manchanda E, Couillard C, Sivashanker K. Inequity in Crisis Standards of Care. *N Engl J Med* 2020. doi: 10.1056/NEJMp2011359
- Media AP. *The Color of Coronavirus: COVID-19 Deaths By Race and Ethnicity in the U.S.* 2020.
- Hardeman RR, Medina EM, Kozhimannil KB. Structural Racism and Supporting Black Lives — The Role of Health Professionals. *N Engl J Med* 2016;375(22):2113-2115. doi: 10.1056/NEJMp1609535
- Paul DW, Knight KR, Campbell A, Aronson L. Beyond a Moment — Reckoning with Our History and Embracing Antiracism in Medicine. *New England Journal of Medicine* 2020. doi: 10.1056/NEJMp2021812
- Cohan D. Racist Like Me — A Call to Self-Reflection and Action for White Physicians. *N Engl J Med* 2019;380(9):805-807. doi: 10.1056/NEJMp1814269
- Grubbs V. Diversity, Equity, and Inclusion That Matter. *N Engl J Med* 2020;383(4):e25. doi: 10.1056/NEJMp2022639
- AbdelHameid D. Professionalism 101 for Black Physicians. *N Engl J Med* 2020. doi: 10.1056/NEJMp2022773
- Forrester A. Why I Stay — The Other Side of Underrepresentation in Academia. *N Engl J Med* 2020;383(4):e24. doi: 10.1056/NEJMp2022100
- Chowkwanyun M, Howell B. Health, Social Reform, and Medical Schools — The Training of American Physicians and the Dissenting Tradition. *N Engl J Med* 2019;381(19):1870-1875. doi: 10.1056/NEJMms1907237
- Doll KM, Thomas CR, Jr. Structural Solutions for the Rarest of the Rare — Underrepresented-Minority Faculty in Medical Subspecialties. *N Engl J Med* 2020;383(3):283-285. doi: 10.1056/NEJMms2003544
- Morse M, Loscalzo J. Creating Real Change at Academic Medical Centers — How Social Movements Can Be Timely Catalysts. *N Engl J Med* 2020;383(3):199-201. doi: 10.1056/NEJMp2002502
- Thomas SB, Quinn SC, Butler J, Fryer CS, Garza MA. Toward a fourth generation of disparities research to achieve health equity. *Annu Rev Public Health* 2011;32:399-416. doi: 10.1146/annurev-publhealth-031210-101136
- Gee GC, Ford CL. STRUCTURAL RACISM AND HEALTH INEQUITIES: Old Issues, New Directions. *Du Bois Rev* 2011;8(1):115-132. doi: 10.1017/s1742058x11000130
- Bailey ZD, Feldman JM, Bassett MT. How Structural Racism Works — Racist Policies as a Root Cause of U.S. Racial Health Inequities. *N Engl J Med* 2020. doi: 10.1056/NEJMms2025396
- Bailey ZD, Krieger N, Agénor M, Graves J, Linos N, Bassett MT. Structural racism and health inequities in the USA: evidence and interventions. *Lancet* 2017;389(10077):1453-1463. doi: 10.1016/s0140-6736(17)30569-x
- Pallok K, De Maio F, Ansell DA. Structural Racism — A 60-Year-Old Black Woman with Breast Cancer. *N Engl J Med* 2019;380(16):1489-1493. doi: 10.1056/NEJMp1811499
- Williams DR, Rucker TD. Understanding and Addressing Racial Disparities in Health Care. *Health Care Financ Rev* 2000;21(4):75-90.
- Kumar V, West DL. Bridging the Equity Gap. *AJR Am J Roentgenol* 2019;213(4):785-791. doi: 10.2214/ajr.19.21528
- Waite S, Scott J, Colombo D. Narrowing the Gap: Imaging Disparities in Radiology. *Radiology* 2021:203742. doi: 10.1148/radiol.2021203742
- Betancourt JR, Tan-McGrory A, Flores E, López D. Racial and Ethnic Disparities in Radiology: A Call to Action. *J Am Coll Radiol* 2019;16(4 Pt B):547-553. doi: 10.1016/j.jacr.2018.12.024
- Webb Hooper M, Nápoles AM, Pérez-Stable EJ. COVID-19 and Racial/Ethnic Disparities. *JAMA* 2020;323(24):2466-2467. doi: 10.1001/jama.2020.8598
- Evans MK. Covid's Color Line — Infectious Disease, Inequity, and Racial Justice. *New England Journal of Medicine* 2020;383(5):408-410. doi: 10.1056/NEJMp2019445
- Kington RaTD. Increasing Racial and Ethnic Diversity Among Physicians: An Intervention to Address Health Disparities? The Right Thing To Do, The Smart Thing To Do: Enhancing Diversity in the Health Professions 2001.
- Alsan M, Garrick O, Graziani G. Does Diversity Matter for Health? Experimental Evidence from Oakland. *American Economic Review* 2019;109(12):4071-4111. doi: 10.1257/aer.20181446
- Amutah C, Greenidge K, Mante A, Munyikwa M, Surya SL, Higginbotham E, Jones DS, Lavizzo-Mourey R, Roberts D, Tsai J, Aysola J. Misrepresenting Race — The Role of Medical Schools in Propagating Physician Bias. *New England Journal of Medicine* 2021. doi: 10.1056/NEJMms2025768
- Yancy CW. Academic Medicine and Black Lives Matter: Time for Deep Listening. *Jama* 2020. doi: 10.1001/jama.2020.12532

**TABLE 2: Common EDI Journal Club Pitfalls and Potential Solutions**

POTENTIAL PITFALL	SUGGESTED SOLUTION
Superficial, short-lived interest Inability for those with vested interests to sustain early momentum	<ul style="list-style-type: none"> <li>■ Leadership to regularly express their support publicly and to provide protected time and a budget to support the EDI committee and Antiracism Journal Club.</li> <li>■ Identify 2-3 influential members with vested interest in changing the status quo and formalize their roles as EDI leaders and ambassadors. At least one of these people should come from leadership. Roles can include advocating for discussions on particular topics and encouraging coworker attendance.</li> </ul>
Minority members bearing the brunt of the labor: “Minority Tax”	<ul style="list-style-type: none"> <li>■ Incentivize and reward broad participation and EDI leadership roles.</li> <li>■ Rotate members to lead discussions on articles they select. The more members in rotation, the better.</li> </ul>
Trepidation about addressing racism directly and frankly. Fear of being regarded as an instigator. Fear of being labeled as racist	<ul style="list-style-type: none"> <li>■ Leadership to set the tone for open and honest discourse.</li> <li>■ Leadership and members to openly acknowledge their own racism and role in perpetuating a broken system.</li> <li>■ Leadership to openly name racism as an opportunity for change and champion antiracism initiatives publicly and regularly.</li> <li>■ Create safe spaces for discussion, including welcoming of dissenting and unpopular opinions.</li> <li>■ Favor remediation over punitive responses to racism.</li> </ul>
Initiatives not advancing beyond the discussion phase	<ul style="list-style-type: none"> <li>■ Identify specific goals and deliverables, including the resources necessary to realize them.</li> <li>■ Secure leadership investment in facilitating the translation of ideas into action.</li> <li>■ Focus on substantive policy changes, such as holistic residency and faculty applicant assessments, recruitment methods to increase diversity, and inclusion of EDI efforts in promotion review processes.</li> <li>■ Cooperate across institutions to institute parallel and synergistic policies.</li> </ul>



## Remaining Focused on Diversity and Inclusion in a Pandemic

By Matthew Bucknor, MD

**Disparities in outcomes for racial and ethnic minority groups with COVID-19, as well as the calls for social justice following the recent killings of Black men and women, along with horrific incidents of anti-Asian violence, have highlighted the ongoing, painful challenges that our country faces with injustice, bias, racism and systemic oppression.**

These events remind us of the paramount importance of our commitment to dismantle structural barriers in education, research, employment and health care, in every aspect of our work at UCSF.

A commitment to these values means not abandoning our focus, even in the midst of a pandemic. Thanks to the unwavering commitment of faculty mentors, staff, trainees and students, the Research Initiative to Promote Diversity in Radiology (RIDR) program, which aims to improve access to careers in radiology, successfully took place in the summer of 2020. Faculty mentors and staff worked collaboratively to

convert the research and mentorship experience to an online format, using Zoom to facilitate trainings, high quality research experiences and career development sessions for the 10 high school, college and medical students selected to participate in 2020. The students met the challenge enthusiastically, many leveraging the online shift to engage in events and learning activities across the campus. They also presented their work at the first-ever online Student Summer Symposium at the end of July.

Recently named Director of Outreach Javier Villanueva-Meyer, MD, and Director of Global Health Tatiana Kelil, MD, will lead the charge to continue expanding the impact of our outreach efforts, despite the challenges presented by COVID-19. They were named in the 2018 and 2020 classes of John A. Watson Scholars, respectively, awards that acknowledge faculty who share our commitments to diversity and service to the underserved.

We also continue to improve department educational opportunities on diversity, inclusion and bias by

providing regularly updated resources through our Radiology Rounds and RadNews department newsletters. In addition, we offer an annual unconscious bias training session for residency and faculty interviewers each fall. This year, committee member Kevin McGill, MD, helped arrange to bring speaker Sunny Nakae, PhD, MSW, senior associate dean, Equity, Inclusion, Diversity and Community Partnerships at the California University of Science and Medicine, School of Medicine, for a grand rounds entitled, “Bias Breaks for Residency Admissions Committees,” which was incredibly well-received.

We know that there is no “Mission Accomplished” in this work. Members of the Diversity and Inclusion Committee remain eager to discover new ways to promote these essential values. In the spring, I was one of several Black faculty invited to speak at the UCSF United for Justice and Equality Town Hall ([diversity.ucsf.edu/addressing-discrimination](http://diversity.ucsf.edu/addressing-discrimination)). In the fall, our department’s Diversity and Inclusion Committee launched a set of new anti-racist initiatives focused on building community and mentorship among our under-represented and minority (URM) faculty and learners, as well as pay equity. We also partnered with the Quality and Safety and Operations committees to develop new programs around health equity.

Despite the work ahead, we are encouraged by the inspiring early career trajectories of numerous students and trainees who have participated in our programs. A commitment to diversity and inclusion remains a core focus of the department’s mission, both as intrinsic values and as a means to improve our patient care, education and research missions. We remain strongly committed to pursuing this important and challenging work, even in the face of the twin pandemics of COVID-19 and systemic racism. ■



*Matthew Bucknor, MD, is an associate professor in residence in the Musculoskeletal Imaging subspecialty section, chair of the Radiology and Biomedical Imaging Diversity and Inclusion Committee, and associate chair of wellbeing and professional climate in the Department of Radiology and Biomedical Imaging at the University of California, San Francisco.*

 [Learn more at radiology.ucsf.edu/about/diversity](http://radiology.ucsf.edu/about/diversity)

UCSF

## RADWomen UCSF: Supporting Women in Radiology

**RADWomen UCSF is a new initiative promoting advocacy for female faculty, trainees, and staff in radiology at UCSF.**

The program leaders are Kimberly Kallianos, MD, an assistant professor and director of the department's Cardiac & Pulmonary Imaging fellowship program; Priyanka Jha, MBBS, associate professor in Abdominal Imaging; and Christine Glastonbury, MBBS, professor, interim chief of Neuroradiology and vice chair for Academic Affairs. "Our aims align with the department's overall goals of increasing diversity," said Kallianos, adding that "issues facing women faculty and trainees include career development, mental and physical health, parenting and caregiving, burnout and stress."

"Our goals for women in academic radiology include enhanced support for the specific issues facing women," said Glastonbury. "We are really excited about the improvements we are making for our female faculty and trainees, which are linked directly to career advancement."

As a component of the initiative, Kallianos, Jha and Glastonbury received a UCSF Chancellor Fund Needs and Enrichment Award to support speakers for a series of talks to raise awareness of special circumstances faced by women in academia and medicine. With this grant support, RADWomen UCSF hosted the inaugural UC-wide "Radiology Grand Rounds: Women in Medicine," a virtual event held September 30. It featured Christina Mangurian, MD, MAS, of the UCSF Department of Psychiatry presenting on "Fostering Resilience during



Speaker Dr. Miriam Bredella (top left) is welcomed by Drs. Kimberly Kallianos (top right), Christine Glastonbury (lower left) and Priyanka Jha (lower right) at the second RADWomen UCSF event.

COVID-19: Pearls from the UCSF COPE Team." Her lecture was followed by a lively interactive discussion moderated by Margo Pumar, MD, a physician in the Department of Psychiatry. "A silver lining of the pandemic has been the development of advanced virtual conferencing, which allowed us to bring in a number of speakers from beyond our immediate geographic area for RADWomen UCSF-sponsored events, including panelists from five UC campuses," said Kallianos. "The presentations and discussions have been well received. People appreciated the honesty and that we involved many people in the conversation."

RadWomen UCSF's second event in November was an invited lecture by Miriam Bredella, MD, an alumna of UCSF Radiology. Bredella is a vice chair and director of the Center for Faculty Development at Massachusetts General Hospital and a professor of Radiology at Harvard Medical School in Boston. She spoke on the "Impact of COVID-19 on Women in Academia: What Can We Do?" The discussion session that followed focused on issues facing women in academia and identification of solutions to these challenges, with expertise provided by Bredella based on her experience directing faculty wellbeing at the School of Medicine, Harvard.

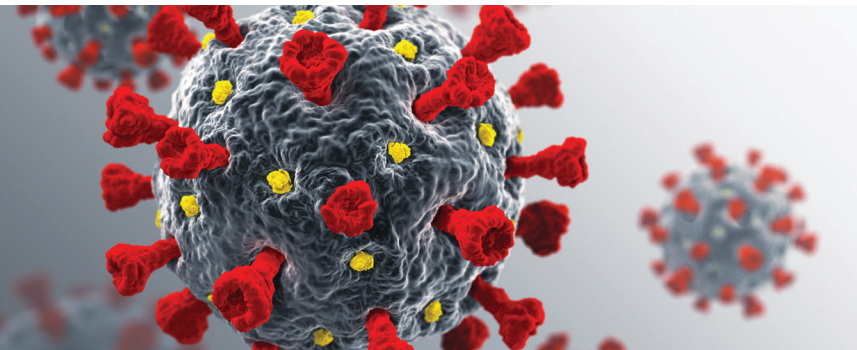
The third RADWomen UCSF event was a UCSF-wide Grand Rounds being

organized for International Women's Day, in collaboration with departments of Psychiatry, Neurology, Radiation Oncology and Office of Diversity. The invited guest speaker was Reshma Jagsi, MD, DPhil, Newman Family Professor and Deputy Chair in the Department of Radiation Oncology and director of the Center for Bioethics and Social Sciences in Medicine at the University of Michigan. She spoke on "Promoting Equity for Women in Academic Medicine: An Evidence-Based Approach." RADWomen UCSF events allow Radiology to join diversity efforts with other departments at UCSF and beyond. "We have the power of collective action to reform the status quo," said Jha. Future events focused on trainees and early career faculty are also in the pipeline.

"Advocacy for women in UCSF Radiology from RADWomen UCSF has included support for new mothers and was instrumental in providing a new lactation room in Radiology at the Parnassus Campus," said Jha. "RADWomen UCSF is an effort toward fulfilling promises to women at all levels, establishing an environment where our circle of influence widely overlaps that of diversity and equity, so that we can invent a future of our imagination. I find it incredibly gratifying to be able to contribute to our department's and UCSF's diversity efforts." ■

“RADWomen UCSF is an effort toward fulfilling promises to women at all levels, establishing an environment where our circle of influence widely overlaps that of diversity and equity, so that we can invent a future of our imagination.”

– Priyanka Jha, MBBS



UCI

## Machine Learning and COVID-19 Treatment

By Daniel S. Chow, MD

Assistant Professor in Residence, Department of Radiological Sciences  
Co-Director, Center for Artificial Intelligence in Diagnostic Medicine (CAIDM)

**A year ago, the news of a novel coronavirus epidemic spreading from China and overwhelming hospitals in Italy and then New York was a flashing red siren to us at the University of California at Irvine Medical Center.**

The question was not whether we would treat this disease but when. We did not have much time to prepare, and we were not even sure what we were preparing for.

This is not a story about a hospital system that was overwhelmed. This is not a story of tragic heroes fighting in isolation against impossible odds. This is not the story we have read too much of over the last year. In fact, this is a story you've never read during the COVID-19 pandemic.

In February 2020, we tried to figure out how to use artificial intelligence and predictive analytics to coordinate and direct patient treatment. That

March, we started using this technology to help our clinicians treat patients. In April, we deployed machine learning in our COVID-19 treatment at scale.

A year later, many health care experts contend that deploying AI at scale for the pandemic is still not possible. In fact, a recent piece in Politico Future Pulse concluded pessimistically that COVID-19 has revealed "the limits of AI."

"Where it's perhaps more helpful is pointing out where humans should focus," the author pointed out, "directing doctors and nurses to the sickest patients, finding neighborhoods in need of extra vaccine outreach, or even paring down the list of drugs researchers evaluate as potential COVID-19 therapies."

That is, in fact, exactly what we've done at UCI.

A year ago, the problems in predicting which patients were most at

risk from COVID-19 were immediately obvious: wide disparities in outcomes across diverse populations, and medical literature listing 50-70 possible predictors of risk. There is simply too much data in a pandemic at scale for a doctor to assess and examine a patient and make an accurate determination. Together, Peter Chang, MD, and Daniel Chow, MD, MBA, Co-Directors at the Center for Artificial Intelligence in Diagnostic Medicine (CAIDM), in collaboration with the Departments of Radiology, Medicine, Pathology, Public Health, Nursing, and Computer Sciences partnered to develop and deploy a tool to identify our most vulnerable.



Daniel S. Chow, MD

Within three months, the team moved from ideation to deployment and the tool has been in routine use at UCI Health as part of the COVID-19 clinical pathway since May 2020. This tool has since been expanded to identify lower risk patients and aid in therapeutic efforts with support from the COVID-19 Federal Response. ■

“ Within three months, the team moved from ideation to deployment and the tool has been in routine use at UCI Health as part of the COVID-19 clinical pathway since May 2020. ”

—Daniel S. Chow, MD