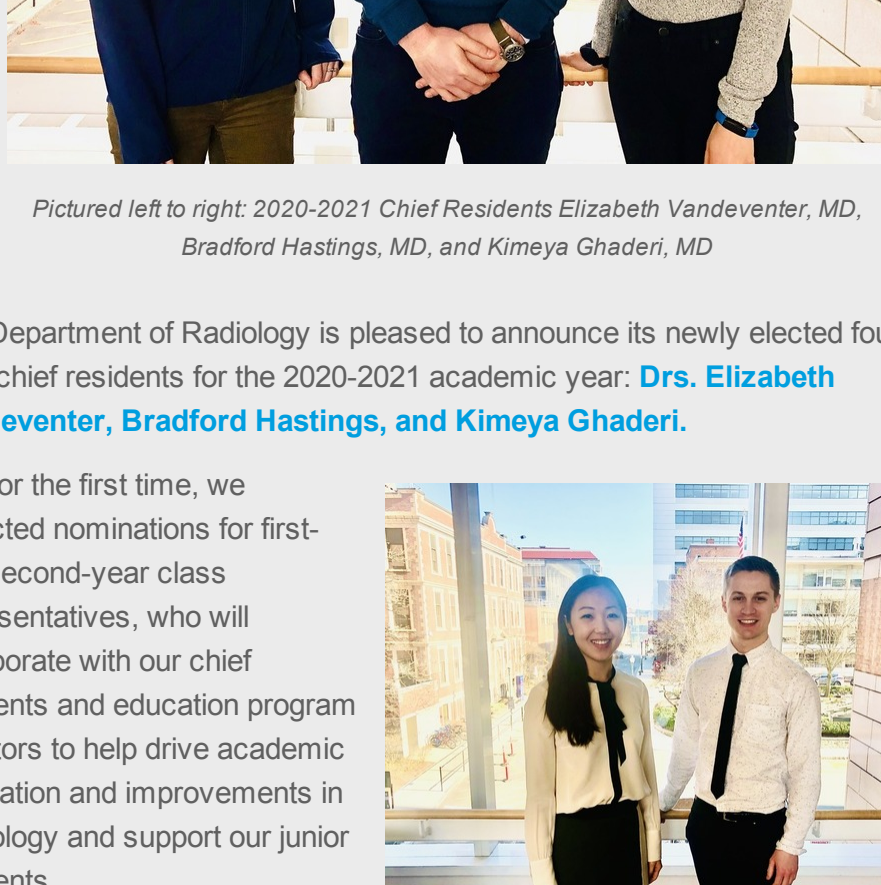


The Inside View

BIDMC Department of Radiology

March 5, 2020 | Volume 2 | Issue 3

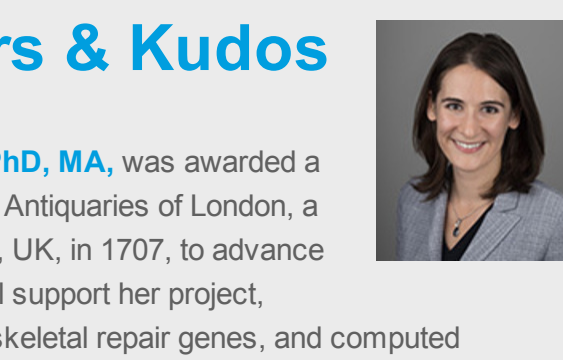
New Chief Radiology Residents, Class Representatives Elected



Pictured left to right: 2020-2021 Chief Residents Elizabeth Vandeventer, MD, Bradford Hastings, MD, and Kimeya Ghaderi, MD

The Department of Radiology is pleased to announce its newly elected fourth-year chief residents for the 2020-2021 academic year: **[Drs. Elizabeth Vandeventer, Bradford Hastings, and Kimeya Ghaderi](#)**.

And for the first time, we collected nominations for first- and second-year class representatives, who will collaborate with our chief residents and education program directors to help drive academic innovation and improvements in Radiology and support our junior residents.

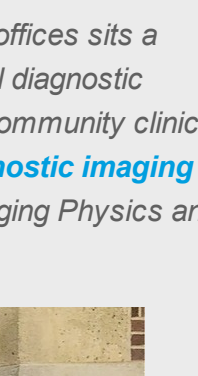


Pictured left to right: Yukun Gao, MD, and Harry Griffin, MD, our new second- and first-year class representatives, respectively.

We are thrilled to share that our inaugural class representatives are **[Drs. Yukun Gao \(second-year class\) and Harry Griffin \(first-year class\)](#)**.

Please join us in congratulating our residents on their new leadership roles!

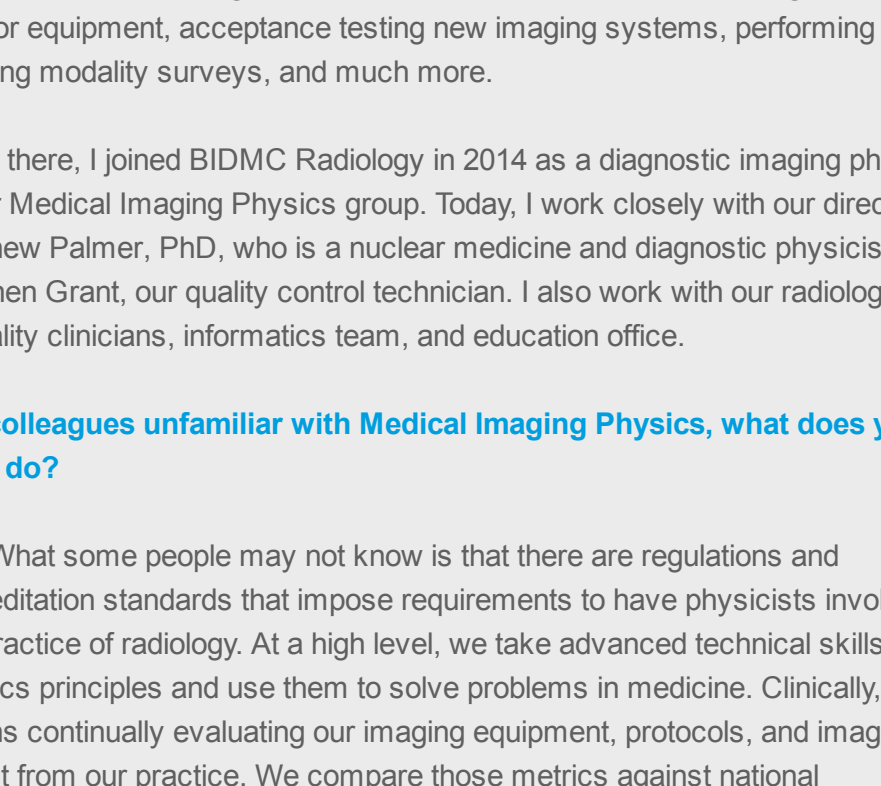
Awards, Honors & Kudos



Katie van Schaik (PGY-2), MD, PhD, MA, was awarded a research grant from the Society of Antiquaries of London, a learned society founded in London, UK, in 1707, to advance the study of the past. The grant will support her project, "Aging, epigenetic modification of skeletal repair genes, and computed tomography skeletal stress analysis in 'super-survivors,'" which she is undertaking in collaboration with the Museum of London and the Royal Brompton Hospital. Dr. Jim Wu is her research mentor. Congratulations, Katie!

Getting to Know: Medical Imaging Physics

Within the Department of Radiology's East Campus Sherman offices sits a small but highly specialized team of physicists that supports all diagnostic modalities at our main campus facilities, offsite affiliates, and community clinics. The Inside View recently sat down with **[Da Zhang, PhD, diagnostic imaging physicist](#)**, to learn more about the unique work of Medical Imaging Physics and how it helps keep our patients safe.



Pictured left to right: Stephen Grant, Matthew Palmer, PhD, and Da Zhang, PhD

Can you tell us about your path to Medical Imaging Physics?

DZ: Sure. I graduated from Beijing University of Posts and Telecommunications with a Bachelor of Science in Telecommunication Engineering. I earned my PhD in electrical and computer engineering from the University of Oklahoma after that and then trained at Mass General Hospital (MGH) for more than five years to become a board-certified medical physicist. During that time, I participated in MGH Radiology's quality assurance program, which gave me hands-on experience collaborating with clinicians and researchers, evaluating commercial vendor equipment, acceptance testing new imaging systems, performing imaging modality surveys, and much more.

From there, I joined BIDMC Radiology in 2014 as a diagnostic imaging physicist in our Medical Imaging Physics group. Today, I work closely with our director, Matthew Palmer, PhD, who is a nuclear medicine and diagnostic physicist, and Stephen Grant, our quality control technician. I also work with our radiologists, modality clinicians, informatics team, and education office.

For colleagues unfamiliar with Medical Imaging Physics, what does your team do?

DZ: What some people may not know is that there are regulations and accreditation standards that impose requirements to have physicists involved in the practice of radiology. At a high level, we take advanced technical skills and physics principles and use them to solve problems in medicine. Clinically, that means continually evaluating our imaging equipment, protocols, and image output from our practice. We compare those metrics against national benchmarks to optimize image quality and patient safety and to identify clinical workflow improvements. We work across all the modalities—CT, Interventional, Mammography, MRI, Nuclear Medicine, PET, Ultrasound, and X-ray.

In these efforts, we collaborate with our modality managers, technologists, radiologists, informatics professionals, and other colleagues to design, implement, and maintain rigorous quality assurance standards and programs. At the core of this work is a commitment to keeping our operations well-managed and our patients and each other safe.

Are you also involved in our education and research initiatives?

DZ: Yes, we play a leading role in our radiation protection and safety education programs for patients, staff, faculty, and trainees. For example, during each academic year, we have more than 30 lectures and hands-on training sessions about medical imaging physics and technologies for our department's residents, medical students, and fellows. We also hold live, in-house radiation safety training sessions for staff working in the interventional and fluoroscopic environment to ensure everyone feels confident in their roles from a technical and safety perspective. Additionally, we help educate our trainees through training and mentorship.

We are also deeply involved in our department's clinical research, such as Dr. Olga Brook's CT and quality research projects and papers, and Dr. Jordana Phillips' research-turned-clinical work, including contrast-enhanced mammography.

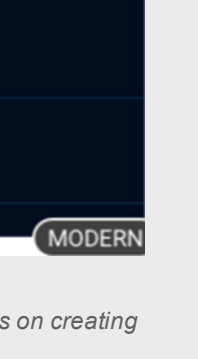
Do you have any projects underway that you're especially excited about?

DZ: My team and I have been working on a new method to help physicians more effectively estimate the right CT doses for patients. In radiation safety, there is a widely known principle called "ALARA," which stands for "as low as reasonably achievable." This means that doses should always be kept as low as possible to minimize patient exposure while still maintaining the intended diagnostic quality. To determine the optimal dose, you must know the size of your patient and the scanner output. The goal of our current project is to include size-specific dose estimates—a newly developed dose metric in the field of radiological physics—in our routine practice, to help distinguish true dose outliers from high- and low-dose cases due to larger or smaller patient waist sizes.

Along this line of development, we aim to calculate patient water-equivalent diameters from localizer (scout) images. In practice, this would mean capturing a localizer image before the actual CT scan to fine-tune the protocol in advance of acquisition. It has been proven that the attenuation (or the reduction in intensity) of radiation in a patient can be represented by the attenuation of a water cylinder of a certain diameter (the so-called "water-equivalent diameter"). Knowing that, we can use measurements from the initial localizer image along with our experimental data to make geometric calculations to define a more precise radiation dose for our patient. Our radiologists would also have the ability to make real-time dose adjustments to support a safer, more accurate exam. We have two papers published/accepted for publication for this project (including one listed in our "Selected Publications" section at the end of this newsletter) and multiple presentations at national meetings, including RSNA and AAPM.

Any final thoughts?

DZ: Medical quality assurance is such a tremendous and complex topic and there can be a lag by vendors in the implementation of new innovations and workflow and equipment enhancements. That's why it's so important for our radiologists and physicists to continue collaborating. Our imaging technologists are also critical to the equation because they are closest to the equipment and have valuable insights into what is working and what needs improvement.

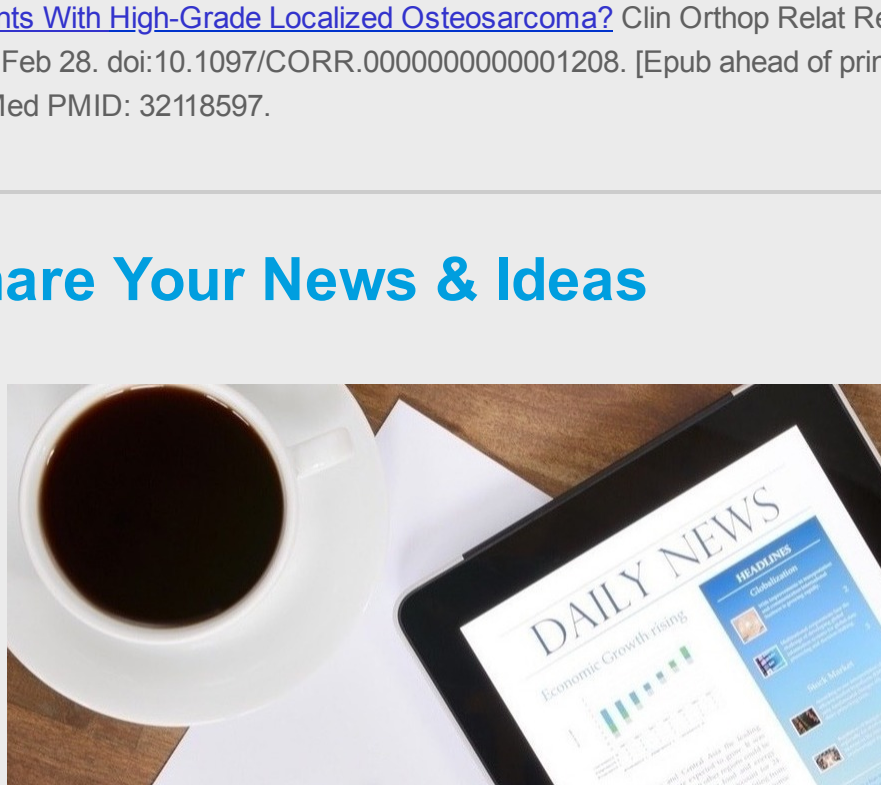


Chris MacLellan, PhD

I am also looking forward to a new addition to our team, Chris MacLellan, PhD, (pictured above), who will be joining us in April as a medical imaging physicist with a specialty in MRI. I'm excited to expand our skill sets to more effectively support our diagnostic modalities going forward.

The Research Roundup

The latest news and information as it relates to our pursuit of radiology research advancements.



Morris Simon Research Day
Thursday, May 28, 2020, 4-8 p.m.

Save the Date for our 4th Annual Morris Simon Research Day!

Thursday, May 28, 4-8 p.m., at The Inn at Longwood Medical
342 Longwood Ave., Boston, MA 02215. More details to come.

Did you know?

You can learn about upcoming research training opportunities, including grant writing sessions, mentoring, and clinical trials courses, on the Harvard Catalyst website. [Visit the site](#).

PACS Tip of the Week

Fluency Upgrade / User Interface Update

As many of you know, our Picture Archiving and Communication System (PACS) team has been working diligently with both M*Modal and Change Healthcare to resolve the few issues we found after our last Fluency upgrade. Part of this upgrade includes a **new user interface (UI)** and new features, which will be deployed in the next few weeks.

We invite you to familiarize yourselves with the new UI and its features prior to our upgrade by going to **Settings > Update Preferences > Beta Features**.

Many of you have already visited the Beta Features tab and are currently using the new UI and features (with good reviews so far).

For those who have not and would like to know more about each feature, click on the blue question-mark icon within the system for a description or click on the "Learn More" button below to see a complete comparison of the two UI versions (classic and modern) and view "how-to" articles.

Please let us know if you have any questions by emailing PACSAdministration@bidmc.harvard.edu.

Updates include new dark and light themes to suit your work environment and personal preference, increased font sizes, and updated icons that are easier to see and recognize.

The new, lightweight editor style reduces clutter and helps you focus on creating your report.

[Learn More](#)

Selected Publications

Below is a PubMed list of selected Radiology publications from Feb. 19 through March 5. Faculty names are bolded; staff and trainee names are underlined. If your publication isn't shown here, please [submit your citation](#) for inclusion in our next newsletter.

Brook OR. Patient-centered Radiology for the Thoracic Imager. J Thorac Imaging. 2020 Mar; 35(2):71-72. doi: 10.1097/RTI.0000000000000471. PubMed PMID: 32084096.

Da Z, Liu X, Duan X, Bankier AA, Rong J, **Palmer MR.** Estimating patient water equivalent diameter from CT localizer images – A longitudinal and multi-institutional study of the stability of calibration parameters. Med Phys. 2020 Feb 22. doi: 10.1002/mp.14102. [Epub ahead of print] PubMed PMID: 32086943.

Anderson ME, **Wu JS,** Vargas SO. CORR® Tumor Board: **Is Microscopic Vascular Invasion In Tumor Specimens Associated With Worse Prognosis In Patients With High-Grade Localized Osteosarcoma?** Clin Orthop Relat Res. 2020 Feb 28. doi:10.1097/CORR.0000000000001208. [Epub ahead of print] PubMed PMID: 32118597.

Share Your News & Ideas

Have something to share in our newsletter? *The Inside View* would love to include it! Here is a list of suggestions to help spark some ideas:

- New colleague welcome messages
- Awards, honors, and kudos content
- Clinical, research, and education news
- Conference and presentation photos
- Information about upcoming radiology events
- Suggestions for our "Getting to Know" profiles
- Photos of and news about our alumni community
- Snapshots of the city or vacation spots

[Submit Your Content](#)

Footnotes

These items require internal access:

- For Coronavirus (COVID-19) updates, please [visit the Portal](#).
- A 2020-2021 Schedule of Academic Meetings and Abstract Deadlines is available. [Download the spreadsheet](#).
- Back issues of *The Inside View* are cataloged on our Radiology Portal News & Events page. [View prior issues](#).

Thanks for reading!

The Inside View is brought to you by the BIDMC Department of Radiology.

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Distributed to the Department of Radiology, its Alumni, and BIDMC Colleagues

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