2023 ALUMNI NEWSLETTER

The Official Newsletter of the Duke University Medical Physics Alumni Association (DUMPAA)

Coordinated and edited by Cielle Collins, MS (2019) & James Spencer, MS (2017)

IN THIS ISSUE:

Matthew Goss, MS (2007), DABR
DUMPAA President, 2020-2023

Duke University Campus, from *today.duke.edu*

A Message from the Association President

Message from the President, 2023

In past newsletters I've tried to craft my president's statement in a way which highlights some of the accomplishments of the past year while looking forward to what this administration is hoping to achieve in the next one. But this marks the end of the current alumni board's tenure, and for many members, myself included, it marks the end of our personal appointments to the board, too. As I prepare to step down as the Association's President, I think it best to look back at what we as an association have been able to accomplish during our brief history, with an eye to what we hope to accomplish in the years to come.

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Want to get involved with the newsletter?
Be featured as an alumni or research spotlight?

Contact DUMPAA Communications Co-Chairs:
Carolyn Eckrich, MS (2023) ceckrich@wisc.edu | Isabel Montero, MS (2023) isabel.montero@duke.edu

A Message from the DUMPAA President | Matthew Goss (2)

In 2016 Dr. Samei assembled a task force to develop a framework of guidelines, positions, and eventual bylaws in the hopes of establishing an independent, self-sufficient, and permanent Alumni Association for our large pool of graduates from the Medical Physics program. At that point we had 9 years' worth of graduating classes and needed a way to give these people a way to connect with each other as well as opportunities to engage with one another in meaningful ways. The task group drew up by-laws and held elections at the AAPM that year in Washington, DC. The first board was appointed, which included Irina Vergalsova as the first president and, among other board members, myself as the secretary. The first initiatives that the newly formed group tackled included creating the Culture Task Force, the Task Force for Educational Excellence, the Distinguished Lectureship series, and the Task Group for Professional Excellence, Publicity Development, and Alumni Outreach.

Over the next four years, the Alumni Association grew larger, developed a seasonal routine of communication and outreach, expanded its presence at national meetings, and worked on new initiatives, including the Zachary Dean Shrock Memorial Scholarship Fund. We saw more alumni grow into well-respected and established members of the medical physics community and pursue jobs post-graduation in specialized areas far and wide. We got our footing and became more organized, focused, and efficient.

In 2020 elections were held again, and I was nominated to run for the presidency. I was hesitant, but excited, to continue the incredible work Irina and the group had started and to develop new areas of interest and effort, new initiatives, ways to engage, and more opportunities for social interactions. I accepted and was ready to get to work. The global pandemic dashed many of those hopes within months of the new administration taking the reins. Grappling with how to engage a group when all in-person activities had gone virtual, the board was then faced with how to respond to what felt like continuous stories of deplorable violence, discrimination, and anger against people in marginalized communities, ones represented by members of our own association and program. Our group unanimously felt it morally wrong to stay silent, despite knowing that we as an elected administrative group are tasked with speaking for a larger whole, which is inherently of different political viewpoints, cultural backgrounds, and opinions. We tried to channel the confusion, fury, and disappointment into active participatory change, creating an ad hoc committee on social justice and systemic bias. We created an open-source sharable database of mixed-media that we found useful in understanding these issues and offering differing viewpoints, and in turn made it available to the Board and Association. I'm proud to say this has been maintained to this day and remains a useful resource.

We established ourselves as a nonprofit and opened a bank account. We helped connect students and new alumni to nonprofit and volunteer groups and established ongoing relationships with vendors to aid in future fundraising and sponsorship. We also created the Mentorship Program, which helps pair current students to alumni, and alumni to each other, to engage and facilitate professional development, board prep, residency interviews, job searches, and career path questions. This was an incredible effort and one we've seen slowly grow over the years, with increased involvement. We planned the first global alumni meetup in Durham and engaged with current students.

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A Message from the DUMPAA President | Matthew Goss (3)

Around this time we collectively decided it was time to re-establish a stronger bond with the program itself; we had achieved independent self-sufficiency, had charted our own path, and built a solid footing outside the scope of the academic department. But we recognized that the obvious next step was to see how both of our groups could mutually benefit each other. So, with Dr. Oldham's help, we decided to establish an open line of communication, appointing a student liaison to attend board meetings and help coordinate joint social events and outreach. Through this effort came the Voices of Alumni program, which helps give current students an open forum to learn from alumni practicing in different professional disciplines. We've seen excellent participation of both groups in this program.

My time as President went so quickly, it's hard not to dwell on all we could have done or be critical of the ways in which we could have done what we did do, more effectively. But I've been reminded by the incredible board I've been privileged to work with that our roles are those of appointed volunteer; we are best served by focusing on what we've been able to accomplish, not what we've failed to do. For every achievement there were several that never made it to the table or didn't work as we'd hoped. But that one initiative might help a student or alumni member, and it's useful to remember that it wasn't in place at the beginning of our term. We were entrusted with a great deal of responsibility by our peers. **It is our job to be stewards of this organization while briefly in our care, and if we can add even a bit to the overall positive direction of its journey – and do so with enthusiasm and compassion – we've done our due diligence.** I certainly feel that this administration has done just that.

I am extremely excited to see where this next, very capable board takes this organization. I have confidence they will engage in ways we couldn't have imagined when we found ourselves where they are now. Please give them your support, input, and engagement.

I'm genuinely humbled and immensely proud to have served as the DUMPAA President. Thank you to the board members I've worked with over my time as your president, and thank you all for the incredible opportunity and experience. Best of luck, and best wishes.

Matthew Goss, MS, DABR

Duke Medical Physics Graduate Program Class of 2007

DUMPAA Secretary 2016-2020

DUMPAA President 2020-2023

~ 20th Anniversary Celebration ~

Durham, NC

December 2024

Please join us in person at Duke this December to celebrate the Program's 20th Anniversary

◊ Details and more announcements to follow ◊

We want your voices to be heard!
Please email activities and event suggestions for the event to BillieAnn Radcliffe, MS (2022)

billieann31@gmail.com

Virtual Imaging Trials in Medicine International Summit (VITM24)

The Center for Virtual Imaging Trials, under the direction of Ehsan Samei, is proud to present the first International Summit on Virtual Imaging Trials in Medicine. Hosted at Duke University, this summit will gather leading experts, researchers, and practitioners in medical imaging and therapy using in silico virtual trials and digital twins in medicine. The complexity and diversity of medical technologies and applications have continued to accelerate, outpacing our ability to optimize their design and use. This has become a significant challenge across the spectra of scientific inquiries, product designs, and clinical applications. The evaluation of new innovations would ideally be achieved through clinical trials. However, such trials are often not feasible or even definitive due to ethical limitations, expense, time-requirements, difficulty in accruing enough subjects, or the fundamental lack of ground truth. In silico or Virtual Trials (VT) provide an alternative approach to assess the impact of such innovations on patient care. They offer a new truth-based approach to conduct medical trials that can be made to be clinically relevant, timely, and accurate while reflecting the variabilities of human bodies and complexities of technologies, providing answers that would otherwise be impractical or unattainable. A VT consists of the following:

1. Realistic populations of computational patients spanning ages, sexes, and races;
2. Detailed models of clinical technologies or applications; and,
3. Computational representations of the outcome assessment.

Envisioned as the first in a series, the objective of this Summit is to consolidate the latest developments, summarize the current status, and envision the future prospects of in silico virtual trials and digital twins in medicine. The conference takes place April 22-24, 2024 and will include proffered presentations, perspectives from the industry, discussion sessions, and four invited speakers: Mitchell Schnall (University of Pennsylvania), Thomas Yankeelov (University of Texas at Austin), Alejandro Frangi (University of Manchester), and Tina Morisson (FDA). The event is meant to serve as a forum to discuss methods, opportunities, challenges, limits, and future direction of virtual trials in medicine. Submissions will be reopened late January for work-in-progress demonstrations. Visit the website (https://cvit.duke.edu/vitm24/) for more information!

VITM
VIRTUAL IMAGING TRIALS IN MEDICINE | 2024

DUMPAA 2024-2025 Executive Board and Committee Chairs (1)

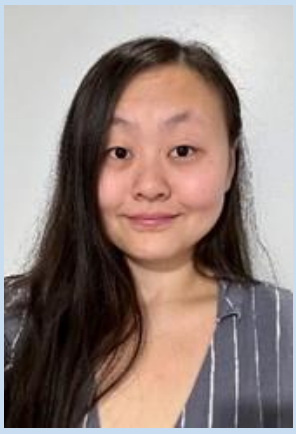
President –
Michelle Rokni, MS (2018):
I am so excited to have the opportunity to stay on the alumni board as the new President. The friendships and connections I have made through Duke Med Phys have been an invaluable part of both my career and life, and I am so excited to help others continue to make these connections through the Duke Alumni Association. Since graduating Duke in 2018, I completed a two year radiation therapy residency at the University of Chicago and then moved back to NC, where I am currently a clinical physicist at Novant Health. Outside of work my life pretty much revolves around my dog Maui, traveling as much as possible, and coaching a local high-school dance team.

Michelle Rokni, MS (2018)
President

Secretary –
James Spencer, MS (2017):
It has been an absolute pleasure serving as Co-Chair of the Communications Committee, but I am now looking forward to staying on the Board as the upcoming Secretary. I am always the note taker of my D&D group campaigns (currently a Rogue Swashbuckler Kobold, thank you for asking), so the training is about to pay off. After receiving my MS from the program in 2017, I stayed at Duke for my imaging residency with CIPG until 2019. I moved back to the DFW area of Texas and now work for Texas Health Resources and get to test equipment for the hospital I was born in. I've been a Senior Medical Physicist at my job ever since I received my Board Certification in 2021 and added those long-sought DABR letters to my signature. When not at work and combating Metroplex traffic between hospitals, I'm either binging a show, at trivia or the movies with my friends, or trying to keep my cats Coconut and Caviar entertained and spoiled.

James Spencer, MS (2017)
Secretary

Treasurer –
Ruilin Li, MS (2021):
I'm very excited to be more involved with the Alumni Association as the new Treasurer! Since I graduated in 2021, I stayed at Duke as a therapy resident until the summer of 2023. Just starting my career as a medical physicist, I am honored to have guidance from Duke staff, faculty, and alumni after graduation. I've enjoyed continuing to work with Duke medical physics alumni as well as learning from the friends I made while I was there, and I can't wait to see the Association grow stronger every year!



Riulin Li, MS (2021)
Treasurer

DUMPAA 2024-2025 Executive Board and Committee Chairs (2)

Digital Communications Coordinator & Communications Committee Co-Chair – Carolyn Eckrich, MS (2023):

I graduated from Duke this past May and matched at University of Wisconsin-Madison for therapy physics. I am very excited to be continuing my involvement with the Duke Medical Physics Program as the new Digital Communications Coordinator and Communications Committee Co-chair. I am loving residency so far and the many opportunities that UW provides. In my free time, I am busy exploring Madison with my Vizsla puppy named Joules (named after the SI unit of energy, of course)!

Carolyn Eckrich, MS (2023)
Digital Communications Coordinator, Communications Committee Co-Chair

Professional Development Chair – Isabella Duarte, PhD (2020):

I am very excited to continue my work in the Alumni Association as the Chair of Professional Development and overseeing the Mentorship Program. I hope to continue to build great connections with our alumni network and help others do so as well. Since graduating with my PhD at Duke in 2020, I completed my Radiation Therapy residency at NYU Langone, where I stayed to work post-residency as a medical physicist and faculty member. Outside of work, I love exploring NYC and trying out new places and restaurants!

Isabella Duarte, PhD (2020)
Professional Development Chair

Graduate Program Relations Committee Chair – BillieAnn Radcliffe, MS (2022):

I am so excited to join the Alumni Association as the Chair of the Graduate Relations Committee. After graduating from Duke in 2022, I went over to the “dark” side to work as a resident at UNC Basnight Cancer Center with fellow alum Simon Brundage. It’s been a fantastic experience, and I’ve been learning a ton about clinical medical physics. The most memorable moment thus far has been transporting the SNC 3D water tank between clinics in the back of my car. Outside of residency I’ve been traveling as much as possible and have been to Iceland, Spain, France, Italy, and Alaska. I will be savoring the next 6 months of this phase of my career and look forward to new opportunities on the horizon.

BillieAnn Radcliffe, MS (2022)
Graduate Program Relations Committee Chair

DUMPAA 2024-2025 Executive Board and Committee Chairs (3)

Activities and Events Committee Chair –
Breylon Riley, MS (2022):
As an MS student in DMP, I served as the Social Coordinator on SLAC — and I am so happy I can say I've graduated to the MedPhys PhD program and the DUMPAA version of Social Coordinator: Activities and Events Committee Chair! Transitioning to the doctorate program comes with tons more research (which I've fallen more in love with), but I still try to prioritize welcoming and integrating incoming students into our program and Duke as a whole. But I'd be remiss if I didn't mention my absolute favorite pastime: hanging out with my ferret-son Toph.

Breylon Riley, MS (2022)
Activities and Events Committee Chair

Communications Committee Co-chair –
Isabel Montero, MS (2023)
I am excited to be joining the Alumni Association as Co-Chair of the Communications Committee alongside Carolyn Eckrich this year! Since graduating with my MS from Duke earlier in May ’23, I have rejoined the program as a PhD student, which is an interesting position to be in. I think that being both a current student and an alum allows me to serve both communities better and to keep our alumni group more in-the-know with what’s happening at Duke! With my free time in Durham, I love hosting parties for my classmates and friends, playing weekly trivia at local breweries, and loving on my cat— Mr. Mulder!

Isabel Montero, MS (2023)
Communications Committee Co-Chair

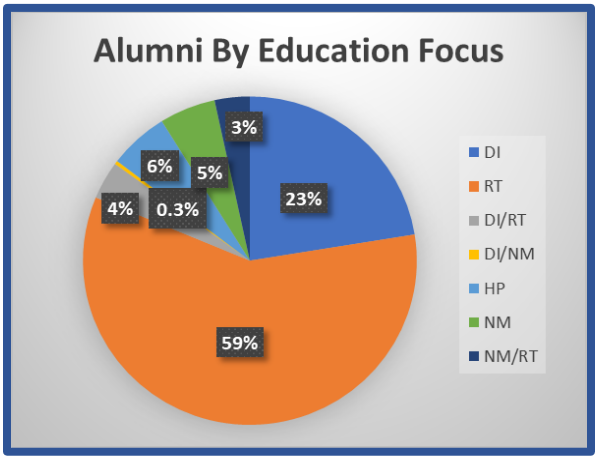
Fundraising Committee Chair –
Jason Paisley, MS (2009):
I'm honored to have been chosen as the Chair of the Fundraising Committee. I'm still shocked at how much the program has changed since I was a student at Duke. I was part of the 3rd class, and at the time we were still "finding our legs". It's truly amazing how far the program has come. Since graduating Duke I worked at Memorial Sloan Kettering in New York City before settling in Wilmington, NC. I've been the Chief Physicist in Wilmington for nearly 10 years, and our department has grown tremendously. I'm an active member of the AAPM and a volunteer examiner for the ABR. Outside of work I like to read, run, and hang out with my family.

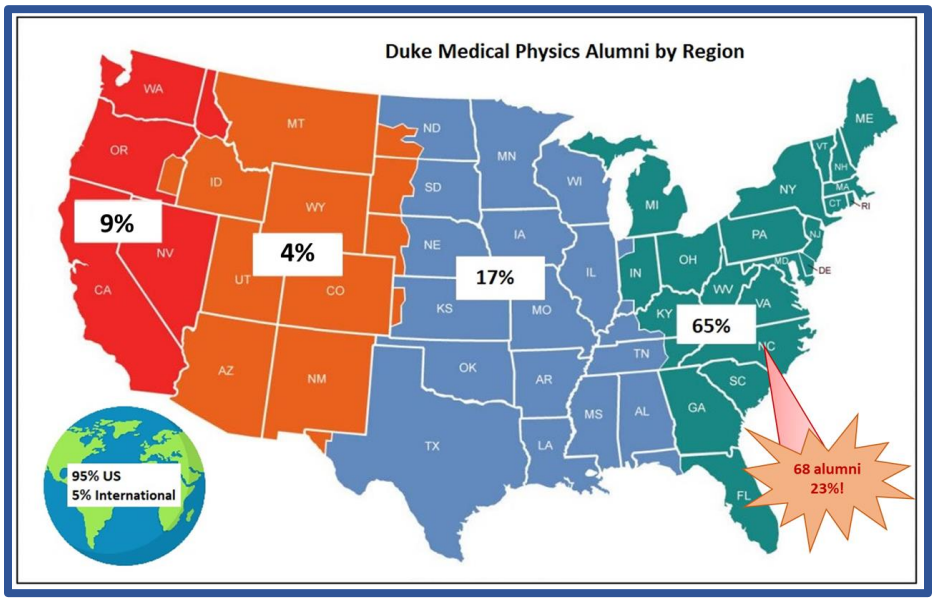
Jason Paisley, MS (2009)
Fundraising Committee Chair

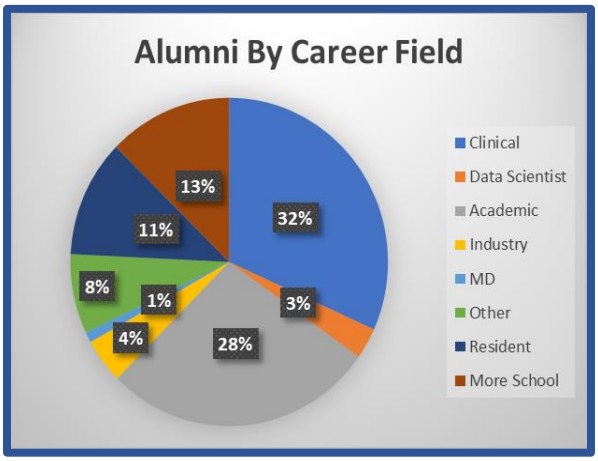
Duke Medical Physics Alumni Association Facts & Figures

With the first class of graduates leaving Duke in 2007, this year saw the 17th graduating class of Duke Medical Physics Alumni exiting the Program and entering into the post-graduate world! With this last graduating class in 2023, the Duke University Medical Physics Alumni Association (DUMPAA) is now over 300 alumni strong! We continue to track our growth and changes with below figures illustrating how our alumni breakdown across some surface level categories.

This data was gathered mostly from the Program's available alumni information (https://medicalphysics.duke.edu/alumni), and is only accurate up to that self reported data. Additionally, when looking at how our alumni break out across career fields, "Academic" and "Clinical" lines blur for those primarily clinical medical physicists who work at academic institutions/hospitals and likely also do research and academic work. Assumptions were made from job titles. While these statistics aren't perfect, they offer a general idea of what Duke Medical Physics alumni are up to and where we are in the world.







Voices of Alumni

Voices of Alumni (VoA) had a fantastic turnout throughout the last year. We finished out the 2023 spring semester strong with the following schedule:

•January: Careers in Academia
- Jessica Nute, MS (2009)
- Titania Juang , PhD (2015)
- Irina Vergalasova, PhD (2013)

•February: Consulting
- Andrew Scott, MS (2012)
- Drake Brookins, MS (2014)
- Liwei Zhang, MS (2007)

•March: Joint event with Women of Medical Physics (WOMP) Group
- Maryann Ayoade, MS (2009)
- Sabrina Campelo, PhD (MS, 2020)
- Lynda Ikejimba, PhD (2015)

•April: Medical Physics, but not Medical Physics
- Katie Albanese, MS (2016)
- Julia Bresticker, MS (2019)
- Dvone Jackson, MS (2009)

•May: Philanthropy opportunities
- Matt Goss, MS (2007)
- Peter Sandwall, PhD
- L. John Schreiner, PhD

If you are interested in accessing the recording of any of the prior events, they are located at https://duke.box.com/s/kp8z3kqw5kb9k03lzcsmn7wy9i8kz74w

The fall semester did not have any official VoA events due to the transition to the new board, but the program hosted a panel of alumni featuring Anna Rodrigues, PhD (MS 2012; PhD 2016); Josh Wilson, PhD (2011); and 4 students from the most recent graduating class – Carolyn Eckrich, MS (2023); Kyle Williams, MS (2023); Patrick Sansone, MS (2023); and, Charlotte Read, MS (2023) – to give advice on searching for residency programs and applications in early November.

We are planning on starting official VoA events back up this spring semester with talks about potential career paths that students may not get to experience during their time in the program. If you have any experience with multiple types of medical physics work or with consulting, industry, or other related fields, please contact trevor.mckeown@duke.edu to find a time to schedule a VoA event with you on the panel.

These events are primarily geared towards current students, but alumni are able and encouraged to tune in live with a link that is provided in announcements prior to each session. Alumni can equally benefit from many of the topics and ask advice or questions from fellow alumni speakers; plus, it is a great way to support your fellow alumni as well as see what alumni are involved with or currently doing.

Be on the lookout for the first VoA session this spring, and we look forward to you joining.

Alumni Association Mentorship Program

The goal of this program is to provide professional mentorship and support to Duke Medical Physics students and alumni through ad hoc and formal mentorship. This program is a great professional development opportunity for both mentors and mentees and a great way to connect with other members of the Duke Medical Physics community.

The Duke Medical Physics Alumni Association Mentorship Program is beginning its next round of mentorship partnerships in early 2024. The program launched in December 2020 and has continued to provide matches for prospective mentors and mentees. Each matched mentorship term will last 3-12 months based on the needs of each mentoring partnership. Alumni can be both mentors to current student mentees or other alumni, or they can be mentees themselves, seeking advice in careers or other professional topics from early to long-term goals. New and older alumni can all benefit from this program depending on their professional goals.

Areas of professional guidance and support can include:

- ABR exam preparation
- Residency applications
- Professional skills development
    - Education
    - Research
    - Clinical care
    - Involvement in professional organizations
    - Leadership
- Career planning and development
    - Strategies for achieving long- and short-term career goals
    - Job searching (including CV/resumes, applications, and interviewing)
    - Switching careers, fields, or specialties
- Equity, diversity, and inclusion (EDI) in the workplace
- Work/life balance

For questions about the program, or if you're looking to be a mentor or mentee, please email Isabella Duarte at isabella.duarte@nyulangone.org, and thank you to both mentors and mentees for your participation and engagement in this effort.

Conference Dates, Social Media, and Meet Ups (1)

Meetings and conferences serve as great meet-up and reunion opportunities for us Alumni. Some events, like AAPM, have official and planned dinners or times to meet, but most events rely on casual and word-of-mouth planning, especially when the conference or meeting involves subspecialties. Below is a yearly outline of some – but definitely not all – upcoming events. Mark these on your calendar now, and let fellow Alumni know which you will be attending! Be sure to visit our Facebook & LinkedIn groups to keep up to date with DUMPAA news and connect with other Duke Medical Physics Alumni!

DATE:	ORGANIZATION:	LOCATION:
January 26, 2024	AAPM-SCC Midwinter Workshop*	Universal City, CA
February 7-10, 2024	SEAAPM Chapter Meeting*	Hilton Head, SC
February 15-17, 2024	SWAAPM Chapter Meeting*	Tulsa, OK
February 18-24, 2024	SPIE Medical Imaging	San Diego, CA
March 21-23, 2024	RSS Scientific Meeting	Chicago, IL
March 21-22, 2024	MRV AAPM Chapter Meeting*	St. Louis, MO
March 23-26, 2024	AAPM Spring Clinical	St. Louis, MO
March 30, 2024	AZ AAPM Chapter Meeting*	Phoenix, AZ
April 17-20, 2024	FLAAPM Chapter Meeting*	Orlando, FL
April 22-24, 2024	VITM International Summit	Durham, NC
May 4-9, 2024	ISMRM/ISMRT Annual Meeting	Singapore
June 17-22, 2024	AAPM Summer School	Hanover, NH
July 21-25, 2024	AAPM 66th Annual Meeting	Los Angelos, CA
Sept 29 - Oct 2, 20234	ASTRO Annual Meeting	Washington, D.C.
December 1-5, 2024	RSNA Annual Meeting	Chicago, IL

*Find all AAPM Chapter meetings as they become finalized here: www.aapm.org/meetings/default.asp

Join DUMPAA on Social Media!

Facebook

Outside of posting on these pages, please send event pictures, announcements, and other media to Carolyn Eckrich, MS (2023) and Isabel Montero, MS (2023): ceckrich@wisc.edu isabel.montero@duke.edu

LinkedIn

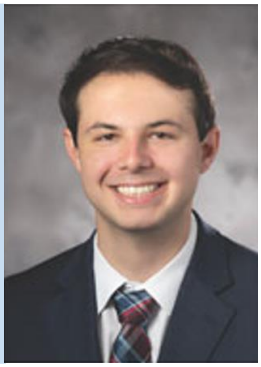
Conference Dates, Social Media, and Meet Ups (2)

Various alumni and current students at AAPM and ASTRO annual meetings

Duke MedPhys on Top of the World | Matt Goss, Patrick Sansone (1)

Matthew Goss, MS (2007) is the outgoing President of the Alumni Association, having served two full terms. He currently works in Pittsburgh within the Allegheny Health Network as a senior medical physicist. He serves on the Board of Trustees for Radiating Hope.

Patrick Sansone, MS (2023) just received his MS degree with the Program last May and is now a therapy resident with Novant Health in Charlotte. He recently partnered with Radiating Hope and summitted Mt. Kilimanjaro this past summer.



Radiating Hope

Who We Are

Cancer does not discriminate against age, race, geography, or economic status. But appropriate treatment for this horrible disease, unfortunately, is not available to all. In the United States, eight out of ten children diagnosed with cancer will survive more than ten years. However, in low-income countries, fewer than two children will survive, and many without pain relief or access to treatment.

In Africa, cancer is currently the leading cause of death, claiming more lives than HIV/AIDS, malaria, and tuberculosis combined. For cancer patients in the US, 60-70% will receive some form of necessary radiation therapy, whereas the vast majority of people living in developing nations do not have access to this crucial treatment. The reason is simple: there is a lack of radiation equipment. Worldwide standards indicate there should be one radiation megavoltage machine per 100,000-200,000 people within a region. Radiating Hope is dedicated to advancing cancer care in these countries by addressing this vital need.

Radiating Hope is a nonprofit focused on appropriate and necessary treatment and equipment for cancer care. Our mission is to improve cancer care, specifically radiation oncology care, around the globe.

How We Help

With the help of our generous volunteers and donors, Radiating Hope identifies and secures available radiation machines, transports them to developing countries in need, and trains staff on how to use these life-saving machines.

Radiating Hope has facilitated successful equipment donations to a host of developing countries, including Panama, Senegal, Ethiopia, Nepal, Guatemala, Tanzania, Honduras and most recently, Ukraine. To date, Radiating Hope has delivered 24 radiation machines, both new and donated, all over the world. Each project is a game changer for the receiving facility and has a huge impact on a country's future radiation treatment development.

Radiating Hope is already making strides toward expanding their mission and reach by partnering with various organizations in three important areas: equipment and placement; training and education; and events and awareness. In addition to these three areas, the need for direct funding through gifts and pledges are critical to the success of our program.

Each year, Radiating Hope organizes various treks, trip and climbs to all corners of the globe. Money raised from these adventures is put back into the local communities and ongoing projects in which Radiating Hope continues to participate. Everest Basecamp, Machu Picchu and Mt. Kilimanjaro are annual staples, which have engaged dozens and dozens of people over the years.

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A Student Testimonial

A recent graduate from the program, Patrick Sansone, MS (2023) partnered with RH to raise money for cancer center equipment for Moshi, Tanzania. To do this, he held a fundraising night with Alpaca Peruvian Chicken and climbed Mt. Kilimanjaro! Patrick's reflections on his experience are given below:

"This past summer I got the unique opportunity to climb up Mt. Kilimanjaro. I did not travel alone though; I was part of a group organized by radiating hope – an outstanding non-profit dedicated to increasing access to cancer treatment worldwide.

Climbing in this group set a unique pretense for my adventure. It served as a symbolic engagement with the struggles of battling cancer. I was able to walk a mile in someone else's shoes and learn from those who won that battle. Connecting with survivors while climbing left an indelible mark on my professional and personal journey. It reminded me of why I chose to join the field of medical physics in the first place. I saw first-hand the vital role of accessible cancer care and the profound impact it has on individuals and local communities.

It was most rewarding for me to witness firsthand the impact of Radiating Hope's work. Following our trip we toured a cancer center under construction on land Radiating Hope purchased. Seeing that our fundraising and climbing went to something tangible made the experience that much more impactful.

This experience atop Kilimanjaro was not just a physical challenge; it was a powerful reminder of the shared commitment to eradicating the impact of cancer globally – and a reminder for us as medical physicists to engage in it regularly."

Patrick was able to raise $2,246 for radiation oncology equipment in Tanzania, with all of the climbers in his group collectively raising $16,660! His hard work and dedication illustrate the positive impact we as medical physicists can have on others outside of our regular jobs.

Pictured above: Patrick Sansone, MS (2023) on the summit of Mt. Kilimanjaro, holding the DMP Program flag. That flag is signed by Patrick and currently resides in the DMP suite.

(Continued on next page…)

How You can get Involved

There are many ways to get involved with Radiating Hope. You can join an existing charity climb:

https://www.radglobaladventures.com/destinations.html

Including a trip to Mt. Hood in Oregon this summer 2024, with proceeds going to the Ukraine Linac Project. I (Matt Goss) am the climbing team lead and would love to have some Blue Devils on the climb with me!

You can climb on your own and raise money privately

You can make a tax-deductible donation to Radiating Hope

You can help by donating used RadOnc equipment which can be refurbished or used as-is

Volunteer to help on-site training or program development and education

Come join us at the annual ASTRO and AAPM parties

Summary

No patient should be without potentially life-saving treatment simply because technology is not affordable. Radiating Hope is changing the landscape of cancer care in the developing world. With your help and the involvement of the Duke MP program and Alumni community, we can make a difference. Happy trails!

Top Left: Kilimanjaro Climb, 2016
Left: Machu Picchu
Above: Mt. Baker trip, 2021

Alumni Spotlight: Q&A with Ross McGurk (1)

Ross McGurk, PhD (2013), DABR: Ross received his PhD from the program in 2013. While in the program, he followed the Radiation Therapy track, but his dissertation research on segmentation of PET images for use in target delineation in RT treatments gave him some valuable experiences in the Nuclear Medicine realm. He went on to complete his residency at UNC in 2015, received his DABR certification in 2017, and returned back to UNC where he continues to work in the Radiation Oncology Department as a clinical medical physicist.

Hi Ross, we appreciate your time answering these questions and letting us put you in the spotlight here a bit. You joined the program in the PhD track already having an MS in Medical Physics from New Zealand. The majority of PhD students either start out in that track, start in MS track in the program and then go onto PhD, or would have some other sort of MS degree. What was that like having a strong background as well as coming in from another country with perhaps different regulations, testing requirements, or vendor jargon?

My background ended up being the way it is due to a long term goal I had which was to come to the USA after I finished my undergraduate degree. I was looking for ways to do so somewhat affordably and knew someone who had applied for a Fulbright Scholarship the year before I did. The Fulbright method seemed like a good way to get my foot in the door without committing to enrolling in a graduate program straight away. So I crafted my application, interviewed, and was fortunate enough to be selected with an application that detailed some research I was interested in pursuing with a group at Mass. General in Boston. With the delay between finishing my undergrad degree and when I was going to be able to travel to the US, I spent the time working on my MSc which ended up being a nuclear medicine project quantifying bone scan activities. This was my main introduction to a clinical environment, handling an IRB application, and helping to run a small clinical trial as part of the work. So I didn't actually have any real RT experience when I left NZ but I knew that was where I wanted to focus.

With that said, I think the main plus with my background was that it was very helpful in giving me a competitive application to Duke's program. The caliber of my classmates who also joined the program in 2008 was fantastic, and the academic environment was super rigorous. I think having a lot of prior medical physics-specific knowledge to fall back on let me spend more time on some concepts and assignments I didn't have much knowledge or experience with and that let me become an overall stronger student.

Your dissertation and research had overlap between DI/NM and RT areas of our field involving PET imaging for radiotherapy applications. Do you maintain that overlap in your career? Do you feel physicists and our field's training could stress overlap like that between different portions of the field, or do you think it works well or best having some separation and specialization in education and training?

I don't do as much direct work with PET or NM images as I did during my dissertation, but it never hurts to be as familiar as you can be with the data you deal with on a day-to-day basis. I feel the use of MRI has skyrocketed with new image sequences beyond just your standard T1/T2 images, so there's always new things to learn about. I do think there's just too much data and too many different systems out there to realistically be excellent at it all. However, as a physicist now more focused on the RT-side of things, in general the best set of skills I've found helpful is having a really solid knowledge of how your overall treatment process works. From how your CT sim works, how your therapists set up patients, and what equipment you have available in your clinic and its advantages and disadvantages. Further, given the increasing use of different modalities for treatment planning, having an understanding of how each modality is acquired and processed into an image, and knowing how to best fuse the "other-modality" data to your planning CT is critical to preserve the highest fidelity you can to help the MDs contour.

You graduated in 2013 and joined the dark side at UNC to complete your residency. Joking aside, was residency a true requirement at that time? Was there a Match process at the time? How chaotic was that for you and/or other graduates you knew?

Residency was not a requirement, but around that time I had a prior obligation to return to NZ to "pay back" my Fulbright scholarship (as well as a second scholarship I was awarded from NZ while at Duke) when I finished my US-based education. My then girlfriend, now wife, was enrolled at UNC in grad school, and we wanted to be together for as long as possible until I literally had to leave the country. I applied to programs all up the East Coast and was very lucky that UNC's program had opened a few years prior and was taking applications. Being accepted to UNC's program was a huge bonus for both my relationship AND for my own career development since during my residency we decommissioned the Siemens Linacs, moved to Elekta, retired the PlanUNC treatment planning system for RayStation, and all throughout this time there were several modernization programs going on, so I had the opportunity to commission a lot of new equipment as well as be involved in research.

(Continued on next page…)

Alumni Spotlight: Q&A with Ross McGurk (2)

Are you involved in UNC's residency program currently? If so, how has it been on the other side, with the field having about 10 years now of residency requirement, more residencies adding or staying around each year, and the full ABR process in a sort of equilibrium?

My involvement with the UNC residency program is limited to helping review applications, interviewing candidates, and then mentoring certain rotations (namely, Machine QA/commissioning/IGRT stuff). My main observation is that as the ABR residency process in general, and UNC's program specifically, has matured, it's become a lot more structured and formalized, which I think helps keep residents in our program on-track for a successful experience. With the quality of candidates I see each year, I do question whether I would make the cut these days with such a limited number of residency spots! So I think there are still capacity issues in the system that would benefit from continued efforts in the field to develop new training positions.

What is something you most gained, took away from, or utilize most from your time at Duke/ the Medical Physics Program?

I look back on the time in the PhD program as one of the most fun periods of time in my life. I made such good friends both inside the program and through the wider grad school. I also found helping Olga run the open houses in the early days was such a bonding experience which helped develop a sense of co-ownership of the program together with the faculty and admin staff who put so much back into the program.

What's a typical day like for you? Are you involved in any research, or is there any cool research going on at UNC you could share about? Is this what you expected it to be like through graduating and residency, or any surprises?

I'll either be on-site or remote, and after our morning department huddles, I will begin checking treatment plans, doing weekly chart checks, or reviewing machine data to prioritize repairs or issues. The physics team splits up the duties across a few main "roles" each day, so every day may be spent prioritizing different clinical tasks. My main responsibility at UNC is helping manage some of the fleet of Elektas we have in the UNC system, so a lot of my non-clinical time is spent on quality improvement projects related to that. My main area of research involves a lot of the quality and safety initiatives we have in our department. UNC has really pushed learning/borrowing approaches from "high reliability" industries like airlines and nuclear power and how best to apply those principles to radiation therapy and we routinely analyze our "good catch" database for learning and quality improvement initiatives.

Outside of medical physics and career, how is life treating you? Any hobbies…or ones you've meant to pick up by now?

Family life keeps me busy, so I don't have a lot of spare time for hobbies. But I dabble a little in landscape design now that I have a backyard, so my pandemic hobby was re-designing that. I'm always thinking about and exploring ideas for new things to try in the garden. I'd really like to get more serious about running again and do a third marathon at some point.

Do you have any advice for younger alumni or current students? What's something you wish you knew before now?

Depending on where you work, this can be an incredibly demanding career, especially trying to balance family and work. It's something I've struggled with, especially transitioning into being a dad. I think finding at least one thing outside of work that you personally get satisfaction out of doing, and maintaining that, can go a long way for mental health.

You've been in the Triangle area now for almost 15 years. How has Durham/Duke changed in that time? For alumni who moved farther away or maybe haven't visited in a while, what's something they'd be shocked by or happy is still the same?

I used to run along the Tobacco Trail a lot when I was in Grad School, and the amount of development on the southern portion of it where it crosses into Cary and Apex is crazy to me. It used to feel like you were in the wilderness, but now you pass through one new housing development after another. I'm super happy our local pizza and trivia spot from my grad school time (Tomato Jake's) is still going, because it's where I hung out with a lot of my friends outside of the MedPhys program, and where I met my wife.

Do you have any funny or unique memories from your class or your time in the program?

I remember being in the first radiotherapy class where we had to create a MATLAB-based BED/EQD2 calculator and getting into a good-natured arms-race with a fellow student. Both of us kept adding more features and functionality until both of our projects could almost be considered a commercial product. It was ridiculous how much time we spent on effectively implementing one equation... Also, planning and hosting the off-book graduation cocktail party at the end of our second year was a ton of fun.

And obviously the important one: Tar Heels or Blue Devils?

Having not grown up in the environment where college sports are such a huge deal, I wasn't super aware of the rivalry until I actually got to the US, and obviously I became VERY aware of it when I got to Duke. I happily supported the Blue Devils throughout grad school, including going to camp out, and was fortunate enough to see a Duke-UNC game at Cameron. Importantly, even though UNC pays my salary now, and how much I enjoy working with my colleagues there, the Final Four loss against UNC in the tournament in 2022 hurt way more than I was expecting, so I'm taking that as a sign that I'll be staying a Blue-Devil fan.

Alumni Spotlight: Q&A with Bria Moore (1)

Bria Moore, PhD (2018), DABR: Bria received her PhD from the Program in 2018. While in the program, she followed the Medical Health Physics track, performing research in the Radiation Safety Department. She went on to complete her residency at Emory University in 2021, she received her DABR certification in 2022, and she now works as a consulting imaging medical physicist for Radiological Physics Associates.

Hi Bria, thanks for letting us catch up and ask how things have been going for you. You graduated from Duke with your PhD. Did you always want or plan to have a PhD? What drew you to that if so?

I think as with most things in my educational career, I did not have a plan. I had a really great mentor during my BS, a Duke graduate, who spoke highly of getting a PhD. At that time, I was settled on Medical Physics as a field, but I wasn't sure exactly where I wanted to end up after school, and he pushed me to pursue my PhD because he believed in my research and knew that the degree would give me the most flexibility upon graduation. So, I went for it.

Your dissertation and research was within the health physics area of the program under Dr. Yoshizumi but was also about dosimetry that could be used for RT applications. How do you view the distinction and overlap of health physics with other areas of the field?

I think in many ways, HP felt like the red headed step child of Medical Physics, but I had the pleasure to do work that highlighted the overlaps. I had the opportunity to work with great physicists and physicians in a variety of fields of study who offered a lot of clarity and expertise. Health Physics does tend to focus heavily on the safety and dosimetry of radiation, but that is the basis and foundation of all areas of the field. The intent of Radiology in general is to gain the most good and do the least harm. Health physics is vital in ensuring we do the least harm, and I'm proud to have the as the back bone of my educational experience.

You went on to do a residency at Emory University in Atlanta that was an imaging centered residency and now work for a consulting group that I assume is also imaging based. How has that transition been both in terms of focus of knowledge in area of study as well as going from academic medical centers to a consulting group setting?

While interviewing for residencies, I fielded this question a lot. "Are you sure you're in the right place?" I worked hard to make sure that I met the didactic requirements, and I knew I wanted to focus my career in imaging, so I collaborated with radiologists and got really good at parsing out any related imaging experience from my dissertation. While at Emory, I thrived. I had amazing teachers and support systems, and I learned a lot of hands-on experience, but I also gained a ton of confidence in my skills and abilities. The residency there was a hybrid program, so I actually spent half my time training in the field with consulting physicists and the other half working in an academic hospital, so it was the perfect stepping stone away from academia. I still participated in a good amount of research during my time there, but in more of a consulting role. I also got a chance to research and explore things that interested me without being within the confines of a lab. The consulting side is a very different world, but it challenges me just as much as research. In most cases, I am the hospitals single expert on a particular modality or radiation in general, and I get lots of questions on the fly that I need to answer quickly and concisely. Some physics concepts are difficult, but I enjoy the challenge of explaining MRI failures to a director with no MRI experience or explaining the steps of testing CT equipment to a curious xray student. It keeps me on my toes.

Looking back on the time when you were getting into the program and first getting involved with medical physics, do you feel on the other side in a career that medical physics means, and is, what you thought it would be? Has anything surprised you or changed more than you thought it would?

I work at a small consulting firm, and one of the most interesting things I've learned about myself is that I've got a decent head for business. Since we are a smaller company, I've gotten more active in the back-end side of Medical Physics with planning new service lines, updating client tracking, and templates, and these are things that I enjoy. I always assumed that physics would only allow me to be a scientist, which I'm great at, but my career has allowed me a chance to be a speaker, a teacher, an operations specialist, a (mediocre) graphic designer, and so much more.

(Continued on next page…)

Alumni Spotlight: Q&A with Bria Moore (2)

What is something you most gained, took away from, or utilize most from your time at Duke and in the Medical Physics Program?

Dr. Yoshizumi really pushed me to ask lots of questions, mostly by asking me lots of questions. The point of this exercise – or what I took from it at least – was that it's worth taking the time to understand and be understood. We fielded requests from lots of other departments, and it was important to understand exactly what was needed of us and be able to communicate exactly what services we were capable of providing. This made me a much better communicator, and this is something I use almost every day.

What's a typical day like for you? Are you able to do research at all, or do you miss that if not having come from academic centers and a PhD background? Favorite and least favorite parts of the job?

One of my favorite parts of my job is that my days aren't typical. Sometimes I'm up early to drive out of town to service a client. Sometimes I'm up later doing invoicing. Sometimes my day is just emails and phone calls with concerned clients and scheduling. Since I completed the extra year of residency, I'm board-eligible in Nuclear Medicine, which allows me to service all modalities, so I get a good mix of machines to work with regularly. Least favorite part of my job... scheduling. It takes a lot of back and forth and finding the right people, and it can be a pain, but I'll call in the office staff if things get too hard. I'm not currently doing any research at all, and if I'm honest I don't miss it yet. Writing is one of my least favorite tasks, so I'm currently enjoying the break from abstracts and grant applications. I do still get some interesting physics questions to answer from time to time but no formal research.

Outside of medical physics and career, how have you been, and what have you been up to?

I've been good. Nashville has been great to me. I'm closer to my family than I have been in years, so getting to spend time with them and travel with them has been great.

Do you have any advice for younger alumni or current students, or what's something you wish you had known before now?

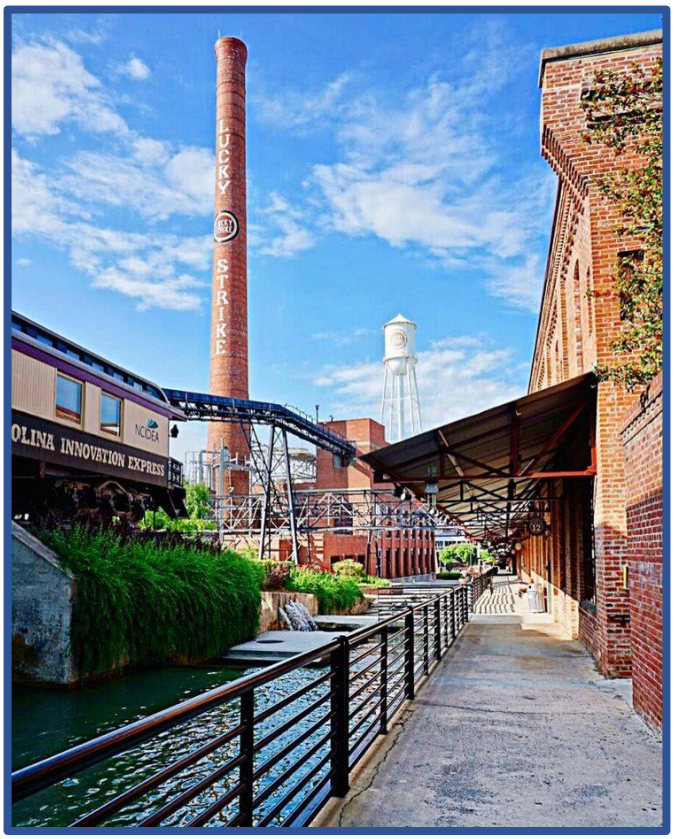
I have two pieces of advice. 1) Take the leap. I had so many amazing experiences I was absolutely terrified of in the beginning. I've started over in many cities and challenged myself to do things I've never dreamed of, but there is joy just on the other side of fear. 2) Know your worth. One of the best pieces of advice I ever got as a nervous speaker about to present my work was that they are experts in so many things, but the only person who knows your work is you. You are the expert on the podium. I still feel that I am early in my career, and it was harder fresh out of school, but I remind myself often: plenty of people have my credentials, but no one else has my experience.

What's a place or thing you miss most about Durham/Duke/North Carolina?

The food! Definitely the food! I miss Guasaca and Tobacco Road and the farmer's market where I'd buy two focaccia breads so I could eat one in the car on the way home. Not the bbq…I'm still from Memphis. But all the other foods.

Do you have any funny or unique memories from your class or your time in the program?

Why is this the hardest question? I don't know if this one counts, but it's something I miss. I planned the interview dinner every year, and I really miss interacting with prospective students. And it's also a food related memory. I think I might just be missing the food a ton.



American Tobacco Campus in Durham (IG: @bestofthebull)

Program Updates: From the Director's Desk | Mark Oldham, PhD

MEDICAL PHYSICS
GRADUATE PROGRAM

The warm glow of the holiday season is here, and it is a great pleasure to wish you all happy holidays and every good wish for 2024! Next year will truly be a special year for our program as it marks 20 years since the formal founding. We are excitedly beginning to plan a 20th anniversary celebration, which will be at Duke in December 2024 - more info to come on that, but please put it on the calendar for consideration.

As I reflect on 2023, my first thought is a strong sense of gratitude that our program is strong and in good health emerging from all the uncertainty and tribulations of the last years. We have weathered the storms well as demonstrated by our fundamentals, starting with our graduating class of 2023 whose placement metrics were excellent, with all 24 graduating students placing in residencies, PhD programs, or other positions, and many obtaining their first choice at prestigious institutions. Similarly, our recruitment remains strong: this year we matriculated 21 MS and 9 PhD for a total of 30 students. This was the largest class since 2010 (32 students) and the second year in a row of a large PhD cohort, which reflects advisors with successful funding. Our recruiting metrics are trending well with rising average GPA (3.7 vs 3.61 for 2022) and higher acceptance rates.

A few highlights worth noting from this past year include much appreciated activities and interactions with our Alumni (voices of alumni and mentoring program) and a research symposium showcasing student research and honoring our founding Directors, Drs. Dobbins and Samei, and their achievements as presidents of the AAPM. The renovation of the Hock suite was a widely appreciated step towards enhanced small group work and remote and teleconferencing activities. A substantially reworked qualifying exam has been approved for next year including a new part 2 exclusive to PhD students. The first funding of faculty seed fund awards to stimulate new interdisciplinary research leading to exciting new student projects now at $15k each were awarded this past month. The Program also now has a revitalized new website (check it out here!). In May a DEI initiative was approved which supports recruitment of a healthy and diverse PhD student body where the program adds an additional year of funding to the Dean's award. A major revision to the bylaws was approved by faculty, which strengthens MPAC and also formalizes the role of one at-large-member position as chair of FAC (Faculty Affairs Committee).

Looking forward to 2024, we are planning more improvements in the curriculum and to implement relevant MP3.0 initiatives, including a focus on skills including clinical, engineering, disease knowledge, and professionalism. For more details on any of these items briefly mentioned above please drop me a note.

Thank-you to all (students and faculty!) for your continuing efforts to make our program a great place to study and teach, and best wishes for the holidays and a very happy New Year!

Mark Oldham, PhD – Program Director

Program Updates: Program Executive Team and Track Directors

Mark Oldham, PhD
Program Director

Joseph Lo, PhD
Associate Director

Dean Darnell, PhD (MS, 2015)
Director of Graduate Studies

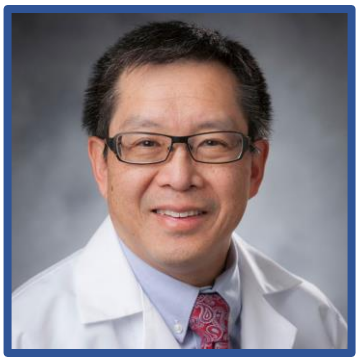
Olga Baranova, PhD
Program Manager

Katherine Hand
Program Coordinator

Scott Robertson, PhD (2017)
DI Track Director

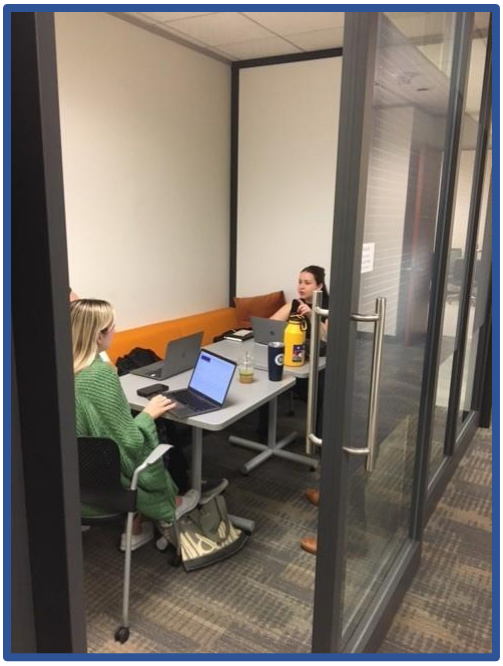
Chu Wang, PhD
(MS, 2013; PhD, 2015)
MHP Track Director

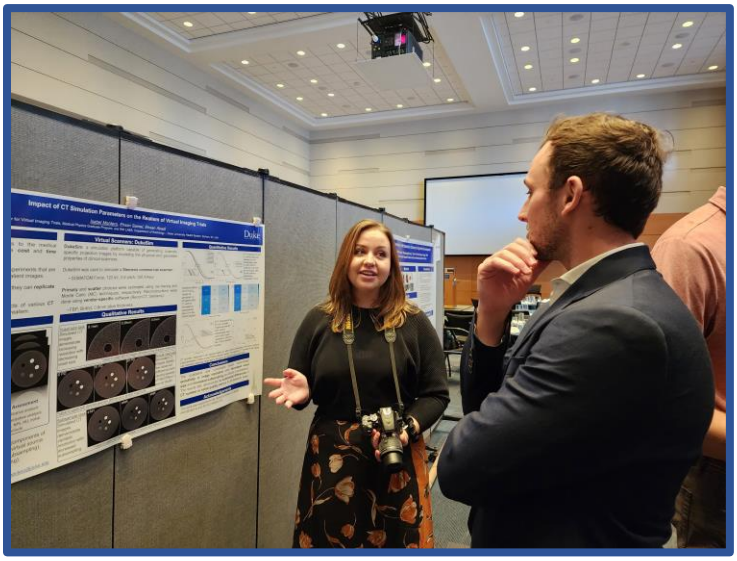
Terrence Wong, MD
NM Track Director

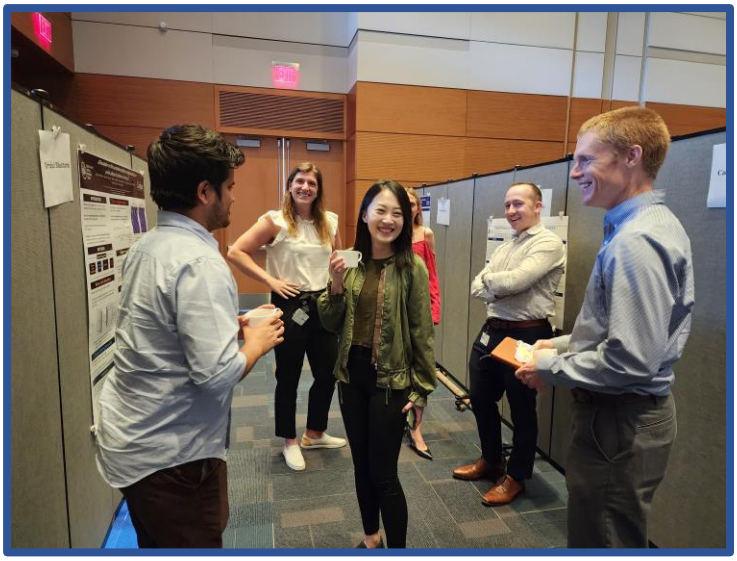


Oana Craciunescu, PhD
RT Track Director

Program Updates: 2023 Events, Hock Suite Renovation





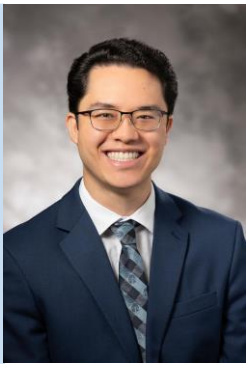



DUKE UNIVERSITY
MEDICAL PHYSICS

Program Updates: 2023 Events; Intramurals, IDMP, & Holiday Party

Student Spotlight: SLAC President | Tyler Kay

Tyler Kay (MS) is a second year MS student with the entering class of 2022 from Huntersville, North Carolina. He obtained his bachelor's degree in Physics at the University of North Carolina at Chapel Hill with a second major in Philosophy. He is the president of the Student Leadership and Advisory Council. His thesis research is on quantifying FLASH normal tissue sparing with Dr. Mark Oldham.



Introduction

It is hard to believe, but another year has gone by, and what a year it has been for the Duke Medical Physics (DMP) program! It has been a year filled with academic challenges and triumphs, enriching social outings, and great growth. This year, I feel the theme was community: working together, supporting one-another, helping each other learn and grow, and making the best of each moment together. We hope to nourish and strengthen this wonderful community into the new year and beyond!

SLAC members for the 2023-2024 academic year. Top, from left to right: Ethan Malin (MS), Tyler Kay (MS), Lindsey Bloom (MS), Edward "Teddy" Criscuolo (PhD), Zachary "Zach" Whipps (MS). Bottom, from left to right: Zachary "Zach" Gude (PhD), Jessica "Jessie" Dominici (MS), Beth Reed (MS), Evangelina Wong (MS). Not pictured: Olivia Dickinson (PhD), Mridul Bhattarai (PhD).

Student Leadership and Advisory Council (SLAC)

As always, SLAC has been hard at work to support students. We successfully formed mentor-mentee pairs for the incoming first year students and had program sponsored mentor-mentee lunches to foster these pairings. We also hosted a BBQ to celebrate the first year students completing their orientation (which has the infamous math boot camp)! These events, coupled with the many other events organized by SLAC, helped foster the sense of community we all love and strive to maintain. To further expand this sense of community, we plan to have the Medical Physics Administrative Council representative on SLAC act as a student representative for DUMPAA. This will forge a more direct link between current students and alumni. We are also looking to collaborate with the Society of Health and Medical Physics Students at the University of Florida and potentially other programs in the coming year!

Duke Kunshan University (DKU) Student

The tradition of having students from DKU come to Durham for the fall semester continued this year, but in a unique way – only one student, Neville (MS) came to spend the fall semester with us. Despite not knowing anyone in the area before arriving in Durham, Neville's warm personality and bright spirit helped him instantly make friends with everyone in the program. Although he was only with us for a semester, he left a lasting impression on the community; it felt as if he had been with us when we first started the program. In honor of the difficulties he overcame and the impact he had on the program, we surprised him with a going away party before he left Durham. This is a perfect example of how engaging and fulfilling the community here truly is.

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Student Spotlight: Social Activities | Jessica Dominici (1)

Jessica "Jessie" Dominici (MS) is a second-year MS student with the entering class of 2022 from Tampa, FL. She entered Duke Medical Physics after obtaining her bachelor's in Nuclear Engineering at the University of Florida. She is a member of the Student Leadership and Advisory Council, where she serves as Social Coordinator and Treasurer. She is conducting her thesis research under the guidance of Dr. Chu Wang.

What a fantastic year it has been for social activities in the graduate program! We've curated a diverse range of events to bring our community together, foster connections, and create lasting memories. From welcoming gatherings to competitive tournaments and festive celebrations, here's a recap of the exciting social events that made this year truly special.

August – Welcoming Picnic & Welcoming BBQ

Welcoming Picnic: To kick off the new school year, we hosted a delightful Welcoming Picnic at Duke Gardens. Faculty and students came together to enjoy great food and engage in a fun bingo event that helped everyone get acquainted.

Welcoming BBQ: Celebrating the completion of the first year's math boot camp, we organized a students-only Welcoming BBQ. Burgers and hot dogs sizzled on the grill as students relaxed, unwinding after the challenges of boot camp.

September – Fall Retreat

Our Annual Fall Retreat at Haw River was a weekend filled with exciting activities. The highlight of the retreat was undoubtedly the epic Cup Pong tournament. In a surprising turn of events, the underdog team of Tyler Kay (SLAC president and 2nd year MS student) and Zach Whipps (SLAC Outreach coordinator and 2nd- year MS student) emerged victorious, defeating the four-year reigning champion Trevor McKeown (PhD) and first-year rookie Ethan Malin (SLAC first-year student representative) in a tense overtime. The whole class erupted in celebration and hoisted Tyler and Zach on their shoulders. Fun Fact: This was only Tyler's second time playing cup pong!

Other activities at the retreat included thrilling relay races with "Survivor-esque" challenges, Women of Medical Physics-sponsored events, insightful faculty talks, and the cozy ambiance of a campfire with s'mores. It was a weekend that created lasting bonds for our diverse group of students.

October – State Fair Trip

In October, we took a trip to the state fair. Our group indulged in a variety of delicious fair foods and had a blast exploring the exhibits and attractions.

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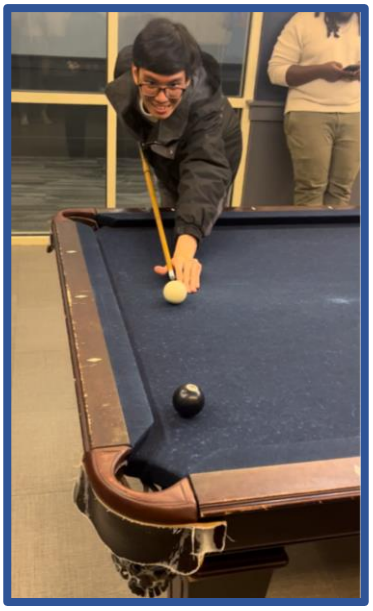
November – International Day of Medical Physics and Friendsgiving

International Day of Medical Physics: To celebrate the International Day of Medical Physics, we organized a memorable day featuring Chipotle catering for students and faculty, followed by a lively round of Medical Physics Trivia.

Friendsgiving: Friendsgiving brought our community together for a festive potluck, where everyone contributed a dish to create a diverse and delicious feast. The event was enhanced by the presence of shuffleboard and a pool table, providing entertainment and friendly competition. Neville, a current MS student, is pictured below during a pool game.



December – Annual Holiday Party at Duke Gardens

The year concluded with a spectacular Annual Holiday Party at Duke Gardens. A live DJ set the mood for a night of dancing and celebration. The event included a toy drive that raised a significant number of items, a surprising raffle where a 4-year-old emerged as the grand prize winner, holiday-themed trivia that tested our knowledge, and the wrapping game (an event where teams of two collaborated to wrap each other in the most beautiful or funny way possible).

As we reflect on this remarkable year of social events, we eagerly anticipate the prospect of extending these connections into the upcoming semester. The joy of planning and participating in these gatherings has not only enriched our graduate program but has also solidified the bonds that truly makes Duke Medical Physics a family!

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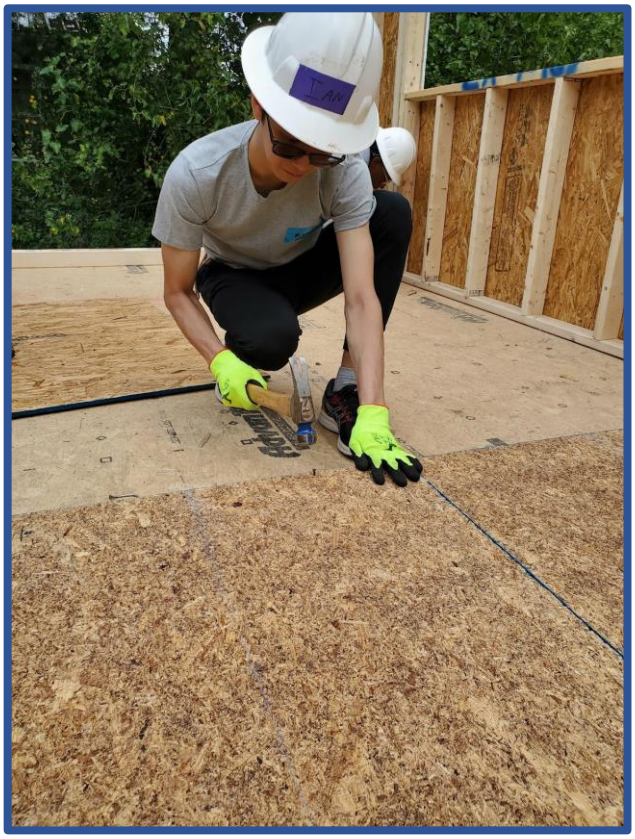
Student Spotlight: Outreach | Zachary Whipps

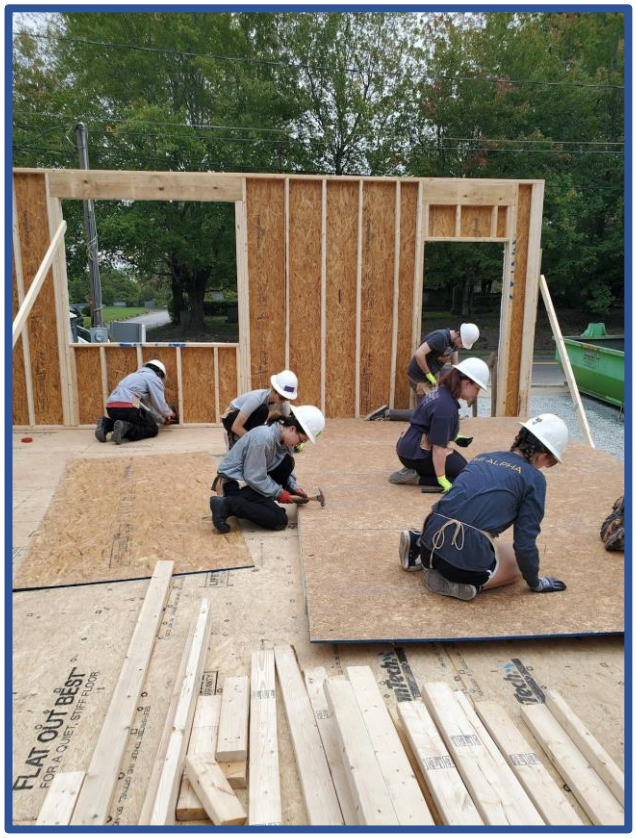
Zachary "Zach" Whipps (MS) is a second year MS student with the entering class of 2022 from Casper, Wyoming. He obtained his bachelor's degree in Physics from Cornell University. He is the outreach coordinator for the Student Leadership and Advisory Council. His thesis research is on AI for breast positioning in mammography.

We've had a lot of opportunities, and the students have done a great job helping the DMP program give back to the community. In September, students volunteered with Habitat for Humanity! We helped put up three walls for a local affordable housing project. It was many of our first times actually working construction (since we really love sitting behind our computers), but still it was a great success!

Our Holiday Party featured a toy drive for Durham Rescue Mission. It was especially successful, as students and faculty donated an absolutely massive amount of toys. I wish I had taken a picture- the donation box was overflowing!

Starting next semester, we will also be making jewelry for cancer patients in DUHS!





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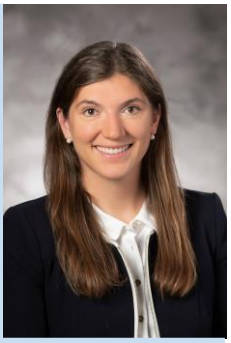
Student Spotlight: Women of Medical Physics | Bloom & Reed



Lindsey Bloom (MS) is a second year MS student with the entering class of 2022 from Baltimore, MD. She entered the Duke Medical Physics program after obtaining her BS in Biophysics from Bucknell University. She is the MS student representative on the Student Leadership and Advisory Council and serves as the Vice President of Special Projects from Women of Medical Physics. Her research is with Dr. Oana Craciunescu on real-time image-guided adaptive HDR brachytherapy for GYN treatments.

Beth Reed (MS) is a second year MS student with the entering class of 2022 from West Virginia. She entered the Duke Medical Physics program after obtaining her BS in Physics and Biology from Washington and Lee University. She serves as the Equity, Diversity, and Inclusion representative on the Student Leadership Advisory Council as well as the president for WoMP.

WoMP
Women of Medical Physics

Hello from WoMP! Following the conclusion of orientation, we welcomed new and returning students with a WoMP brunch filled with good food, good coffee, and amazing community. To kickstart events centered around the WoMP values of respect within the Duke community, we hosted a privilege walk at the annual Medical Physics Graduate Program student retreat, focusing specifically on gender privileges that exist within the realm of medical physics. We plan to host a movie night in the new year where we will watch “Picture a Scientist”, which focuses on the inequalities women face in STEM. If you’re looking for a movie night, we recommend watching it as well or keep an eye out for a notification on when we will be hosting! Virtual attendance is always welcome. We are looking forward to more events in the spring where we hope to welcome any alumni that wish to partake! We are glad to represent women in our field and are excited to create a space to uplift not only women but also all medical physics grad students and beyond.

The 2023-2024 WoMP Executives are Beth Reed (MS), Lindsey Bloom (MS), Julianna Detrick (MS), and Kayli Buchli (MS).

Zachary Dean Shrock Memorial Scholarship | Spencer Lynch

Spencer Lynch (MS) is a 2nd-year MS student in the Duke Medical Physics Graduate Program. He earned his BS in physics and mathematics at East Carolina University (ECU) in 2022. While at ECU, Spencer published a paper on a novel mechanism for the degradation of fibrin fibers in blood clots. At Duke, he is now advised by Dr. Dean Darnell and Dr. Trong-Kha Truong in the Duke-UNC Brain Imaging and Analysis Center (BIAC) where he's working on his thesis on time synchronization of multi-modality data for synthetic MR image reconstruction. In his spare time, Spencer runs a 3D printing business and YouTube channel and enjoys playing piano, guitar, and singing.

Donations to Zach's scholarship may be made at the following link: https://www.gifts.duke.edu/?designation=3992984

I am deeply honored to have received the Zachary Dean Shrock Memorial Scholarship for the academic year 2023-2024. Zachary's principles of honesty, inclusivity, leadership, and service have left an enduring impact on the Medical Physics Graduate Program, inspiring me to uphold these values. His commitment to personal and programmatic excellence serves as a guiding benchmark in my academic journey.

Supported by the Zachary Dean Shrock Memorial Scholarship, I had the privilege of attending the 2023 ISMRM annual meeting in Toronto, Canada. This scholarship not only facilitated my poster presentation but also extended my stay, allowing me to engage in enlightening discussions and explore the vibrant city. The ISMRM events provided valuable networking opportunities with students worldwide, attendance at impactful keynote talks, and connections with future colleagues and mentors. I am profoundly grateful for the opportunities this scholarship presented, molding my academic and professional path in unforeseen ways.

In my research at the Brain Imaging and Analysis Center under the guidance of Dean Darnell and Trong-Kha Truong, I've focused on synchronizing multiple modalities of time series data. By combining MR images, ultrasound, and video footage, we employed machine learning to create synthetic MR images solely from ultrasound data and video footage. This innovative approach enables us to mitigate motion artifacts in images acquired in the scanner and to produce MR images beyond the end of the scanning session.

I aim for our work to embody the values and ideals cherished by Zachary. The Zachary Dean Shrock Memorial Scholarship has not only been vital financial support but also a guiding force, influencing not only my scientific pursuits but also my impact on those I interact with daily. My heartfelt thanks to those dedicated to preserving Zachary's memory.

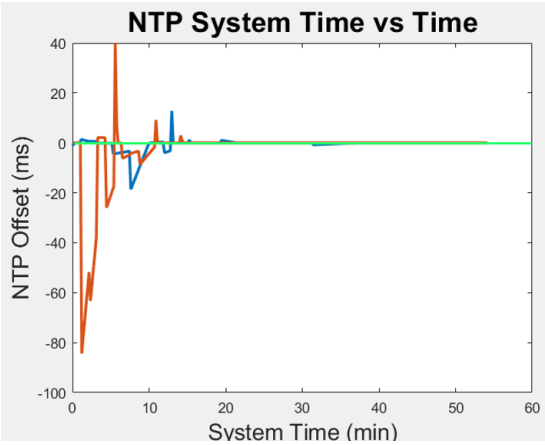


Figure showing the convergence of two computer system clocks to a third computer acting as a Network Time Protocol (NTP) server. The first client (blue line) was a modified Raspberry Pi CM4 recording a patient's breathing with an ultrasound probe during an MR image acquisition. The second client (red line) was a Raspberry Pi 3B+ which recorded pulses from the MR scanner. The server computer (green line) was a laptop inside the control room. All were connected across a wireless LAN.

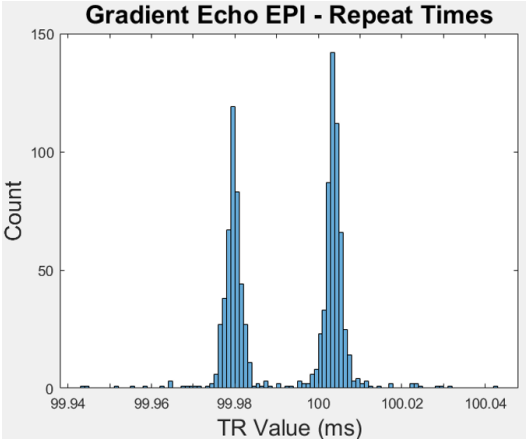
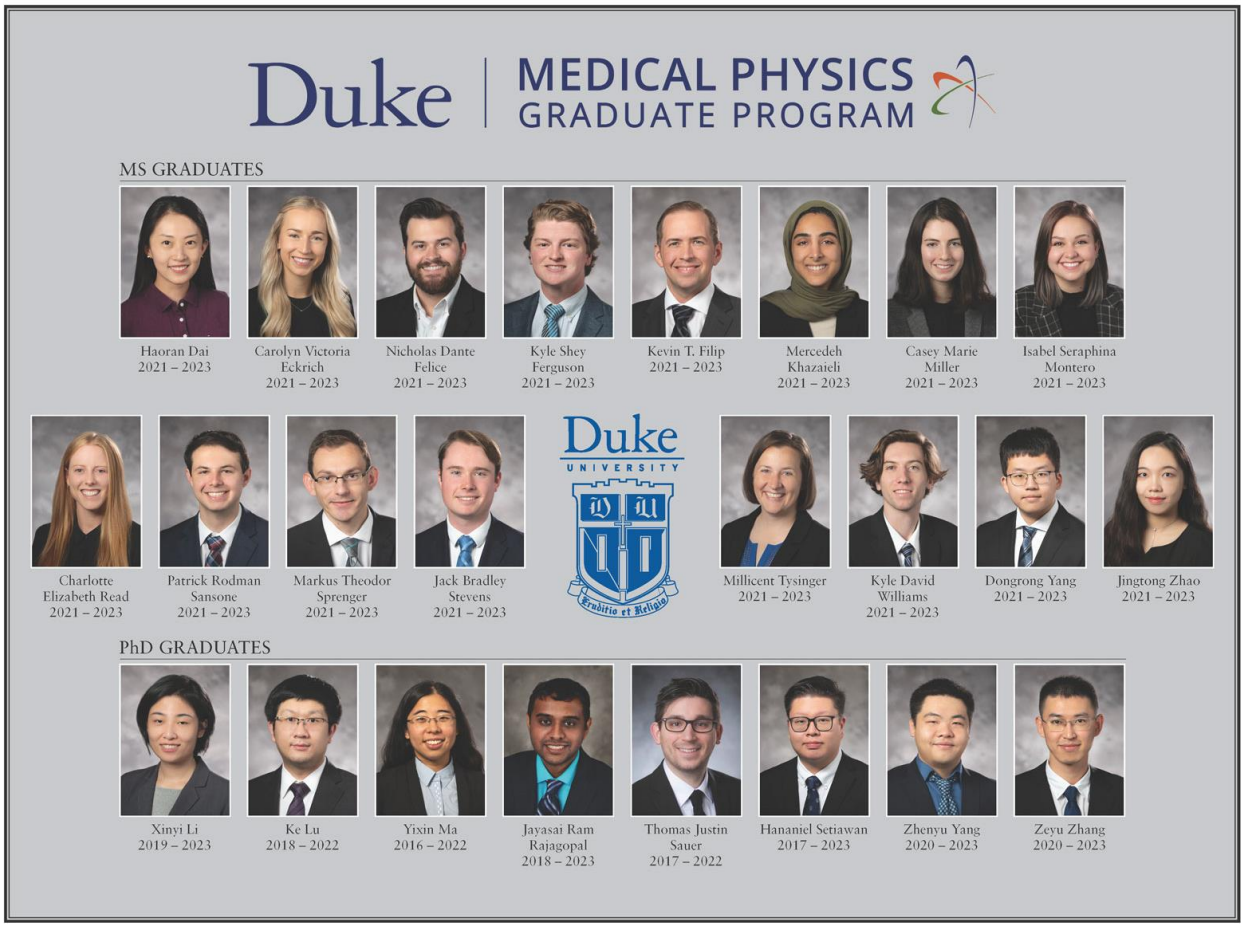
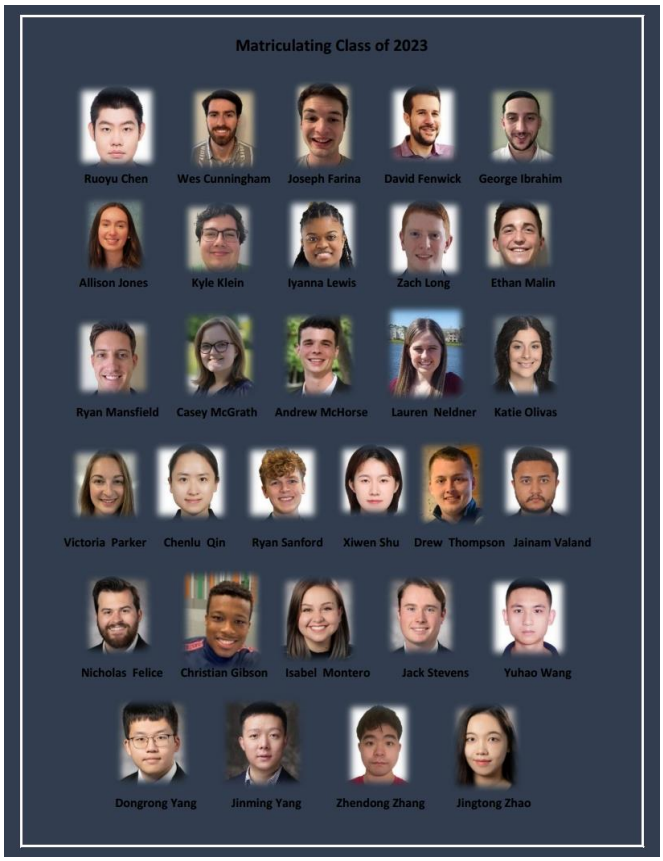


Figure showing the recorded TR times for a Gradient Echo EPI pulse sequence. A Raspberry Pi 3B+ was modified with a voltage clamping circuit and connected to an MR scanner. The pulses were timestamped and reconstructed using the given pulse sequence. The timestamps were fed into a machine learning algorithm with wirelessly acquired ultrasound data to generate synthetic MR images.

Graduating Class of 2023 and Current Student Rosters



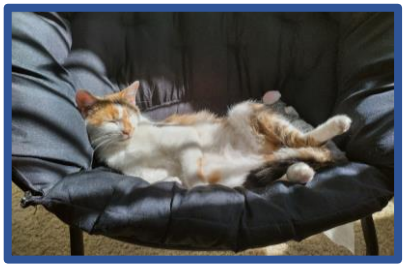


Michael Trager, MS (2017): I have moved from NYC back to Long Island where I grew up and have accepted a new position as a Senior Medical Physicist in Radiation Oncology at Northwell Health in Lake Success. I will be doing routine clinical physics tasks with an emphasis on brachytherapy.

Jered Wells, PhD (2013): I changed jobs in November. I left LANDAUER Medical Physics and returned to Duke University back to work with the Clinical Imaging Physics Group. It feels good to be back home!

Angela (Paolucci) Nimz, MS (2016): I married Drake Nimz this past year.

Xinyi Li, PhD (MS, 2019; PhD, 2023): I adopted my cat Yaya 3 months ago, and she is still so sweet!



Odunola Babawale, MS (2021): I recently got a research training award from the Canadian Cancer Society. See more information at the following link: [Research Training Awards Competition results for Master's and PhD | Canadian Cancer Society]

This award is intended to support growth and innovation in the next generation of diverse cancer researchers across Canada at the Master's, Doctoral and Postdoctoral levels. It will support individuals in conducting cancer related research while fostering long term connections with Canada's cancer research ecosystem through a combination of exposures to other disciplines, knowledge translation, engagement, and mentorship opportunities.

Odunola Babawale
University of Alberta
4D Monte Carlo dose estimation for non-invasive intra-fractional tumour-tracked RadioTherapy (nifteRT) in Alberta Linac-MR

2023	$60,000
2024	$50,000
2025	$50,000
2026	$50,000

Jihyun Yun, University of Alberta

Jordan Houri, MS (2021): Jordan Houri was an invited speaker at the annual meeting for the Pennsylvania-Ohio-West Virginia (POWV) chapter of AAPM. He spoke on personal radiation shielding for astronauts.

Alumni News, Pictures, & Updates (3)

Kai-Cheng Chuang, PhD (MS, 2020): Kai-Cheng Chuang, who graduated from DKU with his MS in 2020, received his PhD in Physics this past May from the LSU Medical and Health Physics Program. He has since returned to the Duke network as a current therapy medical physics resident at Duke University Medical Center. He is pictured here on graduation day with his advisor Owen Carmichael, PhD.

Sabrina Campelo, PhD (MS, 2020): I have just recently graduated with my PhD from Virginia Tech-Wake Forest School of Biomedical Engineering and Sciences. I also accepted a radiation physics residency at MD Anderson in Houston that I will be beginning in September 2024! In the meantime I am transitioning into a Postdoctoral Fellowship at Georgia Tech and Emory University.