PENN DERM

SKIN BIOLOGY & DISEASES RESOURCE-BASED CENTER

SPRING 2021

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Present-Day Duhring Wing

Louis Adolphus Duhring, c. 1867

Did You Know?

Louis Adolphus Duhring, MD, (1845-1913), Professor of Dermatology at the University of Pennsylvania, was the leading expert in skin pathologies of his time. At the time of his death in 1913, he became a benefactor of the University and Penn received $200,000 from the Duhring Estate. This translates to roughly $5.35 million in today's monetary terms. In 1915, Dr. Duhring was honored with the naming of the Duhring Wing, which was a new six-story addition to the Furness Building in the heart of campus. The Duhring Wing was part of the University's Furness Library, which is now termed the Fisher Fine Arts Library.

CHAIRMAN'S MESSAGE

Dear Friends and Colleagues,

For the first time in what seems like years, the prospect of hope is peeking over the horizon. While there is still much work to do and there are many losses we still feel, the world is beginning to return to a new sense of normal. As a result of the tireless work of medical professionals and researchers globally, the scientific community has identified effective preventions and treatments in the fight against the deadly novel SARS-CoV-2 virus. We should all be proud of our colleagues' dedication and the remarkable creativity that has been demonstrated during this time.

Despite the limitations imposed by the pandemic, we were grateful to find new ways to gather virtually and participate in some of our hallmark events. These included hosting the M. H. Samitz Lecture, the Penn Skin Biology and Diseases Resource-based Center (SBDRC) Symposium and Trainee Retreat, and our Penn Academy and Skin Health (PASH) Spring Session, to name a few. The commitment demonstrated to our students and trainees remained unwavering by our dedicated faculty finding inventive ways to promote collaborative work and disseminate knowledge.

Here at Penn Dermatology, we are proud to be leading the way in innovative and novel approaches to treatment. From the discovery of volatile molecules that can be used to detect COVID-19 to the integration of new work-flow, the Department's high-quality research and advanced dermatologic care are world class. This is exemplified by the renewal of the National Institutes of Health (NIH) P30 grant that funds the Penn SBDRC. With an additional 5 years of support, the SBDRC is proud to continue facilitating cutting-edge cross-disciplinary research. Elizabeth Grice, PhD, who led the Department in achieving a perfect renewal score, will become Director of the SBDRC when the new funding period commences. We look forward to seeing further diversification of SBDRC's services.

As we strive for constant improvement, we will incorporate equity into every aspect of the Department. We will rely heavily on the guidance of Susan Taylor, MD, our first Vice Chair of Diversity, Equity, and Inclusion. Dr. Taylor will be directly involved in our recruitment efforts to guide us in our commitment towards building a diverse faculty and trainee environment. She will also play an instrumental role in attracting dynamic cohorts to our PASH which will build networks for the next generation of researchers. Mentoring is a core strength of Penn Dermatology, and fostering it in all facets of our programs is crucial to the development of both present and future translational research.

In the following pages, we are excited to highlight some of our very talented faculty and the scope of their work. The success of our mission depends on a vast network of support afforded to us by our brilliant faculty, generous philanthropic partners, NIH and external grant funding, and a pipeline of outstanding students and trainees. My sincere gratitude extends to all who continue to ensure the success of our department on a global scale.

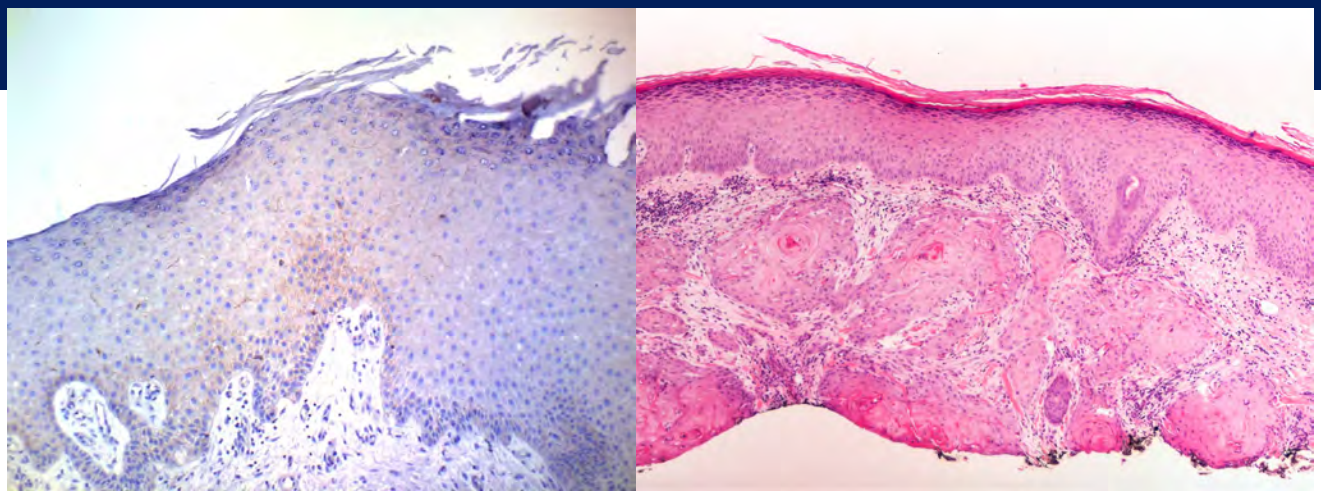
Please enjoy this issue of the PennDerm Newsletter, and send us a note to let us know how you are doing.

Sincerely,

George Cotsarelis, MD

GOING FOR GOLD:

P30 GRANT RENEWED WITH PERFECT SCORE FROM NIH



" The excellence of the SBDRC is the combination of the Department of Dermatology with so many other departments around the university." - Elizabeth Grice, PhD

In 2016 under the leadership of **Sarah Millar, PhD,** and **George Cotsarelis, MD,** the Department introduced the Skin Biology and Diseases Resource-based Center (SBDRC). The success and continuation of the Center is made possible by the support of a five-year P30 Center Core Grant from the National Institutes of Health (NIH) and the National Institute of Arthritis Musculoskeletal and Skin Disease (NIAMS). These awards are specifically allocated to fund programs with shared resources to be used by multiple independently funded investigators across disciplines, with the goal of increasing research efficiency and translational power.

The Department of Dermatology at the University of Pennsylvania Health System spans across eight distinct clinical locations, with over 120,000 outpatient and 103,000 biopsy reports per year. With a large patient volume and vast network of Penn researchers, the Department of Dermatology at Penn was, and continues to be, optimally positioned to advance discovery in the causes, treatment, and prevention of skin disease. Since the SBDRC's founding, membership continues to grow and an impressive list of more than 185 peer-reviewed articles associated with the SBDRC have now been published.

Since 2019 **Elizabeth Grice, PhD** has served as Associate Director of the SBDRC, and she will now serve as the Director of the renewed SBDRC. She has proven to be instrumental in overseeing the management of the SBDRC and the P30 grant. The SBDRC is one of only seven NIAMS funded P30 Resource Centers in the country. The Center is composed of three resource cores, two administrative committees, and four enrichment program sub-cores (please see *Figure 2*). In an effort to further the impact of the funding, the Department matches seed money originating from the P30 award. During the last funding period, an investment of $300K in supportive funding resulted in securing over three million dollars in grants, an astonishing 1:10 return. This further highlights the strength of our Department's investigators and demonstrates the impact that a P30 grant can bring to our institution.

Core A: Cutaneous Phenomics and Transcriptomics (CPAT)

Led by **John Seykora, MD, PhD**, and **Brian Capell, MD, PhD**

Core A is the most heavily utilized of the resource cores. Specifically, it provides innovative, state-of-the-art services to characterize the histopathologic and molecular features of skin samples from human patients and genetically engineered mice. Next Generation Sequencing technologies for genomic and transcriptomic analysis and advanced in-vivo imaging systems are some of the resources facilitated through this Core. With the renewal, the Core will expand to provide biophysical analysis of skin barriers (TEWL, pH, corneometry), two-photon microscopy and macrofluoresence intravital imaging, and libraries of scRNA-seq.

Core B: Skin Translational Research Core (STaR)

Led by **Aimee Payne, MD, PhD**, and **Todd Ridky, MD, PhD**

Core B provides IRB approval assistance for the procurement of primary skin cell cultures. This Core provides state-of-the-art methods for genetic manipulation of these cells, including, but not limited to, CRISPR/Cas9-based genome editing, high-throughput screening and skin xenografts. Dr. Payne also directly consults with each investigator prior to research execution to ensure appropriate samples are being selected for the project at hand. These include innovative services that are unique and enable ground-breaking research approaches. This core assisted in 65% of all studies supported by the SBDRC.

Core C: Data Science and Informatics Core (DSI)

Led by **David Margolis, MD, PhD**, **Joel Gelfand, MD, MSCE**, and **Elizabeth Grice, PhD**

Core C serves to solidify high-standard rigor, reproducibility, and efficacy of both bench and translational research studies. It assists in study design, biostatistical analysis and computational dermatology services. This includes services such as ChIP-seq, LCM sequencing, and 16s RNA analysis. Expansion under the new P30 grant term include enhanced medical record data sets from UPHS and beyond and artificial intelligence-guided approaches to quantifying patterns in dermal samples.

Figure 1. SBDRC Overall Resource Cores

While in the midst of the global pandemic, Dr. Grice led the effort to develop a plan for the submission of a stellar grant renewal application. When asked about how one approaches such a proposal, in true Penn spirit, she recalls, “I joked with people that I wouldn’t be happy with anything less than a ‘perfect 10’ on this renewal. Well, I wasn’t really joking, I would say that if we don’t get a perfect score then I’m not sure if this is going to get funded. I knew how important this was for the Department.” The P30 support of the SBDRC is essential in advancing scientific discovery not only for Penn, but for the greater public whom we serve.

Central to our mission, our future knowledge in skin biology and clinical dermatology is only as strong as the training that our junior scientists receive. As such, the SBDRC prioritizes training and mentoring the next generation of physician-scientists. As a testament to the success and strength of this model, it is is not surprising to discover that Dr. Grice was initially mentored by Dr. Sarah Millar. From 2016-2019, Dr. Millar, now a Department Professor Emeritus, served as Director of the SBDRC, and upon her transition from Penn, Dr. Grice assumed the role of Associate Director. Dr. Grice noted, “[Dr. Millar] continued to serve in an advisory role to the SBDRC until recently, actually. It was very useful to come in as a junior faculty and train for this type of role, rather than just jumping right into this overnight."

When the NIH released their evaluation, the Penn SBDRC earned top marks with a renewal score of a perfect 10. In the spirit of a primary objective of the P30 Grant, Dr. Grice affirms that it was “ truly a

team effort [that] comes through on the application." Given the uncertainties presented over the past year, access to conducting research has been limited. Many researchers have been significantly busier while having less time overall to dedicate to in-person research. Despite these obstacles, the collaborative effort was vital in securing the renewal and was highly lauded in the NIH's report, citing adaptability and diversity of membership as fundamental strengths of the SBDRC.

P30 funding produces collaborative research that enables innovative approaches to the most pressing health concerns. The SBDRC boasts 74 investigators of all ranks, representing Penn's School of Dental Medicine and School of Veterinary Medicine, 11 departments within the Perelman School of Medicine, and 13 academic institutions outside of Penn. In addition to a yearly day-long symposium, the SBDRC also hosts the Duhring Lecture and weekly Dermatology Research Seminars. These events bring together scientific and clinical excellence in multiple disciplines

to solve complex medical problems. As the SBDRC moves into its second iteration, Dr. Grice notes that a goal over the next five years is to "keep expanding our national reach."

In addition to continuing to build new partnerships, the SBDRC will introduce a new internal funding mechanism, called a "Summary Statement Award." This program, which will be made available to members later this year, will function to support investigators who have applied for NIH funding, but may require additional data before their proposal can be approved. Dr. Grice illustrates, "This gives us some funds to support these researchers and to do those experiments until they can then resubmit." It is anticipated that the SBDRC will support three resubmissions per annum. Given the SBDRC's proven success in attracting external funding for projects after providing resources for preliminary data generation, this will provide yet another path for our junior level researchers to participate in innovative scientific inquiry. This data can be used as the basis to apply to more NIH funding opportunities

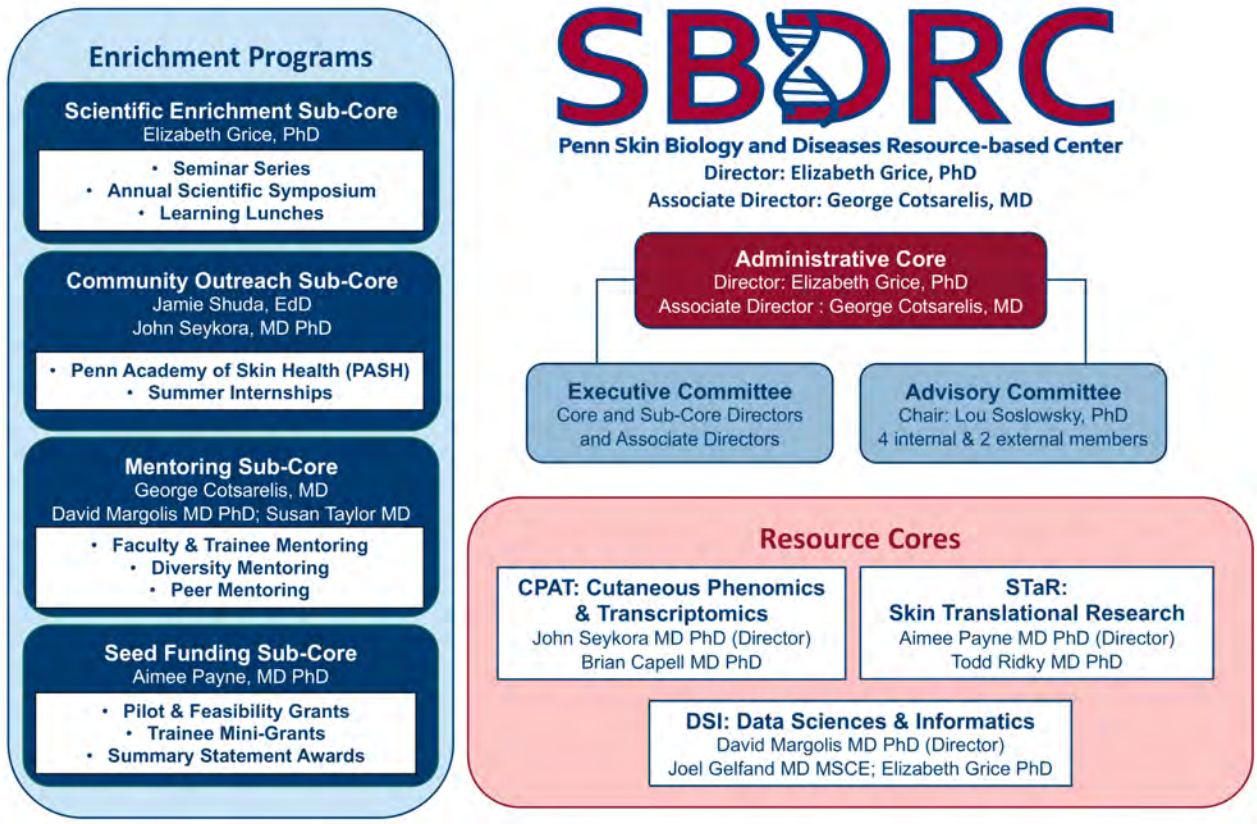


Figure 2. Overall SBDRC Leadership Structure

in the future and jumpstart a researcher's career in academic medicine.

In fact, the SBDRC's robust Mentoring Sub-Core serves as a resource to facilitate meaningful partnerships between investigators of all levels. Dr. Grice credits the Department's active approach to mentoring as a contributing factor in her role as a leader of one of only a handful of prestigious research centers of this kind in the United States: "I never saw myself winding up here in this position. When I started grad school, I could honestly have never seen myself as a PI. There were not a lot of female role models and it became apparent the system was not designed for women to succeed. And I thought, "I don't want to do that to myself." Connecting investigators to mentors, especially mentors that they recognize themselves in, has been empirically proven to contribute to diversification in the medical field.

The SBDRC is a multi-layered and diverse program that goes well beyond serving as a resource to academic researchers. Planned expansion in the Community Outreach Sub-Core, led by **Jamie Shuda, EdD,** and **John Seykora, MD, PhD,** aims to increase accessibility of opportunities for local, under-resourced communities by providing educational and research programs for high school students. The most recognizable aspect of this sub-core is the Penn Academy of Skin Health (PASH), which invites local high school students to participate in spring and summer programs. The students receive training in laboratory techniques from department researchers and attend lectures pertinent to pursuing a career in science.

Students examining cell cultures under supervision of instructors in PASH. *Photo taken pre-pandemic.*

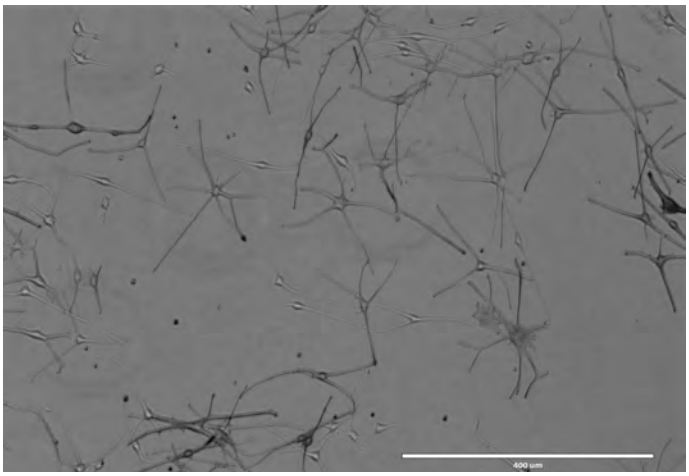
Dr. Grice supporting Victoria Lovins, PhD student in the Microbiology, Virology, Parasitology program, during an experiment.

Dr. Grice explains, "A big part of the SBDRC renewal is enhancing the PASH offerings. Jamie Shuda has been greatly involved in that, in increasing our offerings for the spring Saturday sessions and in getting funded summer internships for the students. Dr. Susan Taylor is now on the steering committee for PASH and will help influence the student curriculum and find the best candidates from the public Philadelphia high schools." By gaining first-hand scientific research experience with current dermatologic investigators, these students are poised to generate a network of mentorship that may not have otherwise been available to them. Through this program they are mentored and trained by our own faculty and graduate students and learn to recognize the value of collaborative inquiry.

We are very fortunate to have **Susan Taylor, MD,** serve as the Vice Chair of Diversity, Equity, and Inclusion for the Department of Dermatology. Dr. Taylor brings her expertise into the planning of the PASH to further highlight the active work we, as a Department and member of the Penn community, are undergoing to ensure equity and justice are integrated within all of our programs. Continuing to expand on not only the Department's, but also the SBDRC's, focus on community engagement solidifies the significance of the program and its success when it reaches beyond the walls of academia. As witnessed countlessly within Penn Dermatology, a mentor can make all of the difference in the trajectory of a young investigator.

The University of Pennsylvania's Skin Biology and Diseases Resource-based Center is empowering investigators to utilize cutting-edge technology and form meaningful partnerships with researchers outside of dermatology. The last five years have illustrated the robust knowledge that can be generated from cross-disciplinary investigation and highlight the way in which streamlining resources can be administered to benefit dozens of researchers.

Dr. Grice examining the cell cultures developed in her lab.



Melanocytes, mature melanin-forming cells, under the microscope. *Photo courtesy of Dr. Aimee Payne.*

We wish success to Dr. Grice, who will formally assume the Director of the Center on July 1st, with the commencement of the renewed funding period. We thank all members who have contributed to the success of the SBDRC and are enthralled to watch it expand over the next five years.

$4,062,500	Total Grant Award
$ 812,500	Grant Award in YR1

120,000	Outpatients per year
103,000	Biopsy reports per year

THE POWER OF PHILANTHROPY

Ensuring the future of PennDerm excellence.

Former Professor of Clinical Dermatology, **Waine C. Johnson, MD,** and **Deanna Johnson** have generously endowed the Department to support early-career dermatopathology researchers.

Introducing the Waine C. Johnson, MD, Fellowship in Dermatopathology

Waine C. Johnson, MD, was a dedicated Clinical Professor of Dermatology at the University of Pennsylvania for nearly four decades. During his tenure, Dr. Johnson was an eminent dermatopathologist, serving as the American Academy of Dermatology's Chairman of the Committee of Pathology for the majority of his career. As a researcher, Dr. Johnson was prolific in his contributions, authoring an astounding 82 peer-reviewed research publications and additional 23 book and book chapters.

Dr. Johnson maintains a sincere love for scientific inquiry and human compassion in medicine. One of Dr. Johnson's fondest impressions of his time in the Department was not only the privilege of shaping of the multiple generations of dermatopathologists, but the reciprocity he gained in learning from his students and colleagues. Frequently, Dr. Johnson collaborated with colleagues and credits the Department's emphasis on research and dedication to recruiting the most influential minds in dermatology as a primary contributor to his career.

Dr. Johnson and Mrs. Deanna Johnson have generously bestowed Penn Dermatology to support a research year for a dermatopathology fellow. When asked what inspired the donation, they stated, "we are grateful to be able to do our small part in assuring that Penn Dermatology can continue its mission of clinical, research, and educational excellence." Our sincerest gratitude extends to Dr. and Mrs. Johnson for the endowment and the four decades of service to Penn Dermatology; we look forward to welcoming and supporting a world-class investigator in the Waine C. Johnson, MD, Fellowship in Dermatopathology.

PARTNERING WITH PENN DERMATOLOGY

Penn has consistently moved the field of dermatology forward through personalized care and therapeutic advances. The Department of Dermatology works continuously to develop new techniques and therapies through research and to educate the next generations of outstanding physicians and researchers. To maximize our expertise and potential, improvements to our research infastructure are required. Basic, translational, and clinical research activities are the hallmark of our clinical care and patient outcomes. With significant philanthropic investments, the Department will move forward addressing pressing medical challenges in dermatologic care and will be instrumental in improving diagnoses, new surgical techniques, and quality of life. Lastly, offering the best multidisciplinary care for our patients remains a top priority.

Department of Dermatology Fundraising Priorities

Pilot Research Projects

Honoring Leaders

As the oldest dermatology department in the country, Penn Dermatology has been shaped by many great leaders whose legacies live on through their scientific breakthroughs. Established in 1874 by Dr. Louis Duhring, Penn Dermatology follows the traditions of many great 19th and 20th century physician-researchers who work collaboratively and across disciplines, such as with the school of engineering. As a contributor to pilot research projects in cutaneous regeneration, Penn investigators gain the ability to impact patients worldwide with novel approaches to skin diseases, innovative treatments, and potential for cures.

Endowed Professorships

Rewarding Innovation

Supporting the work of Penn's physician-scientists is one of the highest priority. Endowed professorships in investigative dermatology provide Penn Dermatology with the ability to retain and attract exceptional faculty. For decades, Penn's preeminent dermatologists and researchers consistently receive recognition for excellence in patient care, research discoveries, and education. Endowed professorships are instrumental in permanently recognizing the dedication of the Department's faculty and their important work.

Fellowship Training Programs

Supporting New Investigators

Penn Dermatology's training programs attract the most outstanding candidates, developing leaders in dermatologic research, academic, and clinical dermatology. Funds directed toward fellowship training programs guarantee Penn Dermatology's long tradition of educating exceptional scientists and physicians.

Laboratories & Research Facilities

Promoting Scientific Advancement

Research space is of great necessity. New laboratories and instruments provide the path to great discoveries. With the right resources, Penn Dermatology will develop a cutaneous regeneration and tissue engineering efforts focused on developing new treatments for skin disorders.

Private philanthropy meets funding needs not covered by governments grants or insurance reimbursements. Your donation enables us to break new ground and to improve upon existing therapies.

Philanthropic gifts of all sizes to support our research, educational, and clinical endeavors are greatly appreciated. Naming opportunities within the Department begin at the $25,000-level. Additionally, any gift can be given outright, through a planned giving vehicle, or can be structured to be paid over a 5-year period.

For more information about partnering with Penn Dermatology, please contact **Caitlin Doelp**, Senior Director of Development at **(215) 746- 2167** or **ccrowe@upenn.edu**.

ALUMNI CORNER

Where PennDerm Alumni share their stories.

Samuel L. Chachkin, MD, '09

IN THE SPOTLIGHT

"I can say definitively I've never been in an environment that was more nurturing, more collaborative, more focused on not just caring for patients, but teaching residents and providing the mentorship that I had when I was a resident."

- Samuel Chachkin, MD

Director of Education, **William D. James, MD**, joins PennDerm alumnus **Samuel L. Chachkin, MD,** to discuss his tips for PennDerm residents and reflect on the power of Penn Dermatology's training programs. Dr. Chachkin completed his residency in 2009, and is a partner in the Pennsylvania Dermatology Group in Huntingdon Valley. Prior to completing his dermatology residency, Dr. Chachkin completed a residency in pediatrics and was an attending pediatrician at CHOP. To hear the full interview with Dr. James and Dr. Chachkin, please visit us at our **website**.

Want to share your story? Visit us at our new website ***dermatology.upenn.edu/alumni/****, email us at* ***PennDermAlumni@uphs.upenn.edu****, and follow us on Instagram* ***@PennDerm****. Check out our monthly Spotlight featuring fellow PennDerm alumni and current faculty research. We look forward to hearing from you.*

COVID-19 AND INNOVATING NOVEL MEDICAL DEVICES

The coronavirus pandemic persists as a global health threat that has been confirmed in more than 100 million cases worldwide, with more than 6 million affected in the United States alone. As such, there is a dire need for the creation and implementation of effective COVID-19 detection technologies in public spaces that will better protect people from being exposed. **Carrie Kovarik, MD,** Professor of Dermatology, with a team of talented and dynamic physician-scientists, physicists, and innovators from the University of Pennsylvania and collaborative groups proposed a "sniffer" device for this role in the fight against the global pandemic.

A life-long advocate for equal accessibility to healthcare, Dr. Kovarik joined Penn Dermatology as a full-time faculty member in 2006 and has made global health, telemedicine, informatics, and HIV-related skin diseases her passion. Dr. Kovarik is an established leader in academic dermatology and brings unique expertise in dermatopathology, combined with medical technology and engineering, to both our Department and to the greater Penn Medicine community. With COVID-19 still rampaging across the globe, Dr. Kovarik is determined to contribute to the fight against this novel virus by bringing her expertise, knowledge, and experience to design and implement a portable device that could enable the public to return to some aspects of pre-COVID "normal life".

Framework: Many pieces must align in developing a device of this caliber. As such, the members of the academic research team each have different roles in ensuring the success and replicability of the project. Cynthia Otto, DVM, PhD, a professor at the University of Pennsylvania School of Veterinary Medicine and Executive Director of the Penn Working Dog Center, laid the groundwork for the project by collecting T-shirts of patients who have been infected with the virus and from those who have not been infected. In a recent proof-of-concept investigation published in the journal *PLOS ONE*, Dr. Otto and her team showed that specially trained detection dogs can sniff out these COVID-19-positive samples with 96% accuracy.

> *"When we are training the dogs on COVID-19, we can put t-shirts from COVID-infected and COVID-uninfected patients in those little containers and see if the dog can find the one from the COVID infected person."*
>
> - Carrie Kovarik, MD

The effort of a team of collaborators to distinguish the specific chemicals that define the signature odor profile of COVID-19 from skin is led by Kenneth G. Furton, PhD, Chemistry Professor and Provost at Florida International University. Lyle Ungar, PhD, is a professor in the Department of Computer and Information Science in Penn's School of Engineering and Applied Science and will be incorporating machine learning into the data analysis of the odor profile analysis.

> *"One big role dermatology has in this is to figure out what kinds of compounds might be coming from the skin. What role does COVID play in the skin? The second thing is trying to think about where to test the patients. When we gather samples, do we want to gather them? Where do we specifically want to gather samples?"*
>
> - Carrie Kovarik, MD

Dr. Kovarik explained how the idea of the detection came about, crediting dogs' dazzling sense of smell. "It's just really fascinating how we don't have a trained nose, whereas dogs can actually pick up these individual smells that we can't... they can detect what we call volatile organic compounds that are emitted from people." Indeed, in recent decades researchers have succeeded in creating electronic detection devices to pick up numerous volatile organic compounds (VOCs) using dogs' powerful sense of smell as inspiration. Using this as the foundation, the team was able to confirm that there are specific VOCs being emitted from the sweat or skin of COVID-19 patients that dogs can detect.

Design and Innovation: A.T. Charlie Johnson, PhD, the R. W. Bushnell Professor of Physics and Astronomy at the University of Pennsylvania and the Principal Investigator of the project, introduced the nano-sensors that could potentially detect the same VOCs that dogs can sense. He brought to the research project an unrivaled expertise in building innovative devices utilizing the scientific understanding of physical and chemical properties, to further advance quality models for healthcare. Dr. Johnson's lab had previously designed nano-sensors capable of detecting unique VOC molecules in patients with ovarian cancer, among other diseases. Using the innovation of these nano-sensors, the research team is working to identify COVID-19 similarly to dogs. Once this is complete, they will work with VOC Health, led by Richard Postrel, CEO, to translate the lab-based system into a commercial device for testing in the community.

Significance and Dermatopathology: Essential to developing a functional sensor are the identification of the precise compounds associated with COVID-19 found in the skin. Various studies have shown that the SARS-CoV-2 spike protein, the protein that allows the virus to penetrate host cells and cause infection, can be found in the skin. However, it is still unclear as to what VOCs from COVID might originate from the skin. This is where Dr. Kovarik's expertise in dermatopathology comes in: "Are the compounds actually from a direct viral effect in the skin? Or, is it a secondary effect from the patient being infected with it, and the compounds that we're going to detect are actually just a side effect of them being infected, but really has nothing to do with the virus being in the skin?" Dr. Kovarik is working to answer these questions with this project.

Implementation: As a result of her prior experience in implementing innovative telemedicine programs using electronic medical records, open-source technology, and accessory medical devices, Dr. Kovarik will play a vital role in strengthening the translational effectiveness of device implementation. Dr. Kovarik recognizes the importance for the device to be portable and small enough to maximize its convenience while maintaining its effectiveness. The idea of a device that needs minimal to no cleaning between tests is being considered; however, it is currently still difficult to obtain a sample without touching the subject, which is understandably functionally limiting given the current climate.

Nonetheless, Dr. Kovarik is optimistic that she will find a way to recapitulate a dog's olfactory processes that no touching will be necessary: "Dogs don't touch the patients, they smell, they waft, they bring the air into their nose, and get those compounds in there. And then their olfactory nerve detects the scent and says yes or no."

Evaluation: The academic research team must then determine how to test patients for the device evaluation process. Questions such as: Where to gather and validate experimental samples and how to optimize the workflow of the testing process are some present unknowns that the members of the team are continuously evaluating. Once the device is ready, testing will be conducted in the Emergency Department at the Hospital of the University of Pennsylvania, in conjunction with a team led by Benjamin Abella, MD MPhil, Professor of Emergency Medicine and Medical Director of the Penn Acute Care Research Collaboration. This testing will allow for device and workflow optimization, in addition to gathering and integrating more data on VOCs in COVID and non-COVID patients.

Dr. Kovarik at the University of Pennsylvania.

> *"... [Dogs'] olfactory nerve detects the scent says yes or no. And then that's how they determine it. So really trying to recapitulate that process that a dog does, is what we would like to do."*
>
> - Carrie Kovarik, MD

Overall, the whole research project will take approximately 2 years to complete and to submit to the Food and Drug Administration for clearance. Once distributed widely, the device will change the face of the COVID-19 testing entirely. As Dr. Kovarik explained, "As you can imagine, if you want to go to a school or an airport to screen people for COVID, you can't have equipment that is exceedingly large, needs to be cleaned in between every single person, is difficult to train people on, or breaks easily. It needs to be something that gathers the sample of the air, or the molecules off the skin, analyzes it, and gives you a simple reading, and then moves on to the next person."

Preliminary data have reported the device is able to detect VOCs from a person infected with COVID-19 with more than 90% sensitivity, and successfully identify unaffected individuals at similar rates. On top of that, the device delivers the results in seconds. This is exciting as this project has the potential to fast-track a return to "normalcy". While the world will forever be changed by the COVID-19 pandemic, looking towards innovative ways to seamlessly integrate additional safety measures into everyday life can ease public concern and prevent exposure to the virus. Moreover, this can potentially prevent "super-spreading" events in the case of high-volume locations. Recognizing the ingenuity of this design, the National Center for Advancing Translational Scientists at the National Institutes of Health awarded Dr. Kovarik's team a $2 million grant, over two years, to further investigate. We anxiously await the project's findings and look forward to watching the impact of this novel technology.

PASH AND ITS IMPACT ON FUTURE SKIN RESEARCHERS

The Penn Academy for Skin Health (PASH) was hosted for its fifth consecutive year this spring. Funded by a grant through the University of Pennsylvania's Skin Biology and Diseases Resource-based Center (SBDRC), PASH aims to give Philadelphia high school students a greater understanding of dermatology, laboratory techniques, and biomedical ethics. Fueled by enthusiasm and dedication of our volunteers and faculty, this year we accepted our largest cohort ever: 18 students!

The growth of the program is evidence of a growing excitement for, and success regarding, PASH. However, in light of the ongoing uncertainty surrounding the pandemic, this year's session was held remotely. **Jamie Shuda, EdD,** said, "For the spring, and it looks like for the summer, we will be virtual. But for the first time, we're having students come in and pick up their lab supplies at Penn! We should really give a shout out to Paola Kuri, PhD and Christian Hopkins, who have really stepped up to help us make this happen."

While this is the second year the program has been held remotely, this spring was the first time that take-home kits with laboratory experiments were packed up and distributed to the students. While continued reliance on remote learning was less than ideal, the dedicated PASH team did their best to ensure an impactful experience. In an effort to bridge the virtual learning with real-world applications, when the students came in to pick up their at-home experiments, they had their palms swabbed for the yearly experiment exploring the skin's microbiome.

PASH students perform PCR and gel electrophoresis in the laboratory. *Photo taken pre-pandemic.*

Dr. Shuda continued, "There are two hands-on experiments, then on the other weekends there are more virtual science. For example, students zoomed into live microscopy to help diagnose skin diseases. They are being provided with the same virtual teaching tools offered to our medical students." In addition to keeping the experience as "in person" (but remote) as possible, the program remained robust with a lineup of pertinent and timely lectures from our Dermatology faculty. **John Seykora, MD, PhD** began the program with a discussion of skin structure and function. **Junko Takeshita, MD, PhD, MSCE** presented a lecture on health disparities within the specialty.

Talented young scientists devote their summer to learn about dermatological processes at PASH.

Additionally, **Carrie Kovarik, MD,** and **David Margolis, MD, PhD** presented on COVID-19 and dermatology. Dr. Seykora concluded the lecture component with a "Diagnose the Disease" session. Students also rotated through digital breakout rooms to engage in conversations with faculty, graduate students, and researchers about careers in science, technology, engineering, and mathematics (STEM).

As integral to PASH as its dedicated cohort of volunteers, is the equally impactful and supportive backing of generous donors. During this past year, we were thrilled to receive a thoughtful donation in the memory of Dr. Ruth Gottlieb, a University of Pennsylvania undergraduate and School of Medicine alumna. This generous gift contributes directly to the creation of the Ruth Gottlieb Research Opportunity Fund, supporting both the PASH and Penn Academy for Reproductive Sciences (PARS) programs. The awards from the Ruth Gottlieb Research Opportunity Fund allows us to further enrich the PASH and PARS missions of fostering enthusiasm for science and medicine in Philadelphia students and empowering them to consider future careers in these fields.

Contributions provide laboratory supplies, summer internships, and coordination to support Philadelphia students as they embark on STEM careers. PASH alumni are gaining admittance to colleges and universities, including Penn, and pursuing STEM-related majors. A special thank you to **Drs. John** and **Janet Seykora** and an anonymous donor for their recent support to help PASH make a lasting impact on the students in Penn's own backyard. We encourage you to support the PASH program **HERE**.

High schoolers train with doctoral students and Penn Derm faculty to perform laboratory techniques. *Photos taken pre-pandemic.*

GLOBAL DERMATOLOGY

EXPANDING PARTNERSHIPS LOCALLY AND ABROAD

"Educational exchange programs are often one of the easiest and best ways to start collaborative relationships with other doctors and institutions." - Amy Forrestel, MD

Since its founding as the first department of its kind in 1874, Penn Dermatology's mission champions the pursuit of knowledge of the treatment of skin and associated diseases through eminent patient care, research, and world-class programs that train the next generation of researchers. Central to this includes providing opportunities for trainees to experience medicine across multiple contexts. The impressive work of our faculty extends beyond the confines of Philadelphia, and demonstrates leadership in advancing global health.

Three Penn faculty members co-direct the American Academy of Dermatology's Resident International Grant (RIG) - **Carrie Kovarik, MD,** Professor of Dermatology, **Amy Forrestel, MD,** Assistant Professor of Clinical Dermatology, and **Victoria Williams, MD,** adjunct Penn Dermatology faculty. Managed under the Education and Volunteers Abroad Committee (EVAC), the RIG has provided funding each year for U.S. and Canadian dermatology residents to complete elective international rotations.

In 2007 with the support of **William James, MD,** current Professor of Dermatology at Penn and President of the AAD at the time, the EVAC proposed the RIG program after two dermatology residents, supported by the Association of Professors of Dermatology, worked at Princess Marina Hospital in Botswana. Dr. Kovarik was instrumental in developing the RIG program in Botswana, which involved fully integrating rotating dermatology residents into the health care system to provide the main source of continuous dermatology care in the country. Sustained collaborations for years among Penn dermatologists, the Botswana-UPenn Partnership, the RIG, and the Botswana public health system have led to successful capacity building and locally-run, self-sufficient public dermatology clinics in Botswana.

Above: **Participants in the Bostwana- UPenn Partnership (the RIG program) after a successful program together.** *Photo taken pre-pandemic.*

Dr. Kovarik and Dr. Victoria Williams seeing a patient at the Cayetano Heredia - WC Gorgas Course in Tropical Dermatology through the collaboration between the Gorgas Memorial Institute of the University of Alabama at Birmingham, the Alexander von Humboldt Tropical Medicine Institute of the Universidad Peruana Cayetano Heredia and the University of Pennsylvania. *Photo taken pre-pandemic.*

This has now allowed for the transfer of day-to-day clinic operations to local providers and created an opportunity for the RIG to include other international locations.

In 2020, the RIG program was expanded to involve three new international sites: the University of KwaZulu-Natal (King Edward VIII Hospital and Albert Luthuli Central Hospital, South Africa), Kathmandu University (Dhulikhel Hospital, Nepal), and Universidad Perunana Cayetano Heredia/Instituto de Medicine Tropical Alexandar Von Humboldt (Peru). When asked about the introduction of the new international partnerships, Dr. Forrestel elucidates, “one of the ideas behind this was creating a broader network of international collaborators; a global community to interact and learn from each other.” By introducing these new locations, the RIG will provide a wider range of clinical and cultural experiences for residents.

Importantly, the updated RIG program emphasizes reciprocity and exchange. Every year, a dermatology trainee from each of the new partner institutions will receive a scholarship to rotate in the U.S. This further contributes to the mutually beneficial program as it allows international trainees exposure to other health systems, and allows more North American dermatologists and trainees to learn from our global partners. Additionally, educational

Dr. Amy Forrestel seeing patients at a RIG program. *Photo taken pre-pandemic.*

exchanges develop collaborative relationships, networks, and build foundations for continued intellectual reciprocity.

The intended goal of these programs is to create a space to shape the next generation of dermatologists by providing international context to the discipline of medicine. RIG students are able to visit medical sites in other countries and learn directly from local experts. "When we work in new environments for

the first time, we're much more in the position to learn because of the nature of being a fish out of water," Dr. Forrestel explains. Rotations such as those provided through EVAC encourage

> *"I think that realistically, when we travel abroad to a new place for the first time, especially as a trainee, we're much more in the position to learn than we are to affect teams... just because of the nature of being a fish out of water and not knowing the diseases and not knowing the system."*
>
> - Amy Forrestel, MD

adaptability, problem solving in lower-resourced settings and significantly, as we continue to expand our awareness, development in cultural humility. Many participants of the program consider these experiences significant in cultivating a drive to service, whether locally or internationally.

Unfortunately, due to the COVID-19 pandemic, residents were unable to participate in this multi-directional exchange this year. The RIG directors are working with international partners and plan to resume the program in the coming year. We look forward to seeing the continued development of these crucial international collaborations. To learn more about the Resident International Grant, please visit the **American Academy of Dermatology Association's website**.

WELCOME NEW FACULTY

Michelle Oboite, MD.

We are thrilled to welcome the newest member of our faculty to Penn Dermatology, **Michelle Oboite, MD.**

Dr. Oboite earned her BA from Harvard University and her MD from Duke University School of Medicine. Prior to starting residency, she completed a pre-residency fellowship in the Ethnic Skin Program in the Department of Dermatology at the Johns Hopkins University. Dr. Oboite went on to complete her residency in dermatology at the Georgetown University Hospital and a fellowship in pediatric dermatology at the Children's Hospital of Philadelphia (CHOP). Dr. Oboite's clinical interests include general dermatology, as well as hair and scalp disorders, and will see patients at Pennsylvania Hospital, Perelman Center for Advanced Medicine, and CHOP.

NOTABLE DEPARTMENT AWARDS FROM THE DERMATOLOGY FOUNDATION

Donna Brennan-Crispi, PhD
Postdoctoral Fellow

Science of Human Appearance Career Development Award for *Roles and Modulation of WNT-FZD Signaling in Hair*

Christoph Ellebrecht, MD
Resident Physician

Physician Scientist Career Development Award for *Development of Targeted Immunotherapy for and Transcriptional Profiling of γδ T Cell Diseases*

Matthew Hedberg, MD, PhD
Dermatopathology Fellow

Research Grant for *Immunoediting in Cutaneous Squamous Carcinogenesis*

Anna Kersh, MD, PhD
Resident Physician

Dermatologist Investigator Research Fellowship for *Elucidating Genes Involved in the Pathogenesis of Lichen Planus and Lichenoid Dermatoses*

Satish Sati, PhD
Postdoctoral Fellow

Research Career Development Award for *Investigating Neuroimmune Interactions to Promote Scarless Skin Regeneration*

Aayushi Uberoi, PhD
Postdoctoral Fellow

Science of Human Appearance Career Development Award for Skin Microbiome-Aryl Hydrocarbon Receptor Crosstalk at Skin Interface Regulates Barrier Function

SBDRC ANNUAL VIRTUAL SCIENTIFIC SYMPOSIUM & TRAINEE RETREAT

The **Skin Biology and Disease Resource-based Center (SBDRC) Scientific Symposium and Trainee Retreat** was held on March 11th, 2021. The symposium highlighted the research accomplishments of the SBDRC investigators, trainee posters and oral presentation sessions, a keynote speaker, and many opportunities for networking and collaboration.

This year, the symposium was held virtually in conjunction with the Trainee Retreat. The trainee-invited keynote, entitled "The immunological consequences of lymphatic transport in skin: from infection to cancer", was presented by Amanda W. Lund, PhD, Associate Professor in the Ronald O. Perelman Department of Dermatology and the Department of Pathology at New York University Grossman School of Medicine.

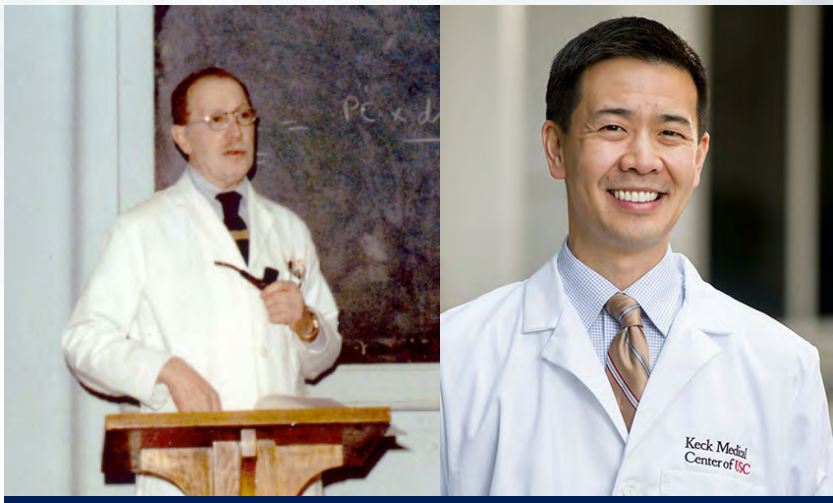
We enthusiastically welcomed Dr. Lund to the symposium to share her novel findings with us.

Dr. Lund is a dedicated researcher with a research laboratory investigating lymphatic immunobiology. The presentation introduced novel tools developed by the Lund Lab to track and quantify the lymphatic vasculature, with applications for tuning immune function and enhancing cancer immunotherapies.

The Keynote Lecture was followed by an afternoon of exciting poster sessions and trainee talks. A wide range of skin-related research projects were presented during the day and despite it being a virtual event, we were happy to see that trainee engagement was very much present. A day devoted to bringing skin investigators and trainees together, to share their exciting projects with each other was enjoyed by all.

Dr. Lund's research investigates the genetic expression of neoplasms, metastatic melanoma, and the role of the lymphatic system in mediating immune responses in vivo. Her lab utilizes the latest state-of-the-art technology to examine the hypothesis that "the lymphatic vasculature is an active regulator of cutaneous and tumor immunity." You can read more about Dr. Lund's research at her faculty **page**.

M. H. SAMITZ LECTURESHIP IN CUTANEOUS MEDICINE



Above left: M.H. Samitz, MD
Above right: David Peng, MD, MPH

The forty-fifth annual **M. H. Samitz Lectureship in Cutaneous Medicine** was hosted virtually on November 12, 2020. Considering the challenges posed during a global pandemic, we were humbled, yet thankful, for the opportunity to continue the legacy.

In the year of his retirement of 1975, a group of students undertook a fundraising campaign to endow the Lectureship to honor the memory of **Morris H. Samitz, MD**, a global leader in the field of dermatology. Dr. Samitz was well respected by his colleagues, looked up to by students, and adored by his patients. He was consistently lauded for his work in clinical and research environments, but also often recognized for his love of humanity, which he interwove into all his endeavors. The positive impact Dr. Samitz made on the Department continues to be felt today.

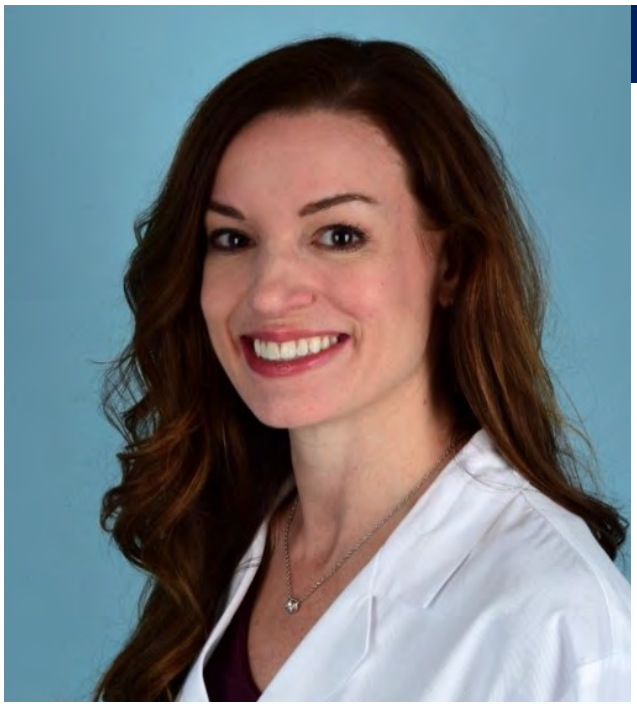
In 2020, we were delighted to welcome David H. Peng, MD, MPH, Chair of the Department of Dermatology at the Keck School of Medicine of the University of Southern California (USC). Dr. Peng also serves as President of the Council of Clinical Chairs and President of the faculty practice plan, USC Care Medical Group (USC Care).

Like Dr. Samitz, Dr. Peng is heavily involved in the continued development of and educational divisions of the Keck School of Medicine and is committed to incorporating innovative techniques in the health system. In fact, he was a pioneer in telemedicine and was critical in bringing virtual care to USC Care.

Dr. Peng is a leader in the epidemiology of cutaneous oncology, severe cutaneous reactions to medication, and complex, in-patient dermatological care. He has received numerous awards from both USC and Stanford that recognized his outstanding teaching and commitment to his students. His presentation, "DRESS Syndrome: An Update", provided insight on his latest research and updated standards of care for patients with this life-threatening disease.

We remain immensely grateful to the Samitz and Cohen families for their steadfast support of the M.H. Samitz Lecture, and their unwavering dedication to our Department.

FACULTY PROMOTION



VICE CHAIR OF BASIC SCIENCE RESEARCH

The Department of Dermatology at the Perelman School of Medicine is proud to announce the promotion of **Elizabeth A. Grice, PhD,** to Vice Chair for Basic Science Research. Since joining the Department in 2012, Dr. Grice continually impresses not only her colleagues, but our entire field with her novel research. Her track-record in all areas of professionalism is also truly exemplary. To date, she has over 46 peer-reviewed research publications, 16 published peer-reviewed reviews, and is credited as co-inventor on a U.S. Patent. Dr. Grice's research is highly interdisciplinary and explores the intersections of genomics, microbiology, immunology, and dermatology. Specifically, Dr. Grice's research focuses on the skin microbiome, including functions and roles in mediating skin health and cutaneous wound healing.

After earning her PhD in Human Genetics from Johns Hopkins University in 2006, Dr. Grice completed a five-year fellowship at the National Human Genome Research Institute at the National Institutes of Health (NIH), after which, she was recruited by Penn Dermatology. In less than ten years, Dr. Grice has established a trajectory of outstanding productivity, creativity, and excellence. This is clearly evidenced by her history of securing outside funding from private investors, industry leaders, non-profit organizations, and, significantly, from the NIH. In fact, she led the Department in the successful renewal of a multi-million dollar P30 Grant that supports the Penn Skin Biology and Diseases Resource-based Center (SBDRC). When the new funding commences this summer, having worked for the past few years as its Associate Director, Dr. Grice will formally assume the position as the Director of SBDRC. As the Director, Dr. Grice looks forward to expanding the breadth, depth, and reach of the SBDRC by working with the Directors of its various cores.

In addition to this work, Dr. Grice is committed to scientific research training at all of its stages and is the Co-Principal Investigator of the Dermatology Research T32 Training Grant. She presently holds editorial positions for three academic journals, *Genome Research*, *Microbiome*, and *Experimental Dermatology* and is a standing member of the Arthritis, Connective Tissue, and Skin NIH study section. Dr. Grice has held organizing roles for over 20 scientific meetings, and in the past five years alone, Dr. Grice has been invited to present more than 50 lectures. It is clear that Dr. Grice is a highly respected scientist who is dedicated not only to the discovery and dissemination of knowledge, but who also prioritizes the training of the next generation of researchers. We are thrilled she will be Vice Chair of Basic Science Research, and look forward to watching Dr. Grice continue at the forefront of our field.

HIGHLIGHTS OF DISCOVERIES

"People with Psoriatic Disease Taking Methotrexate Are More Likely to Develop Liver Disease Compared to Those with Rheumatoid Arthritis on Methotrexate"

Adapted from ***Penn Medicine News***

Read more on the article **HERE**

Methotrexate is a widely used cancer and anti-inflammatory drug to reduce symptoms of skin and joint conditions, but not many people are aware of its various detrimental side effects. **Joel Gelfand, MD, MSCE** and a team of researchers have evaluated 20 years of data from thousands of patients with psoriasis, psoriatic arthritis, and/or rheumatoid arthritis who were also taking methotrexate. Dr. Gelfand and his team found that rates of cirrhosis and liver damage were higher in psoriasis or psoriatic arthritis patients when compared to rheumatoid arthritis patients who were all prescribed methotrexate. The greatest rates of liver disease were displayed in the psoriasis group.

Previous studies found that liver damage was a possible result of methotrexate use, but the results were irreconcilable due to the unreliability of the lab testing as they were found to be susceptible to testing bias. This study recognized the possible issues and opted to use a Danish national database to evaluate the data, the results of which were recently published in the Journal of the American *Association of Dermatology*.

"We are not sure why people with psoriasis and psoriatic arthritis have greater rates of liver disease when on methotrexate. All three conditions cause inflammation that set the stage for possible liver damage. But it is hypothesized that there is a 'psoriatic liver' which means that psoriasis somehow promotes fatty changes in the liver which can lead to a higher risk of liver complications when taking medications that also cause liver damage such as methotrexate," stated Dr. Gelfand.

The research team also recommended for "Clinicians and patients to consider all treatments available for psoriasis and psoriatic arthritis … and if methotrexate is used, clinicians should carefully and regularly monitor their patients' liver health and function and take advantage of new blood and specialized ultrasound tests which can detect liver damage at an early stage to prevent patients from developing clinically significant liver problems."

"Climate Change: Dermatologists Address Impact on Health"

Adapted from ***MedScape***

Read more on the article **HERE**

Climate change has emerged as one of the most prominent public health challenges in our lifetime, and providers have been at the forefront of tackling small particulate matter found in wood smoke and other air pollutants to exacerbations of atopic dermatitis and other inflammatory skin conditions.

this issue by developing solutions, based on credible information, and raising awareness through their scientific knowledge. Medscape covered an academic article written by **Misha Rosenbach, MD**, about the role climate change plays in dermatology. Dr. Rosenbach, the main author of the academic article on climate change, stated: "Climate change is not a far-off threat but an urgent health issue, which changes the range of diseases that patients can face, and the types of patients affected."

Dr. Rosenbach asserted that there is a close relationship between dermatology and climate change. For instance, there is clear evidence linking

The article also emphasized that climate change is a prominent social determinant of health, and that low-income and minority communities, in addition to the very young and the very old, "are, and will continue to be disproportionately affected by climate change." Thus, Dr. Rosenbach urged for all practitioners, especially dermatologists, to be aware of the on-going and predicted effects of climate change on different populations, take preventative actions to reduce their carbon footprint and "serve as a model for patients to do the same."

"Patients Prefer Doctors of Same Race and Ethnicity, Study Finds"

Adapted from ***VeryWell Health***

Read more on the article **HERE**

In November 2020, a team of researchers from Penn Medicine, led by **Junko Takeshita, MD, PhD, MSCE,** found that patients who shared the same racial or ethnic backgrounds as their physicians were more likely to give them the maximum patient rating score. The study result potentially proposes how racial and ethnic similarities improve patient-provider interactions.

The study, published in *JAMA Network Open*, analyzed 17,589 Press Ganey Outpatient Medical Practice Surveys, a patient-reported questionnaire used widely in hospitals across the country. The survey was conducted from July 2014 to May 2017, with the participant population being 82% white, 12.7% African Americans, 3.3% Asian, and 2.3% Hispanic.

For the question "Likelihood of your recommending this care provider to others," most patients gave maximum score to 87.6% physicians who came from the similar racially/ethnically background as them.

"If we can understand what patients like and don't like about their interactions with their physicians, then we will be able to make more targeted improvements in healthcare delivery, which I see as a good thing." Dr. Takeshita stated.

To help alleviate the differences in patient experience ratings, Dr. Takeshita and her research team recommend the following suggestion:

- *Diversifying the physician workforce so the providers are more representative of their patient population.*
- *Implementing implicit bias training in medical school so that physicians are equipped to care for patients with cultural humility and competency.*
- *Active on-site training on how to effectively manage biases from patients.*

"Health Disparities in Dermatology: Making a Change"

Adapted from ***MedScape***

Read more on the podcast episode **HERE**

In the Dermatology Weekly podcast, **Susan Taylor, MD, FAAD,** along with Lynn McKinley-Grant, MA, MD, FAAD, discussed the exacerbation of health disparities during the COVID-19 pandemic and its implication. Dr. Taylor stated that COVID-19 has brought to light the prominent issue of how people of color are disproportionately affected by the novel virus as evidence by the distribution of who has succumbed to it. She pointed out that within the dermatologist workforce, only 3% of dermatologists are of African descent, as opposed to 13% of the US population.

Dr. Taylor emphasized the importance of addressing the issue of disparity in dermatology: "We all must care about this issue because we're all responsible for the issue and we're all responsible for the solution. We're part of a whole. The analogy has been made that we're not 50 states; we're the United States. Similarly, within dermatology, if we have a problem that's significantly negatively affecting our patients, then it is the responsibility of all of us to change that. When we are united, we can effect change. I think that throughout the country, there is an openness now to discuss, to have conversations and dialogue and look toward solutions."

Creating mentorship opportunities for students is critical. "It's important for private-practice physicians to understand that they can impact in multiple ways... You can earmark your funds for mentorship programs, and that is incredibly important and incredibly impactful because then the organizations can reach more students." Dr. Taylor added.

To end the conversation, Dr. Taylor stressed that health disparities are issues that all providers need to join hands to eliminate. She stated: "Disparities in healthcare and in dermatology are an important issue for all of us, whether you are of a diverse background or not. Ultimately, it's about commitment to these issues, to improving patient care, to improving the lives of people… If you want to do something but you don't know what it is, I can plug you in. It takes an effort of all of us to make a difference."

NOTABLE FELLOWSHIP AWARD

Aayushi Uberoi, PhD, a post-doctoral fellow in the Grice Lab, has received a fellowship award from the Prevent Cancer Foundation for her cutting-edge research proposal investigating the effects of ultraviolet radiation on host-microbiota interactions. Dr. Uberoi is studying the dynamic impact of skin microbiome on skin physiology in the context of barrier repair, wound healing, and cancer. Understanding these mechanisms will lead to the identification of microbial biomarkers to screen patients susceptible to UVB-induced skin carcinomas. Additionally, targeting skin microbiota by decreasing bacteria bioburden or harnessing microbial metabolites would provide a low-cost, noninvasive strategy to manage skin cancers.

Congratulations, Dr. Uberoi!

FACULTY AWARDS AND HONORS*

Bruce Brod, MD
Clinical Professor

Elected to the Pennsylvania Medical Society Judicial Council

Awarded the American Academy of Dermatology (AAD) 2020 Presidential Citation Award

Elected by the Accreditation Council for Continuing Medical Education (ACCME) Board of Directors as the 2021 Chair and Vice Chair of the Accreditation Review Committee (ARC)

Brian Capell, MD, PhD
Assistant Professor

Awarded Year 3 of the Charles and Daneen Stiefel Scholar Award in Skin Cancer from the Dermatology Foundation for *Restoring Epigenomic Histone Methylation Dynamics for the Treatment of Keratinocyte Carcinomas*

Zelma Chiesa-Fuxench, MD
Assistant Professor

Awarded a Dermatology Foundation Diversity Research Supplement Award for *Risk of Infection in Adult Patients with Atopic Dermatitis Exposed to Janus Kinase Inhibitors (JAKi)*

Grice Elizabeth, PhD
Associate Professor

Awarded Year 3 of the Sun Pharma Research Award from the Dermatology Foundation for *Harnessing the Commensal Skin Microbiota to Modulate Inflammation and Barrier Function*

Paul Haun, MD
Assistant Professor

Awarded a Dermatology Foundation Dermatopathology Research Career Development Award for *Biomarker Analysis of Transcriptome Signatures in Mycosis Fungoides Across Clinicopathologic Stages*

Carrie Kovarik, MD
Professor

Awarded the American Academy of Dermatology (AAD) 2021 Presidential Citation Award

* ***Awards from November, 2020 through May 15th, 2021***

Aimee Payne, MD, PhD
Professor

Awarded the American Academy of Dermatology (AAD) Eugene van Scott Award for Innovative Therapy of the Skin

Panteleleimon Rompolas, MD
Assistant Professor

Published in Cell Stem Cell entitled, *Two-photon live imaging of single corneal stem cells reveals compartmentalized organization of the limbal niche*

Junko Takeshita, MD, PhD
Assistant Professor

Awarded two Diversity Research Supplement Awards from the Dermatology Foundation for *Evaluating Racial/Ethnic Differences in the Quality-of-Life Impact of Acne*, and *Understanding Health Care Seeking Behaviors for Pediatric Atopic Dermatitis*

Joy Wan, MD, MSCE
Instructor

Awarded the 2021 American Academy of Dermatology (AAD) Young Investigators Award for *Epidemiologic Investigations in Pediatric Atopic Dermatitis*

Awarded Year 2 of the Public Health Career Development Award from the Dermatology Foundation for *Neurocognitive Functioning of Children with Atopic Dermatitis*

Philadelphia Magazine's Top Doctors 2021

Edward Bondi, MD

Bruce Brod, MD

George Cotsarelis, MD

Cherie Ditre, MD

Joel Gelfand, MD, MSCE

Analisa Halpern, MD

William James, MD

Ellen Kim, MD

Christopher Miller, MD

Michael Ming, MD

Alain Rook, MD

Misha Rosenbach, MD

Adam Rubin, MD

James Treat, MD

Joseph Sobanko, MD

Shobana Sood, MD

Victoria Werth, MD

Albert Yan, MD, FAAP, FAAD

FACULTY DIRECTORY 2021

George Cotsarelis, MD
Chairman
Hair and Scalp Disorders

(215) 662-2737

Joel Gelfand, MD, MSCE
Vice Chair, Clinical Research
Acne, Eczema, and Psoriasis

(215) 662-2737

David Margolis, MD, PhD
Vice Chair, Faculty Affairs
Chronic Wounds and Leg Ulcers

(215) 662-2737

Misha Rosenbach, MD
Vice Chair, Education
Cutaneous Sarcoidosis, Adverse Drug Reactions, and Autoimmune Skin Diseases (Connective Tissue and Blistering)

(215) 662-2737

Susan Taylor, MD
Vice Chair,
Diversity, Equity & Inclusion
Cosmetic Dermatology and Skin of Color

(215) 662-2737

Carmela Vittorio, MD
Vice Chair, Operations
General Dermatology, Skin Cancer, Cutaneous T-Cell Lymphoma, Acne Vulgaris, Rosacea, and Laser Hair Removal

(215) 662-2737

Elena Bernardis, PhD

Computer Vision and Computational Dermatology

Edward Bondi, MD

Sun Damaged Skin, Melanoma and Non-Melanoma Skin Cancer

(215) 662-2737

Bruce Brod, MD

Contact Dermatitis and Occupational Dermatology

(215) 662-2737

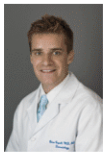
Roman Bronfenbrener, MD
(Part-time faculty)
General Dermatology

(215) 662-2737

Katherine Brown, MD

General Dermatology

(610) 902-2400



Brian Capell, MD, PhD

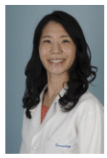
Epigenetics and Health Imbalances of the Skin

(215) 662-2737

Zelma Chiesa Fuxench, MD, MSCE

Inflammatory Skin Disorders

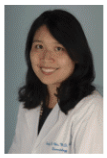
(215) 662-2737



Juliana Choi, MD, PhD

General Dermatology, Acne, Rosacea, and Hyperhidrosis

(215) 662-2737



Emily Chu, MD, PhD

Genodarmatosis, Dermatopathology, and Cutaneous Oncology

(215) 662-2737

Magaly Del Monaco, DO

General and Cosmetic Dermatology

(215) 504-7700

Cherie Ditre, MD

Cosmetic Dermatology

(610) 902-2400

Rosalie Elenitsas, MD

Pigmented Lesions and Melanoma

(610) 902-2400

Jeremy Etzkorn, MD

Micrographic Surgery, Reconstructive Surgery, and Cutaneous Oncology

(215) 504-7700

Amy Forrestel, MD

Complex Medical Dermatology, Inpatient Dermatology, and Global Health Dermatology

(215) 662-2737

Cerrene Giordano, MD

Micrographic Surgery, Reconstructive Surgery, Skin Cancer, and Inherited Skin Cancer Symptoms

(215) 360-0909

Elizabeth Grice, PhD

Wound Healing, Genomics, Microbiome, and Innate Immunity

Analisa Halpern, MD

General Dermatology, Cosmetic Dermatology, Woman's Dermatolgoy, and Complex Medical Dermatology

(215) 662-2737

Paul Haun, MD, MS

Cutaneous T-Cell Lymphoma and Dermatopathology

(215) 662-2737

H. William Higgins, MD, MBE

Micrographic Surgery, Reconstructive Surgery, Skin Cancer, Epidemiology, and Political Advocacy

(215) 360-0909

Phillip Holler, MD, PhD

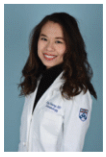
Medical Dermatology and Diseases of the Scalp

(215) 504-7700

Claudia Hossain, MD

General Dermatology, Cosmetic Dermatology, Oncodermatology

(215) 504-7700



Jing Huang, MD

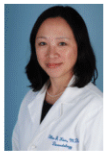
General Dermatology

(215) 829-3100

William James, MD

Acne, Eczema, and Psoriasis

(215) 662-2737



Ellen Kim, MD

Cutaneous T-Cell Lymphoma, General Dermatology, and Melanoma and Pigmentary Disorders

(215) 662-2737

Joseph Kist, MD

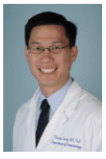
General Dermatology

(215) 662-2737

Carrie Kovarik, MD

Topical and Infectious Dermatologic Disorders and Dermatopathology

(215) 662-2737



Thomas Leung, MD, PhD

Wound Healing, Regenerative Medicine, and Infammatory Skin Diseases

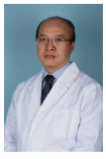
(215) 823-5800 Ext. 204573

James Leyden, MD
Emeritus
Acne

Jules Lipoff, MD

General and Medical Dermatology, HIV, LGBTQ, and Immunosuppression Dermatology

(215) 662-8060



Ming-Lin Liu, MD, PhD

Autoimmune Skin Inflammation and Diseases

Stacy McMurray, MD

Micrographic Surgery, Reconstructive Surgery, and Skin Cancer

(215) 360-0909

Robert Micheletti, MD

Graft versus Host Diseases and Vasculitis and Infectious Diseases

(215) 662-2737

Sarah Millar, PhD
Emeritus
Signaling Mechanisms and Regulating and Embryonic Development of Postnatal Growth of Skin Appendages

Christopher Miller, MD

Micrographic Surgery, Reconstructive Surgery, and Cutaneous Oncology

(215) 360-0909

Michael Ming, MD

Melanoma, Dysplastic Nevi, and Pigmented Lesions

(215) 662-2737

Nicholas Mollanazar, MD, MBA

Atopic Dermatitis, Chronic Pruritus, LGBTQ Dermatology, CTCL, and Psoriasis

(215) 662-2737

Michelle Oboite, MD

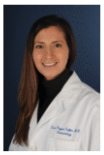
General Dermatology and Hair and Scalp Disorders

(215) 829-3100

Temitayo Ogunleye, MD

General Dermatology, Skin of Color, and Hair Disorders

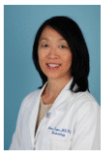
(215) 662-2737



Lisa Pappas-Taffer, MD

General Dermatology, Autoimmune Conditions, Side Effects of Chemotherapy, and Urticaria

(215) 504-7700



Aimee Payne, MD, PhD

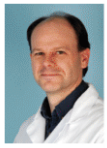
General Dermatology and Autoimmune Blistering Diseases

(215) 662-2737

Douglas Pugliese, MD

General Dermatology and Wound Healing

(215) 662-8060



Todd Ridky, MD, PhD

General and Medical Dermatology, Tissue Engineering, Cancer Biology, and Oncogene Signaling

(215) 662-2737

Panteleimon Rompolas, PhD

Cutaneous Stem Cells in Regeneration and Homeostasis Pathophysiology

Alain Rook, MD

Cutaneous T-Cell Lymphoma and Other Immune Mediated Diseases

(215) 662-2737

Rudolf Roth, MD

General Dermatology and Dermatologic Surgery

(610) 902-2400

Adam Rubin, MD

Nail Disorders, Histopathology of the Nail Unit, and Dermatopathology

(215) 662-2737

Sarah Samimi, MD

General Dermatology, Cutaneous T-Cell Lymphoma, and Melanoma

(215) 662-2737

John Seykora, MD, PhD

Dermatopathology and Cutaneous Diseases Exhibiting Abnormal Keratinocyte Differentiations

(215) 662-2737

Daniel Shin, PhD

Statistical Imaging, Functional Data Analysis, Big Data, Clinical Trials, and Epidemiology

Thuzar Shin, MD, PhD

Micrographic Surgery, Reconstructive Surgery, and Cutaneous Oncology

(215) 360-0909

Meera Sivendran, MD

General Dermatology

(610) 902-2400

Joseph Sobanko, MD

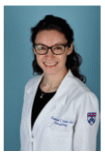
Micrographic Surgery, Reconstructive Surgery, and Cosmetic Dermatology

(215) 360-0909

Shobana Sood, MD

Micrographic Surgery, Photodynamic Therapy, Laser Therapy, and Cosmetic Dermatology

(610) 902-2400



Katherine Steele, MD

Complex Medical Dermatology, Inpatient Consultations, and Dermatologic Oncology

(215) 662-2737

John Stanley, MD

Emeritus

Blistering Diseases and Pemphigus

Junko Takeshita, MD, PhD, MSCE

Health Disparities and Inflammatory Skin Diseases

(215) 662-2737

Jennifer Villasenor-Park, MD, PhD

Skin Lymphoma, Non-Melanoma Skin Cancer, General Dermatology, and Cosmetic Dermatology

(215) 504-7700

Julie Wahrman Cramer, MD

General Dermatology, Pediatric Dermatology, and Cosmetic Dermatology

(215) 504-7700

Michelle Weir, MD

General and Medical Dermatology, Acne, Atopic Dermatitis, Inflammatory and Autoimmune Skin Conditions, and Skin Cancer Detection

(215) 829-3100

Victoria Werth, MD

Autoimmune, Blistering, and Connective Tissue Diseases

(215) 662-2737

Richard Wortzel, MD, PhD

General Dermatology, Skin Cancer, Psoriasis, and Eczema

(215) 504-7700

Sandra Wortzel, MD

(Part-time faculty)

General Dermatology

(215) 504-7700

ASSOCIATED FACULTY

Faizan Alawi, DDS

Oral and Maxillofacial Pathology

(215) 573-7638

Leslie Castelo-Soccio, MD, PhD

Pediatric Dermatology and Pediatric Hair Disorders

(215) 590-2169

Glen Crawford, MD

Allergic, Environmental, and Occupational Dermatology

(215) 662-2737

Steven Fakharzadeh, MD

General Dermatology and Genetic Skin Disorders

(215) 662-2737

Paul Gross, MD

Adjunct

Clinical Dermatology and Dermatopathology

(215) 829-3576

Melinda Jen, MD

Pediatric Dermatology

(215) 590-2169

Patrick McMahon, MD

Pediatric Dermatology

(215) 590-2169

Amanda Moon, MD

Pediatric Dermatology

(215) 590-2169

Aditi Murthy, MD

Pediatric Dermatology

(215) 590-2169

Marissa Perman, MD

Pediatric Dermatology, Epidermolysis Bullosa, and Polycystic Ovarian Syndrome

(215) 590-2169

James Treat, MD

Pediatric Dermatology, Acne, Atopic Eczema, Genetic Skin Disorders, Hemangiomas, Port Wine Stains, and Other Vascular Anomalies

(215) 590-2169

Albert Yan, MD

Pediatric Dermatology, Acne, Atopic Dermatitis, Childhood Blistering Diseases, Hemangiomas, and Vascular Lesions

(215) 590-2169

DUHRING GROUND ROUNDS SCHEDULE JULY-DECEMBER 2021

Please note that due to COVID-19, Duhring Grand Rounds will continue to be conducted virtually, at the below URL, until further notice.

Zoom Connection information:
https://zoom.us/j/8048127474?pwd=bGE3M2J5L3RzTXpMVHNtc1Vhc2NYZz09
Meeting ID: 804 812 7474
Passcode: 153655

Please email **PennDermAlumni@uphs.upenn.edu** with any questions.

July 1, 2021 *No Grand Rounds*

July 8, 2021
7:00AM- 8:00AM Virtual Patient Viewing & Discussion

July 15, 2021 *No Grand Rounds*

July 22, 2021
7:00AM- 8:00AM Virtual Patient Viewing & Discussion

July 29 , 2021 *No Grand Rounds*

August 5, 2021
7:00AM- 8:00AM Virtual Patient Viewing & Discussion

August 12, 2021 *No Grand Rounds*

August 19, 2021
7:00AM- 8:00AM Virtual Patient Viewing & Discussion

August 26, 2021 *No Grand Rounds*

September 2, 2021
7:00AM- 8:00AM Virtual Patient Viewing & Discussion

September 9, 2021
10:00AM- 11:00AM Virtual Patient Viewing & Discussion
11:00AM- 12:00PM Lecturer: **Ginette Okoye, MD**
Professor of Dermatology
Chair of the Department of Dermatology
Howard University College of Medicine
Location: Virtual Session

September 16, 2021
7:00AM- 8:00AM Virtual Patient Viewing & Discussion

September 23 , 2021
7:00AM- 8:00AM Virtual Patient Viewing & Discussion

September 30, 2021
10:00AM- 11:00AM Virtual Patient Viewing & Discussion
11:00AM- 12:00PM Duhring Lectureship Conference: Health Equity Rounds
Lecturer**: Jon Klinton Peebles, MD**
Dermatologist
Kaiser Permanente, Mid-Atlantic Permanente Medical Group
Location: Virtual Session

October 7 , 2021
7:00AM- 8:00AM Virtual Patient Viewing & Discussion

October 14, 2021 *No Grand Rounds*
11:00AM- 12:00PM Wallace H. Clark Jr., MD Lectureship in Cutaneous Oncology & Melanoma Symposium
Lecturer**: Paul Nghiem, MD, PhD**
Professor of Dermatology
Adjunct Professor of Pathology & Oral Health Sciences
Head of the Division of Dermatology
George F. Odland Endowed Chair
Dermatology Site Director, Seattle Cancer Care Alliance
University of Washington, Division of Dermatology
Title: TBD ; **Location**: Virtual Connection information to be announced by the Abramson Cancer Center

October 21, 2021
10:00AM- 11:00AM Virtual Patient Viewing & Discussion
11:00AM- 12:00PM Duhring Lectureship Conference: Health Equity Rounds
Lecturer**: Harvey Floyd II, MA**
Organizational Psychologist, Senior Executive Coach and Lecturer
University of Pennsylvania, Wharton School of Business
Location: Virtual Session

October 28 , 2021
7:00AM- 8:00AM Virtual Patient Viewing & Discussion

November 4 , 2021 *No Grand Rounds*

November 11. 2021
10:00AM- 10:45AM Virtual Patient Viewing & Discussiom
10:45AM- 11:00AM Networking/ Break
11:00AM- 12:00PM **46th Annual Morris H. Samitz Lectureship**
Lecturer**: Susan C. Taylor, MD**
Sandra J. Lazarus Associate Professor of Dermatology
Director of Diversity, Department of Dermatology
Location: Virtual Session

November 18, 2021 *No Grand Rounds*
7:00AM- 9:00AM **Annual Dermatology Mandatory Billing Compliance Education Session**

November 19, 2021 *No Grand Rounds*
HUP Philly Derm Conference

November 25, 2021 *No Grand Rounds*
Thanksgiving

December 2, 2021
7:00AM- 8:00AM Virtual Patient Viewing & Discussion

December 9, 2021
10:00AM- 8:00AM Virtual Patient Viewing & Discussion
11:00AM- 12:00PM Lecturer: Wilson Liao, MD
Professor and Vice Chair of Research
Director of the UCSF Psoriasis & Skin Treatment Center
University of California, San Francisco
Location: Virtual Session

December 16, 2021
7:00AM- 8:00AM Virtual Patient Viewing & Discussion

December 23, 2021
7:00AM- 8:00AM Virtual Patient Viewing & Discussion

December 30, 2021 ***No Grand Rounds***