

## From the Desk of Periodontics Chair, Dr. Charles Sfeir



Welcome to the first issue of Periogram+/- — the newsletter of the University of Pittsburgh School of Dental Medicine Periodontics and Preventive Dentistry Department. We hope this newsletter brings you current with our exciting developments and up-to-date on the successes of those in our program. We have some great things to share with you in this first issue — such as our newly implemented clinical practice model and our expanding translational research efforts. Our clinical model provides residents with — [READ MORE ON PAGE 2](#)



### In this issue...

- ◆ Department Chair's Message
- ◆ Program Director's Welcome
- ◆ Faculty Focus: Dr. Satish Kumar
- ◆ A Practice-Based Residency
- ◆ Periodontics Research at Pitt
- ◆ Catching Up With 2016 Graduates
- ◆ Our Residency Program, In-Depth
- ◆ Dental Hygiene Program Update

## A Word from Residency Director, Dr. Kelly Bolden Williams



Welcome to the first issue of Periogram+/-, a newsletter designed to keep University of Pittsburgh School of Dental Medicine periodontics faculty, students and alumni up to date on all that is happening in our program. Our department has always been a great place to work where we can count on everyone to help and pitch in. I am glad to be a part of that and believe that, whether you are a faculty member, — [READ MORE ON PAGE 2](#)

## Faculty Focus: Dr. Satish Kumar



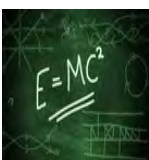
Recognized with an American Academy of Periodontology Outstanding Teaching and Mentor award, Dr. Satish Kumar credits family and mentors with his success. His experience at Pitt, he said, is as supportive as his time at the University of Southern California School of Dentistry, where he studied then taught. "The support is incredible and allows me to become a better educator everyday," — [READ MORE ON PAGE 5](#)

## Residency Program Institutes Practice-based Model



A Special Services office is giving residents in the periodontics program the experience of private practice management before they begin their careers. A joint effort between the University of Pittsburgh School of Dental Medicine Periodontics, Endodontics and Orthodontics departments, the Special Services office aims to coordinate and centralize residents' scheduling and financial counseling — [READ MORE ON PAGE 7](#)

## Pitt Periodontics - Pursuing Cutting Edge Research



With each issue of Periogram+/-, we will be sharing the latest on the innovative research happening in our program. In this inaugural issue, we focus on two NIH-funded projects. One investigates how to harness the abilities of the immune system to treat periodontal disease while another is a wide-ranging multi-site center devoted to guiding new clinical technologies along the translational pathway. [READ MORE ON PAGE 4](#)



**Chair's message, continued from page 1**

a model of efficiency and quality of care. We also have exciting news to share about our translational research efforts that includes development of innovative therapies which will lead us to clinical trials.

When it comes to research, our vision is to establish our department as a center of excellence providing state-of-the-art periodontal and implant clinical therapies while pursuing cutting edge research.

Federally-funded research projects in periodontics at the Pitt School of Dental Medicine include:

- Developing periodontal therapies by controlling the immune system. This involves engineering injectable resorbable particles to be inserted into the periodontal pocket to release a peptide to attract a select type of immune cells capable of restoring periodontal homeostasis. This therapy prevents bone loss and significantly reduces inflammation.
- Developing novel resorbable scaffolds for bone tissue regeneration. The focus is polymeric and calcium phosphate-based scaffolds.
- A novel resorbable pH stable and porous calcium phosphate cement licensed to startup and undergoing pre-clinical assessment for FDA submission.
- A polymer/magnesium composite scaffold to enhance bone regeneration.
- Biomimetic collagen scaffold with dentin-specific peptides for bone tissue engineering.
- Polymer magnesium periodontal membranes; developing resorbable metal fixation devices. New magnesium-based and resorbable technologies-based metals will provide appropriate mechanical fixation strength while avoiding a second surgery.

In addition, clinically-oriented projects are undertaken by residents and faculty. Among them are bone regeneration assessments using novel biologic grafting materials for the treatment of peri-implantitis with the goal of ridge augmentation for implanting.

As these items attest, our periodontics residency is dynamic in scope and grounded by a stable foundation in basic science and top tier clinical training.

Our program is one that not only boasts a rich history but keeps an eye on the future, training residents to be

top level specialists and advancing our ongoing cutting edge research.

This program's success is due to the dedication of faculty, staff and residents – and those are the very people we seek to highlight in these pages. I am glad to have the opportunity to do so in this newsletter and look forward to sharing more with you in coming issues of Periogram+/-.

I hope that you enjoy reading what we have to share about our program. Please know I send you and your loved ones best wishes for the holiday season and happy New Year.

Warm Regards,  
*Charles*

**Residency Director's message, continued from page 1**

a student, or an alum, you have experienced something similar here in the Pitt Periodontics department. Through these pages, I hope to share with you a continuation of that synergy and collaboration.

If you are a faculty member, please know that this publication is a venue for news and information – we look forward to not only sharing with you the latest and greatest but also hope to hear from you about news, events and advances in your practice so we can share them with others through this newsletter.

Students, I hope this publication proves to be a resource for you to expand your knowledge of our department and profession as well as a place for your own news.

Alumni, I anticipate that this newsletter will not only encourage you to look back fondly at your time here, but to view our progress with pride and be inspired. Please know, you are always welcome back, to visit in-person and by contributing updates for our newsletter.

Regards,  
*Kelly Bolden Williams*

**ABOUT PERIOGRAM+/-**

*Periogram+/- is published three times a year by the University of Pittsburgh School of Dental Medicine Periodontics and Preventive Dentistry program.*

**Do you have news to share?**

Contact Jill Smith at 412-648-7729 or [jcsst63@pitt.edu](mailto:jcsst63@pitt.edu).

## RECENT GRADUATES — WHERE ARE THEY NOW?

*With this feature, we keep you posted on our graduates, to recognize their accomplishments in our program and let you know about their current successes. We are pleased to update you in this issue on the graduates of the class of 2016.*

**Dr. David Hay** is one of two from our 2016 graduating class to return to our department, where he teaches as a clinical assistant professor. Dr. Hay also works in private practice with Drs. James DiPerna and Amber Foronda at Integrated Periodontics and Dental Implants in the Pittsburgh area.



“My time at Pitt,” he says, “gave me not only an exceptional experience in surgery, but also the higher level thinking skills to plan and execute complex cases.”

While completing his periodontics residency, Dr. Hay also earned a Master’s of Public Health degree under the mentorship of Dr. Pouran Famili, researching the incidence of periodontitis among community-dwelling diabetic patients.

He spends his free time with his wife, Sara, and their family. A Pittsburgh native, Dr. Hay did his undergraduate studies at Washington and Jefferson College and graduated summa cum laude from the dental program at Temple University.

A member of Omicron Kappa Upsilon, Dr. Hay received Temple University's Kravitt Award for Outstanding Student in Clinical Dentistry and the Academy of Osseointegration Award for Outstanding Student in Implant Dentistry. His MPH thesis received the Best Research Thesis Award from Pitt’s Multidisciplinary Master of Public Health (MMPH) Program.

California native **Dr. Timothy Erdle** is still a familiar face in the periodontics program. He having stepped into the role of clinical assistant professor at Pitt. He is a graduate of Midwestern School of Dental Medicine in Glendale, Arizona and married to fellow Midwestern graduate, Paulina Sek.

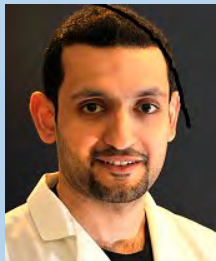


Dr. Erdle spent a year as student director at the SDM Multidisciplinary Implant Center and has received awards for his clinical skills. He works at Precision Dental Specialties Group outside of Pittsburgh and serves as a periodontist diplomate of the American Board of Periodontology.

“Since coming to the University of Pittsburgh, I have learned to appreciate the value of really treatment planning for the dental patient from a multidisciplinary standpoint,” he says.

During his time as a periodontics resident, Dr. Erdle served as multidisciplinary implant seminar student director and student government president, among other roles.

Upon graduation, 2016 periodontics resident **Dr. Ahmad Kamal** returned to his native Kuwait to practice. Dr. Kamal came to Pitt by way of Nebraska’s Creighton University Dental School. By his second year in Pitt’s periodontics program, he had earned his master’s degree in public health under the mentorship of Dr. Pouran Famili.



Dr. Kamal’s thesis research investigated the effects on the number of periodontal procedures performed at the dental school after cuts in Pennsylvania Medical Assistance reimbursements under the previous state governor.

Dr. Kamal presented the results of his research at the 2015 Academy of Osseointegration Annual Meeting in San Francisco. He attended the Academy regularly while a resident.

“What I learned from my experience at Pitt is trust is always gained by feeling and sensing patients’ pain and suffering and working on relieving it,” he says. “Trust is a journey.”

## ***Multidisciplinary Research on Leveraging the Immune System to Treat Periodontal Disease***

Periodontal disease affects 47% of adults age 30 or older (64.7 million people) in the United States. Designing a therapy that will change our treatment approach to the disease requires a multidisciplinary team. This was the basis of the collaboration between Drs. Charles Sfeir and Steven Little.

Dr. Steven Little is the Chairman of the Department of Chemical and Petroleum Engineering and is the William Kepler Whiteford Endowed Professor in the Departments of Chemical and Petroleum Engineering, Bioengineering, Immunology, and Ophthalmology. Dr. Little joined Pitt's McGowan Institute in 2006 after earning his PhD from Massachusetts Institute of Technology. He and Dr. Sfeir first met during a recruitment visit in 2005.

### ***Complementing research interests***

Also part of the McGowan Institute, Dr. Sfeir had interests in tissue engineering similar to those of Dr. Little and was instrumental in bringing him to Pitt. Their research interests complement each other very well. Dr. Sfeir is a periodontist able to understand how the treatment can be applied to and benefits patients, while Dr. Little provides the engineering necessary to help realize many treatments.



*Dr. Steven Little*

*Dr. Charles Sfeir*

Many of their current projects were begun during weekly research meetings over the past eleven years. Together they started to gain preliminary data and secured financial support from the Commonwealth of Pennsylvania, the Wallace H. Coulter Foundation, the NIH, and now are working together on the translational research project with the University of Michigan (DOCTRC).

Pitt is one of only six schools in the U.S. that has a partnership with the Coulter Foundation through the Coulter Translational Research Partners II Program at Pitt. Their mission is to identify, select, develop, and commercialize promising projects undertaken together by bioengineers and clinical faculty that address unmet clinical needs and better patient care throughout the world.

### ***Addressing the root of the problem***

Periodontal disease currently is controlled through daily brushing and flossing, and regular professional deep cleaning with scaling and root planning to remove tartar. Sometimes, antibiotics are needed to decrease the level of oral bacteria.

"Currently, we try to control the build-up of bacteria so it doesn't trigger severe inflammation, which could eventually damage the bone and tissue that hold the teeth in place," Dr. Sfeir said. "But that strategy doesn't address the real cause of the problem, which is an overreaction of the immune system that causes a needlessly aggressive response to the presence of oral bacteria. There is a real need to design new approaches to treat periodontal disease."

"There is a lot of evidence now that shows these diseased tissues are deficient in a subset of immune cells called regulatory T-cells, which tells attacking immune cells to stand down, stopping the inflammatory response," Dr. Little said. "We wanted to see what would happen if we brought these regulatory T-cells back to the gums."

### ***Effects of leveraging the immune system***

Recruitment of the regulatory T-cell population that naturally resolves inflammation has been previously considered to potentially help with wound healing without drugs. It's the body's own way to promote healing with the normal effector T-cells by creating a balance between the regulatory T-cells and the effector T-cells.

A chemokine, or signaling protein, called CCL22, attracts regulatory T-cells. When enclosed in a microsphere system that slowly releases the protein, and then placed between gums and teeth affected with periodontal disease, the team found that while bacterial load did not change, the treatment led to improvements in the patients' periodontal disease. Among the results were decreased pocket depth and decreased gum bleeding, indicating that there was a reduction in inflammation as a result of increasing the number of regulatory T-cells.

*A version of this story originally appeared in the Pitt Dental Medicine Summer 2017 issue.*



## Building a Network to Move Tissue Regeneration Therapies into Clinics

The University of Pittsburgh School of Dental Medicine has received an \$11.7 million grant from the National Institute of Dental and Craniofacial Research (NIDCR) to establish a resource center dedicated to advancing therapies for regenerating damaged dental, oral and craniofacial tissues.



Dr. William Wagner

Dr. Charles Sfeir

The Michigan-Pittsburgh-Wyss Resource Center: Supporting Regenerative Medicine in Dental, Oral and Craniofacial Technologies has been established at the University of Pittsburgh with the University of

Michigan and Harvard University as a part of the NIDCR's Dental, Oral, and Craniofacial Tissue Regeneration Consortium (DOCTRC). The goal of the consortium is to guide new therapies from the research stages through preclinical studies and into human clinical trials.

Researchers from the three universities joined forces in an initial year-long organizational phase. A second, three-year phase, which will consist of project evaluations based on their clinical and commercial viability, is included in the grant. Approved projects will be matched with specific clinical, scientific, industrial, and regulatory expertise necessary to efficiently translate the research into clinical trials with the goal of therapies moving into clinical use.

"There is tremendous value in craniofacial regenerative medicine research, and our goal is to create therapies and technologies that help patients," said Charles Sfeir, D.D.S., Ph.D., principal investigator, associate dean for research and director of Pitt's School of Dental Medicine Center for Craniofacial Regeneration.

"This newly established consortium is dedicated to making the most promising research in this field a clinical reality, and we are proud to be part of this effort at the University of Pittsburgh."

"This opportunity leverages our substantial base of researchers and support personnel in the regenerative medicine space and provides a focus on the unique challenges faced in the craniofacial area," said William Wagner, Ph.D., director of Pitt's McGowan Institute for Regenerative Medicine.

Long-standing collaborative efforts between the School of Dental Medicine's Center for Craniofacial Regeneration and the McGowan Institute for Regenerative Medicine provide outstanding expertise in regenerating dental and

oral cranial tissues. It also positions the University of Pittsburgh and the City of Pittsburgh as a leader in tissue regeneration with a proven record of translating tissue engineering therapies.

"I am confident that the investment from the NIH will result in meaningful progress of new therapies toward patients with needs for craniofacial tissue therapy," Wagner said.

*A version of this story originally appeared in the Pitt Dental Medicine Summer 2017 issue.*



**Michigan • Pittsburgh • Wyss**  
Regenerative Medicine Resource Center

### To learn more...

For more information on the Michigan-Pittsburgh-Wyss Resource Center in Dental, Oral and Craniofacial Technologies visit [www.doctrc.pitt.edu](http://www.doctrc.pitt.edu) or send an email to [info@doctrc.com](mailto:info@doctrc.com)

### Kumar, continued from page 1

he said. The AAP Outstanding Teacher and Mentor Award is given each year to dental school faculty who demonstrate excellence in providing education.

"Receiving this recognition at Pitt SDM means a lot to me personally — most importantly because it suggests that I succeeded in my efforts as an educator in a short time," Dr. Kumar said.

"It also means that I will need to meet higher expectations to fulfill the promise intrinsic to receiving this award. I gladly accept this challenge and will continue to work diligently toward my goals as an educator."

Dr. Kumar directs predoctoral didactic and clinical periodontology courses and supervises resident and predoctoral student clinic care in the periodontics clinic. He participates in seminars and lectures on periodontology, dental implantology and related topics.

The father of two young boys looks to his own parents as role models. Despite humble beginnings and immense struggle, Dr. Kumar said, his parents strived to provide him and his brother with a solid foundation of education.

"I am forever grateful to the amazing soul of my mother who no longer is with us and my father who sacrificed so much so that I would one day have the opportunity to receive this honor as an educator," he said.

## ***Our Residency Program: An In Depth Look***

The field of periodontics is foundational in many ways, as periodontists are trained to evaluate structures supporting the teeth. They must prevent, diagnose and develop comprehensive treatment plans to treat periodontal disease and protect the jaw bone that could involve bone regeneration of the jaw, sinus lifts and dental implant placement.

Because of the breadth of the field, periodontics often intersects with other dental specialties. This relationship motivates the curriculum and training within Pitt's Residency Program in Periodontics, which combines interdisciplinary clinical training with cutting-edge research.

Our three-year certificate program provides residents the necessary training to utilize all periodontal diagnostic modalities, multiple levels of anxiety and pain control, and treat patients with non-surgical, surgical, regenerative and dental implant therapies. In addition, our residents gain real life experience as they learn to interact and communicate with referring dentists.



The program, led by Residency Director Dr. Kelly Williams, accepts three residents each year. Residents are encouraged to pursue research projects and many contribute to national and international meetings of organizations in their specialty.

Residents are encouraged to pursue research projects and many contribute to national and international meetings of organizations in their specialty.

### **An Interdisciplinary Education**

This interdisciplinary program is evidence-based and research rooted. Residents begin clinical education early in the program, which continues to build throughout the three years into varied and extensive clinical experience so they are prepared to leave Pitt and achieve successful careers in private practice.

"Our residents are exposed to objective clinical training, allowing them to forge their own opinions based on solid scientific evidence," Dr. Williams said. "Because this training is interdisciplinary, it's a tremendous benefit to residents."

The Pitt School of Dental Medicine's Multidisciplinary Implant Center is constituted by the active participation of the Departments of Periodontics, Prosthodontics and Oral Surgery. This allows periodontics residents to work closely with prosthodontists as well as oral and maxillofacial surgeons. Periodontics residents also work closely with residents and faculty from the anesthesiology program which allows them to execute their own mild to moderate intravenous sedation of patients as well as to treat patients under general anesthesia.

"Pitt's setting allows for this kind of interdisciplinary education and patient care," Dr. Williams said. "This, alongside the integration of strong basic science with clinical training, broadens the perspective of our residents."

### **Depth and Breadth of Mentors**

What also provides context for residents is the range of faculty expertise within the Department of Periodontics, according to Dr. Charles Sfeir, Chair of the Periodontics department.

Faculty include researchers, clinicians and private practitioners, a mix that affords residents access to a comprehensive clinical training. The backgrounds of the department's faculty encompass a strong basic science research that focuses on technologies in bone regeneration, stem cell biology, novel treatment of periodontal disease by modulating the immune system and dental implant research as well as all facets of clinical practice in the field.

"Our residents' clinical education is done under the mentorship of many practitioners with varied backgrounds and areas of expertise," Dr. Sfeir said.

### Practice-based residency, continued from page 1

and to reach out to a wide and deep network of local dentists to secure referrals for residents in a way that coordinates with their schedules. The Special Services office gives residents the chance to work closely with referring dentists while within the residency setting. But it also serves as a resource for Pittsburgh area dentists and periodontists by making our residents available to treat challenging cases.



**Kristin Hoenig**

Through the Special Services office, the residency program now includes an office manager who is dedicated solely to residents, Kristin Hoenig. Hoenig is responsible for ensuring ongoing communication with referring dentists, which is a common concern for dentists in private practice. Hoening handles scheduling and financial counseling as an office manager in private practice would do.

Her role stimulates the workflow and efficiency residents will need to make sure their future private practices are successful. The pace of the operation is busy but not overwhelming, Hoening said, with a steady stream of referrals coming in from outside dentists throughout the greater Pittsburgh region.

“Our dedicated officer manager is fully engaged with the residents to ensure scheduling and communications run efficiently,” said Residency Program Director Dr. Kelly Bolden Williams.

“In addition to registration and scheduling, a key aspect of the office manager is to facilitate interoffice communications between the residents and referring dentists. This communication skill is absolutely essential to a successful specialty practice, and our goal is to emulate this during the residency program.”

Such a setting ensures that residents will be prepared to make a smooth transition into their careers, and with an established understanding of the dynamics of a successful private practice.

Hoening has a background in microbiology and previously managed the SEES spore strip sterilization monitoring program established by long-time Pitt dental infection control faculty, Dr. Herman Langkamp.

### Hygiene Program Now Awards Associate Degrees

The Dental Hygiene Program students are now fully recognized as undergraduate students of the University of Pittsburgh. With its change from a certificate to an associate degree program, the Dental Hygiene Program graduated its first associate degree students with the class of 2017.

#### About the Program

The Associate of Science Degree in Dental Hygiene Program is a two-year, six-term, 86 credit course of study that provides a broad range of education and experience. This program provides comprehensive intra- and inter-professional education in the basic sciences, health sciences and clinical dental hygiene for men and women of all ages, races and ethnic backgrounds.

#### Hands on Experience

Under the supervision of experienced faculty, students provide dental hygiene services such as oral prophylaxis, periodontal scaling, application of dental sealants and topical fluoride, patient education, and nutritional analysis. The team approach, joining the dental hygienist, dental students, and residents, is used to provide comprehensive dental care.



The School of Dental Medicine offers two programs of study in dental hygiene, the associate program and a bachelor's degree program.



*Wishing you and yours  
a wonderful holiday season  
and a happy New Year!*



University of Pittsburgh  
School of Dental Medicine  
Department of Periodontics and Preventive Dentistry  
3501 Terrace Street, Pittsburgh, PA 15261

OUR FACULTY:

Sarmad Bakuri DMD, MSD  
[sab239@pitt.edu](mailto:sab239@pitt.edu)

Andrejs Baumhammers DDS, MS  
[anb3@pitt.edu](mailto:anb3@pitt.edu)

Andrew Brown, PhD  
[abrown@scivelo.pitt.edu](mailto:abrown@scivelo.pitt.edu)

Timothy Erdle DMD  
[tve2@pitt.edu](mailto:tve2@pitt.edu)

Pouran Famili DDS, DMD, MDS, MPH, PhD  
[pof@pitt.edu](mailto:pof@pitt.edu)

Maryanne Frediani RDH, PhDHP  
[maf150@pitt.edu](mailto:maf150@pitt.edu)

Howard Goldstein DMD, MS

Stephany Gordon DDS, MS  
[seg45@pitt.edu](mailto:seg45@pitt.edu)

David Hay DMD, MPH  
[dch35@pitt.edu](mailto:dch35@pitt.edu)

Edward Heinrichs DMD  
[eph8@pitt.edu](mailto:eph8@pitt.edu)

Satish Kumar DMD, MDSc, MS  
[ssk42@pitt.edu](mailto:ssk42@pitt.edu)

James Manning DMD, MDS  
[jdm9@pitt.edu](mailto:jdm9@pitt.edu)

Jeffrey Manning DMD  
[jsmst32@pitt.edu](mailto:jsmst32@pitt.edu)

Hillary McClain RDH, PhDHP  
[him28@pitt.edu](mailto:him28@pitt.edu)

John Michael DDS  
[jjm62@pitt.edu](mailto:jjm62@pitt.edu)

Charles Sfeir DDS, PhD  
[csfeir@pitt.edu](mailto:csfeir@pitt.edu)

Sayuri Smith DDS, PhD, DMD  
[say15@pitt.edu](mailto:say15@pitt.edu)

Ali Seyedain DMD, MDS  
[seyedain@pitt.edu](mailto:seyedain@pitt.edu)

Alan Timko DMD  
[amt42@pitt.edu](mailto:amt42@pitt.edu)

David Wessel DMD  
[dnw10@pitt.edu](mailto:dnw10@pitt.edu)

Kelly Williams DMD  
[klb31@pitt.edu](mailto:klb31@pitt.edu)

Jennifer Zavoral DMD, MMPH  
[jmm100@pitt.edu](mailto:jmm100@pitt.edu)