NEW DAWN FOR MAIN CLINIC

ROBERT I. SCHATTNER, D’48 MAKES $10M GIFT, SETS STAGE FOR MAIN CLINIC RENOVATION
Building on Our Mission

THIS JULY MARKED my sixth year at Penn Dental Medicine and the final year of my first term as Dean. I am honored to serve the School for a second term beginning in 2016. Being part of this community is tremendously rewarding, particularly working with our Overseers, alumni, faculty, staff, and outstanding students to build on our mission and the strength and legacy of Penn Dental Medicine.

Right now, we have much to celebrate. First and foremost, we are indebted to an alumnus who has demonstrated unprecedented generosity and commitment to Penn Dental Medicine — Robert I. Schattner, DDS, from the Class of 1948, who earlier this fall made a $10 million gift to the School (see story, page 10). His vision and generosity will enable us to transform one of the School’s most important educational and clinical care spaces — the Main Clinic within the historic Thomas Evans Building. In addition, his gift will fund the creation of a dramatic new meeting and reception pavilion as an extension of the School’s Robert Schattner Center.

Dr. Schattner’s gift and the projects it will fund will represent the final phase of our planned ten-year ‘renaissance’ of the School, the core of which is the Evans Building Centennial Renaissance project — the two-year renovation of the Evans Building that got underway in late summer. Through support of alumni, friends, foundations, and industry, this major transformation of the Evans Building is now moving forward, and I am confident that we will reach the funding goals set for this significant project (see story, pages 4-5).

On other fronts, Penn Dental Medicine is continuing to extend its reach globally and locally. On the global stage, the School ran an Orofacial Stem Cell Research Summit at the Penn Wharton China Center (PWCC) in September and we were one of the first recipients of the Penn China Research and Engagement Fund awards — both presented during a week-long series of events with Penn President Amy Gutmann that marked the first 100 days of PWCC in Beijing (see story, page 6). We are also engaging more locally, with our students working to inspire minority youth to consider a dental career in an outreach program run by our Office of Diversity Affairs (see story, page 16).

In the area of research, our faculty and students continue to advance the science and practice of dental medicine. This June, the School brought together highly respected researchers from across the country and globally for the Penn Periodontal Conference 2015 and the Penn Esthetics Symposium. Highlights from both events as well as our 2015 Faculty Research Retreat and 2015 Student Research Day are presented in a special supplement in this issue (see page 41).

Indeed, 2015 — this centennial year for the Evans Building — has been one of celebrating the School’s rich history, which traces back 163 years through ties to the Philadelphia College of Dental Surgery, through the Arthur Ross Gallery exhibition of the Thomas Evans Collection and the return of Evans’ carriage. I thank all of our overseers, our alumni, faculty, staff, and students for your engagement and support as we continue to build on the strengths of this great institution.

Denis F. Kinane, BDS, PhD
Morton Amsterdam Dean
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ON THE COVER: With the recent $10 million gift from alumnus Dr. Robert I. Schattner (D’48), the School’s Main Clinic within the historic Thomas Evans Building will undergo a complete renovation, see story, page 10.

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Dean Denis Kinane Reappointed to Second Term

DR. DENIS KINANE has been reappointed to a second six-year term as the Morton Amsterdam Dean of Penn Dental Medicine. The announcement was made in June by Penn President Amy Gutmann and Provost Vincent Price. Dean Kinane will serve until June 30, 2021.

“Dean Kinane’s first term was marked by a commitment to reenergizing and rebuilding the School across its missions and in a wide array of domains,” Gutmann and Price said in making the announcement. “With an ambitious vision and, through a series of bold moves, he has realized significant change in virtually every aspect of the School’s programs and operations.

“Penn Dental Medicine today — its stature, scholarship, clinics, finances, and facilities — is stronger and better positioned than it was just six years ago.”

— PRESIDENT AMY GUTMANN AND PROVOST VINCENT PRICE

“Dean Kinane’s first term was marked by a commitment to reenergizing and rebuilding the School across its missions and in a wide array of domains. Penn Dental Medicine today is stronger and better positioned than it was just six years ago.”

Looking ahead, Dean Kinane says that completing the Evans Building renovation is among the top priorities as he begins his second term. “With the plans we have in place within the Evans Building Centennial Renaissance project, we are creating an environment that will meet the needs of our students, faculty, and patients well into the future, both transforming the building throughout and maintaining the historic integrity of this grand structure,” says Dean Kinane. “Plans are moving forward on schedule.”

This summer, demolition work began in the lower level of the Evans Building; the first phase of construction, which involves the complete lower level and the start of the new library (on the second and third floors) will extend through April 2016. The entire $34 million renovation should be completed by early 2017 (see related story, page 4).

Faculty recruitment – both top research and clinical faculty – remains another key priority for Dean Kinane going forward. He also notes that the School will continue to build upon new curriculum changes that include adapting teaching methodologies with blended learning to reflect the realities of the digital and social media age. The School will also continue to build its interdisciplinary opportunities for students with Penn’s other graduate schools. “We are always looking to enhance the students’ educational experience,” says Dean Kinane.

In making the announcement on the reappointment, President Gutmann and Provost Price added that Dean Kinane’s second term “will present an opportunity to bring strategies and plans to fruition and to further strengthen and deepen relationships with stakeholders and friends across the School, the Penn campus, the profession, and the community.”
New Post Guiding New Curriculum: Assistant Dean for Curriculum Named

Dr. Faizan Alawi, Associate Professor of Pathology, has been named to a newly created administrative post at Penn Dental Medicine, taking on the role of Assistant Dean for Curriculum in August. This new leadership position stemmed from the development of a new curriculum that was formally implemented with the start of this academic year for first-year students.

“Dr. Alawi’s leadership in creating the new curriculum, his exemplary organization skills, and his experience as an educator and innovator make him a clear choice for this new position,” said Dean Denis Kinane, when announcing the appointment. For the past two years, Dr. Alawi has been working with the School’s faculty to review and update the curriculum, and as Assistant Dean, he is charged with overseeing the design and implementation of the entire predoctoral curriculum, including the new curriculum introduced to the freshman class this year. He will also continue to lead the effort to revise and modernize the entire Penn Dental Medicine curriculum.

“In the interest of strengthening and modernizing dental education, the curriculum needs to constantly evolve,” notes Dr. Alawi. “To this end, our faculty has designed a new and innovative curriculum that is based on the core content material in biomedical, behavioral, and clinical sciences as required by the standards of the Commission on Dental Accreditation.”

He explains that that new curriculum reflects an emphasis on the integration of scientific information, grouping courses into integrative course streams rather than discipline-specific courses, as reflected in the old curriculum. “Small-group and case-based learning opportunities will be enhanced,” he says. “Students will also engage in primary patient care within the first year of their dental education, and experience more clinical rotations throughout the first two years of study.”

Though taking on this new responsibility, Dr. Alawi will continue to serve as principal investigator of a basic science research program funded by the National Institute of Dental and Craniofacial Research. His clinical practice also remains active as Director of Penn Oral Pathology Services, and he will continue to teach predoctoral and postdoctoral students at Penn Dental Medicine, Penn’s Perelman School of Medicine, and Children’s Hospital of Philadelphia.

By the Numbers: Recent Grads & Incoming Students

CLASS OF 2015

- 69.6% of the 148-member class went on to postdoctoral study
- 37.2% entered general practice or AEGD residencies
- 32.4% entered specialty practice programs (Endo, OMFS, Ortho, Pedo, Perio and Pros)
- 29% pursued general practice
- 4% entered practice within the U.S. military
- 3.4% entered public health roles

CLASS OF 2017 PASS STUDENTS

- 15 countries represented in this 29th class of the PASS program
- 35 foreign-trained dentists (18 men and 17 women) from around the world joined the third-year class at the start of this academic year as part of the PASS program

CLASS OF 2019

- 120 students make up this year’s freshman class
  - 71 WOMEN | 49 MEN

Students in this year’s freshman class represent 23 states, Puerto Rico, and 6 foreign countries (Canada, People’s Republic of China, Germany, Lebanon, South Korea, and Thailand)

- 20 languages — from Albanian to Vietnamese — are spoken by the students
- 1 PhD in the class
- 52 students have relatives who are dentists,
  - 8 with relatives who are Penn Dental Medicine graduates
$750K Gift Funds
Advanced Simulation Lab

Penn Dental Medicine has been awarded a $750,000 grant from the Benjamin & Mary Siddons Measey Foundation of Media, Pa., in support of the School’s state-of-the-art advanced dental simulation laboratory, which will soon be a centerpiece of the Evans Building Lower Concourse. The new Measey Haptic Technology Center at Penn Dental Medicine will aid students in building proficiency in handpiece use, depth perception, and fine-motor movement through simulation units that use haptic technology to mimic the feel of tooth preparation, delivering a highly realistic virtual reality simulation of dental procedures. The Measey Foundation is named for the parents of William Maul Measey, an 1889 graduate of the University of Pennsylvania Law School. The Foundation is a longtime supporter of scholarships at Penn Dental Medicine, but with this gift, is now a major contributor to the Evans Building Centennial Renaissance project.

Clinic Named for Former PDM Board Member

The generous support of Henry Schein, Inc. is making possible the construction of a new 60-70 operatory, predoctoral teaching clinic on the first floor of the Evans Building as part of the Evans Building Centennial Renaissance project. Work will begin on the Edward & Shirley Shils Clinic in spring 2016, with completion of the clinic anticipated by January 2017. Henry Schein, Inc. is the world’s largest provider of health care products and services to office-based dental, animal health, and medical practitioners. During his lifetime career at Penn, Dr. Shils earned six degrees, three of them after age 70. He remains a legendary figure in the study of entrepreneurship and was the founder of the Wharton Entrepreneurial Center. Dr. Shils served on the Penn Dental Medicine Board of Overseers from 2002 until his death in 2004. “Dr. Shils was an invaluable mentor whose teachings remain an enduring source of inspiration to so many in the dental community,” noted Stanley Bergman, Chairman and CEO of Henry Schein, Inc.

Campaign Update: The Evans Building Centennial Renaissance

THE LONG-AWAITED reconstruction of the iconic Thomas Evans Building is underway. The Evans Building Centennial Renaissance project kicked off quietly in August, when demolition began in the building’s basement. Offices were relocated, while contingency plans were made for temporary lecture hall space so the heavily used B-60 auditorium could come “off-line” for the balance of the academic year. Over the next six months, a new Preclinical Lab & CE Training Center will take shape in what is now known as the Evans Lower Concourse. Eventually, this lower level will also house the offices of Student and Academic Affairs, classrooms, seminar rooms, an advanced simulation laboratory (the Measey Haptic Technology Center at Penn Dental Medicine, see adjacent story), a student lounge, and the 90-seat William W. M. Cheung Auditorium (currently B-60).

This first phase of renovation will extend through April 2016, and will also see the start of the new library (to be on the second floor). The final phase of the project will address the first floor of Evans, where a new predoctoral teaching clinic (the Edward & Shirley Shils Clinic, see adjacent story) will be constructed, along with new executive offices. Construction is on schedule for completion by early 2017. The School will then turn its attention to the next two exciting building projects: transforming the Main Clinic and creating a new indoor pavilion (see related story, page 10).

Approximately a third of the $34 million cost of the Evans Building Centennial Renaissance project will be met by contributions. Every gift is important — to discuss one of the recognition opportunities on the adjacent page, contact Maren Gaughan, Associate Dean for Leadership Giving, 215-898-8952 or gaughan@dental.upenn.edu.
EVANS BUILDING CENTENNIAL RENAISSANCE NAMING OPPORTUNITIES

Through the Evans Building Centennial Renaissance project, alumni and friends can invest in the future of Penn Dental Medicine and make a lasting legacy through the following naming opportunities.

FIRST FLOOR

The centerpiece of the first floor will be the Edward & Shirley Shils Clinic, a new predoctoral teaching clinic that will replace both Myers and Paletz clinics and occupy the southwest side of the building. The reception area for the new clinic will be named in recognition of gifts from Drs. Richard Copell (D’80) and David Tarica (D’83), co-chairs of the Evans Building Centennial Renaissance campaign. Other opportunities on this floor include:

<table>
<thead>
<tr>
<th>Café</th>
<th>$250,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shils Clinic Operatories</td>
<td>60 @ $50,000, 5 reserved</td>
</tr>
<tr>
<td>Radiology Rooms</td>
<td>4 @ $25,000</td>
</tr>
<tr>
<td>Executive Offices</td>
<td>$3,000,000</td>
</tr>
</tbody>
</table>

Located on the southeast side of the first floor, the executive offices will house the Dean and key administrators as well as provide a secure venue for paintings and decorative art treasures from the Thomas Evans Collection.

| Dean’s Office | $1,000,000 |
| Executive Conference Room | $250,000 |

LOWER CONCOURSE

Preclinical Lab & CE Training Center | $2,000,000

This facility will accommodate up to 90 student workstations, each featuring a retractable simulation unit and outfitted to reinforce correct positioning and posture. A high-speed digital video network will provide live and pre-recorded video to each workstation monitor, allowing for unobstructed, simultaneous, class-wide instruction. The space will also be a high-tech resource for hands-on continuing education courses.

| Preclinical Lab Evaluation Room | $100,000 |
| Preclinical Wet Lab | $100,000 |
| Work Benches | 15 @ $100,000 |
| Instructor Station | $50,000 |
| Retractable Simulation Units | 75 @ $10,000 |
| Haptic Technology Center | Reserved |
| Virtual Reality Simulation Units | 12 @ $25,000 |

Student Lounge | $200,000

This lounge will provide space to meet and relax. Wireless networking will enable student use of hand-held devices, and a TV, wall-mounted flat screen, and media players can be used for entertainment or instructional purposes. The lounge will connect to the west side of the Fonseca Gardens with outdoor seating.

Seminar Classrooms | 4 @ $150,000

Each classroom will feature flexible seating plans and air walls for combining the spaces. Wall-mounted cameras will allow lecture capture and videoconferencing. Instructor lecterns will be mobile and allow for wireless presentation with content delivered to students’ hand-held devices or wall-mounted screens.

William W. M. Cheung Auditorium | 90 @ $1,000

The “Take a Seat” Campaign was launched to augment resources for crucial updates to what has been the B-60 auditorium. Upgrades will include improved lighting, digital connectivity, a new speakers’ podium, and other enhancements. Each of the seats in the new lecture hall can be “named” with a gift of $1,000.

LIBRARY

A key component of the Evans Building Centennial Renaissance project is the relocation of the main library reading room to its original, 1915 space on the second floor. Library-managed spaces are planned for three floors of the building with the aim to facilitate small group instruction and an increasing-ly technology-infused curriculum. Library naming opportunities include:

| Knowledge Center | $750,000 |
| Reading Lounge | $500,000 |
| Collaboration Classroom | $200,000 |
| Group Study Rooms | 12 @ $25,000, 4 reserved |
| Small Study Pods | 3 @ $10,000, 1 reserved |
| Study Carrels | 10 @ $5,000, 2 reserved |

These rooms will accommodate up to six users and feature wireless networking and collaboration software so that users can move between hand-held devices to full-room display. Rooms will support video conferencing, while some will feature high-end cameras and an integrated recording system to capture and share material.

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Expanding Engagement in China

Penn Dental Medicine is continuing to expand its engagement in China, presenting the Orofacial Stem Cell Research Summit at the Penn Wharton China Center (PWCC) on September 12 and being one of the first recipients of the Penn China Research and Engagement Fund (CREF) awards. The Summit and the inaugural CREF awards, announced by Penn President Amy Gutmann and Provost Vincent Price on September 10, were in conjunction with a week-long series of events marking the first 100 days of PWCC in Beijing, which opened in March 2015.

Representing Penn Dental Medicine in Beijing was Dean Denis Kinane; Dr. Dana Graves, Vice Dean for Research & Scholarship; Dr. Syngcuk Kim, Associate Dean for Global Affairs; and Dr. Songtao Shi, Professor and Chair, Department of Anatomy & Cell Biology. Also attending and representing the School were three members of the Board of Overseers — Dr. William Cheung (D’81, GD’82), Nancy Baker, and Robert Zou (WG’94).

“Penn’s engagement in China via research, academic and student exchanges, and broad partnerships with Chinese institutions benefits Penn’s campus and community and enhances global understanding and discovery by bringing the world to Penn and Penn to the world,” said President Gutmann when announcing the CREF awards.

Penn Dental Medicine’s CREF grant, Advancing Research and Clinical Practice in China, will support the development of high-level research symposia on bone, biofilm, and stem cells as well as conferences on the delivery of dental care to China’s vast population. Dr. Syngcuk Kim is the principal investigator of the grant with co-principal investigators Dr. Songtao Shi, Dr. Dana Graves, and Dr. Hyun Koo, Professor of Orthodontics.

The Chinese partners include Sichuan University, Peking University School and Hospital of Stomatology, Wuhan University, Fourth Military Medical University, and Drum Tower Clinical Medical College of Nanjing Medical University. And other Penn partners on the grant are Perelman School of Medicine and the School of Engineering and Applied Science.

“Our Summit marked the first collaborative research symposium between Penn Dental Medicine and our MOU [memorandum of understanding]-partner institutions in China,” said Dr. Kim, “and we look forward to building on this through the CREF grant.”

Penn Dental Medicine’s Orofacial Stem Cell Research Summit at PWCC featured faculty from Penn Dental Medicine as well as leading researchers from throughout China.
Worldwide Learners
Penn Dental Medicine presented its first MOOC (massive open online course) through Penn’s Online Learning Initiative this summer, attracting 8,656 enrollments and 5,742 active learners worldwide. The seven-week course, “Introduction to Dental Medicine,” covered a full range of topics, from basic dental anatomy and disease to examination techniques and common orofacial disorders.

Along with those contemplating a career in dentistry, a key target audience for the course was health-care professionals working in fields outside dental medicine. “By taking this course, our hope was that other health-care professionals would be able to better integrate dental health with the overall health of their patients,” says Dr. Uri Hangorsky, Associate Dean for Academic Affairs, who developed and taught the course with Dr. Thomas Sollecito, Professor and Chair of Oral Medicine, and Dr. Eric Stoopler, Associate Professor of Oral Medicine.

Case studies and lectures on various areas of dental specialties were also presented by Dr. Markus Blatz, Professor and Chair of Preventive & Restorative Sciences; Dr. Bekir Karabucak, Associate Professor and Interim Chair of Endodontics; Dr. Helen Giannakopoulos, Associate Professor of Oral & Maxillofacial Surgery; and Dr. Sam Kadan, Clinical Associate, Dept. of Orthodontics. Recent graduates Arturo Lobell (GD’15) from the periodontics/prosthesis program and Matt Paradisgarten (D’15, GED’15), as well as current predoctoral student Katherine France (D’16) also contributed to the course.

Penn launched its Online Learning Initiative in 2012 with all 12 Penn schools now having presented a course through Coursera, the education platform that partners with top universities and organizations worldwide, to offer courses online for anyone to take. It is anticipated that Penn Dental Medicine’s course will be presented again within the next six months, visit www.onlinelearning.upenn.edu for a complete listing of the current course schedule.

Here are a few facts and figures about the course participants:

- 5,742 active learners – a strong 67% of the total enrolled participated (Penn MOOCs average 65% participation and statistics show that MOOCs often lose 50% of their learners before the first day of class)
- Lectures viewed over 100,000 times
- More than 450 forum posts
- 152 different countries represented (36% from emerging economies)
- 41% North America, 24% Asia, 19% Europe, 9% Africa, 4% South America, 3% Oceania
- 67% of learners were outside the U.S. with a large number of ESL students

Examining Gender Bias in Scientific Publishing
Dr. Anh Le, Norman Vine Professor and Chair of Penn Dental Medicine’s Department of Oral and Maxillofacial Surgery, has joined with a colleague at Penn’s Perelman School of Medicine to help advance the discussion on gender bias in scientific publishing. She and Dr. Sarah Millar, Albert M. Kligman Professor II and Vice-Chair for Research in the Department of Dermatology at Perelman, are co-organizing a symposium on the topic, to be held April 8, 2016 at Penn’s Smilow Center for Translational Research.

“While approximately 50% of medical, dental, and biomedical PhD students are female, women remain underrepresented in tenure-track faculty positions in the biomedical sciences, particularly at the associate and full professor levels,” says Dr. Le. “Barriers to publication are key roadblocks to academic career advancement.”

The keynote speaker will be Dr. Nancy Hopkins, Amgen Professor of Biology at MIT, whose Report on Women Faculty in Science at MIT launched a national reexamination of equity for women scientists. Among the other speakers will be senior editors from Cell Press, Nature Life Sciences, and JAMA, who will provide their perspective on gender bias, offer attendees advice on presenting and advocating for their research, and answer questions from the audience.

“Our goal is to have an interactive discussion with speakers and invited panelists,” says Dr. Le, “aimed at identifying strategies to achieve gender parity in academic biomedical careers.” For more information on the program, visit www.genderinsciencepub.com.
Advancing the Application of Research

Two students — each with a passion for using research to make a difference in the lives of patients — are the first to take advantage of two innovative, research-focused degree programs that are helping them shape distinctive, multifaceted careers.

Sumin Lee, GD ’13, DScD ’15: Doctor of Science in Dentistry (DScD)

Dr. Lee, a 2013 graduate of the endodontics postdoctoral program, is the first graduate of Penn Dental Medicine’s DScD program, which prepares students to enter the field of academic dentistry for careers in research and teaching. She defended her thesis, “The Role of NLRP3 Inflammasome in Pathogenesis of Pulpal Disease,” and was awarded her DScD degree in August.

The School’s DScD program, established in the 2011-2012 academic year, is open to both students pursuing their postdoctoral clinical specialty training at Penn Dental Medicine and those who have completed it elsewhere. The DScD combines the research and clinical strengths of the School, drawing faculty mentors from both the clinical and basic science departments, and offering students the chance to collaborate on research projects across disciplines here at Penn Dental Medicine as well as at Penn’s Schools of Engineering and Applied Sciences, Medicine, Nursing, and Veterinary Medicine.

A native of South Korea, Dr. Lee became interested in dentistry in high school, intrigued by the idea of running her own practice and building close relationships with patients. “I liked the idea of a career that blended art and science,” she remembers. She earned her DDS and completed a three-year clinical residency training and master’s program in conservative dentistry combined with operative dentistry and endodontics at South Korea’s Chosun University before coming to Penn Dental Medicine.

During a visit to Penn while vacationing in the States, she was deeply impressed by the work of Dr. Syngcuk Kim, Louis I. Grossman Professor of Endodontics and a pioneer in the fields of dental pulp physiology and microcirculation. Ready for “something new and different, where I would have more influence in the lives of my patients,” she made a big decision: she would move to Philadelphia to earn a certificate in endodontics at the School of Dental Medicine.

Soon after enrolling, Dr. Lee learned about the DScD degree. “I knew it would help me bring my research ideas from practice to the bench, and solve problems that would help patients live better lives,” she says.

After being accepted to the program in 2012, she was introduced by Dr. Kim to Dr. Anh Le, Chair and Norman Vine Endowed Professor of Oral Rehabilitation in the Department of Oral and Maxillofacial Surgery and selected Dr. Le as her DScD mentor. Working closely with Dr. Le on research involving oral and craniofacial tissue regeneration using orofacial mesenchymal stem cells, Dr. Lee was also able to pursue her own research interests, which deal with pulp tissue regeneration as an alternative to root canal treatment.

“A widely accepted current procedure in endodontics is to remove infected pulp tissue and fill the space with synthetic material, rather than to treat and preserve the living tissue,” she explains. “If we can save the pulp tissue, we can ultimately save natural teeth.” To this end, Dr. Lee isolated and characterized stem cells from both healthy and inflamed pulp to identify their role in pulpal disease and their potential use in tissue regeneration.

Presently, she is continuing to do research in Dr. Le’s lab and looks forward to a career in academia as a researcher and teacher. (She loves being in the classroom, and in 2012 received an award for her outstanding contribution in teaching continuing education courses within the Department of Endodontics at Penn Dental Medicine.)

“The beauty of the DScD program is that I have been able to use my extra education and training to fill the gap between pure science and clinical practice,” says Dr. Lee. “It has allowed me to become a true clinician-scientist.”

Nishat Shahabuddin, D’17: Dual Degree in Translational Research

The daughter of a family dentist from Queens, New York, Shahabuddin, a student in Penn’s seven-year bio-dental program, started dental school with the idea of someday taking over her father’s practice, but she also had a keen interest in specialization and research. As a high school student, she had enjoyed interning with an oral surgeon, and as an undergraduate biology major, she developed a love of basic science. How would she combine her interests? The dual-degree program in Translational Research offered the perfect opportunity to find out (it is one of eight interdisciplinary dual degrees with Penn’s other graduate schools available to students at Penn Dental Medicine).

As a first-year dental student, she was the first to enroll in the program, which, in conjunction with Penn’s Perelman School of Medicine, was designed to give students a strong foundation in the fundamental techniques of translational research and enable them, using contemporary research tools, to conduct sound clinical research.
“Translational research is a balance between basic science and clinical research,” she explains. “Basic science is usually focused on reproducible results in a controlled setting, while clinical research is driven by what a patient needs. Translational research is interdisciplinary — it’s the direct application of basic science to the work of being a clinician and treating patients.” As an example, she cites the lab component of a drug trial, in which researchers use basic science to determine whether a drug is having the desired effect on patients.

Since starting the program more than a year ago, Shahabuddin is supplementing her dental school coursework with a range of research-related classes in areas like statistics, review writing, manuscript writing, study design and ethics, and disease measurement. For her, the opportunity to engage with scientists from such varied fields as medicine and veterinary science is stimulating, and allows her, as a dental student, to share her expertise on the oral cavity.

But the bulk of the degree’s workload is hands-on research, and Shahabuddin is already developing the tools she will need to carry out translational research when she graduates. She is assisting her mentors (Dr. Edward Lally, Professor, Dept. of Pathology, and Dr. Kathleen Boesze-Battaglia, Professor, Dept. of Biochemistry) in an investigation of a microorganism of the oral cavity that could be responsible for localized aggressive periodontitis, an extreme form of gum inflammation that largely affects children. She first started working with them when entering the School’s research honors program the summer before her freshman year. Currently, the team is testing for antibodies to the microorganism to see if it is causing the disease. In the future, the presence of the antibodies could be used as an identifier for patients who might be at risk for developing the disease, and will help clinicians develop effective treatments.

This rigorous combination of coursework and research, which will culminate in a thesis, “is challenging me to think about what I really want to do,” says Shahabuddin, who is considering being a clinician, a clinician educator, and a teacher of basic science, as well as a researcher.

“Penn has always been a leader in basic science,” she says, “but translational research is a newer concept, and Penn is paving the way for a new field. I’m excited to be a part of it.”

**iBook Platform Centralizing Course Materials, Easing Accessibility**

Starting this academic year, all Penn Dental Medicine DMD students now get an iPad from the School and are required to bring them to class, as blended learning initiatives continue to transform the way courses are taught and students learn. Among the ongoing projects is the import of course materials to the iBook platform. To date, 11 courses are involved — four that have published iBooks for students and nine that are under the editing/development process.

“The role of an iBook is to centralize various kinds of course content under one platform and make it easily accessible,” explains Chia-Wei Wu, Associate Director of Online Curriculum Design. “This includes everything from course manuals, instructional videos, and course schedules to lab sign-up sheets and published articles.

“It is not efficient when you try to disseminate a substantial amount of information through too many channels and in hard copy format,” he says. “With the iBook platform, we have curated and centralized all the course information. Not only do we save the planet by saving a significant amount of paper, but we also ensure an enhanced teaching and learning experience thanks to the potential of the learning technology.”

For example, instructional videos are embedded into the Endodontic Preclinical Manual so students can watch a video while reading their iBook, and in the Dental Anatomy iBook, there are links that allow students to watch videos seamlessly on the School’s cloud system.

Once an iBook is completed for a course, Penn Dental Medicine’s Learning Technology team adds that course to the School’s private iTunesU community. Students then are notified by the instructor to enroll in the iTunesU course and download the iBook through the iTunesU app.

“Instructors can always make modifications throughout the course and add a reminder message that prompts students to update their course materials,” adds Wu. “This platform also provides a way to archive course content and make it easily accessible in the same format. We see the iBook as a promising tool that makes it easier for course instructors to engage with students and update course materials according to students’ feedback.”
FEW SCHOOLS BENEFIT from the generosity of one multi-million-dollar gift from an individual in his or her lifetime, much less two. But earlier this fall, Penn Dental Medicine did just that when alumnus Robert I. Schattner, DDS, a member of the class of 1948, gave back to his alma mater once again with a $10 million gift.

This latest contribution is the largest gift from a living donor in the history of Penn Dental Medicine. It will transform one of the School’s most important educational and clinical care spaces — the Main Clinic within the historic Thomas Evans Building — and create a dramatic new meeting and reception pavilion as an extension of the Robert Schattner Center. Dr. Schattner’s earlier major gift was in 1997 when he and his late wife, Kay, contributed $5.5 million for the construction of the Schattner Center and its surrounding gardens; the grand atrium of this clinical facility constitutes the main entrance to the dental school.

“Dr. Schattner has so very generously stepped up to the plate once again in support of the health-promoting work of Penn Dental Medicine,” said Penn President Amy Gutmann of the gift “and it is all the more heart-warming because he is a proud alumnus. No one better understands the vital work of this hallowed school than someone who has been such a valued and respected member of the Penn Dental Medicine family for almost 70 years. His generosity will be transformative and forever honored and remembered.”

AN ENTREPRENEURIAL SPIRIT
The story behind the man that has reached the philanthropic capacity of Dr. Schattner is one of hard work, dedication, and an entrepreneurial spirit that is inspiring for students now and will be well into the future. Along with the Robert Schattner Center, his legacy will be remembered at Penn Dental Medicine through the renaming of the Main Clinic to the Robert I. Schattner Clinic and the creation of the Schattner Pavilion.

TRANSFORMATIVE GIFT
ROBERT I. SCHATTNER, D’48, CONTRIBUTES $10 MILLION TO TRANSFORM MAIN CLINIC AND ADD NEW PAVILION

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“Few alumni have had as great an impact on Penn Dental Medicine as Dr. Robert Schattner,” says Morton Amsterdam Dean Denis Kinane. “His career exemplifies the innovative and entrepreneurial spirit of our earliest benefactor, Dr. Thomas Evans, and is an inspiration to our current high-impact, entrepreneurial faculty.”

“I can attribute my success to a combination of serendipity, luck, and perseverance,” says Dr. Schattner.

Dr. Schattner, now 90, grew up in the shadows of Yankee Stadium in the Bronx, earning a degree in chemistry at the City University of New York before coming to Penn Dental Medicine. After graduation in 1948, he served for one and a half years in the U.S. Public Health Service, then opened his own practice in Bayside, N.Y. In a 2008 interview with The Washington Post (The WashBiz Blog, March 4, 2008), Dr. Schattner relates that it was a serendipitous conversation at a cocktail party in 1952 that would change the trajectory of his career, leading to the world of business and product development.
That evening, another guest asked him if it is possible to anesthetize one’s mouth after having several teeth extracted. Dr. Schattner’s penchant for chemistry and problem solving took hold; he couldn’t let go of the question and decided to start experimenting. Working out of his home, he began mixing ingredients that eventually led to the formulation of Chloraseptic, the now ubiquitous sore-throat anesthetic/mouthwash.

Turning his invention into a successful product, however, is what required the most drive and tenacity of this self-made man. Over the next seven years, along with the challenges of finding a manufacturer and then distributors, he personally built demand, visiting countless dental offices and ear/nose/throat specialists with samples. Sales grew. After 10 years in private practice, he sold his practice to devote himself full time to his company, moving it to the Washington, D.C. area. In the years that followed, the growing success of the product led to a number of interested buyers and Dr. Schattner eventually sold Chloraseptic to Norwich Pharmaceuticals. Eventually, it was bought and marketed by Proctor and Gamble.

Dr. Schattner’s research and development didn’t stop with the sale of Chloraseptic; he started a second venture, developing the hospital disinfectant Sporicidin and a host of other antimicrobial products. Dr. Schattner, who has been a member of the School’s Board of Overseers since 2002, sold Sporicidin Intl. in 2008, retiring from a long career of innovation that includes 70 patents and trademarks.

“Dr. Schattner’s vision of the importance of this facility will have a lasting impact for our students and the School overall.”
— Dean Denis Kinane

Robert I. Schattner Clinic: History Meets Innovation

It seems quite fitting that it will be Dr. Schattner who will bring the renovation of the School’s Main Clinic to fruition, creating a clinic that will reflect the innovation that has so characterized his career, while also respecting the rich history of the School, which he so admires, and this space represents.

Located within the historic Evans Building, the 11,520-square-foot Main Clinic has been the hub of DMD clinical instruction and patient care since its construction in 1915. Wherever their career paths have taken them, all of the School’s predoctoral students have spent many hours in the Main Clinic.

“The Main Clinic has clinically educated thousands of students, and is the centerpiece of the Evans Building. Students spend some of their most critical professional training hours in this space,” says Dean Kinane. “Dr. Schattner’s vision of the importance of this facility will have a lasting impact for our students and the School overall.”

Plans for what will be named the Robert I. Schattner Clinic involve a complete updating of the entire space for an improved student and patient experience. The main improvements will include all new equipment, more than 70 individual operatories designed to maximize privacy and comfort, new flooring and lighting, enhanced radiographic capabilities, and a redesign to optimize operational flow, including improved instrument distribution and collection. Adding a dramatic element to the space are plans to reveal the original, historic windows that line the north side of the clinic, bathing the space in natural light.

“The Main Clinic is a vital theatre for the critical clinical experience needed by our outstanding students, while at the same time serving as a vehicle for affordable dental care to the surrounding West Philadelphia neighborhood,” notes Dean Kinane. In FY2015, students and faculty performed approximately 250,000 procedures in the School’s teaching clinics and approximately 122,000 in the Main Clinic and the School provided nearly $2.5M in uncompensated/undercompensated care. “Through this Clinic renovation, we aim to maximize procedure volume, and strengthen the School’s delivery of quality clinical experience,” adds Dean Kinane. Both aspects of the Clinic’s function align with Dr. Schattner’s wider concerns for the community at large and the education of future generations of students.

In a recent conversation, Dr. Schattner reminisced about his early days in dentistry — when he charged $3 for a filling — and expressed
SCHATTNER PAVILION: EXTENDING A UNIFIED CAMPUS

The second project to be made possible through Dr. Schattner’s gift — the Schattner Pavilion — will build upon the unified Penn Dental Medicine campus achieved with the Robert Schattner Center’s construction. When the Schattner Center opened in 2002, it linked the Evans Building and Leon Levy Center for Oral Health Research. The Schattner Pavilion will enhance this connection, further joining all three buildings and facilitating interaction among faculty and staff within them.

The 2,100-square-foot Pavilion will extend the existing atrium of the Schattner Center and enclose the courtyard area behind it, creating a dynamic new indoor space for public gatherings and interaction. This space is intended to become the central meeting and reception area for faculty, staff, patients, and visitors to the Penn Dental Medicine campus.

A special feature within the Pavilion will be the decorative fountain that is currently within the courtyard behind the Schattner Center. Dr. Schattner and his late wife, Kay, added this fountain to the courtyard in 2004 in honor and memory of each of their parents, and it will be incorporated into the Pavilion design.

CAPPING RENAISSANCE PLAN

Dr. Schattner’s gift and these two key projects it will fund represent the final phase in a ten-year ‘renaissance’ plan for the School. The $34 million Evans Building Centennial Renaissance project that got underway this summer (see related story, page 4) will transform all four levels of the historic Evans Building, but did not include the Main Clinic; plans for its renovation were in the next phase. Now, through Dr. Schattner’s generosity in this centennial year of the Evans Building, the most significant space within this historic structure is set for transformation as well.

The Main Clinic and Pavilion projects are anticipated to begin after the completion in 2017 of the renovation projects currently underway as part of the Evans Building Centennial Renaissance project.

“Dr. Schattner’s continual commitment and warm personality are an inspiration,” says Dean Kinane.

“With this gift, Dr. Schattner will not only expand his legacy at Penn Dental Medicine, he will improve the educational experience of generations of future students.”

— By Beth Adams
Looking Beyond Periodontitis

SOME PEOPLE MIGHT think that the idea of studying gum disease for insights into diseases such as multiple sclerosis is rather odd. To George Hajishengallis, it’s a springboard into entirely new realms of cutting-edge research with implications far beyond dental science.

“Basically I’m interested in understanding the inflammatory mechanisms that drive periodontitis,” says Dr. Hajishengallis, Penn Dental Medicine’s Thomas W. Evans Centennial Professor in the Department of Microbiology. But as he explains, those mechanisms are actually a gateway into a much broader range of questions. For years, the conventional wisdom held that the main culprit in periodontal disease was the bacterium Porphyromonas gingivalis. But matters are far more complicated — and interesting — than that.

Dr. Hajishengallis found that P. gingivalis is a “keystone pathogen,” meaning that its presence is key to setting the stage for other pathogens to act. To survive and feed, the bacterium exploits the functioning of complement, the oldest part of the innate immune system, by hijacking certain receptors on white blood cells. That subversion of the immune system benefits not just P. gingivalis but a wide range of other bacteria living in the mouth, since the inflammatory responses mediated by the immune system also create food for them. When P. gingivalis disrupts those processes, inflammation goes wildly out of control.

The result is a dysbiotic “vicious cycle” in which greater inflammation leads to larger numbers of bacteria, which produce still more inflammation, creating fertile ground for periodontitis to attack the tooth-supporting tissues. “One may consider periodontitis as the side effect of the effort of the bacteria to get their food,” explains Dr. Hajishengallis. “And the tissue damage, the disease we see from our perspective, is the collateral damage.”

To stop P. gingivalis from derailing the body’s normal defenses, Dr. Hajishengallis and his research team have taken several approaches. One involves targeting the C3 component of complement, which is a main player in cell signaling pathways that trigger inflammation and activate the immune system. By blocking C3 with the complement inhibitor drug compstatin, Dr. Hajishengallis, in collaboration with Dr. John Lambris of Penn Medicine, has been able to stop or prevent inflammatory periodontal bone loss in their two study models, and has achieved similar success in mice by targeting two protein receptors, C5aR and TLR-2. By blocking these receptors on white blood cells, their effectiveness to defend against P. gingivalis was restored.

Another effective strategy evolved from Dr. Hajishengallis’ prior work at the University of Louisville studying the relationship between aging and periodontitis. He found a particular gene called Del-1 showed significant downregulation in gingival tissues of older animals. “But unfortunately, we knew nothing about Del-1 and there was very little literature about it,” he remembers.

He would get a break several months later at a scientific conference. Dr. Triantafyllos Chavakis, then at the National Cancer Institute of the NIH, presented work on Del-1 showing it as a key regulator of white blood cell recruitment from the bloodstream. “After I saw that, I realized this is the answer,” says Hajishengallis. “Perhaps decreased levels of Del-1 with old age explained their greater tendency to develop inflammation and periodontitis.”

He soon confirmed that Del-1 knockout in mice indeed resulted in periodontitis, not only in older but even in younger animals. He and Dr. Chavakis, now at the University of Dresden, Germany, “recently showed that Del-1 is important not only in periodontal disease but also in multiple sclerosis, with a very similar mechanism.” With Del-1 also implicated in other diseases associated with inflammatory processes, Dr. Hajishengallis is presently investigating therapeutic possibilities.

For a dentist turned researcher such as Dr. George Hajishengallis, such an outcome represents the best of both worlds. After all, he notes, “we are awarded grants by the NIH not only to satisfy our scientific curiosity and discover new mechanisms — which is very important — but mainly to serve patients. So once we have something that seems to be promising from a translational point of view, we want to see whether we can have a therapeutic approach.”
Guiding Contemporary Protocols for Implants

Contributed By: Dr. Markus Blatz, Professor and Chair of Preventive & Restorative Sciences

THE PACE OF new developments in dental treatment concepts, techniques, technologies, and materials is simply breathtaking, continuously pushing the borders for our ultimate goal: the best possible care for our patients. Implant dentistry is quite likely the area with the most palpable and rapid developments, through minimally invasive surgical techniques, novel implant designs, new esthetic restorative materials, and innovative CAD/CAM technologies.

The single-tooth implant has become a very popular treatment option in the esthetic zone. While viewed by many as a rather simple procedure, to achieve optimal and long-term stable esthetic and functional success with dental implants may well be among the greatest challenges in dentistry. The main reason is that this success is not only dependent on perfectly blending the restoration with the existing dentition, but also on creating harmonious and healthy soft tissue support, the natural frame of any restoration. Especially around dental implants, where the soft tissue collar is quite different from the natural tooth, any deficiencies and resorptions are difficult to correct, but can severely damage the ultimate outcome. A careful and well-planned approach is therefore key to avoid mistakes from the very beginning.

While the key to success lies in the very fine details, there is little detailed guidance in the dental literature to assist the clinician in achieving optimal long-lasting outcomes. The intention of our recently published book “evolution - Contemporary Protocols for Anterior Single-Tooth Implants” was to provide a very detailed, clinically oriented guide, to present a snapshot of current techniques and technologies, and introduce novel concepts for ultimate success based on the most current scientific evidence.

In the era of e-books and digital platforms, we still wanted to author a traditional paper-based book, presented, however, in a novel design that recognizes the preferences of a visually oriented readership. Because the focus of this book is clinical technique, procedures are presented in a step-by-step format, with the explanatory text in immediate proximity. One could also view them as video clips played in adjustable slow motion to allow readers to follow every step at their own pace and to stop whenever they feel necessary, to review and observe the small details that make the difference between failure and success.

Evidence-based dentistry has become a major part of the clinical decision-making process, gaining relevant scientific information from high-level clinical trials and systematic literature reviews. Instead of filling pages with narrative literature reviews, we targeted key topics and presented the findings of our in-depth literature searches in the various “research” sections throughout the book in a most concise and relevant manner.

The goal of this lavishly illustrated book was to provide a clear understanding of the fundamental concepts of implant selection and placement in the esthetic zone. Most importantly, it explains optimized restorative protocols in a step-by-step manner and demonstrates the importance of soft tissue esthetics and minimally invasive surgical techniques.
“One of the best things this program does is expose the Randolph students to the possibility of becoming dentists, and lets them know there are students with similar backgrounds at Penn Dental Medicine.”
— DR. BEVERLEY CRAWFORD
INSPIRING CITY’S YOUTH

PENN DENTAL MEDICINE PARTNERS WITH ORAL HEALTH ACADEMY FOR PHILADELPHIA HIGH SCHOOL STUDENTS

WHEN ALUMNA Dr. Rayna Strong (D’13) was a student at Penn Dental Medicine, she served as minority recruitment coordinator for the Student National Dental Association. As a minority student from a disadvantaged background who had to work fiercely throughout her schooling to earn her place in a prestigious dental program, Dr. Strong was committed to helping those from similar circumstances have an easier path to success — both in dentistry and life.

Around the same time, across the Schuylkill River in North Philadelphia, Estreanna Green enrolled in the city’s A. Philip Randolph Career and Technical High School, at first interested in culinary arts, but switching by 10th grade into the school’s dental assisting program because she thought it would provide more opportunities for her future.

That year, when Dr. Strong was a senior at Penn Dental Medicine and Estreanna a sophomore at Randolph, their paths — and dreams — crossed. With leadership from both institutions, the School District of Philadelphia’s Oral Health Academy at Penn Dental Medicine was initiated to provide much-needed resources, including equipment, academic programming, expertise, and mentors, for the high school dental assisting program.

Charlene Jennings Fenster, BSDH, MA, PHDHP, a 1975 alumna of Penn Dental Medicine’s former dental hygiene program and now Dental Assisting Instructor at Randolph, had reached out to her alma mater to help fill some significant gaps in the dental assisting program.

Dr. Beverley Crawford, DDS, Assistant Professor of Clinical Dentistry and Director of Diversity Affairs for Penn Dental Medicine, recognized an opportunity at Randolph to encourage and support student success in a relevant high school program and potentially increase the pipeline of underrepresented minority students in dentistry.

And Dr. Strong helped to initiate programs and opportunities in the partnership’s first year for her Community Health Honors project, including setting up an annual shadowing day at Penn Dental Medicine and expanding the Diversity Office’s Impressions program, a Student National Dental Association-led, one-day series of workshops and lectures aimed at educating undergraduate students about careers in dentistry, to include the Randolph students.

“One of the best things this program does is expose the Randolph students to the possibility of becoming dentists and lets them know there are students with similar backgrounds at Penn Dental Medicine,” Dr. Crawford says.
The Oral Health Academy at Penn Dental Medicine offers both academic and hands-on experiential opportunities for qualified minority students in Randolph’s dental assisting program. The Randolph seniors take a radiology course, co-developed by Dr. Mel Mupparapu (D’96), Professor of Oral Medicine, Director of the Division of Oral and Maxillofacial Radiology and Director of Faculty Advancement and Diversity, and Fenster, to complement and enrich the high school curriculum. On site at Penn Dental Medicine’s Oral Diagnosis Clinic, the Randolph students learn all aspects of current radiology techniques, and have access to state-of-the-art equipment and resources, as well as instruction and support from dental faculty and students.

The radiology experience is particularly important, Fenster notes, since one of the “brass rings” for Randolph dental assisting students is passing the national radiology exam and earning a Pennsylvania dental x-ray license.

The Randolph juniors, meanwhile, take a hands-on laboratory procedures course at Penn Dental Medicine, allowing them to make alginate impressions of Dentoforms, pour stone models, and fabricate custom trays and acrylic temporary restorations on Dentoform teeth. They are taught and graded with the help of dental students.

In addition to the course content and access to sophisticated equipment, the opportunity to interact with faculty and dental students “provides a reality-based translation of their high school vocational program to a professional career that is economically viable and intellectually gratifying,” according to the Office of Diversity Affairs.

Estreanna Green has benefited from many opportunities through the Oral Health Academy partnership, which have not only helped her be successful in school but also to formulate plans for her future, which include earning a four-year college degree and attending dental school with the goal of becoming an oral pathologist.

The summer before her junior year, she was selected to participate in the Summer Mentorship Program at Penn Dental Medicine, part of a University initiative funded by the Office of the Provost that also places students in Penn Nursing, Penn Engineering, Penn Law, and the Perelman School of Medicine.

The month-long immersion mentorship experience for about 50 Philadelphia public and charter high school students (10 at Penn Dental Medicine) provides classroom instruction, one-on-one sessions with professors, tours of labs and other facilities, as well as SAT preparation, writing workshops, and information on college financial planning.

AN EYE-OPENING EXPERIENCE

“I learned a lot about different aspects of dentistry, orthodontics, and prosthodontics; it was eye-opening for me,” she said. “There were lectures by professors, we went into clinics and labs, and got insight into what goes on in each department.”

And this past summer, heading into her senior year, Estreanna arranged to shadow Dr. Mupparapu, who designed an individualized curriculum for her specific interests and goals.

Following Dr. Strong’s initial efforts, Dr. Eliza Callwood (D’15) and Bianca Williams (D’17) also stepped in to support the Oral Health Academy through the Community Health Honors program. This year, Williams’ goal is to enhance the program’s biology component and provide additional mentorship opportunities for dental students at Randolph.
Williams, who says she knew when she entered dental school that she wanted to dedicate a significant amount of time to serving the community, said one of the most rewarding experiences at Randolph was helping to prepare last year’s seniors for the national written and performance dental assisting occupational exams.

“The Randolph students truly seemed to learn a lot from gaining hands-on assisting experience and having the opportunity to ask questions as we worked,” Williams says.

For Dr. Strong, who also earned her master’s in bioethics at Penn, helping the younger generation of students such as Estreanna is imperative. As lead dental provider at Family Health Centers in Brewster, Washington, she serves a population that is about 80 percent Hispanic, many of them migrant farm workers and their families.

**EMPOWERING THE NEXT GENERATION**

“I wanted to really empower kids who were just starting to dream big to be able to achieve their dreams,” she says. “It takes a lot to step out of your comfort zone and see yourself in a position that is unfamiliar and unrealistic to your own family and peers.”

Other Penn Dental Medicine students contribute to the Oral Health Academy in different ways. Some spent several days at Randolph preparing students for the Dental Assisting National Board exam on radiation, health and safety, while others have presented workshops on SAT preparation and choosing a college. The high school students periodically accompany the Penn Dental Medicine students on community volunteer opportunities.

“Many of our students bring their talents to the program,” Dr. Crawford says. In addition, many Penn Dental Medicine students have donated instruments and supplies they no longer need to support the high school program.

While it will take some time to assess how many students in Randolph’s dental assisting program eventually enroll in dental school, including at Penn Dental Medicine, Fenster says the value of the Oral Health Academy partnership already is clear for the Randolph students.

Of the three classes completing the program so far — 2013, 2014 and 2015 — all of the dental assisting students have graduated from high school and 94 percent have enrolled in college and are still matriculated, Fenster says.

“I wanted to really empower kids who were just starting to dream big to be able to achieve their dreams.”

— BIANCA WILLIAMS, D’17

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**BUILDING DIVERSITY RESOURCES**

Penn Dental Medicine is actively working to build its resources for scholarships and the pipeline programs within the School’s Office of Diversity that are encouraging underrepresented minority students to consider a career in dental medicine. To learn more about how to support these initiatives, contact Maren Gaughan, Associate Dean for Leadership Giving, 215-898-8952, gaughan@dental.upenn.edu.

In addition, every senior who qualified to test during those three years has passed the national radiology exam and earned their Pennsylvania dental x-ray license.

Although her office more typically works to cultivate undergraduate students, Dr. Crawford says starting earlier gives the students a better chance of setting goals and succeeding. “Estreanna wants to be a pathologist, and I don’t know if she would have considered this if she had not been exposed to the research and clinical opportunities at Penn Dental Medicine, and had such a champion as Ms. Fenster and mentor as Bianca Williams,” she says.

At the same time, Dr. Crawford adds, “We want to achieve the goal of 100 percent student enrollment at a four-year university and an end result of the choice of dentistry as a profession. One of the best things this program does is expose students to that possibility.”

— By Debbie Goldberg

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OPPOSITE TOP: On a visit to the Randolph High School, Dr. Beverley Crawford talks with a student about dental career options.

OPPOSITE LOWER: Charlene Jennings Fenster (DH’75) working with students in the dental assisting classroom at Randolph.

LEFT: Bianca Williams (D’17) instructing Randolph students on taking an impression; she is working with them for her Community Health Honors project.
SELECTED PUBLICATIONS

Recently published work by department researchers (indicated in bold).


AWARDED TOP PAPER IN HYPERTENSION

Dr. Henry Daniell, Professor and Interim Chair, Dept. of Biochemistry, has been recognized by the American Heart Association with an award for the top basic science paper published in Hypertension in 2014. His study identified a drug that can be used to treat pulmonary hypertension — delivered orally through capsules of freeze-dried plants containing the therapeutic proteins.

**ENDODONTICS**

**SELECTED PUBLICATIONS**

Recently published work by department researchers (indicated in bold).


Microbiology

**RECENT GRANT AWARDS**

Functions of HSV Glycoproteins in Virus Entry and the Humoral Immune Response Sponsor: NIAID/NIH/DHHS Principal Investigator: Dr. Gary Cohen, Professor, Dept. of Microbiology

**SELECTED PUBLICATIONS**


**ORAL MEDICINE**

**NEWS/ACHIEVEMENTS**

Dental Clinics of North America Clinical Approaches to Oral Mucosal Disorders: Part II (Elsevier), edited by Dr. Thomas Sollecito (D’89, GD’91), Chair and Professor of Oral Medicine, and Dr. Eric Stoopler (D’99, GD’02), Associate Professor of Oral Medicine, received the International College of Dentists Special Citation Journalism Award for its concept and presentation, presented at the Annual Meeting of the American Association of Dental Editors & Journalists, November 2015.

In addition, Dr. Mupparapu and two students conducting research projects with him — Ariel Farahi (D’16) and Sheldon Rozman (D’17) — represented Penn Dental Medicine at the XX International Conference of Dentomaxillofacial Radiology (ICDMFR), in Santiago, Chile, August 2015. Farahi’s project was “Evaluation of FDI and universal tooth numbering system usability among non-US trained dental practitioners enrolled in an advanced standing DMD program” and Rozman’s was “Diagnosis of atlantoaxial subluxation using CBCT-based vertical atlantoaxial index, posterior odontoid angle and Power’s ratio analysis,” both students were invited to present at next year’s ICDMF as well.

Farahi and Dr. Mupparapu also presented an abstract at the 97th annual meeting of the American Academy of Oral & Maxillofacial Surgeons, October 2015.
**NEW DIRECTOR POST-DOC ORTHODONTICS**

Dr. Guoqiang Guan has joined the faculty as Program Director of the Postdoctoral Orthodontics Program and Assistant Professor of Orthodontics. He comes to Penn Dental Medicine from State University of New York at Buffalo (SUNY at Buffalo) where he was Assistant Professor and Clinical Director 2009–2015, and Interim Program Director 2014–2015. Dr. Guan’s research focuses on craniofacial deformities and genetics.

**SELECTED PUBLICATIONS**

Recently published work by department researchers (indicated in bold).


**PATHOLOGY**

**RECENT GRANT AWARDS**

Efects of Ozone on the Central Nervous System: Nr12 Pathway Involvement
Sponsor: NIEHS/NIH/NIH
Principal Investigator: Michelle Erickson, Dept. of Pathology
Secoisolariciresinol Diglucoside to Mitigate Inflammation and Toxicity in HAND
Sponsor: NIMH/NIH/NIH
Principal Investigator: Dr. Kelly Jordan-
SELECTED PUBLICATIONS

Recently published work by department researchers (indicated in bold).


**APPOINTMENTS**

Dr. Dana Graves, Professor, Dept. of Periodontics, and Vice Dean for Research & Scholarship, was named Interim Chair of the Dept. of Periodontics, succeeding former Chair Dr. Joseph Fiorellini, whose term ended in June 2015. Dr. Fiorellini, Professor, remains as an active member of the faculty. A search is underway for a permanent Chair.

Dr. Yota Stathopoulou, Assistant Professor of Periodontics, has been appointed Director of the Postgraduate Certificate Program in Periodontics and Dr. Ernesto Lee (GC’87), Clinical Professor of Periodontics, Director of the Periodontal Prosthesis Program.

Dr. Jon Korostoff (D’85, GR’91, GD’92), Associate Professor of Periodontics, received the J. George Coslet Distinguished Teaching Award for Postdoctoral Periodontics and Periodontal Prosthesis by Penn Dental Medicine. He was also given the Dental Faculty Honorary Award by the Penn Dental Medicine chapter of the national dental honor society, Omicron Kappa Upsilon.

Dr. Mana Nejadi (D’04, GD’09), Clinical Assistant Professor of Periodontics and Predoctoral Director of Periodontics, was recognized with the American Academy of Periodontology Teaching Award.
Dr. Arnold Weisgold (GD’65), Adjunct Professor, Dept. of Periodontics, has been named an honorary member of the American College of Prosthodontics. In addition, Dr. Weisgold and Dr. Joseph Greenberg (D’72, GD’75, GD’76), Adjunct Professor, Dept. of Periodontics, were podium speakers for the annual ADA Session, November 2015, on the topic “Esthetic Dentistry: Macro and Micro Perspectives.”

Dr. Ali Arastu, Clinical Assistant Professor, Dept. of Periodontics, was named a Diplomat of the American Academy of Periodontics.

SELECTED PUBLICATIONS
Recently published work by department researchers (indicated in bold).


Preventive & Restorative Sciences

NEWS/ACHIEVEMENTS
Dr. David C. Appleby (D’74), Clinical Professor of Restorative Dentistry, received the Earle Bank Hoyt Award from the Pennsylvania Dental Medicine Class of 2015, presented for excellence in teaching to a faculty member who is a Penn Dental Medicine graduate.

Dr. Markus Blatz, Chair and Professor of Preventive & Restorative Sciences, was elected President of the International Academy of Adhesive Dentistry (IAAD) during the first biennial IAAD meeting, September 2015. Dr. Blatz was also featured as one of the “10 Professors Changing Dental Technology” on the MedicalTechnologySchools.com blog, which recognized their contributions to academia.

Dr. David A. Tecosky (D’79), Clinical Assistant Professor of Restorative Dentistry, is serving as the editor of the Pennsylvania AGD Keystone Explorer.

APPOINTMENTS
Dr. Eva Anadioti has joined the department’s full-time faculty as Assistant Professor of Clinical Restorative Dentistry. Originally from Greece, she completed an Advanced Education Program and Board Certification in Prosthodontics and a Fellowship in Implant Dentistry.

Dr. Joan Gluch, Associate Dean for Academic Policies and Interim Chief, Division of Community Oral Health was appointed Professor of Clinical Community Oral Health.

Dr. Margrit Maggio (D’87), Director of Operative Dentistry and Director of the Advanced Simulation Laboratory has been promoted to Associate Professor of Clinical Restorative Dentistry.

Dr. Fusun Ozer (D’13) was appointed Associate Professor of Restorative Dentistry and also was named Assistant Dean for Clinical Affairs.

SELECTED PUBLICATIONS
Recently published work by department researchers (indicated in bold).


SHARING PERSONAL & PROFESSIONAL PATHS

WHILE THE PENN DENTAL Medicine community may know the School’s faculty by the courses they teach or the research they conduct, this Q&A faculty spotlight aims to get a bit more personal glimpse of them as individuals.

This issue, we talked with Dr. Kelly Jordan-Sciutto, Professor and Chair, Department of Pathology. Dr. Jordan-Sciutto has been a member of the faculty for 14 years, taking on the leadership role of Interim Chair in 2011 and appointed Chair in 2012.

What do you view as your greatest professional accomplishment?
As a mid-career faculty member, I believe the best is yet to come. Of my accomplishments to date, I am particularly thrilled by my contribution to understanding novel roles for the cell cycle regulatory protein, E2F1, in neurons. We have recently shown that this protein, which is well characterized for its roles in regulating cellular proliferation, is uniquely localized to neuronal synapses, the specialized component of the neuron which carries out communication between these cells. Interestingly, mutation of this protein in neurons leads to age-dependent memory loss in mice. These findings suggest that this protein has a unique function in this cell population. I am hopeful that my team can find out what this unique function is as I move forward in my career.

What drew your interest to your particular field and what do you enjoy most about it?
I received my PhD in Molecular Biology and Biochemistry, which provided excellent tools to approach scientific questions; however, my thesis advisor, Dr. David Hall, told me that it was important to have a biologic system in which to use these tools to understand biology. Because I had a long-standing interest in understanding how the brain worked, I decided to pursue my postdoctoral work in Neuropathology, where I became highly interested in the processes that lead to neurodegeneration, particularly oxidative stress and inflammation.

What have you found most rewarding about being a member of the Penn faculty?
Working in a rich, collaborative research environment with brilliant faculty and students. I feel very fortunate to have been able to work with such amazing people who truly elevate research to the most exciting level.

What excites you most about Penn Dental today?
The increasingly rich research environment and the implementation of the new curriculum. With regard to the former, I am thrilled that we continue to build on our research strengths in virology and immunology, while adding new avenues of research such as wound healing and stem cells. With regard to the new curriculum, I am hopeful it will increase student engagement in their education and spur innovation into best practices for conveying the vast amounts of information needed to be a dentist today.

Schools/degrees:
Villanova University: BS
Thomas Jefferson University: PhD

If you could have dinner with anyone who would it be? And why?
Christopher Moore. He is my favorite author and I would love to learn about how he immerses himself in so many different disciplines, to create fantastical, and wildly entertaining stories.

Hobbies?
Running, cooking, and whatever my kids like to do; this week it is Japanese ink brush painting.

Favorite vacation destination?
Kaua’i

Best book you’ve read recently?
I do not have a lot of time to read for pleasure, but I am an avid audiobook fan. The best book I have listened to recently was “Under Heaven” by Guy Gariel Kay, an historical fiction that evokes life in China during the Tang Dynasty. ■
FOR SUNDAY AKINTOYE, an Associate Professor in Penn Dental Medicine’s Department of Oral Medicine, his recent selection as a Fulbright Scholar to Nigeria is taking him full circle, giving him the opportunity to return to his native country to conduct research and teach where he first began his dental training.

“Over the years at international meetings, I’ve noticed an underrepresentation of African researchers and students, and the students in particular seem to lack some of the mentoring opportunities that students in the United States enjoy,” Akintoye says. “I used to be in their shoes, and am excited to now embark on this fellowship to provide research mentorship for African students.”

The Fulbright award will enable him to spend several months of the 2015–2016 academic year in Nigeria, teaching and mentoring students and young faculty members. He is hopeful that his contribution to supporting researchers in Africa doesn’t end with his award, but continues through partnerships between Penn Dental Medicine and the University of Lagos, where he began his career and where he will be teaching as part of the fellowship.

PASSION FOR RESEARCH
During dental school in Lagos, Akintoye’s interest in research and teaching was sparked. He practiced dentistry after graduation, but knew his opportunities to pursue research to advance the field would be limited unless he trained elsewhere.

“I realized that not only would I gain access to more advanced physical and intellectual resources in the U.S.,” he says, “but I also felt that going to the U.S. would be an opportunity to learn, find opportunities to conduct research, and eventually give back in some way to communities in Africa and the dental community in general.”

He made the decision to continue his schooling in the U.S., earning a DDS at New York University College of Dentistry, where he also received a master’s degree in oral biology. He continued his training with an oral medicine and clinical training residency at the National Institutes of Health’s National Institute for Dental and Craniofacial Research (NIDCR/NIH). Following that, in 2003, he joined the standing faculty at Penn Dental Medicine.

At Penn, Akintoye has made breakthroughs in the field of stem cells and bone regeneration. In his three decades of research, he has observed that stem cells in the mandible and maxilla have unique properties — in growth, longevity, and regeneration — that make them ideal for regrowing bone in the orofacial area. Elucidating what factors distinguish these bones, as compared to other bones in the body, could provide clinicians with tools to replace bone lost to cancer, surgery, or trauma.

Yet these characteristics also appear to make the jaw bone susceptible to a particular type of necrosis called osteonecrosis of the jaw, or ONJ, that arises from exposure to antiresorptive drugs such as bisphosphonate, a drug that is extremely effective against
bone cancer and also prescribed to prevent osteoporosis. His work, funded by support from the NIDCR/NIH, is examining how the drug is taken up by the jaw stem cells, how cellular structures act to break it down, and how this process differs between jaw bone and other bones in the body.

“Some investigators have succeeded at treating ONJ both in animal models and in humans by transplanting bone mesenchymal stem cells,” Akintoye says. “We’re interested in understanding what sets the orofacial stem cells apart from others in the hopes of finding a way to prevent ONJ.”

In a similar vein, the jaw is also vulnerable to osteoradionecrosis, a consequence of exposure to radiation therapy, yet another cancer treatment. When radiation is targeted at the head, as it is for cancer of the head and neck, osteoradionecrosis can cause bone to break down, leaving patients in remission with significant morbidities, including disfigurement and tooth loss. Akintoye’s research in this area, supported by the National Cancer Institute, examines how irradiated bone stem cells from the jaw respond differently from those of other areas of the skeleton.

As a Fulbright Scholar to Nigeria, Dr. Akintoye is returning to his native country to conduct research and teach where he first began his dental training.

To accomplish his research goals, Akintoye is a believer in collaboration. His work with Dr. Kathy Boesze-Battaglia, Professor in the Department of Biochemistry at Penn Dental Medicine, has yielded insights on cellular processing of bisphosphonate by jaw bone stem cells. He has also collaborated with Dr. Amit Maity, Professor of Radiation Oncology, and Dr. Stefan Both, an Assistant Professor of Radiation Oncology, both with Penn’s Perelman School of Medicine to develop a rat model of jaw osteonecrosis using a special radiation delivery method customized for small animals. And yet another collaboration with Dr. Ling Qin, Associate Professor of Orthopedic Surgery at Penn Medicine, is exploring targeted drug therapies for jaw osteoradionecrosis.

Akintoye says, “and I hope to help instill this same balance in Nigerian students as part of my Fulbright project.” He notes that an emphasis on clinical care has arisen in many African dental schools out of necessity for practitioners to serve the community, but further strengthening their research skills can be an added benefit to the patients that the dentists-in-training will one day treat.

During his application process, Akintoye reached out to Dr. Tolu Odukoya, Professor and Chair of Oral Pathology and Oral Biology at the University of Lagos dental school, to see if he would be open to Akintoye’s offer of mentorship and teaching to the dental students.
“He is very supportive,” Akintoye says. “He’s very interested in the opportunity to see how they can build on the research that they’re doing and advance it to a higher level.”

Akintoye’s involvement in dental education and training at the University of Lagos will be many-fold. Since a primary goal will be augmenting the rigor of the Nigerian students’ research training, he will be helping to update the dental school curriculum to incorporate more research training, he’ll serve as an advisor to the senior students as they embark on thesis projects, and he will be teaching a course in research methodologies. The course will encompass everything from identifying research questions and critically evaluating scientific publications to carrying out statistical analyses and presenting the results and conclusions of a study.

Akintoye acknowledges that a major factor holding back progress of African dental students involves limited resources — both physical, in terms of tools and equipment for conducting experiments, as well as intellectual, in terms of access to mentors and journal subscriptions.

He is hopeful that his stay will make a difference on the mentoring front, though he is less able to improve their access to the latest scientific technology. Nevertheless, he believes, “you can always do something with what you have.”

To that end, he has developed a research project that will be feasible to carry out with the equipment available to the students in Lagos. The investigation will look at the issue of how aging-related changes manifest in teeth, specifically examining changes in key molecular markers in dental pulp, which can be taken from teeth that are being extracted for orthodontic or prosthetic purposes.

“Dental pulp is easy to collect, and you can collect it at different ages,” Akintoye says.

The study will use immunostaining to analyze various molecular markers in the pulp, including indicators of aging and autophagy, a degradation process in which the cell digests itself to eliminate damaged cellular components and recycle undamaged ones. Akintoye’s hypothesis is that autophagy plays an important role in the aging of dental pulp.

In addition, depending on access to a cell-culture facility, Akintoye may also have students get involved in research that involves isolating stem cells from dental pulp.

Beyond the benefit of the students gaining experience in evidence-based dentistry, Akintoye says that conducting research on African populations adds an element to the field of dental science that is somewhat lacking.

“There is a lot of work to be done in these geographical regions based on cultural and ethnic differences in disease and treatment,” he says. “The more that is done, the more we can help the local dental patient population.”

Even when Akintoye’s fellowship year comes to an end, he aims to put in place partnerships and programs that will allow the exchange between the U.S. and Nigeria, and Penn and the University of Lagos, to continue.

“It is my hope,” he says, “that this project will act as a bridge to bring American and Nigerian cultures together for the betterment of tomorrow.”

— Dr. Sunday Akintoye

— By Katherine Unger-Baillie
Senior Farewell

On May 12, the graduating Class of 2015 celebrated their transition from students to alumni with Penn Dental Medicine alumni, faculty, and friends at The Bellevue.
Penn Dental Medicine welcomed back alumni May 15–17 for Alumni Weekend 2015 — the reunion year for classes ending in “0” and “5.” Save the date for Alumni Weekend 2016, May 13–14!

1 Members of the Class of 1965 at the first annual “Luminary Society Luncheon,” a recognition for alumni celebrating their 50th reunion and beyond.

2 Richard Derrick (D’65) and Marilyn Rocks at Penn Dental Medicine’s Alumni Picnic.

3 Robert Weishoff (D’05) and Mike Panahi (D’05) celebrate their 10th reunion at the Alumni Parade!

4 Alumni from the class of 1985 catch up at the Reunion Dinner.

5 Alumni gathered in the Fonseca Gardens for the kick-off celebration for the weekend.

Alumni Weekend 2015
David Tarica (D’83), Olivia Sheridan (D’90, GD’92), Brian Lee (D’00, GF’04), and George Lynch (D’05) spoke at the inaugural “Lunch and Learn Series: I Wish I Knew Then What I Know Now.” The presentation included group discussion, mentoring opportunities, and networking.

Janice Repicci, Albert Repicci (D’65), Cyndi Rauch, and Jon Rauch (D’65) celebrated their 50th reunion at the Reunion Dinner.

Norman Goldberger (D’65) and his son-in-law Richard Berman (D’92) gear up for the Alumni Parade.

Penn Dental Medicine’s Dental Hygiene alumni at Alumni Weekend 2015.

Penn Dental made a large showing at the Alumni Parade down Locust Walk.

Mortimer Cohen (D’40) and Eli Zebooker (D’40) celebrated their 75th anniversary with Penn President Amy Gutmann!
Alpha Omega Beta Chapter

The Alpha Omega (AO) Beta Chapter congratulates the AO Class of 2015: Wenting Guo, Debbie Schub, Marcelle Hefez, Miriam Ciner Friedman, Evan Eisler, Lindsey Rubino, Chris Kim, Steven Lin, Hillary Rosen, Prescott McWilliams, Yossi Davis, Amy Maletz, Jordan Seetner, Hien Huynh, Sam Fowler, Matt Pardisgarten, Yassman Hakakian, and Maetal Rozenberg Henig. Reconnect through AO Alumni Relations Chair Allie Brand at dental.ao@gmail.com.

White Coat Welcomes Class of 2019, 8 Legacy Students

Penn Dental Medicine welcomed the Class of 2019 to the study of dentistry with its annual white coat ceremony, held August 17. Among the 120-member freshman class, there are eight legacy students – men and women with relatives who also earned their dental degrees at Penn Dental Medicine.

Those students and alumni include: Michael Ahdout, the nephew of Samuel Ahdout (D’88); Adrian Arreola, the son of Ramon Arreola (D’80); Arjun Kumar, the nephew of Emily Johnson (D’09); Jin Hwang, the son of Ranah Kim (D’03, GD’07); Michael Mullany, the son of George Mullany (D’81); Naomi Orbach, the daughter of Gary Orbach (D’86); Alexa Schweitzer, the granddaughter of the late Robert Schweitzer, (D’55); and Edward Yao, the son of Zheng Yao (D’96).

EVANS COLLECTION EXHIBITION

The Evans Collection exhibition of art and artifacts from the School’s earliest benefactor, Thomas W. Evans, ran at Penn’s Arthur Ross Gallery July 18 – November 8.

By the Numbers: FY15 Giving & Engagement

TOTAL GIVING
$6,469M total cumulative gifts
12.3% of alumni made gifts in FY15
103 were consecutive donors for 3 years
386 were consecutive donors for 5+ years

CAPITAL & ENDOWED GIVING (RESTRICTED)
$1,136M raised toward capital & endowed funds

ANNUAL GIVING (UNRESTRICTED)
$554K gifts raised toward unrestricted annual funds
1,059 annual giving donors
75 Benjamin Franklin Society Members

ENGAGEMENT
504 alumni on Find a Penn Dentist to date (www.dental.upenn.edu/map)
659 attended a Penn Dental alumni event in FY15

Michael D. Yasner (C’79, D’83, GD’84, GD’86); Valerie E. Yasner (C’79, D’83, GD’86); Lee Durst-Roisman (D’83), Alumni Board President; Bernard W. Kurek (D’73, WMP’03, WEV’04); Alyssa Marlin Greenberger (D’02); Tiny Thomas Evans; Robert E. Weiner (C’72, D’79; and Jacklyn M. Gleber (DH’74).
Thank You

Support from alumni and friends is vital in making the renovation of the Thomas Evans Building a reality. Approximately a third of the $34 million cost of the Evans Building Centennial Renaissance project will be met by contributions, and Penn Dental Medicine extends a special thanks to the following supporters for their recent gifts.

**CLINIC OPERATORY DONORS**

The centerpiece of the first floor of the renovated Evans Building will be the Edward & Shirley Shils Clinic, a new predoctoral teaching clinic with 60–70 operatories that will occupy the southwest side of the building (naming opportunities at $50,000/operatory).

Nancy Baker & Peter Clement
Benco Family Foundation

David (D’87, GD’93) & Jackie Ettinger (GNU’87)

John (GD’86), Sharon (D’80) & Michael (D’18) Hayes

Pasquale Malpeso (D’79, GD’83)

Howie (D’82) & Debra Rosa

Umit (C’81, D’86) & Serap Yigit-Odebas

**TAKE A SEAT DONORS**

The “Take a Seat” Campaign was launched to augment resources for crucial updates to what has been the Evans Building’s B-60 auditorium, to become the William W.H. Cheung Auditorium. Each of the 90 seats in the new lecture hall is “named” with a gift of $1,000.

Alan M. Atlas (D’86)

Corinne L Cacas

Stefani Cheung (C’08, D’11) – (2)

Gary H. Cohen, PhD (HOM’73)

Lee Durst-Roisman (D’83)

Paul Feldman (D’83)

Kenneth A. Ingber (D’71)

Martin D. Levin (D’72, GD’74)

Randy (D’81) and Lisa Mitchell

Ya-Li (Emily) Yu (D’89)

To learn more about all of the recognition opportunities within the Evans Building Centennial Renaissance project, see related story, page 4, or contact Maren Gaughan, Associate Dean for Leadership Giving, 215-898-8952 or gaughan@dental.upenn.edu.

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**Missing Classmates**

Some classmates have let their connection with Penn Dental Medicine lapse, and subsequently, we can’t get in touch with them to share news or publications like the Penn Dental Medicine Journal, or good times like reunion. If you know the whereabouts of any of the following fellow alumni who will be celebrating a reunion in 2016, please send an update to almunifeedback@dental.upenn.edu or contact the Alumni Office at 215-898-8951. You can also log into Penn Dental’s Alumni Directory at www.myquakernet.com/dental.

Leigh A. Brandenburg

So Y. Chung

Molly J. Ehrlich

Vincent C. Huang

Jacy J. Papasikos

Jennifer Santos

Deena Zimmerman

David H. Leung

Lii-Ying Wang, D.M.D.

Windsor O. Clinkscale

Dan Fuchs

Jeong-Hwan Kim

Steven J. Rudner

Donald B. Beidler

Ronald R. Capone

Kenneth N. Fishbein

Joseph S. Lavinio, Jr.

Raymond Y. Levitats

Philip R. Schoolnik

Robert M. Levin

Myron A. Lieberman

John A. Pittaway

Aung Than

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CLASSNOTES

NEWS FROM FELLOW ALUMNI

1940s

Eleanore Gross Schmid (DH’40) is enjoying retirement and volunteering. She has three children, five grandchildren, and two great-grandchildren.

Virginia Hadley Walter (DH’40) is enjoying retirement in the Outer Banks, N.C., and staying busy with church activities, singing in three choruses, and teaching second and third grade. She now has two children and six grandchildren.

Alice Farr Cowles (DH’45) is retired and currently living in Savannah. She has two sons, one who lives close by.

Winnie S. Glessner (DH’45) is living in Grand Rapids, Mich. She would love to hear from other classmates!

Jane Dickson McKee (DH’45) worked in private practice prior to working in New Castle Public Schools. She is currently living with one of her three sons, Reid.

Lily S. Schneider (DH’45) worked for a short time in the Philadelphia School District. She now has four children, eight grandchildren, and six great-grandchildren.

Robert I. Schattner (D’48) was awarded the Thomas Evans Achievement Award at the Reunion Dinner Celebration during Alumni Weekend 2015. It is the highest award of recognition in acknowledgment of his innovation, excellence, and leadership in the profession of oral health care nationally and internationally.

1950s

D. Walter Cohen (D’50) will be honored this fall by the National Disease Research Interchange with the inaugural D. Walter Cohen Service to Science award.

John Allan Bier (D’54) is now completely retired after 10 years of limited practice and would love to reconnect with classmates.

Valerie Davidson (DH’55), an active member of the OSU Mothers Club, helps make favors for holidays at the OSU Hospital and in the Widows and Widowers Groups. She has two sons with her late husband and three grandchildren.

Marlene Roach Hee (DH’55) and her husband enjoy traveling and visiting with their four children and six grandchildren.

Carole Kern Jones (DH’55) has retired from private practice and moved back to Pennsylvania with her husband, Ted, in 2003 after being in Columbia, S.C. for 13 years. She is happy to be back with their four children and nine grandchildren.

Carol Appleby King (DH’55) is enjoying life with six granddaughters, two grandsons, and two great-granddaughters!

Norma Hollman King (DH’55) is a professional photographer and still practicing. Her goal is to be the oldest practicing dental hygienist!

Barbara Schroppe Kuhns (DH’55) is part time in private practice and active in church affairs. Along with husband, Fred, she has two children and three grandchildren.

Suzanne Weaver Lizotte (DH’55) has been a volunteer walking scorer for the PGA Heritage Golf Classic tournament at Hilton Head for the last 18 years. She has three sons and a grandson and is enjoying many happy experiences with her significant other, Bill, including traveling and family gatherings.

Sheila Corr McMillon (DH’55) is a volunteer tax counselor and preparer with the AARP and IRS program; an active member of the Portland Garden Club; and loves to play duplicate bridge and golf, and enjoys boating and aerobics. Along with husband, Tom, she has three sons and a daughter, seven grandchildren, and one great-granddaughter.

1960s

Joan Giustina Bazegian (DH’60) is retired. She has three children and six grandchildren with her husband.

Helaine Ross Hazlett (DH’60) is a member of the Marblehead Board of Health as well as many other volunteer and civic activities. Together with husband, James Hazlett (D’61), they have four children and 11 grandchildren.

Carol Balla Hutzell (DH’60) continues to recall her wonderful experience at Penn, especially meeting so many great people and classmates!

Isabel Marks Lenny (DH’60) has been volunteering for the last 14 years with her husband for the Red Cross Disaster Services. They have been married for 55 years in September and have three sons and four grandsons.

Sylvia V. Ransone (DH’60) is a volunteer at County Dental Clinic. She enjoys hiking and fishing with husband, Phil, as well as time with her three daughters and their families in NC and VA.

Patti Lurie Sowalsky (DH’60) is a retired author/publisher. She is active on two theater boards, Cosmos Club, and Boys and Girls Clubs of DC. She remembers her Penn experience fondly and still sees Nikki Marlow Rabino (DH’60) often. Husband Jerry has been on the general council for Ringling Bros. for over 40 years. Together they have two sons and two granddaughters.

Bruce W. Manning (D’64), passed away July 31, 2004, but the living trust he established during his lifetime continues to provide valuable resources to the School. Dr. Manning, originally from Gardner, Mass., attended Bates College for his undergraduate studies, University of Pennsylvania for dentistry, and Tufts for postgraduate work in endodontics. Dr. Manning served in the U.S. Army before moving to San Matteo, Calif., where he practiced for many years and served on the faculty in the department of restorative dentistry at the University of California-San Francisco. A strong believer in higher education, Dr. Manning established a Living Trust in 1994 that has since distributed more than $700,000 to Penn Dental Medicine, in addition to supporting his other alma mater institutions and family. Proceeds from the trust have been an invaluable source of support for ongoing Evans Building renovations, linking two important benefactors more than a century removed from each other: Dr. Thomas W. Evans and Dr. Bruce W. Manning.
Peter J. Abell (D’65) was featured in the American Association of Orthodontist’s New Dimension’s. The article featured Abell’s clean water project “Pure Water for the World,” a program that since 2008 has provided clean water and hygiene education to more than 1,600 schools, nearly 4,000 homes, and nearly 200 care facilities in Central America and the Caribbean.

Helen Clement Adelson (DH’65) retired in 1999 and has been married to Isidore (Itchy) since June ’81. Both were widowed and each has two daughters, and combined, they have seven grandchildren. They winter together in Boca Raton.

Kathleen J. Anzilotti (DH’65) is still practicing part-time in private practice.

Irene Perakos Burke (DH’65) retired in August 2014.

Lynn D. Gallagher (DH’65) is an active member of the Key Biscayne Rotary and Chestnut Hill Historical Society.

Marilyn Grawata-Bernas (DH’65) is practicing part-time in private practice and is involved in many professional and community organizations. She has seven grandchildren.

Kaye A. Haggerty (DH’65) retired in 2001. She has three daughters with her late husband, William “Bill” Haggerty (D’65), and six grandchildren under the age of 6! She has lived near her sister, Sandra “Sandy” Abdalla (DH’66) for the past 13 years.

Anne L. Harding (DH’65) is retired and enjoying time with family as well as tennis, golf, and bridge. Along with husband, John, she has four children and six grandchildren.

Clare Hull Huleen (DH’65) is retired. She has three children with her late husband, John A. Huleen (D’66), and eight grandchildren.

Kathleen A. Lewis (DH’65) served as president of the Hershey Derry Township Historical Society, 1995-2005.

Lynda Schwartz Lieberman (DH’65) is retired from practice, but serves as Treasurer for Pop Corps for Cancer Research. She is married to her “best friend” Michael with whom she has five sons and four grandchildren.

Carol A. Luby (DH’65) is retired after 25 years in the same office. She has two grown children and five grandchildren; and enjoys volunteering now for Phonixville Area Community Services.

Marie K. Maspeaker (DH’65) is Executive Vice President of YachtStock, Inc., a 501(c)3 organization, that through a musical venue raises funds for Shriners Hospital for Children in Philadelphia. She has three children and three grandchildren.

Maria M. Rubin (DH’65) is working part-time in private practice.

Linda Beeler Sprague (DH’65) moved to North Carolina after retiring two years ago to be closer to her daughter and her family. She has two children and five grandchildren; and enjoys volunteering at County Parks and Hiking Clubs.

Norma Stumpf Zimmer (DH’65) is retired and has two children.

Randall G. Baldwin (D’68) has been involved in the Cape CARES Organization since 1991 and has served as President since 2013. The organization sends volunteer teams to Honduras to provide free medical and dental care to people in locations where there is little or no access to such services.

1970s

Judith Shipley Burdt (DH’70) is working in private practice. She has been married to husband, Bill, for 44 years with whom she has three children and 11 grandchildren. Together they snowbird to Florida every winter!

Nancy H. Evans (DH’70) is working as a dental hygienist in a private practice and also as a certified kitchen designer. She has one son.

Judith Pressman Gardner (DH’70) is retired. Together with husband, Bob, she has two children and two grandchildren.

Lucinda Borden McKechnie (DH’70) is a part-time consultant and continuing education speaker (RDH Las Vegas 2016). She is also involved with AADH, Vermont State Dental Society Board of Continuing Education, and is a Historic Preservation Commission Board Member. She and her husband, Jeffrey, have been married for 42 years and work together in a dental practice in Stowe, VT.

Janet L. Myer (DH’70) is still working full-time in private practice and has been married for 24 years.

Suzanne D. Williams (DH’70) is working part-time in a private practice as well as with the Mission of Mercy, and enjoying married life with her husband, Donnie. She stays in touch with many classmates and would love to hear from others!

In the 2015 Alumni Giving Report, I. Michael Elliott (D’71) was omitted from the Class of 1971 Honor Roll of Classes as a Thomas Evans Society Member. We offer our sincere apologies for this omission.

Robert L. Vanarsdall, Jr. (GD’72) received the 2015 Alumni Award of Merit and was honored by the Penn Dental Medicine Alumni Society at the Reunion Dinner Celebration during Alumni Weekend 2015.

Denis N. Cohen (D’73) has been practicing in a community health center in Central Massachusetts — work he says that is greatly needed and very rewarding.

William Domb (D’74) is now retired from chair-side practice; however, he still sees some research cases. Most of his current work is on applications of ozone in dentistry and medicine with some amazing results to date. He is currently serving as President of the International Association of Ozone in Healthcare.

Marc Heft (EE’70, D’74) was installed as the 92nd President of the International Association for Dental Research (IADR) during the 2015 Annual Meeting in Boston, MA.

Ron Pross (D’74) of Tampa, FL was nominated by the Penn Dental Medicine Alumni Society to serve a three-year term as member-at-large beginning July 1, 2015.

Charlene Jennings Fenster (DH’75) received the 2015 Dental Hygiene Alumni Special Achievement Award during the Penn Dental Hygiene Alumni Association’s annual meeting on May 13, 2015.

Hal B. Rosenthaler (D’76) recently stopped at George Washington’s Mount Vernon home where he snapped a photo of Washington’s notorious dentures. Contrary to popular belief, Washington’s dentures were not made of wood, but constructed of materials including bone, hippopotamus ivory, human teeth, brass screws, lead, and gold metal wire.
Steven J. Rosenberg (D’78) was honored by the American College of Prosthodontists with the Private Practice Award for Northeast Region 1 at the 45th Annual Session in Orlando, Fla.

Thomas Schneider (D’79) was appointed Executive Dean for Uniformed Services University Postgraduate Dental College.

Peter Auster (D’80) was named the 2015 Humanitarian of the Year by the American Academy of Cosmetic Dentistry (AACD) during the 31st Annual Aacd Scientific Session in San Francisco.

Lisa T. Bamos (DH’80) is working in private practice and has been married for 24 years to her husband Joe. They have three children Michael (22), Christina (19), and Jennifer (16).

Jerome Cymerman (D’80) has been appointed Acting Chair of the Department of Endodontics at Stony Brook University School of Dental Medicine.

Mary Anne E. Mangigian (DH’80) is working part time in private practice and has a 14-year-old daughter, Elena, with her husband George.

Cynthia Keller Marra (DH’80) is a speech-language pathologist. While on hiatus from teaching at a local college, she maintains a small private practice. She, her husband Fred, and children Natalie (15) and Jake (11) live in Albany, N.Y.

Robin Fisher Mishkovsky (DH’80) has been in the same office for 34 years and every February for the last 13 years has been teaching dental health to area elementary school children. Along with husband, Lee, she has two daughters, Justina (25) and Aimee Lee (19).

Catherine Chan Ng (DH’80) is a certified public accountant and has been working as the Executive Vice President for Cathedral Village, a retirement community, for the past 15 years. Along with husband, Garry, she has three children, Samuel (18), Rebecca (16), and Matthew (9).

Lori Reffett (DH’80) teaches clinical dental hygiene part-time at Northern Virginia Community College. She is also a registered dietitian and certified diabetes educator at a local hospital.

Sharon Ryan Reichart (DH’80) works as a product manager at Anthem and cycles with the Hudson Velo Club. She is married with two children.

In the 2015 Alumni Giving Report, Susan Dworetsky Schlesinger (C’81, D’85, GD’86) was omitted as an associate member of the Benjamin Franklin Society listing. We offer our sincere apologies for this omission.

Saul Pressner (D’79) traveled to Israel to volunteer for a week at the Trudi Birger Dental Clinic through a special program called Dental Volunteers for Israel. This was his sixth visit as a volunteer.

David Tai-Man Shen (D’79, GD’81) and Dr. Chun-Hsi Chung (D’85, GD’92) celebrated Dr. Jerome Sklaroff (C’43), Clinical Professor of Orthodontics, at the Penn Dental Alumni Reception during the 2015 American Association of Orthodontics Annual Session in San Francisco. Dr. Sklaroff received an award from the Diplomate Board for his 64 years of dedicated teaching at Penn Dental Medicine.

Jeffrey Rodney (D’89) sold his office in Pennington, N.J., after 22 years in private practice as a prosthodontist and completed a year fellowship at UCLA in maxillofacial prosthetics in 2014. Rodney became a Board Certified Diplomate of the American Board of Prosthodontics in 2015 and presently practices and teaches maxillofacial prosthodontics at the University of Michigan.

Lisa T. Bamos (DH’80) is working in private practice and has been married for 24 years to her husband Joe. They have three children Michael (22), Christina (19), and Jennifer (16).

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Olivia Sheridan (D’90, GD’92) received the 2015 Alumni Award of Merit and was honored by the Penn Dental Medicine Alumni Society at the Reunion Dinner Celebration during Alumni Weekend 2015.

Ann Kearney Astolfi (D’92), along with her daughter, worked with 1,000 Smiles, a hands-on dental service trip addressing the needs of the Jamaican people. During their week, they were able to reach over 927 children through patient dental education/oral hygiene instructions at seven different elementary schools and distribute over 1,200 toothbrushes and toothpaste to the children. Their team also addressed the restorative, hygiene, and extraction needs of 876 people during the week.

Joan Malcolm (D’94) has been appointed to the National Advisory Council (NAC) on the National Health Service Corps (NHSC). The NAC advises the Secretary of the U.S. Department of Health and Human Services and is a frontline source of information to the NHSC senior management. As one of Council members, she will assist in
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As we mark the 100th Anniversary of the Thomas Evans Building and celebrate Evans, our earliest benefactor, join us in building a legacy of your own.

WE INVITE YOU TO CONTINUE IN THE PROUD TRADITION of our earliest benefactor, Thomas Evans, and the many friends and alumni who share a commitment to educating students in the highest quality clinical and research environment.

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ekett@dental.upenn.edu
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identifying the priorities for the NHSC and advise on policy and future program issues and concerns through ongoing communication with staff, other professional organizations, and the communities the NHSC serves.

Alan M. Polson (D’94) recently received the Robert Morris Award from the Welsh Society of Philadelphia for showing leadership in the field of dentistry. Dr. Polson continues to serve as a professor of periodontics at Penn Dental Medicine.

Mara Leveson (D’95, GED’95, GD’98) and Tony Saito (D’95) would like to encourage our fellow class members to consider a gift to Penn Dental. We both have successful practices and attribute our success to the exceptional education and training we received at Penn Dental. We are giving back to Penn Dental and hope you will too!

Kendra Schaefer (D’95) was awarded the Clinical Expertise Award by The Lucy Hobbs Project in August 2015. The Lucy Hobbs Project is a long-term program that aims to bring women together from all facets of the dental industry.

Joel Laudenbach (D’98, GD’04) has his own private oral medicine referral practice in Beverly Hills, Calif. He recently became president of the Southern California Academy of Oral Pathology and has been selected as a “Southern California Super Dentist” by Los Angeles Magazine two years in a row.

Hien Bui (D’04), along with his family, paid a visit to the School while in Philadelphia this summer and got a chance to see Dr. Thomas Evans’ carriage. Dr. Bui currently resides in San Diego.

Dan Kubikian (D’01, GD’04, GD’05) of Haddonfield, N.J. was nominated by the Penn Dental Medicine Alumni Society to serve a three-year term as member-at-large beginning July 1, 2015.

Ricardo Boyce (GD’03) had his article “Treatment Planning for Restorative Implantology” published in the April 2015 issue of Dental Clinics of North America.

Maria Velasco (D’10) has joined the Penn Dental Medicine faculty in the role of Predoctoral Program Director for Pediatric Dentistry.

Alexander Apple (D’12) completed his Specialty Certificate in Orthodontics and Master of Science in Dentistry at Case Western Reserve University in Cleveland, Ohio where he received the B. Holly Broadbent Award for Outstanding Research and the Sanford Neuger Award for Clinical Excellence. He returned to Philadelphia to join the Penn Dental Family Practice’s new facility in University City.

Jeremy Kay (D’12) completed a three-year prosthodontic residency at New York University this spring and was awarded the Litvak Fellowship Award. He served as Chief Resident in his final year. He and his fiancé are currently living in South Florida with private practices in Aventura and Boca Raton.
Jeff Li (D’12) completed his Certificate in Periodontics from the University of Michigan in 2015 where he was awarded the School of Dentistry Distinguished Periodontics Graduate Student Fellowship, the Ben Duff Endowed Scholarship for Excellence in Periodontics, and the Sigurd P. Ramfjord Award for Excellence. He is currently practicing with Perico in Boston, Mass.

Alf Bunes (GD’15) received the Outstanding Presentation Award, awarded to a resident presenting an outstanding, comprehensive presentation on an endodontic related topic.

Arturo Llobell Cortell (GD’15) was presented with the Arnold Weisgold Director’s Award for Postdoctoral Periodontal Prosthesis.

Kari Hexem (D’15) is currently working at Philadelphia FIGHT, the city’s largest comprehensive care provider for people living with HIV/AIDS, where she is overseeing the launch of the organization’s new dental services program. She also welcomed a new baby in September 2015!

Fatimah Abdulwahed Meshikhes (GD’15) was presented with the Director’s Award for Postdoctoral Periodontics.

Amy Patel (D’15) and Fadi Raffoul (D’15) were nominated by the Penn Dental Medicine Alumni Society to serve as members-at-large in recognition of their service as the Executive Student Council President and Class President, respectively, and interest in continuing to engage young alumni. Their term began July 1, 2015.

Nachiket Saoji (GD’15) received the Louis I. Grossman Award, presented to a resident excelling in endodontic skills, good interpersonal relations, professional attitude, high ethics, good morale, and future leadership qualities.

Matt Sones (D’12) and new wife, Megan, celebrated their marriage with Alexander Apple (D’12), Maureen Kuhta (D’12), Jeff Li (D’12), Alexander Volchonok (D’12), and Chad Speirs (D’12) on August 2, 2015.

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Penn Dental Medicine alumni are invited to list their practice(s) on the interactive map for free; however, opt-in is required. To list your practice today, visit www.dental.upenn.edu/map and follow the instructions under “Attention Alumni” or follow the step-by-step directions listed on the back of this card.

WWW.DENTAL.UPENN.EDU/MAP

We want to hear from you. Share your news on personal and professional accomplishments with your fellow Penn Dental Medicine alumni through the Class Notes section of the Penn Dental Medicine Journal.

We have made it easy for you to make a submission — simply go to www.dental.upenn.edu/classnotes where you can quickly send us your information — we welcome photos as well.

Or, you can send your submissions to:

Robert Schattner Center
Penn Dental Medicine
Office of Development and Alumni Relations
240 South 40th Street
Philadelphia, PA 19104-6030

Questions?
215-898-8951 (p)
alumnifeedback@dental.upenn.edu
The Penn Dental Medicine community warmly remembers an alumnus and long-time, highly respected member of the faculty – Dr. Seymour Oliet (D'53), who passed away August 26, 2015 at the age of 88. Dr. Oliet first joined the School’s faculty in 1953, retiring as Professor Emeritus in 1994. A leader in the field of endodontics, Dr. Oliet was the first Chair of the School’s Department of Endodontics, serving in this leadership role from 1972 through 1980. He also served as Interim Chair from 1990 to 1992. Dr. Oliet went on to be the founding Dean of Nova Southeastern University College of Dental Medicine.

He is survived by his wife, Sherry Roseff Oliet; his son, Dr. Eric Oliet (Mary); his daughter, Amy Heller (Dr. David Heller); seven grandchildren; and two great-grandchildren.

Gifts can be made in memory of Dr. Oliet to the Graduate Endodontics Annual Giving Fund to be used for research and education at www.dental.upenn.edu/give or by contacting Elizabeth Ketterlinus at ekett@dental.upenn.edu or 215-898-3328.

IN MEMORIAM

REMEMBERING MEMBERS OF THE PENN DENTAL MEDICINE COMMUNITY

Seymour Bauch (D'37) Hollywood, FL; November 8, 2014
Herbert C. Krouk (D'39) Dedham, MA; February 28, 2015
Leahruth S. Henderson (DH'40) Woodsfield, OH; December 8, 2014
Frederick L. Agnew (D'41) Penfield, NY; July 18, 2015
Dorothy S. Sonander (DH'42) Salinas, CA; April 10, 2015
Anne Bassok Schupack (DH'44) Farmington, CT; August 6, 2015

Herbert Fuerst (D'44) Raleigh, NC; January 14, 2015
Jane Higgins Hurley (DH'46) Berwyn, PA; March 28, 2015
Robert M. Brubaker (D'46) Monroe Township, NJ; August 14, 2015
Ethel Wolf Gross (DH'47) Glastonbury, CT; March 26, 2015
Luella R. Watkins (D'47) Morristown, NJ; May 11, 2015
J. Raymond Moore, Jr. (D'47) Baltimore, MD; April 29, 2015

Harry O. Bloom (D'47) Boca Raton, FL; June 6, 2015
C. Kocis Horvath (DH'48) Lancaster, PA; March 1, 2015
Perry Brolinson (D'48) Catawba, NC; May 7, 2015
Charles M. Yarid (D'50) Venice, FL; November 7, 2014
Harold Krivins (D'50) Interlaken, NJ; February 12, 2015
Robert Danner (D'51) Boca Raton, FL; March 1, 2015
George Kuttas (D'51) Indian Harbour Beach, FL; May 27, 2015
Alexander A. Colalillo (GD'51) Haddonfield, NJ; March 23, 2015
Thomas A. Davis (D'52) Oreland, PA; March 5, 2015
Thomas R. Judy (D'53) Laguna Beach, CA; April 22, 2015
Seymour Oliet (D'53) Pompano Beach, FL; August 26, 2015

Arthur Straussberg (D'54) West Orange, NJ; May 2, 2015
Charles W. Thompson (GD'54) Atlanta, GA; March 14, 2015
Patricia S. D'Imperio (DH'55) Allentown, PA; June 4, 2015
Bruce Mackenzie (D'55) June 18, 2015, Ramsey, NJ

David L. Schwartz (D'56) Henderson, NV; January 21, 2015
Morton H. Levy (D'56) Miami Beach, FL; February 1, 2015
John C. Saladino (D'56) Brooklyn, NY; January 15, 2015

Frank M. Franz, Jr. (D'58) Bethany Beach, DE; March 31, 2015
Robert A. Fischer (D'60) Lloyd Harbor, NY; February 8, 2015
Thomas A. Bartschi (GD'60) Arvada, CO; April 26, 2015
Joseph Wolfson (D'61) Monroe, NJ; May 6, 2015

Romeo E. Basa (GD'61) American Canyon, CA; March 4, 2015
Fleming J. Hanley, Jr. (GD'61) North Palm Beach, FL; March 6, 2015

John W. Sheffield, Jr. (GD'61) Atlanta, GA; August 25, 2015
Jan Feldman (D'64) Bonita Springs, FL; September 11, 2014
Robert W. Beideman (D'65) Berlin, MD; June 23, 2015
Karen K. Brown (DH'67) Belhaven, NC; April 28, 2015

Lloyd E. Tressler (D'67) Harrisburg, PA; July 3, 2015

Alan M. Marder (D'72) Naples, FL; March 18, 2015

Donald H. Kahn (D'74, GD'76) Old Bridge, NJ; March 2, 2015

Daniel P. Casullo (GD'75) Philadelphia, PA; October 4, 2015

Bonnie Field Crowley (DH'78) Lake Bluff, IL; February 20, 2015

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**2015/2016 CALENDAR**

**UPCOMING EVENTS & PROGRAMS**

**NOVEMBER**

- **NOVEMBER 4, 2015**
  Celebrating Scholarships Dinner  
  Penn Dental Medicine

- **NOVEMBER 6, 2015**
  American Dental Association: Penn Dental Alumni Reception  
  Marriott Marquis, Washington, DC

- **NOVEMBER 7, 2015**
  Courtly Treasures: The Collection of Thomas W. Evans, Closing Event  
  Arthur Ross Gallery of the University of Pennsylvania, Fisher Fine Arts Library Building

- **NOVEMBER 11, 2015**
  Alumni Reception  
  Cherry Hill, NJ  
  Hosted by Robert Stern, D’87

- **NOVEMBER 13, 2015**
  Dual-Degree Luncheon  
  Penn Dental Medicine

- **NOVEMBER 14, 2015**
  CDE: TMJ A to Z: Initial Management Strategies Approaches and End-Stage Disease  
  Penn Dental Medicine

- **NOVEMBER 16, 2015**
  American Academy of Periodontology Annual Meeting: Penn Dental Alumni Reception  
  Orlando, FL

- **NOVEMBER 30, 2015**
  Greater New York Dental Conference: Penn Dental Alumni Reception  
  The Penn Club, New York, NY

- **NOVEMBER 30, 2015**
  Young Alumni After Party  
  Stout Midtown, New York, NY

**DECEMBER**

- **DECEMBER 15, 2015**
  Alumni Lecture Series CDE: Featuring Dr. Thomas Sollecito (D’89, GD’91)  
  Free CDE for alumni  
  Penn Dental Medicine

**JANUARY**

- **JANUARY 29, 2016**
  Yankee Dental: Penn Dental Alumni Gathering  
  Bastille Kitchen, Boston, MA

**FEBRUARY**

- **FEBRUARY 18, 2016**
  Academy of Osseointegration Conference: Penn Dental Alumni Reception  
  San Diego, CA

**MARCH**

- **MARCH 8, 2016**
  Alumni Lecture Series CDE: Featuring Dr. Dean Vafiadis  
  Free CDE for alumni  
  Penn Dental Medicine

- **MARCH 12-14, 2016**
  American Dental Education Association Meeting: Penn Dental Alumni Gathering  
  (venue TBD) Denver, CO

- **MARCH 15, 2016**
  Career Networking Event  
  Penn Dental Medicine

**APRIL**

- **APRIL 2, 2016**
  Oral Cancer Walk  
  Penn Dental Medicine

- **APRIL 7, 2016**
  American Academy of Oral Medicine Penn Dental Alumni Dinner  
  Atlanta, GA

- **APRIL 7, 2016**
  American Association of Endodontics Penn Dental Alumni Reception  
  San Francisco, CA

- **APRIL 29-MAY 3, 2016**
  American Association of Orthodontics Penn Dental Alumni Reception (reception date TBD)  
  Orlando, FL

**MAY**

- **MAY 10, 2016**
  Senior Farewell  
  The Bellevue, Philadelphia, PA

- **MAY 12, 2016**
  Penn Dental Medicine Research Day  
  Philadelphia, PA

- **MAY 13-14 2016**
  Alumni Weekend 2016  
  Penn Dental Medicine

- **MAY 16, 2016**
  Commencement 2016  
  Irvine Auditorium, University of Pennsylvania

- **MAY 19-21, 2016**
  Pennsylvania Dental Association Meeting, Penn Dental Alumni Reception (reception date TBD)  
  Hershey, PA

**Courtly Treasures: The Collection of Thomas W. Evans, Closing Event**

**Arthur Ross Gallery of the University of Pennsylvania, Fisher Fine Arts Library Building**

**Alumni Reception**

**Cherry Hill, NJ**

**Hosted by Robert Stern, D’87**

**Dual-Degree Luncheon**

**Penn Dental Medicine**

**CDE: TMJ A to Z: Initial Management Strategies Approaches and End-Stage Disease**

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**Orlando, FL**

**Greater New York Dental Conference: Penn Dental Alumni Reception**

**The Penn Club, New York, NY**

**Young Alumni After Party**

**Stout Midtown, New York, NY**

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Visit [www.dental.upenn.edu/events](http://www.dental.upenn.edu/events) or call [215–898–8951](tel:215-898-8951) for information on alumni events.

Visit [www.dental.upenn.edu/cde](http://www.dental.upenn.edu/cde) or call [215–573–6841](tel:215-573-6841) for information on continuing dental education programs.
ONCE AGAIN, we are pleased to present this special supplement to the Penn Dental Medicine Journal. In it are highlights from four research meetings held by Penn Dental Medicine over the last year. In June of this year, Penn Dental Medicine hosted two conferences that brought together leading researchers and clinicians from across the country and around the world — the Penn Periodontal Conference 2015 and the Penn Esthetics Symposium, which also celebrated the 60th Anniversary of our Department of Periodontics. And this May, our faculty and students gathered to share their recent research through the School’s annual Faculty Research Retreat and Student Research Day — programs that demonstrated the great depth of research activities by our students and faculty. You will get a sense of the wide range of work presented through a selection of abstracts from each meeting on the pages that follow.

Creating such forums facilitates the exchange of ideas among investigators and helps build new collaborations — a vital part of the School’s mission and important to our ongoing research growth and in Penn Dental Medicine’s leadership in oral health research. Multidisciplinary research that reaches across schools, across fields of study, and across the globe is the hallmark of Penn as a world-class research institution, and it is our focus as well within Penn Dental Medicine’s research enterprise. Whether building collaborations between our own basic and clinical science departments, among colleagues from the other Penn schools, or with other universities throughout the country and around the world, it is this integration of knowledge that advances the science and practice of dental medicine and other fields as well.

The impact of the School’s research and scholarship is far reaching and at a level that generates diverse applications. Within 2014, 164 research articles were published by Penn Dental Medicine’s 44 standing faculty members. Over the past five years, the number of publications, and most importantly, the number of high-impact publications has more than doubled as we have enhanced the quality of the School’s research through faculty recruitment, and will continue to do so. We are also building upon the academic programs that promote research — from the growing interest of our DScD degree, which now has 13 students from the Departments of Periodontics, Endodontics, Orthodontics, and Oral Medicine and our Master’s in Oral Biology to our dual-degree options for DMD students (see related story, page 8). And this year, the first student and young investigator recipients of the School’s AADR/IADR Travel Awards program presented at the 2015 IADR/AADR/CADR meeting (see page, 49).

Indeed, Penn Dental Medicine is continuing to build on its position as an international leader in the generation of new knowledge and treatment modalities in oral health and beyond.

Dana Graves, DDS, DMSc
Vice Dean for Research and Scholarship
Professor and Interim Chair, Department of Periodontics
Director, DScD Program

“Creating such forums [research conferences] facilitates the exchange of ideas among investigators and helps build new collaborations.”
Penn Periodontal Conference 2015: A Forum of Exchange

BRINGING TOGETHER researchers from universities across the country and around the world, the Penn Periodontal Conference 2015 provided a forum to exchange the latest research from the clinical, translational, and basic sciences within periodontology. This international conference, presented by Penn Dental Medicine, is held biennially on the University of Pennsylvania campus and this year was held June 28 through July 2 at the Annenberg Center for the Performing Arts. The inaugural Penn Periodontal Conference, held in 2013, was moved from the Dental School to this same venue because it was over-subscribed, and once again, the Conference drew strong participation.

“We launched this conference two years ago to help fill the void left when the Gordon Conference on Periodontal Diseases was discontinued,” says Dr. Dana Graves, Penn Dental Medicine’s Vice Dean for Research and Scholarship and Interim Chair of the Dept. of Periodontics, who organized and hosted the event with Dr. Denis Kinane, Morton Amsterdam Dean. “To continue to advance our research and clinical care in periodontics, it is vital to bring together the various basic and clinical fields of periodontology. Our goal with the Conference is not only to invite highly respected researchers to speak, but also to encourage all attendees to share their work with each other and foster future collaborations. The conference also is important in establishing Penn Dental Medicine’s prominence in periodontal research.”

The program speakers represented 28 universities from within the United States, Europe, Asia, and South America, addressing topics within the areas of host-microbial interactions; inflammation, immunity, and epigenetics; epidemiology; clinical advances in periodontal disease; resolution of inflammation; and proteomics, biofilms, and novel treatments of periodontal disease (see page 43 for selected abstracts from the presenters).

Highlights also included three keynote speakers — “T Cell Therapeutics in Human and Murine Models of Disease” presented by Robert H. Vonderheide, MD, Dphil, Vice Chief for Research, Hematology-Oncology Division, Penn’s Perelman School of Medicine; “Anti-Inflammatory Treatment of Chronic Disease” by Ira Tabas, MD, PhD, Richard J. Stock Professor and Vice Chairman of Research, Department of Medicine, Columbia University, and “The Infectious Etiology of Cancer” by Erle S. Robertson, PhD, Professor of Microbiology, Penn’s Perelman School of Medicine, and Tumor Virology Program Leader, Abramson Cancer Center.

Structured to facilitate interaction, the scientific program featured morning and evening sessions, leaving the afternoons open for attendees to view and discuss the poster presentations and share their research with fellow attendees.

“A wealth of knowledge was shared, and the Conference offered many occasions to explore ideas and research collaborations,” notes Dr. Graves. “We welcomed postdoctoral researchers and PhD students along with highly accomplished researchers; such a forum is of critical importance to advances in our discipline and to career development. Moreover, internationally renowned researchers from Penn Dental Medicine — Drs. George Hajishengallis, Henry Daniell, Michel Koo, and Songtao Shi — presented their latest findings.” The Conference will be held again in the summer of 2017.
**FGF-2 and Periodontal Regeneration**
By Shinya Murakami, D.D.S., Ph.D., Professor and Chair, Dept. of Periodontology, Osaka University, Graduate School of Dentistry

Basic fibroblast growth factor (FGF-2) has received particular attention in the field of regenerative therapy, as it stimulates various stem cells to proliferate while maintaining their multipotency and is a strong inducer of angiogenesis. To assess the possibility of clinically applying FGF-2 for periodontal tissue regeneration, we conducted double-blinded clinical trials, in which the investigational drugs were topically applied to the periodontal tissue defects. As a result, standardized radiographs revealed significantly increased alveolar bone mass in the 0.3%-FGF-2 Group compared to the Placebo Group. Throughout the investigation period, no emergence of any serious adverse effects was identified. These results suggest that topical application of FGF-2 can induce significant regeneration of periodontal tissue in periodontitis patients.

**Nano-delivery of Inflammatory Therapeutics**
By Steven Little, PhD, Chair, Dept. of Chemical and Petroleum Engineering, University of Pittsburgh

Periodontal disease is initiated by the host’s damaging inflammatory response to invasive bacteria. In recent years it has become apparent that periodontal inflammation is reduced by recruitment of regulatory T-lymphocytes (Tregs). We developed a controlled release of a factor that recruits Tregs, CCL22. Following administration of this Treg-recruiting formulation, we observed increases in Tregs in the gingiva and a marked reduction in inflammation and bone resorption. Likewise, we applied the same system to a dog model of periodontitis and also obtained reduced clinical measures of inflammation and reduced bone loss. Thus, by applying slow release CCL22 we can effectively reduce destruction of periodontal tissue.

**Introduction to Clinical Advances**
By Anton Sculean, PhD, Dept. of Periodontology, University of Bern Switzerland

Recent findings suggest that the administration of short-term (up to 3 days), high dosage antibiotics (Amoxicillin + Metronidazol) in conjunction with nonsurgical therapy may lead to comparable outcomes to those obtained following the conventional one-week antibiotic administration and may minimize side effects that are often associated with one-or-two-week regimens. Furthermore, the combination of non-surgical mechanical therapy and Photodynamic Therapy (PDT), including a combination of Methylene or Toluidine Blue-based staining and low-level laser (670 nm), may result in substantially higher clinical improvements evidenced by probing depth (PD) and/or bleeding on probing (BOP) reductions compared to non-surgical therapy alone in patients with periodontitis. It may also represent a possible alternative treatment in patients with incipient peri-implantitis. Non-surgical mechanical therapy of peri-implantitis with adjunctive repeated application of a diode laser 3x for 30s (settings: 810 nm, 2.5 W and 50 Hz, 10 ms) yielded significant clinical improvements after an observation period of at least two years.
Penn Esthetics Symposium Marks 60th Anniversary of Penn Perio

PENN DENTAL MEDICINE marked the 60th Anniversary of its Department of Periodontics with the Penn Esthetics Symposium, held June 11 – 13, 2015 at Penn’s Annenberg Center for the Performing Arts. The program brought together leading clinicians and researchers for discussion on both surgical interventions and restorative management techniques and topics within the field of periodontics.

“With esthetics and the related fields of implantology, tissue regeneration, and biological materials rapidly evolving, our goal was to present perspectives on the scientific basis and clinical decision-making necessary for optimal outcomes,” says Dr. Ernesto Lee, Clinical Professor of Periodontics, who organized the symposium along with Dr. Joseph Fiorellini, Professor, Department of Periodontics; and Dr. Myron Nevins, Clinical Professor of Periodontics.

“We developed a program that reflected on the excellence in interdisciplinary therapy, which has remained a central theme in the rich heritage of the Penn periodontics and periodontal prosthesis graduate programs since their inception,” states Dr. Lee.

Invited speakers in the area of surgical interventions spoke on mucogingival surgery, bone grafting, and peri-implantitis, while restorative management presentations addressed adhesion, porcelain laminates, single and adjacent implants, and the treatment of compromised sites (see abstracts briefs of selected presentations, page 45). The program also featured two corporate forums by Biomet 3i and Morita, highlighting some of the latest tools and technology in the field. Panel discussions were also part of the program, providing an opportunity for attendees to ask questions and contribute to the dialogue.

“The information shared by the speakers as well as through discussion among attendees was invaluable for all in attendance to gauge the current clinical and research trends impacting the practice of periodontics,” notes Dr. Fiorellini.

The final day of the program was the Morton Amsterdam Program and Celebration of Life, paying tribute to the career and memory of Dr. Morton Amsterdam (C’43, D’45), recognized by many as the father of periodontal prosthesis and the founder of Penn Dental Medicine’s postdoctoral periodontal prosthesis program. The program of speakers included both alumni of the School’s periodontics programs and colleagues of Dr. Amsterdam’s on topics reflecting the influence of Dr. Amsterdam on the fields of periodontics and prosthodontics. The speakers included Drs. D. Walter Cohen (C’47, D’50), Arnold S. Weisgold (GD’66), David A. Garber (GD’78, D’81), Robert L. Vanarsdall (GD’72), Jeffrey Ganeles (GD’87), Harold S. Baumgarten (D’77, GD’82), Howard P. Fraiman (D’77, GD’93, GD’94), and Ernesto A. Lee (GD’87).

A scholarship fund has been established at Penn Dental Medicine in memory of Dr. Amsterdam. Contributions to the Morton Amsterdam Scholarship Fund can be made payable to the Trustees of the University of Pennsylvania and addressed to Penn Dental Medicine, Office of Development & Alumni Relations, 240 S. 40th Street, Philadelphia, PA 19104.
Adjacent Implants
By Joseph Kahn, DDS, MS, Professor, Restorative Dentistry, Loma Linda University School of Dentistry

Papilla is dictated by the bone of adjacent teeth for an anterior single implant. This is because the implant platform is placed according to facial bone, making it inevitably more apical than proximal bone. Long-term maintenance of proximal bone coronal to the implant platform is not predictable, causing an infrabony defect development toward the implant and thinning of the adjacent teeth proximal bone over time. Once the adjacent tooth is extracted, proximal bone loss can be expected, followed by papilla loss. This is why papilla loss is common in inter-implant situations, especially when replacing a failing tooth adjacent to an existing restored implant which had been placed more than four to five years. The proximal socket shield procedure has been advocated with short-term success and can be considered as a cautious option.

Peri-Implantitis
By Michael R. Norton, BDS, FDS, RCSEd, Adjunct Professor, Penn Dental Medicine, Dept. of Periodontics

Defining, diagnosing, and managing dental implants with peri-implantitis is a difficult issue facing clinicians today. This presentation sought to define this disease entity and identify the etiology. The question was raised as to whether peri-implantitis is a condition of a primary infective origin or a secondary opportunistic infection subsequent to bone loss caused by other initiating processes, such as iatrogenic dehiscence of the cortical bone, inflammation induced by exogenous materials such as cement, occlusion, or as has recently been proposed, a foreign-body reaction. Risks and complications include wound breakdown and long-term tissue recession, exposing metal to the oral environment. In the alternative approaches of tissue regeneration versus pocket/defect elimination, the former is aimed at maintaining a good aesthetic outcome, while the latter provides increased predictability for resolution of infection but results in compromised aesthetics. Among the various therapies for peri-implantitis, the use of Erbium YAG laser has been shown to provide an additional tool in the effective decontamination and potential re-sterilization of the implant surface to aid disinfection of the peri-implant defect.

Standing on the Shoulders of Giants: Penn Perio Mentors and Their Influences on Contemporary Practice
By Jeffrey Ganeles, DMD, FACD, GD’87

Patients with severe bone loss, tooth loss, and tooth migration continue to present therapeutic challenges, particularly when fixed restorations are desired. Before implant dentistry was predictable, the principles of periodontal prosthesis were developed in the 1950s – 1970s by Drs. Morton Amsterdam, Leonard Abrams and Arnold Weisgold.

Current application of these principles can be combined with implant dentistry to facilitate treatment and optimize patient outcomes. These points were illustrated through a case presentation of a patient with multiple missing teeth, advanced periodontal bone loss, limited available bone support, severe bite collapse, and poor esthetics. A treatment plan was developed to restore the patient using implants in the maxillary arch, merging the analytic tools and skills of periodontal prosthesis with immediate loading implant dentistry. Critical aspects of care included disease control followed by precise implant placement in critical areas of strategic bone support. An immediate loading protocol was applied to the perio-prosthetic occlusal guidelines.

The results showed instant rehabilitation of the patient with minimal procedures, treatment time and an optimal, evidence-based result. The conclusion — combining the guidelines of periodontal prosthesis with state-of-the-art implant dentistry can lead to predictable, beneficial, and efficient treatment, even for the most difficult patients and circumstances.
Research Retreat 2015 Showcases Studies Across Disciplines

On May 29, Penn Dental Medicine held its Research Retreat 2015, bringing together the School’s basic science and clinical departments for a day of exchange with colleagues across disciplines. This annual gathering, held once again at Penn Vet’s Hill Pavilion, showcases the quality and depth of the School’s research enterprise and provides opportunities for information sharing and discussions on future collaborations.

“The goal of our annual retreat is to create an opportunity for our basic science and clinical departments to take time out together — away from their labs, the clinic, and the classroom — to share their current research activities with one another,” says Dr. Hyun (Michel) Koo, Professor, Dept. of Orthodontics, and Chair of the Research Retreat Organizing Committee.

The program included faculty presenters selected by the Research Retreat Organizing Committee for their high-impact research over the past year as well as faculty and non-faculty (postdoctoral fellows, graduate students, research investigators) selected by the School’s Faculty Senate Research Committee from abstract submissions. This year, there were more than 33 abstracts submitted for consideration. The program featured eight faculty and five non-faculty presentations (see abstract briefs of three of the presentations, page 47):

- **Modulatory Roles of Hypoxia on Orofacial Mesenchymal Stem Cells**, Dr. Sunday Akintoye, Associate Professor, Dept. of Oral Medicine

- **Expanding Public Health Experiential Learning in Predoctoral Education**, Dr. Joan Gluch, Professor of Clinical Community Oral Health

- **Mechanisms of Anti-retroviral Drug-induced Changes in Amyloid**, Dr. Kelly Jordan-Sciutto, Professor and Chair, Dept. of Pathology

- **Mesenchymal Stem Cells: From Clinics to Bench-Top and Back**, Dr. Songtao Shi, Professor and Chair, Dept. of Anatomy & Cell Biology

- **Efficacy and Safety of Intranasal K305 in Anesthetizing Maxillary Teeth**, Dr. Elliot Hersh, Professor, Dept. of Oral & Maxillofacial Surgery/Pharmacology

- **Persistent Infection of Oral Mesenchymal Stem Cells by KSHV and Its Implication in Kaposi’s Sarcoma Development**, Dr. Yan Yuan, Professor, Dept. of Microbiology

- **B-Cell Stimulatory Cytokines BlyS and APRIL Modulate Bone Loss in Murine Periodontitis**, Dr. Jonathan Korostoff, Associate Professor of Periodontics

- **Shear Bond Strength of Dentin and Enamel of Amelogenesis Imperfecta Mouse Incisors**, Dr. Rochelle Lindemeyer, Associate Professor of Pediatric Dentistry

The day’s program also featured two guest speakers — Nicholas J.P. Ryba, PhD, who presented the keynote Joseph L. Rabinowitz Memorial Lecture, and Stefan Holst, DMD, PhD. Dr. Ryba is Senior Investigator and Chief of the Taste and Smell Section of NIH/NIDCR. Interested in the basic questions of sensory perception, his group has focused on the chemical senses, taste and smell, as powerful models to explore how sensory signals are detected and distinguished. Dr. Holst is Global Head of Research, Science and Regulatory Affairs for Nobel Biocare Services AG, responsible for developing and executing the research and science strategy to further develop and support the company’s portfolio of implants, prosthetics, and regenerative products.

Time was also allotted in the program for attendees to view and discuss the poster presentations on display, which included projects from many of the faculty and non-faculty who submitted abstracts as well as those DMD Penn Dental Medicine students who were the recipients of the 2014 and 2015 Penn Dental Medicine AADR Travel Grant Awards.

“The work represented through all aspects of the retreat was inspiring,” says Dr. Koo.
Amelogenesis imperfecta (AI) is a group of heterogeneous hereditary disorders that affect the structure and appearance of dentin enamel. Adhesive restorations have shown high failure rates in areas of poorly mineralized AI enamel. Patients with AI show varying degrees of success with bonded-resin restorations. Mouse models have been developed to show different forms of AI. The purpose of this study was to investigate adhesion strength of a resin composite bonded with a self-etching bonding system to AI-affected mouse enamel or dentin. Using animal AI models, we concluded that enamel sodium hypochlorite deproteinization of AI-affected enamel did not increase shear bond strength, while removal of the defective enamel allowed optimal dentin bonding.

**Mechanisms of Antiretroviral Drug-induced Changes in Amyloid Precursor Protein Processing: Implications for HAND**


Presented by Dr. Kelly Jordan-Sciutto, Professor & Chair, Dept. of Pathology

Despite effective viral control by antiretroviral therapy (ART), 30–50% of HIV-infected individuals develop a range of neurocognitive disorders. We hypothesized that HIV protease inhibitors (PI) may be contributing to persistent cellular stress in the CNS, contributing to cognitive dysfunction in HIV patients. Our studies demonstrate that some compounds used in antiretroviral therapy induce damage to neurons, the cell in the brain responsible for function, in laboratory and in animals. Further, our studies suggest that the pathways activated by the HIV PIs result in the activation of an enzyme, B-amyloid convertase 1 (BACE1), implicated in forming amyloid plaques, a major pathologic hallmark of Alzheimer’s disease. Finally, inhibition of this process protected neurons from damage and toxicity. These findings suggest that adjunctive therapies targeting these deleterious properties may reduce side effects produced by HIV protease inhibitors.
Visualization of Herpes Simplex Virus Endocytic Entry into Mammalian Cells
Atanasiu D., Cox R.G., Whitbeck J.C., Eisenberg R.J., Cohen G.H.
Doina Atanasiu, PhD, was awarded first place for her presentation of this project from the lab of Dr. Gary Cohen, Professor, Dept. of Microbiology

Herpes simplex virus (HSV) causes human disease, ranging from cold sores to serious infections, some being life-threatening. Our goal is to understand the process of fusion that is necessary for virus entry. Fusion requires HSV glycoproteins such as gB and a receptor. To visualize the dynamics of fusion in live cells, we used fluorescent protein tagging technology. We induced and then watched fusion and content mixing between a cell that contained labeled gB packets and a cell that did not. The cells gave off long, gB containing processes that surrounded adjacent cells, and fused with them to form giant cells with more than one nucleus. The gB packets actively moved during fusion. These exciting results give us a new tool to visualize HSV glycoprotein induced fusion in live cells. Future studies will elucidate whether the viral glycoproteins contribute to a signal given off by the cell during fusion and whether the cell extensions transmit information between cells that participate in fusion.

Activation of Human Mast Cells by Retrocyclin and Protegrin Highlight their Immunomodulatory and Antimicrobial Properties
Akhil Kotian, a PhD candidate from the lab of Dr. Henry Daniell, Professor & Interim Chair, Dept. of Biochemistry, tied for second place for his presentation of this project, conducted in the labs of Dr. Daniell and Dr. Hydar Ali, Professor, Dept. of Pathology

In the U.S., approximately 2 million people are infected by drug-resistant pathogens each year, and nearly 23,000 die, thereby increasing the need for novel antibiotics. Two antimicrobial peptides (AMPs), Retrocyclin (RC101, RC100) and Protegrin (PG1), are ideal for killing drug-resistant pathogens. We report a novel finding that Human Mast Cells (HMCs), important in host defense and wound healing, are activated by chemically synthesized RC-100 and PG-1. However, chemical synthesis of these peptides is prohibitively expensive and inadequate modifications may adversely affect their antimicrobial function. Green fluorescent protein (GFP)-tagged RC-101 (an analog of RC-100) and PG-1 synthesized in the chloroplasts of plant cells are potent both in activation of HMCs and in killing microbes. This novel feature of AMPs to activate host defense/wound healing expands their clinical potential beyond their antimicrobial properties. The high-level protein production of the chloroplast system is extremely cost effective and should facilitate their advancement to the clinic.

Biofilm Elimination and Caries Prevention Using Biomimetic Nanoparticles
Gao L., Liu Y., Li Y., Kim D., Hwang G., Koo H.
Lizeng Gao, PhD, tied for second place for his presentation of this project, conducted in the lab of Dr. Hyun (Michel) Koo, Dept. of Orthodontics

There are no clinically effective chemical modalities to disrupt oral biofilms and virulence expression despite the high prevalence (>90%) of biofilm-related oral diseases, such as dental caries, resulting in $81 billion expenditures annually in the U.S. Treating cariogenic oral biofilms is a three-fold challenge: drugs often fail to kill the clusters of bacteria that are protected by the exopolysaccharide (EPS) matrix; bacteria encapsulated within the matrix create highly acidic microenvironments; and topically applied agents are not effectively retained on tooth surfaces or within the biofilm due to rapid clearance in the mouth. Thus, new approaches should effectively disrupt the matrix and kill the embedded bacteria at acidic pH, where pathogenic bacteria prosper and actively develop biofilms. We developed new antibiotic nanoparticles that are activated at acidic pH, and capable of eradicating caries-causing biofilms. It can rapidly kill the bacterial pathogens embedded within biofilms, while preventing the onset of dental caries disease in vivo. Our nano-therapeutic approach has broad applicability, as biofilms are associated with many other infectious diseases as well as industry-related issues.
Penn Dental Travel Grant Awardees Present at 2015 IADR/AADR/CADR

Through Penn Dental Medicine’s AADR Travel Awards, ten DMD students and two junior researchers took their research to an international stage, presenting at the 2015 IADR/AADR/CADR Annual Meeting, held in Boston, March 11-14, 2015. This group was the first round of recipients of the School’s AADR Travel Awards, a new initiative launched last year to advance ongoing research and leadership for junior researchers and students. Following are the projects they presented in either poster or oral presentations.

**DMD Student Projects**

- **Hypoxia Sensitizes Irradiated Bone Mesenchymal Stem Cells to Apoptosis**
  Presented by Mark Guevarra (D’16);
  Preceptor: Dr. Sunday O. Akintoye, Associate Professor, Dept. of Oral Medicine

- **Bisphosphonate-Mediated Endoplasmic Reticulum Stress Response in Human Mesenchymal Stem Cells**
  Presented by Meghan Harley (D’17);
  Preceptor: Dr. Sunday O. Akintoye, Associate Professor, Dept. of Oral Medicine

- **Diabetes Reduces Mesenchymal Stem Cells during Bone Formation through TNF/Faxo1**
  Presented (oral presentation) by Kang Ko (D’15);
  Preceptor: Dr. Dana Graves, Professor and Interim Chair, Dept. of Periodontics

- **Effect of Local Growth Factors on the Masseter Muscle and Craniofacial Bone Growth in Mice**
  Presented by Laura Koo Min Chee (D’16);
  Preceptor: Dr. Elisabeth Barton, former Associate Professor, Dept. of Anatomy & Cell Biology

- **Fracture Mechanics of Self-Etch Adhesives Supplemented with PVM/MA and Triclosan**
  Presented by Joosang Lee (D’16);
  Preceptor: Dr. Francis Mante, Professor, Dept. of Preventive & Restorative Sciences

- **High Glucose Preconditioning Enhances Immunomodulatory Effects of Gmscs on Macrophages**
  Presented by Kevin Lin (D’16);
  Preceptor: Dr. Anh Le, Chair and Norman Vine Endowed Professor of Oral Rehabilitation, Dept. of Oral & Maxillofacial Surgery

**Junior Researcher Projects**

- **MFG-E8 Homeostatically Regulates Inflammatory Bone Loss In vivo**
  Toshiharu Abe, Dept. of Microbiology

- **The Mechanical Properties of Streptococcus mutans Biofilms to External Forces**
  Geelsu Hwang, Dept. of Orthodontics

The 2015 Penn Dental Medicine AADR Travel Awards recipients were selected at the School’s 2015 Student Research Day and the 2015 Research Retreat, both held in May; they will present their work at the 2016 AADR/CADR Annual Meeting & Exhibition in Los Angeles, March 16–19, 2016.

“The AADR and its joint meetings with the IADR and CADR bring together the top dental researchers on all levels from around the world,” says Dr. Michel Koo, Chair of the Penn Dental Medicine AADR Travel Awards Committee, “and it provides a great opportunity for our students and junior researchers to interact with investigators across disciplines and continents.”
Research Day Highlights Diversity of Student Projects

PENN DENTAL MEDICINE turned the spotlight on the broad range of research projects conducted by DMD students over the 2014–2015 academic year with its annual Student Research Day, held May 14, 2015 in the School’s Fonseca Gardens. Students shared their research activities with the Penn Dental Medicine community through an afternoon of poster presentations. A total of 93 posters were presented, featuring the work of students within the Vernon J. Brightman Research Society, who participated in the School’s Summer Research Program; those who took part in the community-based Bridging the Gaps externship; and those students in the School’s honors degree programs in research, community health, clinical care, oral medicine, and dentistry for radiological sciences.

“This day showcases the activities of our students in advancing the profession by gaining new knowledge as it relates to delivering clinical care, radiology, medically complex cases, community outreach, and the laboratory, reinforcing that the crown jewel of Penn Dental Medicine has always been and continues to be our student body,” says Dr. Kathleen Boesze-Battaglia, Professor, Department of Biochemistry and Director of the research honors program. Student members of the Vernon Brightman Research Society organized Student Research Day.

The posters from the School’s Summer Research Program and Bridging the Gaps were judged by a team of independent faculty members. This year’s winners include the following (see pages 51 and 52, for abstract briefs on their projects):

**SUMMER RESEARCH PROGRAM**
*First place:* Souren Hajjar (D’17);  
*Second place:* Catherine Campbell (D’17);  
*Third place:* Yoojin Rhee (D’17).

**BRIDGING THE GAPS**
*First place:* Brittany Gragg (D’17);  
*Second place:* Abby Yavorek (D’17);  
*Third place:* a tie between Sierra Van Der Dries (D’17) and the project of Jasmine Mohandes (D’17) and Corey Toscano (D’17).

Awards were also presented for excellence in radiology to students Betty Yip (D’15), Amy Patel (D’15), and Caroline Heidt (D’15).

In addition, ten students, including the three winners of the Summer Research Program, were selected to receive Penn Dental Medicine AADR Travel Awards, which will enable them to attend and present their research at the AADR/CDR Annual Meeting in Los Angeles in March 2016.

All students presenting a poster as part of Student Research Day also submitted an abstract for inclusion in an abstract book, viewable online at www.dental.upenn.edu/StudentResearchDay2015.

“The Penn Dental Medicine research community is proud to have such accomplished students representing our School’s research enterprise through Student Research Day,” adds Dr. Joseph DiRienzo, Assistant Dean for Student Research and Director of the Summer Research Program. “Among all the participants, the quality of work was exceptional.”
Cisplatin Induced Epithelial Mesenchymal Transition and Glycolysis Render SCC-1 Cells Resistant to Chemotherapy

Souren Hajjar (D’17) was awarded first place for this study, conducted with preceptor, Dr. Anh Le, Professor, Dept. of Oral & Maxillofacial Surgery & Pharmacology

Squamous cell carcinoma of the head and neck (HNSCC) has an incidence of 500,000 new cases per year globally and is the most frequent malignant tumor of the head and neck. Despite substantial improvements in treatment of HNSCC, the prognosis of this malignancy is still poor with the five-year survival rate not changed for decades. The poor survival can partly be attributed to the high frequency of locoregional recurrence (30–40% after standard treatment) and distant metastases (20–30% after standard treatment). Recurrent tumors are often therapy-resistant and may have their origin in resistant cancer stem cells (CSCs) or in tumor cells with an epithelial-mesenchymal transition (EMT) phenotype. Cisplatin, an alkylating-like agent causing DNA crosslinking, therapy is widely used to treat squamous cell carcinoma. This research project has data supporting EMT and glycolytic changes as a potential pathway for Cisplatin drug resistance for in vitro head and neck squamous carcinoma.

Relationship between MKR Mice Lacking IGF-1 Receptors in Masseter Muscle and Impacts on Craniofacial Bone Growth

Catherine Campbell (D’17) was awarded second place for this study, conducted with preceptor, Dr. Elisabeth Barton, former Associate Professor, Dept. of Anatomy & Cell Biology

Muscle and bone interact through mechanical forces between both tissues that modulate growth. However, there are also chemical factors that when secreted also affect growth. This project tested the differential endocrine and mechanical influences of muscle on craniofacial bone growth. Specifically, we used viral-mediated gene transfer to increase expression of insulin-like growth factor-I (IGF-I) locally in mouse muscle. Muscles secreted IGF-I and increased muscle mass, imposing both chemical and mechanical effects on bone. However, a subset of mice had a genetic blockade of IGF-I receptors in muscle, preventing muscle growth. Thus, there was a chemical effect, but no mechanical effect on bone. Results supported a local boost of IGF-I without altering circulating levels or muscle mass in the receptor-deficient mice. Further study will determine effects on the craniofacial skeleton. Findings from this study may lead to development of less invasive or complementary procedures to orthodontic treatment and orthognathic surgeries.

The Effect of Depression on Expression of the Cell Cycle Protein E2F1 in the Central Nervous System

Yoojin Rhee (D’17) was awarded third place for this study, conducted with preceptor Dr. Kelly Jordon-Sciutto, Professor, Dept. of Pathology

Major depressive disorder is a debilitating chronic condition, affecting about 6.7% of adults in the United States each year. The numerous etiologic factors of depression—likely a combination of genetic, psychological, environmental, and biological factors—can make it difficult to appropriately diagnose and treat depression. While the molecular mechanisms of depression are not clear, there are numerous studies demonstrating a high co-occurrence of neurodegenerative disorders and depression. Importantly, neurodegenerative disorders that may present with depression, such as Alzheimer’s and Parkinson’s diseases, share several common pathologic features, including oxidative damage, synaptodendritic loss, and neuroinflammation. In addition, they share increased immunoreactivity for two cell-cycle transcriptional regulators — hyperphosphorylated Retinoblastoma Susceptibility gene product (ppRb) and the E2F1 transcription factor, both of which play a role in activating gene expression necessary for normal cell-cycle progression. Results from the study suggest, however, that in depression, different molecular mechanisms (other than those observed in other neurodegenerative diseases) are at play that lead to altered cell-cycle protein expression.
BRIDGING THE GAPS PROJECT
WINNERS

Following are abstract briefs of the winning poster presentations by students participating in the 2014 Bridging the Gaps community externship program, awarded at the 2015 Student Research Day, May 14, 2015.

Promoting Positive Oral Health Habits
Brittany Gragg (D’17) was awarded first prize for her project at Sayre Health Center with Kelly Kowalchuk, Penn’s School of Social Policy and Practice.

Gragg and Kowalchuk worked to raise oral health awareness and to create better access to dental care in the community served by Sayre Health Center in West Philadelphia. They developed an oral health activity book and curriculum, making educational presentations at day care centers and summer camps in the West Philadelphia community served by Sayre. Following their presentation, children were given the oral health activity book, oral hygiene products, and parent information brochures in an effort to reinforce healthy habits at home. The goal of the project was to not only educate the children, but also educate parents about the importance of their family’s oral health.

From Tots to Flowerpots: Summer Camp at Francis Myers
Abby Yavorek (D’17) was awarded second prize for her project at Francis J. Myers Recreation Center with Kathryn York, Penn’s School of Social Policy and Practice; Tawnee Sparling, Perelman School of Medicine; and Robert Allen, Jefferson Medical College.

Yavorek, along with York, Sparling, and Allen, collaborated with community members to develop a health curriculum for the Center’s youth summer camp. The interns implemented health and wellness activities to promote healthy lifestyles and habits with the campers. Each morning the team designed fitness stations to encourage cardiovascular health, and each afternoon classroom activities were planned to further advance the children’s understanding of nutrition, wellness, and safety.

Ready, Willing and Able
Corey Toscano (D’17) and Jasmine Mohandesi (D’17) tied for third place for their project at Ready, Willing, and Able.

Toscano and Mohandesi worked with staff at the transitional housing center to provide various educational seminars, both dental and health related, to residents. Weekly, they gave presentations to the large group of nearly 70 residents on topics including dental health, heart health, nutrition, and smoking cessation. The two also planned an educational field trip to the iconic Mutter Museum. In addition, Toscano and Mahandesi worked with kitchen staff to develop a healthier menu for the residents, while also holding daily office hours to work with residents individually.

Earth’s Keepers: Urban Farming in Southwest Philadelphia
Sierra van den Dries (D’17) tied for third place for her project at Earth’s Keepers with Roseanne Day, Penn Medicine; and Caitlin Chin, Penn School of Social Policy and Practice.

Van den Dries, Day, and Chin worked alongside teens to grow, harvest, and sell their own produce at this organic urban garden in Southwest Philadelphia. In an effort to build awareness of the importance of fresh produce, the three interns organized a “Night at the Urban Farm.” The students worked with the teens employed at the farm to promote the event in the community, obtain donations from local businesses, and even have local musicians provide entertainment. Many families came out to enjoy everything the farm offers the community and were able to buy organic produce at low cost. The goal is for this to continue to be an annual event. In addition, throughout the summer, the interns taught lessons pertaining to dental, cardiovascular, and mental health to the teens working at the farm.
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