

**Advancing Oral Health.
Improving Lives.™**

GREEN LIGHT

UMSOD assistant professor receives grant to investigate cell signaling in *Staph aureus*.

**CELEBRATING
YOUNG ALUMNI**

New Distinguished Alumni Award unveiled.

THE 'WOW' OF DENTISTRY

Alumnus finds joy and artistry in work.

Mdental

THE MAGAZINE OF THE UNIVERSITY OF MARYLAND SCHOOL OF DENTISTRY | FALL 2019



***When
Art Meets
Science***

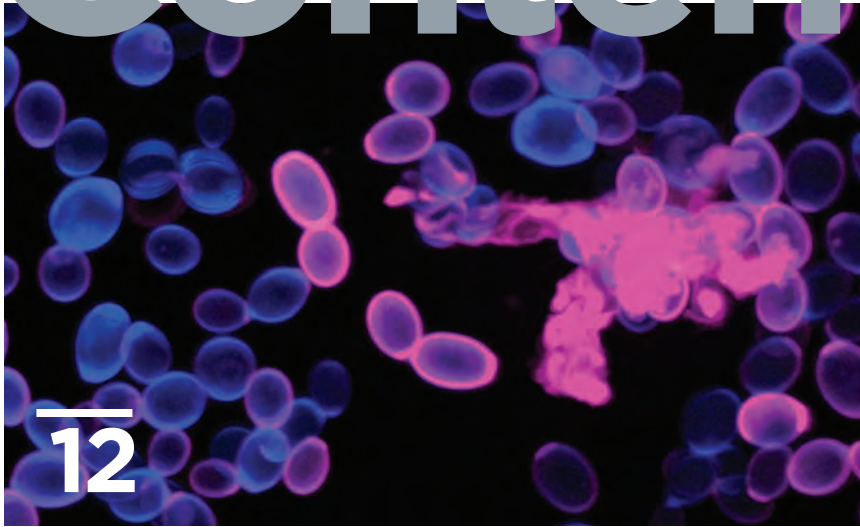
OfNote

Jermaine Blackwell-Smith, a student at Baltimore's Franklin Square Elementary/Middle School, won first place in a poster contest focusing on oral health awareness held July 12 at the University of Maryland School of Dentistry. (His co-winner, Ryan Aye, a student at Green Street Academy, was unable to attend the ceremony.) The annual contest is part of Planet Smilez, a weeklong summer camp aimed at introducing middle school youths to the oral health professions. It falls under the umbrella of the University of Maryland, Baltimore CURE Scholars Program, supported by the National Cancer Institute's Continuing Umbrella of Research Experiences program. **M**

PHOTO BY MATTHEW PAUL D'AGOSTINO / UMB



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The University of Maryland, Baltimore's inaugural issue of *1807*, an art and literary journal published last spring, illustrates what can happen when remarkable people combine their deep scientific knowledge with love of the arts and their own talent.

Works of art created by seven members of the University of Maryland School of Dentistry (UMSOD) community are showcased in the new journal. In this issue of *Mdental*, these dentists, researchers, and students describe the inspirations for and the interplay between their art and their professional endeavors. Their comments reinforce how we all can be enriched and broadened by our work as well as our passion (p. 20).

The journal also reminded me that creativity of all kinds fuels much of the best work we do at UMSOD, from tailoring a treatment plan for a patient with complex oral health care needs to devising new ways of investigating how to combat drug-resistant bacteria.

That creative spark is evident throughout our school — and constantly ignites a variety of innovations, big and small.

Led by Mary Ann Rizk, PhD, professor in the Department of Oncology and Diagnostic Sciences, cutting-edge investigations are exploring new ways to treat *Candida auris*, a drug-resistant fungus that is potentially fatal (p. 12). The Rizk team is examining avenues that include the relationship between *Candida albicans* and *Streptococcus mutans*, the main etiologic agent of dental caries.

In this issue, you also can read about a new collaboration between UMSOD and the University of Maryland School of Medicine's Women's Health Center. Developed by Lisa Bress, RDH, MS, a clinical assistant professor in UMSOD's Department of Dental Hygiene, this innovative and interprofessional program enables pregnant women to take advantage of Maryland's Medicaid benefits, which include dental coverage during a pregnancy (p. 16).

I could go on and on listing the achievements of our faculty and students, fueled by bursts of creative insights into how best to improve the world around us. I hope you will enjoy reading about some of them in this issue.

Warm regards,

Mark A. Reynolds, DDS '86, PhD
Dean and Professor

Mdental

ON THE COVER

See what happens when members of the UMSOD community get creative, p. 20

Photo illustration by B. Creative Group

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OnTheCusp



Photo by Matthew Paul D'Agostino / UMB

Worldwide Collaborations

BY HOLLY SELBY

New connections were forged and long-held ones strengthened at the inaugural Global Health Summit held in May at the University of Maryland, Baltimore (UMB). Sponsored by UMB's Center for Global Education Initiatives, the event drew international researchers and clinicians who shared past successes and discussed future strategies. In the photo above (from left), Valli Meeks, DDS, MS, RDH, clinical associate professor, University of Maryland School of Dentistry; Cyprien Baribwira, MD, country director, Center for International Health, Education, and Biosecurity-Rwanda; and Marik Moen, PhD, MPH, RN, assistant professor, University of Maryland School of Nursing, were among many experts who discussed ideas and results at the summit. **MD**

The summit highlighted the University of Maryland, Baltimore's commitment to improving the human condition through global collaborations in the health and human services.

New Implant Program

Hands-On Course, Thumbs-Up Reviews

BY GWEN FARISS NEWMAN

The University of Maryland School of Dentistry (UMSOD) launched an Implantology Continuum Course last fall that immediately won rave reviews from participants interested in offering patients this service.

“The biggest strength for me was how hands-on this course is,” says Ashley Brown, a 2011 graduate of the Meharry Medical College School of Dentistry in Nashville, Tenn., who practices with RZ Dental Group in Marriottsville, Md. “Many of the weekend courses only allow you to work with a model or a pig jaw versus a real clinical setting and an actual patient.”

UMSOD’s two-year curriculum in implantology is one of the most robust programs offered nationwide. Participants attend a weekly class for two years and participate in lectures and hands-on learning, including patient treatments. To date, the program’s first four participants have performed 15 implants under the guidance of faculty and staff. In response to demand, enrollment this fall has been doubled to include eight dentists. (Enrollment is capped at eight to ensure an individualized experience.)

“The biggest strength for me was how hands-on this course is.”

— ASHLEY BROWN, DDS

Above: Participants in the University of Maryland School of Dentistry’s new continuing education course, led by Herbert Mendelson, DDS, clinical instructor, Implantology Continuum, benefit from hands-on training.



“I like how thorough the course is,” says Priya Abraham, DDS ’06, who practices with AGA Family Dentistry in Catonsville, Md. “We’ve had lectures by oral surgeons, periodontists, prosthodontists, and oral radiologists. It’s a holistic course with a collaborative approach. You’re not just getting the implant piece but how to improve patient care in general.”

Vipul Subramanian, DDS, who practices in Leonardtown, Md., drives two hours each way every Monday to attend class. He already has had five patients qualify for implants, and he’s been a part of the treatment team. Meanwhile, his peers also have inquired about the course.

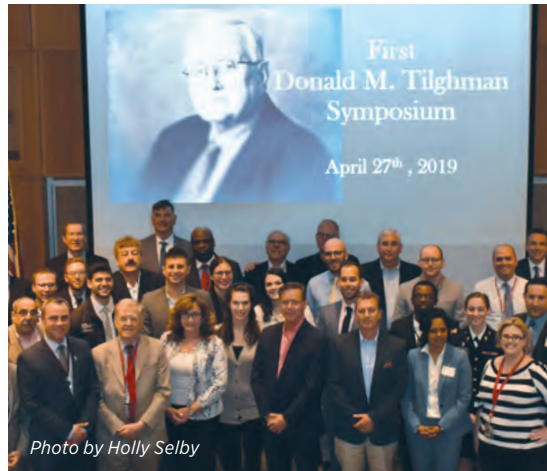
“We are meeting a community need by placing implants at a reduced cost and also are getting to train under experienced faculty using world-class technology,” Subramanian says. “It’s all about supply and demand. General dentistry is going toward a place where everyone should be more comfortable with placing and restoring implants. Devoting one day a week to getting yourself educated, I think, is a great investment.”

Mansi Oza, BDS, DMD, a 2009 University of Pennsylvania School of Dental Medicine graduate who practices at Thurmont Smiles in Thurmont, Md., concurs. “Through this program, participants do book readings and literature review and, when a participant performs an implant, the instructor is [figuratively] holding your hand. And that’s what I want.” **MD**

New Symposium Honors Donald M. Tilghman, DDS '61

About 60 residents and surgeons from the Washington, D.C./Maryland area gathered April 27 at the first annual Donald M. Tilghman Symposium. Organized by the University of Maryland School of Dentistry Department of Oral and Maxillofacial Surgery (OMFS), the event, held at the R Adams Cowley Shock Trauma Auditorium, honored the late Donald M. Tilghman, DDS '61.

Pointing to the Chalmers Lyons Society at the University of Michigan and the Harrigan Society in New York as examples, Robert A. Ord, DDS, MD, FRCS, FACS, MS, chairman and professor, OMFS, noted that there are many renowned lectureships and scientific events dedicated to individual surgeons who were important in the founding or development of their



programs. “Dr. Donald Tilghman was a giant in the field of OMFS, and his dedication to the University of Maryland OMFS program is legendary. It is very fitting that we have chosen to recognize him by founding the Dr. Tilghman Symposium,” he said.

“I hope that this symposium will serve to link his name with the University of Maryland forever and be a tribute to his lifetime of service.”

Speakers included the inaugural keynote address by Robert Emery, DDS '88, founder of X-Nav Technologies, who presented “Dynamic Navigation for Dental Implants and Beyond.” **Md**

— HOLLY SELBY

Trust Is Key to Success

Noting that everyone has a unique emotional history, Kimberly Harms, DDS '81, urged University of Maryland School of Dentistry students to cultivate empathy toward their patients.

“Optimal understanding of a patient is required before you can give optimal treatment,” she said.

Harms, who spoke April 18 at the Dr. Harry W. F. Dressel Jr. Memorial Lecture, also offered professional and personal advice about how practicing dentists can nurture their own — and that of their office staff — emotional health whether dealing with depression, loss, or burnout.

The annual lecture is held in honor of the late Dressel, a 1945 graduate of the School of Dentistry and faculty member who is remembered for his dedication to ethics and advancing dentistry.

Drawing upon three decades of clinical dentistry and the experience of catastrophic personal losses, including the suicide deaths of her mother and son and permanent nerve damage to her drilling fingers, Harms spoke movingly about dealing with loss. “You have to process your own grief,” she said. Ultimately, you “find a place in your life for that person or divorce or marriage or whatever you lost, that enables you to be connected.”

The award-winning author, international lecturer, and former national spokesperson for the American Dental Association described how dentists can create an office environment conducive to emotional health. Building trust between both practitioner and patient and practitioner and office staff members is key, she said. **Md**



Photo by Scott Hesel

— HOLLY SELBY

ByTheNumbers

UMSOD's PLUS Clinic Marks 30 Years of Patient Care

Thirty years ago this fall, the University of Maryland School of Dentistry (UMSOD) opened the doors to the PLUS Clinic, the state's first dental clinic for uninsured Marylanders diagnosed with HIV/AIDS.

Established by Valli Meeks, DDS, MS, RDH, clinical associate professor in the Department of Oncology and Diagnostic Services, the clinic offered much-needed oral health care to this underserved population. Although strides have been made in reducing the number of new infections each year, as of late 2018, there were nearly 10,500 people living with HIV in Baltimore.

Here is a numerical snapshot of the PLUS Clinic:



	1989	2019
Faculty and staff working in the clinic	3	12
Patients treated in the clinic	24	652
AIDS diagnoses reported in Baltimore City	458*	163*
New HIV diagnoses reported in Baltimore City	1,170*	207*

*Data from the Maryland Department of Health

Accolades



◀ **Bashayer Baras, DDS**, a PhD candidate in the Department of Microbial Pathogenesis, received the Graduate Translational Research Award during the annual Graduate Research Conference on March 15 at the University of Maryland, Baltimore.



◀ **Katherine Bell** received the Omicron Kappa Upsilon Dr. William S. Kramer Award of Excellence, presented in May to a junior dental student who has demonstrated scholarship, character, and the potential promise for the advancement of dentistry.



◀ **William Hoffman Jr., MAS**, department administrator in the Division of Prosthodontics, presented “Change Leadership – The Path to Collaboration” at a Society of Research Administrators International conference held Feb. 25-27 in Austin, Texas.



◀ **Maria Ibrahim, BDS, CAGS, MDS, MPH**, a PhD candidate in the Dental Biomedical Science Program, received the 2019 PhD Travel Award to attend the Stevens Conference on Bacteria-Material Interactions on June 12-13 at Stevens Institute of Technology in Hoboken, N.J.



◀ **Tara Sheehan, DDS '19**, won first place for “Cannabis and Dentistry” in the essay competition at the American Dental Society of Anesthesiology 2019 Las Vegas Meeting held Feb. 15-16. Mazda Mansouri, a fourth-year dental student, won third place in the poster competition for “The Increased Need for Sedation in Dental Education.”

The Good Terp:

New UMSOD Graduate Honored with College Park Service Award



When folks lace up their running shoes, they're usually doing so to improve their overall fitness.

But one day every year in Maryland, people run for oral health. That's thanks to Linda Powers, DDS '19, who helped organize Miles for Smiles, a 5K that raises money for the University of Maryland, College Park's (UMCP) Global Dental Brigades chapter. As an undergraduate, Powers co-founded the College Park chapter of the international organization, which builds sustainable health systems in developing nations through mission trips.

In April, Powers was an honoree at A Celebration of Terps: Featuring The Maryland Awards, receiving the Do Good Award for her efforts at UMCP.

“Receiving the award was more humbling than I can explain,” Powers said. “It shows that anyone can make a difference and that what we do matters. It further pushes me to uphold the values represented by the award: To live a life in pursuit of doing good.”

Powers is a recent graduate of the University of Maryland School of Dentistry, where she served as class president and participated in Mission of Mercy. Miles for Smiles is going strong at College Park, and Powers returns every year to volunteer, helping the latest predoctoral students follow in her footsteps.

“I can see myself in them,” she said. “They're eager and hopeful future dentists who are passionate about giving back.”

With a role model like Powers, that dedication to service is no surprise. **MD**

— JOEL KABOT

Photo courtesy of Linda Powers



Members of the 2019 UMSOD Student National Dental Association's executive board. Photo courtesy of Arielle Statham

Winning Streak Continues: UMSOD's SNDA Chapter Earns National Award

BY HOLLY SELBY

“Stay the course” was Arielle Statham’s unofficial mantra as 2019 president of the University of Maryland School of Dentistry’s (UMSOD) chapter of the Student National Dental Association (SNDA).

And that is exactly what she — and her 86 fellow chapter members — did.

In July, the UMSOD SNDA was awarded second place Chapter of the Year for large chapters at the 106th annual National Dental Association (NDA) meeting in Washington, D.C.

The honor marks the sixth consecutive year that the UMSOD SNDA has won first or second place in the Chapter of the Year Awards.

“We really wanted to continue the amazing legacy — really stay the course — that our chapter has set,” Statham says. “We aimed to continue having the impact on the community that we’ve had in the past and also continue being supportive of each other.”

The award recognizes chapters that excel in fundraising, community service, and new initiatives. In particular, the NDA, a professional association of minority dentists, considers how each chapter implements three national programs: Impressions Day, during which pre dental undergraduates visit dental schools to learn about the experience of studying dentistry; a holiday canned food drive; and an annual Oral Cancer Walk.

Fittingly, the award was presented to the UMSOD chapter during the Rite of Passage Gala by UMSOD alumna Tera Poole, DDS '16.

UMSOD’s chapter focused on enhancing its programming aimed at children, says Statham, a fourth-year dental student. “We all love community service, and I really wanted to continue that theme while expanding to reach as many community members as possible.”

At Impressions Day, pre dental students are invited each fall to visit UMSOD, meet with an array of dental professionals, and learn study habits and tips for applying to dental school.

Additionally, through an initiative called Generation NeXT, UMSOD dental students mentored high school students at the Vivien T. Thomas Medical Arts Academy. At the academy, interested students may train to be dental assistants. The SNDA mentors provided advice and information aimed at motivating the younger students to pursue DDS or dental hygiene degrees.

The UMSOD chapter also raised \$19,615 with its Oral Cancer Walk, held annually in April, organized at least one or two oral health fairs each month, and provided oral cancer screenings for 240 local residents.

Interprofessional networking also was emphasized, says Statham. “We are all so busy in school that we often don’t get to know anyone from the other schools.” To help build a Universitywide professional network, the chapter held networking sessions with the National Black Law Student Association and the Student National Medical Association, she says. **MD**

Hugs and Hurrahs

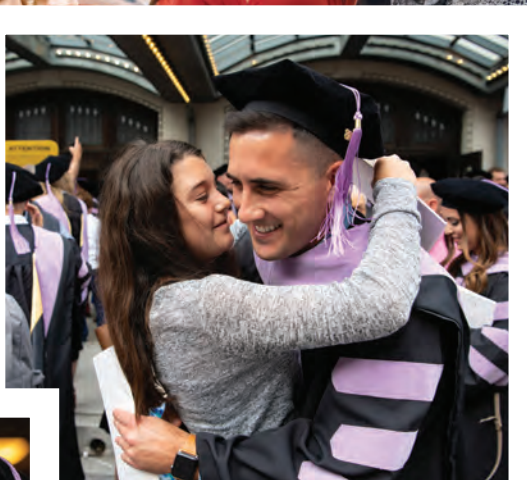
2019 Commencement and Convocation Ceremonies

BY HOLLY SELBY

Friends and family gathered May 17 at the University of Maryland School of Dentistry's Honors Convocation to congratulate the Class of 2019.

After welcoming all in attendance, Mark A. Reynolds, DDS '86, PhD, dean of the School of Dentistry, noted that it was time to "celebrate and congratulate" the graduates. "This day affirms and recognizes the hard work, personal and financial investment, and commitment each of you has made to the oral health professions," he said.

This year for the first time, the University of Maryland, Baltimore's commencement preceded the convocation by one day. Describing the graduates as "young leaders who have the skills, drive, and passion to make a positive impact on the world and serve others," Barbara Pierce Bush, co-founder of Global Health Corps and keynote speaker, spoke about the power of partnership and the importance of diversity and inclusion. **MD**



Photos by Matthew Paul D'Agostino / UMB

Innovation + Discovery

Seeking to Unravel the Biology of Resistance

INTERVIEW BY HOLLY SELBY



Photo by Holly Selby

Som Chatterjee, MS, PhD, is assistant professor in the Department of Microbial Pathogenesis at the University of Maryland School of Dentistry (UMSOD) with a joint appointment at the Institute of Marine and Environmental Technology (IMET), a research facility of the University System of Maryland. In a light-filled lab overlooking the Inner Harbor at IMET in Baltimore's Columbus Center, he is seeking to

understand the causes of antibiotic resistance in the bacterium *Staph aureus*.

Before arriving in January 2019, Chatterjee was a researcher at the University of California, San Francisco. A graduate of Dinabandhu Andrews College in Kolkata, India, he received his doctorate in medical microbiology from the Justus Liebig University in Germany. From 2007 to 2013, he was a postdoctoral fellow at the National Institutes of Health (NIH), where he studied the export mechanism of a group of cytolytic toxins called phenol-soluble modulins (PSMs). He recently received a two-year, \$275,000 grant from the National Institute of Allergy and Infectious Diseases.

Q. Recently there has been a lot of media reports about antibiotic resistance. Why?

A. 'Antibiotic resistance' is kind of a buzzword these days because everyone is concerned about microbes developing resistance to available drugs. It is predicted that in a few decades antibiotic resistant bacteria will kill more people than cancer.

Q. What aspect of antibiotic resistance are you investigating?

A. We are looking to unravel the biology of resistance — how bacterial cell signaling

causes antibiotic resistance. We are working on two different signaling mechanisms in *Staph aureus* that mediate resistance to a group of drugs, beta-lactam, that are considered among the gold standards [of antibiotics] because of their safety and efficacy.

Q. How does your research dovetail with projects at IMET?

A. Antibiotic resistance is an environmental phenomenon; antibiotics are used to treat humans as well as in agriculture and farming, and to increase the shelf life of produce in supermarkets. The use of antibiotics triggers resistance whether within humans or throughout the environment.

Working [at IMET] is a perfect opportunity for me to look into how antibiotic resistance is mediated in the environment. It's a circle: What we do affects the environment and, ultimately, comes back to affect us.

Q. How does your work fit in at UMSOD?

A. I am studying specifically how bacteria become pathogenic. The department I am associated with is Microbial Pathogenesis; that is my wheelhouse. We are increasingly aware that dental health is critical for general health, and that bacteria in the oral cavity is linked to overall health. This is a natural fit, I would say.

Q. What factors drew you to UMSOD and IMET?

A. This is a vibrant research atmosphere. There are so many universities around, and the NIH is nearby. I have good lab space at a state-of-the-art institute. There is good energy here, and people are really, really collaborative. **MI**


CONTINUING EDUCATION COURSES

- **Three-Dimensional (3-D) Endodontic Instrumentation and Obturation**
Presented by Bradley Trattner, DDS '88
Saturday, Nov. 9
8 a.m. to 3:30 p.m.
- **Digital Technology: Three-Dimensional Implant Planning, Design and In-Office Printing of Surgical Guides**
Presented by Radi Masri, DDS, MS, PhD
Saturday, Nov. 16
8 a.m. to 3:30 p.m.
- **Optimum Aesthetics (Hands-On)**
Presented by David Mazza, DDS
Friday-Saturday, Nov. 22-23
8 a.m. to 3:30 p.m.
- **Infection Control is Not Optional | Proper Pharmacologic Prescribing and Disposal | Scope of Abuse**
Presented by Louis DePaola, DDS '75, MS; Christine Wisnom, RN, BSN; and Marvin Leventer, DDS '90
Saturday, Dec. 7
8 a.m. to 4 p.m.
- **Local Anesthesia for Dental Hygienists**
Presented by Marion C. Manski, RDH, MS
Thursday-Saturday, Dec. 5-7
8 a.m. to 5 p.m.
- **Nitrous Oxide Administration and Monitoring for the Dental Hygienist**
Presented by Deborah L. Cartee, RDH, MS
Saturday, Jan. 25, 2020
8 a.m. to 3 p.m.
- **Treating Complex Prosthodontics Patients**
Presented by Carl F. Driscoll, DMD
Saturday, Feb. 8, 2020
8 a.m. to 3:30 p.m.
- **Ridge Preservation for Esthetics, Prosthetics and Implant Placement**
Presented by Jon B. Suzuki, DDS, PhD, MBA
Saturday, Feb. 22, 2020
8 a.m. to 4 p.m.
- **Cone Beam CT Imaging and Principles: Part I Basic Training**
Presented by Jeffery B. Price, DDS, MS
Thursday, Feb. 27, 2020
8 a.m. to 5 p.m.
- **Cone Beam CT Imaging and Principles: Part II Advanced Basic Training**
Presented by Jeffery B. Price, DDS, MS
Friday-Saturday, Feb. 28-29, 2020
8 a.m. to 5 p.m.
- **Anterior/Posterior Composite Artistry**
Presented by Paul Bylis, DDS
Saturday, March 7, 2020
8 a.m. to 3:30 p.m.
- **Local Anesthesia for Dental Hygienists**
Presented by Marion C. Manski, RDH, MS
Thursday-Saturday, March 19-21, 2020
8 a.m. to 5 p.m.
- **Combined Inhalation-Enteral Conscious Sedation for the Adult Dental Patient**
Presented by Marvin Leventer, DDS '90, and Richard L. Wynn, PhD
Thursday-Saturday, April 30-May 2, 2020
8 a.m. to 5 p.m.
- **Combined Inhalation-Enteral Conscious Sedation | Update of Pharmacology and Review of Airway Management and Emergencies**
Presented by Marvin Leventer, DDS '90, and Richard L. Wynn, PhD
Friday-Saturday, May 1-2, 2020
8 a.m. to 4 p.m.
- **Nitrous Oxide Administration and Monitoring for the Dental Hygienist**
Presented by Deborah L. Cartee, RDH, MS
Saturday, May 2, 2020
8 a.m. to 3 p.m.
- **Infection Control is Not Optional | Proper Pharmacologic Prescribing and Disposal | Scope of Abuse**
Presented by Louis DePaola, DDS '75, MS; Christine Wisnom, RN, BSN; Richard L. Wynn, PhD
Saturday, May 16, 2020
8 a.m. to 4 p.m.
- **NEW: Implantology Continuum Course (Two-year course)**
Beginning Monday, Aug. 17, 2020

FOR MORE INFORMATION

Call 410-706-2282 or visit www.dental.umaryland.edu/ce.

TRYING TO SQUASH A SUPER BUG

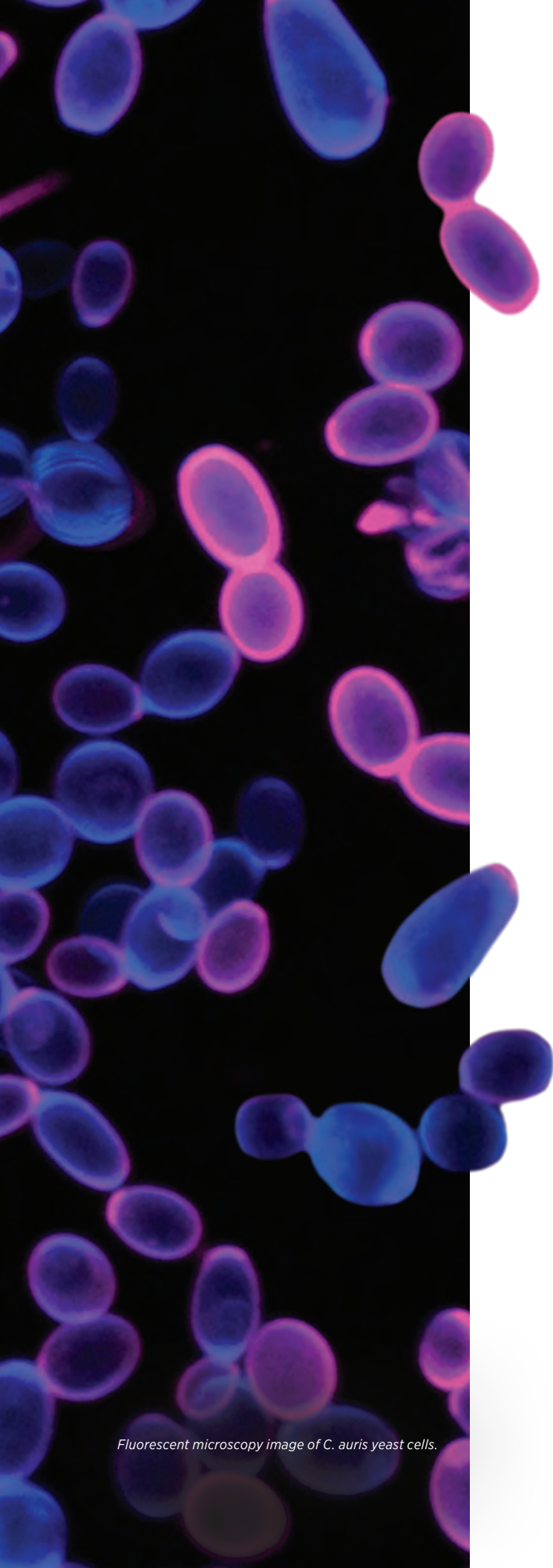
A vertical strip on the right side of the page shows a microscopic view of numerous blue, oval-shaped cells, likely Candida, against a dark background. The cells are densely packed and vary in focus, creating a sense of depth.

UMSOD Lab Tackles Dangerous Fungus, Other 'Candida' Strains

BY SCOTT HESEL

Lately, the news has been full of stories about the latest superbug, *Candida auris*. It is potentially deadly and often drug-resistant.

C. auris, however, is not a bacterium or a virus. It's a fungus, very similar to the yeast that normally colonizes your mouth or is used to make beer. That's what makes it dangerous, according to Mary Ann Rizk, PhD, professor in the Department of Oncology and Diagnostic Sciences at the University of Maryland School of Dentistry (UMSOD) and the Department of Microbiology and Immunology at the University of Maryland School of Medicine (UMSOM). Rizk leads a lab that focuses on *Candida* strains, including the superbug.



Fluorescent microscopy image of *C. auris* yeast cells.

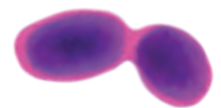
“Fungi are not like bacteria,” she says. “Fungal and human cells share a lot of their molecular and biochemical makeup, so it is very challenging to develop drugs that can selectively target a fungal cell.”

That’s borne out by the fact that while there are numerous antibiotic drugs to treat bacterial infections, there are only three main classes of antifungals available for clinical use. Just as incredible is the fact that of the 5 million estimated species of fungi, only 100,000 are known to scientists. *C. auris* was discovered only in 2009, for instance.

Rizk’s lab, which includes postdoctoral fellows Taissa Vila, PhD; Zaid Khoury, DDS; and Ahmed Sultan, BDS, PhD; is trying to better understand fungal pathogens — in particular how *C. albicans*, a fungal cousin of *C. auris*, transitions from a harmless colonizing state to infection. We all have *C. albicans* in and on our bodies, but for some it can lead to a yeast infection or oral candidiasis, commonly known as thrush. With dentists on her team and a location at UMSOD, Rizk’s lab specifically focuses on *C. albicans* in the oral cavity.

As a result, “our research is translational in nature,” says Rizk, which makes her lab unique among the other institutions in Maryland that study fungi. That has allowed the team to build strong partnerships with regional institutions, especially through the Baltimore Fungal Biology Center (BFBC), a consortium of fungal researchers from UMSOD, UMSOM, the Johns Hopkins University School of Medicine, the Johns Hopkins Bloomberg School of Public Health (JHSPH), and several other local institutions. Through the BFBC, local researchers can share ideas, discuss the latest research, and showcase their projects.

One such project at the Rizk lab, led by Khoury, examines the relationship between *C. albicans* and *Streptococcus mutans*, the main etiologic agent of dental caries.



“FUNGI ARE NOT LIKE BACTERIA. FUNGAL AND HUMAN CELLS SHARE A LOT OF THEIR MOLECULAR AND BIOCHEMICAL MAKEUP, SO IT IS VERY CHALLENGING TO DEVELOP DRUGS THAT CAN SELECTIVELY TARGET A FUNGAL CELL.”

— Mary Ann Rizk, PhD



“It was shown that children with early childhood caries have increased levels of *C. albicans* in their oral cavity,” Khoury says. “The focal point of my research is to ask: ‘Does the interaction between *C. albicans* and *S. mutans* increase the risk of dental caries development?’”

Khoury’s hypothesis — that *C. albicans* and *S. mutans* co-adhere and form biofilms on oral tissues, allowing *S. mutans* to increase in number enough to cause caries — was validated through his studies where *S. mutans* was recovered in greater quantity from the teeth of mice with *C. albicans* infection than those without it.

Elsewhere in the lab, Sultan’s research centers on developing therapeutic strategies targeting denture stomatitis, a *Candida*-associated infection prevalent in denture wearers. Using histatin-5 — a salivary peptide — as a blueprint, the lab developed a patented peptide and a bioadhesive hydrogel formulation for oral topical application.

“Antimicrobial peptides have broad-spectrum activity against various microorganisms. Our peptide, however, is particularly and uniquely potent against *C. albicans*,” Sultan says.

To establish the formulation’s clinical applicability, and in collaboration with Radi Masri, DDS, PhD, MS, associate professor and

(BELOW)

From left, Jerry Palacios and Hussian Ahmed, predoctoral students; Ahmed Sultan, DDS, PhD; Zaid Khoury, DDS, PhD; Mary Ann Rizk, PhD; Taissa Vila, PhD; Alexandra Rizk, predoctoral student; Taanya Puthran, BS; and Daniel Montelongo, PhD

GIVEN THE RISE OF *C. AURIS* AND NEWFOUND PUBLIC AWARENESS OF FUNGAL INFECTIONS, SUCH EXPOSURE IS AS TIMELY AS EVER.

director of the UMSOD Division of Prosthodontics, Sultan utilized 3-D digital imaging and printing to fabricate dentures for rats. Using the animal model of denture stomatitis, Sultan was able to demonstrate the efficacy of the novel agent in preventing *C. albicans* from adhering to the dentures, thus preventing the development of denture stomatitis.

Sultan has since tested the gel successfully against several species of *Candida*, and the Rizk group is evaluating its effectiveness against *C. auris* strains, recently obtained from the Centers for Disease Control and Prevention. The lab members’ experience with *C. albicans* has proved to be beneficial when researching *C. auris*.

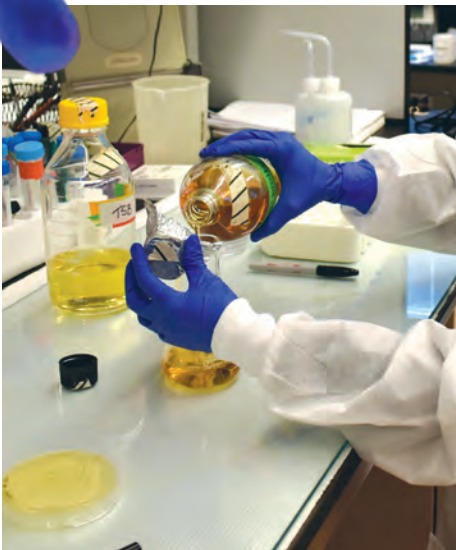
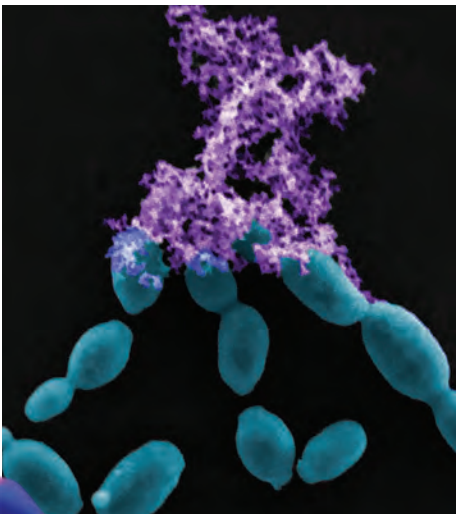
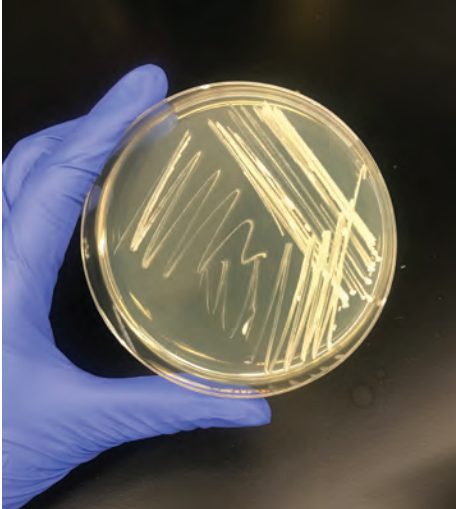
“*C. auris* is similar to *C. albicans*,” says Vila, “except for some pathogenic factors that allow it to rapidly develop resistance to all available classes of antifungals, and that’s what makes it dangerous in a hospital setting.”

Rizk’s lab — and much of the greater fungal research world — is still in the early stages of studying *C. auris*. Vila is currently researching how *C. auris* differs from *C. albicans* and evaluating the fungus’ pathogenesis using animal models.

“We don’t yet have the weapons to fight [*C. auris*] because we don’t know the basic research,” she says. “We are learning as we go.”

Members of the Rizk lab will be learning alongside their colleagues from the BFBC, which evolved after years of collaboration. Rizk and Valeria Culotta, PhD, professor at JHSPH, had long organized joint seminars, drawing upon the complementary nature of





fungal research conducted at UMSOD, UMSOM, and the Johns Hopkins schools. The fungal research labs at Johns Hopkins focus more on the cellular and molecular levels, while UMSOD's translational research focuses on pathogenesis and understanding host-pathogen interactions.

Given the natural link between the institutions, Rizk and Culotta wanted to establish a more interactive event where research trainees could present their research and share ideas.

"In seminars, we sit and listen to the talks and then leave, and we thought in an informal setting with food and drinks, the postdocs and students from Maryland and Hopkins would have an opportunity to mingle and get to know each other's work," Rizk says.

That prompted the researchers to establish the BFBC in 2015. Consisting of 14 labs across participating institutions, the BFBC aims to promote excellence in fungal research and champion the next generation of fungal biology researchers. In March 2019, more than 60 researchers attended the BFBC's first symposium, which was held at UMSOD. Besides the host institutions, attendees from the University of Maryland, College Park; the University of Maryland, Baltimore County; and the National Institutes of Health (NIH) participated.

"The symposium provided an excellent forum for researchers across the Maryland area," Culotta says.

Rizk notes that the NIH's participation is critical for the long-term research aims of the BFBC.

"It's important for the NIH to be aware that between Maryland and Hopkins, there's a lot of fungal-related research going on," she says. "Our collaborations through BFBC will ultimately help us with grant applications."

Given the rise of *C. auris* and newfound public awareness of fungal infections, such exposure is as timely as ever. Building on its recent success, the BFBC plans to hold another meeting in the near future. *C. auris* will be a major point of discussion for the scientists.

Until then, Rizk's lab members at UMSOD will continue their important research into the two *Candida* species. Their work might be in the news now, but they're going about it with the same dedication and determination as before.

"Pathogens don't just fall out of the sky," Rizk says. "They've been around for millions of years. The challenge is to try to understand the evolutionary process and the factors leading to their emergence." **MJ**

(TOP TO BOTTOM)

C. auris colonies growing on solid fungal media.

Digitally colored electron microscopy image of *C. auris* shedding cell wall polysaccharides.

A Rizk team member starts to grow a *C. auris* culture in liquid media.





ORAL HEALTH CARE FOR PREGNANT WOMEN

**New Interprofessional UMSOD Program
Provides Critical Dental Services
to Underserved Women While
Enhancing Student Experience**

BY GWEN FARISS NEWMAN

(TOP LEFT)

UMSOD's Lisa Bress, clinical assistant professor in the Division of Dental Hygiene, reviews a patient's chart. (Middle left) Educational materials focus on good oral health for the whole family. (Bottom left) Under faculty supervision, fourth-year dental students Cole Chester and Kyle Armstrong provide treatment to a pregnant patient. (Right) Baltimore resident Mariah Walker receives oral health care at UMSOD as part of her prenatal care.

LAST AUGUST, MARIAH WALKER ARRIVED AT THE UNIVERSITY OF MARYLAND SCHOOL OF DENTISTRY (UMSOD) FOR HER FIRST DENTAL APPOINTMENT OUTSIDE AN EMERGENCY ROOM IN A LONG TIME.



She had visited an emergency room months ago because of oral pain caused by an infection, but because she was uninsured, she couldn't afford the recommended root canal. Pregnant with her second child, the Baltimore resident now qualified for dental coverage as part of her prenatal care benefits.

At UMSOD, Walker was appointed to Megan Didion, a senior dental hygiene student, for a comprehensive oral health evaluation.

Walker happily got the care she needed. "I've been to the hospital multiple times because of pain," she said. "Today, I was able to come in and get the treatment and care that I felt I deserved."

The 25-year-old is among more than 75 prenatal patients who have received dental treatment as part of an innovative partnership between UMSOD and the University of Maryland School of Medicine's Women's Health Center (UMWHC), that integrates oral health into prenatal care offered to underserved women in Baltimore.

Designed to take advantage of Maryland's Medicaid benefits, which include dental coverage during a woman's pregnancy, the program is the result of a collaboration between Linda McClellan, RN, director of operations at UMWHC, and Lisa Bress, RDH, MS, clinical assistant professor in UMSOD's Department of Dental Hygiene, who developed and implements the program.

The fast-expanding interprofessional initiative also represents a paradigm shift in the way health care providers approach prenatal care and models how a wide range of health professionals can work together to improve patient care.

"The project is unique because it spurred creation of a dental referral protocol for the Women's Health Center so that dental health is now an integral part of prenatal care," Bress said.

"It also enhances education for University of Maryland, Baltimore medical students, OB-GYN residents, dental hygiene and dental students, and Master of Public Health students. And, most importantly, more pregnant patients are being referred to the School of Dentistry and getting access to critical treatment."

Launched in 2017, the program began with dental hygiene students offering oral health education to pregnant women at the Western Penn Women's Center, one of three clinics run by UMWHC. Since then, the initiative has blossomed into a multifaceted interprofessional collaboration that includes registered nurses incorporating oral health education and evaluation into their prenatal education appointments.

"It used to be the RNs only asked, 'Do you have a dentist?' Now they've added three questions to the protocol: 'Do you have dental pain? Do your gums bleed?' And, 'When's the last time you had your teeth cleaned?'" Bress said. "These risk-assessment questions help us determine if patients go to the dentist regularly or only when they are in pain."

Prenatal patients at UMWHC who don't have a dentist are referred to the UMSOD clinic. If they choose to follow up on the referral, dental experts are on hand to assess and treat their oral health needs. Dental hygiene students conduct comprehensive medical histories, hard and soft tissue exams, and offer dietary counseling, among other services.

Mona Gorman, DDS, clinical assistant professor in the Department of General Dentistry and general practice director, triages patients' needs — and assigns a third- or fourth-year dental student to provide operative treatment under the supervision of a faculty member. A dental case manager is available to help coordinate appointments.

(ABOVE LEFT)

Fourth-year student Cole Chester provides dental treatment to a patient.

ABOVE RIGHT (FROM LEFT),

UMWHC's Marquita Vanzego, RN; Richelle Cricks, CNM; Linda McClellan, director of operations; Jenifer Fahey, CNM, MSN, MPH, assistant professor, University of Maryland School of Medicine Department of Obstetrics, Gynecology and Reproductive Sciences; Lisa Bress, UMSOD clinical assistant professor; Katy Battani, project manager, Partnership for Integrating Oral Health Care into Primary Care, Georgetown University



“The dental school’s mission is ‘Advancing Oral Health, Improving Lives.’ That is what this program does,” Bress said.

“Dental pain can be debilitating for low-income communities and expensive for taxpayers. This program diverts women from seeking care in hospital emergency rooms while improving the overall health and quality of life for this underserved population.”

Walker was referred to UMSOD’s clinic by a registered nurse at UMWHC and made an appointment. There, fourth-year dental students Cole Chester and Kyle Armstrong reviewed Walker’s radiographs and began oral surgery for tooth No. 1.

In addition to a comprehensive dental exam, radiographs, and prophylaxis, Walker’s treatment plan includes several restorations and a root canal. It will require at least seven appointments staggered over several months.

Dental pain is one of the most common symptoms reported by the women who come to the prenatal center for care, said Katrina S. Mark, MD, FACOG, an obstetrician/gynecologist and assistant professor at the University of Maryland School of Medicine who directs UMWHC.

“Most of the time it’s not that they don’t want dental care, but that it hasn’t been available to them or they don’t know they qualify to receive it,” Mark said. “Since the partnership began, I’ve spoken with many who are happy that we could connect them to care. It’s been seamless, and the benefits are long term.”

Making access to oral care as convenient as possible is part of the UMSOD team’s strategy, Bress said. Many of the women who seek prenatal care have difficulty finding transportation to the clinic or day care for their other children. Clinic faculty and students work to expedite treatment plans so they can be completed before the patients’ babies are born, which is when Medicaid dental coverage ends.

Once, a mother-to-be, who was edentulous and diagnosed with gestational diabetes, had been denied coverage for dentures by her insurance carrier.

“Patients with gestational diabetes need nutrients from foods that require chewing, and patients without teeth don’t get the nutrients they need, which can be harmful to them and the unborn baby,” Bress said.

The patient’s obstetrician/gynecologist resident at UMWHC explained successfully to the insurance carrier that dentures were a medical need for this patient, and coverage was approved.

In another instance, dental hygiene faculty and students helped an HIV-positive patient maintain dental benefits after delivery by sharing information about the dental care for HIV-positive patients offered by UMSOD’s PLUS Clinic under the Ryan White CARE Act.

“Dental decay is a chronic disease, yes, but even more it’s about health behaviors,” Bress said. “This program doesn’t just treat our pregnant patients’ teeth but also educates mothers — to help stop that chain of disease for the kids at home.” **ME**

HOW THE PROGRAM IS FUNDED

January 2018

The Wrigley Company Foundation, through the American Dental Hygienists’ Association, funds a pilot program enabling University of Maryland School of Dentistry (UMSOD) dental hygiene students to provide oral health screenings and education to prenatal patients at the University of Maryland School of Medicine’s Women’s Health Center (UMWHC).

January 2019 and July 2019

With funding from the Health Resources and Services Administration’s Maternal and Child Health Bureau, the National Maternal and Child Oral Health Resource Center at Georgetown University awards two \$10,000 grants for UMWHC to participate in the Partnership for Integrating Oral Health Care into Primary Care project. It enables certified nurse midwives at UMWHC to integrate oral health care into prenatal care. The project is managed by Katy Battani, BSDH ’02, MSDH ’08, a member of UMSOD’s Alumni Association Board of Directors.

June 2019

The Maryland Office of Oral Health awards \$26,000 to Lisa Bress, RDH, MS, clinical assistant professor at UMSOD, in support of case management to coordinate dental services at the school for prenatal patients referred from UMWHC.



CREATIVE SPARKS

*Mixing the Arts and Sciences,
Seven from UMSOD Have Works
Featured in UMB's '1807' Journal*

BY HOLLY SELBY



To Maureen Stone, PhD, creating art out of glass is simultaneously freeing and restricting.

Glass is radiant and glows with color. It is patient: If Stone, a professor in the Department of Neural and Pain

Sciences at the University of Maryland School of Dentistry (UMSOD), becomes busy tending to her career or other interests, glass will wait for her. It doesn't corrode, dry out, or spoil.

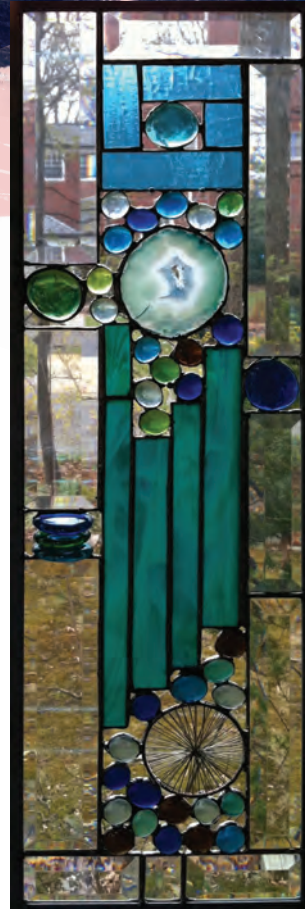
But it also can be demanding in ways radically different from her work at UMSOD.

"Glass is a beautiful thing. I tell my [art] students, 'Don't worry, even if you are clumsy or the piece is imperfect, the inherent beauty of the glass will save you,'" Stone says. "But the process isn't entirely up to you. Glass is both fragile and strong, and its physical and esthetic properties are out of your control."

Stone, whose research focuses on the tongue and vocal tract during speech, swallowing, and breathing, is one of seven members of the UMSOD community whose artworks are included in the inaugural issue of *1807*, a strikingly handsome art and literary journal published by the University of Maryland, Baltimore (UMB). Works by another 67 members of the UMB community also are featured.

After four years of planning by UMB's Council for the Arts & Culture — founded by Jennifer B. Litchman, MA, senior vice president for external relations, special assistant to the president, and *1807*'s editor-in-chief — the journal illuminates links between the sciences and the arts. It showcases poems, photographs, sculptures, watercolors, jewelry, and digital art by dentists, pharmacists, lawyers, doctors, researchers, and students who, unbeknownst to many of us, also are writers, painters, glassworkers, photographers, sculptors, and jewelers.

Stone, whose glass-working began about 15 years ago, teaches occasional workshops throughout Maryland and spends evenings and weekends creating stained-glass pieces in abstract and figurative designs, which may include geodes or shells and other transparent or open-frame found objects.



"Aqua Abstract"
stained glass
Maureen Stone



HOBBY TO PASSION

JANET YELLOWITZ, DDS, MPH, director of UMSOD's Special Care Clinic, came relatively late to her art form: jewelry-making. "I was looking at a necklace that I really liked and figured out that

I could make it. It was crocheted with wire — and very expensive," she recalls.

Her efforts to emulate and improve upon that design have led her to use stringing, crocheting, and braiding to incorporate beads, wire, and gemstones into wearable art. A necklace called "Revisiting Hematite," featured in *1807*, is made of silver and hematite beads.

Yellowitz takes pleasure in creating one-of-a-kind gifts for friends and showing her work at arts and crafts fairs such as the American Craft Show, a national event held annually in Baltimore. "It's great when someone stops and tries on something I made or says, 'Oh, I bought one of your pieces last year, and I love it!'"



'DENTAL SCHOOL DAYS'

SINCE HIGH SCHOOL, LAUREN GRITZER, MPH, has known she has a gift for both arts and sciences. Uninterested in most of the electives offered by her school, she took two

entry-level art courses, then skipped to the Advanced Placement class. At George Washington University, she majored in biological anthropology and minored in studio fine arts. Her focus, the second-year dental student says, was the illustration of hands.

Gritzer, who plans to pursue a career in public health dentistry, has since experimented with monoprints, "the most challenging medium," she says. The artist typically begins with a plexiglass plate, "building" the print's background with collage, paint, or another medium, then laying on the image the artist hopes to depict. "You really have to have a clear vision of what you want your art piece to look like," she says. "At the end of the day, you are printing a one-of-a-kind print."

Gritzer, who has been commissioned to paint murals in the Cottage Children's Hospital in Santa Barbara, Calif., finds inspiration in her own photography, art in museums, magazines, and even microbes. She likes "to look at studies under microscopes and think, 'Oh, that is a really cool image.'"

For her work, "Dental School Days," an 18-inch-by-24-inch monoprint that appears in *1807*, Gritzer was inspired by a centuries-old medical textbook. The predominantly black-and-gray image depicts a skeleton, legs casually crossed, standing at a podium with his right hand resting on a skull. He wearily rests his head in his left hand. A small flock of stenciled birds in dull grays and reds are both background and foreground, the only living creatures.





PRECEDING PAGE

(Left)

"Revisiting Hematite"
silver and hematite beads
Janet Yellowitz

(Right)

"Dental School Days"
monoprint, 18" x 24"
Lauren Gritzer

THIS PAGE

(Above left)

"The Golfer"
acrylic on canvas board
Harold Levy

(Above)

"Never. Again."
oil on canvas
Sahar Nesvaderani

(Left)

"Salem Water Lilies I"
acrylic on canvas, 48" x 48"
Dina Stappert

[MORE ARTISTS' STORIES »](#)



LEARNING TO 'SEE'

HAROLD "HAL" LEVY, DMD, assistant general practice director in the Department of General Dentistry, began painting in high school when a teacher told the class to emulate the style of a famous painter. Levy

chose Salvador Dali, and he says the assignment taught him how to "see." It also launched a lifelong interest in painting and in visiting museums all over the world.

He frequently works from photos and focuses predominantly on landscapes but hopes to incorporate more figurative elements into his paintings. "I know what I like and what I like to look at," Levy says. "And once you know how hard it is to make something really look like what you see, you appreciate it more."

Levy's painting, an acrylic work that appears in *1807*, depicts a golfer in mid-swing on a green-and-gold field set off by a low mound. To help capture a sense of the swing's velocity, Levy asked a friend to pose on a golf course while he quickly sketched an outline of the scene. The painting, titled "The Golfer" and still hanging in his mother's home in Florida, was a 70th birthday gift for his late father.



ART THERAPY

SAHAR NESVADERANI, a third-year dentistry student, loved to draw and paint as long ago as elementary school. As a 14-year-old, she visited a ceramics shop so frequently that she was offered a job. In August 2018,

after dealing with some difficult emotions, Nesvaderani decided to paint on canvas for the first time. She bought a 2-foot-by-3-foot canvas and began sketching.

When first faced with painting the large, blank canvas, Nesvaderani found the experience nerve-wracking. "It was a lot of surface area to be covering," she says. Then time seemed to fly. "The feeling I get from this — I have always used art as emotional therapy — I paint for myself." In three sessions, she painted a monochromatic oil image of a woman's back titled "Never. Again."

She finds great beauty and healing in both art and dentistry: "If someone gives you a perfect set of veneers or takes away your pain, that changes your life. And if you see something amazing that someone has created, that can change you, too. Be it a painting or someone's dentition, there's artistry."



FINDING BEAUTY IN CHAOS

DINA STAPPERT, DDS, grew up in a household in Austria where her parents' friends were artists and her father was an internationally known organ builder. Always fascinated by

the act of creating, Stappert, clinical assistant professor in the Department of Orthodontics and Pediatric Dentistry, developed a style of painting that reflects her love of composition and color and the philosophy that, faced with life's imperfections and occasional chaos, "there is always a need for beauty."

In her "Salem Water Lilies I," an abstract acrylic on canvas work, red, pink, and green color fields draw in the eye as they seem to leap across a vivid blue background. In the note that accompanied her submission to *1807*, she wrote: "I treated an infant with cleft lip and palate, which is the most common craniofacial deformity. In spite of her condition, she had an irresistible spark and light about her. I dedicated this work to her."

Two years ago, Stappert founded a nonprofit called Art of Smile through which proceeds from her artwork aid organizations that support the treatment of children with cleft palates. "As an orthodontist, you can't very easily travel globally to offer treatment to patients in need," she says. "But if you can spread funds, you can spread the care."



CHAPTER AND VERSE

IN HER POEM "EULOGY OF YOU," third-year dental student Elizabeth Chen describes the fleeting sense of knowing:

*And for a moment, you can feel it:
What it would be like to traverse the abyss
That spans between Novice and Expert
And land safely on the other side.*

Her words, initially a stream-of-consciousness journal entry, were inspired at the end of her first year by the feeling that "something had clicked." An English literature major who minored in biology at the University of Maryland, Baltimore County, Chen routinely keeps a journal on hand. "I was always familiar with dentistry because my dad is a dentist, but studying English always felt more natural," she says.

She decided to become a dentist after watching her father, whom she describes as "happy every day."

"Now I realize that my writing is science-oriented," she says. "I didn't realize until recently how much beauty there is in the natural world order."

To read Chen's poem in its entirety or view the entire journal, *1807*, online, visit www.umaryland.edu/arts/journal. **MD**

Lasting Impressions

Laurels



▲ **Goot Alkhubaizi, DDS**, program director, Division of Advanced Education in General Dentistry; Mary Anne Melo, DDS, PhD, MSc, associate professor, Division of Operative Dentistry; and Howard Strassler, DMD, professor, Division of Operative Dentistry; were among co-authors of the paper “Underperforming Light Curing Procedures Trigger Detrimental Irradiance-Dependent Biofilm Response on Incrementally Placed Dental Composites,” published in the *Journal of Dentistry*.

Patrik Bavoil, PhD, professor and chair, Department of Microbial Pathogenesis, was a co-organizer of the Microbial Pathogenesis Symposium “A European Tribute to the Life and Career of Stanley Falkow” held in May in Paris.

Meenakshi Chellaiah, PhD, professor, Department of Oncology and Diagnostic Sciences, was the lead author of two papers, “Plastin Phosphorylation Regulates the Early Phase of Sealing Ring Formation by Actin Bundling Process in Mouse Osteoclasts,”

published in *Experimental Cell Research* in November 2018, and “Peptidomimetic Inhibitors of L-Plastin Reduce the Resorptive Activity of Osteoclasts But Not the Bone Forming Activity of Osteoblasts In Vitro,” published in *PLOS One* in September 2018.

Vineet Dhar, BDS, MDS, PhD, clinical professor and chair, Department of Orthodontics and Pediatric Dentistry, is the author of the chapter “The Oral Cavity” in the 21st edition of the *Nelson Textbook of Pediatrics* (Elsevier, 2019).



▲ **Carl Driscoll, DMD**, professor, Division of Prosthodontics, received the Educator of the Year Award from the American College of Prosthodontists at its annual session last fall in Baltimore.

Robert Ernst, PhD, professor and vice chair, Department of Microbial Pathogenesis, received a three-year, \$240,000 grant from the U.S. Department of Defense for the project “Novel Live Vaccines with Modified Lipid A for the Prevention of *Shigella* Diarrheal Disease.”



▲ **Negar Homayounfar, DDS, MS**, assistant professor, Division of Prosthodontics, was the lead author of “The Effect of Embryonic Origin on the Osteoinductive Potential of Bone Allografts,” published in the *Journal of Prosthetic Dentistry* in December 2018. Co-authors included: Thomas Oates, DMD, PhD, professor and chair, Department of Advanced Oral Sciences and Therapeutics; Meenakshi Chellaiah, PhD, professor, Department of Oncology and Diagnostic Sciences; and Radi Masri, DDS, PhD '05, MS '01, postgraduate program director, Division of Prosthodontics.

Mary Anne Melo, DDS, PhD, MSc, associate professor, Division of Operative Dentistry, and Howard Strassler, DMD, professor, Division of Operative Dentistry, were among the co-authors of the cover article “Dental Erosion: Current Concepts, Best Evidence on Prevention Strategies,” in *Compendium of Continuing Education in Dentistry* in February.

Oksana Mishler, RDH, DHSc, clinical assistant professor, Department of Advanced Oral Sciences and Therapeutics, received the Frank J. Sinnreich Jr. Award for Excellence in Teaching.

David Seminowicz, PhD, associate professor, Department of Neural and Pain Sciences, was among the co-authors of the paper “Pain-Related Nucleus Accumbens Function,” published in *Pain* in January.

Dina Stappert, DDS, clinical assistant professor, Department of Orthodontics and Pediatric Dentistry, was co-author of “Gingival Clefts Revisited: Evaluation of the Characteristics That Make One More Susceptible to Gingival Clefts,” published in the *American Journal of Orthodontics and Dentofacial Orthopedics* in November 2018.

Sheryl Syme, RDH '88, MS '93, associate professor and director, Dental Hygiene Program, Department of Advanced Oral Sciences and Therapeutics, is the primary author of the textbook chapter “Child Abuse and Neglect and Family Violence,” in the fifth edition of *Dental Hygiene Theory and Practice* (Elsevier).



FocalPoint

Looking Beyond the Classic Toothache

BY MARCELA ROMERO-REYES, DDS, PHD, CLINICAL ASSOCIATE PROFESSOR, DEPARTMENT OF NEURAL AND PAIN SCIENCES

I will never forget the first time I saw a patient with trigeminal neuralgia. I was in my last year of dental school, and the patient already had undergone several extractions as well as a series of root canals unsuccessfully aimed at alleviating his excruciating pain.

I ordered an X-ray and did my examination, both of which puzzled me because they revealed that my patient's remaining teeth were healthy. After consulting with my attending, I worked up a thorough patient history. We requested that my patient's primary care doctor order an MRI, which ruled out any intracranial pathology that could have been compressing the root of the trigeminal nerve. Then I treated my patient's episodic, electric, shooting pains with the drug carbamazepine.

I was astonished at how effective this drug was at eliminating my patient's "dental pain."

This experience opened my eyes to the world of orofacial pain disorders — complex conditions that can cause symptoms resembling pain in a patient's teeth or other craniofacial structures. And it inspired me to become an orofacial pain clinician and researcher.

These debilitating and prevalent conditions include neuropathic pain disorders such as trigeminal neuralgia, neurovascular disorders including headaches such as migraine,

and musculoskeletal disorders such as temporomandibular disorders (TMD).

Migraine, for example, affects up to 15 percent of the United States population. The classic presentation is localized pain in the head, behind the eye, or in the neck, but migraine also can cause symptoms that resemble pain in the teeth, jaw, and face.

These conditions cannot be managed with dental procedures. Their treatment demands a more in-depth, differential diagnosis generally beyond the scope of general dentistry.

Managing orofacial pain requires understanding, patience, and compassion. Frequently patients with these conditions have consulted multiple practitioners with little success. Sometimes they have undergone multiple dental procedures that may have exacerbated the pain instead of alleviating it.

As I learned as a dental student and during my residency in orofacial pain, a thorough medical history and examination detailing the characteristics and pattern of the pain are key to proper diagnosis, which may indicate a referral to an orofacial pain practitioner.

One of my goals as an orofacial pain clinician and scientist is to work to further integrate dentistry and overall medicine with the aim of enhancing patient care. As a scientist, I aim to discover new and safer targets for management that potentially will translate into the clinical setting. As an academic, I am passionate about teaching new generations of dental professionals about these disorders.

Since arriving at the University of Maryland School of Dentistry (UMSOD) in 2017, I have been teaching third- and fourth-year dental students about the importance of this integration and how to incorporate it when diagnosing a patient with orofacial pain.

I have had the privilege of witnessing their amazement — and that of the patient! — when we make the diagnosis that what seemed to be a "toothache" is really TMD, for example, and doesn't require a root canal. I am very happy to be among those guiding our students as they become better clinicians and teaching them to think beyond teeth as sources of pain. **MD**

Dr. Romero-Reyes is clinical director of UMSOD's Brotman Facial Pain Clinic and chair of the special interest section of TMD, Cervical Spine and Orofacial Pain of the American Headache Society.

FocalPoint is a recurring feature written by a UMSOD faculty member.

Agents of Change



Celebrating Donors' Commitment to Education

BY HOLLY SELBY

Calling oral health the “greatest profession in the world,” Glenn Nathan, DDS, congratulated dental student Gyeongwon “Karl” Kim, DDS '19, last spring and awarded him the Dr. John Nespeca Scholarship.

Nathan’s remarks were made March 5 at the Scholarship Luncheon, held annually to celebrate those who provide philanthropic support to the University of Maryland School of Dentistry.

Established by Maryland Oral Surgery Associates, the Nespeca scholarship commemorates renowned oral surgeon John Nespeca, DDS, who died in 2003. It is presented each year to a fourth-year student who is interested in oral surgery and has demonstrated high academic achievement and ethical standards.

All told, 34 scholarships totaling \$757,541 were awarded to 78 students at the luncheon. **MD**

Photos by Scott Hesel

1. Keynote speaker Glenn Nathan congratulates Gyeongwon “Karl” Kim, recipient of the Dr. John Nespeca Scholarship.

2. From left, Adam Eisner, DDS '89; Langley Bowers, DDS '19, recipient of the Drs. Stanley E. Block, Philip L. Block, and Joanne Block Rief Endowed Scholarship Fund; Alenna Monet, DDS '19, recipient of the Baltimore Alumni Chapter, Alpha Omega International Dental Fraternity Scholarship; and Bradley Trattner, DDS '88 **3.** From left, scholarship donors Barry Cohan, DDS '74; Leslie E. Grant, DDS '86; Melvin F. Kushner, DDS '66; Betty Jeanne Howard, RDH '83; and Stanley E. Block, DDS '58

Alumni

From the Alumni Association



I am honored to have been elected Alumni Association president. I am a double graduate of the University of Maryland School of Dentistry (UMSOD) — having completed my dental degree and my specialty in pediatric dentistry here — so our school is very near and dear to my heart.

Beginning this year, the Alumni Association Board of Directors'

executive officers will serve two-year terms. This change was passed by the board recently with the aim of enhancing the stability and continuity of its leadership. I am told by past presidents that as soon as they were able to get their ducks in a row, their terms were up. Moving forward, we hope this longer period of representation will enable the board to implement its initiatives more consistently and successfully.

On a fun note, I want to thank those who participated last April in our All-Alumni Reunion. By holding our reunion in April, we were able to provide more opportunities for alumni to interact with students and faculty. We hope to build on the connections formed at the reunion.

During the two-day event, everyone also had plenty of time to catch up with classmates and friends, and a good time was had by all. Please mark your calendars for our next All-Alumni Reunion: April 17-18, 2020!

I would like to thank Mary Ziomek, DDS '85, our immediate past president, for her hard work and leadership. At UMSOD's 2019 Honors Convocation in May, Mary offered eloquent and inspiring remarks and advice to our new graduates. The Alumni Association is very proud of them: Once again this year, all of our graduates passed their boards! We are excited to welcome them to the Alumni Association and encourage them to stay engaged with our school. (We are looking for volunteers to serve on our committees, which is a great way to get involved!)

I hope you are as proud of our school as I am, and I look forward to working with each of you.

Best regards,

Shari C. Kohn, DDS '90

President | Alumni Association Board of Directors

For more information

about the 2020 All-Alumni Reunion (April 17-18) or other events, please contact Nicole Nash, assistant director of alumni relations, at 410-706-3663 or nnash1@umaryland.edu.



If you have news to share, please send it to hselby@umaryland.edu

ClassNotes

Joyce Awramik, DDS '83

Joyce Awramik has achieved life membership in the American Dental Association and emeritus status in the American Association of Endodontists. She retired from the U.S. Navy in 2005 and from civil service (Departments of Veterans Affairs, Defense, and the Navy) in 2013.

Bruno Jham, PhD '10

Bruno Jham received an American Dental Education Association (ADEA) Board of Directors Citation during the 2019 ADEA Annual Meeting for significant contributions to dental education and the ADEA.

Susan Stanton, DDS '91

Susan Stanton retired from the Centers for Disease Control and Prevention (CDC) in January 2019 after 20 years of federal service. Before joining the CDC, Stanton worked for 22 years in private practice, dental public health, dental research, and as a member of the UMSOD Dean's Faculty. She and her husband, Glenn, are spending time in Atlanta and Blue Ridge, Ga., and many summer weeks at their Michigan lake house.

Harlyn Susarla, DMD

Harlyn Susarla, who completed her pediatric residency at UMSOD in 2016, was featured in a story published online by *People* magazine about how she helped save the life of a 5-year-old patient after noticing a tumor growing in the child's jaw during a routine checkup.



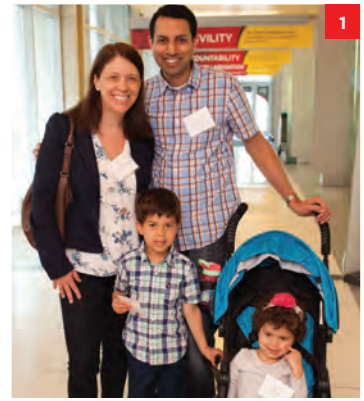
At the 2019 All-Alumni Reunion, Conversations and Connections Took Center Stage

About 150 University of Maryland School of Dentistry alumni, faculty, family members, and friends gathered April 12-13 in Baltimore to catch up with longtime friends and make new ones. Festivities included the Opening Reception, where the Distinguished Alumni Awards were presented; the Grand Luncheon; and tours of the school.

This year's Distinguished Alumni honorees are Leslie Grant, DDS '86, MSPA, Distinguished Public Service Alumni Award; Robert Morris, DDS '69, MPH, FICD, Distinguished Achievement Alumni Award; and Susan Camardese, RDH, MS '06, Linda DeVore Dental Hygiene Award. Additionally, the inaugural Rising Dental Health Leader Award was presented to Vanessa Benavent, DDS '09, MSD, FAGD. The new award recognizes alumni who have graduated within the past 10 years and demonstrated remarkable service to the community. **Md**

— HOLLY SELBY

To view more photos, visit <https://www.dental.umaryland.edu/alumni>



1. Kimberly A. Fields, DDS '09, and family members. **2.** Adam Eisner, DDS '89; Vanessa Benavent, recipient of the Rising Dental Health Leader Award; and Mark A. Reynolds, DDS '86, PhD, dean of the School of Dentistry **3.** Four Class of 1969 DDS graduates — and Distinguished Alumni Award winners past and present — celebrate their 50th reunion (from left): Ronald M. Chaput, Warren M. Morganstein, William P. Magee Jr., and Robert Morris. **4.** From left, Carol Caiazzo, RDH, and Susan Camardese, recipient of the Linda DeVore Dental Hygiene Award. **5.** Leslie Grant accepts the Distinguished Public Service Alumni Award.

A Serendipitous Career

BY HOLLY SELBY

Ask Joseph Heher, DDS '68, why he became a dentist, and he'll answer, "Serendipity." Or luck, chance, kismet — though none of these has proved predictive of just how much he would enjoy his chosen professional path.

Growing up on Long Island, N.Y., Heher was uncertain what career path his future might hold. But because his cousin recently had become a dentist, Heher's mother suggested that he follow in his relative's footsteps.

"So, I did," he says, adding that he knew he had to select something to do.

Upon graduating from the University of Maryland (UMSOD), Heher served three years in the U.S. Navy on Guam and in Washington, D.C. As he was finishing his military service, Heher visited several towns on the Eastern Shore of Maryland, including Salisbury, where he and his wife stopped for lunch in a restaurant that just happened to be across the street from a dentist's office.

Heher crossed the street, entered the one-person office, and asked the practitioner if the local community could support another dentist.

Before the conversation ended, he was offered an associate's position. A year later, when Heher decided to try his hand at his own dental practice, the two men parted ways amicably.

During Heher's first years of practice, as he gained experience and then mastery, his appreciation for the details and artistry of dentistry grew and became a profound dedication to his patients. "I dumb-lucked my way into dentistry, but it is a fascinating profession to be in, blending everything — including architecture, engineering, material science, biology, chemistry, psychology. Dentistry is a wonderful field."

Nearly five decades later, he continues working full time. Ask how he has maintained his health and ability to practice dentistry and, chances are, Heher will again say serendipity played a role: About 20 years ago, a salesman persuaded him to work using a surgical dental microscope on a trial basis.



Photo by Jim Ritch

"I still remember my first patient and how I felt — so I am happy to help out students."

— JOSEPH HEHER

"I was hooked by the end of the second week," he says. "I was mesmerized by how well I could see the teeth under extremely high magnification."

His use of the microscope, he maintains, has extended his career by allowing him to work with better posture — thus largely avoiding the back and neck problems that plague many of his peers — and by enhancing his ability to visualize patients' mouths, thus reducing eye strain.

He also has enjoyed working with and perfecting his technique with composite restorations. "I've been doing them since the '80s, and it's a wonderful material, very technique sensitive, but it allows me to incorporate my personal artistry into my restorative work."

One day a month, he volunteers with the Dean's Faculty at UMSOD. Working with dental students offers him a chance to pass along some of his knowledge and skills. "I'm glad to share what I know," he says. "I still remember my first patients and how anxious I felt — so I am happy to help out students."

Above all, Heher enjoys a special feeling of accomplishment that he has earned, patient by patient, during 50 years in practice. "I love trying to create the perfect filling that no one will ever be able to see as a restoration. And when a patient comes to my office who is fearful and feels trepidation, and I can make it an experience that alters their perception of dental care — that's a big wow!" **MD**

New Plan for New Jersey:

UMSOD Alumnus Leads Oral Health Efforts in Home State

Darwin K. Hayes, DDS '98, MHA, FAGD, is listening carefully to the entire state of New Jersey these days — and soon the entire state will be listening to his recommendations about oral health.

Named state dental director in July by the New Jersey Department of Health, Hayes is charged with overseeing dental programs and working with professional organizations, education leaders, and public health officials to design and implement an overall oral health plan for the state. He is the first person to hold the position in three decades.

Hayes' first steps include meeting with stakeholders throughout New Jersey. "I like to say, 'We have two ears and one mouth,' so we should listen more than we talk," he says. "Listening has helped me in my career as well as my ability to pull people together, which leads to collaboration so that things move forward."

The Lawrenceville, N.J., native, whose father was a dental lab technician and uncle was a dentist, began his academic career by earning a bachelor's degree in architecture from the University of Virginia. "Architecture seems like a roundabout way to wind up building things in people's mouths, but I was always really good at art and eventually

wanted to join the family business," he says.

After graduating from the University of Maryland School of Dentistry, he completed the General Practice Residency (GPR) program at Bronx-Lebanon Hospital Center and served four years active duty as a U.S. Air Force captain and dental officer. He also holds a certificate in dental education from the University of the Pacific's Benerd School of Education and Dugoni School of Dentistry, and a master's degree in health care administration from George Washington University.

Before stepping into his new role, Hayes served for seven years as co-director of the GPR program at BronxCare Health System, the second-largest GPR program in the country.

While at BronxCare, Hayes was part of a leadership team that successfully implemented a \$3.5 million project, funded by the U.S. Health Resources and Services Administration (HRSA), aimed at improving access to oral health care by increasing the number of dental providers and expanding the integration of oral and overall health care. He also served as chair of the Administration Board for



Photo courtesy of Dr. Darwin K. Hayes

the American Dental Education Association's Council of Advanced Education Programs.

Passionate about helping new dentists succeed, Hayes speaks frequently at conferences about professional development within the oral health profession. His advice and tips for aspiring or young dentists — from how to prepare for dental school interviews to honing time management skills — can be found at his YouTube channel "DrDarwinSpeaks."

In his new role, his priorities include implementing a four-year, \$1.6 million HRSA project that will, among other things, identify overweight/obese children and provide them with nutritional counseling aimed at cultivating good eating habits and caries prevention.

Additionally, he says, "There is ongoing discussion about how to integrate medical health into dental health and vice versa. That is a challenge that we are beginning to combat right now."

And, of course, he'll be listening. **MD**

— HOLLY SELBY

InMemoriam

Robert E. Broadrup, DDS '66



Robert E. Broadrup, a longtime dentist and humanitarian, died March 29, 2018. He was 77.

Broadrup graduated in 1962 from the University of Maryland, College Park. In 1966, he graduated from the Baltimore College of Dental Surgery, where he earned honors in prosthodontics and oral surgery and joined Omicron Kappa Upsilon honor society. He was awarded the Timothy O. Heatwole Chair.

In 1966, Broadrup joined the Frederick, Md., practice run by his father, Charles E. Broadrup, DDS '32. The family duo became a trio when Robert's brother, Fred W. Broadrup, DDS '72, joined the practice. After their father died, the brothers continued to share an office.

Robert served in the American Dental Association, Maryland State Dental Association, and the Frederick County Dental Society. He was a 50-year member of the Rotary Club of Frederick. In 2009, he was named a Rotary Fellow, the highest honor the organization can bestow. He is survived by his wife of 52 years, Linda; three children; six grandchildren; and two brothers, including Fred Broadrup.

Henry E. "Hal" Richter Jr., DDS '58



Henry E. "Hal" Richter Jr., a former U.S. Naval officer, faculty member of the University of Maryland School of Dentistry, and

practicing surgeon at University Hospital in Baltimore, died Jan. 9, 2019. He was 86.

Richter graduated from the University of Maryland, College Park in 1954 and was commissioned as an officer in the Naval Reserve Officer Corps, which enabled him to attend dental school. In 1956, he married the late Elizabeth "Libby" Foster of Swarthmore, Pa. In 1958, Richter entered active duty in the U.S. Navy Dental Corps; he furthered his professional training in the specialty of oral and maxillofacial surgery at Bethesda Naval Hospital, according to the *Capital Gazette*.

A diplomate of the American Board of Oral and Maxillofacial Surgery, a member of the American Association of Oral and Maxillofacial Surgeons, and a fellow of the American College of Oral and Maxillofacial Surgeons, he is survived by three sons and their wives and many other family members.

Morris Roseman, PhD



Morris Roseman, who was instrumental in recruiting the first African-American students to the University of Maryland School of Dentistry (UMSOD) in the 1960s, died March 12, 2019. He was 100.

Roseman earned bachelor's and master's degrees in English from the University of Maryland, College Park. Married for 67 years to the late Myra Goldenberg, he served in the Army Air Corps and earned a doctoral degree in clinical psychology from Duke University in 1949, according to *The Baltimore Sun*.

In 1966, he was recruited by UMSOD as an associate professor in the Department of Community Dentistry. "One major component of that federally funded program was to enable 'underprivileged' students, mostly African-Americans, to enroll and succeed," he wrote later.

Roseman, a poet who practiced psychology privately in Baltimore from 1956-87, retired from UMSOD in 1979. In 1974, he received the Maryland Psychological Association's Outstanding Psychologist Award. He is survived by two sons, a daughter, and many grandchildren and great-grandchildren. **MJ**

We are saddened by the loss of the following alumni and friends:

Joseph H. Axelrod, DDS '62
Richard Axman, DDS '52
Mark V. Barren, DDS '68
James L. Berge, DDS '71
Morton A. Brownstein, DDS '56
George F. Buchness, DDS '61
Vito D. Buonomano Jr., DDS '57
Mitchell J. Burgin, DDS '49
Alfred Chesler, DDS '60
Adolph A. Cura, DDS '59
Edward G. Dahne, DDS '80

Thomas M. Darrigan, DDS '63
Erin K. Filipovich, DDS '05
Alfred H. Jansen Jr., DDS '58
Laurence E. Johns, DDS '62
Barry L. Jurist, CERTG '73
Floyd F. Koch, DDS '66
Herbert S. Levy, DDS '43
Paul H. Loflin, DDS '48
Donald B. Lurie, DDS '57
Stanley Macklin, DDS '55
George H. Nieske, DDS '56

Simon R. Nord Jr., DDS '48
Irving J. Raksin, DDS '64
Perry R. Saxe, DDS '52
Kristen M. Sheehan, BS '95
Joel H. Silberman, DDS '71
Brett T. Summey Sr., DDS '61
Richard C. Synowski, DDS '52
Roberto S. Tassinari, DDS '55
Charles V. Wahlberg Jr., DDS '53
Ben A. Williamowsky, DDS '48

GameChanger



Photo courtesy of Vivek Thumbigere Math

UMSOD Researcher Receives International ‘Young Investigator’ Award

As a young clinician at the Government Dental College in Bangalore, India, Vivek Thumbigere Math, BDS, PhD, routinely saw patients, many of whom were longtime users of betel nut and/or tobacco products, suffering from advanced oral cancer or periodontal disease.

But in some cases, he and his colleagues had few effective treatments to offer them.

“We got a lot of referrals and saw many, many patients with oral cancers, periodontal disease, and rare genetic disorders,” says the assistant professor in the University of Maryland School of Dentistry’s (UMSOD) Division of Periodontics. “I kind of felt helpless not being able to provide effective treatment to these patients.”

Frustration, combined with guidance from his mentors, galvanized Thumbigere Math to pursue advanced studies supplemented with research, which would provide him the necessary skill set to develop new and effective treatments for his patients.

In 2004, Thumbigere Math joined the University of Minnesota School of Dentistry to pursue a residency in periodontology and a doctorate in oral biology. Later, he completed a postdoctoral fellowship at the National Institutes of Health (NIH) under the direction of Martha Somerman, DDS, PhD, director of the National Institute of Dental and Craniofacial Research and a former faculty member at UMSOD.

Recently, Thumbigere Math received the 2019 Sigmund Socransky Young Investigator Award at the American Association for Dental Research (AADR)/ International Association for Dental Research conference held in Vancouver, Canada.

Presented annually in honor of the late Socransky, a pioneer in the field of periodontology, the international award recognizes promising young investigators in the field of periodontology.

He has received other recognition as well, including the Joseph Lister Award for Young Investigators bestowed in March 2018 by the AADR. In October 2018, he received the American Academy of Periodontology (AAP) Teaching Fellowship at the AAP Annual Meeting in Vancouver. Also, he is a recipient of a University of Maryland, Baltimore (UMB) Institute for Clinical and Translational Research grant voucher, which provides support for clinical and translation research.

Since arriving at UMSOD in 2017, Thumbigere Math has led a lab focused on studying periodontal disease and osteoimmunology.

“Osteoclasts are bone-eating cells, and we are trying to understand how the immune system regulates osteoclast formation and function. We are also looking at genetic factors that increase susceptibility to periodontal disease,” he says. “Ultimately, the goal is to implement the gathered knowledge in developing new treatment and regenerative strategies for periodontal disease.”

Overall, periodontology has proved a good fit, Thumbigere Math says. “I debated studying oral surgery, but I find periodontology provides me the right balance to perform surgical procedures as well as pursue research.”

At UMSOD, he juggles research with treating patients, teaching pre- and postdoctoral students, and writing research grants and scientific articles for publication. As a researcher, Thumbigere Math particularly enjoys the interdisciplinary aspects of his investigations. “All along we are working closely with the medical folks — physicians, endocrinologists, oncologists, and geneticists. It has been a multidisciplinary approach,” he says. “We are using the oral cavity as a gateway to understanding systemic problems.” ■

— HOLLY SELBY



For more than 175 years, UMSOD has worked to advance oral health and improve lives. Your support of our capital campaign will allow us to:

- ▶ Support our students through scholarships and fellowships,
- ▶ Make groundbreaking research possible,
- ▶ Leverage technology to enhance the student experience,
- ▶ Endow chairs and professorships,
- ▶ Create unique centers of integrative care where faculty specialists treat patients with complex oral health care needs.

CATALYST

A person who causes action | An agent of change
A stimulus, spark, or incitement

YOU & UMSOD

For information about how you can be a catalyst, please contact us:

Catalyst.umaryland.edu

or **410-706-7146**.