The Power of Reinvention
DEAN’S MESSAGE

REINVENTION THAT WORKS

On a recent trip to Kuwait, I was struck by the wonderful transformation of a country that was once described as a poor British protectorate to what it is today—a hub of technology, education, and tourism. Industrialists, governments, and even academics the world over have understood the value of reinvention. Many of you have followed our journey from planning the new facility to developing new technologies to actually moving in and re-establishing our operations in our new home. It was easy to assume it would take months for us to settle in after making such physical and technological leaps. Not true.

The demands of running clinics, keeping our students on track, and ensuring that valuable research time was not lost meant that we had to adapt quickly to our new space and, at times, reinvent how we approach our mission. In fact, reinvention was quite often the order of the day as we left behind the traditional world of dentistry to embrace our new digital life.

True reinvention denotes more than a change, but a modification that stimulates growth, development, and creativity. It’s a catalyst for opening more sophisticated avenues of innovation and progress. In this issue of Mdental, we highlight people and programs that define reinvention at its best.

Warren Morganstein, who came from humble beginnings, is the Baltimore boy who was once discouraged from even applying to dental school, yet rose to the highest levels of our administration and this spring will be honored as a professor emeritus. Head of information systems Chhaya Shah and alumnus Arnold Sindler are helping to reinvent how we perceive and use new technologies. Another alumna, Susan Goodman, has worn a few professional hats as a leader in organized dentistry and represents an excellent role model for women and all health professionals.

Researchers Mark Shirtliff and Mary Ann Rizk have developed novel approaches in combining their investigations to understand biofilms and possibly reduce the microorganisms’ risk to patients. Oral surgeon John Caccamese Jr. completely reinvented a toddler’s smile. The pictures on page 21 tell the story. Students David Richman-Raphael and Michael Virts are using their unique backgrounds to find ways to give back to local and international communities.

The good news is, that although the road to reinvention can sometimes be bumpy, we managed to pull it all together to make this the best dental environment for our patients and students.

Christian S. Stohler, DMD, DrMedDent
Dean
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Stuart Josell, DMD, MDent Sc, has been named the new chair of the Department of Orthodontics. Josell, who came to the Dental School in 1979, served as the acting chair for three years after former chair William Davidson, DMD, PhD, stepped down after 25 years.

In his new role, Josell says he would like to lead the department to excel in teaching, service, and research, areas that will “benefit our patients and students and lead the specialty of orthodontics.”

“I am very grateful for this opportunity. Our advanced specialty education program has outstanding students, and I have a very dedicated faculty and staff to work with,” he says.

Josell is also enthusiastic about the department’s $2 million fundraising campaign to establish the first endowed chair at the Dental School. Co-chaired by Karl Pick, DDS ’66, MSD, and Edgar Sweren, DDS ’54, the campaign was conceived on Feb. 8, 2006, when Sweren and Dean Christian S. Stohler, DMD, DrMedDent, met to discuss the initiative.

Sweren and Pick see the changes in the Dental School in recent years as an opportunity for the alumni to become more engaged in the School’s vision and to “translate our success into a permanent legacy.”

According to Josell, funds from the endowed chair could be used to help support activities that lack funding from the state, such as resources for residents in the orthodontics program and equipment, and income to hire more faculty.

Regarding the new chair, Pick says that “Dr. Josell has the endorsement of the alumni, residents, faculty, and friends in the orthodontic community. With the right circumstances, proper direction, adequate energy, and involvement of the orthodontic community, Dr. Josell can profoundly elevate the status and level of excellence of the Department of Orthodontics.”

Sweren added: “The appointment of Dr. Stuart Josell as only the third chair in our orthodontic program’s 37-year history will enable us to reach and exceed the goals of Dean Stohler and all who are passionate about our profession.”
Biomedical Sciences


Sharon Gordon, DDS, PhD, MPH, and Gregory Zeller, DDS, were inducted as fellows of the American College of Dentists (ACD) at the fall ACD meeting in Las Vegas. The ACD is one of the earliest dental professional organizations and promotes excellence, ethics, and professionalism in dentistry. Sponsors were Margaret Wilson, DDS, MBA, and Richard Tatum, DDS.

Mark Shirltiff, PhD, received a grant from the NIH National Institute of Allergy and Infectious Diseases for $1.25 million to study Staphylococcus aureus. His research was featured in a March issue of The (Baltimore) Sun. (See related story on page 14.)

Endodontics, Prosthodontics, and Operative Dentistry


George Huang, DDS, DSc, MSD, associate professor, commented in the December 2006 issue of Scientific American on the likelihood of stem cells from pulled teeth replacing dental implants. In addition, he co-authored “Immature Teeth With Periradicular Periodontitis or Abscess Undergoing Apexogenesis: A Paradigm Shift” in the December 2006 issue of the Journal of Endodontics.

On Feb. 12, the U.S. Department of Justice, Federal Bureau of Investigation, Criminal Justice Information Services Division, awarded Warren Tewes, DDS, MS, assistant professor, a certificate in recognition of his participation as a member of the FBI’s National Dental Image Repository Review Panel.

Clinical Operations

On Jan. 29, Randy Jacobs returned to the Dental School. For nearly 10 years (1988 to 1997), she worked at the Baltimore College of Dental Surgery as a patient care coordinator before becoming a practice management consultant with The Levin Group, a national firm specializing in dental practices. In her new capacity in the Dental School, she is a program manager for advanced specialty education.

The transition back to the School has been easy for her. “It feels like I never left,” she says, adding, “I am excited to be back.” Moreover, she says that it’s nice to see so many familiar faces. She hopes to leverage the skills she used in consulting “to help streamline and design effective systems.”

Harry Goodman, DMD, MPH, chair of the Clinical Operations Board, says that she’s “made to order” and that after Jacobs’ first week, “the accolades were coming in!”

POSTGRADUATE PROSTHODONTICS

Sunny Cousin-Allen, DMD, MS, presented at the Northeast PG Implant Symposium at the University of


Elizabeta Evtimovska, DDS, MS, presented “The Change in Retention Values of Locator Attachments and Hader Clips Over Time” at the Northeast PG Implant Symposium at the University of Connecticut on Oct. 11. Evtimovska was also accepted into the Maxillofacial Prosthetics Fellowship at Memorial Sloan-Kettering Cancer Center in New York City.

Mary Ibeth Ossa ’06, DMD, MS, was awarded third place in the Tylman Research Competition by the American Academy of Fixed Prosthodontics. Ossa received a cash prize of $500 and an invitation to present her findings at the academy’s annual meeting in February.

John Tran, DDS, was accepted into the Surgical Implant Fellowship at Loma Linda (Calif.) University Dental School.

**Oral-Maxillofacial Surgery**

The Department of Oral-Maxillofacial Surgery welcomed Andrew Salama, DDS, MD, as a member of the faculty on April 1. Salama is a 1999 alumnus of the Dental School. He completed a dual degree tract training in oral and maxillofacial surgery at the University of Maryland in 2005 and received an MD. He furthered his surgical experience as a fellow in head and neck oncology and microvascular surgery at Maryland. Salama promises to be an outstanding addition to the School’s faculty.

**Orthodontics**

After 20 years as director of the laboratory in the Department of Orthodontics, Harvey Lawson retired on Jan. 1. He spent more than 47 years as a laboratory technician, of which 43 years were devoted to orthodontics. In 1987, he was recruited to the Department of Orthodontics by former chairman William Davidson, DMD, PhD.

Since joining the staff at Maryland, Lawson trained and advised countless orthodontic residents, pediatric dentistry residents, predoctoral dental students, work-study employees, and practitioners in laboratory techniques related to the care and management of orthodontic patients. He has participated in Operation Smile missions to China, the Philippines, and the Dominican Republic. He has produced a variety of training manuals and co-authored the book *Benchtop Orthodontics.*

Lawson’s plans for retirement include traveling, gardening, enjoying his pool, cooking, fishing, and spending more time with family, friends, and his wife, Tina.

**Williams Becomes Editor**

Longtime faculty member Robert Williams, DMD, recently was named editor of the Middle Atlantic Society of Orthodontists’ Journal, *The MASO Journal.*
ADHA Comes to Maryland

The University of Maryland Division of Dental Hygiene, in conjunction with the American Dental Hygienists’ Association (ADHA) and the Maryland Dental Hygienists’ Association, hosted the Center for Lifelong Learning (CLL), the ADHA’s annual regional continuing education program for dentists and dental hygienists, the weekend of Feb. 2-3. Participants from across the country were able to tour the Dental School and take continuing education courses at the new facility. Several University of Maryland faculty members spoke at the event. Jacquelyn Fried (pictured at right), RDH, MS, director of the division and coordinator for the event, was a participant on two panels, one that addressed online learning and another on the value of careers in academia. Sheryl Syme, RDH, MS, dental hygiene faculty member, was on the online learning panel, and Lisa Bress, RDH, MS, and Patricia Mulford, RDH, MS, were on the education panel. More than 450 registrants attended the CLL, which proved to be an excellent opportunity to showcase the Dental School. Dental hygiene students participated as volunteers.

DeVore Funds Support Anesthesia In-Service

In keeping with the Linda DeVore Endowment Fund’s goal of enhancing teaching expertise to provide the highest quality education for students, the faculty of the Division of Dental Hygiene attended an in-service program on local anesthesia the weekend of Feb. 3-5 at the Dental School. Monies from the endowment fund supported the course. Two faculty members certified in local anesthesia from Connecticut (where dental hygienists legally are permitted to administer local anesthesia) conducted the in-service training. Before the weekend lecture and clinical activities, faculty were required to complete online learning activities. The event provided faculty with an excellent review of anatomy and pharmacology. Norman Tinanoff, DDS, MS, chair of the Department of Health Promotion and Policy, and Richard Manski, DDS, PhD, MBA, professor and director of the Division of Health Services Research, generously offered their time to supervise the clinical activities. Jacquelyn Fried coordinated the event.
Representatives from some of the world’s leading dental schools have visited the Dental School to see firsthand the profession’s latest and most advanced technologies.

In February, the Dental School hosted guests from the McGill University Faculty of Dentistry in Montreal. Visitors included James Lund, PhD, dean; Jeffrey Myers, DDS, associate dean of clinical affairs; Marie Dagenais, DMD, Dip.Rad., associate dean of academic affairs and director of the Division of Radiology; and Samer Abi Nader, DMD, director of the Division of Restorative Dentistry.

This visit was mutually advantageous, as members of the Dental School came away with some new ideas on innovation for the curriculum. McGill’s interest in digital technology was addressed by a tour of the world’s most advanced dental school.

The McGill dental program is small, with 30 to 35 students per class year, and has no departments, a system that creates a more centralized organization. The curriculum is shaped by four vertical themes: life sciences; professional development; patient care; and the dentist in the community.

Evidence-based dentistry is important at McGill. “Our whole curriculum is based on evidence,” Lund said. Abi Nader added: “We continuously bring forth whatever is demonstrated by evidence.”

Students are not required to engage in traditional lab work and follow a pass-fail grading system until years 3 and 4. Moreover, the students spend their first 18 months learning basic science with McGill’s medical school. This approach is working, according to Lund.

“The bottom line is that our students do very well,” he said. “They go on to hospital-based residency programs and we have had no failures on national board exams.”

Dagenais said McGill’s curriculum is influenced by recommendations from an Institute of Medicine (IOM) 1995 report, “Dental Education at the Crossroads: Challenges and Changes.” The IOM report addresses, among other topics, curriculum concerns, faculty and student research, and the relationship of dental education to the university, the dental profession, and society at large.

The Baltimore hosts then shared their expertise with the visitors. Myers commented that McGill is incorporating more digital technology in its program and that coming to the Dental School would provide useful insights.

Dental School faculty and staff who provided detailed information about the School and its operation included Ward Massey, BDS, PhD, associate dean for academic affairs; Gary Hack, DDS, director of simulation research; Linda Otis, DDS, professor; Harry Goodman, DDS, chair of the clinical operations board; Chhaya Shah, director of clinic information systems; Monica Schneider, DDS, MS, assistant professor; and Kate McManus, director of facilities, along with Dean Christian S. Stohler, DMD, DrMedDent.

Abi Nader called his visit “an enlightening experience.” Not that he was surprised. “Every time I go online to investigate a new innovation, I see Maryland’s name right there. I was very anxious to come here.”

Ronald Dubner, PhD, DDS, department chair, was particularly pleased with Dean Lund’s presentation...
Three months before McGill’s tour, visitors from Vilnius University in Lithuania toured the Dental School in December. In February, faculty from the School of Dentistry, Seoul (Korea) National University made a visit and, in March, 10 guests from Tufts University School of Dental Medicine came for a daylong tour. In addition, representatives from GC (pictured at left), a dental product manufacturer headquartered in Japan, spent a day touring the facility. A member of the GC group stated that out of all the dental schools they have visited around the world, “Maryland has the greatest system.”

Marie Dagenais of McGill University in Montreal looks at a pan X-ray in the clinical simulation room during a tour of the Dental School.

to the Department of Biomedical Sciences. “He provided us with an outstanding lecture on the patterns of neural activity that initiate and maintain mastication, and the importance of the brain stem main sensory nucleus in these central nervous system patterns. These findings are important and related to the studies being carried out in our department by Drs. Dean Dessem, Norman Capra, and Jin Ro.”

Margaret Wilson, DDS, MBA, associate dean for student affairs, took particular note of “the primary focus on patient management, decision-making, and self-evaluation.”

Many faculty members, like Eric Levine, DDS, enjoyed the opportunity to discuss dental operations with their peers. “It was wonderful to visit with the faculty from McGill,” he said. “It is encouraging to hear about all that can be accomplished when a group of individuals share a vision.”

The McGill group also was enthusiastic about the experience. Lund, who had visited the Dental School during construction of the new facility, said, “It’s wonderful to see how it turned out. It’s impressive—probably the best preclinical setup in the world. It’s a great model for others to examine and emulate in total or in part, which is why we came.”

Although the Dental School is still in a transitional state, Dagenais said, “There’s an enthusiasm about this place among the faculty.” Abi Nader added: “You have a wonderful core faculty. There are lots of nice machines, but it’s the people who make the difference.”

Photographs by Regina Davis
A LIFETIME OF LEARNING

Sometimes it’s never too late to reinvent yourself.

By Regina Lavette Davis

Warren Morganstein, DDS, MPH, understands better than most the value of lifelong learning. A 1969 graduate of the Dental School, he has gone full circle from student to associate dean and acting dean to now part-time director of the Dean’s Faculty Enrichment Program. All the while he’s never stopped learning, growing, and inspiring others and working in organized dentistry.

Morganstein says that as early as he can remember, he wanted to pursue dentistry. “I think while in utero, my mother and grandmother planted the seeds,” he says. Although there were no health professionals in his immediate family as a role model, he followed a straight path to dental school.

Even his dentist offered the family no encouragement, saying, “You’re a poor family, you don’t have a chance.” But Morganstein wasn’t dissuaded. “We ignored that advice.”

As an undergraduate at College Park, he recalls being “really very focused. I took all of the courses I needed to get into dental school.” After completing a three-year accelerated combined program, he was admitted to dental school after his junior year. After his first year of dental school, he received his bachelor’s degree.

Singular Focus

A true Baltimorean, he applied to only one dental school: Maryland. He was so focused and single-minded that for his University of Maryland Dental School application essay, “Why Do You Want to
Attend Dental School?” his answer was short and direct: To become a dentist. Of course, he was told to rewrite his initial essay, explaining why he wanted to be a dentist.

He was a good student at College Park. However, there were important lessons for him to learn at the Dental School. He recalls, “It was the first time that I learned that I needed to be well-organized, disciplined, and committed, and review my notes regularly. I also developed an appreciation for the scientific process.”

During his junior year at the Dental School, a family setback could have derailed his education and career. His father suffered a heart attack and could not continue to help pay for Morganstein’s dental education. Undaunted, the dental student found a way to pay for school and make history in the process. Morganstein saw an announcement for the Commissioned Officer Student Training and Extern Program (COSTEP), which was a two-month paid program that placed students in positions in the U.S. Public Health Service (USPH). (Former dean Richard R. Ranney, DDS, MS, also completed the program.)

He went to Dean John J. Salley, DDS, PhD, whose initial response was, “You’ve got to be in clinic,” says Morganstein. Persistence paid off, and he was allowed to participate in the program. But he started his senior year two months behind his classmates. “I think I was the Dental School’s first extern, thanks to Dr. Salley,” Morganstein says.

Coincidentally, he met Maurice Rogers, DDS, in the halls of BCDS just before his externship began. Rogers was the head of USPH on Wyman Park Drive in Baltimore, where Morganstein was assigned.

Rogers, he says, “was a great teacher and mentor.” The day they met, however, Rogers said very little to him except “cut your sideburns.” That summer was very telling for Morganstein, and he says he returned to school in September with “much more confidence and speed”—and his sideburns intact.

‘Everything Leads To Something Else’

That sentiment, from Morganstein, came to fruition over the years. Rogers (also known as ‘Buck Rogers’) advised Morganstein when he was in his last year at the Dental School to consider a general residency program. “I took that advice,” he says, and requested a residency in San Francisco. From that point on, he would be faced with many career paths and choices.

A dental specialty, he says, never interested him. “I felt dentistry was specialized enough as it is. As more clinical practice occurred, the more I saw how difficult it is to be a general dentist. It may be the most challenging discipline there is,” he observes.

Before returning to the Dental School in 1971, he held positions in California and Greenwich Village, N.Y. For Morganstein and his wife, Janice, the career choices were not hard. “We’ve never had a difficult time making a decision. The decisions made themselves,” he says.

For example, in 1971, when he considered moving back to San Francisco to open a general practice, Dean Salley offered him a job. At the time, he says, the School needed someone to head the new Training in Expanded Auxiliary Management Program. In weighing a California practice against heading a Maryland program, “Maryland seemed right,” Morganstein says.

The next step along his professional path included serving as chair of the Department of Community Dentistry. Once again, it was Rogers who stopped by to say, “Warren, you ought to consider that. Throw your hat in the ring.” And he did just that. He not only took the job, but he later turned it into the Department of Oral Health Care Delivery (a predecessor to the current Department of Health Promotion and Policy).

He ultimately moved up the ranks of the Dental School administration. Morganstein was selected by Dean Errol L. Reese, DDS, as associate dean in 1976. He also served as acting dean in 1990-1991. When he retired from full-time teaching in 2006, he left at the rank of senior associate dean.

Discovering New Joys

One truth that Morganstein learned over the years is the need to “continue one’s learning.” In the years before his retirement, he found a new passion, accidentally. A problem with asthma led to his initial visit to an acupuncturist. At the urging of his friend and cousin Charles Langsmam, Morganstein—Western skepticism intact—decided to give the Eastern technique a try.

“I didn’t believe in that stuff,” he recalls. However, he quickly became a believer when the treatments helped get his asthma under control. Trained through a UCLA medical school program, he later integrated acupuncture techniques in the Dental School’s Brotman Facial Pain Center.

Morganstein is not a full-body acupuncturist, though. His practice in Maryland is limited to treating oral and craniofacial pain and disorders. Recently, he has been practicing in the office of Sylvan Feldman (DDS ’65), Robert Sachs (DDS ’87), and Brian Fitzgerald (DDS ’90) in Timonium, Md.

He says his wife jokes that, “It only took 34 years to graduate from dental school.”
Although Morganstein’s practice is limited, he can teach others who use a much wider application of the technique. “It’s ironic that I limit my practice to the head and neck, but teach physicians how to do acupuncture for any part of the body,” he says. He is now a faculty member teaching acupuncture at both UCLA and Stanford medical schools.

Morganstein is still not finished learning. At the Tai Sophia Institute (TSI), he is in his last 18 months of a three-year program. (He is featured on TSI’s Web page and catalog.) He describes the institute as the “premier five-element acupuncture program in the United States.” Right now, he’s looking forward to the clinical aspect of the program, and he is entering a faculty-supervised clinic.

Although he could have waited until he retired to embark upon his new calling, Morganstein’s philosophy at the time was, “Why not now?” He knew he wanted to help people, and there was no time like the present.

**Dean’s Faculty Success**

As a part-timer in the Dental School, Morganstein is bringing people from the professional community into the School to volunteer as Dean’s Faculty members. He has had overwhelming success as director of the program.

“We have reached the original goal of 200 members. The goal is now 300,” he says of the program, which began in January 2004.

The quantitative numbers look great, but Morganstein also is focused on what he describes as the “qualitative value to the students.” Dean’s Faculty members are “treasured by the students,” he says.

Morganstein also is more than pleased with the headquarters for the Dean’s Faculty in the new building. “We have a beautiful suite for the alumni association and the Dean’s Faculty. It’s the first place they come in the morning and it’s the last place they leave in the evening.” In addition to providing an area to place coats and other belongings and to get coffee and snacks, the suite also is complete with computer workstations.

Other Dean’s Faculty perks include access to the campus library and a study club every three months with dinner and a guest speaker. “The lectures allow the Dean’s Faculty members to get virtually all of the continuing education credits they need for licensure free of charge,” adds Morganstein.

Aside from volunteering, members also play other active roles in the School. Morganstein says they “provide great suggestions and feedback and sit on School committees.” He points to individuals such as Eric Katkow, DDS, who served on the curriculum committee and made valuable recommendations. Mary Littleton, RDH, also was instrumental in providing key input when the Dean’s Faculty program was being established.

They don’t just come to fulfill a responsibility or obligation, Morganstein says. “It’s a real commitment from them, and they are treated like family. It’s great to see.”

His most important role as the director, he says, is to act as a facilitator, to help identify potential volunteers—finding a matching area in the School—and to help new members feel at home. So far, he says he has had very few people turn him down when he approaches them to consider joining the Dean’s Faculty.

Morganstein also credits Deborah Horstman, the coordinator in the alumni affairs and Dean’s Faculty office, for helping to keep the program on track. “She is invaluable to the School,” he says. “The volunteers and alumni look at Debbie as a family member.”

Horstman, who has worked alongside Morganstein from the program’s inception, says that “working with him has been great. Since we have both been around the School for a number of years, we knew each other, so when I was asked by him if I wanted to work with him, I was excited.”

Fortunately, both Horstman and Morganstein are well connected to many alumni, so finding a recruitment pool was the least of their worries. When Morganstein became a part-time faculty member, Horstman says he was confident “that the program and the office would be in good hands as long as I was here to run it.”

Despite all the Dean’s Faculty perks, he says the biggest fringe benefit is not something the School gives the members. “It’s inherent in their personalities,” he says. “They have wonderful hearts and they want to give back to future dentists and dental hygienists.”

After all these years, the benefit for Morganstein can’t even be quantified. “It’s the most fun I’ve had of all my roles in the School,” he says.
Although she could be helping to launch aircraft missiles, Chhaya Shah prefers helping the Dental School launch its new era of technology.

Shah, director of clinic information systems, has worked in various School capacities over the past 16 years. “I actually was a telecommuter,” she recalls. She says that the five to six years spent working from home were wonderful because she had the discipline to get the work done, but she had the flexibility to work nontraditional hours while tending to her two children. During those years, the School developed and owned the software and Shah, who only came in for meetings, fixed software bugs, enhanced the program’s functionality, and made sure the accounts “balanced to the penny,” she says.

Her combined math and computer science major at the University of Maryland, Baltimore County made her a natural fit for the task. Shah’s first job out of college, however, was developing software for testing P-3 aircraft equipment for an engineering company. At the time, there was no campus-level relationship between the Center for Information Technology Services (CITS) and the individual schools at the University of Maryland, Baltimore. So, when the Dental School’s director of the Office of Information Technology (OIT) resigned, Shah was asked to become acting director. Reporting directly to the dean, she left her telecommuting position for more rigorous day-to-day management and project responsibilities.

In 2001 a permanent director was hired, Maxwell Wong, and Shah switched her focus as the clinic applications manager and moved toward Axium applications. (Axium is an enterprise software program for clinic management.)

When Peter Murray, PhD, vice president and chief information officer, reorganized CITS’ relationship with the Dental School, he created a “tripod” approach, says Shah, with management duties split among James Leoni (servers), Fred Smith (network, desktop, audiovisual, and telecommunications), and Shah (applications). This type of management infrastructure leveraged the unique areas of expertise of individual team members as they worked toward collective goals.

Recently, to enhance the functionality of this organization, Kent Buckingham was included as director of OIT. He will be responsible for OIT operations and emerging technologies support for the Dental School.

Although it’s not a large staff, Murray notes the effectiveness of the team. “For such a small department, the staff in the Dental School’s Office of Information Technology does an amazing job of handling an increasing number of services and support requests that have been generated by a proliferation of technology in the School,” he says.

“They all have adapted and learned new technologies, almost on the fly, and have met all of the support and services challenges with a high degree of professionalism and by performing a great deal of hard work. They collaborate with CITS personnel, as
well as with other University IT personnel to discover and implement the best technology solutions for the Dental School."

Implementing Change
More recently, Shah has been focused on assisting members of the School to adapt to the advanced technology that accompanied the new building’s opening in September—in particular, the digital radiography and simulation room equipment.

For some, the level of change came quickly, she observes. “I think we knew change was coming, and it presented many levels of challenges to many people,” she says. “The amount of change—I think that was unfathomable.” Shah adds that the School had to “kick it up a couple of notches” to forge ahead and that Dean Christian S. Stohler’s drive, along with the new building, were positive catalysts for change.

Faculty, she says, are realizing they can come to IT for help on a wide array of projects. “Many who had reservations have been calmed. Everyone is entitled to their way of accepting change,” she says, comparing the process of adapting to a river. Now she sees the Dental School “flowing in a positive direction.”

Not only are people adapting, but just as important, the technology also is adapting. Shah says that “specific projects are the driving force behind the needs.” Creating an environment that can respond well to the needs of individuals and projects also relies on close interaction and communication with the School’s industry partners.

Institutional Consultants
The new Dental School facility attracts interest for its creative use of space and architecture and for its current and future opportunities for technology applications. Industry is increasingly turning to the Dental School as a site to develop, test, and unveil its latest products. Shah explains that this offers many benefits for all concerned.

“Corporations are knocking at our door. We have the opportunity to work with new products, proven products. We also can take an immature product and make it mature in this environment,” she says. Currently, the IT department is assisting the School in testing Hypercosm 3D software, which facilitates self-taught virtualization simulation.

When reviewing these new products, part of the process is to assess how and where that technology could best be implemented. Sometimes, says Shah, it is necessary to try a different product altogether. Still, she sees the whole process as beneficial for her team. “It’s a win-win for IT because we are exposed to state-of-the-art products and can try out others if the initial ones don’t work.”

In addition to companies, other dental institutions are looking to Maryland for knowledge, advice, and firsthand views of how the School operates. National institutions (the University of Texas, the University of Pittsburgh, Tufts University) and foreign schools (McGill University in Canada and Vilnius University in Lithuania) have sent representatives for personal tours. The visitors “have been awed,” says Shah.

“As we venture into other products, we are setting a higher standard of dental education,” she says. “We are becoming a model for treatment and for administration. Schools look to us as an example, and we are exceptionally lucky to be ahead.”

Passing Along the Knowledge
In the final analysis, no matter how valuable, creative or cutting-edge the technology, it’s up to indi-
individuals to learn and consistently use it for tangible benefits to occur. For Shah, the best part of her job is interacting with the users and making the technology less intimidating.

“I enjoy making everything connect and work. I like the hands-on, one-on-one conversations. Our faculty, staff, and especially students are prime beneficiaries of the School’s technology. The enhanced technology skills they receive here will prove to be quite fruitful in their future endeavors no matter where they go or what they do,” she says.

In addition to scheduling training, she goes to the clinic floor to get immediate feedback from staff and faculty. She refers to this communication with her users as “making her rounds.” Sometimes she gets routine comments (e-mail, using swipe cards, bad monitors, adjusting/calibrating images, etc.). Other times, she will stop and provide hands-on assistance or demonstrate a new skill.

“Whenever I show someone how to do something, I always say, ‘Pass it on,’” she says. Sharing knowledge is important to Shah and she takes pride in seeing others learn and master an application well enough to show others. “I like to see their growth. That’s what we’re here for,” she says. “That’s what completes our job—to take our users with us.”

“For tech support or systems training, Chhaya is the person,” says Leila Liberman, RDH, Dean’s Faculty clinical instructor and 1988 Dental School graduate. “Her knowledge of Axium and Romexis is astonishing. She knows the programs so well that she can answer her cell phone anywhere and walk you screen-by-screen, click-by-click to answer your questions.”

Murray echoes this sentiment. “She has been invaluable in her IT role in supporting the Romexis Digital Radiography Project, as well as in the implementation of new software and systems in the clinic,” he says.

Shah notes that people in the Dental School—faculty, staff, and students—all appreciate it when they receive personal assistance in mastering the technology. “They love that you take the time to stop. All of our users are feeling more comfortable,” she says.

Adds Liberman: “When you want to learn your way through one of the programs, she is more than willing to make the program work in the easiest way for you. Her support is endless.”

So far, the vendors are happy and the users are happy, which is how Shah likes it, even if it means she’s the point person in between. “It’s wonderful to be in the midst of change. It’s challenging, but rewarding, to ping-pong between the vendors and the users.”

Shah has no regrets about changing the course of her career from engineering.

“I truly prefer this kind of environment because it allows us to help humanity and provide optimal care,” she says. “It feels right. It makes a good difference.”

Her genuine dedication is apparent to Murray, who notes that although she has great expertise, “Most importantly she is passionate about her job and cares deeply for the School and is committed to its success.”

As for the Dental School, Shah sees nothing but open possibilities. “There’s never an end to the implementation—it’s ever-changing and ever-growing,” she says. “You can never stop and think you are done. You’ll fall behind, stunt your growth, and hinder your goals. The sky’s the limit and we are reaching out to touch it!”
The Biofilms That Really Bug Us

Microorganisms that coexist and hang on to their hosts can lead to life-threatening consequences.

By Regina Lavette Davis

Cooperative, well-organized, and altruistic. Excellent characteristics, most would agree, for an ideal community. These “communities” can be found almost anywhere: from the tip of the tongue to pond scum. Biofilms are all around us.

Biofilms are defined as cooperating microorganisms that exist as a well-organized community. They are responsible for everything from slime on stream rocks to serious health infections. According to the Centers for Disease Control and Prevention (CDC), biofilms have great importance for public health because of their role in many infectious diseases.

These microorganisms (or superbugs, as they are known) account for millions of hospital-borne infections each year. Dental School researchers Mary Ann Rizk, PhD, and Mark Shirtliff, PhD, are leading the field in breakthrough investigations of mixed-microbial biofilms that will help prevent and fight infections that often have high mortality rates.

**Microbes with a Chokehold**

A biofilm consists of microbes such as bacteria and fungi that are attached to a hydrated surface and then become embedded within a polysaccharide slime. “Examples of biofilms include the slippery rocks on a mountain stream or the slime buildup on your toilet at home,” says Shirtliff, assistant professor in the Department of Biomedical Sciences in the Dental School and adjunct professor in the School of Medicine’s Department of Microbiology and Immunology.

Dental plaque (biofilm formed on teeth) is another example. When bacteria exist in this “attached state,” antibiotics and other antimicrobial agents do not affect the bacteria, and “our own immune systems can’t get rid of these microbial communities,” adds Shirtliff. Brushing away the plaque is necessary, he explains, to keep cavities from forming and to prevent dental infections such as periodontitis and gingivitis.

Although plaque can be removed, a bigger concern for researchers are those biofilms that cannot be removed. What happens when pathogenic microbes adhere to surfaces and form a permanent biofilm? These biofilm-related infections can form on bone, heart valves, the lenses of your eyes, and devitalized tissue.

Indwelling medical devices also play host to biofilm infections that can cause serious illness and mortality. Examples of such biofilms, says Shirtliff, are those that form on corneal implants, cerebrospinal fluid shunts, prosthetic heart valves, facial reconstruction plastics...
and metals, prosthetic vascular grafts, endocardial pacemaker leads, artificial heart valves, joints and hips, artificial lenses, dental implants, and urinary catheters. Research from the CDC states that “cystic fibrosis, native valve endocarditis, otitis media, periodontitis, and chronic prostatitis all appear to be caused by biofilm-associated microorganisms.”

The research in Shirtliff’s laboratory is centered on understanding the dynamics of biofilms, and this is crucial to the development of novel diagnostic tools, antimicrobials that target biofilm-related infections, and possibly antibiofilm vaccines. Using two-dimensional gel electrophoresis, microarray analysis, reporter systems, and gene disruption techniques, Shirtliff and his team are able to identify biofilm-specific genes and their products in methicillin-resistant \textit{Staphylococcus aureus} and \textit{Proteus mirabilis}.

“The most serious, perhaps, are infections of intravenous catheters, which invariably lead to bloodstream infections with high mortality rates,” he says. These infections resist antimicrobial therapy, often leading to surgical removal of the infected devices. In fact, “bacteria tend to be 50 to 500 times more resistant to antibiotics when associated with a biofilm. These types of infections are on the rise, and the CDC has estimated that up to 56 percent of all infections are now biofilm-mediated,” Shirtliff says.

The CDC estimates that “nearly 2 million patients annually get an infection while being treated for another illness or injury, and nearly 88,000 die as a direct or indirect cause of their infection.” In terms of the economic burden, the organization also reports that these infections translate into a cost of $6.7 billion annually in the United States.

Aside from bacteria-related biofilm research, other important investigations are related to fungal infections, which is Rizk’s area of expertise. An assistant professor in the Dental School’s Department of Diagnostic Sciences and Pathology and adjunct assistant professor in the Department of Pathology in the School of Medicine, Rizk is also an assistant director in the Clinical Microbiology Laboratories at the University of Maryland Medical System.

Her research in the Dental School focuses on the molecular characterization of virulence factors in pathogenic \textit{Candida} species. The AIDS epidemic during the last 25 years has brought about an increase in the incidence of candidiasis. \textit{Candida albicans} is an opportunistic pathogen capable of biofilm formation, tissue invasion, and systemic infections especially in the immunocompromised population, particularly in the HIV-infected.

“Compounding the gravity of the rise in fungal infections is the increase in the emergence of strains resistant to the commonly available antifungal drugs,” Rizk says. “\textit{C. albicans} is primarily an oral pathogen responsible for a variety of oral conditions such as pseudomembranous candidiasis, mucocutaneous candidiasis [thrush], and angular cheilitis as well as denture stomatitis.”

Like the bacterial biofilms, \textit{Candida} also is capable of adhering to the surfaces of indwelling medical devices and intravascular catheters that provide a route through the body’s barrier defenses, which often leads to bloodstream infections. “In fact, \textit{Candida} species are currently ranked as the third most
commonly isolated bloodstream pathogens, and mortality associated with systemic Candida infections is approximately 50 percent,” says Rizk.

According to Rizk, an estimated 80 to 90 percent of HIV-infected individuals suffer recurrent episodes of oral candidiasis during their disease progression. In fact, she adds, the onset of candidiasis in these individuals is considered “a hallmark for the initiation of AIDS and the condition is used in the staging of HIV infection, when it is observed concomitant with declining CD4 T cell subsets.”

Joining Forces
What happens when two biofilm species interact is a fertile area of research investigation. Shirtliff and Rizk’s interest in microbial biofilms and their impact on antimicrobial therapy has led to the two researchers’ collaboration in exploring the interaction of these microbial species in a mixed bacterial-fungal biofilm. It is an area of research not previously investigated.

“Little is presently known about the interaction between mixed species in microbial biofilms,” says Shirtliff. He and Rizk are combining their efforts using imaging techniques, microarrays, and proteomics to understand this complex interaction between these two species.

Although many biofilm infections are traced to a single species, serious infections often involve multiple microbial species. Together, C. albicans and S. aureus are a powerhouse duo that can create persistent, chronic, and systemic infections. Theirs is a mutually beneficial symbiosis.

“The bacterial pathogen, Staphylococcus aureus, and the fungal pathogen, Candida albicans, are currently the leading pathogens in bloodstream and catheter-related biofilm infections in hospitalized patients,” says Rizk.

The fungal C. albicans has two forms: a round yeast form (that can cause bloodstream and systemic infections) and an elongated filamentous (or hyphal) form that can invade tissues. Once Candida attaches to tissues, and under unfavorable conditions such as a low-nutrient environment, the invasive hyphal form predominates.

“This is the form that the bacterial species S. aureus attaches to and hitches a ride into the deeper tissue to invade and cause persistent infections,” Shirtliff explains. “C. albicans, in turn, benefits from this relationship by getting the help from the virulence factors of S. aureus that simultaneously attack and suppress the immune system to prevent the host from eliminating the infection.”

In vivo mice studies have demonstrated what the researchers refer to as “a synergistic effect” between C. albicans and S. aureus on the mortality of dually infected mice. These studies provide evidence that shows how C. albicans directly stimulates the growth of S. aureus and amplifies its virulence. The clinical significance is that this amplified virulence could have grave medical implications for people who harbor both pathogens simultaneously.

Can They Be Stopped?
Traditional antimicrobial regimens are currently too ineffective to seriously contend with the dangers posed by these pathogens. Through their joint and individual investigations, Shirtliff and Rizk hope to identify novel therapeutic strategies that will help prevent and treat biofilm-related infections that are resistant to therapy. Their collaboration has, so far, resulted in several publications and grant submissions for continued funding for their research.

“Understanding the interactions between pathogens and devices to which they adhere, especially in mixed-species biofilm infections, is critical in relation to therapeutic strategies,” says Shirtliff, who is using animal models that will lead to vaccine development and adjuvant therapeutic measures. He also is developing rapid, sensitive, and specific diagnostic assays using tagged monoclonal antibodies against biofilm-specific proteins to diagnose endocarditis, prosthetic implant infection, deep abscess, and osteomyelitis.

Additionally, a novel gene knock-out system is being used to determine the relative importance of genes that exhibit increased expression in a biofilm as assessed by microarray analysis. In terms of prevention, novel indwelling medical devices, including prosthetic implants (e.g., intra-medullary bone stabilization rods), and dental implants that elute bone regenerative activators and antimicrobial agents to prevent biofilm formation are being developed.

As for Rizk, she says she is excited by her recent investigations that have identified the presence of a process of apoptosis (cell suicide) in Candida triggered by a “quorum-sensing molecule” known as farnesol. “Farnesol is effective at killing and inhibiting the formation of the biofilm,” she says. As a biofilm matures, she explains, the aging population of cells in the biofilm altruistically “commit suicide” through apoptosis, a gene-controlled and tightly regulated process that ensures the survival of the species. “At certain concentrations, farnesol is capable of killing and inhibiting the formation of biofilm by Candida,” she says.

Shirtliff is similarly excited by these studies because he says,
Farnesol is produced by Candida in the non-invasive yeast form and this compound kills staphylococci. However, as soon as the Candida switch to the invasive hyphal form, farnesol production drops and S. aureus can attach and enter the tissues. They have published research findings on these initial investigations (along with Timothy Meiller, DDS, PhD, a professor in the Department of Diagnostic Sciences and Pathology), which so far indicate “that modest concentrations of farnesol were sufficient to exhibit an antibacterial effect and significantly inhibit biofilm formation.” 4,5

Continued epidemiologic and laboratory research, therefore, is needed to better characterize these pathogens, allowing for improved diagnostic and therapeutic strategies. The focus, however, remains the host. “We want to take what we have learned in the lab and try to relate it to the patient and to what’s actually happening in the hospital,” says Rizk.

To that end, and to validate the clinical significance of their findings, Rizk and Shirtliff are collaborating with colleagues from the Department of Pathology (Clinical Microbiology Laboratory) and the Division of Infectious Diseases at the School of Medicine. Their close association with the University of Maryland Medical Center has given them access to samples from infected and critically ill patients (from blood and infected catheters and other devices). Analyzing these samples can provide the researchers a truer reflection of the dual infectious process that occurs in the host.

Reaching out for new discoveries is a challenge that both researchers welcome. Rizk sums up her approach to novel research by quoting the Nobel Prize-winning biochemist Albert Szent-Gyorgyi, who said, “Research is to see what everybody else has seen and to think what nobody else has thought.”

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Mother Calls Doctor Who Repaired Son’s Cleft Palate ‘The Best There Is’

The reinvention of a smile

By Michelle W. Murray

In the winter of 2005, Lukas Traynor underwent surgery to repair a bilateral cleft lip and palate. He was only 3 months old when he had his first surgery. His mother, Peechee Neric, was receiving prenatal care at the University of Maryland Women’s Center’s Advanced Fetal Care Unit, where Lukas’ condition was first discovered. They referred her to John Caccamese Jr., DMD, MD, an oral-maxillofacial surgeon with the University of Maryland Oral and Maxillofacial Surgery Associates.

What follows is a Q&A with Neric about her son’s care.

What was Lukas’ condition?
Lukas was born with a bilateral cleft lip and palate.

When/how was he diagnosed?
I was being seen by the University of Maryland Women’s Center for my prenatal care and they had me go to the Advanced Fetal Care Unit due to my age for further monitoring. The Advanced Fetal Care Unit was the first to discover a possible defect while Lukas was in my stomach. I was about four months pregnant. They referred us to Dr. Caccamese, who met with us a few weeks later and confirmed that Lukas did have a bilateral cleft lip and palate.

Once Lukas was diagnosed, what did you do next?
We prayed for a miracle. There really was nothing we could do but just continue on with the pregnancy. I was constantly monitored to make sure Lukas and I were doing OK. We were instructed to contact Dr. Caccamese once I went into delivery so he and/or his team could be there to care for Lukas when he was born.

When did Lukas have his surgery?
Lukas had his first surgery when he was 3 months old, in December 2005. He had his second surgery at 10 months, in July 2006. His next surgery is not scheduled until he is about 4 years old.

How did you feel about the care Lukas received from Dr. Caccamese?
Dr. Caccamese and his team were excellent! They were there every morning and throughout the day to monitor Lukas’ condition. If I had a question, they were always there to answer and I didn’t have to wait too long to get the answer.

Dr. Caccamese is the best there is! We had numerous doctors, nurses, people tell us to interview other doctors when we first heard of Lukas’ condition. But Dr. Caccamese just exuded such confidence in what he does that we immediately trusted what he had to say. He is an excellent doctor! He knows what...
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‘The Best Dental Experience’

We like to hear about our patients’ great experiences at the Dental School. One such patient is Richard St. Hilaire, who recently received implants (and couldn’t be happier!).

“My wife was a patient at the Dental School, and suggested I go there when I needed some dental work,” he says. His wife, it turns out, was referred to the School by a friend.

Initially, he says, he needed basic general dental work and a crown; however, a cap snapped on an upper front tooth, along with a second. Subsequently, he received implants from Debora Armellini, DDS, MS, who was assisted by students Sarah Bolling and John Kuzmak, all of whom St. Hilaire describes as “perfectionists.” Bolling, he says, is a “magician with injections.”

St. Hilaire says that “pleased is an understatement” in describing how he feels about his experience, and that he considers himself fortunate to still have those two upper front teeth. “Like I said to the student and Dr. Armellini when I saw my two implants, ‘Amazing, simply amazing.’”

“This is the best dental experience I have ever had,” he continues. “From the evaluation to the present, everyone has been frank, helpful, thorough, cooperative, responsive, considerate, and supportive.”

Although St. Hilaire is nearly done his course of treatment, he says he has already shared his experiences with many people and recommends the Dental School whenever he has an opportunity.
Q: How did you decide to enter the field of dentistry?
Rather haphazardly, really. Dental hygiene was a blossoming field in the early '70s. I remember going to my guidance counselors in high school seeking direction for college. I really enjoyed art and French classes, and I thought I was going to be an art or French major. Since my parents did not have the opportunity to go to college, they really could not advise me as to what to do.

I will never forget what the guidance counselor told me. She said, “You are a very smart girl. Smart girls become nurses and science teachers—not art or French majors.” I knew I did not want to be a teacher or a nurse, and because I respected the counselor’s opinion, art and French were definitely out!

The community college where I lived had just opened a new dental hygiene program, and several of my friends were considering applying. I talked to a hygienist who was employed at my dentist’s office, and she encouraged me to apply. As it turns out, I was accepted into the program with two of my friends. I was the only one who graduated. I spent 11 years as a dental hygienist before going to dental school.

Q: Why did you select the University of Maryland?
I was working at the University of Maryland Dental School in the Department of Periodontics coordinating a National Institutes of Health-funded research project on the genetic distribution of early-onset periodontitis. It was a terrific position because I had the opportunity to work with many of the faculty and students. While I was coordinating patient evaluation and care with both postgraduate and dental students, I realized that I could do this—I could go to dental school and become a dentist also. It was this realization that prompted me to apply. Up to this time I didn’t think I could make it through dental school.

Susan Goodman, DDS ’91, spent 11 years as a dental hygienist before becoming a dentist. Currently the vice president of the Alumni Association, she gives a frank account of her experiences at the Dental School, the dental profession, professional organizations, and her hopes for the University of Maryland Dental School.
Q: Did you consider any other schools?
I applied only to the University of Maryland. It was and still is a premier dental school with a terrific reputation. I learned this while interviewing for General Practice Residencies (GPR) in my senior year. I interviewed at seven GPR programs within a 250-mile radius of the University of Maryland. In many interviews, program directors made a point to let me know that they always try to match with BCDS [Baltimore College of Dental Surgery] students. It was the utmost compliment to hear that program directors believe Maryland graduates are well-trained clinically, can plan treatments effectively, and have great one-on-one skills with patients.

Q: What was life like for you as a dental student?
The hardest part for me was becoming a student of my previous colleagues. I think it was also more difficult because I had worked for 11 years in the dental field prior to going to dental school. I had experience working in many aspects of the field already: private practice, public health, research, and academia. I had more experience in the dental field than many of my instructors and knew that often there were multiple ways to treat dental disease. I understand that beginning students require consistent and uniform instruction, but it was still hard to clinically perform using “the Maryland way” when I was clinically proficient in other ways.

The good news about all this is that once I started clinically treating patients, I was exposed to part-time or volunteer instructors who were also in private practice, making it easier for me to use my background knowledge. I have to say that the BCDS Dean’s Faculty is one of the best “teaching” mechanisms I have ever seen. It is a privilege to be a part of this, and I hope the current students take advantage of this available expertise.

Q: With all of the new technology in the building, do you envy today’s dental student?
Absolutely. Dentistry is one of those fields that has many “toys.” It is constantly changing for the better. The big difference I see for the students in the new School is that they are exposed to new technology while still in training, so that when they set up their own practices they will be way ahead in the technology arena. I don’t think there is any other dental school as technologically advanced as the University of Maryland. This is so fitting for the first dental college in the world.

Q: How do you see the profession evolving?
The dental field will only become more attractive as a career. Just since I graduated from dental school in 1991, endodontic and periodontal treatment regimens and protocols have changed dramatically. I can see that the advancements in microbiology, physiology, and pharmacology have progressed exponentially in a very short period. I think the need for current and future practicing dentists to continually update their patient care through continuing education is more important now than ever before—the field is evolving this quickly.

Q: As the vice president of the Alumni Association, you play an important role. What are your greatest challenges?
My biggest challenge is to create and shape an organization that represents the diversity and uniqueness of all our graduates. I do believe recent changes in the approach that the Alumni Association has taken over the last several years that I have been on the board—and now as an officer—have proven that we are working in that direction.

I am disappointed in the number of graduates who are not members of the Alumni Association. I
keep hearing that alums don’t feel a part of the School once they graduate, and that the association does not represent them. I don’t feel that this is the situation now and I encourage all graduates to consider joining. I cannot lead an organization in the direction it should go without input from others. I know the direction I think we should be heading, but without more involvement from those I have been elected to represent, the association can only grow so much.

I strongly believe that the Alumni Association is the vehicle for alums to support the changes and address the issues that past graduates have shared with me. The future voice, direction, and focus the Alumni Association takes is ultimately up to its membership.

Q: What sense of personal/professional satisfaction do you gain from being a part of the dental profession?
I have always believed that if you want something to change you have to be an active part of the process. I have held many leadership positions and have been a member of multiple dental organizations, both at the state [Maryland State Dental Association], national [American Dental Association, American College of Dentists, Advanced General Dentistry, Pierre Fauchard Academy], and international [International College of Dentists] levels.

Early in my career, I decided to become active in the political and organizational aspects of the dental profession. Needless to say, this was not an easy task. It took a lot of persistence to “get my foot in the door” due to lack of acceptance by the “good ole boys” at the time. For example, I ran for ADA alternate delegate in Maryland for seven years in a row before I was elected as the only female full delegate.

My sense of satisfaction in all of my involvement in the dental field comes from the fact that I have and will continue to affect much-needed change in the field of dentistry. I don’t sit around and complain and not try to work toward solutions. I have become proactive and work toward what I want to happen. In essence, I have become an advocate for the cause—and try to encourage others to participate also. This has always provided a great sense of satisfaction for me.

Q: Why would you encourage someone to consider dentistry?
It is a great field—and will continue to be so.

Q: How do you envision our School in the future? What are your hopes for the future of the School?
I would love to see BCDS recognized as a symbol of what the gold standard of a premier dental educational facility should be.
Magnifying the Role of Microscopes

Reinventing how we learn and practice

By Regina Lavette Davis

When Arnold “Arnie” Sindler, DDS ’76, ASE ’78, looks through a dental microscope, he sees more than calcifications and cracks—he sees unlimited potential for the Dental School. His mission is to bring advanced microscope technology to the School.

Gerald Bowers, DDS, MS, a pioneer in periodontic research, told Sindler more than a decade ago that microscope-enhanced dentistry would be “the wave of the future.” It took a few years for Sindler to fully acknowledge his friend and mentor’s nudging, but once he saw the microscopes firsthand, he was hooked.

He attended the annual meeting of the Academy of Microscope Enhanced Dentistry (AMED) in Scottsdale, Ariz., four years ago with his staff. He returned “brimming with enthusiasm,” he says, and asked the conference organizers, “How soon can I have one?”

Getting The School On Board

For more than 10 years, endodontic programs have realized the importance of microscopes, and today those programs need coursework in microscopy to retain their accreditation, says Sindler. Other programs, such as periodontics, have been slower to adopt the technology. Starting with the Dental School’s postgraduate periodontics program, Sindler wants to implement training programs.

“It’s a ‘no-brainer’ for periodontics,” he says, adding that the microscopes enable the user “to look inside dark spaces for finer and more precise dentistry. When our vision is enhanced to this extent, we are able to perform to a level otherwise not attainable.”
Dean Christian S. Stohler, DMD, DrMedDent, and Mark Reynolds, DDS ’86, PhD, chair of the Department of Periodontics, support Sindler’s initiative. In fact, Reynolds, along with a handful of residents and faculty, traveled to Charlottesville, Va., for microscope training.

“Dr. Sindler is a master clinician who passionately embraces technologies, such as the dental microscope, that can improve the delivery and quality of patient care,” says Reynolds.

Sindler recalls a meeting with Stohler, Reynolds, and a microscope manufacturer two years ago and gives the dean much credit for paving the way.

“Opportunities abound for this. We are fortunate to have one of the most visionary deans in all of dental education,” says Sindler, who sees the Dental School becoming the microscope center of the East Coast. At an initial training session of postgraduate periodontal residents held at the School last December, most of the attendees were “totally captivated,” he says.

When asked to describe the advantages of the microscopes, Sindler’s response is direct: “The main advantage is vision—you can see.”

Most students and dentists wear loupes, which offer up to 4.5 times the magnification of the naked eye. “However, you can only go so far with the loupes,” he points out. Conversely, microscopes provide 20 times the magnification or more.

Unlike the loupes, which require headlights, the microscopes have a built-in light source. This gives dentists more opportunities to identify cracks, decay, and calculus left on the roots. It also facilitates microsurgery. The ability to see at the levels attainable with this technology enables clinicians to achieve precision not possible without it, explains Sindler. This leads to improved capability for diagnosis and for more predictable treatment outcomes for patients.

Getting More Than He Gives
As a Dean’s Faculty member, Sindler says he has reaped invaluable rewards. Once again, it was Bowers who gave him the idea. “He urged me to volunteer,” he recalls. And once again, he followed the advice of Bowers, whom Sindler describes as a “very special person” (see Mdental, Spring 2005). “I don’t know of another person who has trained as many people who have become deans or department chairs at dental schools,” Sindler says.

Sindler’s experience in the Dean’s Faculty has made a marked difference in his professional life. “I’ve become a much better clinician. I was stale,” he says. “Whatever I’ve become, it’s because of volunteering in the postgraduate periodontics program.”

Being able to learn and grow in his field is clearly important to Sindler. When he comes to volunteer “a day never goes by at the University that I don’t take away more than I’ve given,” he says. “I wouldn’t trade it for the world.”

Volunteers such as Sindler are especially appreciated by the Dean’s Faculty Enrichment Program Director Warren Morganstein, DDS, MPH. “Dr. Sindler has made an invaluable contribution to the Dental School for many years. He is an outstanding practitioner, teacher, and role model,” states Morganstein.

And Sindler’s leadership roles have emerged as well. Although he describes himself as a “behind-the-curtain guy,” his recent activities show the opposite. Last fall he was the first guest lecturer for the Dean’s Faculty Study Club in the newly opened Dental School building. Also, he helped found the Gerald Bowers Study Club, he received The David Clark Distinguished Service Award from AMED, and sits on its Board of Directors.

Sindler says that the organization “is actively trying to promote microscopes in the academic community.” Through his leadership role in AMED, Sindler can facilitate the School’s move in that direction.

“His current expertise with the operating dental microscope will contribute to the Dental School’s position as a leader in the 21st century,” says Morganstein.

Sindler is confident that the day will come when the Dental School is recognized for its microscope training.

“I think we’re going to blow everyone else away.”
PRESIDENT’S MESSAGE
The Job Is Not Done

I enjoy many things in life, but one of the most enriching is walking into our new Dental School building and feeling the excitement and bustle of activity. Everyone is unpacked and settled in. The faces of the patients, students, and faculty seem brighter and the pace is brisk and upbeat.

As alumni, we should feel proud about the grand opening of the Dental School building, but this is only the beginning. Our job is not done. We need more alumni to create new ways to contribute to the success of the BCDS tradition. Yes, donating to the School is the best way to show your support, but there are other ways as well.

If you are not already taking part in this volunteer faculty program, consider being part of the Dean’s Faculty. Working with students and providing additional insight to their education is so worthwhile. You may even learn something new. These students are showing me a thing or two about digital radiography. For more information about the Dean’s Faculty, visit the Dental School Web site at www.dental.umaryland.edu and click on Dean's Faculty.

If volunteering isn’t an option for you, then show your support by attending the BCDS continuing education event and alumni luncheon on Saturday, April 21, starting at 9:30 a.m. at the Nation’s Capital Dental Meeting (www.dcdental.org) at the Washington Convention Center. Our very own Nasir Bashirelahi, PharmD, PhD, will give a presentation, “Nutrition and Nutraceuticals: Update for the Dental Professional.” Come renew old friendships and make new friends.

If you’re still hesitant, then come see the new Dental School building for yourself during the 2007 All-Alumni Reunion Weekend. Mark your calendar for June 1-2 and plan to take part in a full day of continuing education, come to the gala, and attend your reunion class party.

Be a part of the excitement and experience the new BCDS!

Sincerely,
Charles Doring, DDS ’87
President, Alumni Association

ALUMNI RELATIONS
We Have a Home!

The alumni suite, located on the sixth floor of the Dental School, is beginning to take shape. We’re settling in. Yearbooks are neatly aligned on shelves instead of stacked on the floor, there are no visible signs of cardboard boxes, and the coffee pot is operational.

For the first time in recent School history, the alumni have a prominent space in the Dental School to call home. Dean Stohler offered the alumni a beautiful, contiguous, functional space that reflects the stature of alumni in the Dental School. In fact, the space we occupy was originally slated to be the dean’s office, and it provides one of the best views in the building. It seems rather symbolic that it was offered by the dean to the alumni.

The Patteson Alumni Conference Room, named in memory of Dr. William Patteson, ’57, is also part of the alumni suite and serves as the location for the Alumni Association board meetings. Dr. Patteson, who would have celebrated his 50th class reunion this year, was instrumental in identifying the need for a “functional” alumni space within the Dental School. Dr. Patteson passed away before he was able to see his dream come to fruition, but with the help of his alumni family, money was raised to name the conference room in his memory.

Together with a generous $200,000 contribution from the Endowment Fund of the Alumni Association of the Baltimore College of Dental Surgery, Dental School, University of Maryland, Inc., the gifts were gratefully acknowledged by providing the Alumni Association with “prime real estate” in the Dental School. The alumni suite provides ample space for an alumni relations office, a conference room, as well as a volunteer faculty office.

It is most fitting that donor plaques and photos from the past and present will grace the walls of the new quarters, because you, the alumni, represent our past, present, and future at the Dental School. When you are in Baltimore, I invite you to visit your alumni suite. If you call ahead, I’d be happy to arrange a tour of the building.

Warm Regards,
Janice Batzold
Associate Director, Alumni Relations & Special Events
Thomas Dumsha, DDS, professor emeritus, lost his two-year battle with cancer in March. He was a 1979 alumnus of the Doctor of Dental Surgery program and a 1981 graduate of our endodontics program. “Dr. Dumsha mentored many students during their training in the postgraduate endodontics program, which more recently and under his directorship received four commendations from the American Dental Association accreditation site visit team,” says Ashraf Fouad, BDS, DDS, MS, chair of the Department of Endodontics, Prosthodontics, and Operative Dentistry.

Susan Hayduk, DMD, retired clinical assistant professor, died of undetermined causes in April. “Dr. Hayduk will be greatly missed. She was an outstanding clinician and exceptional educator whose extraordinary efforts added significantly to the success of our students,” says Mark Reynolds, DDS, PhD, chair of the Department of Periodontics. Hayduk retired in November 2006.

Patricia Stearns, MS, the first director of the Dental School’s Dental Hygiene program, died in her sleep in early April. The School has an annual scholarship for Dental Hygiene students named in her honor. “Patricia Stearns left us with a very proud legacy,” says Jacquelyn Fried, RDH, MS, director of the Dental Hygiene program. “She was an inspiring educator who touched the lives of many students.”
All the Right Choices

A student’s focus on serving others stimulated his career path.

By Regina Lavette Davis

“Going to the doctor usually meant I was sick, hurt or going to get a shot. It was never fun.” Still, David Richman-Raphael wanted to become a doctor. However, he realized that his dental visits left him with a much different feeling. “I would go to the dentist even when I was healthy and I usually enjoyed the experience,” says the first-year dental student. “It takes talent to make something like a trip to the dentist into an enjoyable experience and I really admired my dentist for that.”

Such was the start of a new career path.

Early Influences
Aside from his dentist (Jerome Yeoumans, DDS ’72), Richman-Raphael’s interest in the world was clearly shaped by his parents. Growing up with a mother who was an anatomist and a father who was a psychologist, he had atypical childhood experiences. He says his earliest memories include standing on a stool, draped in his mom’s lab coat, cutting through a sheep heart or kidney or whatever else he could find in her lab refrigerator.

“I grew up playing with bones and dissecting animal parts on the kitchen table,” he recalls. Equally stimulating were the psychological tests his dad practiced on him, which he simply viewed as games. “The memory tests were my favorite,” he says.

His neighbor and his mother’s best friend, Jacquelyn Fried, RDH, MS (director of the Division of Dental Hygiene), has known him for 15 years and has observed many of his varied interests. “Ever since David was a little boy, he has had a strong interest in science,” Fried says. She adds that his walks through the woods would often yield collections of fossils, insect exoskeletons, and “other objects of nature.”
Fried was among those who encouraged him to become a dentist. Richman-Raphael says the doctors in his family think he’s “very intelligent for choosing dentistry as a career.”

More Than Kid-Friendly
Like most dental students, his impressive educational background has prepared him well for the rigors of dental school. A graduate of Tufts University (magna cum laude; bachelor’s in biophysics and a master’s in child development), he also supplemented his undergraduate education with a summer of advanced studies in Bath, England.

Throughout his education, children have been a primary focus for him. The year before coming to dental school, Richman-Raphael was a high school geometry and algebra teacher and a lacrosse coach at Francis Parker School in San Diego. While at Tufts in Massachusetts, he taught kindergarten, worked in an after-school program, and led counseling sessions for children with emotional and behavioral difficulties. At home in Baltimore, during his summer breaks from school, he supervised sailing programs for children from low-income families.

In addition to these child-oriented pursuits, Richman-Raphael has engaged in scholarly research activities. During an undergraduate summer, he worked as a research assistant at the Johns Hopkins School of Medicine’s Department of Orthopaedic Surgery, where he managed a project investigating the integration of bone cells into different types of titanium surfaces.

At Tufts’ Institute for Applied Research in Youth Development, he engaged in work that related to promoting healthy, positive development among diverse populations of children, adolescents, and families. His research work is supplemented by publications and presentations, including an article in the *Journal of Early Adolescence* (2005).

Based on this background, it’s no surprise that Richman-Raphael plans to pursue a career in pediatric dentistry. “I enjoy the challenges and rewards of working with children and adolescents,” he says.

Jump Start to Success
This first-year student has carved out a dossier that portends a successful career. He not only has strong academic credentials, but he also understands the value of connecting with the community and giving back. Along with fellow dental student Derek Blank, he has become involved in Project Jump Start (PJS), a UMB student organization that meets each Friday to pack and deliver brown bag dinners and health supplies for the less fortunate.

“Project Jump Start works with people who are homeless to help them be aware of and take advantage of the resources that are available,” he explains. Members drive through downtown Baltimore and distribute the dinners and supplies to the homeless, along with any clothing that has been collected by PJS members.

“The dental component is truly in its infancy stage right now,” he says. “We are working with Dan Andersen, one of the founders of PJS, to get the ball rolling.”

Richman-Raphael’s outreach activities are core to his mission in dentistry. “Service to the community has always been an important part of my educational experience. The opportunity to contribute to the oral health of underserved populations is one reason why I decided to come to the Dental School,” he says.

Through their involvement in PJS, Blank and Richman-Raphael have both received Albert
Schweitzer Fellowships. As a dental student, Richman-Raphael says he will be able to provide a link between the Dental School and the homeless community to help others make the most of existing resources.

“I have seen the hard work and dedication of the volunteers of Project Jump Start; I have spoken with current Schweitzer Fellows, and I want to combine my interests in oral health and helping others. These are the reasons why a Schweitzer Fellowship is important to me,” he says.

Moreover, as a Schweitzer Fellow, he will have the opportunity to begin bridging his classroom experience with practical application. “I would also continue to develop my abilities as a leader and collaborator. Both of the traits are best learned outside of the classroom and will be important as I enter the health care community.”

The New Era at Maryland

Although Richman-Raphael is a first-year student, he and his fellow 2010 graduates had a brief experience in the old Dental School building. Being in that environment, even briefly, means they will not take the new School for granted.

“We had the opportunity to spend the first couple of months in the old building, so we can appreciate how much better we have it now,” he explains, adding that “there have been some growing pains, but they get ironed out pretty quickly.”

Of course, a major attraction for the students is the simulation rooms, which he describes as a great showcase of technology. “Working in the labs makes me feel like I’m a part of a new era in dentistry at Maryland,” he says, noting that it has taken students and faculty some time to get used to the new technology. He credits simulation labs director Gary Hack, DDS, and preclinical coordinator Jerome Hillard for ensuring that the simulation areas are running smoothly and that everyone has their needed supplies.

“It takes a lot of hard work to make the transitions that we’ve made at Maryland over the last year. The faculty has been working unbelievably hard to make sure that the School, simulation labs, and clinics are all up and running. The upperclassmen have been generous with their time, books, notes, and test files,” he says.

Like his classmates, Richman-Raphael is eager to move on to working with patients in the clinics, stating, “We all entered dentistry to work with other people and we are all looking forward to the day when we spend more time with patients than with books.”

His Tufts undergraduate and graduate studies, of course, were difficult, but Richman-Raphael is having his mettle tested in this new academic-health arena.

“Dental school is the hardest I’ve ever worked, and there are definitely times when it isn’t fun,” he admits. But he adds, “No other profession offers as much opportunity to help other people and engage my academic interests. The further into the field I go, the more I realize that I have chosen a great career.”
NIH Grant Winner

Brian Robertson, a combined DDS/PhD student, was awarded a grant from the National Institutes of Health for a Ruth L. Kirschstein National Research Service Award for Individual Predoctoral MD/PhD Fellows to begin on June 1, 2007. The award will support his stipend, tuition, the cost of travel to one meeting, and miscellaneous expenses for at least three years.

Robertson is in his third year of a seven-year combined degree program. Having completed the first two years of dental school, he is working on his PhD over the next three years under the mentorship of Meenakshi Chellaiah, PhD, in the molecular and cell biology research specialization in the Department of Biomedical Sciences. In years 6 and 7, Robertson will return to dental school to complete his clinical program and will graduate with two degrees.

ADAF Awards

Three DDS students received awards from the American Dental Association Foundation (ADAF). ADAF promotes and broadens access to excellence in dental education by supporting lifelong learning. The foundation offers scholarships for students in dentistry, dental hygiene, dental assisting, and lab technology. The scholarship awards total $2,500.

Jacob Koch (’08) was selected to receive the ADAF Dental Student Scholarship.

Vanessa Benavent (’09) and Laelaye Shimeles (’09) received the ADAF Minority Dental Student Scholarships.

Dental Student Wins Naming Competition

Although it probably took more than a nanosecond to develop his winning idea, Kevin Bunin (’09) received an iPod Nano for naming the Health Sciences and Human Services Library (HS/HSL) e-newsletter. According to the newsletter, 84 UMB students, faculty, and staff entered the contest and submitted 233 entries. Among all of those submissions, the HS/HSL Web site says that one idea (Bunin’s) “stood out from above the rest”—Connective Issues. In addition to the iPod, Bunin also received a $15 iTunes gift card.

Ethics Award

Andrew Swiatowicz, Class of 2010, received the Ozar-Hasegawa Dental Ethics Award from the American Society for Dental Ethics (ASDE) for his case video, “No Child Left Behind.” He worked with James Craig, MS, EdD, professor in the Department of Health Promotion and Policy; Margaret Wilson, DDS, MBA, associate dean for student affairs; Norman Tinanoff, DDS, MS, chair of the Department of Health Promotion and Policy; and Instructional Technology Specialist Doug Brotherton, along with classmates who participated as actors to complete the video. This national award includes a $500 prize and a one-year ASDE membership.

ASDE is an international nonprofit organization of dental educators, practicing dentists, dental organization officers, dental hygiene faculty and organization officers, ethicists, and other persons in dental health care. Founded in 1987, the organization is dedicated to enhancing the growing dialogue about ethical issues in dental health care and fostering more effective ethics education in this field.
Ronald McDonald House Breakfast

Dental hygiene student volunteers have found a way to connect with kids and their families at the Ronald McDonald House (RMH) of Baltimore. Each month, members of the Student American Dental Hygienists’ Association (SADHA) give up a Saturday morning to prepare and serve breakfast.

MaryAnn Schneiderman, RDH, MS, the SADHA faculty advisor and Division of Dental Hygiene faculty member, says the students contribute money to buy the food as well as serve it to the families. “Those who can’t physically participate donate food or money at our monthly SADHA meetings. The students who participate are providing a valuable service for the RMH families at a difficult time in their lives,” Schneiderman says.

That sentiment is echoed by Joshua Harden, director of volunteer services and community relations for RMH. “They come in once a month and serve a phenomenal breakfast to 45 to 50 people. The families really appreciate it, because it helps relieve the stress they’re under,” he says.

The students arrive early to set up and begin cooking, generally around 7:30 a.m., begin serving from 8:30 to 9:30, and stay until 10:30 to clean up afterward. With only six full-time staff, Harden says that if not for the volunteers, “We would have a difficult time.”

The activity not only enables students to give back to the community, but it also facilitates a collegial experience. “Our students have an opportunity to spend time together and get to know each other outside the dental school environment while volunteering their time for a worthwhile activity,” says Schneiderman, who adds that the friendliness and interactions with the families are important as well. “A big smile goes a long way. It really is what you give back to others through your time and energy that makes you feel good about yourself. And our students can really feel good about the help they are giving to the families at the Ronald McDonald House,” she says.

Students or alumni in the Baltimore area who are interested in volunteering at RMH can call Harden at 410-528-1010, ext. 106.
Care Without Borders
Dental Mission Experience in Russia

In an ongoing effort to highlight international dental outreach, third-year student Michael Virts describes his trips abroad.

By Michael Virts, President, Class of 2008
While I was a laboratory apprentice at a large general dentistry practice in my hometown of Frederick, Md., in the fall of 2002, the opportunity for international professional community service first presented itself to me. John Kershner, DDS, one of the dentists in the practice, asked one morning if I would consider joining him on his 29th three-week dental mission trip to Russia. I immediately said “absolutely” and began to plan for the April 2003 trip.

Little did I know that after this journey, I would be hooked for life. I have since traveled to Russia three times, and have plans for many more trips after completing Dental School.

Dr. Kershner visits Russia three to four times a year to provide dental care to students, faculty, staff, and families of Zaoksky Theological Seminary in the small village of Zaoksky, south of Moscow in the Tula region of Russia. The seminary is under the direction of the Seventh-day Adventist Church. I must note that even though I am not a member of this church, I am warmly welcomed by all the people I meet there.

Using donated dental units and other equipment, including a dental air compressor, water filtration system, autoclave, and radiograph unit, Dr. Kershner has set up a three-operatory dental clinic on the first floor of the main dormitory. Conveniently, our apartment suite is two doors away.

We tend to spend most of our time working in the clinic, and 18-hour days are not uncommon. But Friday afternoons and Saturdays are spent relaxing with friends, visiting the orphanage, or sightseeing. Nearly every night, we are invited to two or three homes for dinner, dessert, and tea, and then we usually head back to the clinic until 11 p.m. or midnight to see more patients. They pay only a small fee, and these monies are used to purchase supplies for the clinic.

Under Dr. Kershner’s supervision, I am able to do nearly everything I would in the clinics at the Dental School, from limited examinations and radiographs to scaling and root planing and exodontia. We do not have a laboratory, so multisurface, pin-retained amalgams and large composite restorations occasionally must take the place of a crown, inlay or onlay, and luckily, most of our patients do not require dentures.

Even though the mission trip is based in dentistry, we also work to find sponsors for the school’s students; support the seminary’s incredibly talented music program; visit and provide hats, gloves, beds, shoes, stuffed animals, and other essentials for a local orphanage; tour St. Petersburg, Moscow, and Yasnaya Polyana (Tolstoy’s homestead); and savor the hours spent visiting and sharing meals with friends and families associated with the school.

Dentists and dental hygienists share in a profession that carries with it many privileges. We are a group of highly educated, greatly skilled individuals who have earned the benefit of a comfortable lifestyle, and a myriad of professional opportunities await us after commencement. Along with this comfortable lifestyle often comes a generous earning potential, but it is critical that we always remember the oath of our White Coat Ceremony: to place our patients and those dependent on us as our first priority above all others.

Luxurious homes, vacations, and automobiles are simply that—luxuries—and while we may someday enjoy them, we must make it our priority to use our unique health care training to serve those in need, both in our own towns and in other parts of the world.
The Advanced Education in General Dentistry program will be hosting its 25th Alumni Reunion the weekend of Sept. 28-29. Festivities include Friday night baseball—Orioles vs. Yankees. Saturday’s continuing education program features Douglas Barnes, DDS, MS, speaking on porcelain veneers; Alfredo Arribas, DDS, MS, speaking on special needs patients; Bryan Fitzgerald, DDS, speaking on implant dentistry; and Neville McDonald, BDS, MS, presenting an update on endodontics. The continuing education program will be followed by a gala evening at the Radisson Hotel. Come visit other alumni, classmates and faculty, and tour our state-of-the-art building that opened in fall 2006.

For more information, please contact Peggy Vaccaro at 410-706-0741 or e-mail mvaccaro@umaryland.edu.

Calendar of Events

June 1-2: Dental School Alumni Reunion

June 8: Department of Orthodontics Annual Alumni and Friends CE Event

June 22: Postgraduate Prosthodontics Alumni/Faculty Day

Sept. 28-29: AEGD Reunion (See above for details.)

Oct. 4-5: Northeast Postgraduate Implant Symposium
Baltimore College of Dental Surgery, Dental School, University of Maryland, Baltimore, seeks to graduate exceptional oral health care professionals, contribute to the scientific basis of treatments for diseases of the orofacial complex, and deliver comprehensive dental care. These accomplishments will promote, maintain, and improve the overall health of the people within Maryland and have a national and international impact.

Future Vision

As we strive to achieve our goals, we envision the future:

Reflecting on its heritage, the Baltimore College of Dental Surgery, Dental School, University of Maryland, Baltimore, will join in full partnership with other campus entities. The resulting multidisciplinary ventures will contribute to our prominence in scientific discovery, scholarly activity, and service to the community. Global outreach efforts of faculty, students, and staff will be mutually rewarding. An atmosphere of collegiality and intellectual stimulation will prevail, nurturing students, faculty, and alumni.

Administrative support will help foster creativity and responsiveness to a range of opportunities. The School will create and maintain an organizational structure that enhances our ability to achieve our goals. Students, faculty, and staff will provide the highest quality oral health care. The world’s first dental college, established in the 19th century, will take its place as the premier dental school of the 21st century.
An Overview of Invisalign® Treatment

Stuart D. Josell, DMD, MDent Sc
Steven M. Siegel, DMD

Learning objectives:
After reading this article the reader will be able to:
• Understand the Invisalign® process
• Identify best candidates for treatment
• Recognize the benefits of Invisalign® as an orthodontic treatment alternative

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