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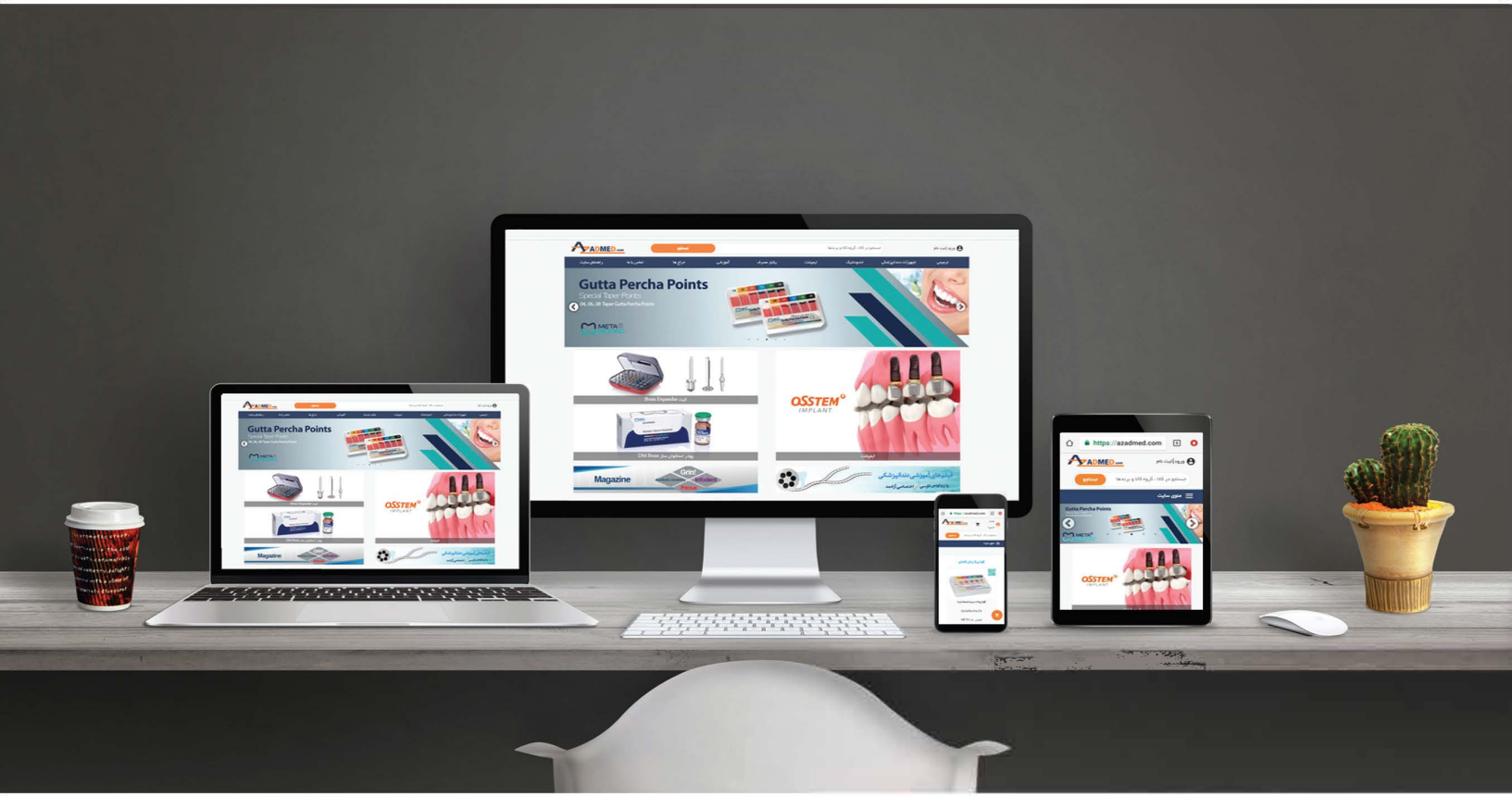

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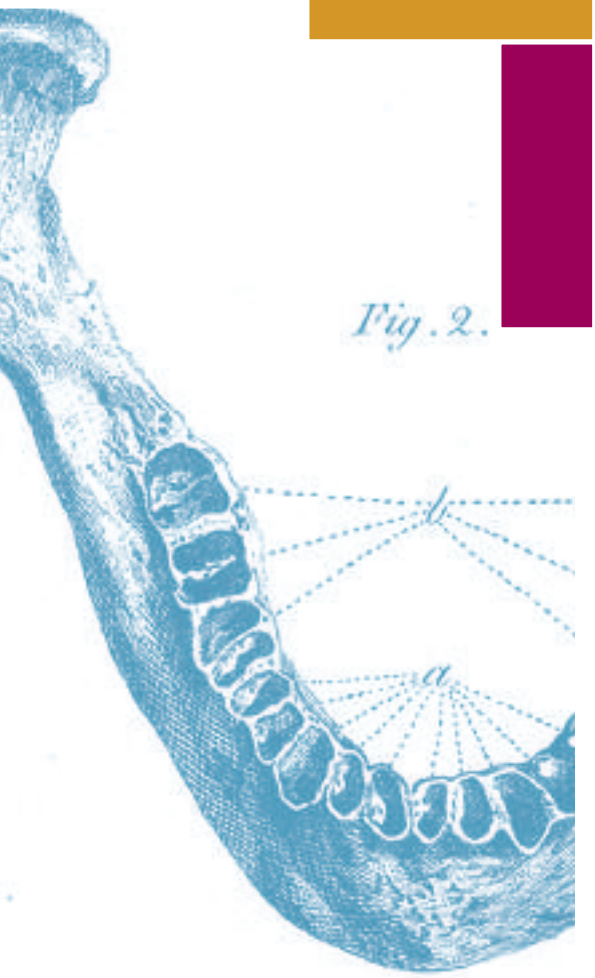

CDM looks forward to molecular-based dentistry, adding craniofacial tissue engineering to the scope of its research programs. p. 5

Columbia University Medical Center

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front cover: Illustrations of the engineered neogenesis of a human-shaped mandibular condyle from mesenchymal stem cells (courtesy of Jeremy Mao, DDS, PhD and *Journal of Dental Research*, 85 (11) November 2006; details from engraving of human mandible by John Hunter (1728-1793), *Natural History of the Human Teeth*, London 1771, (courtesy of Archives and Special Collection, Augustus C. Long Health Sciences Library, Columbia University Medical Center).

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Thanks to staff, alumni and students who shared their photographs for this issue of *Primus*.

CONTENTS

from the Dean's Desk

Dear Alumni and Friends,

On October 16, 2006, a commemorative service was held at the Columbia University Medical Center to celebrate the life and achievements of Dr. Melvin L. Moss. The service was attended by more than 200 of Mel's friends, faculty, students, and colleagues.

Mel was Professor Emeritus of Anatomy and Cell Biology, and Oral Biology, at Columbia University, and from 1968 to 1973 served as Dean of the College of Dental Medicine (School of Dental and Oral Surgery). He was truly a man of science, and his life was devoted to research and teaching. Mel's focus was on craniofacial biology and the characteristics of mineralized tissue. As you review this issue of *Primus*, you will see that focus reflected in the clinical and research activities of many of our faculty.

Dr. Jeremy Mao is newly recruited to CDM. Trained in both research and orthodontics, Jeremy is a tissue engineer. His research is concerned with restoration of lost or damaged structures through the creation of biological replacements grown from stem cells. A major accomplishment in this field was his development of a mandibular condyle that contained both bone and cartilage components. His ongoing research is examining ways that stem cells can be used to replace lost soft tissue. Jeremy's work is supported by the National Institute of Dental and Craniofacial Research (NIDCR) and the National Institute of Biomedical Imaging and Bioengineering.

Drs. Regina Landesberg and John Grbic are studying the occurrence of what appears to be a new oral lesion - osteonecrosis of the jaw associated with bisphosphonate therapy. These drugs are used for patients with osteoporosis and a variety of cancers, and this new research project (funded by NIDCR) will help alleviate some of the confusion about who is at risk. Other clinical activity highlighted in this issue of *Primus* is the work of Dr. Heera Chang related to disorders of the temporomandibular joint. These projects represent an important effort by our faculty to advance research and improve patient care.

I hope you enjoy this issue of *Primus*. As always, I welcome your comments.

Sincerely yours,

Ira B. Lamster, DDS, MMSc
Dean

from the President

This is a year of new beginnings in several significant ways. We have a new name, the Association of Dental Alumni of Columbia University College of Dental Medicine. We have a new sense of our future and a renewed sense of purpose for our Association.

We need to provide a bridge between dental school and professional life. We need to create an ongoing sense of connection between our graduates and the school. We have begun by reaching out to learn what our students need and how the Association can help them. We have proposed the creation of an ombudsman position to assure students that they will have a voice to address their concerns. We have charged the student leaders with proposing programs for our alumni to present. Topics could include: practice management, specialty training, or even how to code insurance forms. We are reactivating our Mentor Program, where interested alumni will meet with small groups of students. Those interested in becoming involved in these programs can contact the Alumni Office at 212-305-6881.

We enjoyed seeing all of you at our reception at the Greater New York Dental Meeting in November and look forward to talking with you again at the Young Alumni event we are planning for this winter, as well as our traditional Alumni Evening program in the spring.

Our new agenda requires new leaders with fresh ideas from our student body, as well as from our alumni. It is a matter of "giving back," and helping to make the experience of all CDM students a memorable one. It is a matter of putting a face on our profession. Please join us.

With best regards,

Lois A. Jackson '77, Peds '80
President, Association of Dental Alumni
Columbia University College of Dental Medicine

above: Model for the tissue-engineered condyle construct from Dr. Jeremy Mao's laboratory at CDM, shown with a human jaw bone.

CDM at Work

Tissue Engineering: NO SMALL TASK

"IT IS INCREASINGLY POSSIBLE TO SEE THE BROAD OUTLINES OF MOLECULAR-BASED DENTISTRY THAT WILL DOMINATE THE 21ST CENTURY AND TRANSFORM DENTAL PRACTICE."

BRUCE L PHILSTROM, DDS, MS, & LAWRENCE TABAK, DDS, PHD, *JADA*, JUNE 2005

Writing in the June 2005 issue of the *Journal of the American Dental Association (JADA)*, National Institute of Dental and Craniofacial Research (NIDCR) director Lawrence Tabak '77 and his coauthor Bruce L Philstrom, DDS, MS, looked toward a day when lost dental, periodontal and craniofacial structures will be routinely regenerated through tissue engineering (TE). "It is increasingly possible to see the broad outlines of molecular-based dentistry that will dominate the 21st century and transform dental practice."

The reality of their prediction has already begun to take shape – the shape of a mandibular condyle. The first anatomical construct of its kind, the condyle is the work of tissue engineer Jeremy Mao, DDS, PhD, who joined the faculty of Columbia's College of Dental Medicine in February 2006. Dr. Mao's successful creation of a condyle, which joins the lower jaw to the temporal bone of the skull, excited scientists and made global headlines in 2003.

After being educated as an oral surgeon at Wuhan University in China, Dr. Mao spent his postgraduate years in Beijing hospitals, where he saw and treated many craniofacial deformities. The difficulties entailed in restoring normal function and appearance to patients with these disfiguring anomalies and injuries ignited Dr. Mao's interest in the study of the temporomandibular joint. Deciding to pursue a career in research, he entered the University of Alberta, Canada, where he earned an interdisciplinary PhD in engineering, followed by postdoctoral training in musculoskeletal engineering. Dr. Mao began his career at the University of Pittsburgh, an early incubator center of tissue engineering. It was in Pittsburgh that Dr. Mao began experiments on tissue engineering. "I was in the right time at the right place," Dr. Mao says modestly, referring to the fact that large-scale tissue-engineering, craniofacial or otherwise, only began to emerge as a research field in the early 1990s. Dr. Mao was later recruited to the University of Illinois (UIC) at Chicago, where he directed the UIC Tissue Engineering Laboratory. The successful production of the initial condyle construct, which Dr. Mao carried out at UIC with doctoral candidate Adel Alhadlaq, was a major milestone in the field of TE and regenerative medicine. The National Institutes of Health (NIH) and the American Dental Association (ADA) both issued press releases of this landmark achievement, which was later included in the NIH Stem Cell Registry.

It is often stated that TE combines the fundamentals of engineering and the life sciences. Clinicians have sought to supply anatomic reconstructions for centuries, in many cases adapting engineering principles to achieve their desired outcome. Dental replication was probably one of the earliest attempts to restore a physical loss. Such prostheses have been made of many materials, including shells, tusks, and even porcelain. George Washington, as every prosthodontic student must surely learn, wore dentures constructed partially of – not wood – but rhinoceros horn! One of the most urgently needed craniofacial replacements has been the jaw, often destroyed by oral cancer. Two famous cases are those of Grover Cleveland, who underwent several secret operations early in his presidency to remove his diseased upper jaw and to be fitted with a vulcanized rubber prosthesis inside his mouth, and of Sigmund Freud, whose last 20 years were increasingly painful as he suffered through surgery after sur-

gery and attempts to adapt to many ill-fitting and dysfunctional artificial substitutes for his own jaw. Mechanical constructions reproducing body parts in artificial materials were generally incompatible with the sites they were intended to fill, inefficient in carrying out their purpose, and uncomfortable for the patient.

At the turn of the last century, medical science began to experiment with the use of living organs to replace those that were diseased or damaged. Methods pioneered by 1912 Nobelist Alex Carr showed that living cells could be kept alive outside the body indefinitely, making them available for organ transplantation. Although skin grafts, kidney, liver, and pancreas transplants were accomplished with varying degrees of success in the ensuing years, anatomical replacement remained difficult, engendering serious immunologic complications.

For a surgeon ... to improve the match between regenerated body parts and the needs of human anatomy and physiology, the development of engineered tissues was the logical next step.

In 2004, a National Science Foundation (NSF) report on the relatively new field of TE summed up the problems faced by surgeons who have attempted to save their patients with insufficient mechanical means or unstable transplantations, and concluded that, "For a surgeon ... to improve the match between regenerated body parts and the needs of human anatomy and physiology, the development of engineered tissues was the logical next step." The idea of fabricating living replacement parts in the laboratory from biological rather than man-made components – a significant challenge because the body's complex and refined natural tissues are hard to imitate – arrived gradually during the second half of the 20th century. In 1987, the NSF sponsored a meeting on the topic of "Tissue Engineering," but its program was still largely focused on the manipulation and movement of tissue within or between bodies, and the re-engineering of prostheses made of materials from nonhuman sources. The concept of tissue engineering as an independent field did not become widely accepted until a 1993 article in *Science* demonstrated that scientists working in a variety of research areas were involved in projects that could all find a common home under this heading. The burst of stem cell research that arrived in the final decades of the 20th century, fueled by successful cell cultivation, increased the understanding of conditions necessary to go beyond using living cells for skin grafts alone. And, in the same period, a method using resorbable polymer matrices as a vehicle for cell transplantation was published. Tissue engineering, then, descends from cell scientists and biotechnologists on the one hand, and from traditional polymer and chemical engineers on the other. The first published overview of craniofacial tissue engineering principles appeared in 1999.

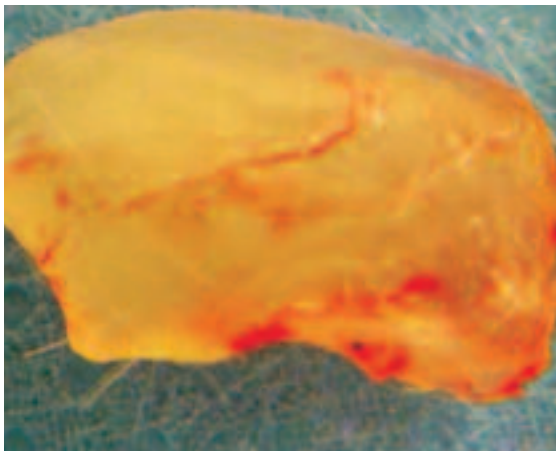
In the NSF's 2004 publication, "The Emergence of TE as a Research Field," the authors place emphasis on the polymer matrix's contribution to the new discipline, saying, "On the face of it, the work ... represented a modest advance ... a logical combination of existing approaches – cell-seeding of two-dimensional matrices of biological origin, as in the early work on artificial skin; three-dimensional cell culture on synthetic matrices; and selective cell transplantation, as in the early work on islet cell transplantation.

The method of seeding cells on resorbable polymer scaffolds was, however, unique, and rapidly became both the most important enabling technology and the most important organizing concept in the field, serving as a common element across lines of research addressing a wide range of therapeutic challenges. As a technique for building tangible objects, TE also became a vehicle for enhanced public visibility – if not enhanced public understanding – of the field and its goal of "growing organs."

Fundamentally, TE approaches understanding and reproducing the way in which cells are assembled into tissues during their development by working with the three elements of tissue: cells, the extracellular matrix, and growth factors. Craniofacial TE targets mesenchymal cells (MCs), from which the majority of craniofacial structures derive. In a recent article (*Journal of Dental Research*, November 2006), Dr. Mao, writing with TE colleagues from the University of Michigan, Stanford University, and NIDCR, describes the versatility and broad capabilities of the mesenchymal cell. "During development, MCs originating from the neural crest are known to migrate, differentiate, and subsequently participate in the morphogenesis of virtually all craniofacial structures, such as cartilage, bone, ligaments, cranial sutures, musculature, tendons, the periodontium, and the teeth." Once the MCs have undergone various changes in the process of morphogenesis, and birth has occurred, they become mesenchymal stem cells (MSCs), and remain in the craniofacial tissues – where they respond to injury by regenerating tissue.

Dr. Mao and his coauthors go on to say that the capacity of MSCs in the *de novo* formation and/or regeneration of craniofacial structures seems to be such a natural strategy that its lack of substantial exploitation before the past decade is surprising. Nevertheless, they point out that the task of growing human craniofacial tissues and organs "is by no means a small task." They describe the effort as having been, in fact, insurmountable until several "seemingly unrelated disciplines – such as cell and molecular biology, polymer chemistry, molecular

Jeremy M. Mao, DDS, PhD

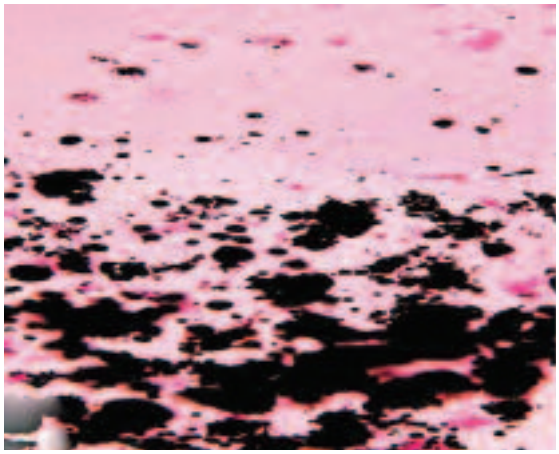


genetics, materials science, robotics, and mechanical engineering – converged into the self-assembling field of tissue engineering." The useful interaction of these various disciplines in TE is made clear in the authors' description of the steps necessary to engineer a functional biological structure: "...cells must be instructed to differentiate and receive positional cues, and to synthesize the appropriate extracellular matrix molecules in the overall shape and dimensions of the diseased or missing tissues/organs. Biomimetic scaffolds are frequently needed to enable cell growth and differentiation to occur in an environment reproducing principles found in developmental biology, but previously unfamiliar to either biologists or engineers."

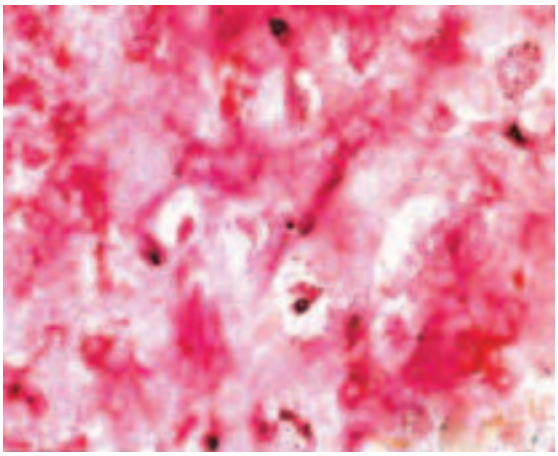
Nearly 30 million Americans suffer acutely from temporomandibular joint (TMJ) problems, and finding a way to alleviate their pain has been a longtime objective for dental surgeons. The mandibular condyle's primary function is to integrate the movement of the mandible with the maxilla. It is an adaptable structure, capable of remodeling in reaction to changes in the maxilla and the constant loading of the mandible. In spite of its ability to modify under stress, this jaw joint can be prone to severe arthritis, a type of TMJ damage for which there has been no solution. As Dr. Mao notes, "People ... often have large condyle defects, so the entire condyle needs to be replaced." But attempts to tissue-engineer replacements for the mandibular condyle had been unsuccessful until Dr. Mao's lab, in his own words, produced for "the first time, a human-shaped articular condyle with both cartilage- and bone-like tissues ... grown from a single population of adult stem cells."

Dr. Mao's laboratory experiment began with bone marrow taken from rats. The marrow was processed to obtain adult mesenchymal stem cells (MSCs), which were chemically induced for differentiation. One culture laced with growth factor transformed the MSCs into cartilage (chondroblast) cells, while the other was treated with chemicals that transformed the cells into bone (osteoblast) cells. Each cell type was then suspended in a hydrogel polymer/photoinitiator solution that solidifies when exposed to ultraviolet (UV) light (photopolymerization). A layer of chondrogenic cell culture was poured into several plastic molds derived from human mandibular condyles, followed by a layer of the MSC-derived osteogenic cells in the remaining space. After photopolymerization, the small bone- and cartilage-striated condyle constructs, were removed from the molds and implanted into the backs of immunodeficient mice for several weeks, where they grew and absorbed nutrients from the surrounding fluids. When removed from the mouse, the tissue-engineered structures had developed into condyles with two layers of cartilage- and bone-like elements, closely resembling the natural tissues.

Stem cell molding like this has never been achieved before. But, Dr. Mao believes there is much more to be done, saying, "For one thing, the potential implants had grown a relatively even distribution of bony cells and cartilage-like cells, raising the question of

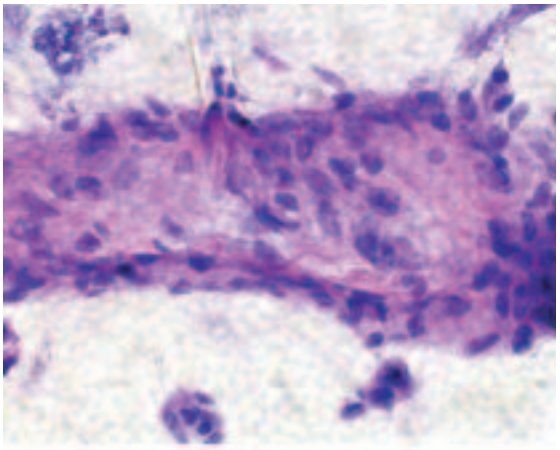


whether this or some other proportion of cells is most desirable." And, even though microscopic examination of slices taken from the completed condyles showed tissues similar to natural bone and cartilage, which expressed genes and produced chemicals characteristic of its tissue, as well as showing a normal increase of bone tissue calcium content over time, Dr. Mao realized that the engineered condyles were not sturdy enough to replace condyles in human patients. He described them as being "about as strong as those found in newborn babies," and added that "the strength and durability of the engineered tissue must be addressed before medical applications can be considered." To increase mechanical strength in the condyles, Dr. Mao proposes administering additional slow-release chemical growth factors to the cells, thereby promoting further tissue growth and maturation. A second approach applies mechanical stresses to cells at various times during production of the condyle. "We



plan to mechanically stress the stem cells while they are still in cell culture and then later mechanically stress the osteoblasts and chondroblasts located within the gel," says Dr. Mao. "These treatments may increase the rate of tissue formation and strengthen the extracellular matrix between the cells."

In the course of developing the mandibular condyle, Dr. Mao also grew human soft tissue from stem cells. His explanation for this approach was that the same cells he used to engineer the cartilage in his temporomandibular joint also make adipose tissue, or – fat! As he points out, fat cells produced in the laboratory can be put to good use in the manufacturing of soft tissue to supplant deficiencies caused by disease, surgery, or trauma in craniofacial regions and other areas of the body.



Dr. Mao's studies demonstrate that in coming decades scientists may be able to seed a three-dimensional scaffold with a patient's own adult stem cells, thereby generating cell types for both bone and cartilage tissue that could build an entirely new jaw, knee, or hip for someone who has lost these structures to disease or injury. The completed body part could then be returned to the body as an implant without fear of triggering an immune response.

Illustrations of the engineered neogenesis of a human-shaped mandibular condyle from mesenchymal stem cells on pp. 8 and 9 (courtesy of Jeremy Mao, DDS, PhD and *Journal of Dental Research*, 85 (11) November 2006); and details from an engraving of the human mandible by John Hunter (1728-1793), *Natural History of the Human Teeth*, London 1771, on pp. 6 and 8 (courtesy of Archives and Special Collection, Augustus C. Long Health Sciences Library, Columbia University Medical Center).

"I don't want you to have pain..."

Lori Kraus is a kindergarten teacher. Ms. Kraus had never suffered from headaches or jaw pain until the day in March, 2004, when she woke up with a terrible toothache. She went to her family dentist and then to a periodontist, but neither found anything wrong and could suggest nothing to help, except for the usual painkillers.

A few days later, in spite of being "miserable," she and her husband left on a Caribbean vacation. Ms. Kraus, however, was unable to bear the pain and "couldn't get home fast enough!" By that time, she had a burning sensation in her lips and her teeth felt "swollen."

After seeing an eye, ear, nose, and throat doctor, who diagnosed sinus trouble and gave her a CAT scan that revealed nothing wrong, Ms. Kraus could find relief only when she slept. Next, she made an appointment with a neurologist who ordered an MRI of her head; he was looking for lupus, Lyme disease, or a possible tumor – none of which showed up. She was then started on an antiseizure medicine, which didn't help until the dose was raised to a very high level. By the time an antidepressant was added, "to get her mind off the pain," Ms. Kraus's nose, eyebrows, and scalp all hurt. Still, she went on teaching everyday, finding it was the only way she could function.

When a neurologist suggested she could have surgery, she was so upset she says, "I yelled at my husband that he had to find me help!" And he did, calling hospitals all over New York, without really knowing what to ask for, until someone told him about Columbia's Oral, Facial, and Head Pain Center at the College of Dental Medicine.

Lori Kraus was treated by Dr. James Uyanik, "a wonderful man [who told me] I don't want you to have pain." Best of all, he really listened to her – very carefully. Concluding that, in spite of her atypical symptoms, Ms. Kraus's trigeminal nerve was involved, Dr. Uyanik prescribed medication that began to reduce her pain. She was soon reporting a 90% improvement, was able to stop taking one medication, and will shortly give up the other. But her doctor's "gentle, wonderful manner" may have been the most important part of Lori Kraus's treatment at CDM.

Lori Kraus answers questions from students in a class on orofacial pain at CDM, led by James Uyanik, DDS.

Many CDM Experts Share Care at Oral, Facial, and Head Pain Center

"THE WORD 'PAIN' COMES FROM THE LATIN *POENA*, MEANING PUNISHMENT, A FINE, A PENALTY" MERRIAM-WEBSTER

For the 10 to 15 percent of adults in the United States afflicted, chronic orofacial pain must certainly feel like a punishment. Their unremitting, sometimes incurable, misery is responsible for many thousands of visits to both dentists and physicians, and its cost to the nation can run into billions of dollars annually.

In response to a growing awareness of this widespread problem, the College of Dental Medicine at Columbia University established its Center for Oral, Facial, and Head Pain. Because orofacial pain can be traced to a number of clinical problems, CDM initiated a multidisciplinary team approach, drawing pain management and other specialists from across Columbia University Medical Center's dental and medical spectrum to the new Center's faculty. In addition to the dental subspecialties of endodontics, adult dentistry, and oral and maxillofacial surgery, the faculty includes specialists in acupuncture, anesthesiology, behavioral psychology, complementary and alternative medicine, endocrinology, headache (neurology), integrative medicine, medical psychology, neurology, neurological surgery, neuroradiology, and ophthalmology.

The craniofacial region is filled with a multitude of nerve endings sensitive to numerous triggers. Considering this complexity of anatomical density and mechanisms of referred pain, it is not surprising that the causes of orofacial pain, especially those involved in chronic suffering, have been considered difficult to differentiate and diagnose. At Columbia University's Center for Oral, Facial, and Head Pain, patients are evaluated for a range of conditions, including: musculoskeletal disorders of the head, face, and neck, temporomandibular disorders (TMD), trigeminal neuralgia, cranial neuralgia, headache, and burning mouth and tongue syndromes, among others. Following the evaluation of individual patients, staff members meet to discuss a diagnosis and set up a treatment plan. Rather than applying piecemeal treatment to one facet of the problem at a time, the Center designs care to encompass the entire scope of probable causes for the individual patient's pain, including the possibility of comorbid influences and psychological pathology. For ease and convenience, Center patients have access to all specialists and technology necessary for managing their comprehensive course of therapy at the single location provided by the Center.

Ninety percent of Center patients are dentist- or physician-referred. The complaint, such as earache, dizziness, accompanying muscle pain, sinus pain, and headache, would naturally prompt the patient to make a medical appointment initially. Conversely, apparent dental problems – pain in and around the teeth, jaw, and mouth – may actually arise from a condition which originates outside the maxillofacial area. Cardiac ischemia, for instance, can refer pain to the oral cavity, and a diagnosis of Lyme disease may be missed because one of its side effects, TMD, may overshadow the underlying cause. In addition, many orofacial pain complaints – tension headaches, trigeminal neuralgia, temporal arthritis, and dystonia, for instance – may be mistakenly called TMD – or vice versa. If any of these diagnoses are incorrect, improper treatment planning may follow. Fortunately, ongoing research in orofacial and pain management, has allowed clinicians at CDM's Center to use specific diagnostic methods and standardized classification systems to discover the root cause of such symptoms, so that their patients can be treated more accurately and with higher success rates.

Although temporomandibular disorders are only one group of conditions in the category of chronic orofacial pain disorders and dysfunctions, it is no wonder they are often suspect. Trouble can come from an unstable bite, or because of missing or poorly aligned teeth. In such cases, the muscles must

work harder to bring the teeth together, which may induce muscle spasms in the head, neck and jaw. Clenching or grinding teeth (bruxism), trauma to the head and neck, or working under poor ergonomic conditions, can all provoke TMJ pain. Pain can develop in ears, eyes, sinuses, cheeks, or the side of the head, and clicking – or even locking – may strike while moving the jaw. Psychological factors like stress, depression, and panic attacks can also play an important role in the etiology and maintenance of orofacial pain symptoms. When jaw pain deprives patients of their ability to chew, swallow, and sleep, they experience a debilitating deficit in their quality of life and may become withdrawn or depressed. It is even possible for chronic orofacial pain to outlive being defined as a symptom and take on the role of a disorder. Chronic orofacial pain sufferers could also become more susceptible and irritable to new stimuli.

While the clinical management of temporomandibular disorders has progressed rapidly from the 1920s to today, its future should be even brighter as scientists focus their efforts on identifying the biological, psychological, and genetic risk determinants that lead to muscle and joint pain. The National Institute of Dental and Craniofacial Research (NIDCR), directed by Lawrence Tabak '77, "... recognizes a unique opportunity ... with the emergence of genomic, proteomic, and other powerful information-generating technologies, to define in greater detail the genetic and molecular basis of pain [which should allow] future clinicians to more selectively and efficiently control the pain process."

Dr. Uyanik listens to a Pain Center patient describe her symptoms.

New Insights Into TMD's Pathology and Treatment

"...A WILDLY MOBILE ... HULA-DANCING **HINGE** THAT GOES SIDE TO SIDE, BACKWARD, FORWARD, **UP**, DOWN. IT CAN EXERT 650 TO 1000 POUNDS OF **FORCE** PER SQUARE INCH..."

A picturesque description of the sometimes temperamental temporomandibular joint (TMJ) appeared in the April 2006 Health Section of the *New York Times*. It was written following a discussion of TMJ problems between the reporter and Dr. Heera Chang, Assistant Professor of Clinical Dentistry in the Division of Oral and Maxillofacial Surgery at Columbia's College of Dental Medicine. Both writer and doctor had suffered their own bouts of temporomandibular joint disorder (TMD) and, typically, both are women. As Dr. Chang explained during the interview, "Women come in right away," when they feel pain or experience movement problems in the jaw joint, but, "men come in and say, 'I've had this problem for nine years.'"

Heera Chang, DDS, MD, examines a TMD patient.

Dr. Chang's personal experience with TMD occurred in college and was responsible for her decision to pursue a career in science and dental medicine. She attended the University of Wisconsin, graduating with a Bachelor of Science degree in 1992. She became Dr. Chang in 1998, when she earned her DDS at Columbia's College of Dental Medicine, receiving numerous student awards for research. A decision to go on for a second doctoral degree, in medicine, took her to the University of Connecticut, where she honed her surgical expertise. Today, in addition to training OMFS postgraduates at CDM, she is a clinical specialist in reconstruction and implantation, and the treatment of maxillofacial trauma and temporomandibular disorders. She has remained dedicated to research as a means of strengthening her understanding of the field in which she practices.

As interesting as the psychological rationale for gender differences in reporting TMD may be, Dr. Chang has focused her recent research efforts on examining the biochemical pathology of this syndrome. In the June 2005 issue of the *Journal of Oral and Maxillofacial Surgery*, Dr. Chang and her coauthor, Dr. Howard Israel, published results from their study "to find a correlation between biochemical markers and joint pathology" for TMD. Before its publication, Dr. Chang presented material from the article, for which she won the best research abstract of the session, at the 2003 annual

meeting of Oral and Maxillofacial Surgeons.

Researchers exploring the pathogenesis of TMD over the past decade had already identified some key immunological regulators. But, by using what they believed to be more appropriate controls, Drs. Chang and Israel were seeking to demonstrate a clearer distinction between disease and health in the temporomandibular joint than had been shown previously.

Twenty TMD patients with "severe pain and limitation of mandibular movement that had failed to improve with at least three months of a full course of nonsurgical therapy" and 13 members of a control group were examined arthroscopically for signs of osteoarthritis, synovitis, internal derangement, disc perforation, or adhesions. Next, the researchers analyzed the level of three specific inflammatory mediators in lavage samples from the temporomandibular joint synovial fluid of both patient and control groups. Their work revealed that degenerative conditions found in the TMJs of symptomatic subjects were "almost always" accompanied by significantly elevated levels of synovial inflammation, which can cause destruction to the joint tissues by stimulating inflammatory activity that has the potential to damage the articular disc surface. Earlier research had tended to sidestep biochemical and tissue changes that may precede cartilage destruction in the joint space.

Not only did their results help to clarify the pathogenic mechanisms of TMDs in patients with severe symptoms, but the authors also point out that the methodology used in the study could lead to beneficial results for TMD patients. They concluded that, "Lavage of the joint space via arthrocentesis assists in the removal of inflammatory mediators and antigenic sources. Arthroscopic surgery also provides lavage of the joint space while enabling direct visualization and treatment of inflamed synovial tissues, osteoarthritic cartilaginous tissues, the physical removal of adhesions and mobilization of the articular disc. The end result of a successful arthroscopic surgery is a joint with reduced inflammatory mediators and a reduction of cartilage breakdown products in the synovial fluid. This leads to a decrease in antigen load and a decrease in inflammation, which ultimately results in improved maximum opening distance and reduced joint pain."

Dr. Chang has also explored pharmacological treatment for TMD. Writing in the December 2005 issue of *Dentistry Today*, she discusses botulism toxin (BTX) use for this purpose. A blocker of neuromuscular transmission, BTX received FDA approval in the 1980s for use in cases of focal dystonias. Subsequently, BTX has found medical application in many areas, including subcategories of TMD, like bruxism, clenching, masseteric hypertrophy, recurrent dislocation, oromandibular dystonia, and myofacial pain. Dr. Chang summarizes studies that show a growing body of evidence for success in treating these TMJ problems with BTX, although she adds that there have been some reports of difficulty in swallowing, which could lead to more serious problems. In closing, she points out that the effects of the treatment are reversible and its administration is minimally invasive.

Whether through elucidating the causes of TMD at the cellular level, or determining the best course of treatment to give them relief, Dr. Chang's focus is on helping her patients. Her attitude is made clear in the *New York Times* article, which quotes her as saying, "...if someone comes to you with pain, they have pain. I don't give patients the runaround and say it is imaginary."

Dr. Chang in her office in the Division of Oral and Maxillofacial Surgery at CDM.

Seeking Scientific Evidence of

Associate Professor of Clinical Dentistry Regina Landesberg, DMD, PhD, is an oral and maxillofacial surgery research scientist at CDM.

IN 2003, A LETTER TO *THE JOURNAL OF ORAL AND MAXILLOFACIAL SURGERY* DESCRIBED A STILL UNCOMMON CONDITION, OSTEONECROSIS OF THE JAW (ONJ), AS "A GROWING EPIDEMIC." THE CONCLUSION WAS BASED ON THE CASES OF SEVERAL DOZEN CANCER PATIENTS WHO HAD BEEN RECEIVING INTRAVENOUS BISPHOSPHONATE THERAPY AND PRESENTED WITH "PAINFUL BONE EXPOSURE [IN THE JAW] ... [THAT WAS] UNRESPONSIVE TO SURGICAL OR MEDICAL TREATMENTS."

Bisphophonates have been used for almost 20 years in preventing and treating postmenopausal and steroid-induced osteoporosis, Paget's disease of bone, hypercalcemia of malignancy, and multiple myeloma, and in preventing bone metastases associated with breast, prostate, lung, and other soft tissue tumors. Bisphosphonates strengthen bone and prevent fractures by inhibiting bone loss (resorption) in skeletal long bones, but may act somewhat differently on the jaw bones, interfering with the osteoblast/osteoclast balance important to bone remodeling. Recent research has related the biochemical interaction that makes BPs very effective inhibitors of bone resorption to the chemical structure and molecular action of inorganic phosphate, which regulates bone metabolism by initiating osteoclast destruction. BPs are currently approved for the treatment and prevention of skeletal-related events in breast cancer patients with bone metastases, as well as in cases of prostate, lung, and other soft-tissue cancers. Breast cancer accounts for approximately 30 percent of all new cancer cases in women, half of whom develop bone metastases, with 40 to 70 percent experiencing bone pain, pathological fracture, or spinal cord compression.

Investigators at the College of Dental Medicine (CDM) have been awarded one of the first NIH-supported grants to study the incidence and risk factors for developing osteonecrosis of the jaw in cancer patients undergoing bisphosphonate therapy to prevent bone metastases. Associate Professor of Clinical Dentistry in the Division of Oral and Maxillofacial Surgery Regina Landesberg, DMD, PhD, and Professor and Director of the Division of Oral Biology and the Center for Clinical Research in Dentistry John T. Grbic, DMD, MS, MMSc, are co-investigators for the two-year study grant.

Our knowledge of ONJ comes primarily from case reports that are limited by the lack of a consistent definition for ONJ. ONJ is characterized by an exposure of the jaw bone that fails to heal and is often found at the site of a previous invasive surgical procedure, such as an extraction. Other symptoms include: painful, swollen, or infected gums; mouth sores that heal poorly; loose teeth; numbness and tingling in the lips or jaw, or a "heavy" feeling jaw. Such a lesion may, however, be painless and not apparent to the patient. Because these case reports lacked the scientifically based examination necessary to draw accurate conclusions on the concomitant risk factors, predictive markers, etiology, and pathognesis on ONJ, Drs. Landesberg and Grbic, working with colleagues from the College of Physicians & Surgeons as well as the Mailman School of Public Health, have designed a clinical study to investigate these and other variables that could contribute to the condition.

BP/ONJ

Potential risk factors for the development of ONJ are therapy with corticosteroids, a history of periodontal disease, and poor oral hygiene. Currently, the best approach to the management of ONJ is to prevent it from occurring. Excellent oral health care and preventive maintenance, with continual monitoring of active carious lesions and/or periodontal disease, are essential when there is an increased risk for development of ONJ. Unfortunately, if a patient develops ONJ, there are presently no adequate treatment therapies for the condition.

Using data compiled in an incidence density, case-control study and a prospective cohort-design longitudinal study, researchers at the Columbia University Medical Center (CUMC) will test the hypothesis that an intravenous BP (zolendronate) used in cancer chemotherapy is associated with ONJ. Analysis of results from these studies will allow the researchers to begin defining the natural history, risk factors, and predictive biomarkers for ONJ. In addition to determining the rate of new ONJ cases in the study population, CUMC's researchers will address the supposition that BP use imparts risk for ONJ, independent of that associated with poor oral hygiene, extraction of teeth, oral surgical manipulation, or abnormal prechemotherapy bone scans. They will also consider whether individual variables increase risk of ONJ, if factors of treatment and care modify risk for ONJ development, and if biomarkers and findings in prevalent ONJ cases differ from those in persons who develop ONJ. They expect to find that biomarkers of skeletal turnover will provide early identification of patients at risk for the development of this condition.

Columbia's BP/ONJ multidisciplinary research team is made up of specialists representing the departments of oncology, endocrinology, radiology, nuclear medicine, oral and maxillofacial surgery, periodontics, and oral biology.

Dr. Landesberg confers with her co-investigator on the BP/ONJ study, John T. Grbic, DMD, MS, MMSc. who directs the Division of Oral Biology and the Center for Clinical Research in Dentistry at CDM.

Alumni and School News

Jeanette Grauer '88
Amazonian Dentist

Redheaded and statuesque, Jeanette Grauer '88 is known as "the tall fire lady" among the people to whom she brings dental care in Peruvian towns and tribal villages along the Amazon River. Dr. Grauer formed her nonprofit Amazon Dental Project in 2004 after several years as a medical volunteer in Peru. Now, she and a core of four dental students from the Universidad Nacional De La Amazonia treat approximately 1200 children for two weeks each summer in remote regions along the Amazon. The areas Dr. Grauer's team visits are difficult to access. They must travel for hours above the jungle by plane, then for many more in a river boat, followed by a long hike inland. But, as she says, "They can't come to me, so I go to them."

A native of Uruguay, Dr. Grauer began her dental training in South America before earning her DDS at Columbia. She is fluent in both Spanish and Portuguese, helping to increase rapport with her Peruvian patients. "It is a very spiritual experience, and I am committed to an ongoing relationship with the community," says Dr. Grauer. "[Although it] is my vision, ... I am just a conduit. The people in Peru are the real heroes!" Dr. Grauer says she never expects anything in return for her services and never imposes her own ideas on the groups she treats, simply asking what they need. She believes her Amazon Dental Project can support these rural Peruvians during a period in which they will learn to take care of their health themselves, and is instructing the villagers – teachers, nurses, and other willing adults – in basic dental skills. One local nurse learned so quickly that, in just a few days, he was able to refit his mother's dentures. "That's what they want," she says, "and we want to engender sustainable healthcare through resources that are culturally and environmentally respectful, in partnership with the native Amazon people."

When she is not moving along the Amazon or bushwhacking through the jungle, Dr. Grauer uses her evidently unbounded energy to raise the financial support needed for her project, while also tending to her practice in Union, New Jersey. Her office there provides patients with a wide range of services, including orthodontic, endodontic, and cosmetic dental treatment. Recipient of the Consumer's Research Council of America Top Dentist for Cosmetic & Family Dentistry award in 2003 and 2004, Dr. Grauer is also advocacy chair for the Rachel Coalition, a New Jersey group dedicated to preventing domestic violence, and directs Women's Smiles, Women's Power, a program of free dental treatment for women victims of violence who wish to reenter the work force.

Although a lifelong competitor in track and field, volley ball, and soccer, Dr. Grauer has never been drawn to water or water sports – an oddity she ponders during her long trips on the world's second largest river.

A young Peruvian patient gives Dr. Grauer a loving greeting.

Ronald Odrich '59, Perio '63

Life Without Missing a Beat

Google the name of Ronald Odrich and, unless you know him well, you may find the results confusing. You will find so many references to that name that it may be hard to decide which one is your target. If you are looking for a New York periodontist, with a Park Avenue office and patents for dental inventions, you will find them all under Odrich. If you want a jazz clarinetist, who jams, concertizes and has recorded with New York's most celebrated musicians (including his late friend and patient, Leonard Bernstein), you will find him under the same name, along with the Odrich in music publishing. Or, you might want Odrich, the author, cited for his recently published mystery, *Perfect Pitch*, as well as for a number of scientific articles.

So, who is the real Ronald Odrich? It is no surprise to most who know him that the same Dr. Odrich embodies all these roles. And, his celebrity is not confined to the United States; the Italian dental organization equivalent to the ADA, named him their 2006 "dentist of the year" at a ceremony in Naples, followed by a jazz concert starring Dr. Odrich on clarinet. The honor recognizes Dr. Odrich's many years of teaching and carrying out clinical research in Italy. Much of the credit goes to his Neapolitan grandfather, who gave him Italian lessons daily, with a report card on the results. Dr. Odrich recalls, "I couldn't go out to play ball, until I did my homework."

Family and Columbia have been central to Dr. Odrich's success as a polymath. Son of a cellist who doubled on reeds, played with Toscanini and Artie Shaw, and earned multiple college degrees; brother of a Columbia PhD in Education, pianist, and composer; father of two sons who are Columbia-educated ophthalmologists teaching at Columbia; and of a daughter who is a Columbia-educated nurse, he is married to a graduate of the former Columbia Dental Hygiene Program. His mother, though not a musician, still has at 102, says Dr. Odrich, "simply the best ear in the family."

Although his first instrument was cello, at thirteen, young Ron switched to clarinet after hearing "Rhapsody in Blue." He chose Queens College for his BA so he could keep playing jazz in New York, then segued to Columbia for his DDS and certificate in Periodontics. A part-time faculty member at CDM (SDOS) for 27 years, Dr. Odrich has fond memories of Columbia. He practices periodontics three days a week and music every day!

Ron Odrich seen in two of his many personas, on campus and on a record cover.

Barnett Gillman '24

Ortho, Law, and.... Boxing!

One hundred and four years ago, Barnett Gillman was born in Russia. At the age of eight, his parents, Max and Molly, brought him and his two brothers to Brooklyn, New York. Ten years later, Barney entered Columbia's dental school directly from high school, because professional schools did not yet require a college degree for admission.

He graduated in the class of 1924 and had his father's name, Max, added to his own on the diploma he received, as a symbol of the respect and admiration he had for his parents, and in gratitude for the opportunities they had made possible despite their own lack of education and money.

The practice he set up in Brooklyn became a success. But, when the Great Depression of 1929 set in, many of Dr. Gillman's patients were having trouble paying for their dental care, so he simply stopped charging them. Nevertheless, since marrying in 1927, his own financial responsibilities had begun to rise, so he decided to enter Brooklyn Law School as a road to a new career. He received his LLD in 1931 and soon applied his new legal knowledge to expanding the margins of his dental practice by patenting a number of dental techniques of his own invention, including an early form of bonding. After moving his office to New Hyde Park, Dr. Gillman decided to focus his practice on orthodontics, a specialty in which he also received numerous patents for appliances he designed. His inventive and practical mind created the Gillman Medical Surgical Plan, a precursor of the current HMO, to cover his New York patients. Even after becoming a full-time orthodontist, Barney Gillman was always available to advise or represent friends and patients who needed legal counsel.

Barney Gillman not only mixed his dental and legal careers with great success, but also managed to enjoy a third area of interest as an avid, competitive boxer. His participation in the sport led to a treasured friendship with Jack Dempsey, America's admired heavyweight champion. In addition, he served his community on its school board and by running after-school athletic programs for neighborhood children.

Retirement for Dr. Gillman, as he entered his 80s, gave him time to represent senior citizens in malpractice suits and to support their rights in many causes. He helped to win millions of dollars worth of settlements as an attorney and expert witness for the elderly.

Today his life is less active, but Barney Gillman remains keen about world affairs and loves a debate on politics with his grandchildren.

Barney Gillman, DDS, LLD, before retirement, and (below) on his 104th birthday, with his grandson, Evan Gillman.

Alumni Notes

IRVING KITTAY '41 was made an Honorary Fellow by the American Academy of Craniofacial Pain in July. Dr. Kittay was honored for "contributions to dental education as demonstrated by his lifetime achievements and his skill, knowledge and experience in the diagnosis and treatment of Craniofacial Pain and Temporomandibular Joint Disorders." Dr. Kittay is an adjunct assistant professor in the Division of Oral amd Maxillofacial Surgery at CDM, an assistant clinical professor in the Division of Oral Biology and Pathology at Stony Brook University, and a lecturer and assistant attending at Mt. Sinai Medical Center.

NORMAN MENKEN '43 is still practicing dentistry part time and teaching at the Rose Kennedy Center of Albert Einstein College of Medicine.

ALEXANDER B. SMITH '43, ORTHO '61 reports that he is now 88 years old.

HAROLD BAURMASH '48, ORTHO '53, a retired clinical professor who taught at CDM for 40 years, is still actively writing and publishing scientific papers, the majority of which have been published in the *Journal of Oral and Maxillofacial Surgery*.

JEANO M. DEMARTIN ORTHO '58 reports that he retired in 2003.

JOEL M. FRIEDMAN '68 is an elected member of the Board of the New York State Society of Oral & Maxillofacial Surgeons and an alternate delegate to AAOMS. In addition, he is a governor of NYSDA, representing the Bronx. He was inducted into the International Academy for Dental Facial Esthetics and the New York Academy of Dentistry.

PAULA K. FRIEDMAN '74, Associate Dean for Administration at the Boston University School of Medicine, was elected to serve as Guest Board Member on the Board of Trustees of the Massachusetts Dental Society.

ALBERT KURPIS '74 and his daughter, LAUREN KURPIS '89, visited relatives and friends in Europe this summer, spending one day in Gdansk, Poland,

with close family friend, Lech Walesa, the former Polish President and Nobel Peace Prize winner (above). Dr. Kurpis reports that, while just "hanging out" in President Walesa's backyard, they spent the time discussing politics and, what else? – "dentistry!"

TIMOTHY TURVEY '74 has been awarded honorary membership in the Hellenic Association of Oral and Maxillofacial Surgeons. The induction took place in Athens in November 2005 at the 19th Annual Conference of the Hellenic Association of Oral and Maxillofacial Surgery, where he presented several lectures. Dr. Turvey is professor and chairman of the Department of Oral and Maxillofacial Surgery at the University of North Carolina School of Dentistry.

ROBERT J. EISENBERG '76 was awarded Fellowship in the American College of Dentists in October 2005.

SYNGCUK KIM '76, ENDO '78 was presented with the Ralph F. Sommer Award by the American Association of Endodontists at the Annual Session held in Hawaii in March 2006. He was honored for his pioneering research on pulpal physiology and microcirculation and its profound effect on modern endodontics. Dr. Kim is chairman of the Department of Endodontics at the University of Pennsylvania School of Dental Medicine.

MICHAEL KURTZ '77 is coauthor of an updated chapter on Dental Injuries in a book entitled *Sports Medicine: A Comprehensive Approach.* In 2005, he was made a Fellow of the Academy for Sports Dentistry, which has so honored only 35 other fellows worldwide.

VINNIE MASCIA '80, ORTHO '81 is currently pursuing an MPH at the University of Virginia to gain a better understanding of national health policy issues. Dr. Mascia has also earned an MBA from Cambridge University, and formed a film production company in partnership with a Hollywood director.

DEBRA KOEHN, HYG '81 went on to complete dental school at the University of Pennsylvania, graduating in 1986. She has a private practice in upstate New York.

DANIEL WEINSTEIN '81 is married and lives in Great Neck, NY. He has a daughter, Emma, who is 13 and a son, Samuel, who is nine. He has a general practice in Long Island City, NY.

ERIN LACEY-SPECTOR, AEGD '04 and MICKEY SPECTOR, PERIO '04 are assistant professors at the University of Iowa College of Dentistry.

VINCENT B. ZICCARDI '89 has been selected for the seventh annual class of the ADEA Leadership Institute, a yearlong program to develop the nation's most promising dental and allied dental faculty as future leaders in dental and higher education. Dr. Ziccardi received his MD in 1993 from the University of Pittsburgh. He is an associate professor in the Division of Plastic Surgery at the New Jersey Medical School.

CHRISTOPHER BONACCI '92, MD '95 was inducted into the American College of Dentists at their Annual Meeting in Las Vegas. He is shown below with fellow inductee Dr. Sidney Eisig, Director of the Division of Oral and Maxillofacial Surgery.

ADAM FREEMAN '92 was honored in May with the Distinguished Service Award by the Connecticut State Dental Association House of Delegates for his help in disaster relief for Hurricane Katrina.

FARIBA KALANTARI '92 is in private practice in Hollywood, California, having relocated from Cliffside, New Jersey.

SHAILA GARASIA '95 and her husband are actively involved in the National Health Service Corps (NHSC). They serve as Community Ambassadors and are also on the NHSC team that interviews NHSC Scholars with the goal of recruiting dentists and physicians to work in underserved areas.

FARISA (SURATTANONT) MULVEY '01, PEDS '03 and THOMAS MULVEY '96, PEDS '98, are the proud parents of Sadtha Mulvey, a baby boy born on October 13. They also have a young daughter, Rosemary.

JONATHAN SHENKIN '96 was invited by the Institute of Medicine to participate in a study of school foods for the federal Centers for Disease Control and Prevention in Atlanta. In 2003, he served on the Commission to Study Public Health in Bangor, Maine, a group focused on the issue of obesity.

SANDRA POKHAI '97, PERIO '00 is moving with her physician husband to Chania on the Greek island of Crete. Dr. Pokhai will be practicing periodontics, and her husband will be associated with a hospital and primary care center in a village outside the city.

TASIOS VAKKAS '00 and SONIA VARLAMOS '00 were married recently. Tasios is an oral surgeon in New York City, and Sonia is practicing periodontics.

CATHERINE SANTIAGO '01 and JAHANGIR MOZAFFARI '01 were married in the summer of 2005, and have a son named Camron Jon.

BRYANT TO '03 writes that he has learned to appreciate the education he received at Columbia, discovering that it has made his practice of dentistry both easier and more enjoyable.

AMY BRYER '04 (standing far right in photo below, left) is a Navy Lieutenant on the USS Enterprise carrier, treating patients in restorative and preventive dentistry. Dr. Bryer was recently asked to be a Distinguished Visitor Tour Guide for the Secretary General of NATO. She has traveled to Malaysia, Hong Kong, Greece, South Korea, and Croatia.

MARTIN DAVIS, STUART EPSTEIN, LAWRENCE GOLUB, LAWRENCE GELB, ROBERT GOLDMAN, and LEONARD SKOPE, met this past summer for their annual Class of '74 tennis tournament reunion at Dr. Epstein's home in Connecticut.

BENJAMIN F. LEVENE '41
KENNETH F. LEVENE '72, ORTHO '76
A FAMILY PRACTICE CENTENNIAL

Dr. Benjamin F. Levene '41 recently rounded out 100 years of continuous service to dental patients by his family. In June of 1905, Dr. Levene's father was granted a license to practice dentistry in New York. Thirty-six years later, there were two Dr. Levenes treating patients in the same Manhattan dental office overlooking Central Park at 57th and Fifth. The third provider in this family of dentists, Dr. Kenneth Levene, received a DDS at Columbia in 1972, and finished his postdoctoral orthodontics training at CDM (SDOS) in 1976.

Still working two days a week, Dr. Benjamin Levene, is also still treating patients who began their dental care with his father. One family has been coming to

the Levene office for five generations. Dr. Kenneth Levene, although limiting his own practice to orthodontics rather than offering the variety of services that both his father and grandfather made available, has been granted the privilege of carrying on the family record for service longevity.

Obituaries

CHESTER KUPPERMAN '40

ALVIN MOONEY '42

SAMUEL PLOTNICK '43

WILLIAM LEONARD '44

WILLIAM QUAST JR. '44

DANIEL BLATMAN '45

JULIUS LIEBERMAN '45

MELVIN L. MOSS '46

ROBERT WALSH '47

PAUL ARSLAN '48. Dr. Ivin B. Prince shares the news that "our classmate and dear friend, Dr. Paul Arslan, passed away on July 12, 2006. We are all saddened, and feel warm sympathy for Nancy and family."

CHARLES JURKA '48

MORTON S. LOEB '48

LIONEL E. REBHUN '48

LYNDON M. "BINDY" VIRKLER, ORTHO '48

CHARLES LEVIN '50

JAMES T. O'CONNOR '51

JULIUS TARSHIS, ORTHO '52 was a clinical professor in the Division of Orthodontics. A dedicated teacher and clinician, Dr. Tarshis served on faculty for over 50 years. He was actively involved in the Orthodontic Alumni Society and was a member of many professional organizations.

LAWRENCE ROSEN '54

VINCENT E. LYNCH '56, ORTHO '69 held assistant professorships at Columbia and Stony Brook Universities. For more than 20 years, Dr. Lynch had a private orthodontics practice in Patchogue, Long Island. He served as president for both Brookhaven Memorial Hospital Dental Surgery and the Long Island Academy of Odontology. Dr. Lynch was committed to preserving and fostering appreciation of Long Island's natural environment and local history. He was president of the Friends of Fire Island National Seashore and past commodore of the Domino Yacht Club.

LEONARD A. SHERR '50

HENRY SELIGMAN '60

ARA PEZESHKIAN, ORTHO '61

DON PEYTON WHITED, ORTHO '64

IRVING FRIED, ENDO '70. Dr. Fried was a part-time faculty member for many years in the Division of Endodontics; later he held a full-time position at NYU. Dr. Fried cared greatly about his students and will be missed by all who knew him.

BARBARA ANDOH '01 was an assistant professor in the Division of Pediatric Dentistry at CDM and was appointed to the full-time faculty in 2003. Dr. Andoh was a staff dentist at the Ossining Open Door Family Medical/Dental Center. The first enrollee in the CDM Minority Dental Faculty Development Program, Dr. Andoh was pursuing an EdD in Health Education at Teacher's College.

COMMEMORATIVE PROGRAM FOR

Dr. Melvin Moss

On October 16, more than 200 friends and colleagues of Dr. Melvin Moss, Professor Emeritus of Anatomy and Oral Biology in the College of Physicians & Surgeons, Professor Emeritus of Dentistry, and former Dean of the College of Dental Medicine, gathered at Columbia University Medical Center's Alumni Auditorium for a celebration of his life and achievements.

Those attending listened as a number of Dr. Moss's fellow academics, who had worked with him over his long and productive research, teaching, and administrative career, shared their memories of an extraordinary man. CDM's Dean, Ira B. Lamster and Assistant Dean for Extramural Hospital Programs Louis Mandel opened the program. Other speakers included Professor Gautam Dasgupta and Professor and Vice Dean Morton B. Friedman, both from the Columbia University Fu Foundation School of Engineering and Applied Science, and Associate Professor Ernest W. April from the Department of Anatomy and Cell Biology at Columbia. Professor of Anthropology at Pennsylvania State University Joan T. Richtsmeier, and Distinguished Professor Stephen C. Cowin from the Departments of Biomedical and Mechanical Engineering at City College also spoke of their friendship with Dr. Moss. The program concluded with a video tribute to Dr. Moss, presented by Senior Associate Dean for Academic Affairs and Edwin S. Robinson Professor of Dentistry (in Anatomy and Cell Biology) Letty Moss-Salentijn, Dr. Moss's widow. A reception followed at the CUMC Faculty Club.

Melvin L. Moss '46, PhD Anat '54

Melvin L. Moss '46, PhD Anat '54

"THE DENTAL PROFESSION HAS TRULY LOST ONE OF [ITS] GREATEST TEACHERS. MY FONDEST MEMORY IS HOW DR. MOSS COULD UNFLINCHINGLY EAT A HAM AND CHEESE SANDWICH WITH HIS RIGHT HAND, WHILE HE UNERRINGLY DISSECTED A CADAVER WITH HIS LEFT. WHAT A MAN!"

LEWIS GROSS '79

Melvin Lionel Moss DDS, PhD, was born in Manhattan in 1923. He had earned an AB from New York University by the time he was 19, and four years later, in 1946, received his DDS from Columbia's dental school. After serving in the Army Dental Corps during World War II, he entered private practice for a short period before returning to Columbia as a PhD candidate in anatomy, with an emphasis on physical anthropology. He joined the Columbia faculty in 1952, was made assistant professor in anatomy in 1955, and in 1967 became a professor of oral biology. He remained at Columbia throughout his career, earning the admiration of many generations of medical and dental students for his outstanding courses in human anatomy.

"THE NEWS OF DR. MELVIN MOSS'S DEATH IS A GREAT LOSS TO THE SCHOOL AND TO ME PERSONALLY, AS HE HELPED SHAPE MY CAREER AT SDOS DURING MY STUDENT DAYS..." ROBERT RENNER '68, PROSTH '71

A prolific scientist and author, with more than 50 years of publications, Dr. Moss contributed to the study of dentistry and anatomy, and to physical anthropology and zoology as well. His wide interdisciplinary knowledge and keen perception of significant areas of biologic interaction led to other discoveries in morphometrics, comparative calcification, marine biology, comparative histology of calcified tissues, and evolution.

Dr. Moss's seminal work was the development of his "Functional Matrix" theory, which explained how the jaw, cheekbones, and other facial bones grow and coalesce. He tested and verified the hypothesis in his own lab, as did many other scientists throughout the world.

"Mel's important early insight was that bones *per se* have no biological reality," said Dr. Letty Moss-Salentijn, writing on her husband's life in research for the *Journal of Dental Research* in 1997. Describing Dr. Moss's development of the functional matrix hypothesis, she says "[It became] readily apparent to Mel that growth of the neurocranium was a response to the

DEAN OF DENTAL SCHOOL 1968-1973

primary growth of the neural mass and that the sutures were sites of secondary, compensatory skeletal responses to that growth." Introduced in 1962, this theory became known internationally as the major source for a shift of research emphasis that gave new life to studies of craniofacial growth and development. It stands as a milestone in orthodontic research.

The complex biologic concept also developed profound clinical importance, earning its own entry in *Dorland's Medical Dictionary*. Dr. Moss's ground-breaking work resulted in the orthodontic application of orthopedic forces, and led to changes in the surgical treatment of craniofacial anomalies, including a new procedure for treating children with premature cranial synostosis. The procedure of the recent separation of the cranially-conjoined twins from the Philippines by Dr. James Goodrich (a former student of Dr. Moss) also was much influenced by Dr. Moss' work.

In the mid-1960s, following a change in policy causing the removal of basic science training from its curriculum, the dental school suffered the loss of full accreditation. Dr. Moss was asked to accept a joint appointment at the School, as well as in the Department of Anatomy, to oversee an expanded program in Oral Biology. His leadership in this area led to his appointment as Dean of the School in 1968, and the new direction resulted in increased resources and faculty growth. Dr. Moss encouraged research and added numerous new courses during his five years as Dean, a period widely considered to have shaped the success of the school that exists today.

"DR. MOSS WAS ONE OF THE MOST INFLUENTIAL PROFESSORS IN MY LIFE. I HAD THE GOOD FORTUNE OF LEARNING GROSS ANATOMY... FROM HIM AND HE WILL ALWAYS BE IN MY HEART AND MIND. HIS WORK ETHIC AND PASSION FOR THE PROFESSION IS SURPASSED BY NO ONE. ONE OF HIS GREATEST QUOTES [WHICH] I USE FOR MY OWN CHILDREN TODAY IS TO "STUDY WELL AND PLACE THINGS IN DEEP MEMORY." MAY GOD BLESS, AND MY DEEPEST SYMPATHY TO LETTY," CHARLES VALICENTI '84

Mel Moss was an extremely popular teacher. His lectures were always widely attended and are well remembered by his students and others. To hear Mel speak," wrote Dr. Moss-Salentijn, "was... an experience..[especially, when he would] use some of his "Mossisms: 'Bone is stupid, you can fool it,' and 'There are no genes for bones.' He used these simple statements, which contained basic elements of truth, she explained, "to stimulate discussion from the audience."

"I SPOKE TO THE INCOMING CLASS AT BOSTON UNIVERSITY IN AUGUST, AND TOLD THEM SOME OF THE THINGS THAT DR. MOSS TOLD OUR CLASS. HE WAS A WISE MAN, AND TAUGHT ME LIFE LESSONS AS THEY PERTAIN TO THE DENTAL PROFESSION. THE ANATOMY LESSONS WERE SECONDARY, IN THE GRAND SCHEME OF THINGS." ALAN S. GOLD '83, PRESIDENT, MASSACHUSETTS DENTAL SOCIETY

Speaking of the years following her husband's service as Dean, Dr. Moss-Salentijn writes that his work "gradually became focused on ... the kinematics of cephalic growth. He ... had the good fortune to meet Richard Skalak ... a Professor of Civil Engineering, ... interest[ed] in bioengineering. For nearly 10 years, the two worked together productively; they learned a common vocabulary, established a well-funded program project with a team of bright young people, and produced a series of landmark papers on the finite element analysis of cephalic growth."

Melvin Moss's research contributions were recognized by his peers in 1990, when the International Association for Dental Research presented him with its Craniofacial Biology Research Award.

In addition to Dr. Moss-Salentijn, his wife of 36 years, who is a professor of dentistry (in anatomy and cell biology) and a senior associate dean at Columbia, Dr. Moss is survived by two sons, Noel and James, and a granddaughter Kristina.

Student News

EUGENE KO '10 was a 2006 summer intern at the National Institute of Dental and Craniofacial Research, where he conducted research on the interactions between *streptococcus gordonii* and *actinomyces naeslundii*. He described the experience as "perfect for those who ... need ... genuine research experience [as a] catalyst or inhibitor for ... pursuing that avenue." It worked for Ko, who is now planning a career in dental research.

SOULTANA CHATZOPOULOS '07 and PETER TRINH '07 have an article in the Fall 2006 issue of *MOUTH*, the American Student Dental Association's national journal. Authors Chatzopoulos and Trinh write about persuading dental patients to stop their use of tobacco and how to support them in that decision, under the title "Helping Patients Kick the Habit."

More than 200 faculty and students gathered to watch the seniors defeat the juniors at the College's annual Fall BBQ's interclass softball contest. It was the most heavily attended picnic in more than a decade. Seen below are Associate Dean MARTIN DAVIS (far left) and Assistant Dean JOSEPH MCMANUS (far right), who shared pitching and umpire duties for the game, with Assistant Professor RICHARD LEHRER '73 (middle, back row) and team members for this portrait. Each class will have a "game ball" displayed in CDM's trophy case. The Association of Dental Alumni graciously donated baseball caps in different colors to help identify players for each team.

Dean Ira Lamster and Associate Dean Martin Davis presented KEITH DA SILVA '09 with the Pierre Fouchard Award (below, center) for excellence in scholarship and leadership. Keith, who was also honored with the Van Woert Award after maintaining the number one slot in his class for three years, will go on to postdoctoral training in pediatrics.

WAYNE STEPHENS '09 recently spent six weeks in Washington, DC, on a National Health Policy Externship, working in the offices of the American Dental Association. Wayne was chosen for the award after competing in a field of applicants from all over the nation. Assigned to some issues in Regulatory Policy and Congressional Affairs, he was also involved with drafting a position paper on the need to retain critical services, including dental care, in upcoming revisions for Medicaid. Wayne spent time on Capitol Hill in meetings and lobbying efforts connected with the ADA, where he met with elected officials, including Massachusetts Senator Edward Kennedy, shown here (below, right) with Wayne. After receiving his DDS from CDM, Wayne intends to earn his MBA, with a focus on healthcare management, in a dual degree program with Columbia's Graduate School of Business.

CDM ASDA RECEIVES AWARD FOR CREST HEALTHY SMILES PROGRAM

A panel of clinical and public health faculty from dental schools across the nation honored Columbia University's American Student Dental Association

(ASDA) chapter for its involvement with the Crest Healthy Smiles Program. The award was one of six given to participating schools for outstanding implementation of the Crest children's oral health education program in a community setting. Columbia's first and second delegates to the 2006 ASDA annual session in Baltimore, WAYNE STEPHENS '09 and NEERU SINGH '08 (below, left), accepted a $600 contribution from Crest, as well as a commemorative plaque. CDM's ASDA chapter looks forward to repeating the program next year on an even larger scale.

CDM'S SNDA CHAPTER WINS NATIONAL AWARD

MARVIN BAPTISTE '08 is the CDM chapter president of the Student National Dental Association (SNDA), the student organization that focuses on community service. During the '05-'06 academic year, SNDA participated in sixteen different community service events, reaching over 3,000 children, high school, and college students. During SNDA's annual meeting in July in Nashville, Tennessee, the CDM chapter, under Marvin's leadership, was selected to receive the "Most Improved Chapter" award. Marvin was also chosen as President-Elect of the national SNDA organization at the meeting and is the first CDM student in over a decade elected to a national student organization presidential office.

MARVIN BAPTISTE '08 and RICHARD ANSONG '08 both served this summer as Resident/Teaching Assistants for the Summer Medical/Dental Education Program (SMDEP), a six-week summer enrichment program for underrepresented college students, funded by The Robert Wood Johnson Foundation at 12 medical centers around the nation. The program, operated by the Office of Diversity and Multicultural Affairs, is offered at both P&S and CDM. Dr. Dennis A. Mitchell, CDM's Associate Dean for Diversity and Multicultural Affairs, directs SMDEP at the College, which has been one of the two leading national sites for this important and effective program.

Members of the 2006 SMDEP summer program at CDM.

THE LANG YOUTH MEDICAL PROGRAM is a New York-Presbyterian Hospital science enrichment and mentoring program for Washington Heights youth from ethnic backgrounds underrepresented in the health professions. Seventh-grade through ninth-grade students undergo a rigorous process to gain acceptance to the program. Program advisors are students from Columbia's dental and medical schools, who plan, supervise, and facilitate scientific investigations and discussions, as well as hospital

below, volunteers for CDM's SNDA Crest Healthy Smiles Program.

tours and field trips. The objective is to educate the students about the human body and to help them understand the causes and treatments of illness. HANNAH AHN '08, a volunteer for the Lang Program, says, "The opportunity to work with children in the process of educating them appealed to me ... it's my goal to motivate them ... to help them develop social, personal and academic skills, and – perhaps – serve as a role model for pursuing careers in the health profession."

EXTERNSHIPS IN ANKARA FOR FOUR CDM STUDENTS

Izmir-born YASEMIN KILICAK '09, who, following a few years in Saudi Arabia, has lived in the United States since the age of nine, decided she had to go back to Turkey last summer – to see how dental students were educated there. It was only natural: her grandmother, now retired, was one of the first women dentists in Turkey. At Yasemin's request, the Dean and faculty of the University of Ankara's dental school invited her and three other CDM students, TANYA OKS '10, JENNIFER CASTRO '10, and PETER FRANDSEN '10, to spend a one-week externship on their campus. The group found their time in Ankara enlightening and interesting. They observed procedures in every specialty and made friends with Turkish dental students, who were both knowledgeable and helpful. All four called the week "an amazing experience!" Traveling through the country after completing their externship week was made easy because Yasemin speaks Turkish, although (so her cousins say) with an accent!

KARAM ASHOO '03 FREEZING, BUT FUN

KARAM ASHOO, president of the Class of 2003 and currently a first-year CDM postdoctoral endodontics student, recently returned from treating dental patients in Iqaluit, Canada, not far from the Arctic circle. A fellow Canadian, who had built a clinic in this fast growing town, capital of the new Nunavut territory on Frobisher Bay, offered him a chance to spend two months treating dental patients in Iqaluit, where temperatures can linger around minus 40 degrees fahrenheit. Karam's love of adventure led him to sign on for April and May of 2006.

Dr. Ashoo's patients sometimes traveled great distances and many days from outlying areas of Nunavut across frozen waters by komatik, a big "sort of wooden Santa Claus sled," pulled by snowmobile. Like his patients, Karam learned to wear layers of protection against wind and snow: "two pairs of socks, two pairs of pants, four layers on my torso, two layered gloves, Russian-style hat (with ear flaps), scarf, ski goggles, and snow boots," which, he adds, "saw more use in two Iqaluit weeks, than for two winters in Boston." When the Tundra spring arrived, raising the temperature slightly

below, left: Tanya Oks, Yasemin Kilicak, Jennifer Castro, and Peter Frandsen, all class of '09, sightseeing in Ephesus, Turkey, following their externship week in Ankara.

below, right: Karam Ashoo '03, ready for the weather in Iqaluit, near the Arctic Circle.

closer to freezing, Karam found the effect on Iqaluit inhabitants amusing. "Children wore t-shirts and shorts, and people took walks outside ... and some didn't show up for dental appointments ... they were out hunting .... for caribou and polar bears."

He sums up his time in Iqaluit, saying, "I will miss the Arctic... the silent snow-blanketed town and crunching snow beneath my boots, even in May. I will miss treating the community, from the tattoo artist to members of parliament, judges, biologists, geologists, hunters, carvers, and air traffic controllers ... and I will always remember the closeness of this small, arctic town, and the warmth of its people."

School Events

WHITE COAT CEREMONY FOR CDM CLASS OF 2010

At a white coat ceremony held during orientation week in August, College of Dental Medicine Faculty joined in robing members of the Class of 2010 (left, top). The annual rite welcomes future doctors into the profession, offering them an opportunity to pledge their commitment to the compassionate practice of dentistry and medicine. Dr. Leslie Seldin '66 was keynote speaker for the occasion, when the Class also heard from a representative of the New York State Dental Association and received gifts from the CDM Association of Dental Alumni.

DR. GOTTSEGEN HONORED AS RECIPIENT OF CDM'S FIRST LIFETIME AWARD

DR. ROBERT GOTTSEGEN '43, PERIO '48 received the College of Dental Medicine's first Lifetime Achievement Award at the Periodontal Alumni Homecoming Day Luncheon in June 2006. He is seen (left, center) with Dean Lamster and Panos N. Papapanou, chairman, Section of Oral and Diagnostic Sciences, at the ceremony, where generations of alumni, as well as friends, family, and colleagues, gathered to honor Dr. Gottsegen for his many years of loyal service to the College, and for his significant contributions to the profession of dentistry.

DR. THOMAS J. CANGIALOSI, Chairman, Section of Growth and Development and Director, Division of Orthodontics at the Columbia University College of Dental Medicine, received the Distinguished Service Award of the Eastern Component of the Edward H. Angle Society at its 2006 meeting in Washington, DC (left, bottom). Dr. Cangialosi was recognized for extraordinary service to orthodontics: as an educator and administrator at Columbia University; as Director and President of the American Board of Orthodontics; as Chairman of the American Association of Orthodontists Council on Orthodontic Education; for his service in organized orthodontics at the local and national levels; and as a hardworking member of the Angle Society. The Award was presented by Dr. David Musich, Director and National Vice-President of the Angle Society.

On Oct. 17, 2006, SIDNEY B. EISIG, George Guttmann Professor of Craniofacial Surgery, Chairman, Section of Hospital Dentistry, Director, Division of Oral & Maxillofacial Surgery and Chief of Dental Service, NewYork-Presbyterian Hospital, and STEVEN CHUSSID, Director, Division of Pediatric Dentistry, were inducted into the American College of Dentists (ACD) at the organization's annual meeting in Las Vegas. Dr. Louis Mandel nominated Dr. Eisig and Dr. Stanley P. Freeman nominated Dr. Chussid. The ACD was founded in 1920 and recognizes dentists who have made significant contributions to the advancement of dentistry.

The College of Dental Medicine recently signed an agreement with Biolase Technology, Inc. to integrate waterlase dentistry into its course curriculum. "Clinical dentistry is constantly improving, due in large part to advances in technology, noted Dean Ira Lamster. "We recognize that it is essential for students in training to be familiar with the latest clinical advances. The use of lasers and laser technology is one such advance, and we greatly appreciate that Biolase is working with the College to introduce their devices into the dental school curriculum." DR. SHANTANU LAL, Director of the Predoctoral Pediatric Dentistry Program, who is in charge of the waterlase program, is described by Dean Lamster as bringing "both passion and experience to this role."

Assistant Clinical Professor and Faculty Advisor Albert J. Thompson '60 chats with students at one of the two Professional Society Receptions held in October to welcome new students and faculty to the school. The Societies were formed by Dean Ira Lamster to promote and encourage informal interaction between students and faculty.

On September 19, 2006, a state-of-the-art dental suite was opened at the ISABELLA GERIATRIC CENTER. CDM faculty member Dr. Gregory Bunza and a group of AEGD fellows, who provide dental care to Isabella Center patients as part of Columbia University's ElderSmile program, will work in the new facility. ElderSmile, launched at CDM in 2004 "to address the oral health care needs of older adults," offers a program to train future dentists in geriatric dentistry, and combines outreach, education, prevention, and treatment for elderly patients at Isabella Center and several other sites in Northern Manhattan. Dean Lamster thanked Henry Schein Inc. President and CEO Stanley Bergman for the company's ongoing role as a major supporter of the College's "access to care" programs. Their contribution of $50,000 worth of state-of-the-art components – dental chair, hand-held equipment, a panoramic x-ray system, fixtures, and cabinetry – were essential in helping to create the Isabella dental suite. Schein Vice President Steve Kess, a member of CDM's Advisory Council, said that his company is proud of its long-lasting relationship with the dental school and is "happy to help Isabella" meet the growing needs of the surrounding community. Joining the ribbon-cutting ceremony (above) for the new facility were: (left to right) Adriano Espaillat, Assembly Member, 72nd Assembly District; Mr. Kess; Mr. Bergman, Ira Lamster, DDS, MMSc, Dean, Columbia University College of Dental Medicine, and Mark J. Kator, President and CEO of Isabella Geriatric Center.

Faculty News

DEAN IRA B. LAMSTER was a guest speaker at two professional meetings in the fall of 2006. He presented a paper on "Analysis of Gingival Crevicular Fluid as Applied to the Diagnosis of Oral and Systemic Diseases" to a New York Academy of Science meeting held in October at Lake Lanier Islands, Georgia. Dean Lamster also spoke at the November PerioAid '06 Symposium, "The Relationship of Periodontitis and Systemic Diseases," sponsored by DentAid, an oral health company in Spain. The meeting was held at the World Trade Center in Barcelona and hosted by Professor of Periodontology and Director of Periodontics at the University of Barcelona CARLOS MENDIETA '89, PERIO '85. Dean Lamster's subject was, "The Bidirectional Relationship of Diabetes Mellitus and Periodontitis: Pathogenesis and Therapeutic Considerations."

Dean Lamster was recently appointed to the Board of Directors of The New York State Dental Foundation. The Foundation supports numerous public projects in oral health throughout the state, including the Percy T. Phillips Visiting Professorship at Columbia, which is now in its 26th year. Dean Lamster is also guest editor of a supplement to the November 2006 edition of the *Journal of the American Dental Association*. He is also the author of an article in the supplement, "Antimicrobial Mouthrinses," an important topic for both children and adults.

Associate Dean for Extramural Programs STEPHEN E. MARSHALL has been granted an award of $210,000 by the Fan Fox and Leslie R. Samuels Foundation to begin implementation of CDM's ElderSmile clinical network.

BURTON EDELSTEIN, DDS, MPH, Chairman of the Section of Social and Behaviorial Sciences, has been appointed to a Committee of the Institute of Medicine/National Research Council that will address issues in adolescent health care services. Dr Edelstein is the only dentist on the panel, which includes professionals from adolescent medicine, an ethicist, a social-psychologist, a pregnancy expert, a child welfare expert, an epidemiologist, an economist, a program health finance evaluator, and a quality systems engineer. Adolescent health care is a critically underserved area, in which oral health is a substantial issue.

left to right: Scott Stringer, Mrs. Formicola, Dr. Antonia Novello, Dr. Formicola, and President Bollinger.

DR. ALLAN FORMICOLA IS FIRST 'COMMUNITY HERO'

Community Voices: Healthcare for the Underserved, a national W.K. Kellogg Foundation initiative, named Dr. Allan Formicola as its first 'Community Hero,' during a celebration held at Columbia University's Italian Academy last spring. It was also an occasion to mark the fifth anniversary of Columbia's Center for Community Health Partnerships (CCHP), as well as honoring Dr. Formicola, the Center's Vice Dean and also former dean of CDM (SDOS). The Center serves as a catalyst for creating academic-community partnerships that help to improve the health of the community. A number of distinguished guests, including political representatives, northern Manhattan community leaders, and Columbia staff and professors were in attendance. During the ceremony, Columbia University President Lee Bollinger, the Honorable Commissioner of Health for New York Dr. Antonia Novello, and Manhattan Borough President Scott Stringer all spoke of Dr. Formicola's vision, leadership, and commitment with high praise.

JOHN M. SCAROLA '60, Clinical Professor of Dentistry in the Division of Prosthodontics, was inducted as President-Elect of the American College of Dentistry at the annual meeting in October.

Associate Professor of Clinical Dentistry and Director of the third-year predoctoral clinical program LAUREEN A. ZUBIAURRE, DMD is a current Fellow at the

Leadership Institute of the American Dental Education Association. Dr. Zubiaurre will join other outstanding academics (see p.23, Vincent B. Ziccardi '89) selected to participate in one of the nation's top leadership development programs for health professions education. Working individually and in teams during their fellowship year, participants network at their home institutions and with each other to gather information on educational organization and management, and also to develop personal and professional growth. This year's select group of 17 Fellows is the seventh annual class of the Institute.

The American Academy of Pediatrics and the American Academy of Pediatric Dentistry recently introduced the Oral Health Risk Assessment Preceptorship Program. It is intended to help those medical sites where some patients may not be able to afford a pediatric dentist when needed. The AAP/AAPD program has identified pediatric dentists who will provide training in oral health care to staff at such sites. DR. KAVITA KOHLI, Director of Advanced Education in Pediatric Dentistry for CDM and Children's Hospital of New York, is working with the program to make this service available at sites in Baton Rouge, Louisiana.

Events Calendar & CE Courses

Friday, January 26	Alumni Reception: Boston Yankee Dental Congress **5:30 to 7:30 p.m. Boston College Room, Boston Marriott Copley Place**
Thursday, February 1	Young Alumni and Student Reception. **6:00 to 9:00 p.m. Divine Bar, 236 West 54th Street, NYC**
Sunday, February 11	Alumni Luncheon Reception at Charley's Crab Palm Beach. **11:30 a.m. to 1:30 p.m. Palm Beach, Florida**
Friday, February 23	Sinus Elevation Surgery. Lecture & Hands-on. **6 Credits**
Thursday, March 1	13th Annual Dental Alumni Evening Seminar. **5:45 to 9:00 p.m., Rosie O'Grady's, 800 7th Ave, NYC**
Saturday, March 10	Patricia McLean Symposium in Dental Hygiene. **5 Credits**
Friday, March 16	Integrating the CEREC System Into Your Practice. **6 Credits**
Friday, March 23	Postdoctoral Endodontics Program 40th Anniversary Celebration. Including Irving Naidorf Lecture, luncheon and evening event. Columbia University Medical Center
Wednesday, April 1	Transition Your Practice: The Time to Plan is Now. **4 Credits**
Friday, April 20	Managing the Patient with Diabetes Mellitus in the Dental Office. **5 Credits**
Tuesday, April 24	Alumni Reception: Greater Long Island Meeting **5:30 to 7:30 p.m. Hilton Hotel, Melville, NY**
Thursday, April 26	Endodontics Alumni Reception at American Association of Endodontics Meeting **6:00 to 9:00 p.m., Philadelphia Marriott**
Wednesday, May 2	Integrating Modern Orthodontic and Endodontic Concepts into the Dental Practice. **4 Credits**
Friday, May 4	Class Reunion Day for 5-year reunion classes 1937 to 2002
Monday, May 7	6th Annual Henry Chang Jr. '74 Memorial Golf Outing **Rockland Country Club, Sparkill, NY**
Friday, May 11	Aging and Oral Health: Preparing for the Baby Boomers. **3 Credits**
Wednesday, May 16	Columbia University Commencement. **10 a.m. Columbia University Morningside Campus**
Thursday, May 17	College of Dental Medicine Graduation. **11 a.m. Columbia University Medical Center Garden**
Saturday, May 26	Pediatric Dentistry Alumni Reception, San Antonio, Texas
Wednesday, June 13	Oral Health and the Cancer Patient Including an Update on Bisphosphonates. **3 Credits**
Friday, June 15	Postdoctoral Graduation. **10:00 a.m. Columbia University Medical Center**
Saturday, October 20	Mark your fall calendars for the College of Dental Medicine 90th Anniversary Gala! This festive, black-tie affair at Low Library will feature fabulous entertainment, distinguished honorees, and an opportunity to support our *alma mater*.

For further information regarding these events and courses, please contact Melissa Welsh at 212-305-6881 or mmw7@columbia.edu.

CDM Development Report 2005-2006

Samuel Pritz, DDS
A Happy, Generous Life

Dr. Sam Pritz says he got into dentistry without any idea what it was all about.

That may be true, but thousands of people who have known him after a notably long and brilliantly successful career would find his claim hard to believe. Colleagues, students and patients characterize him as a consummate dental practitioner, a wise man who continues to share a substantial body of knowledge with upcoming generations in the profession.

After college he applied to Columbia's Dental School and, although he says his grades were not acceptable, he and the Admissions Dean established a rapport, and because of this he was accepted. Upon graduation, he became an instructor in the Prosthodontics Department. After two years of teaching, he resigned and went into practice.

His first office was at 57th and Fifth Avenue and the first four years he was supported by his father, who also paid the rent. Things changed in the fifth year because Dr. Robert F. Loeb, the Chief of Medicine, and Dr. Dunnington, the head of ophthalmology, took an interest in him and sent many patients his way. From that point on, things went very well. The practice ultimately became one of the most prestigious in the country.

About 15 years ago, Dr. Pritz came back to Columbia to teach in the operative department and he says these years have been happy ones. He is also a member of the CDM Admissions Committee. Dr. Pritz says the school is one of the best in the country and requires considerable funds to maintain this enviable position, which is the reason he and his wife have made a pledge of one million dollars to the College of Dental Medicine.

IRA DONORS OVER 70½ FIND PHILANTHROPY LESS TAXING

For philanthropists, age 70½ or older, making a gift from an individual retirement account (IRA) has recently become easier and more financially attractive. In past years, using IRAs – as resources for personal philanthropy – has been complicated and had minimal tax advantages. Now, a change in the charitable tax laws gives the donor a gift, if he or she will be 70 years or older by December 2007.

If you must take a minimum distribution from your IRA, you will pay income taxes on that withdrawal. If instead you make a gift directly from your IRA to a charity such as the Columbia University College of Dental Medicine of any amount up to $100,000 per person by December 31, 2007, the transfer will not be taxed as income. Additionally, you may count the gift amount toward fulfilling the IRA's required distribution in the year the gift is made. There will, of course, be no charitable deduction for the gift.

Called the Pension Protection Act of 2006, the new charitable tax regulations allow a gift if:

- You are age 70½ or older
- You make an outright charitable gift of up to $100,000
- You transfer funds from an IRA directly to a tax-exempt organization such as Columbia University College of Dental Medicine

Here is the scenario: Dr. Dan Tell, who celebrated his 70th birthday in April, has an IRA totaling $500,000. He and his wife have been annual supporters of Columbia's College of Dental Medicine, but had not felt financially ready to make a major contribution until the advantageous rewriting of the IRA tax law. Now he is able to fulfill the couple's desire to help CDM by instructing his plan administrator to make a transfer of $100,000 from his IRA, and he may do so without adverse tax complications.

The College of Dental Medicine invites friends and alumni to consider this very sensible method of making a gift during their lifetime, so that they may enjoy watching their generosity benefit CDM's students, faculty, and the communities they serve. Donors should consult their tax advisors about charitable distributions from an IRA and the advisability of making such contributions.

RAISING AWARENESS FOR DENTAL EDUCATION:
A National Effort to Support Partner Organization Fundraising

A 2005 study supported by the Josiah Macy Jr. Foundation says the dental profession will enter a crisis situation within the next ten years if current issues facing dental schools are not addressed. Dental Education: Our Legacy – Our Future is a national effort to raise awareness of these challenges, which include faculty shortages, lack of diversity, aging physical and clinical facilities, lagging federal and state government support, and escalating costs.

Our Legacy – Our Future, which is not a fundraising entity itself, plans to help its partner organizations collectively raise more than $500 million between July 1, 2004 and December 31, 2014.

There are three types of partners:

- RECIPIENTS: institutions that raise their own funds and maintain dental education programs accredited by the ADA Commission on Dental Accreditation. They include dental schools, graduate dental education programs, hospital-based dental residency programs, and allied dental health programs.
- FACILITATORS: organizations that solicit, hold and redistribute funds for dental education.
- DONORS: for-profit corporations and nonprofit or philanthropic organizations that financially support dental education.

Among 61 current partners, there are 44 dental schools and 17 dental and specialty organizations, including the ADA Foundation and the American Dental Education Association (ADEA). Dr. Leslie W. Seldin, '66, former ADA vice president, has been named as a Vice Chair for the campaign.

"Our Legacy – Our Future," is underwritten by the ADA Foundation with additional support from the American Dental Association, and will showcase all opportunities and fundraising campaigns by partner organizations, helping donors decide where to send their money and how to direct its use.

1852 Society

Columbia University College of Dental Medicine (CDM) traces its origins to 1852, the year in which the New York State legislature chartered the New York College of Dentistry, subsequently renamed the New York College of Dental and Oral Surgery. When the University accepted dentistry as an integral and important part of the health sciences and a true university discipline, Columbia created CDM by absorbing the College and, later, creating mergers with other dental institutions from the area.

The 1852 Society's name commemorates the earliest date connected with the history of the College and recognizes the College's most honored benefactors. It is composed of CDM alumni and friends who make gifts of $1,000 and more to CDM during the fiscal year, of the College's newest alumni, whose contributions for the year are from $250 to $499, and of those who have been graduates for between six and ten years, whose annual gifts are between $500 to $999.

LEADER'S CIRCLE
($25,000 AND ABOVE)

American Heart Association, Inc.
Colgate-Palmolive Company
Community Health Foundation
3i Implant Innovations, Inc.
The Robert Wood Johnson Foundation
Nobel Biocare USA, LLC
Procter & Gamble
Charles S. Solomon DDS'58
Straumann

FOUNDER'S COUNCIL
($10,000 - $24,999)

Mrs. Jack Klatell
Mr. and Mrs. David A. Klatell
Mrs. Joseph M. Leavitt
David M. Momtaheni DDS
New York State Dental Foundation
Ennio L. Uccellani DDS'48

DEAN'S CIRCLE
($5,000 - $9,999)

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The Ettinger Foundation, Inc.
Flagler System, Inc.
James Geduldig DDS'82
Robert Gottsegen DDS'43, PD'48
Letty Moss-Salentijn DDS, PhD
Orthodontic Alumni Society

AMBASSADORS
($2,500 - $4,999)

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Arrow Electronics, Inc.
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Mr. and Mrs. Robert Klatell
Albert J. Kurpis DDS'74
Fidelity Charitable Gift Fund
Henry I. Nahoum DDS'43, PD'52
New York Academy of Dentistry, Inc.
Murray Schwartz DDS'53
Nathaniel Wharton Fund for Research
Ralph N. Wharton MD

BENEFACTORS
($1,000 - $2,499)

David A. Albert DDS, MPH'87
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Arthur Ashman DDS'61
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Michael L. Barnett DDS'67
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Michael S. Bubon DDS, PD'88
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Vincent P. Capasso DDS'79
Amos C. Chang DDS'86
David C. Christian DDS'71
Francis H. Chung DDS'95
Gwen S. Cohen DDS'96
Samuel D. Cohen DDS'74
Richard S. Corbin DDS'89
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Colleen Cournot DDS'78
Anthony J. Curinga DDS'66
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Vicky Evangelidis-Sakellso DDS'87, PD'90
Ms. Cassandra Fields
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John M. Fox DDS'76
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Gilbert H. Sokal DDS
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John T. Grbic DDS, MMSc
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James E. McCormick DMD, MS
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Irving A. Karel DDS, PD'60
Ralph S. Kaslick DDS'59, PD'62
Mitchell Kellert DDS, PD'79
Robert M. Knepper DDS'74, PD'81
The Jacques & Margot W. Kohn Foundation
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Evanthia G. Lalla DDS, PD'97
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Eugene P. LaSota DDS'61
Gabriela N. Lee DDS'87
Dieter W. Leipert DDS'76
Marc S. Lemchen DDS, PD'74
Benjamin F. Levene, Jr. DDS'41
Renee F. Litvak DDS'02, PD'04
John J. Lucca DDS'47
Howard S. Markowitz DDS'79
Ernest J. McCallum DDS, PD'95
Christopher McCulloch DDS, PD'78
Guy Metcalf, Jr. DDS'75, PD'76
Marc W. Michalowicz DDS, MSc
Mrs. William J. Miller
Robert D. Miner DDS'67
Michelle S. Mirsky DDS'77
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Dennis N. Morea DDS'70
Michael R. Moynihan DDS'91, PD'94
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One Source Mortgage Corporation
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Leon Perahia DDS, PD'52
Michael A. Perrino DDS'76
Karl H. Perzin MD
Pfizer Foundation
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David P. Pitman DMD, PD'88
Ivin B. Prince DDS'48
Samuel P. Pritz DDS'33
Henry J. Rankow DDS'72, PD'75
Sarina A. Reddy DDS'93
Morton C. Rennert DDS'58, PD'67
Victor M. Rivera DDS'51
Jack S. Roth DDS'81
Michael B. Savin DDS, PD'70
John M. Scarola DDS'60
Arthur Schrager DDS'41
Steven S. Scrivani DDS'48
Leslie W. Seldin DDS'66
Jeffrey S. Senzer DDS'73, PD'75
Yin-Yin Shang DDS'90
Nathan Shapiro DDS'74
Joseph Shyong DDS'78
Kenneth L. Siegel DDS'64, CFT'66
Cleber P. Silva DDS'98
Allan C. Silverstein DDS'64
Terry W. Slaughter DDS'61
Gilbert H. Sokal DDS'70
Ms. Gail E. Steimer-Henry BS'71
Mayra Suero-Wade DDS'88
Shahrzad Tajtaraghi DDS'89, PD'90
Paul J. Tannenbaum DDS'61, PD'67
Albert J. Thompson DDS'60
William Wallert DDS, PD'62
Herbert Weiss DDS, PD'58
Whip Mix Corporation
Daniel L. Zedeker DDS'83

YOUNG 1852 (RECENT GRADUATES)

Sun-Young Sarah Ahn DDS , PD'00
Michael E. Ayoub DDS'97, PD99
Angie Papandrikos Bayiokos DDS'98
Brian S. Bosonac DDS, PD'98
Justin S. Boyd DDS'01
Amy L. Bryer DDS'04
Sandra Burkett DDS'97, PD'98
Heera K. C. Chang DDS'98
Jason Ching Shun Chang DDS, PD'99
Wisanu Charoenkul DDS'00, PD'03
Ian Cheng DDS, PD'00
Sandra Sung Yoon Choo-Stevo DDS,'99 M.P.H.
Francis Hyunjin Chung DDS'95
Gwen Stacey Cohen DDS'96
Julie Anne Connolly DDS'01, PD'05
Carlos Diaz-Albertini DDS, PD'95
Evan Disick DDS'02
Richard N.Fernandes DDS'05
Joseph J. Fertucci DDS'97
Robert J. Gallois DDS, PD'01
Paul J. Ganjian DDS'97
Kathy Garcia-Najarian DDS, PD'96
Gordon S. Groisser DDS'00
Yuan Hung DDS'00
Kyung Kyle Y. Jeon DDS'00
Grace Juan DDS'02
Myung Jean Ke DDS'93, PD'96
Brian T. Kim DDS'01
Hyung-beom Kim DDS, 00
Catherine Lei Kuo DDS'00
Shantanu Lal DDS'01, PD'05
Anne R. Lee DDS'00
Renee F. Litvak DDS'02, PD'04
Ernest J. McCallum DDS'95
Zana I. Mihovilovic DDS'00
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front cover: Illustrations of the engineered neogenesis of a human-shaped mandibular condyle from mesenchymal stem cells (courtesy of Jeremy Mao, DDS, PhD and *Journal of Dental Research*, 85 (11) November 2006; details from engraving of human mandible by John Hunter (1728-1793), *Natural History of the Human Teeth*, London 1771, (courtesy of Archives and Special Collection, Augustus C. Long Health Sciences Library, Columbia University Medical Center).

PRIMUS notable

ALLAN J. KUCINE '82

Q. Dr. Kucine, you graduated at the top of your class from Columbia's dental school; does that mean you wanted to be a dentist when you grew up?

A. When I was growing up in Brooklyn, the guidelines for success usually meant being a doctor. I had good enough grades for medical school, but I noticed that my family dentist had a very nice life. He lived in a white house with green shutters, had a wife who brought his lunch to the office every day, and he took her on vacation to some warm island every year. So, I thought, "I could do that!"

Q. So, why did you give up your successful private practice as an oral and maxillofacial surgeon in exchange for full-time academic and administrative positions at Stony Brook University?

A. I love my specialty -- and still treat patients at the University Hospital at Stony Brook and the School of Dental Medicine Faculty Practice. But I discovered I was happiest when teaching. Helping students from diverse backgrounds acquire knowledge and skills, and to develop as professionals-- is exciting! It's especially rewarding when one of them returns later in life to say, "that was a great education."

Q. What makes a good teacher?

A. Well, I had wonderful teachers in dental school: Irwin Mandel, Steve Roser, and Ed Cain, who, when I told him I was going to be an "oral surgeon," said, "Remember, Kucine, we're ALL surgeons!" Like them, I teach my students to think through problems, not just to memorize answers. Every patient the student encounters offers an opportunity to consider the risk/benefit ratio for various treatments in determining the ultimate course of therapy.

Q. Since coming to SUNY/Stony Brook's School of Dental Medicine in the early 1990s, you have held posts as Director of Pain Control, Assistant Dean for Postdoctoral Education, Associate Dean for Curriculum and Postdoctoral Programs, Associate Dean for Academic Affairs, Associate Dean for Clinical Affairs, and both Vice Chairman and Acting Chairman of the Department of Oral and Maxillofacial Surgery. Is there any other role you can fulfill there?

A. In fact, I have taken on responsibility for Information Technology. Many schools still use paper records in their clinics, but Stony Brook University has "gone electronic" as intelligently as possible, developing systems for assessment, quality assurance, and patient care. Our next project will be data mining, which may uncover significant, and possibly unexpected, relationships among our demographic and treatment statistics. We also hope to have kiosks in our clinics soon, where patients can enter information electronically.

Q. You also just shepherded your school through an ADA site visit. How did it go?

A. Wonderfully. We received no recommendations and a number of commendations; I'm very pleased.

The Primus Notable feature appears regularly in CDM publications, focusing on a graduate of distinction who has maintained a close interest in the College throughout his or her career.

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