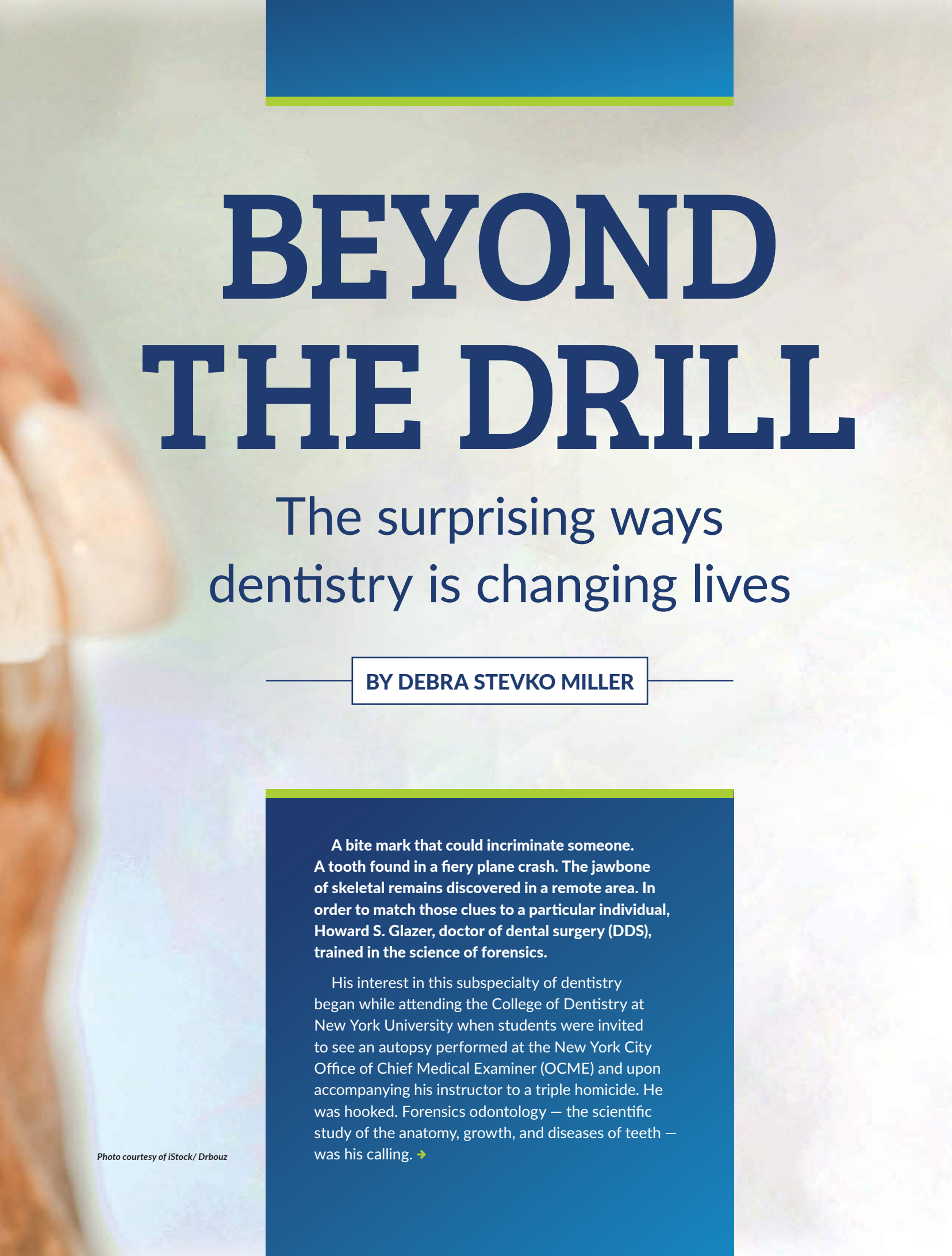




BEYOND THE DRILL

The surprising ways
dentistry is changing lives

BY DEBRA STEVKO MILLER

A bite mark that could incriminate someone. A tooth found in a fiery plane crash. The jawbone of skeletal remains discovered in a remote area. In order to match those clues to a particular individual, Howard S. Glazer, doctor of dental surgery (DDS), trained in the science of forensics.

His interest in this subspecialty of dentistry began while attending the College of Dentistry at New York University when students were invited to see an autopsy performed at the New York City Office of Chief Medical Examiner (OCME) and upon accompanying his instructor to a triple homicide. He was hooked. Forensics odontology — the scientific study of the anatomy, growth, and diseases of teeth — was his calling. ➔



Dr. Howard S. Glazer
Photo courtesy of Dr. Howard S. Glazer

During the 50 years he has practiced general dentistry and as the attending dentist at Englewood Health, for 45 of those years he also served, and continues to do so, as deputy chief forensic dental consultant at OCME.

"It's a fascinating field, it's a necessary field," Dr. Glazer said. "You must be able to assemble the different parts of information and connect the dots."

Two notable events for which he provided forensic expertise were the 1975 plane crash of a Boeing 727-225 at New York's John F. Kennedy International Airport, and in 2001 as one of the leads in the identification of victims in Manhattan following 9/11.

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— Dr. Howard S. Glazer
on forensic dentistry

"When (emergency personnel) are doing recovery, or even during rescue, they may not know what a bone fragment looks like, or what tissue looks like, so we very often help out in that aspect," he said. "You have to have a hard stomach for this. If you're not prepared, you can be overrun by it physically and emotionally."



Dr. Jolie Chou
Photo courtesy of Dr. Jolie Chou

He continues to train in mock disasters with a dedicated forensics team of volunteers.

Whether identifying the deceased or testifying in a criminal or civil case, odontologists can definitively identify someone based on their dental record X-rays in just a few minutes. Dr. Glazer explains that even though a computer can sort through records quickly, age tissue, see patterns in the bone, and interpret X-rays with assistance from artificial intelligence (AI), a visual identification is essential.

Then there is the dental professional who opts to fix the broken and beautify the abnormal. They extend their academic training to pursue a dual degree and become

doctors of medicine in order to perform surgeries, administer anesthesia, and perform bone grafting.

Joli Chou, DMD, MD, is an oral and maxillofacial surgeon for the Cooper University Health Care system in Moorestown and Camden who cares for pediatric patients with a traumatic injury or



Dr. Greg Rago
Photo courtesy of Rago family

defect in their jaw, head, face, or neck. Her multidisciplinary team at Cooper Health treats infants, children, adolescents, and young adults for cleft lip, cleft palate, and craniofacial conditions.

Dr. Chou focuses on hard and soft tissue reconstruction involving joint replacement in the jaw, traumatism, biopsies, tumor removal, and dental implants. Her sophisticated operating tools include an ultrasonic saw that cuts bone without harming tissue, and navigation equipment with sensors calibrated to surgical instruments. 3D printing is used for customizations as well.

Life-changing is how she describes the outcomes for patients with a jaw realignment for instance.

"Fifty percent of the surgeries that I do in that particular realm, the discrepancies or the differences are quite drastic," she said. Her patient's lives improve significantly by being able to chew and eat normally after the surgery.

For 10 years, Dr. Chou has also volunteered on the Mercy Ships, the state-of-the art floating hospitals that treat patients living along the African coast who lack critical health care. In November, she will make a return trip to Madagascar for a two-week stint.

"It re-energizes me because what I do here, and there, helps people," she said.

Typically monitoring for gum disease, a primary care dentist can also detect thyroid issues, oral and throat cancers, swollen lymph nodes, and temporomandibular joint (TMJ) pain during a full exam. While you are in the dental chair, your health care professional is evaluating possible issues not only within your mouth, but your neck and head regions as well.



Dr. Howard Glazer reviews dental X-rays, a critical tool in forensic odontology that can help identify victims and provide key evidence in criminal investigations.

Photos, above and right, courtesy of Dr. Dan Levitt



Dr. Howard Glazer examines forensic dental evidence, where teeth and dental records can provide critical clues for identifying victims and helping solve criminal investigations.



Dr. Joli Chou cares for a patient aboard a Mercy Ships hospital vessel, where she volunteers to provide life-changing oral and maxillofacial surgery to underserved communities along Africa's coast.

Photo courtesy of Mercy Ships Marketing



Dr. Greg Rago volunteers with World Mission Partners in the Dominican Republic, providing essential dental care to patients with limited access to oral health services.

Photo courtesy of Rago family

Have a stiff neck muscle, headache, or ear pain? Ask your dentist for their expert opinion.

"A lot of things go unnoticed," said Greg Rago, DDS, a private practice provider who has diagnosed thyroid problems and some cancers. "Mainstream doctors are now seeing that there is a direct correlation between oral health and systemic health. If we can get the oral health under control it definitely helps with the systemic health and vice versa."

For a second opinion, AI can often assist in making a speculative diagnosis too, according to Dr. Rago.

His interactions with patients occasionally even morph into a therapy session, he said, but it helps build a more complete picture of the individual's overall health. After 27 years in practice, that personal connection is evident in the generations of families who

bring their kids and grandchildren to him for dental appointments.

"It's beyond just drilling a tooth," said Dr. Rago, who holds achievements in prosthodontics, endodontics, operative dentistry and community health, and is a Zest Dental Solutions Master certified clinician.

Dr. Rago's commitment to treating patients extends beyond the borders of America. The doctor is a committed volunteer with World Mission Partners in the Dominican Republic, where he helps provide essential dental care to patients with limited access to oral health services.

Dr. Rago also integrates cutting-edge dental techniques into his practice. What about that high-pitched whining sound of the traditional dental drill? Well, some dentists are utilizing a quieter alternative. Clinical

lasers offer a minimally invasive option for cavities, for instance, that help preserve tooth structure and hasten healing. But, if a cavity is caught early enough, remedies like fluoride treatments can help regenerate a tooth, or a liquid resin injection that inhibits a cavity's growth, are options. Faster prototyping such as digital light processing, 3D imaging, and 3D printing have now accelerated analysis and accuracy for faster customized oral fabrications too.

A helpful tip: after drinking sugary or acidic beverages, rinse your mouth with water and wait to brush at least 30 minutes.

"Teeth demineralize and mineralize on their own based off the saliva we have," Dr. Rago explained.

Good to know. Anything to avoid getting a cavity! ❖