

# Howard Belgorod, DDS, Dentist of the Manhattan Project

by Dr. Barry Belgorod

## Childhood

Dad's father, Harry Belgorod, attended City College of New York. That is where the best and the brightest of his generation went for college. Like many of his peers at the time, his higher education was fragmented and was finally ended by the Great Depression. Despite Dad's father Harry's not having any formal science education, my father remembered Grandpa Harry as being able to pick up Dad's physics book, read it once and teach him the lesson. Harry was a passionate bibliophile, providing intellectual stimulation to Dad in his youth, and through his adulthood.

A sizeable parcel of land in downtown Brooklyn that Harry owned jointly with his two brothers had been sought after by the Capitol Theater chain. Unfortunately, it lost most of its value in a short period of time due to the economic downturn. Had the land been sold in timely fashion, as Grandpa Harry had urged, it would have made the Belgorod family financially secure during the Depression. The family survived nevertheless.

Dad's mother, Minnie ran a small family business, which provided the necessities for the family during the uncertain Depression era. There was no doubt in my Grandmother Minnie's mind that higher education was unequivocally one of those necessities. Against all odds, in a bad economy, and battling against her failing health and Grandpa Harry's retinal disease, they were able to afford to send both of their sons to college and to professional school through hard work and determination. The Belgorod sons became those educated men she envisioned.

## Camp Seneca

The Belgorod family was fortunate to be able to send its sons to summer camp to escape the hot urban summers. Remarkably, Camp Seneca was to prove a pivotal force in Dad's life. It was at Camp Seneca, run by Robert and Betty Howard, on Whaley Lake in Pawling, New York, that Dad forged a multitude of remarkable and close, life-long friendships. Most of the circle of friends continued on, as camp counselors. Dad's peer group was unique in Seneca annals, in that almost every one of the boys became a professional, educator, or entrepreneur. The bonds of these relationships were so strong that they were only to be broken by death. Dad was one of the last two surviving members of this proud group.

## Education and Sense of Duty

Dad attended DeWitt Clinton High School, a massive, public, all-boys school in the Hells Kitchen section on the West Side of Manhattan. He excelled academically and was remembered by a classmate, who serendipitously came to see me as a patient. He surprised me by recounting that Dad once sang a solo before an auditorium filled with thousands of rough and tumble young men at DeWitt Clinton. Dad reportedly held the huge audience spellbound with his clarity of voice, so that one could have heard a pin drop in the otherwise rowdy crowd.

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Dad was offered a sought-after, full scholarship to Wesleyan University in Connecticut. He turned it down, however, to remain in New York City to be in close proximity to his ailing mother. Dad's mother, Minnie, was dying from the long-term effects of diabetes mellitus acquired in the pre-insulin era. Dad determined that he could not go out of town for college, even at the expense of giving up his cherished scholarship. Instead, he attended New York University for his undergraduate studies, followed by New York University School of Dentistry, from which he was graduated in 1940. We usually do not remember Dad for his athletic prowess, rather for his intellect and humanity. Surprisingly, however, he did go out for track and field as an undergraduate. Somehow, those genes were passed on to his grandsons Gregory and Douglas, who have proven themselves to be the fastest boys in their respective age groups at the New York Athletic Club.

## World War II

Dad initially established his dental practice in Greenwich Village. He enlisted in the US Army to defend his country when World War II broke out. After basic training at the Carlisle Barracks in Carlisle, PA, he was sent to Camp Breckenridge and joined the staff Nichols General Hospital in Louisville, KY. During this period his family and friends expressed concern that he was being investigated by the FBI. Unbeknownst to even Dad himself, he was in the process of being issued high level security clearance for the Manhattan Project, the top secret wartime project to develop the atomic bomb, which greatly facilitated the Allied victory in the war in the Pacific. A lifelong quest for Dad was to learn who it was who recommended him for the Manhattan Project. He was never to find out.

## The Manhattan Project

Dad's first Manhattan Project assignment was in Oak Ridge, TN. Oak Ridge was the massive facility constructed to purify U235, which along with the Pu (Plutonium) synthesized at Hanford, WA, would be the fissionable materials that would fuel the atomic weapons to be detonated at the Trinity Test Site in the Alamogordo Desert in New Mexico, and over Hiroshima and Nagasaki in Japan.

Dad was next transferred to the top-secret facility at Los Alamos, NM. The hastily constructed town was literally in the middle of nowhere, at a former boys' school atop a mesa in the New Mexico desert. It remained nameless to those on the outside. Like all Los Alamos residents, Dad's mail and phone calls were censored. It was not unusual for mail to be sent out of Los Alamos with entire sentences or paragraphs, literally, cut out of the paper upon which they had been written. Secrecy was a way of life in Los Alamos. Los Alamos was to remain his home until several years after the War.



Dad joined the staff of the Army hospital, where he quickly became known as the hardest working and most meticulous dentist at the facility. All of Los Alamos knew, if dental work was to be done properly, my father was the man to do it. He was eventually joined in Los Alamos by his wife Madeline (nee Bloom) and newborn son Morie. He had daily interactions with the plethora of Nobel laureates, for whom he cared and among whom he lived. He was known by such towering figures as General Leslie Groves, the Army commander of the Manhattan Project and his next-door neighbor, Dr. Edward Teller, the father of the Hydrogen bomb.

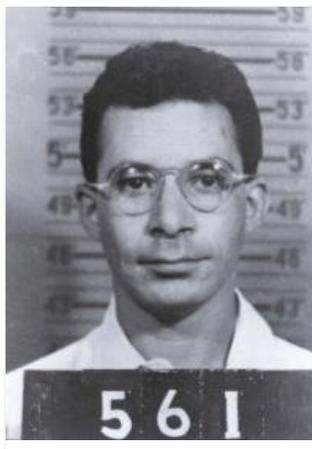
Dad recalled walking home one day, noticing a neighbor, who was a brilliant scientist, looking at his screen door with a perplexed expression on his face. Dad recounted how fascinated the scientist was when Dad assisted him with the seemingly "insoluble" task of getting the screen door to open without a key. Dad used this example to

teach us that genius is usually spotty at best.

Dad forged a life-long friendship with William King, a dashing young man, who was in charge of security at the top-secret facility. King, who recently celebrated his 91 st birthday, revealed to Dad after nearly sixty years of friendship, that he was responsible for the safe transit of the final two bombs made by the Manhattan Project, code named “Fat Man” and “Little Boy” on the ill-fated USS Indianapolis on their voyage to Tinian Island in the South Pacific for loading onto the nuclear bombers, Enola Gay and Bock’s Car.

### Louis Slotin

Soon after the War in 1946, a nuclear scientist named Louis Slotin was slowly bringing together two hemispheric, sub-critical masses of Plutonium using a screwdriver as a



spacer. He was watching the Geiger counter needle rise, or as Noble laureate Richard Feynman called it, “tickling the dragon’s tail.” One day, the screwdriver slipped. As a consequence, critical mass was attained causing the emission of the intense blue glow of

Cerenkov radiation, which flashed directly in front of him. This placed everyone in his vicinity, and the laboratory itself, at risk of a “China Syndrome” nuclear meltdown.

Slotin grabbed one of the hemispheres with his bare hands, separating the two into safe, sub-critical masses. Heroically, he saved his colleagues and his laboratory, but in the act, exposed himself to a lethal does of radiation, comparable to that of the populations of Hiroshima and Nagasaki. Slotin’s skin was badly burned. His body became edematous. His bone marrow and gastrointestinal tract shut down. The minerals of his teeth had become highly radioactive and were continually irradiating and burning the

soft tissues of his tongue and mouth. Dad’s task was to risk exposure to the radioactive Slotin and to shield, as much as possible, Slotin’s mouth from his own radioactive teeth. Lead could do the job, but was itself, toxic. Dad conceived of, and fashioned, bite plates of pure gold to comfort the dying hero, who himself had become hazardous nuclear material.

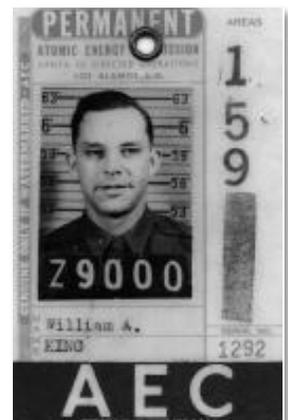
After the war, Dad continued his research on radiation and teeth, publishing with his co-researcher, William Ward Wainright, D.D.S.

### Fatherhood

Dad returned to New York City to re-establish his dental practice. In 1953, I, his second son was born. Growing up with Dad as my father was a wonderful experience. He used to keep a ping-pong table for Morie and me stored in his dental office next door to our apartment. He turned most of his dental laboratory into a chemistry lab for Morie and me. In the present day, that probably would have violated several OSHA and EPA statutes, but it was a great learning experience for us. It was always comforting to know that even though Dad would work very long hours, he was just next door and was always accessible. Morie and I were always welcomed to visit his office at any time and for any reason.



Mother and Dad made trips to visit me at the University of Pennsylvania School of Medicine almost every month. Most students were either not used to, or overtly disinterested in visits from family. I, on the other hand, always looked forward to my parents’ visits. I loved to join my parents in visiting Philadelphia landmarks, followed by dinner at Bookbinders, Frankie Bradley’s or City Tavern. Their visits kept me mindful of the high cal-



ling for which I was preparing and the unspoken sacrifices that they were making for me to be there.

One magic Saturday night during my internship, I had been given tickets to the Manager's box at the Philadelphia Academy of Music to hear the world-famed Eugene Ormandy conduct his Philadelphia Orchestra. After enjoying, literally, the best seats in the house, my parents were given a special treat, when Madame Ormandy beckoned us out of the "green room" to spend the next few hours chatting privately with Maestro Ormandy in his study. I vividly remember how my parents beamed to hear Ormandy recount how I had saved the life of the Orchestra's legendary manager, Boris Sokoloff.

I remember Dad fishtailing down the New Jersey Turnpike through the snow in a rented station wagon to deliver my favorite desk chair to me at Penn's Graduate Towers. If my parents weren't delivering a chair, it was the next month's supply of healthy food. There was nothing that my parents wouldn't do to support my academic endeavors.

On a typical trip to Philadelphia, Mother would sit in the car with the Sunday New York Times crossword puzzle in her lap. She would read the clues aloud to Dad as he drove. Mother would fill in the squares with Dad's flawless answers, in his trademark, red ink. Of course, Dad finished the puzzle on each trip without ever having seen the actual paper on which it was printed.

By the way, one never challenged Dad to a Scrabble game. It was always a losing proposition to watch him make triple word scores with the highest value consonants and almost no vowels! If you were presumptuous enough to check his words in the dictionary, you soon learned that he was always right.

### Dental practice

Dad always put the needs of his patients before his own. He was a meticulous clinician, with the highest standards of ethics. Although he retired over fifteen years ago, after practicing dentistry for fifty years, it was com-



mon for patients to call him at home to let him know that their dental work of decades ago was still going strong, and was the best that they had ever had. He was renowned for seeing patients in distress after hours, at any time, day or night. He could not bear to permit a patient to suffer, when he could relieve that suffering.

He had an old-fashioned sense of duty. He treated patients without regard for their ability to pay for his services. He cared for so many patients whom he never even thought of charging. He often paid for indigent patient's dental laboratory bills out of his own pocket. He expected nothing in return. He believed in the dignity of the healing arts and he trusted in the integrity of those who sought his care. He always said, "They will pay me if and when they can."

In 1990, when he retired after fifty years of dental practice, he had been suffering from a facial pain syndrome, which would later become refractory to all pain medications. It, however, never made him miss an opportunity to care for his granddaughter Margot. Through the years they forged the strongest of bonds.

In the year 2000, he was in so much pain, that he could no longer wash his face, shave, eat or drink. On a life-saving trip to the University of Pittsburgh for a procedure, he became pain-free, off all medications, from the time he returned to the recovery room.

Unfortunately, my father was no stranger to other serious illnesses. ...In reality, he survived over nine years

longer than anyone could have possibly foreseen. If you will permit me, Dad dodged more bullets than Elliot Ness and made more rebounds than the Knicks. We were privileged to have always had a team of hand-picked, outstanding clinicians and support staff to help see him through the worst of times. It was their efforts for which I am eternally indebted.

Despite battling multiple life-threatening diseases, he never lost his renowned sense of humor. To close family members his jokes became so familiar that they almost could be recited by number. Punch lines became totally unnecessary. We would just laugh at the set-up lines.

### **Remembering: Dad**

His caring, gentleness, diligence, sense of humor, and extreme generosity serve as a role model for his children, grandchildren and for us all. As a scientist, outstanding clinician, devoted son, loving husband, inspiring father and dutiful grandfather, he has always been a great source of knowledge, wisdom, comfort and enjoyment.

Dad is survived by his devoted wife of 62 years, Madeline, his loving sons Morie and Barry, his adoring granddaughter Margot and his admiring grandsons Gregory and Douglas. He will be missed by all those whose lives he touched and improved.

Pater (which was my pet name for Dad), one last crossword puzzle clue: number one across: palindrome, 3 letters, the best word in the English lexicon: Dad.