# Biography of Otto C Brantigan
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I am honored to be invited by Dr Cooper to discuss his paper and to give a brief biographical sketch of my father.

My father, Otto Brantigan, was born in Chattanooga, Tennessee on August 31, 1904. He and his family subsequently moved to Gary, Indiana. After dropping out of high school, he worked in the steel mills to help support his family. He learned the machinists trade from his older brother, becoming a first class machinist. In Gary he had his first major encounter with the medical establishment when he cut off the end of his thumb in an industrial accident. Not knowing any better, he took the amputated piece to the local doctor who, also not knowing any better, sewed it back on. He then moved to Chicago. I will always remember accompanying him to a medical convention at the Palmer House in Chicago and learning that he had worked on the steel skeleton of that same building.

Otto Brantigan worked so hard to convince his younger brother to go to college that he convinced himself. His brother joined the Navy instead. One day when riding the Elevated to work in Chicago, he noticed an advertisement that read "Sign up now for classes at Northwestern University." Since the train was going there he signed up. He worked his way thru college during the Depression, earning a number of scholarships and awards, including a one semester scholarship to the University of Heidelburg. The football scholarship lasted until his second shoulder dislocation. He graduated from college in 1931 and from Northwestern University Medical School in 1933. He was elected to Alpha Omega Alpha.

Otto Brantigan served a rotating internship and surgical residency under Arthur M Shipley at Baltimore City Hospital between 1933 and 1938, and then continued on the staff. He met my future mother, Edith Reinhart, there and married her in September 1939. He become Chief of Surgery in 1948, a position that he held until the late 1950's. During the Second World War he served as director of the Burn Unit of the University of Maryland and as director of the Emergency Room. From the time he completed his training in 1938 until his retirement in 1976 he maintained a busy private practice and an active academic career, serving the University of Maryland School of Medicine as Professor of Surgery, Professor of Thoracic Surgery and Professor of Surgical Anatomy. Teaching anatomy to medical students from 1938-1975 brought him great pleasure and caused me some distress, as everyone assumed knowledge of anatomy was inherited. Service to the medical community characterized his career. He organized the Maryland Chapter of the American College of Surgeons and the Potomac Chapter of the American College of Chest Physicians. He led the group which built the modern St Joseph Hospital in Baltimore when that institution was faced with closure. The Medical Library of

that hospital is named in his honor, and the surgical suite is dedicated to him. Having seen many colleagues practice beyond their time, he decided several years in advance that he would retire at age 72. His last year as a practicing surgeon was a busy one, but when the day came he walked out of the office he had occupied for almost 40 years, locked the door and never looked back. One of his last surgical procedures was one of the emphysema operations described today. He remained active until his death from a heart attack in 1981, attending medical meetings, writing, working for the First Evangelical Lutheran Church, gardening, and enjoying vicariously the accomplishments of his children.

Otto Brantigan's research interests and publications were eclectic and diverse. He published over 110 medical articles during his career. In the late 1930's urinary retention from gonococcal strictures or prostatism was a major concern. At the same time his advocacy of internal fixation of hip fractures allowed Baltimore City Hospital to empty its beds of femoral non unions. In the early 1940's, anatomic research led to a series of articles elucidating the functional anatomy of the knee joint which are widely quoted to this day. Tuberculosis became a major interest and he developed an extensive experience in thoracoscopy and closed chest pneumonolysis. His work with leucite ball plombage was well enough known that I still get calls from time to time asking advice about what to do with all of those balls. In 1948 he performed his first closed mitral commissurotomy after learning the technique from Bailey. In the 1950's he became interested in vascular surgery and published an early article on repair of aortic arch aneurysms. In the 1960's he recognized that esophagitis was a physiologic problem more than an anatomic one. At about this time he began to use a latissimus flap to reconstruct radical mastectomy patients.

His emphysema work, described today, began with the first procedure in 1950 and continued until he retired in 1976. As a surgeon myself, I can not imagine doing such a procedure under conditions so primitive compared to those of today. As you have heard, the operation was based on an understanding of pulmonary physiology. While the operation consistently improved vital capacity and recreated a difference between inspiration and expiration of chest X ray, my father had few additional objective measurements available to him. I was too young to appreciate his early attempts at measurement. While I was in college and medical school, he shared with me his struggles to come up with these objective measurements. In 1963 he saw a pH meter in the chemistry lab where I was working and saw immense potential for pH and blood gas measurements in clinical medicine if only they were available to him. The following year while he was explaining to me the relationship of surface tension of the lung to pulmonary emphysema I showed him the Langmuir surface balance, which he then used to study the subject. Denervated lungs have a lower surface tension. His thought that the microvasculature was somehow important in emphysema led to early work with lung scanning, which proved insufficiently sensitive, and beautiful corrosion castings of the lung which reside in my basement but never led to a publication. From my younger brother he obtained a mass spectrometer, originally designed for the space flight program, and discovered that gas measurements by themselves were unable to document differences in a patients functional capacity. He asked for help from physiologists, most poignantly at the

AMA Clinical Congress in Washington in 1960. They were no more interested in studying these patients than they had been interested in studying the renal transplants that he had done in dogs in the 1940's. They knew that the pulmonary operation wouldn't work with the same certainty that they knew that a transplanted kidney would never function. The result of this lack of measurements and the inherent difficulty of the operation was that the operation died with him.

My father felt that he had received great blessing thruout his career. He felt the need to pass on what he had learned. The highest honor a teacher could have is to have his pupil exceed his highest accomplishments. "If someone criticizes your work," he said, "then publish your results." Your work will stand or fall on its own merits. Three weeks ago The Denver Brass and the Colorado Symphony Brass Section performed to great acclaim a new composition celebrating the life of one individual. What an honor. My father would have considered that he had received an even greater honor today. He believed that the greatest honor that he could receive would be for someone to critically examine and confirm his work. My family and I are indebted to Dr Cooper and his colleagues and congratulate them on their fine work.