**Comments from D.B. McCormick**

Dr. Touster was born in New York, N.Y., earned a B.S. from the College of the City of New York, an M.S. from Oberlin College, and his Ph.D. under the mentorship of Herb Carter in the Chemistry Department of the University of Illinois at Urbana-Champaign.

Dr. Touster was first a chemist at Atlas powder Company and a biochemist at Abbott Laboratories before he joined the Biochemistry faculty under the chairmanship of Bill Darby in the School of Medicine at Vanderbilt. Touster rose through the tenured ranks to full professor before he undertook the mission of starting the Department of Molecular Biology, initially in the School of Arts and Sciences.

Prof. Touster received many honors during the span of his academic career. Among these was the Theobald Smith Award in the Medical Sciences for his seminal work on the molecular cause of essential pentosuria. As a pentosuric himself, he was motivated to understand what genetic fault was underlying this benign inborn error of metabolism that led to the urinary excretion of grams of L-xylulose per day. It was during this period of investigation that one of his current biographers (DBM) joined his laboratory to detail the metabolic fate of pentoses and pentitols in the mammal. We used $^{14}C$-labeled compounds and traced their incorporation into glucose within liver glycogen that was then chemically degraded to show which carbons became labeled, thereby revealing the routing of these carbohydrates, namely through the pentose phosphate or 6-phosphogluconate oxidative pathway. When Professor Siegfried Hollmann from the Heinrich-Heine University in Dusseldorf, Germany joined Touster's lab, the task was to isolate the enzymes responsible. Both activities for the pyridine nucleotide-dependent D- and L-xylulose oxidoreductases were characterized and shown to connect through xylitol. When the L-xylulose enzyme was lacking, bridging through xylitol to D-xylulose and its subsequent 5-phosphate could not occur, so the L-xylulose was excreted.

Professor Touster had other colleagues who interacted in his laboratory and received the benefit of both his teaching and the personal enjoyment of seeking new knowledge. Much of the findings were published in a variety of books and journals, including *Organic Reactions, American Journal of medicine,* the *Encyclopedia of Biochemistry,* and *Molecular and Cellular Biochemistry.*

The long span of Prof. Touster's career included such activities as serving as president of Oak Ridge Associated Universities (1976-1988) and chairman of the Board of Directors (1988-1991).

**Comments from Conrad Wagner**

Oscar Touster was one of the individuals who transformed Vanderbilt from a small regional institution to a world-class educational and research center. I first met Oscar when I arrived at Vanderbilt in the fall of 1961 as a newly hired Assistant Professor in the Department of Biochemistry that was part of the Medical Center. There was no comparable course in the College. At that time Vanderbilt was in the midst of many changes. A new Chancellor, Alexander Heard, had just been chosen. There was an acknowledgement that Biochemistry and its young offspring, Molecular Biology, needed to be added to the undergraduate curriculum. An eminent scientist, who was a leader in the study of bacteriophage, August H. Doermann, had been hired to serve as the Chair of the fledgling Department. Suddenly, however, Professor Doermann decided to relinquish the position and move to Alaska. A Search Committee was hurriedly established to find a replacement to lead the new department with Dr. Touster as Chair of the Committee. The committee was unable to find a replacement expeditiously and recommended that Dr. Touster, himself serve as the New Chair. Oscar then proceeded to recruit a number of oustanding young and established scientists into the Department and began teaching Biochemistry as well as Molecular Biology as an undergraduate course. It became well known as essential for applicants to Medical Schools.

Oscar and I became friends almost from the beginning of my arrival in Nashville. This was probably because we had both received undergraduate degrees from the College of the City of New York and were transplanted New Yorkers. We both loved to play tennis, albeit badly, but were well matched. We recruited another transplanted New Yorker to join us for the twice weekly games, Stanley Cohen another member of the Biochemistry Department who is well known as the Winner of the Nobel Prize in Medicine in 1986. The fourth member of our Doubles Matches varied but was usually from another Department.

Oscar was distinguished by his boundless energy. In addition to holding leadership positions in a number of National Organizations and served as President of the Vanderbit Senate. He was an outstanding scientist who worked in the fields of the processing of glycoproteins, particularly in regard to Golgi membrane functions, lysosomal diseases, and nerve cell metabolism. He mentored a number of students who achieved distinction. Among them was Donald B. McCormick who became a leading expert on riboflavin and flavoproteins and an influential figure in Nutritional Biochemistry. Dr. McCormick eventually became the Chair of the

Department of Biochemisty at Emory University. Antonio Gotto was an undergraduate major mentored by Dr. Touster. Dr. Gotto was a Rhodes scholar who attended Oxford where he received a D.Phil. then returned to Vanderbilt Medical School to obtain an M.D. His field of research was atherosclerosis and eventually became Dean of Weill Medical college of Cornell Medical School in New York City.

Oscar had an deeply inquiring mind and was gregarious in small Research groups. Perhaps the most inspiring memories I have are the Wednesday lunchtime research conferences organized by Dr. Rollo Park, Chair of the Department of Physiology in the Medical School. Attendance by Faculty was voluntary but every attendee was expected to prepare a presentation in turn, either on his or her own work or a new development in the field of biochemical research. The attendees included 5 members of the National Academy of Science (Park, Cohen, Najjar, Sutherland, Colowick) two Nobel Prize winners (Sutherland and Cohen) and younger aspiring investigators. Presentation was limited to four white Marker boards. Presenters were expected to withstand the good natured skepticism and banter from the audience. The leader of such discussions was usually Dr.Touster followed by Najjar and Colowick.

Oscar was unique.

**Comments from Tom Oeltmann, Emeritus Professor**

Oscar and I had a joint lab meeting for more than 25 years. When he retired, we continued to meet once a week for lunch and discuss not only Glycobiology but current events as well. If I had been to a meeting, he always wanted a report on new and exciting work.... Often these lunch meetings were 3 hours. His use of inhibitors of enzymes involved in glycoprotein processing and his discovery of mannosidase II and its role in glycoprotein processing were critical in sorting out the pathway.

He played tennis almost every Saturday at the VU tennis complex with Stan Cohn and others.

During his later years at Vanderbilt his wife became sick and less mobile and he raised his grandchildren due to his daughter's illness as well.

He was a critical thinker, excellent mentor and teacher, and served the University with a zeal we don't see much these days. He was unselfish in every way. He was everything one wanted as a colleague. He was a great man, he was my friend, and I will miss him.

## Comments from Graham Carpenter, Emeritus Professor

Dr. Touster was a tennis player and often played with Stan Cohen and Connie Wagner. As a postdoc with Cohen, I sometimes joined them for Saturday morning doubles. Oscar was pretty serious.

## Comments from Carl Hellerqvist, Emeritus Professor

Dr. Touster was the major reason I came to Vanderbilt. He advised Dr. Cunningham to accept me. He and Dr. Mildred Stahlman became my key mentors. Dr. Touster had a journal club, which I joined and it became a major base for intellectual curiosity development. He reinforced the concept of critical review of authority/dogma that my high school teacher instilled in me. My deepest condolences to his family.