

David T. Young — 70's

Venia Docendi, Space Physics, University of Bern, Switzerland, 1980
Ph.D., Space Science, Rice University, 1970
M.S., Space Science, Rice University, 1967
B.S., Physics, *Summa Cum Laude*, University of Louisiana at Lafayette, 1964

Dr. Young's expertise and interests are centered on developing a wide range of space-borne mass spectrometers used to investigate the chemical composition and dynamics of solar system magnetospheres, ionospheres, and atmospheres. His interests also include the spinoff of space science instrumentation to ground-based applications.

RESEARCH: During his professional career Dr. Young has carried out extensive research on the chemical composition and dynamics of terrestrial and planetary magnetospheres. As an experimental space scientist he has contributed to the design and development of thirteen plasma mass spectrometers of progressively increasing capability. These instruments have made key contributions to eight NASA and three European Space Agency missions launched to explore the space environments of Earth, the moon, Saturn, Titan and several comets. His leadership roles include serving as Principal Investigator for instrument development and conduct of the scientific investigations on four NASA missions: the Cassini Plasma Spectrometer on the Cassini mission to Saturn; four Hot Plasma Composition Analyzers developed for NASA's Earth-orbiting Magnetosphere Multiscale (MMS) mission scheduled to launch in October; the Plasma Experiment for Planetary Exploration on the Deep Space 1 mission to Comet 19P/Borrelly, and the Low-Energy Mass Composition Spectrometer on the Combined Release and Radiation Effects Satellite. Over the past decade Dr. Young has also led development of the Multi-Bounce Time-of-Flight (MBTOF) mass spectrometer designed for next-generation NASA planetary missions to Jupiter and/or Titan. The MBTOF has the distinction of achieving the highest resolution ever achieved by a space-borne mass spectrometer. Dr. Young retired from Southwest Research Institute in 2012 but still serves as a consultant to SwRI and NASA.

TEACHING: At various times and places Dr. Young has taught courses on magnetospheric physics, plasma instrument theory and design, particle optics, and spacecraft design. He has taught at the University of Bern, Switzerland, the University of Michigan, Rice University and St Mary's University in San Antonio, TX. Despite his focus on instrument research and development, Dr. Young has served as thesis adviser for doctoral degrees awarded to five of his students.

PATENTS & PUBLICATIONS: Dr. Young has authored or co-authored over 220 publications in refereed professional journals and books, and holds patents for Earth-based applications of miniaturized mass spectrometers.

HONORS & AWARDS: For his contributions to space science missions, Dr. Young has received seven NASA Group Achievement Awards, two achievement awards from the Jet Propulsion Laboratory, and two from the European Space Agency. In 2002, he was awarded the Heinrich Greinacher Prize (valued at approximately \$25,000) by the International Space Science Institute in Bern, Switzerland for "outstanding lifetime contributions to magnetospheric physics and to instrument development." In 2004, he

received the Medal of the City of Marseille, France for his "outstanding contributions to the Cassini program." In 2008, Dr. Young was made a Fellow of the American Geophysical Union for "eminence in geophysics." In 2012 he received the American Women in Communication award for "lifetime professional achievement."

PROFESSIONAL CHRONOLOGY:

- 1970 Research Scientist, Department of Space Science, Rice University, Houston, TX
- 1971 Senior Research Scientist, Royal Institute of Technology, Stockholm, Sweden
- 1971-1980 Senior Research Scientist, Institute of Physics, University of Bern, Switzerland
- 1980-1981 *Privat Docent* (equivalent to tenured associate professor), Institute of Physics, University of Bern, Switzerland
- 1981-1987 Scientific Staff Member, Los Alamos National Laboratory, Los Alamos, NM
- 1988-1999 Institute Scientist, Southwest Research Institute, San Antonio, TX
- 1996-1997 Chairman, Advisory Committee for Research, Southwest Research Institute, San Antonio, TX
- 1999-2002 Professor of Space Science, College of Engineering, University of Michigan, Ann Arbor, MI
- 2002-2007 Institute Scientist, Southwest Research Institute, San Antonio, TX
- 2007-2012 Program Director for Research and Development, Southwest Research Institute, San Antonio, TX
- 2012-present Consultant, Southwest Research Institute, San Antonio, TX
- 1996-1999 Adjunct Professor, Department of Physics and Astronomy, Rice University, Houston, TX
- 2007-2012 Adjunct Professor, Department of Physics and Astronomy, Rice University, Houston, TX
- 2013 Adjunct Professor, Physics & Earth Sciences Department, St. Mary's University, San Antonio, TX