

## **PROF. ROBERT E. SIEVERS**

### **EXPERIENCE**

- 1993-: Director, CU Environmental Program.  
1975-: Professor, Dept. of Chemistry and Biochemistry, Univ. of Colorado.  
1980-93: Director, Cooperative Institute for Research in Environmental Sciences, Univ. of Colorado.  
1990-2002: Regent, University of Colorado (Elected to represent the 2nd Congressional District)  
1986-87: Interim Dean of the Graduate School and Assoc. Vice-Chancellor for Research, Univ. of Colorado.  
1978-80: Co-Chairman, Dept. of Chemistry and Biochemistry, Univ. of Colorado.  
1969-75: Senior Scientist (GS-16), Aerospace Research Laboratories, Wright-Patterson A.F.B., Ohio.  
1968-69: Visiting Professor, Tuebingen Univ., Germany.  
1960-67: Research Chemist and Group Leader, Aerospace Research Laboratories, Wright-Patterson A.F.B., Ohio.  
1960: Research Chemist, Monsanto Co., St. Louis, Missouri.  
1956-60: Research Asst. and Teaching Asst., Dept. of Chem., Univ. of Illinois, Urbana, Illinois.  
1955-60: Research Chemist (summers), Sinclair Oil Co. and Cities Service Co.

### **EDUCATION**

- 1960: Ph.D., Univ. of Illinois, Urbana, Illinois.  
1956: B. Chem., Univ. of Tulsa, Tulsa, Oklahoma.

### **HONORS AND AWARDS**

- 2009 Boulder Rotary Club Humanitarian Award  
2009 Governors Award for Research Impact  
2008 ACS Astellas Award  
2004 Pinnacle of Inventorship Award, University of Colorado  
2003 Robert L. Stearns Faculty Award, University of Colorado Alumni Association  
2001 Thomas Jefferson Award, University of Colorado  
1992: Keene P. Dimick Award in Chromatography, Pittsburgh Conf. on Analytical Chemistry.  
1985: Gold Medal Award, Colorado Section, American Chemical Society.  
1981: Tswett Chromatography Medal, Barcelona, Spain.  
1975: Decoration for Exceptional Civilian Service, Dept. of Air Force.  
1973: Distinguished Alumni Award, Univ. of Tulsa.  
1971: Technical Achievement Award, Aerospace Research Laboratories  
1960: Phi Lambda Upsilon, Sigma Xi.  
1953: Phi Eta Sigma.

### **PUBLICATIONS**

- 1960-: 218 journal publications and 40 U.S. and foreign patents.  
1995: "Selective Detectors," Editor, J. Wiley and Sons, N.Y.

- 1992: "The Chemistry of the Atmosphere: Its Impact on Global Change," Editor with J. Calvert and J. Birks, American Chemical Society, Washington.
- 1973: "NMR Shift Reagents", Editor, Academic Press, NY
- 1965: "Gas Chromatography of Metal Chelates", Pergamon Press, NY; with R. Moshier; Russian translation was published in 1967

## RESEARCH

Pulmonary drug delivery, synthesis of 1- $\mu$ m diameter pharmaceutical particles, atmospheric chemistry, environmental chemistry, trace analysis of air and water, gas and liquid chromatography, aerosols, supercritical fluid technology, and spray bubble drying; supported at various times by NSF, EPA, NOAA, DOE, DOD, DARPA, NASA, The Bill and Melinda Gates Foundation and various pharmaceutical and chemical companies. For 43 years the research group has conducted fundamental and applied studies of the formation of nanoparticle and microparticle aerosols and innovative methods for synthesis, purification, characterization of useful materials.

## PROFESSIONAL AND SERVICE ACTIVITIES

- 1980-: Cooperative Institute for Research in Environmental Sciences (CIRES) Council of Fellows
- 2016-2018: Sustainability, Energy, Environmental, Community (SEEC) Space Advisory Committee.
- 1967-2017: Mentored research of 44 graduate student doctoral candidates, and taught graduate and undergraduate courses.
- 2005-2011: Principal Investigator, Needle-free Aerosol Vaccines for Developing Countries, \$20 M grant from the FNIH as part of the Grand Challenges in Global Health Initiative created by the Bill and Melinda Gates Foundation.
- 2001-04 Member, Jury for Willard Gibbs Medal, Chicago Section, American Chemical Society
- 1995-: Faculty Advisory Board of the Center of the American West.
- 1995-: University of Colorado Foundation, Inc.; President's Club, Norlin Society.
- 1994-: C.U. representative on the Executive Committee of the Rocky Flats Environmental Institute.
- 1992-94: NAS/NRC Review Committee for NIST.
- 1992-94: American Chemical Society, Councilor, elected by Colorado Section.
- 1992-3: Member, Board of Directors, Auraria Higher Education Center, Denver, Colorado.
- 1991: Chairman, IUPAC-CHEMRAWN Conference on Changes in the Atmosphere
- 1990- Consultant, various corporations.
- 1990-92: Gov. Romer's Scientific Panel on Monitoring Systems for Rocky Flats.
- 1989-91: Member of the Board of Directors of the Boulder Technology Incubator.
- 1988-92 Department of Energy, Health and Environmental Research Advisory Committee.
- 1988-: Editorial Board, *Chemical Speciation and Bioavailability*.
- 1987-89: Member of National Academy of Sciences' NRC Committee on Global Change.
- 1987-90: Chair, Committee on Atmospheric Chemistry, NAS/NRC.
- 1987-: Member Representative, University Corporation for Atmospheric Research
- 1982-89: Member of National Academy of Sciences' NRC Commission on Physical Sciences, Mathematics, and Resources.
- 1985-86: Member of Board of Trustees, University Corporation for Atmospheric Research.

- 1985-88: Editorial Advisory Board, *Chromatographia*.  
 1979-82: Member of Science Advisory Board, EPA.  
 1970-75: Principal Investigator for NASA Apollo Lunar Analysis Project.  
 1983: Co-founder, Sievers Instruments, Inc.; acquired by Ionics, Inc. in 1996, GE in 2000, Suez Industrial Water in 2017.  
 1978-82: Science Advisor, Rocky Mountain Region of FDA.  
 1984: Chairman, 22nd. Intl. Conf. on Coordination Chemistry.  
 1985-88: Editorial Advisory Board, *Critical Reviews of Analytical Chemistry*.  
 1980-83: Analytical Division of American Chemical Society Executive Comm.  
 1980-83: Editorial Advisory Board, *Analytical Chemistry*.  
 1978: Chairman, 31st ACS Analytical Chemistry Conference.  
 1970-88: Editorial Advisory Board, *Coordination Chem. Rev.*  
 1969-71: Editorial Advisory Board, *Talanta*.  
 1968-75: American Chemical Society Councilor, elected by Dayton Section.  
 1968-82: Member of ACS Committee on Environmental Improvement.  
 1983-85: Advisory Board for Natural Resources Law Center (C.U. Law School).  
 1983: Organized and hosted workshop on Analytical Chemistry for faculty from small colleges.  
 1983: Chaired UCAR Committee to review U.S. research program on acid precipitation.  
 1981-82: Chaired six-university Consortium on Energy Impacts.  
 1975-: Guided research of graduate student doctoral candidates, and taught graduate and undergraduate courses.

#### GRADUATE AND POST-DOCTORAL STUDENTS (since 1985)

- 1985: Ph.D. awarded to John N. Gillis and Stefan A. Nyarady, M.S. to Denise Dunlap.  
 1986: Ph.D. awarded to Randall C. Greaves.  
 1987: Ph.D. awarded to Randall L. Shearer. Post-doctoral associate: William T. Foreman.  
 1988: Ph.D. awarded to Stephen A. Montzka, M.S. to Sheryl A. Beaton.  
 1989: Ph.D. awarded to Elizabeth A. McNamara. Post-doctoral associate: Huang Ling.  
 1990: Ph.D. awarded to Sherri B. Turnipseed, Martin P. Buhr and Pamela R. Veltkamp, M.S. to James J. DeAngelis.  
 1991: Ph.D. awarded to Brian Hansen and Brooks Hybertson.  
 1992: M.S. awarded to Lynn Pellini. Post-doctoral associate: John Brock.  
 1993-: Post-doctoral associate: Barbara A. Watkins.  
 1994: Ph.D. awarded to Andrew Dunham, Thomas Ryerson. Post-doctoral associate: Uwe Karst.  
 1995: Ph.D. awarded to Susan Buhr, Kristen Hansen, Anthony Lagalante; Post-doctoral associate: Lynn McInnis.  
 1996: Post-doctoral associates: Chongying Xu, Peter Milewski  
 1997: Ph.D. awarded to Paul Frazey; Post-doctoral associate: Scott Sellers  
 1999: Post-doctoral associate: Brenda Korte  
 2000: Post-doctoral associate: Edward Huang  
 2001: Post-doctoral associate: Dean Liang  
 2002: Post-doctoral associate: Steve Cape  
 2003: Ph.D. awarded to Joseph Villa  
 2006: Post-doctoral associate: Chad Braun  
 2009: Ph.D. awarded to Jessica Burger  
 2010: Ph.D. awarded to David McAdams, J'aime Manion

2016-2017: Post-doctoral associate: Lia Rebits

**MENTORING OF UNDERGRADUATE STUDENTS (since 1990)**

1990: Jim Navratil, Meg Hermann, Eric Folwell  
1991: Kristian Kløver and Stewart Dunbar  
1992: Cecilia Orr  
1993: Jeff Bull, Greg Weigand, Christy Symanski, Dennis Province, Tony Brakohiapa, Jack Schaefer  
1994: Rich Walsh, Rick Krivjanski, Conrad Stoldt, Jack Schaefer, Denise Greig, Christa Wilson, Ruth Warriner  
1995: Ruth Warriner, Conrad Stoldt, Jack Schaefer, Greg Jones, Shamae Harris, Jeff Merkel, Alfonso Mateo Morales  
1996: Jasna Rusic-Pavletic, Tilak Mandal  
1997: Kyle Kusek, Paul Kluetz  
1998-99: Sonemala Phommatha, Laura Whildin, Graham Clark  
2000: Janelle Kawamoto, Andrea Constance  
2001: Janelle Kawamoto, Miranda Evans  
2002: Tom Walsh, Helena Meresman  
2003: Travis Piester, Shannon Hibbard, James Madsen  
2004: Jessica Best, Shannon Hibbard, James Madsen, Lia Rebits  
2005: James Madsen, Jessica Best  
2006: Jessica Burger, Akiko Komura  
2007: Nicolette Wolters, Sampada Joshee, Charles Kelly  
2008: Justin Kuntzman, Lowell Nicholson  
2010: Nisha Shah, Hana Richter  
2011-2012: Nisha Shah, David Chen  
2013: Jane Duplantis  
2014: Jonathon Florance  
2016-2017: William Showers, Luis Rocas