Prof. Charles T. Campbell is the Rabinovitch Endowed Chair in Chemistry at the University of Washington, where he is also Adjunct Professor of Chemical Engineering and of Physics. He is the author of over 300 publications and two patents on surface chemistry, catalysis, physical chemistry and biosensing, with 18,000 total citations and an h-index of 72 (ISI Web of Science). He is an elected Fellow of both the ACS, the AVS and the AAAS, and Member of the Washington State Academy of Sciences. He received the Arthur W. Adamson Award of the ACS and the ACS Award for Colloid or Surface Chemistry, the Gerhard Ertl Lecture Award, the Robert Burwell Award/Lectureship of the North American Catalysis Society, the Medard W. Welch Award of the AVS, the Gauss Professorship of the Göttingen Academy of Science, the Ipatieff Lectureship of Northwestern University and an Alexander von Humboldt Research Award. He served as Editor-in-Chief of *Surface Science* for ten years, and now serves as Editor-in-Chief of *Surface Science Reports*, and on the Boards of the *Journal of Physical Chemistry*, *Catalysis Reviews*, *Catalysis Letters* and *Topics in Catalysis*. He received his BS (1975) and PhD (1979) degrees at the University of Texas at Austin in Chemical Engineering and Chemistry, respectively, then did postdoctoral research in Germany under Gerhard Ertl (who won the 2007 Nobel Prize in Chemistry).

Campbell's research has clarified the mechanisms and elementary-step kinetics and energetics of CO oxidation and NO reduction on clean surfaces of Rh and Pt(111), the selective oxidation of ethylene over clean and Cl-promoted and Cs-promoted Ag surfaces, the water-gas shift and methanol synthesis reactions over clean, Cs-promoted, and S-poisoned Cu surfaces and over Cu/ZnO, and hydrocarbon conversion reactions over Pt. He helped develop a systematic understanding of ensemble and electronic effects on numerous bimetallic and alkali-promoted metal surfaces, clarifying how the second metal influences chemisorption and catalysis. He carefully studied the structural, energetic, electronic, chemisorption and catalytic properties of numerous ultrathin metal films and metal nanoparticles on single-crystal oxide surfaces, clarifying metal-support interactions in catalysis, and the role of nanoparticle size and the support in catalysis by oxide-supported metal particles. He and his group developed by far the most sensitive and effective single-crystal adsorption microcalorimeters in the world, and applied these to measure the heats of adsorption of metals on oxide surfaces and the strength of metal – oxide chemical bonding for the first time, clarifying particle size effects and support effects in catalysis, and the kinetics of catalyst sintering. Through this he helped develop sinter-resistant catalyst nanomaterials and elucidated particle size effects in oxidation catalysis by gold. He made the first direct calorimetric measurements of adsorption energies and heats of formation for a wide variety of key adsorbed intermediates. He measured and explained important trends in entropies of adsorbates and preexponential factors for surface elementary reactions of key importance in catalysis. He developed the first rigorous method for identifying the rate-determining step and the most rate-controlling intermediates in complex reaction mechanisms via his "degree of rate control". He also developed and applied widely-used methods for the quantitative analysis of adsorption kinetics from liquid solutions based on surface plasmon resonance (SPR) sensing, and extended this to SPR analysis of microarrays for high-throughput analysis of the kinetics of protein and DNA binding to immobilized receptors.