Biophysical Chemistry 158 (2011) 90

Contents lists available at ScienceDirect

Biophysical Chemistry

journal homepage: http://www.elsevier.com/locate/biophyschem

Gary K. Ackers (1939–2011)

Gary Keith Ackers, professor and researcher in molecular biophysics and former member of the Editorial Board of Biophysical Chemistry, died on May 20, 2011, at the age of 71 from early-onset Alzheimer's disease. His research focused on the thermodynamics of macromolecular assemblies, in particular protein-DNA systems and the mechanism of human hemoglobin cooperativity. He developed an innovative approach to the analysis of cooperative oxygen binding by hemoglobin using the linkage between ligation and dissociation of the hemoglobin tetramer into dimers, applying lessons learned from DNA binding studies using footprint titration methods. This approach required the development of laboratory techniques such as large-zone analytical gel chromatography, low-temperature isoelectric focusing, and methods for modifying and hybridizing human hemoglobin tetramers. His laboratory was known for careful, high-precision measurements and emphasis on thermodynamic principles underlying macromolecular function. Even as the field of molecular biophysics became more and more reliant on structural information, Gary remained a fervent advocate of the application of linkage thermodynamics to the study of macromolecular systems. Indeed, his work on hemoglobin revealed the importance of detecting ligation intermediates in the difficult task of deciphering the mechanism of cooperativity and exposed major flaws in the experimental or theoretical approaches that would ignore these components.

Gary was drawn to science at a young age, winning the Bay Area Science Fair at the age of 15. He published his first five scientific papers while majoring in chemistry and mathematics at Harding College. He earned his doctorate in physiological chemistry with Tom Thompson at Johns Hopkins University, and then joined the faculty at the University of Virginia, becoming full professor at age 33. He returned to Johns Hopkins University in 1977 as Professor of Biology and the McCollum-Pratt Institute. While at Hopkins, he also served as Professor of Biophysics and Director of the Institute for Biophysical Research on Macromolecular Assemblies, which he founded with the support from the National Science Foundation. He joined Washington University School of Medicine in St. Louis, MO, in 1989 as the Raymond H. Wittcoff Professor and Head of the Biochemistry department. There, he established the Molecular Biophysics program and recruited a cradle of outstanding new faculty who contributed enormously to the success of the department and the field of biological thermodynamics. He was a member of the American Society of Biochemistry and Molecular Biology, the American Association for the Advancement of Science, the American Chemical Society, and a Fellow of the Biophysical Society. He served as President of the Biophysical Society and was a co-founder of the Gibbs Conference on Biothermodynamics, that this year celebrates its 25th anniversary. Gary's legacy in this field will be enduring, as documented by the number of highly successful scientists that he trained during his long career at Hopkins and Washington University. He will be greatly missed as a mentor, colleague and scientist.

Gary was known for his exquisite sense of humor and propensity for science puns. My favorite line of his was the way he would dismiss “alternative” explanations: “It's very interesting, especially if it's true”. He was deeply gratified by the success of the graduate and postdoctoral students who trained in his laboratory, as well as by the faculty he was able to recruit. He is survived by his wife, Jo M. Holt, who was his friend, confidante, and close collaborator in the last decade of his research career, and by her son, James Hazzard. He is also survived by his first wife, Naomi Caldwell, and their children: Lisa Ackers; Sandra Ackers and her husband Bryan Session; and Keith Ackers, his wife Mimi and their children Anna and Owen.

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doi:10.1016/j.bpc.2011.06.002