Professor William F. Bailey

A Tribute

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Dr. William F. Bailey was born at the vanguard of the World War II "Baby Boom" generation on 8 December 1946 in Jersey City, New Jersey, to Gregory and Helen Bailey. Bill's father was proprietor of a plumbing business in Jersey City and Bill spent his Saturdays and summers from the age of 12 to 22 learning the business as he rose to the status of a journeyman plumber. However, this was not to be his calling.

Bill's first exposure to chemistry, during his tenure at Saint Peter's College in Jersey City (B.S., 1968), was life-changing. A young Professor at St. Peter's, James Pegolotti (Ph.D. with Young at UCLA in 1959), taught several advanced organic chemistry courses to a small cohort of students, including Bill, using the then-current literature rather than a text. Bill was hooked. During one of these courses, Professor Ernest Eliel presented a seminar dealing with conformations of saturated heterocycles and invited Bill to apply to Notre Dame for graduate study. As Bill describes it, this opportunity allowed him to escape from both plumbing and the Garden State to pursue a Ph.D. at the University Notre Dame with Eliel. Bill's Ph.D. work involved investigations of the generalized anomeric effect and the stereochemical dependence of ^{13}C shifts. After receiving his Ph.D. from Notre Dame in 1973, he accompanied Ernest to the University of North Carolina where he helped with the set-up of the newly built labs and then departed for a very productive two-year postdoc with Professor Kenneth Wiberg at Yale. In

1975, Bill joined the faculty at the University of Connecticut where he is currently Professor of Chemistry.

Bill's research interests lie in the development of new synthetic methodology using main-group organometallic chemistry and he also has a long standing interest in the investigation of reaction mechanisms and molecular structure and energetics. Bill is perhaps best known for the development of intramolecular carbolithiation as a route to functionalized ring systems. His 1985 report, detailing the kinetics of the cyclization of 5-hexenyllithium to (cyclopentyl) methyllithium, was the first unequivocal demonstration of the intramolecular addition of a C–Li bond to an unactivated carbon-carbon π-bond. The ring-closure of unsaturated organolithiums would have most likely remained an intellectual curiosity were it not for a concurrent contribution from the Bailey lab: development of a convenient method for the preparation of organolithiums that does not involve the intermediacy of radicals. In the course of a careful, long-term mechanistic study of the lithium-halogen exchange reaction, Bill's group demonstrated that the mechanism of the exchange between simple alkyllithiums and alkyl halides is halogen dependent and the solvent used for the exchange has a profound effect on the outcome of the reaction. Prior to Bill's work in this area, the extensive literature dealing with the mechanism of the exchange was difficult to interpret and the preparation of simple organolithiums by the exchange method was more of an art than a science.

Bill has been chair of the Gordon Research Conference on Organic Reactions and Processes, chair of the ICOS-16 Symposium on Organolithium Compounds in Organic Synthesis, has been recipient of the American Association of University Professors Research Excellence Award at the University of Connecticut, and he has held visiting professorships at Oxford University, Flinders University of South Australia, and Yale University. For the past decade, Bill has been a Visiting Fellow at Yale and his continuing collaboration with Ken Wiberg's group has led to a series of notable computational investigations of both the etiology of enantioselective lithiations by *sec*-alkyllithium-sparteine as well as the mechanism of the lithium-halogen exchange.

Bill has taught virtually every organic chemistry course offered at the University of Connecticut over the course of his 35 year career and he has been recipient of the University of Connecticut Alumni Association Faculty Excellence Award in Teaching.

In a more personal context, I will add that I met Bill Bailey in July of 1972 – nearly four decades ago, when I joined Professor Ernest Eliel's group in Chapel Hill, North Carolina, and Bill was an advanced graduate student and certainly a leader in the group. That same year, Bill introduced me to the concept of the "anomeric effect", a topic that somewhat fortuitously would become central to my independent research activities in Mexico. Furthermore, a seminal contribution of the Bailey's group in 1988[8] regarding the spectroscopic behavior of 1,3-diheterocyclohexanes inspired me to examine the possibility that stereoelectronic effects might be operative in such heterocycles. Bill Bailey has always cared to keep in touch with many former students and postdoctoral members of the Eliel group, such as Armando Hartmann, Jorma Koskimies, John Powers, Rodney Willer, Robert Hutchins, and Fritz Vierhapper, among others.

In this regard, one can easily see that Bill has also cared for the well-being and success of his own students and research associates. It is also clear that they greatly appreciate him.

It is my honor to participate in this well deserved Tribute to a good friend and excellent scientist and educator: William F. Bailey.

Eusebio Juaristi
Departamento de Química
Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional
Apartado Postal 14-740
07000 México, D. F. (MEXICO)
e-mail: juaristi@relaq.mx

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