

At a meeting of the Faculty of Arts and Sciences on October 19, 2010, the following Minute was placed upon the records.

FAKHRI A. BAZZAZ

Born: June 16, 1933

Died: February 6, 2008

Fakhri A. Bazzaz, H. H. Timkin Professor of Science from 1984 to 1997 and then Mallinckodt Professor of Biology from 1997 until his retirement in 2004, passed away on February 6, 2008, of complications following a stroke. A giant in the field of plant ecology, Bazzaz transformed the study of plant population biology through his deep knowledge of plant physiology. The dominant theme throughout his career was that of how plants respond to natural and anthropogenic disturbance, from the classical area of plant succession—how plant communities succeed one another over time—to the impacts of global climate change on the productivity and stability of ecosystems. Bazzaz’s landmark studies of old-field succession broke with the descriptive paradigm that dominated mid-twentieth century plant ecology and established a modern experimental approach grounded in mechanistic understanding of plant physiology and community interactions. He played an equally important role in the study of climate change, conducting far-reaching work on the mechanisms by which plants, plant communities, and ecosystems respond to elevated carbon dioxide and other global change factors such as increases in temperature and nitrogen deposition. Bazzaz was invited by Vice-President (then Senator) Al Gore to testify before Congress in 1992, and he was a signatory of a scientific letter to President Clinton in 1997, advising serious and careful attention to global climate change. His long and productive career is recorded in nearly 300 scientific papers, 18 book chapters, and 6 books, while his lasting impact on the field of ecology is reflected in the careers of his 56 graduate students, 36 postdoctoral fellows, and 17 undergraduate research students.

Fakhri Bazzaz was born in Baghdad, Iraq, on June 16, 1933, to a family prominent in public service. He studied biology at Baghdad University, obtaining his undergraduate degree in 1953. An Iraqi government scholarship for postgraduate study allowed him to complete both his M.Sc. (1960) and Ph.D. (1963) at the University of Illinois at Urbana-Champaign, under the supervision of Professor Lawrence Bliss. After two years as a Lecturer at Baghdad University, he returned to an Assistant Professor position at the University of Illinois, rising through the ranks to full professor, head of the department of plant biology, and acting director of the School of Life Sciences.

The agricultural landscape of central Illinois, with its patchwork of abandoned fields, formed a natural laboratory on which Bazzaz first made his mark on ecology. As such “old fields” give way to increasingly taller and more perennial vegetation, Bazzaz recognized that the process of species replacement was governed by the life history characteristics of individual species. In doing so, he transformed what had been a purely phenomenological line of inquiry into a predictive, hypothesis-driven science. Bazzaz used field, glasshouse, and laboratory experiments to test hypotheses of how the underlying mechanisms by which

plants compete for resources influence community interactions. Bazzaz was the first to understand that plasticity is itself a trait under selection and to study how variation in allocation to roots, leaves, and especially reproductive structures influences competitive interactions. His infusion of physiological mechanism into plant population biology and his insistence on integrating the entire plant life cycle—from germination through to seed production—placed him at the vanguard of the nascent field of plant physiological ecology.

Bazzaz's move to Harvard in 1984 coincided with an increasing focus on the study of climate change. He was among the first ecologists to recognize not only the significance of such anthropogenic impacts on natural ecosystems, but also their complexity. While other scientists were content to document the impact of elevated carbon dioxide on the growth of individual plants, Bazzaz realized that climate change had the potential to alter interactions between species and even to decrease plant diversity. He documented how elevated atmospheric carbon dioxide concentrations could have far-reaching impacts on ecological communities due to differential effects on the reproductive allocation of plants and the altered nutritional quality of plant tissues. In particular, Bazzaz's research showed how the effects of climate change on plants could cascade through the food chain, affecting communities of pollinators and herbivores with important consequences for human health. He recognized the need to study interactions between rising carbon dioxide concentrations and other aspects of global change such as nitrogen deposition and increases in temperature. He spoke eloquently and with great fervor about the dangers of climate change. Bazzaz's contributions to humanity are reflected in his scientific work, which lays bare the potential impacts of climate change on plant communities and the consequences for human well-being of failing to respond to such a serious and self-induced threat.

Bazzaz was an energetic and dedicated teacher, who inspired a generation of young ecologists. His commitment to students was reflected in the tightly organized and effective lab group that was the hallmark of his leadership style. He took immense pride in his students' success, both personal and professional, and considered their continued work an important part of his legacy.

Throughout his career, Fakhri Bazzaz received many honors, including election as a Fellow of Clare Hall of Cambridge University (1981), the American Association for the Advancement of Science (1987), the American Academy of Arts and Sciences (1989), and the Japan Society for the Promotion of Science (1993). He was awarded a John Simon Guggenheim Fellowship in 1988, the Humboldt Forschungspreis in 1996, and the Desert Research Institute's "Nevada Medal" in 2004. Bazzaz received a founding membership in the Iraqi National Academy of Science in 2003, and he helped found the Arab Science and Technology Foundation and served on its Advisory Board. He is survived by his wife of nearly 50 years, Maarib Bakri Bazzaz, his daughter Sahar Bazzaz of Cambridge, Massachusetts and his son Ammar Bazzaz of Chino, California.

Respectfully submitted,

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