

Princeton University

Honors Faculty Members
Receiving Emeritus Status



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The biographical sketches were written by
colleagues in the departments of those honored.

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Faculty Members Receiving Emeritus Status

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Austin Newton



Austin Newton spent his entire academic career at Princeton as a teacher and scholar, first in the biology department and biochemical sciences program, then as a founding member of the Department of Molecular Biology. During this time, he established a new experimental system and mentored many generations of undergraduates, graduate students, and postdoctoral fellows.

Austin was born in Texas, graduating from the University of Texas–Austin in 1959 with a degree in chemistry, and then migrating to the University of California–Berkeley for his Ph.D. in biochemistry in 1964. Supported by a National Science Foundation fellowship, he then joined the Pasteur group in Paris headed by the Nobel Prize winner Jacques Monod. This was during the Golden Age of molecular biology, when much could be imagined, and clear thinking and experimental elegance highly prized. In this environment, Austin showed how an outstanding puzzle in gene regulation could be solved by the clever utilization of simple genetic tools. During this time, he also developed an abiding passion for African sculpture and textiles, the Lewis Thomas Laboratory being but one of the lucky beneficiaries of his expertise and practiced eye.

At Princeton, where he was appointed an assistant professor in 1966, he continued work begun in Paris, publishing several classic papers of fundamental importance to our understanding of coordinated gene translation. He soon realized, however, that molecular biology was moving on, and that the genetic approaches with which he was familiar could be used to launch an attack on fundamental problems in developmental biology. This became the major focus of his research at Princeton.

Theories about how animals get their proper shape go back to at least Aristotle, who speculated endlessly in his *De Anima* on this topic. Seeking simplicity and building on his knowledge of simple systems, Austin decided to study the tiny fresh water bacterium *Caulobacter*, isolating his first exemplars from Lake Carnegie. *Caulobacter* is a bacterium that produces distinctive asymmetric daughter cells upon division, a model for the asymmetries so obvious in cell division in animal and plant cells. With his students and longstanding collaborator Noriko Ohta, he began a systematic genetic and molecular analysis of the origins of these asymmetries. Research of this sort—initiating an entirely new field—requires vision, scientific imagination, courage, and fortitude. This work is now widely seen as pioneering, and has led to many new insights into cell polarity, cell cycle organization and regulation, and, especially, how cells switch from one morphology to another. This work, it is fair to say, has inspired others to build on his science, thus advancing our understanding of bacterial morphogenesis in many, many ways.

Austin was promoted to associate professor in 1972 and later to full professor. In addition to his teaching and research at Princeton, always supported by competitive awards from the National Institutes of Health and the National Science Foundation, Austin served on the editorial board of the *Journal of Bacteriology*, and as associate editor of *Developmental Genetics*. He is a member of various scientific societies and a fellow of the American Academy of Microbiology.