At a meeting of the Faculty of Arts and Sciences on December 6, 2011, the following Minute was placed upon the records.

ALLAN R. ROBINSON

Born: October 17, 1932
Died: September 25, 2009

Allan R. Robinson, Gordon McKay Professor of Geophysical Fluid Dynamics, *Emeritus*, died suddenly on September 25, 2009, at his summer home overlooking Buzzards Bay. Professor Robinson established and, for nearly four decades almost singlehandedly ran, a graduate program in physical oceanography in the School of Engineering and Applied Sciences and the Department of Earth and Planetary Sciences. Many of his nearly 30 Ph.D. students and 25 postdoctoral fellows hold leadership positions at major universities and research centers.

Allan was known throughout the world of oceanography for his insightful contributions to understanding the Gulf Stream, the evolution of ocean eddies (the oceanic equivalent of weather), and the dynamics of circulation in the Mediterranean Sea. In the early 1980s he demonstrated that ocean current forecasting was possible and developed the Harvard Ocean Prediction System, a uniquely portable forecasting and analysis tool that is still widely used. He then successfully connected this methodology to practical applications in fisheries, search and rescue, and national defense.

Allan was born in Lynn, Massachusetts, and grew up a few blocks from the coast in Marblehead. As a student he excelled in science and began his lifetime interest in art, literature, and music. Like many in his community, he was drawn to the sea.

He enrolled in 1950 at Harvard College, where he enjoyed courses in physics and math and played baritone horn with the Harvard Band. During commencement week in 1953 Allan and his friends Edward Upton and Charles Lipson decided to write a set of nonsense Latin verses for "Ten Thousand Men of Harvard." Today when the Harvard Band sings one can occasionally still hear "Illigitimum non carburundum, Domine salvum fac." During Allan's memorial service in Memorial Church the band sang his lyrics -- he would have loved it.

As Allan contemplated possible career directions in physics, he was guided by a desire to make a fundamental contribution to theory. He began his dissertation research on nuclear shell theory, but midway through this work he was invited by Columbus O'Donnell Iselin, who was the Director of Woods Hole Oceanographic Institution at the time, to join a regular discussion among a small group of Massachusetts Institute of Technology faculty and Woods Hole scientists who were attempting to reconcile ocean observations with fundamental physical processes. Around this time, under the tutelage of George Carrier, Allan's Ph.D. research was shifting to theoretical ocean processes. This work was highly novel: only 14 prior publications are cited in his dissertation, and his studies led to more than half a dozen papers in prestigious scientific journals.

After completing his Ph.D. Allan spent a year as a National Science Foundation postdoctoral fellow at Cambridge University's Cavendish Laboratory with luminaries in fluid dynamics such as G. I.

Taylor and George Batchelor. Allan returned to Harvard as an assistant professor in 1960 and was subsequently promoted to associate and then the Gordon McKay Professor of Geophysical Fluid Dynamics in 1968.

In the early 1960s Allan's elegant analysis of vorticity conservation over a sloping sea floor led to the discovery of continental shelf waves, a term he coined. Next Allan spearheaded a number of ship-based explorations designed to study the performance of his ocean current models when compared to observed currents and water properties. With Henry Stommel he co-directed the Mid-Ocean Dynamics Experiment and co-chaired the US POLYMODE Organizing Committee, the latter of which involved extensive collaboration with Soviet physical oceanographers. These studies provided the first comprehensive overview of turbulent ocean "weather" that is analogous to the high and low pressure systems that influence atmospheric weather.

In the 1980s Allan launched a successful basin-scale modeling project of the eastern Mediterranean Sea that for the first time correctly depicted ocean current structures, which led to new research on the connections between ocean eddies and gyre circulation in the Mediterranean Sea.

While theoretical studies employing elegant mathematics were always dear to Allan's heart, he also thought that scientists have an obligation to address societal problems. Allan's understanding of the physics of eddies and his novel application of quantitative forecasting methods were highly valued by the U.S. Navy in its operational work relating to submarine detection. He took pleasure in the deference paid him by military leaders, such as when they delivered via a navy submarine an instrument he needed on a research vessel. Admiral Peter Cressy (Ret.) said, "From extensive personal observation . . . I can state . . . that [Professor Robinson's] contributions were essential to our national defense and a key component of the successful conclusion of the cold war." In 1991 the Office of Naval Research awarded Allan its Distinguished Educator's Award in Ocean Science, in recognition of his many contributions to national security.

Allan served for many years as the editor of the journal *Dynamics of Atmospheres and Oceans*, and as editor-in-chief of the prestigious occasional series THE *SEA*, overseeing the production of six volumes. He retired from teaching in 2002 and from his research professorship in 2007. Over his professional career Allan wrote or edited over 150 research articles and books. He was a Fellow of the American Academy of Arts and Sciences and of the American Geophysical Union and received honorary degrees from the University of Liege and the University of Massachusetts. In recognition of his contributions to important societal problems, he received the Award for the Merits of Two Worlds from the European Institute of Cultural Integration.

It would be fair to say that over the last half century no single physical oceanographer was more important than Allan in advancing the intellectual underpinning of interdisciplinary ocean science. In his later years he completed some of a projected series of influential papers on the theory of physical-biological interactions. Allan's sudden death was a shock to all who knew him. He was as mentally active as ever, authoring papers, exploring new research ideas, and laying plans for new edited volumes. His friends and close collaborators quite simply expected him to continue this way forever. He is survived by his spouse, Marguerite; their three daughters, Sarah Penelope Robinson, Perrine Robinson-Geller, and Laura Ondine Robinson; six grandchildren; and his sister, Gladys Meltzer.

Respectfully submitted,

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