

Memorial: Edgar Brown, Professor Emeritus of Mathematics, Daniel Ruberman, Professor of Mathematics



Professor Emeritus Edgar Brown (Mathematics) passed away on December 22, 2021, just shy of his 95th birthday. He arrived at Brandeis in 1958 following postdoctoral positions at Washington University in St. Louis and the University of Chicago. He retired in 1997 but remained an active presence in the Mathematics department for many years afterwards. He is survived by Gail C. (Hamilton) Brown, his children Jessica L. Gillis of Cambridge and Nicholas H. Brown of Cambridge, U.K., two grandchildren and two great-grandchildren.

Ed started his graduate work at MIT in 1951 at a time when his field of algebraic topology was rising to a preeminent position in mathematics that it would occupy for the subsequent twenty years. As the name suggests, the field combined abstract algebraic ideas with geometric techniques to solve problems about spaces that had previously seemed intractable. Starting with his Ph.D. thesis, Ed was at the heart of this enterprise, with new ideas and constructions that remain foundational for this and allied areas to this day.

One can perhaps get a glimpse into Ed's intellectual legacy in the sheer number of fundamental ideas that bear his name: the Brown representability theorem, the Brown-Gitler spectrum, Brown-Comenetz duality, the Arf-Brown invariant, and the Brown-Peterson spectrum BP. This

last object, grew out of Ed's long-term collaboration with his MIT colleague and close friend Frank Peterson. Together they wrote 22 papers, many of them classics, and founded the influential MIT Topology Seminar. While the initials BP may mean something else to the rest of the world, many topologists would think first of Brown-Peterson.

Ed came to Brandeis in 1958 as a founding member of a remarkable group that built a strong program in mathematics in a few short years. In his own words (from a 1994 memorial for Maurice Auslander)

I was an ONR fellow at Brown that year and was recruited by Oscar [Goldman] and Maurice [Auslander] who sold me on Brandeis as an ambitious place on the way up, having a Mathematics Department with a very attractive mathematical atmosphere.

Ed in turn recruited other topologists and helped create a long-lasting departmental presence in the field. He had 14 Ph.D. students over the years, many of whom went on to prominent careers of their own. Ed served two terms as department chair (1960-62 and 1978-80), trying to build on the momentum of those early days. He remained a reliable counsel to younger colleagues as we in turn took on greater responsibility in the department. His advice was leavened with humor and irony, but was never heavy-handed.

On Ed's passing this December, colleagues from around the world posted tributes on the alg-top mailing list discussing Ed and his work as representing the 'great founding generation of algebraic topology'. David Blanc's message reads,

It is unfortunate that many of the present generation of topologists never got to meet the actual people behind the names of this generation. A couple of years ago a post-doc here was giving a talk in which Brown-Gitler spectra came up, and said "I don't know which Brown that was". I had to point out that Brown representability, BP, Brown-Gitler spectra, and Brown-Comenetz duality were all due to the same person, who was still alive at the time.

Beyond his mathematical legacy, Ed was remembered as genial and as 'a true gentleman'. He was encouraging to his junior colleagues and kind to graduate students. Marc Levine wrote I have often looked back with pleasure on the algebraic topology class I took from Ed while I was a grad student at Brandeis in the late 70s, as well as the few occasions I had to meet with him over the years. He was a kind and gentle teacher, and I can still clearly picture his somewhat bemused grin and the twinkle in his eye as he patiently explained to me some quite trivial point. The twinkle in his eye was coupled with a somewhat laconic style of speaking and a dry midwestern wit. Once I saw him in the department in a jacket and tie and asked if he was off to see the Dean. I must have been the fifth person to make such a remark, and he came back with, 'No, it's just that I don't inherit the same sartorial wasteland as the rest of you'.

Ed felt great pride in his career at Brandeis and in his role in bringing the Mathematics Department to prominence. He leaves a striking legacy in mathematics, and a great sense of loss in those of us who were privileged to know him.

