

Resolution on the Death of Professor Martin Guterman

May 19, 2004

The Mathematics Department invites the Arts, Sciences and Engineering faculty to join us in remembering our friend and colleague Martin Guterman, Professor of Mathematics, who died of cancer on February 1, 2004.

Marty came to Tufts as an Instructor in 1966. After he completed his Ph.D. at Cornell in 1968, he was promoted to Assistant Professor; he became Associate Professor in 1972 and Professor in 1987.

Marty's research was in a branch of mathematics called group theory. Group theory is the study of symmetry, and is of fundamental importance in mathematics and theoretical physics. Marty's major research papers were part of one of the grandest enterprises in twentieth century mathematics, the effort to classify all finite simple groups, that is, to produce a "periodic table" of the "elements" from which all finite groups are composed. This project involved the combined efforts of well over 100 mathematicians by the time it was completed in the mid-1980s. Marty's major contribution to the project was to study the structure of the exceptional Lie groups of type F_4 defined over a finite field of characteristic two. Later he also published a paper with Richard Weiss and a graduate student, Susan Danielson, on 3-transposition groups. This class of groups played an important role in the classification of finite simple groups.

Marty was a truly extraordinary teacher. He was central in initiating many of the courses that are now standard in our mathematics curriculum, including Discrete Math (Math 22), Number Theory (Math 41), Linear Algebra (Math 46), and the graduate-level sequence in algebra (now Math 215-16). He helped shape the current differential equations course taken by all engineering majors (Math 38), which is unusual in its use of differential equations to motivate basic linear algebra. This innovation was a central theme of the book he wrote with Zbigniew Nitecki, which served as the text for Math 38 (as well as courses at many other institutions around the country, notably Yale and Berkeley) through three editions, from 1984 until 2003. However, the course that he regarded as his proudest achievement in teaching was Math 8, "Symmetry", a course for non-technical majors which

uses wallpaper patterns and the art of M. C. Escher to introduce students in a concrete way to basic ideas in group theory. At the end of Math 8, the students produce art projects illustrating some of the different possible types of symmetry in the plane. Marty's office in Bromfield-Pearson Hall is still filled with spectacular examples of his students' projects. His (unpublished) manuscript of over 200 pages, which continues to serve as the text for Math 8, is a tour de force of exposition, explaining sophisticated ideas from group theory to an audience whose exposure to abstract mathematics is minimal. This course, together with "The Mathematics of Social Choice", another Guterman creation, continues to be the most popular way for students in the arts and humanities to fulfill their mathematics distribution requirement at Tufts.

Many of Marty's colleagues outside the Mathematics Department came to know him through his energetic and wide-ranging involvement in committee work at Tufts. He served on and chaired many of the important faculty committees in Arts, Science and Engineering, including the Educational Policies Committee (1976-81, chair 1977-9), Budget and Priorities (1977-82), Tenure and Promotion (1983-6, chair 1985-6), the Policy and Programs Committee of the Graduate School (1990-2001), Liberal Arts and Jackson Curriculum (1998-2001, chair 1999-2001), Engineering Curriculum (1985-94), and the Faculty Liaison Committee (1999-2000). He also served for many years as the Mathematics Department liaison to the Education Department.

Marty was a passionate and knowledgeable listener of classical music. He accumulated a truly extraordinary collection of classical music recordings, both vinyl and digital. He took great pride in the achievements of his wife Sonia as a biochemist and more recently intellectual property rights lawyer, and of his daughters Lila, a science writer at the Chronicle of Higher Education, and Beth, a concert violist.

A scholarship has been established in Marty's name to encourage an outstanding first-year undergraduate at Tufts to continue the study of mathematics. Many of Marty's former students have contributed to funding this scholarship. Another scholarship has been established in Marty's name to encourage a high-school student at the New England Conservatory in the study of chamber music. With donations from several publishers of mathematical books (especially Klaus Peters), a collection of books about mathematics, accessible and interesting to a broad and general audience, is

being set up in Marty's memory. This collection will be housed in the reading area on the third floor of Bromfield-Pearson Hall, now called the Martin Guterman Library.

We, Marty's colleagues, very much miss his presence as a force in the classroom and in formulating our curriculum, as well as his insightful advice and integrity in our policy deliberations. Most of all we miss his infectious laugh and his generous friendship.

We ask that this resolution be included in the minutes of the faculty of Arts, Sciences and Engineering, and that copies be sent to Professor Guterman's widow and daughters.