



HERE'S TO JACK E. GRAVER ON HIS 80th BIRTHDAY

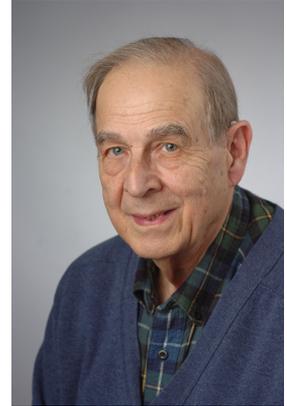
BRIGITTE SERVATIUS

Jack the educator. The Syracuse Mathematics Department is housed in Carnegie Library. Imagine heavy snowfall and a slim, tall figure approaching the Carnegie building, propping the heavy door open with one knee while his hands are busy shaking the snow off the Daily Orange (SU student newspaper) and the figure seemingly freezing in this position for as long as it takes to read the front page article. For SU students this is a familiar image of Jack E. Graver, always interested in students and always finding time to read their news.

Jack the administrator. A surprisingly deep dark voice resonating from the chairman's office inside Carnegie singing "Nobody knows the trouble I have seen, nobody knows my sorrows" is another image of Jack E. Graver.

Jack the researcher. The mathematician Graver is described on MathSciNet by publication in the areas of biology and other natural sciences, combinatorics, convex and discrete geometry, game theory, economics, social and behavioral sciences, geometry manifolds and cell complexes, operations research, mathematical programming, probability theory and stochastic processes.

Graver received his Ph.D. from Indiana University in 1964 under Andrew Hugh Wallace. His dissertation's title was "An Analytic Triangulation of an Arbitrary Real Analytic Variety", the field algebraic topology. It is remarkable that the 1964 paper [3] of the same title is cited more than once in this millennium. In 1966 he cashed an Erdős check for results in [8], a paper that may be called his first major work (cited more than 10 times in this millennium!). Because of this paper, written with Jim Yackel at Dartmouth (John Wesley Young Research Instructor), Jack Graver is known as a Ramsey Theorist. From 1966 to present, he teaches at Syracuse University. Why Syracuse? Because I felt at home here, he says. In 1975 he published *On the foundations of linear and integer linear programming I* [4], a paper that turned his name into an adjective. On Wikipedia you can read up on *Graver bases*, but if you want a more reliable source, try [9], where the relationship of Gröbner bases to Hilbert bases and Graver bases is presented. If you look for *On the foundations of linear and integer linear programming II*, you need to read Amir Fournudi's thesis, one of Jack Graver's 9 (so far) Ph.D. students - Jack himself was handicapped by his 1977-1994 chairmanship. However, despite administrative duties, his collaboration with Mark Watkins turned him to Graph Theory, with [6, 10, 7] as major contributions to the field. A fortunate diversion into Architecture produced not only a novel and unusual text [1], but awoke Jack's interest in rigidity of frameworks and he promoted matroids as a major tool in a colloquium talk that changed my life. I became his Ph.D. student, one of four simultaneously supervised by an acting chair. We did not fight over mathematical issues as Jack had all four of us work on totally disjoint topics, we merely fought for being next in line to enter the chairman's office. Combinatorial rigidity [2] (100 citations) is to this very day the focus of my research.





Meanwhile Jack has moved on to new Ph.D. students and new topics, namely, Fullerenes [5]. When asked about retirement he justifies the non-existence of plans by stating with a smile: “Normally people retire around 65, but next year will be only my 50th year at SU, so I have some time to think about that.”

There’s more to life than math—there is family, scouting, Shakespeare, gardening, fine dining, stories. Whenever you tell him a story, Jack will tell you a funnier and better one than you have ever heard. We have told but a small part of an interesting life to which we may look up to for future inspiration.

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MATHEMATICAL SCIENCES, WORCESTER POLYTECHNIC INSTITUTE, WORCESTER MA 01609-2280

E-mail address: bservat@wpi.edu