

Preface

This volume is dedicated to John W. Helton, also known as Bill, on the occasion of his 65th birthday. It includes, biographical information, personal notes and articles by many of Bill's friends and collaborators.

The first part of the volume begins with a list of Bill's publications and a number of short notes by close friends. This is followed by a transcript of two public addresses delivered at the conference dinner during a three day workshop held at UCSD from October 2nd to the 4th, 2010, to celebrate Bill's birthday. The first is a survey of Bill's contributions to mathematics and engineering, by Miroslav Krstic. The second is an essay on Bill's early work, by Jim Agler.

The editors and most of the authors of this volume have had the privilege to know and work closely with Bill. His unbounded curiosity, original ideas, and generosity have marked many of us. Entire chapters of modern operator theory and control theory of linear systems of differential equations have been shaped by his thoughts. The nineteen expository articles in the second part of this volume illustrate his remarkable impact. Subjects include interpolation, Szegő limit theorems, Nehari problems, trace formulas, systems and control theory, convexity, matrix completion problems, linear matrix inequalities and much more.

Bill's mathematical talent was discovered and directed by the famous mathematical pedagogue Robert L. Moore at UT Austin. From those early days, Bill preserved the experimental attitude and a Socratic approach to research, as displayed throughout his career. This might help explain his success at talking to and doing mathematics with engineers, physicists and all humans with an inclination to listen or respond to his endless questions. For Bill, every mathematical problem is interesting, while solving it in a continuous dialogue is the most natural approach – the numerous experts in mathematical education (in such an expansive state nowadays) have much to learn from Bill. Another explanation might be on his unreserved kindness and his friendly manner. Under the guise of an absent-minded gentleman, Bill hides a lucid, focused search for the mathematical truth. His openness to dialogue and willingness to share ideas is an inspiration to all of us.

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