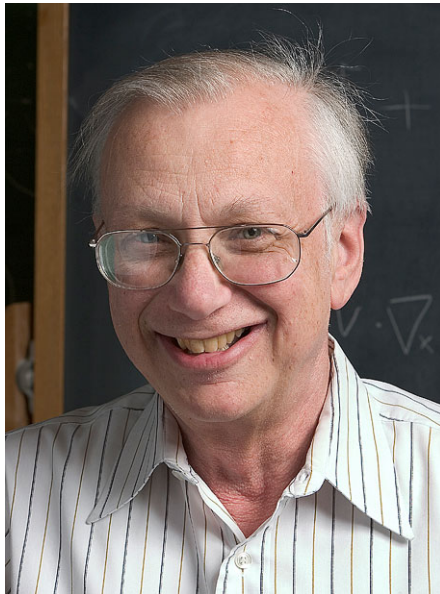


Foreword

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Special Issue in Memory of David Gottlieb



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This special issue of the *Journal of Scientific Computing* is in honor of the memory of David Gottlieb, who passed away on December 6, 2008. With his death, our community of computational mathematicians and scientists lost a wise, generous, and kind mentor and friend. The *Journal of Scientific Computing* has also lost a valued long-time associate editor.

David was a central figure in the development of high-order and spectral methods for the solution of partial differential equations. In a productive career spanning forty years, he produced 125 papers and two books, most of which in collaboration with colleagues. The work he is best known for includes the development and analysis of spectral methods for time-dependent problems, the resolution of the Gibbs phenomenon using Gegenbauer polynomials, the analysis of perfectly matched layer methods for absorbing boundary conditions, and the development of penalty methods for boundary conditions. At the time of his death, he was enthusiastic about the publication of his work on modified optimal prediction methods (JSC November, 2008), and was working on further developing these methods.

In recognition of his work and its scientific impact, David was awarded honorary doctorates from the University of Paris VI and Uppsala University, and was elected to the US National Academy of Sciences and the American Academy of Arts and Sciences. In July of 2008, only five months before his death, he was awarded by SIAM the John von Neumann Lecture at the 2008 SIAM Annual Meeting. His talk, titled “The Effect of Local Features on Global Expansions”, was filled with his love of scientific computing and his characteristic humor. This was to be his last public lecture.

Four years ago, the *Journal of Scientific Computing* published a special issue in honor of David Gottlieb’s sixtieth birthday. Peter Lax dedicated his paper in that issue

To David Gottlieb, master of scientific computation,
subtle numerical analyst, Mensch extraordinaire.

While his work was recognized and appreciated, it was his kindness, gentleness, and integrity that made David the special person (Mensch) that he was. His courage and humor in living a productive and happy life despite a battle with kidney cancer that lasted close to twelve years was an inspiration.

David was an associate editor of the *Journal of Scientific Computing* ever since it was founded. He dedicated a lot of time and energy to running this journal. In this special issue, his friends, colleagues and students contributed papers ranging from mathematical models to image processing. The majority of the papers are however on high order accurate numerical methods, an area in which David was particularly influential.

It is fitting, then, that this issue of the *Journal of Scientific Computing* be dedicated to the memory of David Gottlieb, master of scientific computation, subtle numerical analyst, Mensch extraordinaire.

Providence, June 2010