



Preface

This special issue of the Journal of Computational Physics celebrates the 70th birthday of Tony Leonard. Tony Leonard is one of the pioneers and innovators of Computational Fluid Dynamics and responsible for landmark, fundamental contributions in the fields of Large Eddy Simulations of Turbulent flows, three-dimensional Vortex Methods and Vortex Dynamics, chaotic transport in dynamical systems and flow–structure interaction of bluff body flows.

It is beyond my capacity to fully assess the immense scientific work of Tony Leonard, but I wish to remark that his work in areas such as the numerical errors in the filtered Navier–Stokes equations and the handling of distortion of Lagrangian computational methods has had significant implications for several fields of science ranging from Plasma Physics to Computer Graphics and Astrophysics.

Tony Leonard has carved a path in science that is distinguished by its rigor, elegance, clarity and a unique perspective for future research directions. He has been a source of inspiration for generations of students and colleagues at Stanford, NASA Ames and at the Graduate Aeronautical Laboratories of the California Institute of Technology, not only by being an example of scientific innovation and integrity, but also by his genuine curiosity for all aspects of science and his capability to grasp the essence of diverse problems and to offer invaluable insight. He guides his PhD students with gentleness and enthusiasm, and offers a freedom that reflects his deep respect and attention to all the details of humanity and scientific inquiry.

Tony hardly looks 70 today and many of us attribute his youthful look to his passions for sports, traveling (on the adventurous side) and good food (from a simple beach cantina to the most elegant sushi restaurant). Surfing and football have been his passions and it is no longer secret that academia profited early in his life at the expense of the US NFL! Last but not least some of us think that his young looks are in the end due to his great relationship of 50 years with Gretchen.

I wish to emphasize that the present issue of the Journal of Computational Physics is not a complete overview of the numerous scientific contacts and research interests of Tony Leonard. It is rather meant as a present from a small sample of friends for Tony's 70th birthday and we only hope that he will enjoy reading it much as the other readers of the Journal.

Tony, please allow me on behalf of all your students, post-docs, former and current colleagues as well as all the people that have been touched by your work and personality to wish you:

Happy Birthday!

Petros Koumoutsakos
*ETH Zurich, Chair of Computational Science,
Universitatstrasse 6, CH-8092 Zurich,
Switzerland*
Tel.: +41 44 632 5258; fax: +41 44 632 1703
E-mail address: petros@ethz.ch

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