

CURRICULUM VITAE

Name: Stanley J. Osher

Office Address:

Department of Mathematics
University of California
Los Angeles, CA 90095-1555
(310) 825-1758
e-mail: sjo@math.ucla.edu

Date of Birth:

April 24, 1942

Education:

1966, Ph.D., New York University (J.T. Schwartz, thesis advisor)
1964, M.S., New York University
1962, B.S., Brooklyn College

Professional Employment:

Professor, UCLA, 1977-present
Professor, SUNY, Stony Brook, 1975-77
Associate Professor, SUNY, Stony Brook, 1970-75
Assistant Professor, University of California Berkeley, 1968-70
Assistant-Associate Mathematician, Brookhaven National Laboratories, 1966-68

Research Interests:

Scientific Computing, Numerical Analysis, Applied Partial Differential Equations

Honors: Fulbright Fellow, 1971

Alfred P. Sloan Fellow, 1972-1974
SERC Fellowship (England), 1982
US-Israel BSF Fellow, 1986
NASA Public Service Group Achievement Award, 1992
Invited speaker, International Congress of Mathematicians, Zurich, 1994
ICI Original Highly Cited Researcher, 2002
Japan Society of Mechanical Engineers Computational Mechanics Award, 2003
ICIAM Pioneer Prize, 2003

Five Most Relevant Publications

S.J. Osher, J.A. Sethian, "Fronts propagating with curvature dependent speed. Algorithms based on Hamilton-Jacobi formulations}, *J. Comp. Phys.*, v.79, 1988, pp. 12-49.

S.J. Osher and L. Rudin, "Feature oriented image enhancement using shock filters", *SIAM J. Num. Anal.* **28**, 919-940 (1990)

S.J. Osher and C.-W. Shu, "High order essentially nonoscillatory schemes for Hamilton-Jacobi Equations", *SIAM J. Num. Anal.* **28** 907-922 (1991).

H.K. Zhao, T. Chan, B. Merriman and S.J. Osher, "A variational level set approach to multi-phase motion", *J. Comp. Phys.*, **115**, 179-195 (1996).

L. Rudin, S.J. Osher and E. Fatemi, "Nonlinear total variation based noise removal algorithms", *Physica D* **60**, 259-268 (1992).

Five Other Significant Publications:

H.,K. Zhao, B. Merriman, S.J. Osher and M. Kang, "Implicit nonparametric shape reconstruction from unorganized points using a variational level set method", *UCLA CAM Report 98-7*, 1998; *Computer Vision and Image Understanding*, v.80, 295-314 (2000).

L.I. Rudin and S.J. Osher, "Total variation based restoration with free local constraints", *Proc. ICIP, IEEE Int'l conf. on Image Processing*, Austin, TX, 31-35 (1994).

M. Bertalmio, L.T. Cheng, S.J. Osher and S. Sapiro, "Variational problems and partial differential equations on implicit surfaces: the framework and examples in image processing and pattern formation", *UCLA CAM Report 00-23*; *J. Comp. Phys.*, to appear.

P. Burchard, L.T. Cheng, B. Merriman and S.J. Osher, "Motion of curves in three spatial dimensions using a level set approach", *J. Comp. Phys.*, v.170, 720-741 (2001).

B. Merriman, J. Bence and S. Osher, "Motion of multiple junctions, a level set approach", *J. Comput. Phys.*, v.112, 2 334-403 (1994).

Synergistic Activities

Dr. Osher is the coinventor and a principle developer of widely used i) state-of-the-art high resolution schemes for approximating hyperbolic conservation laws and Hamilton-Jacobi equations; ii) level set methods for computing moving fronts involving topological changes; applications and extensions include a variational version, multiphase flow, crystal growth, computer vision and graphics; iii) total variation and other partial differential equations based image processing techniques.

He has been a Fulbright Fellow, Alfred P. Sloan Fellow, SERC (England) Fellow, U.S. - Israel Binational Fellow, received NASA Public Service Groups Achievement Award, and was an invited speaker at the International Congress of Mathematicians.

His work has been written up numerous times in the scientific and international media, e.g. science News, Die Zeit (both in 1999). He has had approximately 60 invited lectures in the past two years. He is, or was recently Associate Editor of the Journal of Computational Physics, Mathematics of Computation, and SIAM Journal on Numerical Analysis. He was also co-organizer of a meeting held Spring 2001 on "Geometrically Based Motions" at the new NSF funded Institute of Pure and Applied Mathematics at UCLA. He is also Director of Special Projects at this Institute.

Collaborators over the past four years:

Y. Chang, T. Hou, B. Merriman, Xu-Dong Liu, B. Engquist, E. Fatemi, F. Lafon, M. Sussman, P. Smereka, E. Harabetian, C.-W. Shu, H.-K. Zhao, T. Chan, R. Lagnado, R. Fedkiw, Z. Li, S. Chen, L. Wang, M. Green, B. Miller, G.-S. Jiang, C.-T. Lin, E. Tadmor, M. Kang, T. Aslam, M. Gyure, D. Peng, S. Ruuth, L.-T. Cheng, P. Burchard, F. Santosa, J. Shen, G. Sapiro, M. Bertalmio, A. Marquina, G. Liu, G. de la Pena, J. Xin

Graduate Advisor: Jacob Schwartz (New York University)

Graduate students over the last five years:

M. Sussman, H.-K. Zhao, R. Fedkiw, S. Chen, M. Kang, A. Jiang, B. Miller, L.-T. Cheng, H. Shim, D. Peng