BIOGRAPHICAL SKETCH for Susan Friedlander

PROFESSIONAL PREPARATION

London University	B.Sc.	1967
M.I.T.	M.S.	1970
Princeton University	Ph.D.	1972
Courant Institute, NYU	Post-doc	1972-74

APPOINTMENTS

University of Southern (

University of Southern California	Professor, Director of
	Center for Applied Mathematical Sciences
University of Illinois-Chicago	Assistant, Associate, Full Professor
Princeton University	Instructor

Selected Sabbatical and Visiting Positions

Institute for Advanced Study, Member (1999, 2005, 2020, 2020) M.S.R.I., Berkeley, Research Professor (1999, 2008, 2021) E.T.H., Zurich, Visiting Member (2000, 2004) Cambridge University (2000, 2009) I.H.E.S., Paris, Visiting Member (2002, 2004, 2006)

Honors

Elected Honorary Member, Moscow Mathematical Society (1995) Awarded Medal of Institut Henri Poincaré (1998) Gauthier-Villars Prize for a paper in nonlinear analysis (1998) Plenary speaker at SIAM annual meeting (1999) Senior Scholar Award of University of Illinois (2003) Fellow, Society for Industrial and Applied Mathematics (2012) Fellow, American Mathematical Society (2012) Fellow, American Association for the Advancement of Science (2012) Raubenheimer Award for Research and Scholarship (2019)

Editorial Positions

Editorial Board, Geophysical and Astrophysical Fluid Dynamics (1991-95) Editorial Board, SIAM J. of Math Analysis (1992-98) Editorial Committee, Notices of AMS (1993-2015) Chair, Colloquium Publication Series of AMS Editorial Board (1996-05) Editor (with D. Serre): The Handbook of Math Fluid Dynamics (2001-present) Associate Editor, J. of Math Fluid Dynamics (2009-present) Editorial Board, SIAM J. of Multiscale Modeling and Simulation (2013-20) Chief Editor, Bulletin of the AMS (2005-present)

SELECTED ACTIVITIES

Associate Secretary of the American Mathematical Society, (1996-2010) International Conference Organization: AMS-South Africa (1997), AMS-Australia (1999) AMS-Spain (2003), AMS-India (2003), AMS-Germany (2005), AMS-Poland (2007) AMS-Shanghai (2008), AMS-Mexico (2010) Scientific Advisory Committees of M.S.R.I. (2001-2006), of CRM in Montreal (2010-2014) Member, Board of Mathematical Sciences and their Applications (2008-2011) Steering Committee, Mathematical Congress of the Americas (2011-2025) Member, Section A Steering Committee, AAAS, (2013-15) Chair, Executive Committee, Mathematical Council of the Americas (2013-present) Member, MIT Math Department Visiting Committee, (2013-2021)



2008-present

1975-2008 1974-75

SELECTED PUBLICATIONS

Lax pair formulation for the Euler equation, (with M.M. Vishik), Physics Letters A, 148 no. 6, 7 313-319 (1990).

An inverse scattering treatment for the flow of an ideal fluid in two dimensions, (with M.M. Vishik), Nonlinearity, 6, 231-249 (1993).

Dynamo theory methods for hydrodynamical stability, (with M.M. Vishik), J. Math Pure et Appliques 72, 145-180 (1993).

Nonlinear instability in hydrodynamics on an ideal fluid (with W. Strauss and M.M. Vishik), Annales I.H.P, J. Nonlineaire 14, 2, 187-209 (1997).

Instability of steady flows of an ideal incompressible fluid (with A. Shnirelman). "Mathematical Fluid Mechanics - Recent Results and Open Questions", Editors Neustupa and Penel, *Advances in Mathematical Fluid Mechanics*, Birkhauser, 143-172 (2001).

Localized instabilities in fluids (with A. Lipton-Lifchitz). Handbook on Mathematical Fluid Dynamics, vol. 2, 289-354, North-Holland (2003).

Blow up in a 3 dimensional vector model for the Euler equations (with N. Pavlovic), Comm. Pure App. Math vol. LVII, 705-725 (2004).

Nonlinear instability for the Navier-Stokes equations (with N. Pavlovic and R. Shvydkoy), Comm. Math. Physics 264, 335-347 (2006).

The unstable spectrum of the Navier-Stokes operator in the limit of vanishing viscosity (with R. Shvydkoy). Annales I.H.P., J. Nonlineaire, 25, 713-724 (2008).

Energy conservation and Onsager's Conjecture for the Euler equations (with A. Cheskidov, P. Constantin, and R. Shvydkoy). Nonlinearity, 21 no. 6, 1233-1252 (2008).

Global well-posedness for an advection-diffusion equation arising in magnetogeostrophic dynamics (with V. Vicol). Annales I.H.P., J. Nonlineaire, 28, 283-301 (2011).

On the ill/well-posedness and nonlinear instability of the magneto-geostrophic equations (with V. Vicol). Nonlinearity, 24, 3019-3042 (2011).

On a singular incompressible porous media equation (with F. Gancedo, W. Sun and V. Vicol). Journal Math Physics, 53, no. 11, 1-20 (2012).

On the supercritically diffusive magneto-geostrophic equations (with W. Rusin and V. Vicol), Nonlinearity, 25, 3071-3097 (2012).

On the second iterate for active scalar equations (with W. Rusin). J. Math Fluid Mech, 15, 481-492 (2013).

The magnetogeostrophic equations: a survey (with W. Rusin and V. Vicol). AMS Translations Series, vol. 232, 53-78 (2014).

Existence, uniqueness, regularity and instability results for the viscous magneto-geostrophic equations (with A. Suen). Nonlinearity, 28, 3193-3217 (2015).

Inviscid limits for a stochastically forced shell model of turbulent flow (with N. Glatt-Holtz and V. Vicol). Annales I.H.P., Probabilities et Statistiques, vol 52, no. 3, 1217-1247 (2016).

Asymptotic analysis for randomly forced MHD (with J. Foldes, N. Glatt-Holtz and G. Richards). SIAM J. Math Analysis vol 49, no. 6 (2017).

Solutions to a class of forced drift diffusion equations with applications to the magnetostrophic equation (with A. Suen). Annals PDE, 4, no. 2 (2018).

Wellposednes and convergence of solutions to drift diffusion equations (with A. Suen). J. Math. Fluid Mech. Vol. 27, Art 50 (2019).

Vanishing diffusion limits and long time behavior of a class of forced active scalar equations (with A. Suen). Arch. Rational Mech. Anal. 240, (2021).

On Moffatt's magnetic relaxation equations (with R. Beekie and V.Vicol). Comm Math Phys, vol 390 (2022).