

**Thomas A. Hewett  
Professor of Petroleum Engineering**

YEAR AND PLACE OF BIRTH:

1944            Lansing, Michigan

EDUCATION:

1966    B.S.    Mechanical Engineering, Michigan State University  
1968    S.M.    Mechanical Engineering, M.I.T.  
1969    Mech. E.    Engineering, M.I.T.  
1970    Ph.D.    Engineering, M.I.T.

PROFESSIONAL EXPERIENCE:

1970–1975      Assistant Professor of Mechanical Engineering, The City College of the City  
                        University of New York  
1975–1979      Adjunct Associate Professor of Mechanical Engineering, The City College of the City  
                        University of New York  
1975–1978      Senior Research Engineer, Linde Research Department, Union Carbide Corporation  
1978–1979      Research Scientist, Linde Research Department, Union Carbide Corporation  
1979–1985      Senior Research Engineer, Exploratory Assisted Recovery Section, Reservoir  
                        Properties Division, Chevron Oil Field Research Company  
1985–1986      Senior Engineering Associate, Exploratory Assisted Recovery Section, Reservoir  
                        Properties Division, Chevron Oil Field Research Company  
1986–1991      Senior Engineering Associate, Reservoir Characterization Section, Reservoir  
                        Engineering Division, Chevron Oil Field Research Company  
1991–present    Professor of Petroleum Engineering, Stanford University

HONORS AND AWARDS:

1966            Outstanding Engineer of Michigan State University  
1966–1968      National Science Foundation Graduate Fellow  
1971            Teacher of the Year, CCNY Pi Tau Sigma (M.E. honorary)  
1973            Teacher of the Year, CCNY Pi Tau Sigma (M.E. honorary)  
1973            Selected as Danforth Associate, 1973  
1975            Teacher of the Year, CCNY Pi Tau Sigma (M.E. honorary) Listed in American Men  
                        and Women of Science and Who's Who in the West  
1990            Recipient of Chevron Corporation Chairman's Award for developing the Hybrid  
                        Fractal Finite Difference/Streamtube Method for scaling the effects of reservoir  
                        heterogeneity on oil recovery processes  
1991            Fellow of the Institute for the Advancement of Engineering  
1991            Orange County Engineering Council "Engineering Merit Award"  
1991–1992      SPE Distinguished Lecturer, (27 lectures in 18 countries)  
1997–present    Listed in Who's Who in America

UNIVERSITY SERVICE (September 1, 1997 through December 31, 2000):

1991–present    Director of the Stanford Center for Reservoir Forecasting  
1991–present    Faculty advisor to undeclared students  
1992–2000      Chairman, Stanford Petroleum Engineering Department Graduate Admissions  
                        Committee  
1992–present    Member, Earth Sciences Council

1994–present Associate Chairman, Stanford Department of Petroleum Engineering  
 1995–1997 Stanford School of Earth Sciences Ocean Margins Initiative Faculty Search Committee  
 1999 Acting Chairman, autumn quarter, Stanford University Department of Petroleum Engineering  
 2000 Petroleum Engineering Department Faculty Search Committee

PROFESSIONAL ACTIVITIES (September 1, 1997 through December 31, 2000):

1992 - present Associate Editor, In Situ  
 1993 - 1997 Society of Petroleum Engineers Books Committee  
 1995 Society of Petroleum Engineers Western Regional Meeting Technical Session Chairman  
 1995-present Board of Directors, Reservoir Engineering Research Institute, Palo Alto, CA  
 1996-1997 Co-Covenor, Stanford and Heriot-Watt University Forum on Reservoir Description, Stanford Sierra Camp, South Lake Tahoe, CA, September, 1997  
 1997-1998 SPE Sixth International Oil and Gas Conference and Exhibition in China Organizing Committee and Session Chair  
 1997-1998 SPE/JAPT Applied Technology Workshop Steering Committee  
 1997-1998 Chairman, Gordon Research Conference on Modeling Flow in Permeable Media  
 1998-1999 Co-Covenor, Stanford and Heriot-Watt University Forum on Reservoir Description, Crieff Hydro, Perthshire, Scotland, September 5-10, 1999  
 2000 Invited Lectures: CSIRO Upscaling Downunder, Marysville, Australia; BHP Petroleum, Melbourne, Australia

COURSES TAUGHT (September 1, 1997 through December 31, 2000):

<u>Year</u>	<u>Course Number</u>	<u>Course Title</u>	<u>Units</u>	<u>Enrollment</u>		<u>Total Units</u>	<u>Course Type</u>
				<u>Undergrad</u>	<u>Grad</u>		
1997-1998	PetE 224	Heterogeneous Reservoirs	3	0	10	30	L
1997-1998	PetE 360-65	Petroleum Engineering Research	1-15	0	6	42	D
1997-1998	PetE 802	Ph.D. TGR Dissertation	0	0	8	0	D
				0	24	72	
1998-1999	PetE 221	Multiphase Flow	3	0	10	30	L
1998-1999	PetE 224	Heterogeneous Reservoirs	3	0	6	18	L
1998-1999	PetE 802	TGR Dissertation	0	0	6	0	D
				0	22	48	
1999-2000	PetE 120	Fundamentals of Petroleum Engr	3	6	14	59	L
1999-2000	PetE 360-	Petroleum Engineering Research	1-15		2	9	D
				6	16	68	

ADVISEES RECEIVING DEGREES LAST THREE YEARS:

<u>Year</u>	<u>Name and Dissertation or Thesis Title</u>	<u>Degree</u>	<u>Place of Employment</u>
1997-1998	Ricardo C.M. Portella, "Gridding, Upscaling, and Simulation Using Streamtube Techniques"	Ph.D.	Petrobras, Brazil
1997-1998	Apurva M. Kumar, "Upscaling for Reservoir Simulation Using Multi-Layer Directional Two-Phase Pseudofunctions"	M.S.	Mysimon, Santa Clara, CA
1998-1999	Koichi Suzuki, "Scale-Up of Relative Permeabilities of Isolated Gridblocks Accounting for Boundary Effects"	Ph.D.	Japan Oil Development Co.

1998-1999	Munseok Baek, "A Hybrid Streamtube Simulator Using a Semi-Analytical Method"	Ph.D.	Korea Gas Corporation
1999-2000	Vinit Doshi, "Evaluation and Modification to the Streamline-Pseudofunction Based 3-D to 3-D Scaleup Algorithm"	MS	i2 Technology
1999-2000	Shahin Aliyev, "Simulation Breakthrough Time and Optimum Horizontal Well Location in Three Phase Systems"	MS	Schlumberger Geoquest

RESEARCH SUPPORT (September 1, 1997 through December 31, 2000):

<u>Project Title</u>	<u>Agency</u>	<u>Duration</u>	<u>Amount</u>
Productivity and Injectivity of Horizontal Wells (with Fayers and Aziz)	DOE	03/97-03/98	460,081 x .10
Stanford Center for Reservoir Forecasting (with Journal)	Industry	1997-98	761,928/2
Stanford Center for Reservoir Forecasting (with Journal)	Industry	1998-99	597,963/2
Stanford Center for Reservoir Forecasting (with Journal, Caers)	Industry	09/99-06/00	373,000/3
Flow in Heterogeneous Reservoirs	Industry	7/00-06/01	294,649

RESEARCH EXPENDITURES:

Annual Expenditures	1997-1998	\$423,137
Annual Expenditures	1998-1999	\$222,488
Annual Expenditures	1999-2000	\$79,635

PUBLICATIONS (January 1, 1997 through December 31, 2000):

- 1997 Hewett, T.A., and Archer, R.A., "Scale-Averaged Effective Flow Properties for Coarse-Grid Reservoir Simulation", SPE 37988, presented at the 1997 SPE Reservoir Simulation Symposium, Dallas, TX, June 8-11, 1997.
- 1997 Portella, R.C. M, and Hewett, T.A. "Fast 3-D Reservoir Simulation and Applications Using Streamlines" SPE 39061, presented at the Fifth Latin American and Caribbean Petroleum Engineering Conference and Exhibition, Rio de Janeiro, Brazil, August 30-September 3, 1997
- 1998 Portella, R.C.M., and Hewett, T.A., "Upscaling , Gridding and Simulation Using Streamtubes," SPE 49071, Proceedings of the 1998 SPE Annual Technical Conference and Exhibition, New Orleans, Sept. 27-30, 1998
- 1998 Hewett, T.A., Suzuki, K., and Christie, M.A., "Discretization Effects in Coarse-Grid Pseudofunctions," 6th European Conference on the Mathematics of Oil Recovery, Peebles, Scotland, Sept. 8-11, 1998.
- 1998\* Hewett, T.A., Suzuki, K., and Christie, M.A., "Analytical Calculation of Coarse-Grid Corrections for Use in Pseudofunctions," SPE Journal, Sept., 1998, pp. 293-305.
- 1998\* Yamada, T., and Hewett, T.A., "Coupled Gridding and Upscaling Using Streamfunctions," In Situ, 22, 4, pp. 373-413, Nov., 1998.
- 1999\* Portella, R.C.M. and Hewett, T.A., "Fast 3-D Reservoir Simulation and Scale Up Using Streamtubes," Mathematical Geology, Vol. 31, No. 7, 1999.
- 1999 Suzuki, K., and Hewett, T.A., "Scale-Up of Relative Permeabilities of Isolated Gridblocks Accounting for Boundary Effects, SPE 51938, presented at the 1999 SPE Reservoir Simulation Symposium, Houston, TX, February, 1999.

- 1999\* Portella, R.C.M. and Hewett, T.A., "Upscaling, Gridding, and Simulation Using Streamtubes," SPE Reservoir Engineering (in press).
- 2000\* Portella, R.C.M. and Hewett, T.A., "Upscaling, Gridding, and Simulation Using Streamtubes," SPE Reservoir Engineering, SPE Journal, Vol. 5, No. 3, Sept., 2000., pp. 315-323
- 2000\* Suzuki, K. and Hewett, T.A., "Sequential Upscaling Method," Transport in Porous Media, 1591: 1-34, 2000 (in press)
- 2000 Baek, M., and Hewett, T.A., "A Hybrid Streamtube Simulator Using a Semianalytical Method," SPE 63151, presented at the 2000 SPE Annual Technical Conference and Exhibition, Dallas, TX, October, 2000