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## Education

Cornell University	PhD - Physics	1981
University of Manitoba	BSc (Honours) - Physics	1975

## Positions

July 2006 - present	State University of New York at Stony Brook Nov. 2007 - Deputy Provost July 2006 - Associate Provost
Sept. 2002 - Jun 2006	State University of New York at Stony Brook President, University Senate
Jan. 1989 - present	Department of Applied Mathematics and Statistics State University of New York at Stony Brook Sept. 1999 - Associate Chair Sept. 1994 - Full Professor Jan. 1989 - Associate Professor
Sept. 1981 - Dec. 1988	Courant Institute of Mathematical Sciences New York University Sept. 1988 - Research Associate Professor Jan. 1985 - Research Assistant Professor Sept. 1981 - Associate Research Scientist

## Visiting Positions

Aug. 1996 – July. 1997	TICAM Fellow, The University of Texas at Austin
Sept. 1996 – Dec. 1996	Visiting Professor, Dept. of Mathematics, UT-Austin

## Honours

- 2011 Most Cited Article 2005 to 2010, Computers and Geosciences,  
for *Analysis of vesicular structure of basalts*, **31(4)** (2005), 473–487
- 2010 Lee Segel Prize (joint with I.D. Chase), Society of Mathematical Biology
- 2002 Chancellor’s Award, Excellence in Teaching, State University New York
- 2002 Presidents’s Award, Excellence in Teaching, Stony Brook University
- various Outstanding Teacher awards, F’03,F’02,F’01,F’00,F’97,S’96,S’95,S’94
- 1975 National Research Council of Canada Graduate Scholarship  
(declined award as graduate studies continued outside of Canada)
- 1975 University of Manitoba Gold Medalist: Science
- 1975 University of Manitoba Gold Medalist: Physics

## Research Support

### Current

Title: Changes of Porosity, Permeability and Mechanical Strength Induced by Carbon Dioxide Sequestration

Agency: NSF

co-PI: T.-f. Wong

Amount: \$653,8729

Period: 06/01/10-05/31/2013

Title: Stony Brook Songdo Branch Campus Planning Fund Support Agreement

Agency: Incheon Free Economic Zone Authority

Amount: \$1,000,000

Period: 12/28/08-12/31/2010

Title: Effects of Pore Structure Change and Multi-Scale Heterogeneity on Contaminant Transport and Reaction Rate Upscaling

Agency: DOE, ERSP

Amount: \$1,349,496

Period: 10/01/08-09/30/2011

Title: UBM - Institutional: Research Training in Mathematical Biology

Agency: NSF

co-PIs: D.F. Green, S.O. Smith, J.P Gergen

Amount: \$930,513

Period: 9/1/07-8/31/12

### Past

Title: Up-Scaling Geochemical Reaction Rates for CO<sub>2</sub> in Deep Saline Aquifers

Agency: DOE

co-PIs: C. Peters, M. Celia

Amount: \$443,145

Period: 02/01/05–08/31/08

Title: Soil Pore Structure Changes Induced by Caustic Waste Solutions

Agency: Stony Brook/BNL

Amount: \$25,000

Period: 6/1/07-5/31/08

Title: Interface Physics in Porous Media

Agency: Sandia National Laboratory

co-PIs: D.R. Nobel, L. Pyrak-Nolte

Amount: \$960,000

Period: 10/01/05-9/30/08

Title: Morphological Analysis of Trabecular Bone Structure  
Agency: Advanced Acoustic Concepts (Hauppauge NY) and SensorCAT  
Amount: \$10,000 Period: 3/1/06-8/30/06

Title: Research and Educational Efforts for Enhancing Applications of Ultrascalable Architectures in Computational Science  
Agency: IBM co-PI(s): Y. Deng, et al.  
Amount: \$1,000,000 Period: 07/01/05-06/30/06

Title: Morphological Analysis of Trabecular Bone Structure  
Agency: Advanced Acoustic Concepts and NYSTAR  
Amount: \$24,664 Period: 01/01/05-12/31/05

Title: Medial Axis Analysis Applied to Tomographic Images of Fibrous Material  
Agency: Kimberly-Clark Corporation  
Amount: \$38,252 Period: 4/15/04-4/14/05

Title: Pore Scale Geometric and Fluid Distribution Analysis  
Agency: DOE  
Amount: \$196,237 Period: 9/1/01-8/31/04

Title: Automated Morphometry of Dendritic Spines  
Agency: NSF  
Amount: \$180,000 Period: 9/30/01-8/31/03

Title: Medial Axis Analysis Applied to Tomographic Images of Fibrous Material  
Agency: Kimberly-Clark Corporation  
Amount: \$35,458 Period: 4/15/03-4/14/04

Title: Automated Analysis of Neurite Outgrowth of Explants  
Agency: Brookhaven National Lab.  
Amount: \$21,470 Period: 09/01/01-05/30/02

Title: VIGRE: Interconnecting Research and Education in the Mathematical Sciences at Stony Brook  
Agency: NSF co-PI(s): A. Tucker, D. McDuff, et al.  
Amount: \$2,606,355 Period: 1/1/00-12/31/04

Title: Medial Axis Analysis Applied to Tomographic Images of Fibrous Material  
Agency: Kimberly Clark Corp.  
Amount: \$216,589 Period: 3/1/96-4/14/03

Title: Theory and Stochastic Simulation Methods for Multi Scale Problems with Energy-Related Applications  
Agency: DOE co-PI: J. Glimm  
Amount: \$1,822,414 Period: 2/1/99-1/31/02

Title: Microscale Geometric Analysis of Geologic Porous Media  
Agency: DOE  
Amount: \$165,000 Period: 9/1/98-8/31/01

Title: Automated Analysis of Neurite Outgrowth of Explants  
 Agency: Swartz Initiative for Computational Neuroscience  
 Amount: \$30,468 Period: 09/01/00–08/31/01

Title: Stochastic Partial Differential Equations Applied to the Predictability of Complex Multiscale Phenomena  
 Agency: DOE co-PIs: Y. Deng, J. Glimm, F. Tangerman  
 Amount: \$300,000 Period: 8/1/98–7/31/01

Title: Enhanced Resolution Simulation Methods, Mathematical Theory, and Energy Related Applications  
 Agency: DOE co-PI: J. Glimm  
 Amount: \$1,188,696 Period: 2/1/96–1/31/99

Title: Los Alamos - Stony Brook Collaboration  
 Agency: Los Alamos National Laboratory co-PIs: J. Glimm, B. Plohr  
 Amount: \$78,750 Period: 3/18/98–5/31/98

Title: Statistical Characterization of the Three-Dimensional Microgeometry of Porous Media  
 Agency: Sandia National Laboratory  
 Amount: \$100,000 Period: 11/15/96–9/30/98

Title: Medial Axis Analysis of Porous Media  
 Agency: DOE  
 Amount: \$100,968 Period: 9/1/95–8/31/98

Title: Partnership in Computational Science  
 Agency: DOE co-PI: J. Glimm  
 Amount: \$469,200 Period: 7/15/95–7/14/97

Title: Traineeship for Pawel Dzedzic  
 Agency: Brookhaven National Laboratory  
 Amount: \$14,030 Period: 10/1/95–8/31/96

Title: Computations and Theory for Discontinuous and Stochastic Solutions of Partial Differential Equations  
 Agency: DOE co-PI: J. Glimm  
 Amount: \$1,176,363 Period: 1/1/93–1/31/96

Title: 3-Dimensional Imaging of Drill Core Samples Using Synchrotron Computed Microtomography  
 Agency: DOE  
 Amount: \$64,430 Period: 5/1/92–4/30/95

Title: Long Island's Groundwater Hydrology  
 Agency: Suffolk County Water Authority co-PI: H. Bokuniewicz  
 Amount: \$100,000 Period: 3/1/94–2/27/95

Title: Evaluation of PICS Groundwater Code GCT 1.0  
 Agency: Brookhaven National Laboratory  
 Amount: \$20,000  
 Period: 4/22/94–9/30/94

Title: High Performance Computing Equipment for Environmental Remediation Modeling and First Principles Simulation of Material Properties  
 Agency: DOE  
 Amount: \$700,000  
 co-PI: J. Glimm  
 Period: 4/15/93–4/14/94

Title: High Performance Computing of Ground-water Transport  
 Agency: Oak Ridge National Laboratory  
 Amount: \$838,600  
 co-PIs: J. Glimm, A. Kaufman  
 Period: 6/01/92–4/31/95

Title: Modeling of Complex Continua  
 Agency: DOE  
 Amount: \$1,176,391  
 co-PIs: J. Glimm, Y. Deng  
 Period: 1/1/90–12/31/92

Title: Fundamental Solutions of Multiphase Flow  
 Agency: NATO  
 Amount: \$40,000  
 co-PIs: B. Plohr, D. Marchesin  
 Period: 1/10/89–9/31/91

Title: Heterogeneities in Reservoirs  
 Agency: Petrocomp Software  
 Amount: \$5,000  
 Period: 2/1/89–7/30/89

### Current Collaborators

I. Chase (Stony Brook University), M. Celia (Princeton), K. Jones (BNL), C. Peters (Princeton), M. Rockhold (Pacific Northwest National Lab), W. Um (Pacific Northwest National Lab), T.-f. Wong (Stony Brook University)

### Publications

- D. Kim and W.B. Lindquist. Dependence of pore-to-core up-scaled reaction rate on flow rate in porous media, *Transport in Porous Media*, under review.
- D. Kim, C.A. Peters and W.B. Lindquist. Upscaling geochemical reaction rates accompanying acidic CO<sub>2</sub>-saturated brine flow in sandstone aquifers. *Water Resour. Res.*, **47** (2011) W01505, doi:10.1029/2010WR009472.
- P.B. Kerkar, K.W. Jones, R. Kleinberg, W.B. Lindquist, S. Tomov, H. Feng, and D. Mahajan. Direct observations of three dimensional growth of hydrates hosted in porous media. *Appl. Phys. Lett.*, **95**(2) (2009) 024102.
- R. Cai, W.B. Lindquist, W. Um and K.W. Jones. Tomographic analysis of reactive fluid induced pore structure changes in flow column experiments. *Adv. Water Resour.*, **32** (2009) 1396–1403.
- Y. Sholokova, D. Kim and W.B. Lindquist. Network flow modeling via lattice-Boltzmann based channel conductance. *Adv. Water Resour.*, **32**(2) (2009) 205–212.

- W.B. Lindquist and I.D. Chase. Data-based analysis of winner-loser models of hierarchy formation in animals. *Bull. Math. Bio.*, **71**(3) (2009) 556–584.
- I.D. Chase and W.B. Lindquist. Dominance hierarchies as a model of social structure in small groups. The Oxford Handbook of Analytical Sociology, P. Hedstrom and P. Bearman (eds.). Oxford University Press, Oxford, UK, 2009, 800 pp.
- R.S. Seright, W.B. Lindquist, and R. Cai. Pore-level examination of gel destruction during oil flow. *SPE J.*, **14** (2009) 472–476.
- D.L. McLean, M.A. Masino, I.Y.Y. Koh, W.B. Lindquist and J.R. Fetcho. Continuous switches in the active set of spinal interneurons drive changes in locomotor speed. *Nature Neurosci.*, **11** (2008) 1419–1429.
- L. Pyrak-Nolte, W.B. Lindquist and J. Nordbotten. Modeling Multiple Processes at Interacting Scales. In Basic Research Needs for Geosciences: Facilitating 21st Century Energy Systems, a report of the BES Workshop on Basic Research Needs for Geosciences, Feb. 21-24, 2007. pp. 51-55. US DOE Office of Science <http://www.sc.doe.gov/bes/reports/list.html>
- L. Berlyand, W.B. Lindquist, K. Lipnikov and D. Moulton. Multi-Scale Analysis. In Report of the Computational Subsurface Sciences Workshop, Jan. 9-12, 2007, pp. 181-192. US DOE Office of Science.
- M. Hilpert and W.B. Lindquist. Pore-scale Modeling, *Adv. Water Resour.*, **30**(2) (2007) 169-170.
- M. Prodanovic, W.B. Lindquist, and R.S. Seright. 3D Image-based characterization of fluid displacement in a Berea core. *Adv. Water Resour.*, **30**(2) (2007) 214–226. [ftp://ams.sunysb.edu/pub/papers/2005/susb05\\_04.pdf](ftp://ams.sunysb.edu/pub/papers/2005/susb05_04.pdf)
- F.C. Zhou, B. Anthony, K.W. Dunn, W.B. Lindquist, Z. Xu and P. Deng. Chronic alcohol drinking alters neuronal dendritic spines in the brain reward center nucleus accumbens. *Brain Res.* **11134**(1) (2007) 148–161.
- K.W. Jones, P.B. Kerkar, D. Mahajan, W.B. Lindquist and H. Feng. Microstructure of natural hydrate host sediments. *Nucl. Instr. Meth. B.*, **261**(1-2) (2007) 504-507. Proceedings, CAARI 2006: 19'th International Conference on the Application of Accelerators in Research and Industry, Aug. 20-25, 2006, Fort Worth, TX. [ftp://ams.sunysb.edu/pub/papers/2006/susb06\\_11.doc](ftp://ams.sunysb.edu/pub/papers/2006/susb06_11.doc)
- M. Prodanovic, W.B. Lindquist and R. Seright. Residual fluid blobs and contact angle measurements from X-ray images of fluid displacement. Proceedings, International Conference on Computational Methods in Water Resources XVI, P.J. Binning, P. Engesgaard, H. Dahle, G.F. Pinger and W. G. Gray (Eds.), Copenhagen, Denmark, June 19-22, 2006. [ftp://ams.sunysb.edu/pub/papers/2006/susb06\\_02.pdf](ftp://ams.sunysb.edu/pub/papers/2006/susb06_02.pdf)
- W.B. Lindquist, S. Chung, J. Pinezich, E. Gorin, Y.-X. Qin. Quantifying topological change in bone under uniform erosion. [ftp://ams.sunysb.edu/pub/papers/2005/susb05\\_09.pdf](ftp://ams.sunysb.edu/pub/papers/2005/susb05_09.pdf)
- M. Prodanovic, W.B. Lindquist and R.S. Seright. Porous structure and fluid partitioning in polyethylene cores from 3D X-ray microtomographic imaging. *J. Colloid Interf. Sci.*, **298**(1) (2006) 282–297. [ftp://ams.sunysb.edu/pub/papers/2005/susb05\\_13.pdf](ftp://ams.sunysb.edu/pub/papers/2005/susb05_13.pdf)

- W.B. Lindquist. The geometry of primary drainage. *J. Colloid Interf. Sci.*, **296**(2) (2006) 655–668. [ftp://ams.sunysb.edu/pub/papers/2005/susb05\\_12.pdf](ftp://ams.sunysb.edu/pub/papers/2005/susb05_12.pdf)
- R.S. Seright, M. Prodanovic and W.B. Lindquist. X-ray computed microtomography studies of fluid partitioning in drainage and imbibition before and after gel placement: disproportionate permeability reduction. *SPE Journal*, **11** (2) (2006) 159–170. [ftp://ams.sunysb.edu/pub/papers/2005/susb05\\_15.pdf](ftp://ams.sunysb.edu/pub/papers/2005/susb05_15.pdf)
- R.S. Seright, M. Prodanovic, and W.B. Lindquist. X-ray computed microtomography studies of disproportionate permeability reduction. SPE paper #89393, presented at the 14th SPE/DOE Symposium on Improved Oil Recovery, Tulsa, OK, Apr. 17–21, 2004. [ftp://ams.sunysb.edu/pub/papers/2003/susb03\\_19.doc](ftp://ams.sunysb.edu/pub/papers/2003/susb03_19.doc)
- H. Shin, W.B. Lindquist, D.L. Sahagian and S.-R. Song. Analysis of the vesicular structure of basalts. *Comput. & Geosci.*, **31**(4) (2005) 473–487. [ftp://ams.sunysb.edu/pub/papers/2003/susb03\\_01.pdf](ftp://ams.sunysb.edu/pub/papers/2003/susb03_01.pdf)
- M. Prodanovic, W.B. Lindquist, and R.S. Seright. 3D microtomographic study of fluid displacement in rock cores. Proceedings, Computational Methods in Water Resources XV Conference, Chapel Hill, NC, June 13–17, 2004. [ftp://ams.sunysb.edu/pub/papers/2004/susb04\\_01.pdf](ftp://ams.sunysb.edu/pub/papers/2004/susb04_01.pdf)
- C.M. Weaver, P.R. Hof, S.L. Wearne and W.B. Lindquist. Automated algorithms for multiscale morphometry of neuronal dendrites. *Neural Comput.*, **16** (2004) 1353–1383. [ftp://ams.sunysb.edu/pub/papers/2003/susb03\\_17.pdf](ftp://ams.sunysb.edu/pub/papers/2003/susb03_17.pdf)
- M. Maravall, Y.Y. Koh, W.B. Lindquist, and K. Svoboda. Experience-dependent changes in basal dendritic branching of layer 2/3 pyramidal neurons during a critical period for developmental plasticity in rat barrel cortex. *Cerebral Cortex*, **15** (2004) 655–664. [ftp://ams.sunysb.edu/pub/papers/2004/susb04\\_02.pdf](ftp://ams.sunysb.edu/pub/papers/2004/susb04_02.pdf)
- A. Kulkarni, J. Gutleber, S. Sampath, A. Goland, W.B. Lindquist, H. Herman, A.J. Allen and B. Dowd. Studies of the microstructure and properties of dense ceramic coatings produced by high-velocity oxygen-fuel combustion spraying. *J. Mater. Sci. Engin. A* **369** (2004) 124–137. [ftp://ams.sunysb.edu/pub/papers/2004/susb04\\_04.pdf](ftp://ams.sunysb.edu/pub/papers/2004/susb04_04.pdf)
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- C. M. Weaver, J.D. Pinezich, W.B. Lindquist and M. Vazquez. An algorithm for reconstruction of neurite outgrowth images. *J. Neurosci. Meth.* **124** (2003) 197–205. [ftp://ams.sunysb.edu/pub/papers/2001/susb01\\_10.pdf](ftp://ams.sunysb.edu/pub/papers/2001/susb01_10.pdf)
- K.W. Jones, H. Feng, W.B. Lindquist, P.M. Adler, J.-F. Thovert, B. Vekemans, L. Vincze, I. Szaloki, R. Van Grieken, F. Adams, C. Riekkel. Study of the microgeometry of porous materials using synchrotron computed microtomography. In *Applications of X-ray Computed Tomography in the Geosciences*, F. Mees, R. Swennen, M. Ven Geet, P. Jacobs, eds. Geological Society, London, Special Publications, **215** (2003) 39–49.
- W. Guo, W.B. Lindquist and W. Oh. A parallelized, structured-unstructured hybrid, tetrahedral grid construction. Preprint SUNYSB-AMS-02-10.

- R.S. Seright, J. Liang, W.B. Lindquist and J.H. Dunsmuir. Use of X-ray computed microtomography to understand why gels reduce permeability to water more than to oil. *J. Petroleum Sci. Eng.*, **39** (2003) 217–230. [ftp://ams.sunysb.edu/pub/papers/2002/susb02\\_03.pdf](ftp://ams.sunysb.edu/pub/papers/2002/susb02_03.pdf)
- S.Y. Cho and W.B. Lindquist. Predictability in Stochastic Reservoirs. Preprint SUNY-SB-AMS-01-21.
- W.B. Lindquist. Network flow model studies and 3D pore structure. *Contemporary Mathematics*, **295** (2002) 355–366. [ftp://ams.sunysb.edu/pub/papers/2001/susb01\\_14.pdf](ftp://ams.sunysb.edu/pub/papers/2001/susb01_14.pdf)
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- W. Hwang and W.B. Lindquist. The 2-dimensional Riemann problem for a 2x2 hyperbolic conservation law II. anisotropic media. *SIAM J. Math. Anal.* **34** (2002) 359–384. [ftp://ams.sunysb.edu/pub/papers/2001/susb01\\_12.pdf](ftp://ams.sunysb.edu/pub/papers/2001/susb01_12.pdf)
- W.B. Lindquist. Quantitative analysis of three dimensional X-ray tomographic images, in Developments in X-ray Tomography III, U. Bonse (ed.), Proceedings of SPIE **4503** (2002) 103–115. SPIE, Bellingham, WA. [ftp://ams.sunysb.edu/pub/papers/2001/susb01\\_06.pdf](ftp://ams.sunysb.edu/pub/papers/2001/susb01_06.pdf)
- I.Y.Y. Koh, W.B. Lindquist, K. Zito, E.A. Nimchinsky and K. Svoboda. An Image Analysis Algorithm for the Fine Structure of Neuronal Dendrites. *Neural Comput.* **14** (2002) 1283–1310. [ftp://ams.sunysb.edu/pub/papers/2001/susb01\\_01.pdf](ftp://ams.sunysb.edu/pub/papers/2001/susb01_01.pdf)
- R.S. Seright, J.-T. Liang, W.B. Lindquist, and J.H. Dunsmuir. Characterizing disproportionate permeability reduction using synchrotron X-ray computed microtomography. *SPE Reserv. Eval. Eng.*, **5** (2002) 355–364. [ftp://ams.sunysb.edu/pub/papers/2002/susb02\\_02.pdf](ftp://ams.sunysb.edu/pub/papers/2002/susb02_02.pdf)
- R.S. Seright, J. Liang, W.B. Lindquist, and J.H. Dunsmuir. Use of X-Ray Computed Microtomography to Understand Why Gels Reduce Permeability to Water More Than That to Oil. 7th International Symposium on Reservoir Wettability, Freycinet, Tasmania, Australia, March 12-15, 2002.
- R.S. Seright, J. Liang, W.B. Lindquist, and J.H. Dunsmuir. Characterizing Disproportionate Permeability Reduction Using Synchrotron X-Ray Computed Microtomography. Paper 71508 - 2001 SPE Annual Technical Conference and Exhibition, New Orleans, Sept. 30 - Oct. 3.
- C.H. Arns, M.A. Knackstedt, W.V. Pinczewski and W.B. Lindquist. Accurate estimation of transport properties from microtomographic images. *Geophys. Res. Lett.*, **28** (2001) 3361–3364.
- I.Y.Y. Koh and W.B. Lindquist. Automated 3D dendritic spine detection and analysis from two-photon microscopy, in Three-Dimensional and Multidimensional Microscopy: Image Acquisition and Processing VIII, J.-A. Conchello, C.J. Cogswell and T. Wilson (eds.), Proceedings of SPIE, **4261** (2001) 48–59. SPIE, Bellingham, WA.
- S.-R. Song, K.W. Jones, W.B. Lindquist, B.A. Dowd, and D.L. Sahagian. Synchrotron X-ray computed microtomography (CMT) studies on vesiculated basaltic rocks. *Bulletin of Volcanology* **63** (2001) 252–263. [ftp://ams.sunysb.edu/pub/papers/2003/susb03\\_01.doc](ftp://ams.sunysb.edu/pub/papers/2003/susb03_01.doc)

- H. Yang and W.B. Lindquist. Three-dimensional image analysis of fibrous materials. Applications of Digital Image Processing XXIII, A.G. Tescher (ed.), Proceedings of SPIE **4115**, 275–282. SPIE, Bellingham, WA, 2000.
- I.Y.Y. Koh and W.B. Lindquist. 3DMA Dendrite/Spine Detection Users Manual. SUNY-Stony Brook report, SUNYSB-AMS-00-03, 2000.
- R.M. Sok, M.A. Knackstedt, A.P. Sheppard, W.V. Pinczewski, W.B. Lindquist, A. Venkatarangan, L. Paterson. Direct and stochastic generation of network models from tomographic images: Effect of topology on residual saturations. *Transport in Porous Media* **46** (2002) 345–371.
- W.B. Lindquist, A. Venkatarangan, J. Dunsmuir and T.-f. Wong. Pore and throat size distributions measured from synchrotron X-ray tomographic images of Fontainebleau sandstones. *J. Geophys. Research*, **105B**, (2000) 21508–21528. [ftp://ams.sunysb.edu/pub/papers/1999/susb99\\_13.pdf](ftp://ams.sunysb.edu/pub/papers/1999/susb99_13.pdf)
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- J.T. Fredrich, D.R. Noble, R.M. O’Connor, and W.B. Lindquist. Development, implementation, and experimental validation of the lattice Boltzmann method for modeling three-dimensional complex flows. Sandia National Laboratory report SAND99-0369. February, 1999.
- W. Oh and W.B. Lindquist. Image thresholding by indicator kriging, *IEEE Trans. Pattern Anal. Mach. Intell.*, **21**, (1999) 590–602. [ftp://ams.sunysb.edu/pub/papers/1998/susb98\\_02.ps.gz](ftp://ams.sunysb.edu/pub/papers/1998/susb98_02.ps.gz)
- W.B. Lindquist and A. Venkatarangan. Investigating 3D geometry of porous media from high resolution images, *Phys. Chem. Earth (A)*, **25**, (1999) 593–599. [ftp://ams.sunysb.edu/pub/papers/1998/susb98\\_01.ps.gz](ftp://ams.sunysb.edu/pub/papers/1998/susb98_01.ps.gz)
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- K.-K. Chang and W.B. Lindquist. Mass conserving front tracking for miscible flow, *SIAM J. Sci. Comp.*, **18**, (1997) 1310–1327.
- W.B. Lindquist, S.M. Lee, D. Coker, K. Jones and P. Spanne. Medial axis analysis of void structure in three-dimensional tomographic images of porous media. *J. Geophys. Res.*, **101B**, (1996) 8297–8310. [ftp://ams.sunysb.edu/pub/papers/1995/susb95\\_01.ps.gz](ftp://ams.sunysb.edu/pub/papers/1995/susb95_01.ps.gz)
- W.B. Lindquist and Y. Sharma. Confidence estimation in history matched models. SUNY-Stony Brook report SUNYSB-AMS-95-10, 1995.
- P. Spanne, J.F. Thovert, C.J. Jacquin, W.B. Lindquist, K.W. Jones and P.M. Adler, Synchrotron computed microtomography of porous media: topology and transports. *Phys. Rev. Lett.*, **73**, (1994) 2001–2004.

- W.B. Lindquist, W. Oh and A. Venkatarangan. A stochastic kriging algorithm. SUNY-Stony Brook report SUNYSB-AMS-94-17, 1994.
- D.A. Coker and W.B. Lindquist. An edge-based algorithm to filter tomographic data sets. SUNY Institute of Technology report, SUNYIT-MS-1-1994.
- B. Bielefeld, J. Glimm, W.B. Lindquist, and F. Tangerman. Encorporation of two dimensional front-tracking into PICS GCT 1.0. SUNY-Stony Brook report SUNYSB-AMS-93-07, 1993.
- D. Coker and W.B. Lindquist. Structural reliability analysis for one dimensional, two phase miscible flow. *SIAM J. Appl. Math.*, **54**, (1994) 935–953.
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### Professional Service

- Panelist, Facilitating 21st Century Energy Systems, DOE, 2/21-23, 2007
- Panel co-lead, Computational Subsurface Sciences Workshop, DOE, 1/10–11, 2007
- On-site Review Panel, NSF Institutes in the Mathematical Sciences, 04-05.
- Panel, National Research Council Associateship Program, 2004-06.

Expert Panel, NSERC (Canada) Networks of Centres of Excellence, 2002-04  
AMS-IMS-SIAM Committee on Joint Summer Research Conferences in the  
Mathematical Sciences, 7/1/97 – 6/30/01

Grant Selection Committee for Pure and Applied Mathematics, NSERC (Canada),  
7/1/98 – 6/30/01

Vice Chair, SIAM Activity Group on Geosciences, 1/1/98 – 12/31/00

Newsletter Editor, SIAM Activity Group on Geosciences, 1/1/92 – 12/31/00

Selection Panel, NSF Small Business Innovation Research Program, 9/98

Expert Panel, NSERC (Canada) Networks of Centres of Excellence, 6/98

Selection Panel – Collaborative Research Projects, NSERC (Canada),  
7/1/95 – 6/30/96

Reviewer for DOE proposals in the Applied Mathematics, Geosciences, EPSCOR and  
SBIR programs

Reviewer for NSF proposals in the Mathematical Sciences, SBIR, and CAREER  
programs

Reviewer for NSERC (Canada) proposals in the Mathematical Sciences

Proposal reviewer for the Research Council of Norway

Reviewer for the following journals:

Advances in Water Research, Applied Mathematics Letters, Applied Numerical  
Mathematics, Computational Geosciences, In Situ, J. Stochastic Hydrology,  
J. Computational Physics, J. Differential Equations, J. Geophysical Research,  
Matematica Aplicada e Computacional, J. Nonlinear Analysis, SIAM J. Math-  
ematical Analysis, SIAM J. Scientific Computing, Transport in Porous Media,  
Water Resources Research, Computers and Geoscience, J. Colloid and Interface  
Science, J. Mathematical Vision and Imaging.

## **Consulting**

Exxon Research and Engineering, Annondale, NJ  
Petroleum Recovery Research Center, New Mexico Institute of Technology  
Brookhaven National Laboratory  
Department of Mathematics, University of Iowa  
Elf Geosciences Research Center, London  
Institute for Energy Technology, Norway

## **Professional Memberships**

American Geophysical Society  
American Physical Society  
Society for Industrial and Applied Mathematics  
Society of Petroleum Engineers

## **Teaching**

Spring 2006: Developed a new course, AMS 538 - Methods in Neuronal Modeling, as an upper level elective in the computational biology graduate track.

Spring 2006: Lead the development of a new graduate track in computational biology.

Spring 1996: Developed new course, AMS322 - Groundwater Modeling, as one of the core course offerings in the Applied Environmental Sciences track.

Spring 1996: Developed a new undergraduate track, Applied Environmental Sciences, offered jointly by the Department of Applied Mathematics and Statistics (AMS) and the Marine Science Research Center, and administered by the AMS Department. This is a 71-credit track of required courses leading to a Bachelor of Science in Applied Mathematics.

Fall 1995: Developed new course, AMS321 - Computational Projects in Applied Mathematics, a computer lab-based undergraduate course which introduces sophomores to computational mathematics.

Fall 1992: Developed new course, AMS562 - Numerical Hydrology, a service course for the Geosciences Department's Master of Science in Hydrology program.

Spring 1989: Developed new course, AMS528 - Numerical Analysis III, the third semester course (numerical PDEs) in the AMS graduate computational math curriculum.

### **Graduate Students Supervised**

Pantaleao da Silva (PhD 1992), Kou-Kung (Alex) Chang (PhD 1993), David Coker (PhD 1993), Dragan Mirkovic (PhD 1993), Sang-Moon Lee (PhD 1995), William Thistleton (PhD 1996), Pawel Dziejczak (MS 1996), Wonho Oh (PhD 1998), Arun Venkatarangan (PhD 2000), Woon-Jae Hwang (PhD 2000), Hyunmi Yang (PhD 2001), Ingrid Koh (PhD 2001), Wei Guo (PhD 2002), Imbunm Kim (PhD 2002), Seungyeon Cho (PhD 2002), Hyunkyung Shin (PhD 2002), Abhishek Datta (MS 2002), Adrei Antonenko (MS 2002), Christina Weaver (PhD 2003), Meungkeun Oh, Masa Prodanovic (PhD 2005), Anup Krishna (MS 2007), Sohae Chung (PhD 2005), Firas Daahboul (PhD 2006), Hagos Kifle (PhD 2008), Daesang Kim (PhD 2008), Ho Joon Choi (MS 2008), Yelena Sholokova (PhD 2009), Rong Cai (PhD 2009), Joong-Hyun Ahn, Kyung-Taek Jun, Long Li, Seunghee Kim, Joo Won Kim

### **Post-doctoral Fellows Supervised**

Pantaleao da Silva, Gang Li, Dragan Mirkovic, Felipe Pereira (joint with J. Glimm), Wonho Oh, Woon-Jae Hwang, Ingrid Koh, Daesang Kim

### **Service**

Department

Associate Chair 1999-2006

Executive Committee 1999-2006

Graduate Student Recruitment/Admissions Committee

Faculty and Postdoctoral Fellow Hiring Committees

University

Deputy Provost - 2007–present  
Associate Provost - 2006–2007  
University Senate, President - 2002–2006  
    Vice-President for Engineering and Applied Sciences (CEAS)- 2001–2002  
    Senator for CEAS - 1993, 1995–2002  
University Senate Undergraduate Council, 1995/96, Chair 1998/99  
University Senate Coordinating Council, 1998/99  
University Senate Committee for Campus Environment, 1997/98  
Chair, Provost's Steering Committee on Advising, 1999–2001  
CEAS Curriculum and Teaching Policy Committee, 1991–2006  
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