

Date: January 9, 2012
Name: Richard Dennis Vigil
Department: Chemical & Biological Engineering
Current Rank: Associate Professor

I. PERSONAL HISTORY AND PROFESSIONAL EXPERIENCE

A. Educational Background

University of Michigan - Ann Arbor

Doctor of Philosophy in Chemical Engineering, May 1990
Advisor: Robert M. Ziff
Major Area: Aggregation Kinetics
Thesis: Kinetics of Aggregation-Fragmentation Processes
Master of Science in Chemical Engineering, December 1986
Advisor: Robert M. Ziff

University of New Mexico - Albuquerque

Bachelor of Science in Chemical Engineering, May 1985

B. List of Academic Positions since Final Degree

Associate Professor, 8/01 – present
Department of Chemical & Biological Engineering
Iowa State University

Assistant Professor, 1/94 – 8/01
Department of Chemical Engineering
Iowa State University

Post-Doctoral Research Associate and Lecturer, 8/90 – 12/93
Department of Chemical Engineering and Department of Physics
University of Texas - Austin
Advisor: Harry Swinney, Professor of Physics & Director, Center for Nonlinear Dynamics

C. Other Professional Employment

Research Assistant, 6/87 – 8/87
Los Alamos National Laboratory, Materials Science Division
Research Assistant, 6/85 – 8/85
Amoco Research Center, Naperville, IL, Exploratory Catalysis Division
Metallurgical Assistant, 6/84 – 8/84
Phelps-Dodge Corporation, Morenci, AZ

D. Honors, Recognitions, and Outstanding Achievements

Chemical Engineering Science Most Cited Paper 2003-2006 Award (with Daniele Marchisio and Rodney Fox).

Iowa State College of Engineering LEAD (leadership in engineering through academic diversity) special recognition award, 1997, 1998.

Ford Foundation Postdoctoral Fellow, 1991-1992.

Michigan Minority Merit Scholar, 1985-1989.

GEM Fellow, The University of Michigan, 1985-1986.

Amoco Engineering Scholarship, The University of New Mexico, 1984.

NASA Engineering Scholarship, The University of New Mexico, 1981.

E. Invited Lectures

“Constructing Rate Kernels for Aggregation-Fragmentation Problems,” Computational Fluid Dynamics Center Seminar Series, Iowa State University, Ames, IA, Feb 9, 2010.

“Equilibrium Solutions of Aggregation-Fragmentation Problems,” Department of Physics, Kansas State University, Manhattan, KS, May 7, 2009.

“Aggregation and Mixing,” Department of Chemical Engineering, University of Iowa, Iowa City, IA, April 3, 2003.

“Liquid-liquid Taylor-Couette-Poiseuille Flow,” Department of Chemical Engineering, University of Wisconsin, Madison, WI, January, 1999.

“Oscillatory Dynamics in a Heterogeneous Surface Reaction,” Center for Nonlinear Dynamics, University of Texas, Austin, TX, 1996.

“Oscillatory Dynamics in a Heterogeneous Surface Reaction,” Center for Nonlinear Studies, Los Alamos National Laboratory, Los Alamos, NM, 1996.

“Pattern Formation in Reaction-Diffusion Systems,” Department of Chemical Engineering, San Jose State University, San Jose, CA, 1994.

“Pattern Formation in Reaction-Diffusion Systems,” Department of Chemical Engineering, University of Missouri, Columbia, 1994.

“Kinetics of Aggregation, Breakup, and Adsorption,” Sandia National Laboratory, Albuquerque, NM, 1993.

“Kinetics of Aggregation-Fragmentation Processes,” Department of Chemical Engineering, University of New Mexico, Albuquerque, NM, 1990.

“Kinetics of Aggregation-Fragmentation Processes,” Department of Chemical Engineering, University of Cincinnati, Cincinnati, OH, 1990.

F. Grants and Contracts Received (Total Funding = \$2.94 million, share = \$1.2 million)

18. Investigators:	R. Dennis Vigil, Jacqueline V. Shanks
Title of Grant:	Energy Efficient Cultivation of Microalgae and Simultaneous Separation of Products Using a Novel Taylor Vortex Reactor-Separator
Granting Agency:	Conoco Phillips Corporation
Dates:	1/1/11 – 12/31/12
Total Dollar Amount:	\$240,735
Role:	Principal Investigator

17. Investigators: Igor Beresnev, R. Dennis Vigil
 Title of Grant: Quantitative Characterization of the Vibratory Enhancement of Organic-Fluid Flow in Porous Media: Integrated Experimental and Theoretical Approach
 Granting Agency: National Science Foundation
 Dates: 5/01/07 – 4/30/10
 Total Dollar Amount: \$294,858
 Share: \$147,429
 Role: Co-Principal Investigator
16. Investigator: R. Dennis Vigil
 Title of Grant: Numerical Simulation of Unsteady Temperature and Moisture Profiles in Wheat Kernels Undergoing Steam Blanching and Subsequent Drying
 Granting Agency: General Mills/IPRT
 Dates: 6/12/06 – 9/15/06
 Total Dollar Amount: \$12,888
 Share: \$12,888
 Role: Principal Investigator
15. Investigators: B. Narasimhan (PI), Participants: Charles Glatz, Monica Lamm, Surya Mallapragada, Peter Reilly, Brent Shanks, Jacqueline Shanks, R. Dennis Vigil
 Title of Grant: REU Site in Biological Materials and Processes (BioMaP)
 Granting Agency: National Science Foundation
 Dates: 5/06 – 4/09
 Total Dollar Amount: \$370,639
 Role: Participant
14. Investigators: Michael Olsen, Rodney Fox, James Hill, R. Dennis Vigil, Fred Haan, Partha Sarkar, Hui Hu
 Title of Grant: MRI: Acquisition of a High-Speed Particle Image Velocimetry System for Fluid Dynamics Research
 Granting Agency: National Science Foundation
 Dates: 9/01/05 – 8/31/06
 Total Dollar Amount: \$325,350
 Share: \$46,479
 Role: Co-Principal Investigator
13. Investigators: Michael Olsen, Rodney Fox, James Hill, R. Dennis Vigil, Fred Haan, Partha Sarkar, Hui Hu, Adin Mann
 Title of Grant: Acquisition of a Laser Doppler Velocimetry System for Fluid Dynamics Research
 Granting Agency: Iowa State University Internal Equipment Grant Competition
 Dates: 9/01/05 – 8/31/06
 Total Dollar Amount: \$100,000
 Share: \$12,500
 Role: Co-Principal Investigator
12. Investigators: Rodney Fox, Monica Lamm, Mark Gordon, Chris Sorensen, Sean Garrick, R. Dennis Vigil, Shankar Subramaniam
 Title of Grant: NIRT: Multiscale Simulation of Nanoparticle Aggregation for

- Scale-Up of High-Rate Synthesis Methods
 Granting Agency: National Science Foundation
 Dates: 8/01/04 – 7/31/07
 Total Dollar Amount: \$1,004,984
 Share: \$80,551
 Role: Co-Principal Investigator
11. Investigator: R. Dennis Vigil
 Title of Grant: Selective Drug Delivery to Cancer Cells: Monte Carlo Simulation of Receptor-Mediated Targeting of Liposomes
 Granting Agency: Iowa State University College of Engineering Grant
 Dates: 1/01/03 – 12/31/03
 Total Dollar Amount: \$10,000
 Share: \$10,000
 Role: Principal Investigator
10. Investigators: Igor Beresnev, R. Dennis Vigil, Robert Ewing
 Title of Grant: Mechanism of Acoustic Stimulation of Fluid Flow in Porous Media: Integration of Laboratory Pore-Scale Studies and Theoretical Model Development
 Granting Agency: National Science Foundation
 Dates: 5/15/02 – 4/30/04
 Total Dollar Amount: \$200,000
 Share: \$108,874
 Role: Co-Principal Investigator, responsible for CFD simulations and experimental aspect of the project
9. Investigator: R. Dennis Vigil
 Title of Grant: Computational Fluid Dynamics Simulation of Stratified Liquid-Liquid Reactive Flow in a Co-Rotating Counter-Currently Fed Taylor-Couette Reactor
 Granting Agency: Value Recovery, Inc. (U.S. Department of Energy SBIR Grant)
 Dates: 8/01/02 – 5/29/04
 Total Dollar Amount: \$85,000
 Share: \$85,000
 Role: Principal Investigator
8. Investigator: R. Dennis Vigil
 Title of Grant: A Novel Taylor Vortex Extractive-Reaction Process for Reducing Organic Wastes Dissolved in Aqueous Streams
 Granting Agency: Value Recovery, Inc. (Department of Energy SBIR Grant)
 Dates: 8/01/01 – 5/29/02
 Total Dollar Amount: \$25,000
 Share: \$25,000
 Role: Principal Investigator
7. Investigators: Rodney Fox, R. Dennis Vigil
 Title of Grant: Development of Novel Design and Process Optimization Tools for Solution Crystallization
 Granting Agency: OLI (Department of Energy Grant)
 Dates: 8/01/01 – 5/31/04
 Total Dollar Amount: \$329,588
 Share: \$164,794

- Role: Co-Principal Investigator, responsible for development of aggregation experiments and novel population balance methods
6. Investigators: Rodney Fox, R. Dennis Vigil
 Title of Grant: Investigation of Reactive Precipitation in a Stirred Tank Reactor
 Granting Agency: BASF
 Dates: 5/1/01 – 4/30/03
 Total Dollar Amount: \$44,267
 Share: \$22,133
 Role: Co-Principal Investigator
5. Investigator: R. Dennis Vigil
 Title of Grant: Scale-up of a Palladium Powder Reactor
 Granting Agency: Westinghouse Savannah River
 Dates: 12/08/98 – 12/7/01
 Total Dollar Amount: \$235,929
 Share: \$235,929
 Role: Principal Investigator
4. Investigators: Christopher Baldwin, R. Dennis Vigil
 Title of Grant: Application of Particle Image Velocimetry to Multiphase Fluid Systems
 Granting Agency: ISU Special Research Initiation Grant
 Dates: 9/01/98 – 8/31/99
 Total Dollar Amount: \$14,970
 Share: \$7,485
 Role: Co-Principal Investigator
3. Investigators: Jennifer Lucero-Leslie, Ivan Maldonado, Carol Kilgour, R. Dennis Vigil
 Title of Grant: LEAD Summer Bridge Program: Jump Start to Success
 Granting Agency: Iowa State University
 Dates: 1/01/96 – 12/31/96
 Total Dollar Amount: \$15,000
 Share: \$3,750
 Role: Co-Principal Investigator
2. Investigator: R. Dennis Vigil
 Title of Grant: Recovery of Intermediate Species in a Couette Reactor
 Granting Agency: University Research Grant, Iowa State University
 Dates: 5/01/95 – 4/30/96
 Total Dollar Amount: \$12,000
 Share: \$12,000
 Role: Principal Investigator
1. Investigator: R. Dennis Vigil
 Title of Grant: Pattern Formation in Nonisothermal Reaction-Diffusion Systems
 Granting Agency: Iowa State University College of Engineering Seed Grant
 Dates: 5/01/94 – 4/30/95
 Total Dollar Amount: \$4,000
 Share: \$4,000
 Role: Principal Investigator

II. PUBLICATIONS AND CREATIVE WORKS

A. Doctoral Thesis Title

“Kinetics of Aggregation-Fragmentation Processes”

B. Articles in Peer-Reviewed Journals (in print or in press)

37. I. Beresnev, W. Gaul, and R.D. Vigil, Direct pore-level observation of permeability increase by seismic waves. *Geophysical Review Letters*, **38**, L21812 (2011). doi:10.1029/2011GL049481
36. I. Beresnev, W. Gaul, and R. D. Vigil, Thickness of residual wetting film in liquid-liquid displacement. *Physical Review E*, **84**, 026327 (2011). doi: 10.1103/PhysRevE.84.026327
35. I. Beresnev, W. Gaul, and R. D. Vigil, Forced instability of core-annular flow in capillary constrictions. *Physics of Fluids*, **23**, 072105 (2011). doi: 10.1063/1.3607472
34. G. Pranami, M. H. Lamm, and R. D. Vigil, Molecular dynamics simulations of fractal aggregate diffusion. *Physical Review E*, **82**, 051402 (2010). doi: 10.1103/PhysRevE.82.051402
33. J. C. Cheng, R. D. Vigil, and R. O. Fox, A Competitive Aggregation Model for Flash NanoPrecipitation. *Journal of Colloid and Interface Science*, **351**, 330-342 (2010).
32. I. A. Beresnev, W. Li, and R. D. Vigil, Condition for breakup of non-wetting fluids in sinusoidally constricted capillary channels. *Transport in Porous Media*, **80**, 581-604 (2009).
31. R. D. Vigil, On equilibrium solutions of aggregation-fragmentation problems. *Journal of Colloid and Interface Science*, **336**, 642-647 (2009). doi: 10.1016/j.jcis.2009.04.061
30. T. Mokhtari, A. Chakrabarti, C. M. Sorensen, C. Cheng, and D. Vigil, The effect of shear on colloidal aggregation and gelation studied using small-angle light scattering. *Journal of Colloid and Interface Science*, **327**, 216-223 (2008). doi: 10.1016/j.jcis.2008.08.017
29. S. Markutsya, S. Subramaniam, R. D. Vigil, and R. O. Fox, On Brownian dynamics simulation of nanoparticle aggregation. *Industrial & Engineering Chemistry Research*, **47**, 3338-3345 (2008).
28. R. D. Vigil, I. Vermeersch, and R. O. Fox, Destructive aggregation: Aggregation with collision-induced breakage. *Journal of Colloid and Interface Science*, **302**, 149-158 (2006).
27. I. A. Beresnev, R. D. Vigil, W. Li, W. D. Pennington, R. D. Turpening, P. P. Iassonov, and R. P. Ewing, Elastic waves push organic fluids from reservoir rock. *Geophysical Research Letters*, **32**, p. L13303 (2005).
26. L. Wang, M. D. Olsen, and R. D. Vigil, Reappearance of azimuthal waves in turbulent Taylor-Couette flow at large aspect ratio. *Chemical Engineering Science*, **60**, 5555-5568 (2005).
25. W. Li, R. D. Vigil, I. A. Beresnev, P. Iassonov, and R. Ewing, Vibration-induced mobilization of trapped oil ganglia in porous media: Experimental validation of a capillary physics mechanism. *Journal of Colloid and Interface Science*, **289**, 193-199 (2005).
24. L. Wang, R. D. Vigil, and R. O. Fox, CFD simulation of shear-induced aggregation and breakage in turbulent Taylor-Couette flow. *Journal of Colloid and Interface Science*, **285**, 167-178 (2005).
23. L. Wang, D. L. Marchisio, R. D. Vigil, and R. O. Fox, CFD simulation of aggregation and breakage processes in laminar Taylor-Couette flow. *Journal of Colloid and Interface Science*, **282**, 380-396 (2005).

22. D. L. Marchisio, R. D. Vigil, and Fox, R. O., Implementation of the quadrature method of moments in CFD codes for aggregation-breakage problems. *Chemical Engineering Science*, **58**, 3337-3351 (2003).
21. D. L. Marchisio, J. T. Pikturna, R. O. Fox, R. D. Vigil, and A. A. Barresi, Quadrature method of moments for population balance equations. *American Institute of Chemical Engineers Journal*, **49**, 1266-1276 (2003).
20. D. L. Marchisio, R. D. Vigil, and R. O. Fox, Quadrature method of moments for aggregation breakage processes. *Journal of Colloid and Interface Science*, **258**, 322-334 (2003).
19. M. Fontenot and R. D. Vigil, Pore-scale study of non-aqueous phase liquid dissolution in porous media using laser-induced fluorescence. *Journal of Colloid and Interface Science*, **247**, 481-489 (2002).
18. X. Zhu and R. D. Vigil, Banded liquid-liquid Taylor-Couette-Poiseuille flow. *American Institute of Chemical Engineers Journal*, **47**, 1932-1940 (2001).
17. X. Zhu, R. J. Campero, and R. D. Vigil, Axial mass transport in liquid-liquid Taylor-Couette-Poiseuille flow. *Chemical Engineering Science*, **55**, 5079-5087 (2000).
16. N. Kumar, T. S. King, and R. D. Vigil, A portal model for structure sensitive hydrogen adsorption on Ru-Ag/SiO₂ catalysts. *Chemical Engineering Science*, **55**, 4973-4979 (2000).
15. R. J. Campero and R. D. Vigil, Flow patterns in liquid-liquid Taylor-Couette-Poiseuille flow. *Industrial and Engineering Chemistry Research*, **38**, 1094-1098 (1999).
14. F. Sheikh and R. D. Vigil, Simulation of imperfect micromixing for first-order adiabatic reactions: The coalescence-dispersion model. *Chemical Engineering Science*, **53**, 2137-2142 (1998).
13. R. D. Vigil and R. M. Ziff, On the scaling theory of two-component aggregation. *Chemical Engineering Science*, **53**, 1725-1729 (1998).
12. R. J. Campero and R. D. Vigil, Spatiotemporal patterns in liquid-liquid Taylor-Couette Poiseuille flow. *Physical Review Letters*, **79**, 3897-3900 (1997).
11. R. J. Campero and R. D. Vigil, Axial dispersion during low Reynolds number Taylor-Couette flow: Intra-vortex mixing effects. *Chemical Engineering Science*, **52**, 3303-3310 (1997).
10. R. D. Vigil and F. T. Willmore, Oscillatory dynamics in a heterogeneous surface reaction: Breakdown of the mean-field approximation. *Physical Review E*, **54**, 1225-1231 (1996).
9. R. D. Vigil, Q. Ouyang, and H. L. Swinney, Turing patterns in a simple gel reactor. *Physica A*, **188**, 17-25 (1992).
8. R. D. Vigil, Q. Ouyang, and H. L. Swinney, Spatial distribution of a short-lived intermediate species in a Couette reactor. *Journal of Chemical Physics*, **96**, 6126-6131, (1992).
7. B. J. Brosilow, R. M. Ziff, and R. D. Vigil, Random sequential adsorption of parallel squares. *Physical Review A*, **43**, 631-638 (1991).
6. R. M. Ziff and R. D. Vigil, Kinetics and fractal properties of the random sequential adsorption of line segments. *Journal of Physics A*, **23**, 5103-5108 (1990).
5. R. D. Vigil and R. M. Ziff, Kinetics of random sequential adsorption of rectangles and line segments. *Journal of Chemical Physics*, **93**, 8270-8272 (1990).
4. R. D. Vigil and R. M. Ziff, On the stability of coagulation-fragmentation population balance equations. *Journal of Colloid and Interface Science*, **133**, 257-264 (1989).

3. R. D. Vigil and R. M. Ziff, Random sequential adsorption of unoriented rectangles onto a plane. *Journal of Chemical Physics*, **91**, 2599-2602 (1989).
2. R. D. Vigil and R. M. Ziff, Comment on 'Cluster-Size Evolution in a Coagulation -Fragmentation System'. *Physical Review Letters*, **61**, 1431 (1988).
1. R. D. Vigil, R. M. Ziff, and B. Lu, New universality class for gelation in a system with particle breakup. *Physical Review B*, **38**, 942-945 (1988).

C. Publications Under Review:

D. Bulletins, Reports, or Conference Proceedings That Have Undergone Stringent Editorial Review by Peers (in print or accepted).

3. C. Cheng, R. D. Vigil, and R. O. Fox, "Bivariate Population Balance Models for Composite Block Copolymer Stabilized Nanoparticles," *Proceedings of the 17th International Symposium on Industrial Crystallization*, Maastricht, The Netherlands, Sep. 14-17, (2008).
2. L. Wang, M. G. Olsen, and R. D. Vigil, "Reappearance of Azimuthal Waves in Turbulent Taylor-Couette Flow," *Proceedings of the 11th International Symposium on Flow Visualization*, University of Notre Dame, South Bend, IN, Aug. 9-12, (2004).
1. L. Wang, D. L. Marchisio, R. D. Vigil, R. D., and Fox, R. O., "Aggregation and Breakage Processes in Taylor-Couette Flow," *AIChE Symposium Series* (2003).

E. Technical Presentations

46. M. H. Lamm, G. Pranami, and R. D. Vigil, "Diffusion of Fractal Aggregates," Midwest Thermodynamics and Statistical Mechanics Conference, Wheaton, Illinois, May, 2011. (invited).
45. I. Beresnev, W. Gaul, and R. D. Vigil, "Thickness of Residual Wetting Film in Liquid-Liquid Displacement in Capillary Channels," American Geophysical Union Fall Meeting, San Francisco, CA, December 13-17, 2010.
44. J. C. Cheng, R. O. Fox, M. G. Olsen, and R. D. Vigil, "Kinetic Modeling of Nanoprecipitation Using CFD, Micro-PIV, and Population Balance Equations," 21st International Symposium on Chemical Reaction Engineering, Philadelphia, PA, June 13-16, 2010.
43. J. Laage, M. G. Olsen, and R. D. Vigil, "Spectral Analysis of Temporally Resolved Velocity Field Data for Taylor-Couette Flow," 62nd APS Fluids Meeting, Minneapolis, MN, November 24, 2009.
42. S. Markutskya, R. O. Fox, R. D. Vigil, and S. Subramaniam, "Understanding the Structural Properties of Clusters in Sheared Aggregating Systems Using Brownian Dynamics Simulation," 62nd APS Fluids Meeting, Minneapolis, MN, November 23, 2009.
41. R. D. Vigil, "Equilibrium Aggregation-Breakage: Connecting Molecular Dynamics Simulations and Rate Kernels," AIChE Annual Meeting, Nashville, TN, November 11, 2009.
40. C. Cheng, R. D. Vigil, and R. O. Fox, "An Aggregation Model for Flash Nanoprecipitation," AIChE Annual Meeting, Nashville, TN, November 10, 2009.
39. W. Deng, I. Beresnev, W. Gaul, and R. D. Vigil, "Drop Breakage in Sinusoidal Constrictions: Analysis, CFD Simulation and Experimental Validation," AIChE Annual Meeting, Nashville, TN, November 10, 2009.

38. G. Pranami, R. D. Vigil, and M. H. Lamm, "Molecular Dynamics Simulation of Diffusion of Fractal Aggregates," 237th ACS National Meeting, Salt Lake City, UT, March, 2009.
37. C. Cheng, M. H. Lamm, R. O. Fox, and R. D. Vigil, "Nanoparticle Formation by Amphiphilic Block Copolymer Directed Assembly: A Model Study Using Molecular/Brownian Dynamics Simulations," AIChE Annual Meeting, Philadelphia, PA, November 20, 2008.
36. C. Cheng, R. D. Vigil, and R. O. Fox, "Multivariate Population Balance Models for Functional Nanoparticle Formation Stabilization by Amphiphilic Block Copolymer Directed Assembly," AIChE Annual Meeting, Philadelphia, PA, November 20, 2008.
35. C. Cheng, R. D. Vigil, and R. O. Fox, "Multivariate Population Balance Models for Nanoparticle Stabilization by Copolymer Assembly," AIChE Spring Meeting, New Orleans, LA, April 2008.
34. G. Pranami, R. D. Vigil, and M. H. Lamm, "Molecular Dynamics Simulation of Diffusion of Fractal Aggregates," AIChE Annual Meeting, Salt Lake City, UT, November 2007.
33. W. Li, I. A. Beresnev, and R. D. Vigil, "Spontaneous Droplet Breakup in Constricted Capillary Channels," AIChE Annual Meeting, San Francisco, CA, November 14, 2006.
32. S. Markutsya, S. Subramaniam, R. O. Fox, and R. D. Vigil, "Using Brownian Dynamics to Model Nanoparticle Aggregation Under Shear," AIChE Annual Meeting, San Francisco, CA, November 15, 2006.
31. R. D. Vigil, I. Vermeersch, and R. O. Fox, "Aggregation with Collision-Induced Breakage: Solutions and Comparison with Linear Breakup," AIChE Annual Meeting, San Francisco, CA, November 13, 2006.
30. R. D. Vigil, "Particulate Phase Evolution in Laminar and Turbulent Flow: Simulations and Experimental Validation," Larson-Ruth Symposium, Department of Chemical Engineering, Iowa State University, Ames, IA, April 7, 2005.
29. L. Wang, R. D. Vigil, and R. O. Fox, "CFD Simulation of Shear-Induced Aggregation and Breakage in Turbulent Taylor-Couette Flow," AIChE Annual Meeting, Austin, TX, November 12, 2004.
28. W. Li, R. D. Vigil, and I. Beresnev, "Mechanism of Vibration-Induced Mobilization of Trapped Non-Aqueous Phase Liquids in Porous Media: Theory and Experimental Validation," AIChE Annual Meeting, Austin, TX, November 10, 2004.
27. L. Wang, M. G. Olsen, and R. D. Vigil, "Reappearance of Azimuthal Waves in Turbulent Taylor-Couette Flow," 11th International Symposium on Flow Visualization, University of Notre Dame, Notre Dame, IN, August 9-12, 2004.
26. A. Annapragada, R. D. Vigil, K. B. Ghaghada, and R. S. Kuczynski, "Modeling of Carrier Cell Interactions in Targeted Drug Delivery – A Stochastic Approach," AIChE Annual Meeting, San Francisco, CA, November 21, 2003.
25. L. Wang, D. Marchisio, R.D. Vigil and R.O. Fox, "Experimental and Numerical Investigation of Aggregation in a Taylor-Couette Reactor," AIChE Annual Meeting, San Francisco, CA, November 20, 2003.
24. L. Wang, M. G. Olsen, and R. D. Vigil, "Analysis of Flow Transitions in Taylor Vortex Flow: PIV Experiments," American Physical Society Division of Fluid Mechanics 55th Annual Meeting, Dallas, TX, November 24, 2002.

23. L. Wang, D. Marchisio, M. G. Olsen, R. D. Vigil, and R. O. Fox, "CFD Simulation of a Taylor-Couette Device with Axial Flow: Validation Using Particle Image Velocimetry," AIChE Annual Meeting, Indianapolis, IN, November 7, 2002.
22. D. Marchisio, L. Wang, R. D. Vigil, and R. O. Fox, "Aggregation in a Taylor-Couette Reactor: Simulation and Comparison with Experimental Data," AIChE Annual Meeting, Indianapolis, IN, November 7, 2002.
21. J. Pikturna and R. D. Vigil, "Reductive Precipitation of Palladium in a Stirred Tank Reactor: Mixing Effects," AIChE Annual Meeting, Indianapolis, IN, November 5, 2002.
20. D. Marchisio, J. Pikturna, R. D. Vigil, and R. O. Fox, "Use of the Quadrature Method of Moments for Modeling Population Balances in CFD Applications," 15th International Symposium on Industrial Crystallization, Sorrento, Italy, September 15-18, 2002.
19. M. Fontenot and R. D. Vigil, "Pore-Scale Study of the Effect of Low-Frequency Sonication of NAPL Ganglia," AIChE Annual Meeting, Reno, NV, November 6, 2001.
18. R. D. Vigil and X. Zhu, "Banded Taylor-Couette-Poiseuille Flow," 12th International Couette Taylor Workshop, Northwestern University, Evanston, IL, September 6, 2001.
17. D. L. Hawker-Schreiner, C. E. Glatz, R. C. Seagrave, and R. D. Vigil, "A Systematic Approach to Satisfying EC2000," Annual Conference of the American Society for Engineering Education, Albuquerque, NM, June 25, 2001.
16. M. Mosier and R. D. Vigil, "Three Dimensional Visualization and Quantification of NAPL Dissolution in Porous Media," AIChE Annual Meeting, Los Angeles, CA, November 15, 2000.
15. X. Zhu and R. D. Vigil, "Liquid-Liquid Taylor-Couette-Poiseuille Flow: Role of Interfacial Surface Tension and Axial Flow Rate," AIChE Annual Meeting, Los Angeles, CA, November 13, 2000.
14. R. J. Campero, X. Zhu, and R. D. Vigil, "Flow Patterns and Axial Mass Transport in Liquid-Liquid Taylor-Couette-Poiseuille Flow," AIChE Annual Meeting, Dallas, TX, November 4, 1999.
13. R. J. Campero and R. D. Vigil, "Dynamics of Immiscible Liquid-Liquid Taylor-Couette-Poiseuille Flow at High Reynolds Numbers," AIChE Annual Meeting, Los Angeles, CA, November 18, 1997.
12. N. Kumar, R. D. Vigil, and T. S. King, "Structure Sensitive Hydrogen Adsorption on Ru/SiO₂ and Ru-Ag/SiO₂ Catalysts: Theory and Experiment," AIChE Annual Meeting, Los Angeles, CA, November 19, 1997.
11. R. D. Vigil and F. T. Willmore, "Oscillatory Dynamics in a Heterogeneous Surface Reaction: Breakdown of the Mean-Field Approximation," AIChE Annual Meeting, Chicago, IL, November 11, 1996.
10. R. J. Campero and R. D. Vigil, "Mass Transport in a Taylor-Couette Vortex Column at Low Rotation Rates of the Inner Cylinder," AIChE Annual Meeting, Chicago, IL, November 13, 1996.
9. F. Sheikh and R. D. Vigil, "Mixing Effects in Nonisothermal Systems," AIChE Annual Meeting, Chicago, IL, November 13, 1996.

8. R. D. Vigil, "Role of Product Occupancy and Reversible Adsorption of Inerts in the Monte Carlo Simulation of CO Oxidation," AIChE Annual Meeting, San Francisco, CA, November 17, 1994.
7. R. D. Vigil, Q. Ouyang, and H. L. Swinney, "Spatial Distribution of Short-lived Chemical Species in a Couette Reactor," Gordon Research Conference on Oscillatory Phenomena in Chemical Systems, Newport, RI, July, 1992.
6. R. D. Vigil, Q. Ouyang, and H. L. Swinney, "Recovery of Short-lived Chemical Species in a Couette Reactor," AIChE Annual Meeting, Los Angeles, CA, November 17-22, 1991.
5. R. M. Ziff, B. J. Brosilow, and R. D. Vigil, "Irreversible Adsorption of Rectangular Shaped Objects," AIChE Annual Meeting, Los Angeles, CA, November 17-22, 1991.
4. R. D. Vigil and R. M. Ziff, "Kinetic Gelation in Systems with Aggregation, Breakup, and Flow," Fall Meeting of the Materials Research Society, Boston, MA, November 27-December 1, 1989.
3. R. D. Vigil, E. D. McGrady, and R. M. Ziff, "Breakup and Coalescence of Oil Droplets in Turbulent Couette Flow: Theory and Experiment," AIChE Annual Meeting, Washington, DC, November 27 - December 2, 1988.
2. R. D. Vigil, E. D. McGrady, and R. M. Ziff, "Monte Carlo Simulations of Aggregation: Verification of the Mean-Field Assumption," AIChE Annual Meeting, New York, NY, November 15-20, 1987.
1. R. D. Vigil, E. D. McGrady, and R. M. Ziff, "Kinetics of Colloidal Coagulation, Coalescence, and Breakup," 61st Colloid and Surface Science Symposium, American Chemical Society, Ann Arbor, MI, June 22, 1987.

F. Summary of Citations for top 10 Publications (total citations for all publications = 844, H-Index = 15)

The source for the number of citations in the following list of publications is the Web of Science. Results are as of January 9, 2012. Journal impact factors come from the Web of Knowledge Journal Citation Reports and are from the 2008 edition.

- D. L. Marchisio, R. D. Vigil, and R. O. Fox, Quadrature method of moments for aggregation-breakage processes. *Journal of Colloid and Interface Science*, **258**, 322-334 (2003). **123 citations, Journal Impact Factor = 2.443**
- D. L. Marchisio, J. T. Pikturna, R. O. Fox, R. D. Vigil, and A. A. Barresi, Quadrature method of moments for population balance equations. *American Institute of Chemical Engineers Journal*, **49**, 1266-1276 (2003). **103 citations, Journal Impact Factor = 1.883**
- R. D. Vigil and R. M. Ziff, Random sequential adsorption of unoriented rectangles onto a plane. *Journal of Chemical Physics*, **91**, 2599-2602 (1989). **98 citations, Journal Impact Factor = 3.149**
- D. L. Marchisio, R. D. Vigil, and R. O. Fox, Implementation of the quadrature method of moments in CFD codes for aggregation-breakage problems. *Chemical Engineering Science*, **58**, 3337-3351 (2003). **57 citations, Journal Impact Factor = 1.884**

- R. D. Vigil and R. M. Ziff, On the stability of coagulation-fragmentation population balance equations. *Journal of Colloid and Interface Science*, **133**, 257-264 (1989). **52 citations, Journal Impact Factor = 2.443**
- B. J. Brosilow, R. M. Ziff, and R. D. Vigil, Random sequential adsorption of parallel squares. *Physical Review A*, **43**, 631-638 (1991). **46 citations, Journal Impact Factor = 2.908**
- L. Wang, D. L. Marchisio, R. D. Vigil, and R. O. Fox, CFD simulation of aggregation and breakage processes in laminar Taylor-Couette flow. *Journal of Colloid and Interface Science*, **282**, 380-396 (2005). **42 citations, Journal Impact Factor = 2.443**
- R. M. Ziff and R. D. Vigil, Kinetics and fractal properties of the random sequential adsorption of line segments. *Journal of Physics A*, **23**, 5103-5108 (1990). **38 citations, Journal Impact Factor = 1.540**
- R. D. Vigil, Q. Ouyang, and H. L. Swinney, Turing patterns in a simple gel reactor. *Physica A*, **188**, 17-25 (1992). **35 citations, Journal Impact Factor = 1.441**
- R. D. Vigil and R. M. Ziff, Kinetics of random sequential adsorption of rectangles and line segments. *Journal of Chemical Physics*, **93**, 8270-8272 (1990). **26 citations, Journal Impact Factor = 3.149**

III. INSTRUCTION AND SUPERVISION

A. Instruction for ISU

Term-Year	Subject	Credits	Notes
F11	ChE 357	3	36 Students, 1 st time taught
S11	ChE 382	3	54 Students, 6 th time taught
F10	ChE 382	3	40 Students, 5 th time taught
F10	Engr 101	R	115 Students, 1 st time taught
S10	ChE 587	3	16 Students, 7 th time taught
F09	ChE 382	3	48 Students, 4 th time taught
S09	None		Faculty Improvement Leave
F08	ChE 587	3	17 Students, 7 th time taught
S08	ChE 356	3	35 Students, 6 th time taught
F07	ChE 587	3	12 Students, 6 th time taught
S07	ChE 587	3	14 Students, 5 th time taught
F06	ChE 356	3	20 Students, 6 th time taught
F05	ChE 545	3	11 Students, 8 th time taught
S05	ChE 356	3	32 Students, 5 th time taught
F04	ChE 587	3	10 Students, 4 th time taught
S04	ChE 302	R	~75 Students, 1 st time taught
S04	ChE 202	R	~80 Students, 1 st time taught
F03	ChE 587	3	12 Students, 3 rd time taught
SS03	ChE 392	6	18 Students, 1 st time taught
S03	ChE 391	1	18 Students, 1 st time taught
S03	ChE 382	3	~35 Students, 3 rd time taught
F02	ChE 587	3	12 Students, 2 nd time taught
S02	ChE 356	3	20 Students, 4 th time taught
F01	ChE 587	3	8 Students, 1 st time taught

S01	ChE 441	3	4 Students, 3 rd time taught
S01	ChE 645	3	8 Students, 3 rd time taught
F00	ChE 545	3	10 Students; 7 th time taught
S00	ChE 382	3	33 Students; 2 nd time taught.
S00	ChE 302 (ethics)	R	~80 Students.
F99	ChE 545	3	12 Students; 6 th time taught.
S99	ChE 382	3	62 Students; 1 st time taught.
S99	ChE 302 (ethics)	R	~80 Students.
F98	ChE 645	3	11 Students; 2 nd time taught
F98	ChE 545	3	9 Students; 5 th time taught.
S98	ChE 356	3	40 Students; 3 rd time taught.
S98	ChE 302 (ethics)	R	~80 Students.
F97	ChE 545	3	11 Students; 4 th time taught.
S97	ChE 356	3	70 Students; 2 nd time taught.
S97	ChE 302 (ethics)	R	~80 Students.
F96	ChE 545	3	16 Students; 3 rd time taught.
F96	ChE 645	3	10 Students; 1 st time taught.
S96	ChE 441	3	11 Students; 2 nd time taught.
F95	ChE 545	3	12 Students; 2 nd time taught.
S95	ChE 356	3	35 Students; 1 st time taught.
F94	ChE 545	3	12 Students; 1 st time taught.
S94	ChE 441	3	11 Students; 1 st time taught.

Subject Details:

- **Engr 101 – Engineering Orientation** – Chemical engineering section, introduction to chemical engineering, experiential educational opportunities, involvement in campus groups, career opportunities, engineering ethics, graduate school opportunities.
- **ChE 202 – Sophomore Seminar** – I was responsible for the entire course during Spring 2004.
- **ChE 302 – Junior Seminar** – The ethics component of this course (2 to 4 sessions), was usually taught in collaboration with one or more other faculty (Glatz, Mallapragada). In Spring 2004 I was responsible for the entire course.
- **ChE 356 - Momentum Transport Operations** - a required core undergraduate topic emphasizing a chemical engineering approach to fluid mechanics.
- **ChE 357 – Transport Phenomena II (Heat and Mass)** - a required core undergraduate topic emphasizing a chemical engineering approach to heat transfer and an introduction to diffusion and convective mass transfer.
- **ChE 382 – Chemical Reaction Engineering** - a required core undergraduate topic emphasizing kinetics and design of homogeneous and heterogeneous chemical reactors.
- **ChE 391 – Foreign Study Orientation** – preparation course for students participating in the summer laboratory program at University College, London.

- **ChE 392 – Foreign Study Program** – Summer laboratory program at University College, London.
- **ChE 441 - Modeling and Simulation** - an undergraduate elective course emphasizing model formulation and analysis of typical chemical engineering problems. The course includes a significant computing component.
- **ChE 545 - Analytical and Numerical Methods** - a compulsory course for entering graduate students emphasizing model formulation and analysis of typical chemical engineering problems. The course includes a significant computing component.
- **ChE 587 - Advanced Chemical Reactor Design** - a core graduate-level course emphasizing heterogeneous and multiphase reactors.
- **ChE 645 - Advanced Calculation Methods for Chemical Engineers** - an elective course emphasizing nonlinear analysis and bifurcation theory applied to current chemical engineering research problems.

B. Supervision of Graduate Student Research

1. Frank Willmore, M.S., 1995, “Monte Carlo Investigation of the Monomer-Dimer Problem with Inert Poison.”
2. Farooq Sheikh, M.S., 1996, “Micromixing in Nonisothermal Reactive Systems.”
3. Naresh Kumar (Terry King, co-advisor), Ph.D., 1998, “Structure Sensitive Adsorption of Hydrogen on Ruthenium and Ruthenium-Silver Catalysts Supported on Silica.”
4. Richard Campero, Ph.D., 1998, “Hydrodynamics and Mass Transport in Homogeneous and Two Phase Liquid-Liquid Taylor-Couette Flow.”
5. Xiaoyan Zhu, Ph.D., 2001, “Mass Transport and Chemical Reaction in Single and Liquid-Liquid Taylor-Couette Flow.”
6. Mirrya Mosier, Ph.D., 2001, “Study of Transport and Dissolution of a Non-Aqueous Phase Liquid in Porous Media: Effects of Low-Frequency Pulsations and Surfactants.”
7. Jesse Pikturna, Ph.D., 2004, “Particle Size Prediction in Reactive Precipitation Processes.”
8. Liguang Wang (Rodney Fox, co-advisor), Ph.D., 2004, “Computational Fluid Dynamics Simulation of Precipitation Processes.”
9. Wenqing Li, Ph.D., 2006, “Vibration-Induced Mobilization of Trapped Non-Aqueous Phase Liquids in Porous Media”
10. Sergiy Markutsya (Shankar Subramaniam, primary advisor), Ph.D., 2010.
11. Isaac Vermeersch (Rodney Fox, co-advisor), Ph.D., left ISU S08.
12. William Gaul (Igor Beresnev, co-advisor), Ph.D., work in progress, degree expected spring 2012.

C. Service on Thesis Committees Other than Own Advisees

Degrees Completed

Ore Sofekun, Ph.D., Chemical Engineering, 1995, Advisor: L.K. Doraiswamy
Robert Sanderson, Ph.D., 1995, Chemical Engineering, Advisor: James C. Hill
Jean Pelkey, M.S., 1995, Statistics, Advisor: Derrick Rollins
Joseph Isaac, M.S., 1995, Chemical Engineering, Advisor: Kurt Hebert
Angelita Garth, M.S., 1995, Statistics, Advisor: Derrick Rollins
Alex Soejarto, M.S., 1996, Chemical Engineering, Advisor: Glenn Schrader
Kong Tian, M.S., 1997, Chemical Engineering, Advisor: Kenneth Jolls
Sanjeev Naik, Ph.D., 1997, Chemical Engineering, Advisor: L.K. Doraiswamy
Dana Haugli, M.S., 1997, Chemical Engineering, Advisor: James C. Hill
Caroline Wilharm, Ph.D., 1998, Chemical Engineering, Advisor: Richard Seagrave
Dawn Downey, Ph.D., 1998, Chemical Engineering, Advisor: Richard Seagrave
Sridhar Desikan, Ph.D., 1998, Chemical Engineering, Advisor: L.K. Doraiswamy
George Barac, Ph.D., 1998, Chemical Engineering, Advisor: Richard Seagrave
Zhi-Yang Xue, Ph.D., 1999, Chemical Engineering, Advisor: Glenn Schrader
Kirk Thompson, Ph.D., 1999, Chemical Engineering, Advisor: Glenn Schrader
Chris Jones, Ph.D., 1999, Chemical Engineering, Advisor: Maurice Larson
Holger Glatzer, Ph.D., 1999, Chemical Engineering, Advisor: L.K. Doraiswamy
Victoria Bascunana, Ph.D., 1999, Chemical Engineering, Advisor: Derrick Rollins
Mei-Yu Shen, Ph.D., 1999, Chemical Engineering, Advisor: Tom Wheelock
Nidhi Bhandari, Ph.D., 2000, Chemical Engineering, Advisor: Derrick Rollins
Justinius Satrio, Ph.D., 2001, Chemical Engineering, Advisor: L.K. Doraiswamy
Tetteh Akiti, Ph.D., 2001, Chemical Engineering, Advisor: Brent Shanks
Brian Anderson, Ph.D., 2002, Chemical Engineering, Advisor: Surya Mallapragada
Yanhui Hu, Ph.D., 2002, Chemical Engineering, Advisor: Rodney Fox
Thomas Paskach, Ph.D., 2002, Chemical Engineering, Advisor: Glenn Schrader
Yunxue Shen, M.S., 2002, Materials Engineering, Advisor: Rohit Trivedi
Weihua Deng, M.S., 2003, Chemical Engineering, Advisor: Brent Shanks
Sipho Ndlela, M.S., 2003, Chemical Engineering, Advisor: Brent Shanks
Mathew Hagge, M.S., 2003, Mechanical Engineering, Advisor: Mark Bryden
Halim Meco, Ph.D., 2004, Materials Engineering, Advisor: Rohit Trivedi
Ganesh Sriram, Ph.D., 2004, Chemical Engineering, Advisor: Jacqueline Shanks
Phillip Hol, M.S., 2005, Mechanical Engineering, Advisor: Francine Battaglia
Sipho Ndlela, Ph.D., 2005, Chemical Engineering, Advisor: Brent Shanks
Daniel Lahr, Ph.D., 2005, Chemical Engineering, Advisor: Brent Shanks
Pavel Iassonov, Ph.D., 2005, Geology, Advisor: Igor Beresnev
Mathew Hagge, Ph.D., 2005, Mechanical Engineering, Advisor: Mark Bryden
Isa Mbaraka, Ph.D., 2005, Chemical Engineering, Advisor: Brent Shanks
Chengzhi Tang, Ph.D., 2005, Mechanical Engineering, Advisor: Ted Heindel
Dongmei Zhai, Ph.D., 2005, Chemical Engineering, Advisor: Derrick Rollins
Weihua Deng, Ph.D., 2005, Chemical Engineering, Advisor: Brent Shanks
Sim-Siong Wong, Ph.D., 2006, Chemical Engineering, Advisor: Surya Mallapragada
Jason Bootsma, Ph.D., 2006, Chemical Engineering, Advisor: Brent Shanks
Yin Yani, M.S., 2006, Chemical Engineering, Advisor: Monica Lamm
Rong Fan, Ph.D., 2006, Chemical Engineering, Advisor: Rodney Fox
Deify Law, Ph.D., 2006, Mechanical Engineering, Advisor: Francine Battaglia
Boopathy Mummudi, Ph.D., 2006, Chemical Engineering, Advisor: Rodney Fox
Ying Liu, Ph.D., 2007, Chemical Engineering, Advisor: Rodney Fox
Sarah Monahan, Ph.D., 2007, Chemical Engineering, Advisor: Rodney Fox
Jong Shin, Ph.D., 2007, Materials Engineering, Advisor: Rohit Trivedi
Nicholas Suek, Ph.D., 2008, Chemical Engineering, Advisor: Monica Lamm

Jerrod Houser, Ph.D., 2008, Chemical Engineering, Advisor: Kurt Hebert
Sean Smith, Ph.D., 2008, Chemical Engineering, Advisor: Rodney Fox
Gaurav Pranami, Ph.D., 2009, Chemical Engineering, Advisor: Monica Lamm
Sikander Hakim, Ph.D., 2009, Chemical Engineering, Advisor: Brent Shanks
Yin Yani, Ph.D., 2009, Chemical Engineering, Advisor: Monica Lamm
Wen Deng, Ph.D., 2010, Geology, Advisor: Igor Beresnev
Chungyin Cheng, Ph.D., 2010, Chemical Engineering, Advisor: Rodney Fox

Degrees in Progress

John Laage, Ph.D., Mechanical Engineering, Advisor: Michael Olsen
Keenan Deutsch, Ph.D., Chemical Engineering, Advisor: Brent Shanks
Zheng Li, Ph.D., Chemical Engineering, Advisor: Brent Shanks
Maulik Mehta, Ph.D., Chemical Engineering, Advisor: Rodney Fox
Ram Rokkam, Ph.D., Chemical Engineering, Advisor: Rodney Fox
Michael Nolan, Ph.D., Chemical Engineering, Advisor: Brent Shanks
Shannon Haughney, Ph.D., Chemical Engineering, Advisor: Balaji Narasimhan

D. Supervision of Undergraduate Research and Independent Study

Undergraduate Research Assistants and Independent Study

Eugene Johnston, ChE, 1994	Eddy Karmana, ChE, 1995
Kok-Siong Heng, ChE, 1996	Alan Wong, ChE, 1997
Boon Leong, ChE, 1998	Samuel Keninger, ChE, 1999
Erik Edwards, ChE, 2000	Erik Allen, ChE, 2001, 2002
Robert Kuczynski, ChE, 2003	Benjamin Stover, ChE, 2003
Anish Patel, ChE, 2004	Jonathan Gorke, ChE, 2004
Thomas Reneker, ChE, 2005	Isaac Vermeersch, ChE, 2005-2006
Stephanie English, ChE, 2006	Travis Salinas, ChE, 2006
Michael Mayer, ChE, 2007	Bradley Forney, ChE, 2007
Eric Gauthier, ChE, 2007	Juan Montoya Urdaneta, ChE, 2008
Christopher Renner, ChE, 2009	Maxwell Terban, ChE, 2010
Leeanna Hyacinth, ChE, 2011	Trent Ray, ChE, 2011

IV. SERVICE (PUBLIC, PROFESSIONAL/DISCIPLINARY, AND UNIVERSITY)

A. Service to Disciplinary and Professional Societies or Associations

Meeting Organization or Session Chair:

Chair, Association for Crystallization Technology Steering Committee, 2007-2012.

Meeting Organizer, 17th Larson Workshop, Association for Crystallization Technology, New Brunswick, NJ, October 3-6, 2010.

Meeting Organizer, 16th Larson Workshop, Association for Crystallization Technology, Boston, MA, October 4-7, 2009.

Chair, AIChE Area 2B Programming Committee, 2007-2009.

Chair, “Fundamentals of Nucleation,” AIChE Annual Meeting, Philadelphia, PA, November 21, 2008.

Chair, “Crystallization of Biological and Pharmaceutical Molecules,” AIChE Annual Meeting, Salt Lake City, UT, November, 2007.

Chair, “Recent Developments in Crystallization and Evaporation,” AIChE Annual Meeting, Salt Lake City, UT, November 2007.

Chair, Session 189, “Fundamentals of Nucleation,” AIChE Annual Meeting, San Francisco, CA, November 14, 2006.

Chair, Session 292, “Recent Developments in Crystallization and Evaporation,” AIChE Annual Meeting, Cincinnati, OH, November 1, 2005.

Chair, Session 529, “Advances and Case Studies in Crystallization and Post Crystallization Processing,” AIChE Annual Meeting, Cincinnati, OH, November 3, 2005.

Co-Chair, Session 229, “Interfacial Crystallization,” AIChE Annual Meeting, Austin, TX, November 11, 2004.

Session Co-Chair, “Nucleation and Aggregation” 12th Larson Workshop, Association for Crystallization Technology, Groton, CT, September 17, 2003.

Co-Chair, Session 154, “Polymerization and Aggregation Kinetics” AIChE Annual Meeting, Chicago, 1996.

Reviewer for the following scientific journals and agencies:

ACS Petroleum Research Fund
AIChE Journal
ASME Journal of Fluids Engineering
Canadian Journal of Chemical Engineering
Chemical Engineering Science
Fluid Dynamics Research
Industrial & Engineering Chemistry Research
Journal of Colloid and Interface Science
Journal of Theoretical and Computational Fluid Mechanics
Langmuir
National Science Foundation
Physical Review E
Physics of Fluids

B. University/Campus Service

Departmental Service

CBE ADVANCE Committee	2010-12	Review results of faculty interviews related to workplace environment and develop proposals for improvement.
Graduate Program Committee	2009-12 2001-03 1994-97	Co-Chair, 2002-2003 Associate Chair, 2009-10
Cyberinfrastructure Committee	2009-12	Chair

Department Chair Review Committee, Chair	2007	Short-term but significant effort to review department chair
Faculty Search Committees	2008-10 2003-05 1995-98	Significant time commitment. Participated in at least 7 search cycles resulting in hiring of four new faculty members and 3 department chairs.
ABET Coordinator	2004-07 1999-2000	Significant time required to prepare for successful ABET re-accreditation in Fall, 2006
Curriculum Committee	2008-09 1998-2007	Chair, 2008, 1999-00. Significant effort to support ABET preparation
Associate Department Chair	2005-2006	
Advising Oversight	2003-08	Led effort to hire and supervise departmental advising coordinator.
Planning and Governance Committee	2008-09 2003-06	
Class Schedule Coordinator	2003-06	
Laboratory Task Force	2002	
Advising Task Force	2002-2003	Led effort to revamp advising system.
Ad-hoc committee on computational tools	1998	Chair
Ad-hoc committee for catalog transition problems	1998	Chair
Minority Enhancement Committee	1998	
Summer Orientation Advising	1997-99	
Graduate Seminar Coordinator	1996-99	
AICHe Student Chapter Advisor	1996	
Graduate Computing Laboratory Committee	1994-95	

Engineering College Service

	Date	Notes
EFTF Committee	2009-12	
Student Learning Task Force	2004-07	
Cluster Hire Committee	2006	
Engineering Honors Program Committee	1998-03	Met 2-3 times monthly during each semester during 98-00.
Advisor, Society of Hispanic Engineers	1999-01	

LEAD Advisory Board	1995-99	Engineering College Minority Recruitment and Retention
LEAD Coordinator Search Committee	1995	
LEAD Mentor	1995	
Dean's Academic Advisory Committee	1994-95	College-wide Promotion and Tenure Committee

University Service

Provost's Faculty Misconduct Committee, 2001-2012

C. Consulting Activities

Grefe & Sidney, P.L.C.