

Curriculum Vitae

**MICHAEL C. SUKOP, DEPARTMENT OF EARTH AND ENVIRONMENT
Florida International University**

EDUCATION

Degree	Institution	Field	Dates
PhD	University of Kentucky	Soil Science	1997-2001
MS	Washington State University	Soil Science	1986-1989
BS	The Pennsylvania State Univ.	Geological Science	1980-1982

FULL-TIME ACADEMIC EXPERIENCE

Institution	Rank	Field	Dates (M/Y)
Florida Intl. Univ.	Associate Professor	Earth Sciences	8/2009-present
Florida Intl. Univ.	Assistant Professor	Earth Sciences	8/2003-8/2009
Univ. of Connecticut	Postdoctoral Fellow	Civil/Environ Eng	7/2002-7/2003
Utah State Univ.	Postdoctoral Fellow	Soil Physics	7/2001-8/2002

PART-TIME ACADEMIC EXPERIENCE

Institution	Rank	Field	Dates
N/A			

NON-ACADEMIC EXPERIENCE

Place of Employment	Title	Dates
CH2M HILL Engineering, Redding CA	Hydrogeologist/ Soil Scientist	1989-1997
Donohue and Associates Engineering, Sheboygan WI	Hydrogeologist	1984-1986

EMPLOYMENT RECORD AT FIU

Rank	Dates
Associate Professor	2009-present
Assistant Professor	2003-2009

PUBLICATIONS IN DISCIPLINE (Supervised students and post-docs underlined)

Books

Sukop, M.C. and D.T. Thorne, Jr., 2006 (second printing 2007). Lattice Boltzmann Modeling: An Introduction for Geoscientists and Engineers. Springer, Heidelberg, Berlin, New York 172 p.

Articles.

Sukop, MC and KJ Cunningham, Lattice Boltzmann Methods Applied to Large-Scale Three-Dimensional Virtual Cores Constructed from Digital Optical Borehole Images of the Karst Carbonate Biscayne Aquifer in Southeastern Florida, accepted October 12, 2014 by *Water Resources Research*.

Ngachin, M., RG Galdamez, S Gokaltun, **MC Sukop**, 2014, Lattice Boltzmann Simulation of Rising Bubble Dynamics using an Effective Buoyancy Method, Accepted 16 July 2014 by *Int. J. Mod. Phys. C*
<http://dx.doi.org/10.1142/S012918311550031X>

Anwar, S., **M.C. Sukop**, and D.T. Thorne, Jr., 2013, Lattice Boltzmann modeling of classic solute transport boundary value problems. *Vadose Zone Journal* 12,
<http://dx.doi.org/10.2136/vzj2012.0192>

Huang, H.B., J.J.Huang, X.Y. Lu, **M.C. Sukop**, 2013, On simulations of high-density ratio flows using color-gradient multiphase lattice Boltzmann models, *Int. J. of Modern Phys. C*, 24(4), 1350021 <http://dx.doi.org/10.1142/S0129183113500216>

Sukop, M. C., H. Huang, P. F. Alvarez, E. A. Variano, and K. J. Cunningham, 2013, Evaluation of permeability and non-Darcy flow in vuggy macroporous limestone aquifer samples with lattice Boltzmann methods, *Water Resour. Res.*, 49(1), 216-230, <http://dx.doi.org/10.1029/2011WR011788>.

Ozturk, Z., B. Tansel, Y. Katsenovich, **M. Sukop**, S. Laha, 2012, Highly organic natural media as permeable reactive barriers: TCE partitioning and anaerobic degradation profile in eucalyptus mulch and compost, *Chemosphere*, 89(6) 665-671,
<http://dx.doi.org/10.1016/j.chemosphere.2012.06.006>

Kim, J-W., **M.C. Sukop**, E. Perfect, Y. Pachepsky, and H. Choi, 2011, Geometric and Hydrodynamic Characteristics of Three-dimensional Saturated Prefractal Porous Media Determined with Lattice Boltzmann Modeling, *Transport in Porous Media*, <http://dx.doi.org/10.1007/s11242-011-9818-6>

- Huang, H.-B., X. Lu, and M.C. Sukop, 2011, Numerical study of lattice Boltzmann methods for a convection-diffusion equation coupled with Navier-Stokes equations *Journal of Physics A: Mathematical and Theoretical*, 44 055001. <http://dx.doi.org/10.1088/1751-8113/44/5/055001>
- Dausman, A.M., J. Doherty, C.D. Langevin and M.C. Sukop, 2010, Quantifying Data Worth Toward Reducing Predictive Uncertainty. *Ground Water* 48(5):729–740. <http://dx.doi.org/10.1111/j.1745-6584.2010.00679.x>
- Langevin, C.D., Dausman, A.M., and Sukop, M.C., 2010, Solute and Heat Transport Model of the Henry and Hilleke Laboratory Experiment. *Ground Water*, 48(5): 757-770. <http://dx.doi.org/10.1111/j.1745-6584.2009.00596.x>
- Cihan, A., M.C. Sukop, J.S. Tyner, E. Perfect, and H. Huang, 2009. Analytical predictions and lattice Boltzmann simulations of intrinsic permeability for mass fractal porous media. *Vadose Zone J* 7(1):187–196. <http://dx.doi.org/10.2136/vzj2008.0003>
- Anwar, S. and M.C. Sukop, 2009. Regional scale transient groundwater flow modeling using lattice Boltzmann methods. *Computers & Mathematics with Applications*, 58:1015-1023. <http://dx.doi.org/10.1016/j.camwa.2009.02.025>
- Cunningham, K.J., M.C. Sukop, H. Huang, P.F. Alvarez, H. A. Curran, J.F. Dixon, and R.A. Renken, 2009. Prominence of ichnologically-influenced macroporosity in the karst Biscayne aquifer: stratiform "super-K" zones, *Geological Society of America Bulletin* 121:1-2, 164-235. <http://dx.doi.org/10.1130/B26392.1>
- Anwar, S. and M.C. Sukop, 2008. Lattice Boltzmann models for flow and transport in saturated karst, *Ground Water* 47(3):401-413. <http://dx.doi.org/10.1111/j.1745-6584.2008.00514.x>
- Anwar, S., A. Cortis, and M.C. Sukop, 2008. Lattice Boltzmann Simulation of Solute Transport in Heterogeneous Porous Media with Conduits to Estimate Macroscopic Continuous Time Random Walk Model Parameters, *Progress in Computational Fluid Dynamics* 8:1-2, 213 - 221. <http://dx.doi.org/10.1504/PCFD.2008.018092>
- Sukop, M.C., H. Huang, C.L. Lin, M.D. Deo, K. Oh, and J.D. Miller, 2008. Distribution of multiphase fluids in porous media: Comparison between lattice Boltzmann modeling and micro-x-ray tomography, *Phys. Rev. E* 77, 026710, 7p. <http://dx.doi.org/10.1103/PhysRevE.77.026710>.
- Huang, H., D.T. Thorne, M.G. Schaap, and M.C. Sukop, 2007. Proposed approximation for contact angles in Shan-and-Chen-type multicomponent multiphase lattice Boltzmann models, *Phys. Rev. E* 76, 066701, 6p. <http://dx.doi.org/10.1103/PhysRevE.76.066701>

- Thorne, Jr., D.T., C.D. Langevin, and **M.C. Sukop**, 2006. Addition of Simultaneous Heat and Solute Transport and Variable Fluid Viscosity to SEAWAT. *Computers and Geosciences* 32, 1758–1768. <http://dx.doi.org/10.1016/j.cageo.2006.04.005>
- Perfect, E., R.W. Gentry, **M.C. Sukop**, and J.E. Lawson, 2006. Multifractal Sierpinski Carpets: theory and application to upscaling effective saturated hydraulic conductivity. *Geoderma* 134, 240-252. <http://dx.doi.org/10.1016/j.geoderma.2006.03.001>
- Chau, J.F., D. Or, and **M.C. Sukop**, 2005. Simulation of Gaseous Diffusion in Partially Saturated Porous Media Under Variable Gravity with Lattice Boltzmann Methods. *Water Resources Research* 41, W08410, 11p. <http://dx.doi.org/10.1029/2004WR003821>
- Sukop, M.C.** and D. Or, 2005. Lattice Boltzmann method for homogeneous and heterogeneous cavitation. *Physical Review E*, 71, 046703, 5p. <http://dx.doi.org/10.1103/PhysRevE.71.046703>
- Sukop, M.C.** and D. Or, 2004. Lattice Boltzmann method for modeling liquid-vapor interface configurations in porous media, *Water Resources Research*, 40, W01509, 11p. <http://dx.doi.org/10.1029/2003WR002333>.
- Sukop, M.C.** and D. Or, 2003. Invasion percolation of single component, multiphase fluids with lattice Boltzmann models. *Physica B* 338, 298-303. <http://dx.doi.org/10.1016/j.physb.2003.08.009>
- Sukop, M.C.**, G-J. van Dijk, E. Perfect, and W.K.P. van Loon, 2002. Percolation thresholds in 2-dimensional prefractal models of porous media. *Transport in Porous Media* 48, 187-208. <http://dx.doi.org/10.1023/A:1015680828317>
- Perfect, E., **M.C. Sukop**, and G.R. Haszler, 2002. Prediction of dispersivity for undisturbed soil columns from water retention parameters. *Soil Science Society of America Journal* 66, No. 3, 696-701. <http://dx.doi.org/10.2136/sssaj2002.6960>
- Sukop, M.C.** 2001. Dispersion in VLEACH and similar models. *Ground Water* 39, No. 6, 953-954. <http://dx.doi.org/10.1111/j.1745-6584.2001.tb02483.x>
- Sukop, M.C.**, E. Perfect, and N.R.A. Bird, 2001. Water retention of prefractal porous media generated with the homogeneous and heterogeneous algorithms. *Water Resources Research* 37, 2631-2636. <http://dx.doi.org/10.1029/2000WR000097>
- Sukop, M.C.** 2000. Estimation of vertical concentration profiles from existing wells. *Ground Water*, 38, No. 6, 836-841. <http://dx.doi.org/10.1111/j.1745-6584.2000.tb00681.x>

Sukop, M. and C.G. Cogger, 1992. Adsorption of Carbofuran, Metalaxyl, and Simazine: Koc evaluation and relation to soil transport. *J. Environ. Sci. Health B* 27(5):565-590. <http://dx.doi.org/10.1080/03601239209372801>

Proceedings. Supervised students and post-docs underlined (give full bibliographical references: author(s); journal title, publisher, title, date, volume and page number)

Variano, E.A., **M.C. Sukop**, D.T. Ho, S. Anwar, and V.C. Engel, 2010, Velocity Variations in a Patterned Wetland from Lattice-Boltzmann Flow Modeling, 71-72, *In* H.O. Andradottir (Ed.), Proceedings of the 14th International Workshop on Physical Processes in Natural Waters, June 28 - July 1, Reykjavík, Iceland, pp. 166.

Gokaltun, S., **M.C. Sukop**, G.S. Dulikravich, 2009, Statistical Modeling of Rarefied Gas Channel Flows, ASME Fluids Engineering Division Summer Meeting, AUG 02-06, 2009, FEDSM2009, VOL 2: 519-527.

Sukop, M.C., S. Anwar, J.S. Lee, K.J. Cunningham, and C.D. Langevin, 2008, Modeling Ground-water Flow and Solute Transport in Karst with Lattice Boltzmann Methods, Proceedings of the U.S. Geological Survey Karst Interest Group Workshop, May 27-29, 2008, Bowling Green, Kentucky, Western Kentucky University Campus, E.L. Kuniatsky, Ed., USGS Scientific Investigations Report 2008-5023, p. 77-86. <http://pubs.usgs.gov/sir/2008/5023/32sukop.htm>

Bardsley, K.J. and **M.C. Sukop**, 2008 Simulating Density-Dependent Flows Using the Lattice Boltzmann Method, Proceedings of the Salt Water Intrusion Meeting, Naples FL, July 23-27, p.14-17.

Dausman, A.M., C. Langevin, **M.C. Sukop**, and V. Walsh, 2008, Saltwater/Freshwater Interface Movement in Response to Deep-Well Injection in a Coastal Aquifer Proceedings of the Salt Water Intrusion Meeting, Naples FL, July 23-27, p. 50-53.

Cunningham, K.J., **Sukop, M.C.**, Huang, H., Alvarez, P.F., Curran, H.A., Wacker, M.A., Florea, L.J., Renken, R.A., and Dixon, J.F., 2008, Biogenic Macroporosity and Its Lattice Boltzmann Method Permeability in the Karst Biscayne Aquifer: In Sasowsky, I.D., Feazel, C.T., Mylroie, J.E., Palmer, A.N., and Palmer, M.V., eds., Karst from Recent to Reservoirs: Special Publication 14, Karst Waters Institute Proceedings, Leesburg, VA, p. 30-35.

Langevin, C.D., A.M. Dausman, D.T. Thorne, and **M.C. Sukop**, 2008. Modeling Solute and Heat Transport with SEAWAT, p. 476-480 in MODFLOW and More: Ground Water and Public Policy, Golden, Colorado, May 19-21 Eds: Poeter. E.P, M.C. Hill, and C. Zheng, 535p.

Dausman, A.M., Doherty, J., Langevin, C.D., and **Sukop, M.C.**, 2008. Quantifying Data

- Contributions toward Reducing Predictive Uncertainty in a Variable-Density Flow and Solute/Heat Transport Model, p. 320-324 in MODFLOW and More: Ground Water and Public Policy, Golden, Colorado, May 19-21 Eds: Poeter. E.P, M.C. Hill, and C. Zheng, 535p.
- Dausman, A.M., Langevin, C.D., and **Sukop, M.C.**, 2007, Simulation of submarine groundwater discharge salinity and temperature variations: implications for remote detection, in Sanford, W., Langevin, C.D., Polemio, M., and Povinec. P., eds., 2007, A new focus on groundwater-seawater interactions: IAHS Publication 312, Oxfordshire, United Kingdom, p. 272-280.
- Dausman, A.M., Langevin, C.D., Doherty, J., **Sukop, M.C.**, and Walsh, V., 2007. A unique approach to calibrating a variable-density flow and transport model. Geological Society of America Abstracts with Programs, Vol. 39, No. 6, p. 110, Denver, Colorado, October 28-31, 2007.
- Bardsley, K.J., S. Anwar, and **M.C. Sukop**, 2006. Simultaneous heat and solute transport modeling of ground water with lattice Boltzmann methods. 8 pp. in Proceedings of the XVI International Conference on Computational Methods in Water Resources, edited by Philip J. Binning Peter K. Engesgaard, Helge K. Dahle, George F. Pinder and William G. Gray., Copenhagen, Denmark, June 19-22, Internet access: <http://proceedings.cmwr-xvi.org/getFile.py/access?contribId=314&sessionId=7&resId=0&materialId=paper&confId=a051>
- Thorne, D.T., C.D. Langevin, and **M.C. Sukop**, 2006. MODFLOW/MT3DMS-Based Simulation of Variable-Density Groundwater Flow with Simultaneous Heat and Solute Transport. 8 pp. in Proceedings of the XVI International Conference on Computational Methods in Water Resources, edited by Philip J. Binning, Peter K. Engesgaard, Helge K. Dahle, George F. Pinder and William G. Gray, Copenhagen, Denmark, June 19-22, Internet access: <http://proceedings.cmwr-xvi.org/getFile.py/access?contribId=313&sessionId=16&resId=0&materialId=paper&confId=a051>
- Thorne, D.T. and **M.C. Sukop**, 2004. Lattice Boltzmann model for the Elder problem, In Computational Methods in Water Resources, p. 1549-1557 in Proceedings of the XVth International Conference on Computational Methods in Water Resources (CMWR XV), June 13-17, 2004, Chapel Hill, NC, USA. C.T. Miller, M.W. Farthing, W.G. Gray, and G. F. Pinder Eds., Elsevier, Amsterdam.
- Perfect, E. and **M.C. Sukop**, 2001, Modeling Solute Dispersivity in Irregularly Shaped Soil Pores, p. 107-116 in Proceedings 4th Eastern Canada Soil Structure/Carbon Workshop, eds. W.D. Reynolds, C.F. Drury & C.S. Tan, Leamington, Ontario, Canada, August 23-25, 1999.

Chapters in Books (give complete bibliographical references)

Cunningham, K.J., **Sukop, M.C.**, and Curran, H.A., 2011, Application of Ichnology to Carbonate Aquifer Characterization: In Bromley, R.G., and Knaust, D., eds., Trace fossils as indicators of sedimentary environments: Developments in Sedimentology, Elsevier.

Sukop, M.C. and E. Perfect, 2004. Solute Transport. In D. Hillel, C. Rosenzweig, D. Powlson, K. Scow, M. Singer and D.L. Sparks, Eds. Encyclopedia of Soils in the Environment, Elsevier Ltd., Oxford, U.K. Vol. 3, p .521-531.
<http://dx.doi.org/10.1016/B0-12-348530-4/00445-8>

Perfect, E. and **M.C. Sukop**, 2001. Models relating solute dispersion to pore space geometry: a review, p. 77-146 in Physical and Chemical Processes of Water and Solute Transport/Retention in Soils. D. Sparks and M. Selim. Eds., Soil Sci. Soc. Am. Special Pub. 56, <http://dx.doi.org/10.2136/sssaspecpub56.c3>

Government Reports or Monographs. Supervised students and post-docs underlined (give complete bibliographical references)

Cunningham, K.J., and **Sukop, M.C.**, 2012, Megaporosity and permeability of Thalassionoides-dominated ichnofabrics in the Cretaceous karst-carbonate Edwards-Trinity aquifer system, Texas: U.S. Geological Survey Open-File Report 2012–1021, 4 p. <http://pubs.usgs.gov/of/2012/1021/>

Cunningham, K.J., and **Sukop, M.C.**, 2011, Multiple technologies applied to characterization of the porosity and permeability of the Biscayne aquifer, Florida: U.S. Geological Survey Open-File Report 2011–1037, 8 p., available at <http://pubs.usgs.gov/of/2011/1037>.

Dausman, A.M., Langevin, C.D., Thorne, D.T., Jr., and **Sukop, M.C.**, 2009, Application of SEAWAT to Select Variable-Density and Viscosity Problems: U.S. Geological Survey Scientific Investigations Report 2009-5028, 31 p.
<http://pubs.usgs.gov/sir/2009/5028/>

Langevin, C.D., Thorne, D.T., Jr., Dausman, A.M., **Sukop, M.C.**, and Guo, Weixing, 2008, SEAWAT Version 4: A Computer Program for Simulation of Multi-Species Solute and Heat Transport: U.S. Geological Survey Techniques and Methods Book 6, Chapter A22, 39 p. <http://pubs.usgs.gov/tm/tm6a22/>

Perfect, E., M.S. Coyne, **M.C. Sukop**, G.R. Haszler, V.L. Quisenberry, and L. Bejat. 1998. Solute and bacterial transport through partially saturated intact soil blocks. p. 46. Kentucky Water Resources Research Institute Report, University of Kentucky, Lexington.

Sukop, M. and C.G. Cogger, 1989. Retention of pesticides by alluvial soils in western Washington: experimental variables, relation to soil properties, and spatial

variability. Report A-160, State of Washington Water Research Center, Pullman, Washington. March 1989.

Book Reviews (give complete bibliographical references)

Sukop, M.C., 2011. Percolation Theory for Flow in Porous Media, Second Edition, (invited book review), *Vadose Zone Journal* 10:771-772.
<http://dx.doi.org/10.2136/vzj2010.0156>

Sukop, M.C., 2009. Review of *Randomnicity: Rules and Randomness in the Realm of the Infinite* by Anastasios Tsonis, (invited book review), *Vadose Zone Journal* 8(4):1085-1086. <http://dx.doi.org/10.2136/vzj2009.0026br>

OTHER PUBLICATIONS (List publications outside of discipline. Give complete bibliographical references.)

N/A

PRESENTED PAPERS, AND LECTURES (List title, date, and venue where presented)

Lectures

Invited: “The Enigmatic Biscayne Aquifer”, Earth and Environment seminar, Florida International University, Miami Florida, September 12, 2014

Invited: “The Enigmatic Biscayne Aquifer”, Geotopics seminar, University of Miami, Miami Florida, September 8, 2014

Invited: “Geostatistical Analysis and Simulation of South Florida’s Water Source, the Biscayne Aquifer”, Conference in Statistical Methods and Mentoring, Florida International University, April 11, 2013

Invited: “National Science Foundation Water, Sustainability, and Climate Project for South Florida”, Sea level rise, restoration, and freshwater management in South Florida Mini-symposium Organized by the Florida Coastal Everglades Long Term Ecological Research student group, February 26th 2014

"National Science Foundation Water, Sustainability, and Climate Project for South Florida: Hydro-economics and Ecosystems", South Florida Hydrologic Society, Coral Springs, Florida, February 6, 2013

Invited: “Lattice Boltzmann Methods: 21st Century Modeling Tool”, University of South Florida, Environmental & Water Resources Graduate Seminar/Environmental Research Interdisciplinary Colloquium, Tampa, Florida, January 14, 2013

Invited: “Lattice Boltzmann Methods: 21st Century Modeling Tool and Application to Karst Aquifers”, Institut für Erdwissenschaften, Uni Graz, Austria, December 11, 2012

Invited: “National Science Foundation Water, Sustainability, and Climate Project for South Florida: Hydro-economics and Ecosystems”, Departamento de Agronomía, Universidad de Córdoba, Campus Universitario de Rabanales, Córdoba, Spain, Miércoles 21 noviembre 2012

Invited: “Effective Management of Karst Aquifers for Coastal Water Resources”, T93. Advances in Hydrology and Sustainable Water Management in Coastal Environments, Session No. 218, Wednesday, 7 November 2012, Geological Society of America Meeting 4-7 November, Charlotte, NC

Invited: “National Science Foundation Water, Sustainability, and Climate Project for South Florida: Hydro-economics and Ecosystems”, Centro Hispano-Luso de Investigaciones Agrarias (CIALE), Universidad de Salamanca, Campus de Villamayor, Salamanca, Spain Viernes, 19 octubre 2012

“Linking Fractal Porous Media Geometrical Parameters and Solute dispersion”, 2012, PEDOFRACT VII, International Workshop on Scaling in Particulate and Porous Media: Modeling and Use in Predictions. A Coruña, Spain, May 14-17

Invited: “Lattice Boltzmann Methods: 21st Century Modeling Tool”, Key Laboratory of Computational Geodynamics, Graduate University, Chinese Academy of Sciences, Beijing, July 25, 2011

Invited: “Introduction to Lattice Boltzmann Methods with Emphasis on Solute Transport in Soils”, Universidad Politécnica de Madrid, Madrid, April 26, 2011

FIU Environmental Engineering Graduate Seminar Series February 4, 2011

“Lattice Boltzmann Methods: 21st Century Modeling Tool”, Ohio University, Athens OH, May 21, 2010

Invited: “Lattice Boltzmann Modeling Fundamentals” and “Lattice Boltzmann Modeling Applications and Scour”, Wayne State University, Detroit MI, September 25, 2009

“Lattice Boltzmann Methods: 21st Century Modeling Tool”, University of Kentucky, Lexington KY, October 9, 2009

Invited: “A Career in Science”, Georgetown College, Georgetown KY, October 8, 2009

Invited: Lattice Boltzmann Methods: 21st Century Modeling Tool, Institute for Geoscience, Eberhard Karls Universität Tübingen (Germany), June 25, 2009.

Invited: Lattice Boltzmann Methods: 21st Century Modeling Tool, Earth and Planetary Sciences

Department, University of Tennessee-Knoxville, September 6, 2007.

Invited: Relative Permeabilities of Fractal Porous Media with Lattice Boltzmann Methods, PEDOFRACT 2007, International Workshop on Scale Dependences in Soil and Hydrologic Systems. El Barco de Avila (Spain), July 3-6, 2007

Invited: Applying Lattice Boltzmann, Fractal, and Geostatistical Methods to Karst, PEDOFRACT 2007, International Workshop on Scale Dependences in Soil and Hydrologic Systems. El Barco de Avila (Spain), July 3-6, 2007

Invited: Lattice Boltzmann Methods: 21st Century Modeling Tool, Mechanical Engineering Department, University of Maryland Baltimore County, February 23, 2007.

Invited: Lattice Boltzmann Simulation of Solute Transport in Heterogeneous Porous Media with Conduits to Estimate Macroscopic Continuous Time Random Walk Model Parameters, International Conference on Mesoscopic Methods in Science and Engineering, Hampton VA, July 26, 2006

Lattice Boltzmann Methods: 21st Century Modeling Tool, Geotopics seminar, University of Miami, Miami Florida, November 14, 2005

Lattice Boltzmann methods for single and multiphase fluids and solute transport, Florida International University Civil and Environmental Engineering graduate environmental engineering seminar, Miami Florida, April 4, 2005

Lattice Boltzmann methods and aquifer storage and recovery applications, Department of Geology, University of South Florida, Tampa Florida, October 15, 2004.

Lattice Boltzmann methods for single and multiphase fluid and mass transport simulation, Physics Department Colloquium, Florida International University, Miami Florida, October 1, 2004.

Lattice Boltzmann methods for multiphase fluids, Mechanical and Materials Engineering Department, Florida International University, Miami Florida, January 16, 2004

Lattice Boltzmann models for gaseous diffusion in partially saturated porous media under variable gravity. Soil Science Society of America Annual Meeting, Denver Colorado, November 3, 2003

Ground water and solute transport modeling and new approaches for fluids and porous media, Florida International University, Miami Florida, February 19, 2003

Single component, multiphase Lattice Boltzmann models (LBM) in invasion percolation. Sixth International Conference on the Electrical Transport and Optical Properties of Inhomogeneous Media, Snowbird UT, July 15-19, 2002

Simulating water/water vapor equilibria in porous media: single component/multiphase Lattice Boltzmann method. Western Regional Research project W-188 Technical Committee Annual Meeting, Las Vegas, NV. January 3-4, 2002

Application of lattice gas cellular automata to determine soil moisture characteristics of pore spaces of known fractals. University of Kentucky Department of Agronomy Soil Science Seminar. Lexington Kentucky, September 1, 2000

Introduction to fractals and some potential applications. Unité de Science du Sol - INRA, Avignon, France. November 5, 1999

Scale-dependent dispersivities and the fractional convection - dispersion equation. Symposium - Issues of Scale and Spatial variability as Related to Solute Transport. IEG-73 - Information Exchange Group: "Classifying Soils for Solute transport as Affected by Soil Properties and Landscape Position." Lexington, Kentucky April 26, 1999

Introduction to fractals and some potential applications. University of Kentucky Department of Agronomy Soil Science Seminar. Lexington Kentucky, March 5, 1999

Injection well testing at the Air Force's Global Communications Facility in Davis, California. University of Kentucky Department of Geological Sciences Seminar. Lexington Kentucky, February 5, 1998

Spatial variability of soil physical properties and metalaxyl transport parameters. University of Kentucky Department of Agronomy Soil Science Seminar, Lexington Kentucky, December 5, 1997

Contaminant transport and attenuation. Presented to Thurston County Groundwater Advisory Committee, Olympia, WA. September 15, 1988

Presented Papers (Speaker/Presenter's name in bold. Supervised students and post-docs underlined.)

Invited: Sukop, M.C. and K.J. Cunningham, Geostatistical Analysis and Simulation of South Florida's Water Source, the Biscayne Aquifer, 2014, Conference in Statistical Methods and Mentoring, Florida International University, April 11, 2013 (Oral presentation)

Sukop, M.C. and J. Bolson, 2013, Decision-making for south Florida water resources: ecosystem service valuation, hydro-economic optimization, and conflict resolution modeling, Abstract H34F-02 presented at 2013 Fall Meeting, AGU, San Francisco, CA, 9-13 Dec., (Oral presentation)

Sukop, M.C., M. Marquez, S. Garcia, and A. Garcia, Geological Society of America Meeting Denver, Seeking the Truth about the hydraulic conductivity of the Biscayne Aquifer, 2013 Denver GSA Annual Meeting (27-30 October 2013) Paper No. 171-1: Geological Society of America Abstracts with Programs. Vol. 45, No. 7, p.420 (Oral presentation)

Invited: Sukop, M.C., Effective Management of Coastal Karst Aquifer Water Resources, 2012 Charlotte Geological Society of America Meeting (4-7 November 2012) Paper No. 218-1: Geological Society of America Abstracts with Programs. Vol. 44, No. 7, p.516 (Oral presentation)

Invited: Sukop, M.C. and K.J. Cunningham, 2012, High-Resolution Variograms from Optical Borehole Imaging for Borehole-Scale Geostatistical Rock Simulation and Lattice Boltzmann Flow Simulation in High-Permeability Carbonates, AAPG/SPE/SEG Hedberg Research Conference “Fundamental Controls on Flow in Carbonates”, July 8-13, 2012, Saint-Cyr-Sur Mer, Provence, France,
<http://www.aapg.org/education/hedberg/past/france2012.cfm>

Herleman, K.C. and M.C. Sukop, Geological Society of America Meeting Charlotte, Limits of Standard Petrophysical Laboratory Permeability Measurements, 2012 Charlotte GSA Annual Meeting (9-12 October 2012) Paper No. 77-2: Geological Society of America Abstracts with Programs. Vol. 44, No. 7, p.206 (Oral presentation)

Garcia, S. and M.C. Sukop, Geological Society of America Meeting Charlotte, Permeability Measurement of Biscayne Aquifer Touching-Vug Macroporous Carbonate Rock with Lattice Boltzmann and Specialized Laboratory Methods, 2012 Charlotte GSA Annual Meeting (9-12 October 2012) Paper No. 77-3: Geological Society of America Abstracts with Programs. Vol. 44, No. 7, p.206 (Oral presentation)

Sukop, M.C., S. Gokaltun, A. J. Pearson, X. Comas and N. Kettridge, 2012, Lattice Boltzmann Simulation of Gas Bubble Dynamics in Peat, 9th INTECOL International Wetlands Conference, Wetlands in a Complex World, June 3-8, 2012 Orlando, Florida, USA,
<http://www.conference.ifas.ufl.edu/intecol/Abstracts.pdf>

Sukop, M. Linking Fractal Porous Media Geometrical Parameters and Solute dispersion, PEDOFRACT VII, International Workshop on Scaling in Particulate and Porous Media: Modeling and Use in Predictions. A Coruña, Spain, May 14-17 (Oral presentation),
<http://www1.etsia.upm.es/pedofractvii/scientific.htm>

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Sukop, M.C., P.F. Alvarez, K.J. Cunningham, and C.D. Langevin. 2007. Investigating Non-Darcy Flow in Highly Porous Aquifer Materials with Lattice Boltzmann Methods. International Conference on Mesoscopic Methods in Engineering and Science, Munich, Germany, July 16-20 (Oral presentation)

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Dausman, A.M., C.D. Langevin, **M.C. Sukop**, and V. Walsh (2006), Development and Calibration of a Variable-Density Numerical Model of a Deep-well Injection Site near the Southeastern Florida Coast, Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract H33D-1538

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Gentry, R.W., E. Perfect, and M.C. Sukop, 2005. Effective Hydraulic Conductivity Scaling in a 2-Dimensional Geometrical Multifractal Model for Aquifer Heterogeneity, Eos Trans. AGU, 86(52), Fall Meet. Suppl., Abstract H11D-1289

Sukop, M.C., **D. T. Thorne**, and **S. Anwar**. 2004. Lattice Boltzmann Methods and Their Boundary Conditions for Solute Transport. EOS Trans. AGU, 85(47), Fall Meet. Suppl., Abstract H32A-07 (Oral presentation)

Sukop, M.C. and **D. Thorne**. 2004. Lattice Boltzmann Modeling for ASR Systems. Aquifer Storage Recovery IV, Tampa FL, April 15-16.

Chau, J., D. Or, S. B. Jones, and M. C. Sukop. 2004. Lattice Boltzmann Modeling of Gaseous

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- Sukop, M.C.** and D. Or. 2003. Lattice Boltzmann Models for Diffusion in Partially Saturated Porous Media under Variable Gravity, Soil Science Society of America Annual Meeting, Denver, Colorado. (Oral presentation).
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- Sukop, M.C.** and D. Or. 2001. Application of Lattice Boltzmann Method to Simulation of Liquid-Vapor Interfacial Configuration in Angular Pores. EOS Transactions 82(47) H12B-0292.
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- Sukop, M.C.,** G-J. van Dijk, E. Perfect, W.K.P van Loon. 2000. Percolation Thresholds in 2-Dimensional Prefractal Models of Porous Media. Agronomy Abstracts. (Oral presentation)
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- Perfect, E.,** M.S. Coyne, M. Sukop, V .L. Quisenberry, and L. Bejat. 1998. Measuring solute transport in structured soils using time domain reflectometry. Kentucky Water Resources Annual Symposium. Lexington, KY, p. 13-14.
- Mulla, D.J.,** M.C. Sukop, C. Cogger, and L.W. Getzin. 1989. Field Scale Variability: Effects on Pesticide Transport. Agronomy Abstracts.
- Sukop, M.** and C. Cogger. 1988. Spatial Structure of Pesticide Sorption Coefficients. Agronomy Abstracts.
- Sukop, M.** and C. Cogger. 1987. Pesticide Transport in Unsaturated Soil Columns. Agronomy Abstracts.
- Sukop, M.** 1986. The sandpack dewatering phenomenon in slug testing, Abstracts, American Water Resources Association Wisconsin Section Annual Meeting, April 3-4, 1986, Chula Vista, Wisconsin Dells. Abstract no. 15.

a) Graduate Student Supervision

As Dissertation/Thesis Supervisor, Committee Chair/Co-Chair. Chronologic order.

NAME	YEARS	DISSERTATION/ THESIS TITLE	DEGREE AWARDED	RESULTING PUBLICATIONS (SUPERVISED STUDENTS AND POST-DOCS UNDERLINED)	CURRENT POSITION
Carmen Serpa	2003-2005	Lattice Boltzmann Method Simulation of Flow in Idealized Intersections of Systematic Fractures and Cross Joints	MS, Geosciences		Database Specialist at Northwestern University
Pedro Alvarez	2003-2007	Lattice Boltzmann Modeling of Fluid Flow to Determine the Permeability of a Karst Specimen	MS, Geosciences	<p>Sukop, M. C., <u>H. Huang, P. F. Alvarez, E. A. Variano, and K. J. Cunningham</u>, 2013, Evaluation of permeability and non-Darcy flow in vuggy macroporous limestone aquifer samples with lattice Boltzmann methods, Water Resour. Res., 49(1), 216-230, http://dx.doi.org/10.1029/2011WR011788</p> <p>Cunningham, K.J., M.C. Sukop, <u>H. Huang, P.F. Alvarez</u>, H. A. Curran, J.F. Dixon, and R.A. Renken, 2008. Prominence of ichnologically-influenced macroporosity in the karst Biscayne</p>	Pilot, US Air Force

				<p>aquifer: stratiform “super-K” zones (in press in Geological Society of America Bulletin. 17 pages).</p> <p>http://dx.doi.org/10.1130/B26392.1</p>	
Zuhal Ozturk (co-chair)	2004-2006	Trichloroethylene Fate and Transport Studies and Biodegradation Kinetics in the Saturated Zone	PhD, Environmental Engineering	<p><u>Ozturk, Z.</u>, B. Tansel, Y. Katsenovich, M. Sukop, S. Laha, 2012, Highly organic natural media as permeable reactive barriers: TCE partitioning and anaerobic degradation profile in eucalyptus mulch and compost, Chemosphere, 89(6) 665-671,</p> <p>http://dx.doi.org/10.1016/j.chemosphere.2012.06.006</p>	Engineer: Metcalf & Eddy AECOM Sunrise, Florida
Jozsef Garai	2006-2007	Thermodynamic Description and Phase Transformation of Highly Symmetrical Monoatomic Structures	PhD, Geosciences		University of Debrecen, Hungary
Shadab Anwar	2004-2008	Lattice Boltzmann Modeling of Fluid Flow and Solute Transport in Karst Aquifers	PhD, Geosciences	<p><u>Anwar, S.</u>, M.C. Sukop, and <u>D.T. Thorne, Jr.</u>, 2013, Lattice Boltzmann modeling of classic solute transport boundary value problems. Vadose Zone Journal 12,</p> <p>http://dx.doi.org/10.2136/vzj2012.0192</p> <p><u>Anwar, S.</u> and M.C. Sukop, 2008. Lattice</p>	Assistant Professor, Missouri University of Science and Technology

				<p>Boltzmann models for flow and transport in saturated karst, <i>Ground Water</i> 47(3):401-413. http://dx.doi.org/10.1111/j.1745-6584.2008.00514.x</p> <p><u>Anwar, S.</u> and M.C. Sukop, 2009. Regional scale transient groundwater flow modeling using lattice Boltzmann methods. <i>Computers & Mathematics with Applications</i>, 58:1015-1023. http://dx.doi.org/10.1016/j.camwa.2009.02.025</p> <p><u>Anwar, S.</u>, A. Cortis, and M.C. Sukop, 2008. Lattice Boltzmann Simulation of Solute Transport in Heterogeneous Porous Media with Conduits to Estimate Macroscopic Continuous Time Random Walk Model Parameters, <i>Progress in Computational Fluid Dynamics</i> 8:1-2, 213 – 221. http://dx.doi.org/10.1504/PCFD.2008.018092</p>	
Alyssa Dausman	2005-2008	Quantifying the Effects of Temperature and Concentration on		<p>Langevin, C.D., <u>Dausman, A.M.</u>, and Sukop, M.C., 2010, Solute and Heat Transport Model of the Henry and Hilleke Laboratory Experiment. <i>Ground Water</i></p>	Gulf Coast Science Coordination Office and the Gulf Coast Ecosystem Restoration Task Force

		<p>Variable-Density Flow in Numerical Modeling of Groundwater Systems: Implications for Predictive Uncertainty and Data Collection</p>	<p>48(5) 757–770, doi: 10.1111/j.1745-6584.2009.00596.x</p> <p>Government Reports:</p> <p><u>Dausman</u>, A.M., <u>Langevin</u>, C.D., <u>Thorne</u>, D.T., Jr., and Sukop, M.C., 2009, Application of SEAWAT to Select Variable-Density and Viscosity Problems: U.S. Geological Survey Scientific Investigations Report 2009-5028, 31 p. http://pubs.usgs.gov/sir/2009/5028/</p> <p><u>Langevin</u>, C.D., <u>Thorne</u>, D.T., Jr., <u>Dausman</u>, A.M., Sukop, M.C., and Guo, W., 2008, SEAWAT Version 4: A Computer Program for Simulation of Multi-Species Solute and Heat Transport: U.S. Geological Survey Techniques and Methods Book 6, Chapter A22, 39 p. http://pubs.usgs.gov/tm/tm6a22/</p> <p>Proceedings:</p> <p><u>Langevin</u>, C.D., <u>A.M. Dausman</u>, <u>D.T. Thorne</u>, and M.C. Sukop, 2008. Modeling Solute and Heat Transport with SEAWAT, in MODFLOW and More: Ground Water and Public Policy, Golden,</p>	<p>United States Geological Survey, Northern Gulf Institute, Stennis Space Center, MS</p>
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			<p>Colorado, May 19-21, Poeter. E.P, M.C. Hill, and C. Zheng, Eds., 535p.</p> <p><u>Dausman, A.M.</u>, Doherty, J., Langevin, C.D., and Sukop, M.C., 2008. Quantifying Data Contributions toward Reducing Predictive Uncertainty in a Variable-Density Flow and Solute/Heat Transport Model, in MODFLOW and More: Ground Water and Public Policy, Golden, Colorado, May 19-21, Poeter. E.P, M.C. Hill, and C. Zheng, Eds., 535p.</p> <p><u>Dausman, A.M.</u>, Langevin, C.D., and Sukop, M.C., 2007, Simulation of submarine groundwater discharge salinity and temperature variations: implications for remote detection, in Sanford, W., Langevin, C.D., Polemio, M., and Povinec. P., eds., 2007, A new focus on groundwater-seawater interactions: IAHS Publication 312, Oxfordshire, United Kingdom, p. 272-280.</p> <p><u>Dausman, A.M.</u>, Langevin, C.D., Doherty, J., Sukop, M.C., and Walsh, V., 2007. A unique approach to calibrating a variable-density flow and transport model. Geological Society of America Abstracts with Programs, Vol. 39, No. 6,</p>	
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				p. 110, Denver, Colorado, October 28-31, 2008.	
Katie Bardsley	2005-2009	MS, Geosciences		Proceedings: <u>Bardsley, K.J., S. Anwar, and M.C. Sukop</u> , 2006. Simultaneous heat and solute transport modeling of ground water with lattice Boltzmann methods. CMWR XVI – Computational Methods in Water Resources, XVI International Conference, Copenhagen, Denmark, June 19-22	Office Manager at Plaza Periodontics & Implant Dentistry Highlands Ranch CO
Jeffery Lee	2007-2008	PhD, Geosciences program terminated			Unknown
Merlin Ngachin	2010-2011	Simulation of rising bubble dynamics using the Lattice Boltzmann methods http://digitalcommons.fiu.edu/etd/466	MS, Geosciences	<u>Ngachin, M., RG Galdamez, S Gokaltun, MC Sukop</u> , Lattice Boltzmann Simulation of Rising Bubble Dynamics using an Effective Buoyancy Method, Accepted 16 July 2014 by <i>International Journal of Modern Physics C</i>	Health Physicist at Waste Control Specialists, Andrews, TX
Sadé Garcia	2011-2013	Lattice Boltzmann Modeling and Specialized Laboratory Techniques to Determine the Permeability of Megaporous Karst Rock	MS, Geosciences	FIU Best Geosciences Thesis, Summer 2013 through Spring 2014 term	PhD student, LSU Petroleum Engineering

		http://digitalcommons.fiu.edu/etd/918/			
Sadé Garcia	2013	PhD Geosciences terminated			PhD student, LSU Petroleum Engineering
Lucas Scott	2013-present	MS Geosciences in progress			
Maria Marquez	2014-present	MS Geosciences in progress			
Aiah Yassin	2014-present	PhD Geosciences in progress			

As Post-doctoral Supervisor. Chronologic order.

NAME	YEARS	DISSERTATION/ THESIS TITLE	DEGREE AWARDED	RESULTING PUBLICATIONS (SUPERVISED STUDENTS AND POST-DOCS UNDERLINED)	CURRENT POSITION
Danny Thorne, Jr.	2003-2005	N/A (Post-doctoral)	N/A (Post-doctoral)	<p>Authored Book: <u>Sukop, M.C.</u> and <u>D.T. Thorne, Jr.</u>, 2006 (second printing 2007). Lattice Boltzmann Modeling: An Introduction for Geoscientists and Engineers. Springer, Heidelberg, Berlin, New York 172 p.</p> <p><u>Huang, H., D.T. Thorne, M.G. Schaap, and M.C. Sukop</u>, 2007. Proposed approximation for contact angles in Shan-and-Chen-type multicomponent multiphase lattice Boltzmann models, Phys. Rev. E 76, 066701. http://dx.doi.org/10.1103/PhysRevE.76.066701</p> <p><u>Thorne, Jr., D.T.</u>, C.D. Langevin, and M.C. Sukop, 2006. Addition of Simultaneous Heat and Solute Transport and Variable Fluid Viscosity to SEAWAT. Computers and Geosciences 32, 1758–1768. http://dx.doi.org/10.1016/j.cageo.2006.04.005</p>	Associate Professor, Georgetown College

				Langevin, C.D., <u>Thorne, D.T., Jr., Dausman, A.M., Sukop, M.C.,</u> and Guo, W., 2008, SEAWAT Version 4: A Computer Program for Simulation of Multi-Species Solute and Heat Transport: U.S. Geological Survey Techniques and Methods Book 6, Chapter A22, 39 p.	
Haibo Huang	2006-2007	N/A (Post-doctoral)	N/A (Post-doctoral)	<p>Authored Book (in progress, under contract with Wiley), Huang H, MC Sukop, and X-Y Lu, Theory and Application of Multiphase Lattice Boltzmann Modeling</p> <p><u>Huang, H.B., J.J.Huang, X.Y. Lu, M.C. Sukop</u>, 2013, On simulations of high-density ratio flows using color-gradient multiphase lattice Boltzmann models, Int. J. of Modern Phys. C, 24(4), 1350021 http://dx.doi.org/10.1142/S0129183113500216</p> <p>Sukop, M. C., H. Huang, P. F. Alvarez, E. A. Variano, and K. J. Cunningham, 2013, Evaluation of permeability and non-Darcy flow in vuggy macroporous limestone aquifer samples with lattice Boltzmann methods, Water Resour. Res., 49(1), 216-230, http://dx.doi.org/10.1029/2011WR011788</p>	Associate Professor, Department of Modern Mechanics, University of Science and Technology of China, Hefei, Anhui Province, China

				<p>Cunningham, K.J., M.C. Sukop, <u>H. Huang</u>, P.F. Alvarez, H. A. Curran, J.F. Dixon, and R.A. Renken, 2008. Prominence of ichnologically-influenced macroporosity in the karst Biscayne aquifer: stratiform “super-K” zones (in press in Geological Society of America Bulletin. 17 pages). http://dx.doi.org/10.1130/B26392.1</p> <p>Sukop, M.C., <u>H. Huang</u>, C.L. Lin, M.D. Deo, K. Oh, and J.D. Miller, 2008. Distribution of multiphase fluids in porous media: Comparison between lattice Boltzmann modeling and micro-x-ray tomography, Phys. Rev. E 77, 026710. http://dx.doi.org/10.1103/PhysRevE.77.026710</p> <p><u>Huang, H.</u>, D.T. Thorne, M.G. Schaap, and M.C. Sukop, 2007. Proposed approximation for contact angles in Shan-and-Chen-type multicomponent multiphase lattice Boltzmann models, Phys. Rev. E 76, 066701. http://dx.doi.org/10.1103/PhysRevE.76.066701</p> <p>Cihan, A., M.C. Sukop, J.S. Tyner, E.</p>	
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				<p>Perfect, and <u>H. Huang</u>, 2009. Analytical predictions and lattice Boltzmann simulations of intrinsic permeability for mass fractal porous media. <i>Vadose Zone J</i> 7(1):187–196. http://dx.doi.org/10.2136/vzj2008.0003</p> <p>Proceedings:</p> <p>Cunningham, K.J., Sukop, M.C., <u>Huang, H.</u>, <u>Alvarez, P.F.</u>, Curran, H.A., Wacker, M.A., Florea, L.J., Renken, R.A., and Dixon, J.F., 2008, Biogenic Macroporosity and Its Lattice Boltzmann Method Permeability in the Karst Biscayne Aquifer: In Sasowsky, I.D., Feazel, C.T., Mylroie, J.E., Palmer, A.N., and Palmer, M.V., eds., <i>Karst from Recent to Reservoirs: Special Publication 14, Karst Waters Institute Proceedings</i>, Leesburg, VA, p. 30-35.</p>	
BoJing Zhu	2009	N/A (Post-doctoral)	N/A (Post-doctoral)		<p>Assistant Professor of Geodynamics SCI&EI Building 105 Key Lab of Computational Geodynamics College of Earth Graduate University of Chinese Academy of Science 19A Yuquan Rd.,</p>

					Shijingshan, Beijing 100049, China
Andrew J. Pearson	2011-2012	N/A (Post-doctoral)	N/A (Post-doctoral)		Deceased

As Dissertation/Thesis Committee Member.

NAME	YEARS	DISSERTATION/ THESIS TITLE	DEGREE AWARDED	RESULTING PUBLICATIONS	CURRENT POSITION
Mohammad Haji-Gholizadeh	2014-	PhD Civil and Environmental Engineering, in progress			
Yonas Habtemichael	2013-	PhD Civil and Environmental Engineering, in progress			
Moncholi, Manuel E.		PhD Civil and Environmental Engineering, in progress			
Stephanie Long	2011-2014	Simulating Everglades National Park hydrology and phosphorus transport under existing and future scenarios using numerical modeling	PhD Geosciences	Long, S, GI Tachiev, R Fennema; MC Sukop , F Miralles-Wilhelm, Modeling the impact of restoration efforts on phosphorus loading and transport through Everglades National Park, FL, USA, submitted to Science of the Total Environment, submitted May 10, 2014	Engineer A.D.A. Engineering 215 Verne Street, Suite D Tampa, FL 33606 T (813)-254-1115 www.adaeng.net
Tara Blakey	2011-	PhD Geosciences, in progress			
Nadia Seeteram	2013-	MS Environmental Studies, in progress			
Ramona	2012-	PhD Physics, in progress			

Valenzuela Perez					
Hari Kandel	2011-	PhD Geosciences, in progress			
Abas Abdoli	2012-	PhD Mechanical Engineering, in progress			
K. Cortney Gustafson	2012	MS Environmental Studies, in progress			
Jaime Mudrich	2012-	MS Mechanical Engineering, in progress			
Pushpa Soti	-2013	Influence of Soil Biogeochemical Properties on the Invasiveness of Old World Climbing Fern (<i>Lygodium microphyllum</i>)	PhD Geosciences		
Nicole Tucker	2011-2013	Analyzing Tidal Fluctuations in the Big Pine Key Freshwater Lens with Time-Lapse Resistivity	MS Geosciences		Hydrogeologist at HydroGeoSense Inc., Tucson AZ
Meenakshi Jerath	2011-2012	An Economic Analysis of Carbon Sequestration and Storage Service by Mangrove Forests in Everglades National Park, Florida http://digitalcommons.fiu.edu/etd/702	MS Environmental Studies		Environmental resource management consultant, Course Coordinator, Disaster Risk Reduction Program, FIU
Vivek Kumar	2010-2012	Hydro-Physical Characterization of Media Used in Agricultural Systems to Develop the Best Management Practices for operation of an Environmentally Sustainable Agricultural Enterprise http://digitalcommons.fiu.edu/etd/787	PhD Civil and Environmental Engineering		
Elisa Orduy	2010	Carbon Footprint Evaluation for the	MS Civil and		Sustainability

		City of Plantation	Environmental Engineering		Coordinator City of Plantation
Gopal Bhatta	2010-2012	The Nature of Microvariability in Blazar 0716+714	PhD Physics		
Konstantinos Menelaou	2009	Impact of the Planetary Boundary Layer on Eyewall Mesovortices in Hurricanes	MS Geosciences		
Ronald Gutierrez	2006-2010	Design and Performance of Aortic Heart Valve for Tissue Engineering	PhD Biomedical Engineering		
Seckin Gokaltun	2005-2008	Lattice Boltzmann Method for Flow and Heat Transfer in Microgeometries	PhD Mechanical Engineering	Ngachin, M., RG Galdamez, S Gokaltun, MC Sukop , Lattice Boltzmann Simulation of Rising Bubble Dynamics using an Effective Buoyancy Method, Accepted 16 July 2014 by <i>International Journal of Modern Physics C</i>	Research Analyst, Applied Research Center, FIU, Miami FL
Ryan Moreno	2005-2006	A study of branching fluid networks for enhancing the performance of thermal-fluid devices	PhD Mechanical Engineering		Administration / S.T.E.M. Education Consultant, REM Learning Center, Miami FL
Ramon Moral	2005-2008	Hybrid Multi-Objective Optimization and Hybridized Self-Organizing	PhD Mechanical		Research Mechanical Engineer, Impact and

		Response Surface Method	Engineering		Explosive Effects Branch at US Army Corps of Engineers Clinton, Mississippi
Keqiang Xing	2005-2007	Numerical Investigation on the Heat Transfer Enhancement Using Micro/Nano Phase-Change Particulate Flow http://digitalcommons.fiu.edu/etd/28	PhD Mechanical Engineering		
Melroy Borges	2005-2008	Life cycle of Deccan trap magma chambers: a crystal scale elemental and strontium isotopic investigation	PhD Geosciences		Materials Engineer III, Corning, Inc. Corning NY
Carlos Altberto Molina-Veliz	2003-2005	Fluid Flow Modeling Through Bed-Confining Fracture Networks in Layered Rocks with an Emphasis on Cross Joints and Throughgoing Fracture Zones	MS Geosciences		Shell, Houston TX
Vincent J. DiFrenna	2003-2005	Effect of Scaling on Hydraulic Conductivity in a Karst Aquifer,	MS Geosciences		Hydrologist, Everglades National Park
Varinia Consiglio	2006-	An Analysis of Thrombosis using the Lattice Boltzmann Method	MS Biomedical Engineering		Manufacturing Engineer, Boston Scientific, Miami FL
Chris Haugh	2006-2007	The influence of anastomosis angle and linear taper on an arteriovenous graft for hemodialysis	MS Biomedical Engineering		PhD student, Biomedical Engineering, FIU,

Virginia Walsh	2005-2012	Geochemical Determination of the Fate and Transport of Injected Fresh Wastewater to a Deep Saline Aquifer http://digitalcommons.fiu.edu/etd/692	PhD Geosciences	<p><u>Dausman, A.M.,</u> Langevin, C.D., Doherty, J., Sukop, M.C., and Walsh, V., 2007. A unique approach to calibrating a variable-density flow and transport model. Geological Society of America Abstracts with Programs, Vol. 39, No. 6, p. 110, Denver, Colorado, October 28-31, 2008.</p> <p><u>Dausman, A.M.</u>, C. Langevin, V. Walsh and M.C. Sukop. 2006. Modeling the Potential for Plume Migration from a Deep Well Injection Site. National Ground Water Association Ground Water Summit, San Antonio, Texas, April 23-26</p>	Miami FL Senior Professional Geologist, Chief Hydrogeology Section, Miami-Dade Water and Sewer Department
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				<p><u>Dausman, A.M.</u>, C.D. Langevin, M.C. Sukop, and V. Walsh (2006), Development and Calibration of a Variable-Density Numerical Model of a Deep-well Injection Site near the Southeastern Florida Coast, Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract H33D-</p> <p><u>Dausman, A.M.</u>, C. Langevin, M.C. Sukop, and V. Walsh, 2008, Saltwater/Freshwater Interface Movement in Response to Deep-Well Injection in a Coastal Aquifer Proceedings of the Salt Water Intrusion Meeting, Naples FL,</p>	
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				June 23-27, p. 50-53.	
Jeremy Stalker	2005-2008	Hydrological dynamics between a coastal aquifer and the adjacent estuarine system, Biscayne Bay, South Florida	PhD, Geosciences		Assistant Professor, Marine Science, Jacksonville University, Jacksonville FL
Vaibhav Jain	2005-Present	PhD, Mechanical Engineering in progress			
Yao Yan	?-2006	PhD program terminated, Geosciences			
Himadri Biswas	2008	Numerical Groundwater Flow Modeling in the Wakal River Basin, India	MS, Environmental Studies	Biswas, H. , A. Melesse, M. McClain, and M. Sukop (2008), Groundwater flow modeling using PMWIN model in the Wakal River basin, Rajasthan, India, EOS Trans. AGU, 89(23), Jt. Assem. Suppl., Abstract H41B-04	
Kateryna Ananyeva	2009-2012	Non-thesis	MS Agronomy, Michigan State University		

CREATIVE WORK

(List date and type of work and/or place of presentation. If the creative work has received recognition, such as design award, competition prize, exhibition or publication by others, or critical review, indicate the level of recognition as well as the peer-review context and process.)

Continuing development of popular on-line instructional videos for Lattice Boltzmann code operation and testing. Available from
http://www.fiu.edu/~sukopm/LBnD_Prime/LBnD_Prime.html

Computer rendering of flow in a fractal porous medium. Cover of February 2009 issue of Vadose Zone Journal. <http://vzj.geoscienceworld.org/content/8/1.cover-expansion>. Not peer-reviewed.

WORKS IN PROGRESS

Papers submitted to journals for consideration (list Journal and date of submission)

Long, S, GI Tachiev, R Fennema; **MC Sukop**, F Miralles-Wilhelm, Modeling the impact of restoration efforts on phosphorus loading and transport through Everglades National Park, FL, USA, submitted to *Science of the Total Environment*, submitted May 10, 2014

Sukop, MC and KJ Cunningham, Geostatistical Modeling Approaches for Mapping Interwell Vuggy Megaporosity and Matrix Porosity in the Karst-Carbonate Biscayne Aquifer: Towards Improved Groundwater Flow Prediction, submitted to *Groundwater*, submitted July 21, 2014, accepted pending revision as of September 11, 2014

Other completed papers

N/A

Research in Progress

- Hydro-economic evaluation of south Florida water resources utilization now and in the future including ecosystem services valuation and human behavior, as lead PI with NSF Water, Sustainability, and Climate project team
- Estimation of extreme hydraulic conductivities of Biscayne aquifer using slug tests and development of Forchheimer-based slug test analyses (Collaboration with Drs. Julian Edward and Hamid Meziani/FIU Math and Statistics)
- Impact of large pores and conduits on ground water flow (Collaboration with Dr. Kevin Cunningham/United States Geological Survey)

- Simulation of macroporous karst aquifer rocks with geostatistical methods
(Collaboration with Dr. Kevin Cunningham/United States Geological Survey)

Grant Proposals (list title of project, agency receiving proposal, and date of submission)

FUNDED RESEARCH

(List all investigators, title of project, funding agency [if the funding is a subcontract, from what organization], project dates, and amount of funding [when there are co-PIs on an award, give the portion of the total award coming to the candidate]).

PI/CO-PIs	TITLE	AGENCY	DATES	AMOUNT
PI: Mike Kirgan Assoc. Dir. Division of IT, Co-PIs: Michael Sukop and Seckin Gokaltun	Instructional and Research Computing Center (IRCC)	FIU Technology Fee	7/2012- 7/2015	\$634,589
PIs: Michael C. Sukop (lead), plus 18 Co-PIs.	WSC-Category 2 Collaborative: Robust decision-making for South Florida water resources by ecosystem service valuation, hydro-economic optimization, and conflict resolution modeling	National Science Foundation	1/1/2013 12/31/2017	\$1.5M (FIU portion of ~\$5M total)
Michael C. Sukop	Linking Ecosystem Function with Ecosystem Services in a Neotropical Mangrove Estuary Subject to Sea Level Rise and Changes in Freshwater Discharge	National Science Foundation	10/1/2010- present	\$124,225
Michael C. Sukop (and others)	Tesla Supercomputer Upgrade funded at \$75,000 for Year 1, ~\$40,000 for years 2-3	FIU Technology Fee	2010-2012	\$115,000
Michael C. Sukop	Lattice Boltzmann Methods for Concentration- and Temperature-Induced Density Driven Flows	National Science Foundation	8/1/2005-	\$243,967
Michael C. Sukop	Determination of Sheetflow Hydrodynamic Properties	South Florida Water Management District	5/1/2008- 9/30/2008	\$18,933

Michael C. Sukop	Lattice Boltzmann Measurement of Borehole-Scale Hydraulic Conductivity of Biscayne Aquifer Materials	US Geological Survey	1/1/2008-12/31/2008	\$70,000
Michael C. Sukop	Lattice Boltzmann Measurement of Hydraulic Conductivity of Digitized Macroporous Limestones Representative of Miami-Area Aquifer Materials	US Geological Survey	3/1/2007-1/15/2008	\$33,592
Michael C. Sukop	Lattice Boltzmann Measurement of Hydraulic Conductivity of Digitized Macroporous Limestone	US Geological Survey	9/1/2006-8/31/2007	\$12,273
Michael C. Sukop	SEAWAT Heat Transport and Thermal Buoyancy Enhancement Project	US Geological Survey	8/2004-8/2005	\$56,000
Professor Jan Miller, University of Utah. Co-PI: Michael C. Sukop	Development of a 3D Lattice-Boltzmann Model for Fluid Flow Simulation under Partially-saturated Conditions in Packed Beds of Particles	Center for Advanced Separation Technologies (Subcontract to University of Utah)	11/1/2005-10/31/2007	\$40,000 (FIU share)

PROPOSALS SUBMITTED BUT NOT FUNDED

(List title of project, funding agency, project dates, and amount of requested funding)

PI/CO-PIs	TITLE	AGENCY	DATE	AMOUNT
Co-PIs: Michael C. Sukop, Marilys Nepomechie, Ali Mostafavi	Urban Water Innovation Network (U-WIN): Transitioning Toward Sustainable Urban Water Systems	National Science Foundation	9/15/2014-9/14/2019	\$903,077 FIU (of \$12 M total), pending
Co-PIs: Michael C. Sukop, Lee Florea, Ball State University	Collaborative Research: Investigating the Heterogeneity and Anisotropy of Thermal Plumes in District-scale Ground-Coupled Geothermal Systems to Reduce 'First Costs' and Increase System Efficiency	National Science Foundation Division of Civil, Mechanical, and Manufacturing Innovation		\$315,101 Recommended by panel but declined
Co-PIs: Michael C. Sukop, Dr Xavier Comas, Florida Atlantic University	Collaborative Research: The role of peat structure in biogenic gas dynamics from peatlands: a comparative study between northern and subtropical systems	National Science Foundation	06/01/2011	\$211,944
Michael C. Sukop and others	Quantifying vertical and lateral carbon fluxes and community succession in a mangrove forest subject to climate change and sea level rise	Department of Energy	5/3/2010	FIU portion \$213,490
Michael C. Sukop	Development of Next Generation	National Science	06/01/2007	\$262,703

	Ground Water Flow and Transport Models	Foundation		
Co-PIs: Michael C. Sukop, Professor Ed Perfect, University of Tennessee	Collaborative Research: Advancing fractal models of porous media by linked numerical measurements and theoretical prediction of relative permeability	National Science Foundation	06/01/2007	\$174,632
Co-PIs: Michael C. Sukop, Dr. Andrea Cortis, Lawrence Berkeley National Laboratory	Collaborative Research: Linking Porous Medium Geometry with Advanced Solute Transport Model Parameters via Lattice Boltzmann Methods	National Science Foundation	06/01/2006	\$371,852
Co-PIs: Michael C. Sukop, Professor Jan Miller, University of Utah	NSF/Sandia: Collaborative Research: Multi-scale X-ray Microtomographic Validation of Countercurrent Air and Lixivant Solution Flow Modeling in Partially-Saturated Porous Media	National Science Foundation	03/01/2006	\$195,155
Michael C. Sukop	CAREER: Lattice Boltzmann Methods for Environmental Fluid Mechanics and Solute Transport	National Science Foundation	07/21/2005	\$852,740
Co-PIs: Michael C. Sukop, Dr. Charles Downer/Everglades	Lattice Boltzmann Modeling of Tamiami Trail	US Department of Interior	05/04/2004	\$306,766

National Park	Physical Barrier Modifications			
René Price Co-PIs: Michael C. Sukop, Zafer Top/University of Miami, James Happel/University of Miami	Collaborative Research: Estimating Brackish Groundwater Discharge in the Coastal Southern Everglades	National Science Foundation	02/18/2004	\$532,471
Michael C. Sukop	Linking Porous Medium Geometry with Advanced Solute Transport Model Parameters via Lattice Boltzmann Methods	National Science Foundation	12/01/2003	\$361,804
René Price Co-PIs: Michael C. Sukop, Leonard Scinto	Quantifying Carbon Fluxes in a Coastal Carbonate Platform: Hydrologic and Biogeochemical Processes	National Science Foundation	10/22/2003	\$628,377

PATENT DISCLOSURES, APPLICATIONS, AND AWARDS

N/A

PROFESSIONAL HONORS, PRIZES, FELLOWSHIPS

Department: N/A

School/College: N/A

University: 2012-2013 Florida International University Top Scholar in the category of Established Faculty with Significant New Funding

OFFICES HELD IN PROFESSIONAL SOCIETIES

Webmaster, Hydrogeology Division, Geological Society of America 2009-present
President, South Florida Hydrologic Society, 2011-2012.

OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE

Associate Editor, Vadose Zone Journal, January 2012-present

Peer Reviewer for:

National Science Foundation (also member of multiple panels), United States Geological Survey, Department of Energy, US Army Engineer Research and Development Center, Natural Sciences and Engineering Research Council of Canada, Austrian Science Fund, Swiss National Science Foundation, Israel Science Foundation; Institute of Geophysics, Planetary Physics, and Signatures, Los Alamos National Laboratory; Kearney Foundation of Soil Science, American Chemical Society/Petroleum Research Fund, Water Resources Research, Journal of Hydrology, Journal of Hydrologic Engineering, Hydrogeology Journal, Journal of Fluid Mechanics, Groundwater, Vadose Zone Journal, Transport in Porous Media, Advances in Water Resources, Journal of Colloid and Interfacial Science, Journal of Physics and Chemistry of Solids, Society of Petroleum Engineers Journal, American Society of Mechanical Engineers, Environmental Science and Technology, Journal of Geophysical Research-Atmospheres, Soil Science Society of America, Journal of Environmental Quality, European Journal of Soil Science, Soil and Tillage Research, Geochemical Journal, Applied Geochemistry, Computers and Geosciences, International Journal of Heat and Mass Transfer. International Journal of Thermal Sciences; Estuarine, Coastal and Shelf Science; International Journal of Modern Physics C, Chinese Physics Letters, Microfluidics and Nanofluidics, Non-linear Processes in Geophysics, Journal of Applied Geophysics, Chemical Engineering Communications, Advances in Engineering Software Journal, Physics Letters A, Biot Conference on Poromechanics, Computers and Mathematics with Applications, International Journal of Computational Fluid Dynamics, Special Topics and Reviews in Porous Media – An International Journal, Technical Sciences, Springer books

Session Convener/Chairmanships

M.C. Sukop, D. Whitman, V. Walsh, J. D. Hughes, L.A. Land, L.J. Florea, J. Obeysekera and J.B. Giddings, Presiding: T95. THE BISCAVNE AND OTHER EOGENETIC KARST AQUIFERS: CHARACTERIZATION, MODELING, AND MANAGEMENT, GSA Hydrogeology Division; GSA Geophysics Division Monday, 5 November 2012: 8:00 AM-12:00 PM, Charlotte Convention Center 213BC

PEDOFRACT VII, International Workshop on Scaling in Particulate and Porous Media: Modeling and Use in Predictions. A Coruña, Spain, May 14-17, 2012

Co-convener Non-Darcian Flow in Porous Media Session (H42), American Geophysical Union 2009 Fall Meeting, San Francisco, CA, December 14-18

Parameter estimation session chairman, 20th Salt Water Intrusion Meeting, Naples FL, June 23-27, 2008

Co-convener Recent Advances in Groundwater Hydrology Session (H11), American Geophysical Union 2008 Joint Assembly, Ft. Lauderdale FL, May 27–30

Bio/Porous Media Flow Session Chairman, International Conference on Mesoscopic

Methods in Engineering and Science, Hampton VA, July 24-28, 2006

Board Memberships

Executive Board of the Florida Climate Institute member, 2013-Present
Faculty Club Board member, 2013-Present

Fellowship Interviewer

Florida International University Applied Research Center Department of Energy
Fellowships: May 2011, October 2011, May 2012

Judging

FIU Department of Earth and Environment Graduate student symposium, April 2012

Poster Exhibition Judge, Florida International University Applied Research Center
Department of Energy Fellows, May 2011, October 2011

Student Presentation Judge, American Geophysical Union 2007 Fall Meeting

Student Presentation Judge, American Geophysical Union 2004 Fall Meeting

Student Poster Judge, American Geophysical Union 2002 Fall Meeting

Student Research Symposium Judge, American Society of Agronomy 2000 Annual
Meeting

Science Fair Judge: Lexington, KY 1999 - 2001; Redding, CA 1990 - 1997

American Society of Civil Engineers Mathcounts program presentations to 6th and 7th
graders, 1990 – 1997

Distinguished Lecture Host

Geological Society of America Birdsall-Dreiss Lecture:

Dr. Larry Band, February 2014

Dr. Dani Or, 2013

Dr. Jeffery McDonnell, February 2011

Dr. Susan Hubbard, February 2010

Dr. Chunmiao Zheng, 2009

Dr. Larry McKay, January 2008

Dr David Blowes, 2006

Dr. Bill Woessner, March 2005

Dr. Barbra Bekins, 2004

National Groundwater Association Darcy Lecture:

Dr. Dorte Wildenschild, 2104
Dr. S. Majid Hassanizadeh, 2012
Dr. Tim Schiebe, January 2010
Dr. Eileen Poeter, 2006
Dr. Kip Solomon, 2005
Dr. Allen Shapiro, 2004

Recruiting (Set up and man booth)

American Geophysical Union Annual Meeting: 2013, 2011, 2010, 2009

Geological Society of America Annual Meeting: 2010, 2009

FIU Graduate open house booth, November 2012, November 2009

Miscellaneous

Florida International University Campus Representative for Geological Society of America, August 2013-present

Earth and Environment Explorers student group faculty advisor, March 2012-Present

FIU student chapter of AAPG faculty mentor, February 2012 –Present

Designed and managed installation of replacement campus monitoring wells (2011-2012)

Presentations to high school students at the Florida International University Partnerships in Academic Community (PAC) outreach event organized by the FIU College of Education, March 4 and March 25, 2011

Lead 16 graduate students on Ten Thousand Islands paddle/camping trip, February 2011

Prepare Graduate School Colloquium Enhancement and recruitment proposals, 2010, 2013

Present Word for Large Documents seminar for Earth Sciences Department graduate students January 28, 2005 and March 11, 2008

Short Courses Taught

Summer Course 2011: Laboratory of Computational Geodynamics, Graduate University, Chinese Academy of Sciences

Summer Course 2011: Universidad Politécnica de Madrid

LB3D_Prime short course, Florida International University, December 5-7, 2008.

Lattice Boltzmann Summer Course, University of Utah, August 9-13, 2004

Professional Registrations

California Certified Hydrogeologist No. 91

California Registered Geologist No. 5615

Kentucky Professional Geologist No. 2236

Memberships

American Association of Petroleum Geologists, 2012-Present

American Geophysical Union, Hydrology Section, 1997-Present

National Ground Water Association/Association of Ground Water Scientists and Engineers, 1991-Present

International Association for Mathematical Geology, 2008-2009

Geological Society of America, Hydrogeology Division, 2009- Present