

CPB Exh 20

Curriculum Vitae for
Dr. Norman L. Jones

CPB Exh 20

Dr. Norman L. Jones

Curriculum Vitae

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Position Professor
Dept. of Civil and Environmental Engineering
Brigham Young University
Provo, UT

Co-Founder, Consultant
Aquaveo, LLC
Provo, UT

Education **B.S., 1986**
Brigham Young University
Major: Civil Engineering

M.S., 1988
University of Texas at Austin
Major: Geotechnical Engineering

Ph.D., 1990
University of Texas at Austin
Major: Geotechnical Engineering

Awards 2001 Walter L. Huber Civil Engineering Research Prize
2003 Brigham Young University Technology Transfer Award
2007 Utah Engineering Educator of the Year (ACEC)
2012 Karl G. Maeser Research and Creative Arts Award (BYU)
2016 AWRA Utah Section Educator of the Year

Teaching **University Courses**
CE En 270 – Computer Methods in Civil Engineering
CE En 341 – Elementary Soil Mechanics
CE En 540 – Geo-Environmental Engineering
CE EN 544 - Seepage and Slope Stability Analysis
CE En 547 – Ground Water Modeling
CE En 641 – Advanced Soil Mechanics

Seminars
I have taught approximately 75 seminars and short courses at various locations in the United States and internationally (China, Korea, Australia, Germany). The course topics have included beginning and advanced ground water modeling, and computer simulation of natural attenuation and bio-remediation.

Prof. Societies American Water Resources Association
American Geophysical Union
National Ground Water Association
American Society of Civil Engineers

Expert Witness **Kevin Aguiar vs. BNSF Railway, 2003**
This case involved from a BNSF facility that was alleged to have caused groundwater contamination in a neighboring water supply. I was hired by the plaintiffs to review a groundwater model and series of reports and write an affidavit summarizing my conclusions.

City of Mapleton vs. Ensign Bickford, 2005
Worked with the city of Mapleton, Utah on a case involving groundwater contamination from an explosives manufacturing plant. Reviewed data and models. Case was eventually dropped.

Cleveland Ranch Water Rights, 2011

Expert witness for the Church of Jesus Christ of Latter Day Saints, owners of a cattle ranch in Spring Valley, Nevada. Provided expert testimony supporting a protest of a groundwater pumping system proposed by the Southern Nevada Water Authority.

Software Development**Groundwater Modeling System (GMS)**

Pre- and post-processor for a suite of widely used groundwater models – including MODFLOW

Arc Hydro Groundwater

Data model and suite of tools for managing groundwater data in ArcGIS platform

Tethys Platform

Software Development Kit for developing web apps for water resource decision support and spatial data management

Research Grants

1. Automated Mesh Generation For the TABS-2 System, \$19,000, 2/90 - 11/90, U.S. Army Engineer Waterways Experiment Station
2. A Geometry Pre-Processor for HEC-1 Employing Triangulated Irregular Networks, \$20,048, 3/91 - 10/91, U.S. Army Engineer Waterways Experiment Station
3. Real-Time Visualization for the TABS-2 Modelling System, \$14,123, 4/91 - 8/91, U.S. Army Engineer Waterways Experiment Station
4. An Investigation of X-Windows Interface Tools, \$49,556, 1/92 - 8/92, U.S. Army Engineer Waterways Experiment Station
5. Descriptive Geometry and Solid Rendering, \$24,000, 1/92 - 10/92, U.S. Army Engineer Waterways Experiment Station
6. An Investigation of Automated Pre-processing Schemes for TIN-Based Drainage Analysis, \$34,750, 4/92-10/92, U.S. Army Engineer Waterways Experiment Station
7. A Comprehensive Graphical User Environment for Groundwater Flow and Transport Modeling, \$246,526, 6/93-9/94, U.S. Army Engineer Waterways Experiment Station
8. An Integrated Surface Flow Modeling System, \$131,848, 1/94-1/95, U.S. Army Engineer Waterways Experiment Station
9. Productivity and Management Tools for Groundwater Flow and Transport Modeling, \$207,404, 5/94-4/95, U.S. Army Engineer Waterways Experiment Station
10. Enhanced Tools for Quality Control in Automated Groundwater Transport Modeling, \$246,553, 1/95-12/95, U.S. Army Engineer Waterways Experiment Station
11. Visualization for Two-Dimensional Surface Runoff Modeling, \$98,221, 1/95-10/95, U.S. Army Engineer Waterways Experiment Station
12. Visualization Tools for Two-Dimensional Finite Element Hydrologic Modeling, \$93,933, 11/95-10/96, U.S. Army Engineer Waterways Experiment Station
13. A Graphical Environment for Multi-Dimensional Surface Water Modeling, \$49,789, 3/96-9/96, U.S. Army Engineer Waterways Experiment Station
14. A Conceptual Modeling Approach to Pre-processing of Groundwater Models, \$475,743, 11/95-11/97, U.S. Army Engineer Waterways Experiment Station
15. Hydrosystems Modeling, \$2,458,083, 5/97-4/02, U.S. Army Engineer Waterways Experiment Station
16. Second Generation Hydroinformatics Research, \$4,958,127. U.S. Army Engineer Research and Development Center.
17. Flux Calculations and 3D Visualization for the SCAPS Piezocone and GeoViz System, \$34,931, U.S. Navy.
18. Development of modeling methods and tools for predicting coupled reactive transport processes in porous media under multiple scales. \$949,000. US Dept. of Energy. 1/07-12/09.
19. CI-WATER: Cyberinfrastructure to Advance High Performance Water Resource Modeling, \$3,435,873. National Science Foundation - EPSCoR. 9/11-8/14.
20. Comprehensive Streamflow Prediction and Visualization to Support Integrated Water Management, \$599,823. NASA SERVIR, 8/16-8/19.

Summary: PI or Co-PI on 20 projects totaling \$14,115,483.

**Peer-Reviewed
Publications**

1. Jones, Norman L., Stephen G. Wright, and David R. Maidment, "Watershed delineation with triangle-based terrain models," *ASCE Journal of Hydraulic Engineering*, October, 1990, pp. 1232-1251.
2. Jones, Norman L. and Stephen G. Wright, "Algorithm for smoothing triangulated surfaces," *ASCE Journal of Computing in Civil Engineering*, January, 1991, pp. 85-102.
3. Jones, Norman L. and Stephen G. Wright, "Solid modeling for site representation in geotechnical engineering," *Geotechnical Engineering Congress*, June, 1991, pp. 1021-1031.
4. Richards, D.R., Norman L. Jones, H. C. Lin, "Graphical innovations in surface water flow analysis," *First International Conference on Integrating Geographic Information Systems and Environmental Modelling*, Sept. 15-19, 1991, Boulder, Colorado.
5. Jones, Norman L. and D.R. Richards, "Mesh generation for estuarine flow modelling," *ASCE Journal of Waterway, Port, and Coastal Engineering*, Vol. 118, No. 6, November/December, 1992, pp. 599-614.
6. Jones, Norman L. and Stephen G. Wright, "Subsurface characterization with solid models," *ASCE Geotechnical Engineering Journal*, Vol. 119, No. 11, November, 1993, pp. 1823-1839.
7. Nelson, James, Norman L. Jones, and A. Woodruff Miller, "Integrated hydrologic simulation with TINs," *Advances in Hydrosience and Engineering*, Volume 1, Sam S.Y. Wang, Ed., Proceedings of the First International Conference on Hydro-Science and Engineering, Washington, D.C., June 7-11, 1993, pp.571-578.
8. Jones, Norman L., and Takafumi Saito, "Flow animation techniques for two-dimensional hydrodynamic modeling," *Advances in Hydrosience and Engineering*, Volume 1, Sam S.Y. Wang, Ed., Proceedings of the First International Conference on Hydro-Science and Engineering, Washington, D.C., June 7-11, 1993, pp. 2091-2096.
9. Jones, Norman L., and E. J. Nelson, "Construction of TINs from borehole data," *Advances in Site Characterization: Data Acquisition, Data Management, and Data Interpretation*, ASCE Geotechnical Publication No. 37, 1993, pp. 13-26.
10. Nelson, J. E., Norman L. Jones, and A. Woodruff Miller, "An algorithm for precise drainage basin delineation," *ASCE Journal of Hydraulic Engineering*, Vol. 120, No. 3, March, 1994, pp. 298-312.
11. Jones, Norman L., and D. R. Richards, "A comprehensive modeling environment," *Proceedings of the First International Conference on HYDROINFORMATICS*, Delft, the Netherlands, Sept. 19-23, 1994, pp. 317-322.
12. Nelson, E. J., and Norman L. Jones, "Reducing roundoff error in digital elevation data," *Journal of Hydrology*, Vol. 169, 1995, pp. 37-49.
13. Jones, Norman L., S. J. Owen, and E. C. Perry, "Plume characterization with natural neighbor interpolation," *GEOENVIRONMENT 2000*, ASCE Geotechnical Special Publication No 46, 1995, pp. 331-345.
14. James Nelson, A. Woodruff Miller, and Norman L. Jones, "A TIN based watershed delineation technique for both rural and urban runoff," *Water in the 21st Century: Conservation, Demand, and Supply*, American Water Resources Association, Salt Lake City, Utah, April 1995, pp. 643-652.
15. Owen, Steven J., Norman L. Jones, and Jeffrey P. Holland, "A comprehensive modeling environment for the simulation of groundwater flow and transport," *Engineering With Computers*, Dec., 1996, pp. 235-242.
16. Jones, Norman L., and R. J. Davis, "Three-Dimensional Characterization of Contaminant Plumes," 1996 Meeting of the Transportation Research Board, Washington, D.C., January 7-11, 1996.
17. Alan K. Zundel, and Norman L. Jones, "An integrated surface water modeling system," *Proceedings of the Second International Conference on HYDROINFORMATICS*, Zurich, Switzerland, Sept. 9-13, 1996.
18. Norman L. Jones, and David R. Richards, "A conceptual model approach to hydroinformatics," *Proceedings of the Second International Conference on HYDROINFORMATICS*, Zurich, Switzerland, Sept. 9-13, 1996.
19. David R. Richards, and Norman L. Jones, "A blueprint for hydroinformatic design of US Army hydrologic models," *Proceedings of the Second International Conference on HYDROINFORMATICS*, Zurich, Switzerland, Sept. 9-13, 1996.
20. Jones, Norman L., E.V. Edris, Jr., and M.J. Kennard, "Three-dimensional characterization of contaminant plumes using cone penetrometer data," *Proceedings of the Second International Conference on Environmental Geotechnics*, IS-Osaka '96, Nov. 5-8, 1996, Osaka, Japan.
21. Staten, Matthew L., and Norman L. Jones, "Local Refinement of Three-Dimensional Finite Element Meshes," *Engineering With Computers*, 1997, Vol. 13, pp. 165-174.
22. Jones, Norman L., E.V. Edris, Jr., "Calibration tools for hydroinformatics systems," *Proceedings of the Third International Conference on HYDROINFORMATICS*,

- Copenhagen, Denmark, Aug. 24-26, 1998.
23. Zundel, A.K., Demirbilek, Z., Fugal, A.L., N.L. Jones, "Automatic definition of two-dimensional finite element coastal models," *Proceedings of the Third International Conference on HYDROINFORMATICS*, Copenhagen, Denmark, Aug. 24-26, 1998.
 24. Nelson, E.J., N.L. Jones, R.J. Berrett, "Adaptive tessellation method for creating TINs from GIS data," *ASCE Journal of Hydrologic Engineering*, Vol. 4, No. 1, January, 1999.
 25. Jones, Norman L., A.M. Lemon, C. Talbot, "Integrating GIS Data with 3D Finite Element Groundwater Models," *Proceedings of the International Symposium 2000 on Groundwater IAHR*, Saitama, Japan, May 8-10, 2000.
 26. Jones, Norman L., Michael J. Kennard, Alan K. Zundel, "Fast algorithm for generating sorted contour strings," *Computers and Geosciences*, Vol. 26, pp. 831-837, 2000.
 27. Jones, Norman L., E. James Nelson and Colby T. Manwaring, "Managing temporal data in a comprehensive modeling environment," *Journal of Hydroinformatics*, Vol. 2, No. 2, pp. 105-112, 2000.
 28. Jones, Norman L., Alan M. Lemon, and Fred T. Tracy, "A hybrid approach to flow net generation," *International Journal of Numerical and Analytical Methods in Geomechanics*, Vol. 25, pp. 1339-1349, Sept. 2001.
 29. Jones, Norman L., Trevor J. Budge, Alan K. Zundel, Alan M. Lemon, "Generating MODFLOW grids from boundary-representation solid models," *Ground Water*, Vol. 40, No. 2, March-April 2002, pp. 194-200.
 30. Jones, Norman L., R.J. Davis, W. Sabbah, "A comparison of 3D interpolation techniques for plume characterization," *Ground Water*, Vol. 41, No. 4, July-August 2003, pp. 411-419.
 31. Lemon, A.M., N.L. Jones, "Building solid models from boreholes and user-defined cross-sections," *Computers and Geosciences*, Vol. 29, No. 5, June, 2003, pp 547-555.
 32. Jones, N.L., 2002, "Using transition probability geostatistics with MODFLOW," *Calibration and Reliability in Groundwater Modelling: A Few Steps Closer to Reality* (Proceedings of ModelCARE'2002, Prague, Czech Republic, 17-20 June 2002). IAHS Publ. no. 277, pp. 359-364.
 33. Jones, N.L., J.I. Green, and J.R. Walker, "Stochastic inverse modeling for capture zone analysis," *Groundwater Quality Modeling and Management Under Uncertainty*, Proceedings of the Symposium, EWRI Congress, June 23-26, 2003, Philadelphia, Pa., Srikanta Mishra, Ed., American Society of Civil Engineers, pp. 1-12.
 34. Jones, Norman L., J.R. Walker, & S.F. Carle, "Hydrogeologic unit flow characterization using transition probability geostatistics," *Ground Water*, Vol. 43, No. 2, Mar-Apr 2005, pp. 285-289.
 35. Wallace, R.M., A. Byrd, C. Butler, N. Jones, R. Jones, "Generic Model Data Format", *Proceedings of the European Simulation Interoperability Workshop 2005*, Toulouse France. June. (document # 05E-SIW-046).
 36. Jones, Norman L., T.P. Clement, C.H. Hansen, "A Three-Dimensional Analytical Modeling System for Risk Assessment at Chlorinated Solvent Sites," *Ground Water*, Vol. 44, No. 5, July-August 2006, pp. 613-617.
 37. R. Wallace, K. Pathak, J. P. Holland, D. Stuart, C. Butler, D. R. Richards, M. Fife, N. L. Jones and J. Harris, "Information infrastructure for integrated ecohydraulic and water resources modeling and assessment", *Journal of Hydroinformatics*, Vol. 8, No. 4, 2006, pp 317-333.
 38. Strasberg G., D.R. Maidment, N.L. Jones, "A geographic data model for representing ground water systems," *Ground Water*, Vol. 45, No. 4, July-August 2007, pp. 515-518.
 39. Jones N.L., and G. Strassberg, "The Arc Hydro MODFLOW data model", *Water Resources Impact*, Vol. 10, Num 1, January 2008, pp. 17-19.
 40. Williams, G, N. Jones, T. Winkel, A. Mayo, 2008, "Field description and multi-phase modeling of a naturally occurring inverted density groundwater interface," *Proceedings of the American Society of Civil Engineers (ASCE) Environmental and Water Resources Institute*, May 2008, Honolulu, HI.
 41. Williams, G, N. Jones, T. Winkel, A. Mayo, 2008, "Field measurements and an osmotic conceptual model of a steady-state groundwater pressure ridge," *Proceedings of the American Society of Civil Engineers (ASCE) Environmental and Water Resources Institute*, May 2008, Honolulu, HI.
 42. Jones N.L., J.R. Handy, R.M. Wallace, "Levee Analyst: A GIS-based levee modeling and management system," Proceedings of the Association of State Dam Safety Officials Annual Conference 2008, September 7-11, Indian Wells, California.
 43. Gustavious P. Williams, Norman Jones, and Jeffrey Handy, "A Heuristic Algorithm for Optimal Alignment and Matching of Borehole Stratigraphy", *Proceedings of the ASCE Environmental and Water Resources Institute 2008 Conference*, Kansas City, Kansas, May 2009.
 44. Jones, N., Lemon, A, Patton, R., "Automated well permitting in a coastal region using

- SEAWAT and ArcGIS", *SWIM21 - 21st Salt Water Intrusion Meeting*, Azores, Portugal, June 21-26, 2010, pp. 187-190.
45. Strassberg, G., Jones, N., "Arc Hydro Groundwater Data Model and Tools: Overview and Use Cases," *AQUA mundi*, Vol. 1, No. 2, December 2010, pp. 101-114.
 46. Jones, N.L., M. Smilowitz, and D. Whitehead, "The Sacramento Regional Groundwater Model", *World Environmental & Water Resources Congress 2011*, May 22-26, Palm Springs, CA.
 47. Jones, N., Wallace, R., Jones, R., Butler, C., Zundel, A. "Efficient Application Programming Interface for Multi-Dimensional Modeling Data", *Journal of Hydroinformatics*, Vol. 14, No 1., 2012, pp 1-12.
 48. Whiteaker, T., N. Jones, G. Strassberg, A. Lemon, D. Gallup, "GIS-based Data Model and Tools for Creating and Managing Two-Dimensional Cross Sections," *Computers and Geosciences*, Vol 29, Feb 2012.
 49. Christensen, Scott D., Michael Burns, Gil Strassberg, and Norman L. Jones. "A Web-Based Groundwater Mapping and Visualization Tool Using Google Earth." In *World Environmental & Water Resources Congress*. Duke Energy Convention Center, Cincinnati, OH, 2013.
 50. Jones, Norman L., E. James Nelson, Gustavious P. Williams, Fred Ogden, David Tarboton, Steve Burian. "CI-WATER: Cyberinfrastructure to Advance High Performance Water Resource Modeling." In *World Environmental & Water Resources Congress*. Duke Energy Convention Center, Cincinnati, OH, 2013.
 51. Latu, Kilisimasi, Nathan R. Swain, Scott D. Christensen, Norman L. Jones, James E. Nelson, and Gustavious P. Williams. "Essential GIS Technologies for Hydrologic Simulation Applications in Cloud Computing." In *World Environmental & Water Resources Congress*. Duke Energy Convention Center, Cincinnati, OH, 2013.
 52. Jones, N. L., Lemon, A. M. and Kennard, M. J. (2013), Efficient Storage of Large MODFLOW Models. *Ground Water*. doi: 10.1111/gwat.12060
 53. Jones, N., Nelson, J., Swain, N., Christensen, S., Tarboton, D. Dash, P. Tethys: A Software Framework for Web-Based Modeling and Decision Support Applications. In: Ames, D.P., Quinn, N.W.T., Rizzoli, A.E. (Eds.), *Proceedings of the 7th International Congress on Environmental Modelling and Software*, June 15-19, San Diego, California, USA. ISBN: 978-88-9035-744-2
 54. Jones, N., Griffiths, T., Lemon, A., Kudlas, S. Automated Well Permitting in Virginia's Coastal Plain Using SEAWAT and GIS Geoprocessing Tools. In: Ames, D.P., Quinn, N.W.T., Rizzoli, A.E. (Eds.), *Proceedings of the 7th International Congress on Environmental Modelling and Software*, June 15-19, San Diego, California, USA. ISBN: 978-88-9035-744-2
 55. Y. Fan, S. Richard, R. S. Bristol, S. E. Peters, S. E. Ingebritsen, N. Moosdorf, A. Packman, T. Gleeson, I. Zaslavsky, S. Peckham, L. Murdoch, M. Fienen, M. Cardiff, D. Tarboton, N. Jones, R. Hooper, J. Arrigo, D. Gochis, J. Olson and D. Wolock (2014), DigitalCrust – a 4D data system of material properties for transforming research on crustal fluid flow, *GeoFluids*, Article first published online: 7 OCT 2014 | DOI: 10.1111/gfl.12114.
 56. Swain, N.R., K. Latu, S.D. Christensen, N.L. Jones, E.J. Nelson, D.P. Ames, G.P. Williams (2015). "A review of open source software solutions for developing water resources web applications." *Environmental Modeling & Software* 67: 108-117.
 57. Jones, David, Norm Jones, James Greer, and Jim Nelson, "A cloud-based MODFLOW service for aquifer management decision support," *Computers and GeoSciences*, Vol. 78, pp. 81-87, 2015.
 58. Dolder, H., Jones, N., and Nelson, E. (2015). "Simple Method for Using Precomputed Hydrologic Models in Flood Forecasting with Uniform Rainfall and Soil Moisture Pattern." *J. Hydrol. Eng.*, 10.1061/(ASCE)HE.1943-5584.0001232 , 04015039.
 59. Fatichi, S., Vivoni, E.R., Ogden, F.L., Ivanov, V.Y., Mirus, B., Gochis, D., Downer, C.W., Camporese, M., Davidson, J.H., Ebel, B., Jones, N., Kim, J., Mascaro, G., Niswonger, R., Restrepo, P., Rigon, R., Shen, C., Sulis, M., and Tarboton, D. (2016). *An Overview of Challenges, Current Applications and Future Trends of Distributed Process-based Models in Hydrology*. *Journal of Hydrology*. Vol 537, 45-60. DOI:10.1016/j.jhydrol.2016.03.026
 60. Snow, Alan D., Scott D. Christensen, Nathan R. Swain, E. James Nelson, Daniel P. Ames, Norman L. Jones, Deng Ding, Nawajish S. Noman, Cédric H. David, Florian Pappenberger, and Ervin Zsoter, 2016. *A High-Resolution National-Scale Hydrologic Forecast System from a Global Ensemble Land Surface Model*. *Journal of the American Water Resources Association (JAWRA)* 52(4):950–964, DOI: 10.1111/1752-
 61. Perez, J. Fidel, Nathan R. Swain, Herman G. Dolder, Scott D. Christensen, Alan D. Snow, E. James Nelson, and Norman L. Jones, 2016. *From Global to Local: Providing Actionable Flood Forecast Information in a Cloud-Based Computing Environment*.

Journal of the American Water Resources Association (JAWRA) 52(4):965–978. DOI: 10.1111/1752-1688.12392

62. Swain, N. R., S. D. Christensen, A. D. Snow, H. Dolder, G. Espinoza-Dávalos, E. Goharian, N. L. Jones, E. J. Nelson, D. P. Ames and S. J. Burian (2016). "A new open source platform for lowering the barrier for environmental web app development." *Environmental Modelling & Software* 85: 11-26.
63. Souffront Alcantara, Michael A.; Crawley, Shawn; Stealey, Michael J.; Nelson, E. James; Ames, Daniel P.; and Jones, Norm L. (2017) "Open Water Data Solutions for Accessing the National Water Model," *Open Water Journal*: Vol. 4 : Iss. 1 , Article 3.

**Books
Manuals
Reports**

1. Jones, N.L., *FastTABS Reference Manual*, Engineering Computer Graphics Laboratory, Brigham Young University, 1992. 150 pp.
2. Jones, N.L., *FastTABS Tutorials*, Engineering Computer Graphics Laboratory, Brigham Young University, 1992. 85 pp.
3. Jones, N.L., D.R. Richards, *RMA-2 Primer*. , U.S. Army Engineer Waterways Experiment Station, 1993. 165 pp.
4. Jones, N.L., *GMS v1.0 Reference Manual*, Environmental Modeling Research Laboratory, Brigham Young University, Provo, Utah, 1994, 300 pp.
5. Jones, N.L., *GMS v1.0 Tutorials*, Environmental Modeling Research Laboratory, Brigham Young University, Provo, Utah, 1994, 175 pp.
6. Jones, N.L., *GMS v2.0 Reference Manual*, Environmental Modeling Research Laboratory, Brigham Young University, Provo, Utah, 1996, 350 pp.
7. Jones, N.L., *GMS v2.0 Tutorials*, Environmental Modeling Research Laboratory, Brigham Young University, Provo, Utah, 1996, 200 pp.
8. Jones, N.L., *GMS v2.1 Reference Manual*, Environmental Modeling Research Laboratory, Brigham Young University, Provo, Utah, 1997, 425 pp.
9. Jones, N.L., *GMS v2.1 Tutorials*, Environmental Modeling Research Laboratory, Brigham Young University, Provo, Utah, 1997, 230 pp.
10. Lin, Richards, Talbot, Yeh, Cheng, Cheng, Jones, *FEMWATER (version 2.0) : A Three-Dimensional Finite Element Computer Model for Simulating Density-Dependent Flow and Transport in Variably Saturated Media*. Technical Report CHL-97-12, U.S. Army Engineer Waterways Experiment Station, July 1997, 151 pp.
11. Jones, N.L., *GMS v3.0 Reference Manual*, Environmental Modeling Research Laboratory, Brigham Young University, Provo, Utah, 1999, 584 pp.
12. Jones, N.L., *GMS v3.0 Tutorials*, Environmental Modeling Research Laboratory, Brigham Young University, Provo, Utah, 1999, 261 pp.
13. *Jones, N.L., *GMS v3.0 File Formats*, Environmental Modeling Research Laboratory, Brigham Young University, Provo, Utah, 1999, 94 pp.
14. *T.P. Clement, and N.L.Jones, *RT3D Tutorials for GMS v3.0 Users*, Battelle Pacific Northwest National Lab, Hanford, Washington, 1998, 99 pp.
15. Jones, N.L., *SEEP2D Primer*. Environmental Modeling Research Laboratory, Brigham Young University, Provo, Utah, 1999, 94 pp.
16. Richards, Lin, Cheng, Talbot, Jones, *Development of a multidimensional hydroinformatic system for simulating canal, overland, and groundwater flow in South Florida*, US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi, 2000, 350 pp.
17. Jones, N.L., *GMS v3.1 HTML Help Document*, Environmental Modeling Research Laboratory, Brigham Young University, Provo, Utah, 2000.
18. Jones, N.L., *GMS v3.1 Tutorials*, Environmental Modeling Research Laboratory, Brigham Young University, Provo, Utah, 2000, 313 pp.
19. T.P. Clement, and N.L.Jones, *RT3D Tutorials for GMS v3.1 Users*, Environmental Modeling Research Laboratory, Brigham Young University, Provo, Utah, 2000, 97 pp.
20. N.L. Jones, *Ground Water Modeling with GMS Training Manual, EMS-I*, Provo, Utah, 2000.
21. N.L. Jones, *Advance Ground Water Modeling with GMS Training Manual, EMS-I*, Provo, Utah, 2000.
22. Lin, Richards, Talbot, Yeh, Cheng, Cheng, Jones, *FEMWATER: A Three-Dimensional Finite Element Computer Model for Simulating Density-Dependent Flow and Transport in Variably Saturated Media, Version 3.0*. Technical Report CHL-01-??, U.S. Army Engineer Waterways Experiment Station, 2001, 153 pp.
23. EMRL, *Groundwater Modeling System (GMS) version 4.0 Help File*, Environmental Modeling Research Laboratory, Brigham Young University, Provo, Utah, 2002.
24. EMRL, *Groundwater Modeling System (GMS) version 4.0 Tutorial Documents, Volumes 1-4*, Environmental Modeling Research Laboratory, Brigham Young University, Provo, Utah, 2002.

25. EMRL, Groundwater Modeling System (GMS) version 4.0 Tutorial Documents, Volumes 1-4, Environmental Modeling Research Laboratory, Brigham Young University, Provo, Utah, 2002.
26. EMRL, Groundwater Modeling System (GMS) version 5.0 Help File, Environmental Modeling Research Laboratory, Brigham Young University, Provo, Utah, 2004.
27. EMRL, Groundwater Modeling System (GMS) version 5.0 Tutorial Documents, Volumes 1-4, Environmental Modeling Research Laboratory, Brigham Young University, Provo, Utah, 2004.
28. XMDf User Manual, Environmental Modeling Research Laboratory, Brigham Young University, Provo, Utah, 2004.
29. EMRL, Groundwater Modeling System (GMS) version 6.0 Help File, Environmental Modeling Research Laboratory, Brigham Young University, Provo, Utah, 2005.
30. EMRL, Groundwater Modeling System (GMS) version 6.0 Tutorial Documents, Volumes 1-4, Environmental Modeling Research Laboratory, Brigham Young University, Provo, Utah, 2005.
31. South Florida RSM Peer Review Report.
32. XMDf manual published as an ERDC technical report.
33. Sacramento Regional Model Groundwater Modeling Report, Aquaveo LLC, Provo, Utah. 2010
34. Clement, T.P., M.O. Barnett, C. Zheng, N.L. Jones, Development of Modeling Methods and Tools for Predicting Coupled Reactive Transport Processes in Porous Media at Multiple Scales (2010), Auburn, Auburn University.
35. Strassberg, G., Jones, N., Maidment, D. (2011). *Arc Hydro Groundwater: GIS for Hydrology*. ESRI Press, Redlands, California, 250 pp.
36. Jones, N., A. Mayo (2011). *Impact on Proposed SNWA Wells on CPB Water Rights in Northern Spring Valley, Nevada*, Aquaveo LLC, 124 pp.
37. Ying Fan, Stephen Richard, R. Sky Bristol, Shanan E. Peters, Steven E. Ingebritsen, Nils Moosdorf, Aaron Packman, Tom Gleeson, I. Zaslavsky, S. Peckham, Lawrence Murdoch, Michael Fienen, Michael Cardiff, David Tarboton, Norman Jones, Richard Hooper, Jennifer Arrigo, D. Gochis, J. Olson and David Wolock, *DigitalCrust - a 4D data system of material properties for transforming research on crustal fluid flow*, in *Crustal Permeability*, Tom Gleeson, Steve Ingebritsen, Eds., Wiley-Blackwell, November 2016, 472 pp.

Other Technical Publications

1. Jones, Norman L., S. G. Wright, R. Gloyd, and D. Maidment, "An Algorithm for automated drainage analysis of a triangle-based terrain model," *Proceedings of the First International Conference on Applications of Advanced Technology in Transportation Engineering*, San Diego, Calif., Feb 5-8, 1989.
2. Lin, H.C., Norman L. Jones, and D.R. Richards "A microcomputer-based system for two-dimensional flow modelling," *Proceedings of the ASCE 1991 National Conference on Hydraulic Engineering and International Symposium on Ground Water*, Nashville, Tennessee, July 29 - Aug. 2, 1991.
3. Jones, Norman L., and James Nelson, "Drainage analysis using triangulated irregular networks," *ASCE 8th Conference on Computing in Civil Engineering - Symposium on Geographic Information Analysis*, June 7-9, 1992, Dallas, Texas.
4. Jones, Norman L., and James Nelson, "Automated delineation of catchment area boundaries with TINs," *ASCE Water Forum 1992*, Aug 3-5, 1992, Baltimore, Maryland.
5. Lin, H.C., Norman L. Jones, D.R. Richards, "Multitasking application of surface water flow modeling," *ASCE Water Forum 1992*, Aug 3-5, 1992, Baltimore, Maryland.
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