

## 2005 RSM Peer Review Panel

### **Dr. David Chin, PE, Professor at University of Miami**

Phone: (305) 284-3391; e-mail: [dchin@miami.edu](mailto:dchin@miami.edu)

#### **Experience**

##### Academic

- University of Miami, Professor of Civil and Environmental Engineering, 1994-Present.
- University of Miami, Chairman, Department of Civil, Architectural, and Environmental Engineering, 1992-Present
- University of Miami, Associate Professor of Civil Engineering, 1988-1994.
- University of Miami, Assistant Professor of Civil Engineering, 1984-1988.

##### Non-Academic

- United States Geological Survey, Miami, Florida, Project Chief, 1988-1989, 2001-2003 .
- Hydrologic Associates, U.S.A., Miami, Florida, Consulting Engineer, 1988-1992 (Approx.).
- Nortec, Redmond, Washington, Consulting Engineer, 1984
- Harza Engineering Company, Chicago, Illinois, Hydropower Engineer, 1978-1979.

#### **Selected Research**

- Principal Investigator, "Modeling Surface and Subsurface Water Flow and Soil Water Balance in South Florida", United States Department of Agriculture, \$13,193, 2004-2005.
- Principal Investigator/Project Chief, "The Relationship Between Rainfall and Runoff in the Developed Areas of South Florida", United States Geological Survey, \$537,524, 2001-2003 (PI funded via direct faculty appointment with USGS).

#### **Education**

- Georgia Institute of Technology, Ph.D. (Civil Engineering), 1982
- California Institute of Technology, M.S. (Civil Engineering), 1978
- University of the West Indies, B.Sc. (Civil Engineering with First-Class Honors), 1977

#### **Selected Publications**

- Chin, D.A. Water-Resources Engineering, Second Edition. Prentice Hall, Upper Saddle River, New Jersey, 750 pp., 2005 (in press).
- Chin, D.A. and R.D. Patterson. Quantification of Hydrologic Processes and Assessment of Rainfall-Runoff Models in Miami-Dade County, Florida. U.S. Department of the Interior, United States Geological Survey, Scientific Investigations Report 2004-1346, Reston, Virginia, 2004.
- Chin, D.A. A Method to Estimate Leakage to the Biscayne Aquifer, Dade County, Florida. U.S. Department of the Interior, United States Geological Survey, Water-Resources Investigation No.90-4135, Tallahassee, Florida, 1990.

More information can be found at:

[http://www.miami.edu/UMH/CDA/UMH\\_Main/1,1770,6489-1;6307-3,00.html](http://www.miami.edu/UMH/CDA/UMH_Main/1,1770,6489-1;6307-3,00.html)

## 2005 RSM Peer Review Panel

### **Dr. John Dracup, PE, Professor at University of California Berkeley**

Phone: (510) 643-4306; e-mail: [dracup@ce.berkeley.edu](mailto:dracup@ce.berkeley.edu)

"The focus of my research program is in the areas of hydrology and water resource systems analysis. In the area of hydrology I have been involved in the stochastic analysis of floods and droughts and the assessment of the impact of climate on hydrologic processes. In the area of water resources my research interests are in the simulation and optimization of groundwater systems and large-scale river basin systems. Since 1966 I have been a Principal Investigator or Co-Principal Investigator on research grants from the United Nations Development Program, the National Science Foundation, the Ford Foundation, the Office of Naval Research, the Environmental Protection Agency, the Office of Water Resources Research, the California Air Resources Board, the Metropolitan Water District of Southern California, the U.C. Water Resources Center, the U.C. Pacific Rim Research Center and the National Institute for Water Resources Research." More information can be found at: <http://www.ce.berkeley.edu/~dracup/>

#### **Education**

- B.S., University of Washington, Seattle, June 1956, Civil Engineering
- M.S., Massachusetts Institute of Technology, Cambridge, June 1960, Civil Engineering
- Ph.D., University of California, Berkeley, June 1966  
Civil Engineering (major in water resource engineering & hydrology, minor in agricultural economics),

#### **Selected Publications**

- Piechota, T.C., Dracup, J.A., 1999, "Long-Range Streamflow Forecasting Using El Nino-Southern Oscillation Indicators," *ASCE, Journal of Hydrologic Engineering*, Vol. 4, No. 2, April, pp. 144-151. (Awarded the Best Paper in the ASCE Journal of Hydrologic Engineering, 1999).
- Silverman, D. and J.A. Dracup, 2000, "Artificial Neural Networks and Long Range Precipitation Prediction in California," *Journal of Applied Meteorology*, Vol. 39, No. 1, January, pp. 57-66.
- Hidalgo-Leon H, T. Piechota, J. Dracup, 2000 "Alternative principal components regression procedures for dendrohydrologic reconstructions," *Water Resources Research*, Vol. 36, No. 11, pp. 3241-3249, November.
- Piechota, T.C., F.H.S. Chiew, and J.A. Dracup, 2001, Hydrological Implications of the El Niño Southern Oscillation (ENSO): Observations and Hydrologic Forecasting. American Geophysical Union, *Water Resources Monograph, Observations and Modeling of the Land Surface Hydrological Processes*, Water Science and Application Volume 3, pp. 231-246.

## 2005 RSM Peer Review Panel

### **Dr. Norman L. Jones, PE, Professor at Brigham Young University and Director of the Environmental Modeling Research Laboratory**

Phone: (801) 422-7569; e-mail: [njones@et.byu.edu](mailto:njones@et.byu.edu)

"I am the director of the Environmental Modeling Research Laboratory (EMRL) at Brigham Young University. In this position, I supervise the development of the Groundwater Modeling System (GMS) software. GMS is used by thousands of organizations around the world. GMS is a graphical pre- and post-processor for a wide variety of ground water models. My experience with GMS has given me the unique opportunity to study a large number of models. I am quite familiar with most of the industry standard groundwater models including IHM, MODFLOW, MT3DMS, SEAM3D, RT3D, MODPATH, FEMWATER, WASH123D, SEEP2D, MODAEM, ADH, MODFLOW-SURFACT, MODFLOW-HMS, MIKE-SHE, NUFT, TOUGH-2, CFEST, FEFLOW, UTCHEM, T-PROGS, PHT3D, PEST, UCODE, PARFLOW, OS3D, MODGA, etc."

"I have a good understanding of object-oriented programming and I have experience with multiple modeling languages. I have programmed in FORTRAN, C, C++, Visual Basic, Pascal, LISP, Modula2, and PHP. I teach a course on Visual Basic programming. Our EMRL software is written in C/C++. We are currently in the process of overhauling our software to be more object-oriented and we are working to make these objects accessible via an API." More information can be found at: <http://www.emrl.byu.edu/njones/>

#### **Education**

- B.S 1986 Brigham Young University: Civil Engineering
- M.S. 1988 The University of Texas at Austin: Geotechnical Engineering:
- PhD 1990 The University of Texas at Austin: Geotechnical Engineering

#### **Peer-Reviewed Publications**

- 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.
- Jones, Norman L. and D.R. Richards, "Mesh generation for estuarine flow modeling," ASCE Journal of Waterway, Port, and Coastal Engineering, Vol. 118, No. 6, November/December, 1992, pp. 599-614.
- Nelson, J. E., Norman L. Jones, and A. Woodruff Miller, "An algorithm for precise drainage basin delineation," ASCE Journal of Hydraulic Engineering, March, 1994, pp. 298-312.
- 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.
- Staten, Matthew L., and Norman L. Jones, "Local Refinement of Three-Dimensional Finite Element Meshes," Engineering With Computers, 1997, Vol. 13, pp. 165-174.
- 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.
- 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.

## 2005 RSM Peer Review Panel

### Dr. Victor Miguel Ponce, Professor at San Diego State University

Phone: (619) 594-6070; e-mail: [ponce@ponce.sdsu.edu](mailto:ponce@ponce.sdsu.edu)

Dr. Victor Miguel Ponce is an expert in the field of hydrological engineering, with 37 years of experience in engineering education, research, consulting, and service. Specific areas of current interest are: computer modeling of hydraulic and hydrologic systems, kinematic and diffusion wave modeling, flood hydrology, SCS runoff curve number, kinematic shock, hydroclimatology of droughts, hydrologic and environmental impact of development projects, convergent groundwater models, stream rehabilitation, wetland hydrology, interdisciplinary studies, and sustainable development. More information can be found at:

#### Expertise

- Hydrology, Surface Water Hydrology, Computational Hydrology, Environmental Hydrology.
- River Mechanics, Sedimentation Engineering, Potamology.
- Environmental Science and Engineering, Interdisciplinary Studies, Sustainable Development.

#### Education

- Ph.D., 1976, Civil Engineering, Colorado State University, Fort Collins, Colorado.
- M.S., 1970, Civil Engineering, Colorado State University, Fort Collins, Colorado.
- B.S., 1967, Civil Engineering, Universidad Nacional de Ingeniería, Lima, Peru.

#### Books

- [Engineering Hydrology, Principles and Practices](#) (Prentice Hall, 1989).
- [Fortran for Scientists and Engineers](#) (Webpublished, 2002).

#### Selected Publications

- Ponce, V. M., O. I. Cordero, and S. Y. Hasenin. 1997. [Generalized conceptual modeling of dimensionless overland flow hydrographs](#). *Journal of Hydrology*, **200**(1997), 222-227.
- Ponce, V. M., and A. Lugo. 2001. [Modeling looped ratings in Muskingum-Cunge routing](#). *Journal of Hydrologic Engineering*, ASCE, **6**(2), March-April, 119-124.

#### Recent Award

2004: Most Influential Faculty Award, Civil Engineering, San Diego State University

**\*\*Note:** If selected, I will have time for this work starting May 23.

## 2005 RSM Peer Review Panel

**Raymond W. Schaffranek, USGS Research Hydrologist & Project Chief, Reston, Virginia** Phone: (703) 648-5891; E-mail: rws@usgs.gov

### Relevant Projects and Expertise:

[Canal and Wetland Flow/Transport Interaction](#)

[Interrelation of Everglades Hydrology and Florida Bay Dynamics to Ecosystem Processes and Restoration in South Florida](#)

[Tides and Inflows in the Mangrove Ecotone \(TIME\) Model Development](#)

[Vegetative Resistance to Flow in the Everglades](#)

### Professional Position:

USGS Mathematician – 1967 - 1976

USGS Research Hydrologist – 1976 - 1980

USGS Research Hydrologist & Project Chief – 1980 - present

### Education:

- George Washington University, Hydraulic Engineering M.S., 1976
- Indiana University of Penna., Mathematics B.S., 1967

### Selected Publications:

- Schaffranek, R.W., 2004, Sheet-flow velocities and factors affecting sheet-flow behavior of importance to restoration of the Florida Everglades, U.S. Geological Survey Fact Sheet 2004-3123, 4 p. (<http://pubs.er.usgs.gov/pubs/fs/fs20043123>).
- Schaffranek, R.W., 2004, Simulation of surface-water integrated flow and transport in two dimensions: SWIFT2D user's manual, U.S. Geological Survey Techniques and Methods, book 6, chap. 1, section B, 115 p. (<http://pubs.water.usgs.gov/tm6b1/>).
- Lai, C., Baltzer, R.A., and Schaffranek, R.W., 2002, Conservation-form equations of unsteady open-channel flow, Journal of Hydraulic Research, Vol. 40, No. 5, pp. 567-578.
- Schaffranek, R.W., 2001, The tides and inflows in the mangroves of the Everglades (TIME) interdisciplinary project of the south Florida ecosystem program, U.S. Geological Survey Fact Sheet 031-01, 4 p. (<http://water.usgs.gov/pubs/FS/fs-031-01/>).
- Schaffranek, R.W., and Lai, Chintu, 1996, Friction-term response to boundary-condition type in flow models: American Society of Civil Engineers, Journal of Hydraulic Engineering, New York, NY, v. 122, no. 2, pp. 73-81.
- Schaffranek, R.W., 1987, Flow model for open-channel reach or network: U. S. Geological Survey Profession Paper 1384, 12 p.
- Schaffranek, R.W., Baltzer, R.A., and Goldberg, D.E., 1981, A model for simulation of flow in singular and interconnected channels: U. S. Geological Survey Techniques of Water-Resources Investigations, book 7, chap. C3, 110 p.

## 2005 RSM Peer Review Panel

**Dr. RENÉ THERRIEN, PE, Professor, Université Laval, Québec, Canada**

Phone: (418) 656-5400; e-mail: [rene.therrien@ggl.ulaval.ca](mailto:rene.therrien@ggl.ulaval.ca)

### Research

"My research program focuses on the development and application of numerical models to simulate fluid flow and mass transport in the subsurface, as well as coupled surface and subsurface systems. The model development and application are strongly linked to real situations since I also collaborate on research projects with strong laboratory and field components that provide the driving force for modeling. The models are used to gain an understanding of controlling processes for soil and groundwater contamination, as well as design efficient control and remediation measures for contaminated aquifers. I am the principal developer of the model **FRAC3DVS**, which simulates 3D variably-saturated flow and multispecies reactive transport in discretely-fractured porous media, also incorporating density-dependence of fluid flow and solute transport and chain-decay of solutes. A recent development has been the HydroSphere model, which couples surface and subsurface fluid flow and solute transport. *HydroSphere* is documented in a very comprehensive manual of 275 pages (Therrien et al. 2004 as listed in publications) that contains theory, verification examples and input guidelines."

"FRAC3DVS is considered one of the most efficient simulators for 3D ground water flow and contaminant transport and it has unique capabilities to simulate fractured geological systems. We are careful to maintain, verify, support and document the model. We also make it available to researchers at academic institutions. As a result, the model has received considerable attention, as indicated by numerous requests we have had by researchers in Canada, the U.S., Europe, Asia, as well as consultants in the U.S."

### Education

- NSERC Postdoctoral Fellow, Department of Civil Engineering, Kassel University, Kassel, Germany. Under the supervision of Dr. Wolfgang Kinzelbach. Research Topic: Numerical modelling of transport of biodegradable organic contaminants in the subsurface.
- Ph.D. Earth Sciences, University of Waterloo, Ontario, Canada. Thesis: Three-Dimensional Analysis of Variably Saturated Flow and Solute Transport in Discretely-Fractured Porous Media.
- M.Sc. Hydrogeology, Université Laval, Québec, Canada.
- B.A.Sc. Geological Engineering, Université Laval, Québec, Canada.

### Selected Publications

- Therrien, R., R.G. McLaren, E.A. Sudicky, S. Panday, 2004. HydroSphere: A Three-dimensional Numerical Model Describing Fully-integrated Subsurface and Surface Flow and Solute Transport, User's Guide, Université Laval and University of Waterloo, 273 pages.
- Lepage, N., R. Lefebvre, R. Therrien, A regional groundwater flow model for the Island of Montreal, Quebec, Canadian Geotechnical Journal (accepted pending revisions).
- Descamps, G., P. Therrien, R. Therrien, A novel approach for web-based diffusion and analysis of spatial data, accepted with minor revisions in Computer & Geoscience.