

THE CURRENT

NEWS FROM WATERBORNE ENVIRONMENTAL, INC.

FALL 2005

An Italian Teaching Experience *Round 2*

Amy Ritter was invited back to Italy to be an instructor for “Pesticide Risk Assessment in Rice Paddies (TRAINRICE), June 27–30, 2005. Besides providing training in Waterborne’s Riverine Water Quality Model (RIVWQ), she also presented “Higher-Tier Exposure Assessment in Rice Paddy Areas—An USA Perspective” along with RIVWQ training. The course was arranged by Professor Ettore Capri at Universita Cattolica del Sacro Cuore in Piacenza, Italy. The attendees of the course were from different arenas such as industry, consulting, and university representing many countries including Greece, United Kingdom, Japan, Germany, Italy, and Korea. Once again it was a great experience for Waterborne to answer questions and see the implementation of the models across the globe, collaborate with fellow modelers, and learn more about rice agronomic practices in Europe and Japan. ❧

Waterborne Opens Champaign, Illinois Office

In fall 2004, Waterborne opened an office in Champaign, Illinois to expand our geographic presence, facilitate on-going studies in the Midwestern US, and to enhance and expand our strong relationship with the University of Illinois. Currently we have six graduates, one post doctoral, and an adjunct professor all associated with the University of Illinois in the ranks at Waterborne.

The Champaign office is currently staffed with three full-time and four part-time scientists and engineers. Full-time staff include Chris Harbourt (Manager, Engineering), Margaret Ryan (Staff Env. Scientist) both who relocated from the Leesburg office in 2004, and Paul Miller (see bio in this issue). Paul has quickly proven to be a valuable asset to the Field Studies and Modeling groups with a strong background in GIS, statistics, ecology, and monitoring.

Our close proximity to the University of Illinois provides new opportunities in research, business, and personnel. Currently through an intern and Co-Op program with the Departments of Agricultural Engineering and Natural Resources and Environmental Sciences we were able to tap into a very talented pool of students. Already new software and techniques from this relationship have yielded increases in efficiency and quality for Waterborne while providing valuable educational experience for a future engineer.

The Illinois office also established a relationship with Bill Northcott (see bio in this issue) who has become a valuable modeling group resource with a background in advanced modeling including SWAT, RZWQM, Drainmod, Finite Element structure, Neural Networks, and model-GIS coupling.

We are excited by the prospects that our Champaign expansion has provided believing that our enhanced capabilities will help better serve our clients into the future. If you find yourself in Champaign-Urbana, please stop by the office to say hello to Chris, Margaret, Paul, and the rest of the staff. ❧

Waterborne Renovates Headquarters Building

After purchasing the rental units Waterborne has occupied for years, we set about to spruce up the space beginning last fall. The effort lasted about five months while staff showed considerable flexibility and patience (for the most part!) during the construction period. The renovation resulted in a more attractive and cohesive office space with significant improvements

made to the technology infrastructure. The office environment is greatly improved fostering a more productive atmosphere.

Most notably our renovations to the conference room improve the ease of communication between our offices allowing for rapid and effective sharing of ideas. These tools not only help us internally, but the infrastructure allows

us to more easily collaborate with clients on complex data-intensive projects.

Kudos to Hansen Ball, Mark Cheplick, and Kristen Umbaugh for their considerable efforts to ensure quality “Class A” work space for Waterborne employees in Leesburg. Please come by to see the significant improvements made to our office space in Virginia. ❧



EVENTS

Upcoming Posters and Presentations

■ **National Pyrethroid Aquatic Exposure Analysis (Part 1); Spatial Proximity of Agriculture to Surface Water by Watershed** Poster presentation, 26th Annual Meeting in North America, Society of Environmental Toxicology & Chemistry, Baltimore, MD, November 2005 (C. Holmes*, P. Havens, P. Hendley, S. Jackson, M. Matella, and G. Sabbagh).

■ **National Pyrethroid Aquatic Exposure Analysis (Part 2); Relative Erosion Potential Summarized by Watershed** Poster presentation, SETAC North America 26th Annual Meeting, 13–17 November 2005, in Baltimore, Maryland, USA., (J. M. Cheplick*, P. Havens, P. Hendley, S. Jackson, and G. Sabbagh)

■ **National Pyrethroid Aquatic Exposure Analysis (Part 3); Regional Sensitivity to Drift and Erosion Entry** Poster presentation, SETAC North America 26th Annual Meeting, 13–17 November 2005, in Baltimore, Maryland, USA., (A.M. Ritter*, P. Havens, P. Hendley, S. Jackson, and G. Sabbagh)

■ **National Pyrethroid Aquatic Exposure Analysis; Estimation of Drift and Erosion Potential at the Watershed Level** Platform presentation, SETAC North America 26th

Annual Meeting, 13–17 November 2005, in Baltimore, Maryland, USA., (C. Holmes*, J. M. Cheplick, P. Havens, P. Hendley, S. Jackson, A. M. Ritter, and G. Sabbagh).

■ **Mapping Risk to Aquatic Organisms from Exposure to Pesticides** Platform presentation, Pesticide Behavior in Soils, Water and Air, Society of Chemical Industry (SCI), Warwick, UK, March 2006 (C. Holmes*, C. Brown, C. Wells, R. Williams, S. Beulke, and W. Van Beinum).

Upcoming Book Publications

■ **Aquatic Ecological Risk Assessment of Atrazine—A Tiered Probabilistic Approach** Giddings J. M., Anderson T. A., Hall L.W., Hosmer A. J., Kendall R. J., Richards R. P., Solomon K. R., Williams W. M. 2003. Pensacola, FL: SETAC Press. (in review).

Recent Technical Presentations

■ **Watershed Modeling Linking PRZM with RIVWQ** J. M. Cheplick, M. H. Ball, A. M. Ritter, N. J. Snyder, and W. M. Williams*, Platform presentation, 228th National Meeting of the American Chemical Society, Philadelphia, PA, August 2004.

■ **Farmers Perspective on Modern Turf Farming** C. M. Harbour* and L. DeLalio, Platform presentation, American Chemical

Society (ACS), Washington, D.C., September 2005

■ **New Thatch and Subsurface Drainage Components in PRZM** M. Cheplick*, C. M. Harbour, and W. J. Northcott, Platform presentation, American Chemical Society (ACS), Washington, D.C., September 2005

Recent Technical Posters

■ **Watershed Modeling by Linking PRZM, RICEWQ, and RIVWQ**, A. M. Ritter*, M. H. Ball, and W. M. Williams, poster presentation, 228th Meeting of the American Chemical Society, Philadelphia, PA, August 2004.

■ **Watershed Characterization for Pesticide Exposure Assessment Using GIS & Remote Sensing** 228th National Meeting and Exposition Program of the American Chemical Society, Philadelphia, PA, August 2004 (C. Holmes*, M. Ball, M. Matella, S. Kay).

■ **Spatial Analyses and Post-Processing for Customized Landscape-Level Aquatic Exposure Assessment** Poster presentation, ESRI Mid-Atlantic User's group Annual Conference, Silver Spring, MD, December 2004 (R. Williams*, C. Holmes, S. Kay). ☞

New Easily Customized Software Helps with Field Data Collection

Waterborne has developed flexible easily customized PDA software for field data collection.

Electronic data collection and tracking systems simplify complex data handling and reporting tasks and can allow for more efficient communication of study information. We have been using this technology for the past 2 years working with our QA unit to assure GLP compliance. One focus in investing in electronic data collection is to reduce the possibility for transcription errors, but the core focus is to save time in the data processing and reporting phases, passing those savings on to clients. Data processing and reporting savings between 20% and 40% are possible on large studies.

Not all field documentation situations benefit from an electronic data collection system. Paper and pen have their place as

flexible friend of the GLP's. However, some studies benefit year after year from the vision to set up a document-handling plan early in the study design. Prime examples of studies that benefit are those that require repeat tasks (in time) at the same location, a large number of sites with similar data from each location, or well established studies following protocol templates.

Waterborne's PDA application runs in the Windows CE environment and we have adapted the software to work with many PDA processors and windows versions. Customizable entry forms, secure transfers through "syncing" directly linking field data to locked MS Access databases, and easy loading to a secure online data handling system are all options. Online document tracking allows clients and study management to monitor the study in near real-time which is especially helpful for investigating potential site issues. ☞

STAFF NEWS



Hansen Ball, began his Waterborne career in 2003 as a Project IT Specialist. He earned a BS degree in Mathematics with a minor in English at Virginia

Polyethnic Institute and State University returning a few years later for a MA in Economics. Hansen was promoted to Operations Manager in late 2004. As Operations Manager he will function as a technology bridge and business management between owners, administration staff, and technical staff in the areas of financial administration, resource management, and project execution. Hansen brings to the table strengths in database creation and management that is utilized on a daily basis.



Surajit Dasgupta, joined Waterborne as a Staff Agricultural Engineer in August 2005. He earned a MS degree in Rangeland Ecology &

Management and a graduate certificate in GIS from Texas A&M University. Surajit attended Bapuji Institute of Engineering & Technology where he received his undergraduate degree in Mechanical Engineering. While at Texas A&M, Surajit completed two projects during his tenure as a Masters student. The first study was related to the impact of brush control on basic hydrogeological processes within a karst environment.

The second study was focused on the spatio-temporal variations of soil hydraulic parameters in vertisols. He was also involved with the investigation of spatio-temporal dynamics of soil moisture from across the United States conducted by NASA & USDA. At Waterborne, Surajit will be a valuable addition to the Modeling Field Studies Groups.

Paul Miller, joined the Waterborne in August 2005 as a Project Engineer. Paul completed his PhD in Environmental and Natural Resources Engineering from Purdue University, and he received both his BS and MS degrees from the University of Illinois in Soil and Water Conservation Engineering. Most recently Paul worked as a Post-Doctoral Research Associate at the Department of Biological Systems Engineering at the University of Wisconsin at Madison where he oversaw a number of projects intersecting watershed dynamics, environmental chemistry, and chemical fate and transport, emphasizing sediment and phosphorus as the



primary constituents of concern. Paul's dissertation work involved the development of novel mechanistic and statistical algorithms facilitating the decision-mak-

ing process for water quality policy, especially involving the TMDL process. In addition, his research experiences have required the design, programming, development, and system integration of environmental monitoring equipment and data logging peripherals. His extensive background will be a great addition to the Modeling Group.



Joshua Amos, began working for Waterborne in May 2005 as a Staff GIS Specialist in the Spatial Technologies Group. He joined us from URS Corporation

where he provided cartographic and program support to a water resources engineering team focusing on the production of Digital Flood Insurance Rate maps (DFIRM), DFIRM geodatabases, and Flood Insurance Studies (FIS) produced for the Federal Emergency Management Agency. Joshua attended Clemson University where he earned a BA degree in Biological Sciences. Currently he is continuing his quest for knowledge and is in the process of completing a GIS Certification program thru Penn State University.



William (Bill) Northcott, joined Waterborne in January 2005 as a Project Agricultural Engineer. He shares this responsibility with his full time job as an

Assistant Professor in the Department of Agricultural Engineering at Michigan State University. Bill has degrees in both Agricultural Engineering and Soil Science from the University of Illinois at Urbana-Champaign. He has expertise in surface water and vadose zone hydrology, water quality and geographic information systems. He has spent the last several years

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developing and testing watershed scale hydrologic and water quality models and has developed a number of innovative techniques to manage and treat agricultural wastewater that are being adopted by NRCS as engineering practices. He also has several years of experience working in herbicide research examining efficacy and fate and transport. He currently is a member of several state-level technical working groups in Michigan working on improving water quality in agricultural watersheds. Over the last few years Bill has been applying the SWAT (Soil

and Water Assessment Tool) model for modeling hydrology and water quality of Midwestern agricultural watersheds. He has incorporated the SWAT model into the curriculum of his undergraduate hydrology and water quality courses.

Barbara Thacker joined Waterborne in June 2005 as an Administrative Assistant and Receptionist for the company. Prior to joining Waterborne, Barb worked for the local cooperative extension agency as an Administrative and Program Specialist assisting with the Loudoun County 4-H



program and the Family and Consumer Sciences Division. Barb joins us with over 20 years of administrative support experience. ”

