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Fifty Years Of Watershed Modeling - Past, Present
And Future

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2012

Conference Program

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Recommended Citation

Anthony S. Donigian, Jr. and Richard Field, "Conference Program" in "Fifty Years Of Watershed Modeling - Past, Present And Future", A.S. Donigian, AQUA TERRA Consultants; Richard Field, US EPA (retired); Michael Baker Jr., Inc. Eds, ECI Symposium Series, (2013). <http://dc.engconfintl.org/watershed/30>

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Sunday, September 23, 2012

4:00 pm – 7:00 pm Optional pre-conference reception at NCAR Table Mesa Facility
(1850 Table Mesa Drive, Boulder)

Heavy hors d'oeuvres will be served.

Conference check-in materials will be available at this event.

There will be shuttle bus service from downtown Boulder.

The Mesa Lab Visitor Center is open until 5:00 with free exhibits about weather and climate, guided and self-guided tours, a gallery featuring local artists, an outdoor weather trail, etc.

Directions: <http://www2.ucar.edu/campus/mesa-laboratory>

NOTES

- Audiotaping, videotaping and photography of presentations are strictly prohibited.
- Please do not smoke at any conference functions.
- Turn your cellular telephones to vibrate or off during technical sessions.
- All conference continental breakfasts and lunches (and optional banquet), technical and poster sessions will be at NCAR Center Green (3038 Center Green Drive, Boulder).
- Be sure to check your contact information on the Participant List in this program and make any corrections to your name/contact information online. A corrected copy will be sent to all participants after the conference.
- Speakers – Please leave at least 5 minutes for questions and discussion. Be available for discussion during meals and social periods

Monday, September 24, 2012

- 07:00 – 08:30 Continental Breakfast at NCAR
Conference check-in
- 08:30 – 08:45 Conference Welcome
Conference Co-Chairs: Tony Donigian (AQUA TERRA) and Richard Field
(Michael Baker Jr., Inc; US EPA, retired)
- Session I – PAST**
Moderator: Richard Field
- 08:45 – 09:00 Introduction: Why are we here? Goals and Objectives
Leslie Shoemaker (Tetra Tech) and Wayne Huber (Oregon State University)
- 09:00 – 09:30 The evolution of watershed modeling from the Stanford model to BASINS
Tony Donigian (AQUA TERRA)
- 09:30 – 10:00 The history and evolution of the EPA SWMM
Wayne Huber (Oregon State University) and Larry Roesner (Colorado State University)
- 10:00 – 10:30 Watershed model development for assessment of agricultural land use and management
Jeff Arnold (USDA/ARS)
- 10:30 – 11:00 Coffee break / Poster viewing
- 11:00 – 11:30 USGS Watershed Model Evolution – RRM (1972) to GSFLOW (2012)
Steve Markstrom (USGS)
- 11:30 – 12:00 Watershed model development within the USACOE
Pat Deliman (ACOE/ERDC)
Bill Scharffenberg (HEC)
- 12:00 – 12:15 Discussion
- 12:15 – 13:15 Lunch / Poster viewing
- 13:15 – 15:15 Panel discussion:
History of Watershed Model Development: What Have We Learned??
What is our advice to the present/future?
Has technology opened the door to new potential?
What are the most common mistakes in modeling applications?
Moderator: Paul Freedman (Limno-Tech, Inc.)
Panelists: Norm Crawford (Hydrocomp, Inc.), Larry Roesner (Colorado State University), Bill James (Computational Hydraulics, Int'l), Bill Scharffenberg (HEC), Jeff Arnold (USD/ARS)
- 15:15- 15:45 Coffee break / Poster viewing

Monday, September 24, 2012 (continued)

Session II - PRESENT

Moderator: Leslie Shoemaker

- | | |
|---------------|---|
| 15:45 – 16:15 | Chesapeake Bay watershed model evolution over 30 years
Lewis Linker (US EPA/CBP Modeling Director), Gary Shenk (US EPA) |
| 16:15 – 16:45 | Lake Tahoe Modeling – Comprehensive system analysis and management
John Reuter (University of California Davis) / John Riverson (Tetra Tech) |
| 16:45 – 17:15 | Regional SWAT application in the Texas Gulf for Conservation Policy
Assessment
Jeff Arnold (USDA/ARS) |
| 17:15 – 18:00 | Poster viewing |
| 18:00 | Buses return to hotels |

Tuesday, September 25, 2012

- 07:00 – 08:30 Continental Breakfast at NCAR
- 08:15 – 08:20 Welcome and Themes for the day
Leslie Shoemaker (Tetra Tech)
- 08:20 – 08:50 SWMM 5 – A Case Study of Model Redevelopment
Lew Rossman (US EPA/ORD)
- 08:50 – 09:20 WinSLAMM: Integrating Stormwater Management and Green Technologies
Robert Pitt (University of Alabama)
- 09:20 – 09:50 SUSTAIN: Urban Modeling Systems Integrating Optimization and Economics
Joong Lee (US EPA/ORD) and John Riverson (Tetra Tech)
- 09:50 – 10:20 National Data – Linking Models and Data in Regional Applications
Jack Kittle and Paul Hummel (both AQUA TERRA)
- 10:20 – 10:50 Coffee break
- Applying Models to Today's Needs**
- 10:50 – 11:20 SSOAP Toolbox – Evolution and Applications
Srini Vallabhaneni (CDM Smith)
- 11:20 – 11:50 Modeling urban watersheds impacted by CSOs and SSOs
Ted Burgess (CDM Smith)
- 11:50 – 12:50 Lunch and Poster Viewing
- 12:50 – 13:20 Watershed modeling for impact assessment on U.S. Military Installations
John Imhoff (AQUA TERRA)
- 13:20 – 13:50 Improving watershed models through stakeholder involvement
Laura Weintraub (Limno-Tech, Inc.)
- 13:50 – 14:20 Modeling and the assessment of waters: Impacts of nutrient loading
Tim Wool (US EPA/ORD)
- 14:20 – 14:50 Use of HSPF and SWAT Watershed Models for Climate Response Simulation
Jonathan Butcher (Tetra Tech)
- 14:50 – 15:15 Coffee break

Tuesday, September 25, 2012 (continued)

Session III: Future

Moderator: Richard Hooper

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|---------------|--|
| 15:15 – 15:30 | Introduction to Session III
Rick Hooper (CUAHSI) |
| 15:30 – 16:15 | Models for Scientific Inquiry

The dialog between field scientist and watershed modeler
Jeff McDonnell (University of Saskatchewan - currently Oregon State University) |
| 16:15 – 16:45 | The right answer for the right reason
Jerad Bales (USGS/Chief Scientist of Hydro) |
| 16:45 – 17:15 | Challenges for conducting regulatory water quality modeling: Keeping up in a rapidly shifting scientific and political environment
Michael Haire (US EPA/OWOW) |
| 17:15 – 18:00 | Poster viewing/Reception/Appetizers |
| 18:30 | Banquet (Optional)
Keynote Speaker: Dr. Norman H Crawford, Hydrocomp, Inc.
Title: "Watershed Modeling History, Philosophy and Prognostication" |
| 20:00 | Buses return to hotels |

Wednesday, September 26, 2012

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|---------------|---|
| 07:00 – 08:15 | Continental Breakfast at NCAR |
| 08:15 – 08:45 | Community and New Models

HydroShare: An online, collaborative environment for the sharing of hydrologic data and models
Dave Tarboton (Utah State University) |
| 08:45 – 09:15 | Coupling hydrologic models with weather and climate models for seamless predictions
David J. Gochis (National Center for Atmospheric Research) |
| 09:15 – 09:45 | Towards a national water modeling system
Don Cline (Chief, Hydrology Laboratory, National Weather Service, NOAA) |
| 09:45 – 10:15 | Coffee break |
| 10:15 – 10:45 | Petascale hydrologic modeling: Needs and challenges
Fred Ogden (University of Wyoming) |
| 10:45 – 11:15 | Enabling distributed hydrologic prediction through radar detection of rainfall
Baxter Vieux (University of Oklahoma) |
| 11:15 – 11:45 | SWMM5/PCSWMM combined 1D-2D modeling: Applications to urban flooding
Rob James and Bill James (CHI) |
| 11:45 – 12:15 | Beyond the desktop: Embedded modeling and cloud-based real-time monitoring and control
Marcus Quigley (Geosyntec) |
| 12:15 – 13:15 | Lunch and Poster Viewing |
| 13:15 – 13:45 | New developments for parameterizing models for forecasting and uncertainty
Christine Shoemaker (Cornell University) |
| 13:45 – 14:15 | Non-traditional databases to support contemporary urban water modeling
James Heaney (University of Florida) |
| 14:15 – 14:45 | Modeling the integrated urban water system
Larry Roesner (Colorado State University) |
| 14:45 – 15:15 | Critical gaps in operational watershed modeling
Ken Potter (University of Wisconsin) |
| 15:15 – 15:45 | Coffee break |
| 15:45 – 16:45 | Open Discussion with all attendees
Moderator: Wayne Huber
(3-4 minutes per question) |
| 16:45 – 17:00 | Closing Remarks
Tony Donigian (AQUA TERRA) and Richard Field (Michael Baker; Jr. ,Inc., US EPA, retired) |