

January 2018

David E. Rosenberg

Department of Civil and Environmental Engineering and
Utah Water Research Laboratory
Utah State University
4110 Old Main Hill, Logan, UT 84322-4110
Telephone: 435.797.8689
Email: david.rosenberg@usu.edu
<http://rosenberg.usu.edu>

EDUCATION

<u>PhD</u>	Civil and Environmental Engineering, University of California, Davis	March 2008
<u>MS</u>	International Agricultural Development, University of California, Davis	September 2003
<u>MS</u>	Civil and Environmental Engineering, , University of California, Davis	June 2003
<u>BSE</u>	School of Civil & Environmental Engineering, Cornell University, Ithaca, NY. <i>Magna Cum Laude</i>	May 1998

PROFESSIONAL AND RESEARCH EXPERIENCE

1. July 2014 – Present. **Associate professor**, Dept. of Civil and Env. Engineering and Utah Water Research Laboratory, Utah State University, Logan, UT, USA.
2. October 2014 – August 2015. **Visiting professor**, Politecnico di Milano, Milan, Italy.
3. July 2008 – June 2014. **Assistant professor**, Dept. of Civil and Env. Engineering and Utah Water Research Laboratory, Utah State University, Logan, UT, USA.
4. August 2003 – March 2008. **Doctoral candidate**, Dept. of Civil and Env. Engineering, University of California, Davis. Fieldwork in Jordan.
5. August 2005 – September 2005. **Consultant**, Liquid Assets – Middle East Water Project.
6. July 2001 – August 2003. **Hydraulic Engineer**, Hydrologic Engineering Center, U.S. Army Corps of Engineers, Davis, CA, USA.
7. February 2001 – June 2001. **Staff Engineer**, Geologic Services Corporation, Columbia, MD, USA.
8. July 1998 – October 2000. **Wetland reserve staff**, Royal Society for the Conservation of Nature, Azraq, Jordan (as U.S. Peace Corps volunteer).

HONORS/AWARDS (6 NATIONAL/INTERNATIONAL, 1 STATE, 6 LOCAL)

- 2017 Best Associate Editor, Environmental Water Resources Institute, American Society of Civil Engineers.
- 2015 Best Research-Oriented Paper, *ASCE-Journal of Water Resources Planning and Management*. May, 2015.
- Outstanding Service - Academic Sector, American Water Resources Association – Utah Chapter. May 2015.
- Quentin Martin Best Research-Oriented Paper Award, *ASCE-Journal of Water Resources Planning and Management*. May, 2013.
- Early Faculty CAREER Award, National Science Foundation. January, 2012.
- Gardner Junior Faculty Travel Fellowship Award, Utah State University, March 2011.
- Best Reviewer, *Journal of Water Resources Planning and Management-ASCE*, November, 2010.
- Best Ph.D. Dissertation in Water Policy and Socioeconomics, Universities Council on Water Resources, July, 2010.
- Graduate Research Fellowship, National Science Foundation; 2003 to 2007.
- Jastro-Shields Research Award, International Agricultural Development Graduate Group, University of California—Davis; May 2002.
- Engineer-In-Training, State of California, License #113520; December 2001.
- Jastro-Shields Fellowship, International Agricultural Development Graduate Group, University of California, Davis; April 2001
- Advanced rating in Arabic on ACTFL exam, Amman, Jordan, October 2000.

FUNDED PROJECTS

\$US 4.4 million external as PI or co-PI

*\$US 0.5 million internal funded by Utah State University (** items)*

Water Conservation

- “Metering Non-Residential Water Users to Identify Conservation Opportunities”. **David E. Rosenberg**, Jeffrey Horsburgh. Utah Mineral Lease Funds. August 2015 – July 2017. \$104,261.**
- “Intervening to encourage water conservation: developing an interdisciplinary urban water conservation research program at USU.” **David E. Rosenberg**, Arthur Caplan, and Joanna Endter-Wada. SPARC, USU Office of the Vice President of Research. July 2009 – September 2010. \$34,988.**
- “Value Landscape Engineering Lifecycle Analysis.” **David E. Rosenberg**, Kelly Kopp, Heidi Kratsch, Larry Rupp, Paul Johnson, and Roger Kjellgren. Central Utah Water Conservancy District. January - September, 2009. \$42,400.
- “Estimating and Verifying Situational Household Water Conservation Potentials.” David E. Rosenberg. Utah State Allocated Funds. December 2008 - December 2009. \$52,000.**

Environmental and Near-Optimal Water Management

- “**CAREER: Near Optimal Water Management to Improve Environmental and Ecological Decision Making.**” **David E. Rosenberg**. National Science Foundation. January 2012 - December 2017. \$409,985.

- “Analyzing the Spread of *Phragmites australis* over Short Time-scales Using Spatial and Genetic Tools”. Karin Kettenring, Mac McKee, and **David E. Rosenberg**. USGS (104b) and Utah Mineral Lease Funds. March 2010 – February 2011. \$67,387.
- “Allocating Scarce Water for Utah wetlands with Ecological uncertainties.” **David E. Rosenberg**. Utah Mineral Lease Funds. August 2009 – July 2010. \$52,500.**
- “Allocating scarce water to benefit wetlands and wetland plant communities at the Bear River Migratory Bird Refuge: ecological experiments and optimization modeling.” Karin Kettenring, **David E. Rosenberg**. USU Water Initiative. June 2009 - May 2010. \$38,300.**
- “Optimizing Water Management for Environmental Purposes.” **David E. Rosenberg**. Utah Mineral Lease Funds. August, 2008 - July, 2009. \$26,000.**

Systems Modeling

- “Integrated Water Resources Management Model for the Great Salt Lake Basin,” **David E. Rosenberg**. CH2M/State of Utah. April, 2015 – Dec 2016. \$10,000.
- “iUTAH - innovative Urban Transitions and Arid-region Hydro-sustainability”. Michelle Baker, et al. National Science Foundation, Utah EPSCoR Track I. August 2012 - July 2017. \$20,000,000.
- “CI-Water: Cyberinfrastructure to Advance High Performance Water Resource Modeling.” Norm Jones, David Tarboton, **David E. Rosenberg**, Jeff Horsbough, et al. National Science Foundation, Utah EPSCoR Track II. October, 2011 to September 2014. \$923,999 (USU portion).
- “Water Resources Modeling for Utah's Cache Valley.” **David E. Rosenberg**, Leah Meeks. Utah Mineral Lease Funds. January 2011 - December 2014. \$94,954.**
- “WSC-Category 1: Hydrologic and Ecological Impacts of Changes in Human Water Resources Management.” Doug Jackson-Smith, Charles Sims, Jeff Horsburgh, Beth Neilson, and **David E. Rosenberg**. National Science Foundation. September 2010 – August 2011. \$149,943.

Drought, Climate, Infrastructure, and Adaptation

- “Drought Contingency Plan.” **David E. Rosenberg**. Weber Basin Water Conservancy District / U.S. Bureau of Reclamation. February 2017 – August 2018. \$50,741.
- “[Graduate Climate Adaptation Research that Enhances Education and Responsiveness of science at the management-policy interface \(Grad-CAREER\)](#).” Nancy Huntley, Patrick Belmont, Courtney Flint, **David E. Rosenberg**, Simon Wang. National Science Foundation. September 2016 – August 2021, \$2,700,000.
- “Managing Water in the Face of Recurring, Pre-instrumented Era Droughts in the Bear River Basin”. David E. Rosenberg. Utah Mineral Lease Funds. August 2015 – July 2017. \$136,250.**
- “Cache County Water Master Plan.” **David E. Rosenberg**. Cache County / J-U-B Engineers. August 2012 – August 2013. \$3,894.
- “Economic Impacts of Groundwater Drawdown in Jordan.” **David E. Rosenberg**, Richard Peralta. U.S. Agency of International Development / International Resources Group. July – December, 2011. \$34,773.
- “Drought Planning with Reservoir Carryover Storage.” **David E. Rosenberg**. USGS (104b). March 2009 - February 2010. \$67,600.

TEACHING ACTIVITIES

1. August 2008 – Present. **Course Instructor and Advisor**, Department of Civil and Environmental Engineering, Utah State University.
 - Water Resources Engineering ([CEE 5460/6460](#))—Fall 2008, Fall 2009, Fall 2010, Fall 2011, and Fall 2012
 - Integrated River Basins/Watershed Planning and Management ([CEE 6490](#))—Spring 2009-Spring 2014, Spring 2016-2017
 - Hydroinformatics ([CEE 6930](#))—Fall 2012
 - Water Resources Systems Analysis ([CEE 6110](#))—Fall 2013, Fall 2015, Fall 2016
 - Currently major advisor for 3 PhD students, 2 MS Students, 1 Post Doc.

2. February 2015-August 2015. **Visiting Professor**. Natural Resources Management + Integrated Water Resources Management. Politecnico di Milano, Como, Italy.

3. Fall 2013 – Present. **Chair and Lead**, Excellence in Systems Analysis Teaching and Innovative Community (ECSTATIC), Task Committee of ASCE-Environmental Water Resources Institute. Lead approximately 10 colleagues in collection analysis of 40 water resources systems course syllabi and interviews with practitioners. Lead author on article that compares what water resources systems courses teach to skills practitioners says students need. Oversaw February 2017 launch of online repository for excellent teaching and communication materials (<http://ecstatic.usu.edu>).

4. August 2012 – Present. **Director**, Bear River Fellows Program, Utah State University.

Oversee Bear River Fellows program which offers 5 fellowships per year to 5 incoming freshmen in partnership with the USU Outdoor Recreation Program. In August, take the freshmen fellows out on the nearby Bear River for 5-day/4-nights of field data collection, meetings with water managers, canoeing, camping, and leadership development. Hire each Fellow for the subsequent Fall and Spring semesters as undergraduate research assistants to analyze, synthesize, and present the field data they collected in support of a wider NSF CAREER river basin environmental water management project. To date, 16 Fellows have presented seven posters at USU Spring Runoff Conference and program presented at three national conferences. <http://bearriverfellows.usu.edu/>

5. July, 2013 & 2014. **Co-Facilitator**, Code Camp, Utah State University.

Oversaw the planning and implementation of a one-day code camp for high school students at USU. Toured USU's high performance computing and data storage center, gave an introduction to programming in Python, and had the students work in groups to develop and code reservoir release functions in Python for Pineview reservoir, Utah that generated hydropower, delivered water for irrigation, and protected the city of Ogden from floods.

6. Spring 2006. **Co-Instructor**, Water Resources Engineering Planning (ECI 155), Dept. of Civil and Env. Engineering, University of California, Davis.

Developed and gave 4-unit senior-level undergraduate engineering class, including lectures, assignments, field trip, exam, and term paper with co-instructor. 20 students. Topics include rational planning; regional, utility, and water user management and conservation; watershed

hydrology; public participation and accountability; optimization; flood management; and hydropower.

7. February 2004 – August 2004. **Consultant**, Academy for Educational Development.

Developed lectures and assignments for semester course (condensed into two weeks) on strategic planning for water demand management given at Jordan University of Science and Technology in Irbid, Jordan in August 2004. Topics included roles of water demand management (WDM) in a water system; WDM actions, incentives, programs, and scales of implementation; common conservation techniques for water users; communication strategies; measuring program results; paying farmers to conserve; and optimal leakage, among others.

8. Winter 2004. **Facilitator**, Seminar on Computer Support for Negotiation (ECI 299), Dept. of Civil and Env. Engineering, University of California, Davis.

Assigned readings and facilitated weekly discussions for 1-unit graduate level seminar class. 8 students. Organized and edited a “Comment” later published in *Water International*.

LANGUAGES

- English: Native speaker
- Arabic: Listening, speaking, and reading competency. Need native speaker to proofread writing
- Italian: beginning.
- Programming: Matlab, GAMS, SQL, Data System Storage, and HEC-5

PROFESSIONAL AFFILIATIONS & ACTIVITIES

- American Water Resources Association, Member (2010 through present); Utah Chapter steering committee, Member (2010 through present)
- American Geophysical Union, Member, (2008 through present)
- American Society of Civil Engineers, Associate Member (2008 through present); Environmental Water Resources Institute, member (2010 through present); Environmental Water Resources Systems Committee, Control Group Member (2010 through present; Chair, 2014-2015); Excellence in Systems Analysis Teaching and Innovative Communication (ECSTATIC) Task Committee, Chair (2013-present).
- Friends of Jordan Association, member (2003 through present); former President (2009-2011)
- National Peace Corps Association for Returned PCVs (2000 through present)
- International Water Resources Association, Member (2003 through present)
- Associate editor, *ASCE-Journal of Water Resources Planning and Management* (2015 to present)
- Reviewer for *Advances in Water Resources*, *ASCE-Journal of Water Resources Planning and Management*, *Desalination and Water Treatment*, *Engineering Optimization*, *Environmental Modeling & Software*, *Environmental Science and Technology*, *Hydrology and Earth System Sciences*, *International Journal of River Basin*

Management, Journal of the American Water Resources Association, Journal of Environmental Management, Water International, Water-Open Access, Water Resources Management, Water Resources Research, CRC Press (2004 – present)

PROFESSIONAL DEVELOPMENT

Proposal Writing Institute participant, Utah State University, Office of Proposal Development. Logan, UT: April 21, 2011 - June 2, 2011.

Excellence in Civil Engineering Education (ExCEED) workshop participant, American Society of Civil Engineers. Boulder, CO: July 18, 2010 - July 23, 2010.

PEER-REVIEWED JOURNAL PUBLICATIONS (30)

1. Jim Stagge, David E. Rosenberg, Justin DeRose, Tammy Ritenour (2018). "Monthly paleostreamflow reconstruction from annual tree-ring chronologies." *Journal of Hydrology*, 557, 791-804. <https://www.sciencedirect.com/science/article/pii/S0022169417308855>.
2. Andrea Cominola, Matteo Giuliani, Andrea Castelletti, David E. Rosenberg, Adel Abdallah (2017) "Implications of data sampling resolution on water use simulation, end-use disaggregation, and demand management." *Environmental Modeling & Software*.
3. Jeffrey Horsburgh, Miguel Leonardo, Adel Abdallah, **David E. Rosenberg** (2017). "Measuring Water Use, Conservation, and Differences by Gender With High Frequency Metering Data." *Environmental Modeling & Software*. 96, pp. 83-94
4. **David E. Rosenberg**, Meghna Babbar-Sebens, Elizabeth Root, Jon Herman, Ali Mirchi, Marcio Giacomoni, Joseph Kasprzyk, Kaveh Madani, David Ford, Leon Basdekas (in press). "More Integrated Formal Education and Practice in Water Resources Systems Analysis." *ASCE-Journal of Water Resources Planning and Management*. 143(12).
5. Leah Meeks, **David E. Rosenberg** (2017). "High Influence: Identifying and Ranking Stability, Topological Significance, and Redundancies in Water Resource Networks." *Journal of Water Resources Planning and Management* 143(6).
6. Omar Alminagorta, **David E. Rosenberg**, Karin M. Kettenring (2016). "Systems modeling to improve the hydroecological performance of diked wetlands." *Water Resources Research*, 52 (9), pp. 7070-7085 DOI: 10.1002/2015wr018105.
7. **David E. Rosenberg** (2015). "Blended near-optimal alternative generation, visualization, and interaction tools for water resources decision making." *Water Resources Research*, 51(4). DOI: 10.1002/2013WR014667.
8. Rebecca L. Hale, Andrea Armstrong, Michelle A. Baker, Sean Bedingfield, David Betts, Caleb Buahin, Martin Buchert, Todd Cowl, R. Ryan Dupont, James R. Ehleringer, Joanna Endter-Wada, Courtney Flint, Jacqueline Grant, Sarah Hinnners, Jeffery S. Horsburgh, Douglas Jackson-Smith, Amber S. Jones, Carlos Licon, Sarah E. Null, Augustina Odame, Diane E. Pataki, **David Rosenberg**, Madlyn Runburg, Philip Stoker, Courtenay Strong

- (2015). "iSAW: Integrating Structure, Actors, and Water to Study Socio-Hydro-Ecological Systems." *Earth's Future* 3 (3). DOI: 10.1002/2014EF000295.
9. Melina Santos Vanderliner, Christopher Neale, **David E. Rosenberg**, Karin M. Kettenring (2014). "Use of remote sensing to assess changes in wetland plant communities in response to large-scale disturbance and management – a case study from the Bear River Migratory Bird Refuge, Great Salt Lake, UT." *Western North American Naturalist* 74(1). pp. 33-46.
 10. **David E. Rosenberg** and Kaveh Madani (2014). "Water Resources Systems Analysis: A Bright Past and a Challenging but Promising Future." *ASCE-Journal of Water Resources Planning and Management*. 140(4), pp. 407-409.
 11. Adel Abdallah and **David E. Rosenberg** (2014). "Heterogeneous Residential Water and Energy Linkages and Implications for Conservation and Management." *ASCE-Journal of Water Resources Planning and Management*. 140(3). Pp. 288-297. doi:10.1061/(ASCE)WR.1943-5452.0000340. **Best Research-Oriented Paper Award, 2015.**
 12. Abdelhaleem Khader, **David E. Rosenberg**, and Mac McKee (2013). "A decision tree model to estimate the value of information provided by a groundwater quality monitoring network." *Hydrology and Earth System Sciences*, 7(5), 1797-1807. doi:10.5194/hess-17-1797-2013.
 13. Omar Alminagorta, Bereket Tesfatsion, **David E. Rosenberg**, Bethany Neilson (2013). "Simple Optimization Method to Determine Best Management Practices to Reduce Phosphorus Loading in Echo Reservoir, Utah." *ASCE-Journal of Water Resources Planning and Management*, 139(1), 122-125. doi:10.1061/(ASCE)WR.1943-5452.0000224.
 14. Francisco Suero, Peter Mayer, **David E. Rosenberg** (2012). "Estimating and Verifying United States Households' Potential to Conserve Water." *ASCE-Journal of Water Resources Planning and Management*, 138(3), 209-306. doi:10.1061/(ASCE)WR.1943-5452.0000182. **Quentin Martin Best Research-Oriented Paper Award, 2013.**
 15. Ahmed Al-Juaidi, **David E. Rosenberg**, Jagath Kaluarachchi (2011). "Water Management with Wastewater Treatment and Reuse, Desalination, and Conveyance to Counteract Future Water Shortages in the Gaza Strip." *International Journal of Water Resources and Environmental Engineering*. 3(12): 266 - 282. doi:10.5897/IJWREE10.030.
 16. **David E. Rosenberg**, Kelly Kopp, Heidi Kratsch, Larry Rupp, Paul Johnson, Roger Kjelgren (2011). "Value Landscape Engineering: identifying costs, water use, labor, and impacts to support landscape choice." *Journal of the American Water Resources Association*. 47(3), pp. 635–649. doi:10.1111/j.1752-1688.2011.00530.x.
 17. **David E. Rosenberg** (2011). "Raising the Dead without a Red Sea-Dead Sea project? Hydro-economics and governance." *Hydrology and Earth System Sciences*. 15, 1243-1255. doi:10.5194/hess-15-1243-2011.
 18. **David E. Rosenberg** (2010). "Residential Water Demand under Alternative Rate Structures: a simulation approach." *ASCE-Journal of Water Resources Planning and Management*. 136(3), pp. 395-402. doi:10.1061/(ASCE)WR.1943-5452.0000046.

19. Julien Harou, Manuel Pulido-Velazquez, **David E. Rosenberg**, Josue Medellin-Azuara, Jay Lund, Richard Howitt (2009). "Hydro-economic Models: Concepts, Design, Applications, and Future Prospects." *Journal of Hydrology*. 375(3-4), pp. 627-643. doi:10.1016/j.jhydrol.2009.06.037.
20. **David E. Rosenberg** (2009). "Integrated Water Resources Management and Modeling at Multiple Spatial Scales in Jordan." *Water Policy*. 11(5), 615-628. doi:10.2166/wp.2009.064.
21. **David E. Rosenberg** (2009) "Shades of Grey: a critical review of grey-number optimization." *Engineering Optimization*. 41(6), pp. 573 - 592. doi:10.1080/03052150902718125.
22. **David E. Rosenberg** and Jay Lund (2009). "Modeling Integrated Water Utility Decisions with Recourse and Uncertainty: Amman, Jordan." *Water Resources Management*, 23(1), pp. 85-115. Doi:10.1007/s11269-008-9266-4.
23. **David E. Rosenberg**, Samer Talozzi, and Jay Lund (2008) "Intermittent Water Supplies: Challenges and Opportunities for Residential Water Users in Jordan." *Water International*. 33(4), pp. 488-504.
24. **David E. Rosenberg**, Richard Howitt, and Jay Lund (2008). "Water Management with Water Conservation, Infrastructure Expansions, and Source Variability in Jordan." *Water Resources Research*, 44, W11402. doi:10.1029/2007WR006519.
25. **David E. Rosenberg**, Tareq Tawarneh, Rania Abdul-Khaleq, Jay Lund (2007). "Modeling Integrated Water-User Decisions in Intermittent Supply Systems." *Water Resources Research*. 43, W07425. doi:10.1029/2006WR005340.
26. **David E. Rosenberg** (2007) "Probabilistic Estimation of Water Conservation Effectiveness." *Journal of Water Resources Planning and Management*. 133(1), pp. 39-49.
27. **David E. Rosenberg** (2006) "The Yarmouk River Agreements: Jordan-Syrian transboundary water management, 1953–2004." *Arab World Geographer*. 9(1), pp. 23-39.
28. **David E. Rosenberg** and Jay Lund (2006) "Derived Operating Rules for Storage and Recovery in Multiple, Unconnected Aquifers." *Journal of Water Resources Planning and Management*: 132(1), pp. 25-34.
29. **David E. Rosenberg** and Travis Marcotte (2005) "Land-use system modeling and analysis of shaded cacao production in Belize." *Agroforestry Systems* 64 (2), pp. 117-129.
30. Stacy K. Tanaka, **David E. Rosenberg**, Paul Haans, Belen Marti Cardona, Julien Harou, and Fauwaz U. Hanbali (2004) "Comments on 'Computer Support for Implementation of a Systemic Approach to Water Conflict Resolution' by V. Rajasekaram, S. Simonovic, and K. Nandalal." *Water International* 29(3), pp. 402-404.

BOOK CHAPTERS (1)

31. Bereket Tesfatsion, **David E. Rosenberg** (2013). "Evaluating Storage Carryover in the Weber River Basin using the Water Evaluation and Planning (WEAP) System". In *Water Resources Systems Analysis through Case Studies: Data and Models for Decision Making*, Watkins, David W, Jr. (ed). American Society of Civil Engineers: Alexandria, VA, Chapter 9.

PATENTS (1)

32. Sarah Allendorf, David Ottenson, **David E. Rosenberg**, and Gary Hubbard (Nov 16, 1999) "Method and Apparatus for Off-Gas Composition Sensing." U.S. Patent No. 5,984,998.

MEDIA COVERAGE AND POPULAR PRESENTATIONS (5)

- "[Between the lines: Tree rings hold clues about a river's past.](#)" EurekAlert! Global Source for Science News, January 9, 2018.
- "[A new tool for wetland management.](#)" EurekAlert! Global Source for Science News, Utah Public Radio, and other venues. September 1, 2017. 11,000 views in first week.
- "[Talking Water.](#)" Utah Public Radio. February 27, 2014.
- "[Near Optimal to Survive and Thrive](#)". TEDxUSU. November 5, 2013.
- "[Plan proposed to help Logan City conserve water.](#)" Utah Statesman. March 4, 2011.

GRADUATED STUDENTS (2 PHD, 3 MS, 1 UNDERGRAD)

1. Ayman Alafifi, PhD, (2018). "Integrated Systems Modeling to Improve Watershed Habitat Management and Decision Making." Now senior water resources engineer with Brown and Caldwell, Seattle, WA.
2. Omar Alminagorta, PhD, February 2015, "[Systems Optimization Models to Improve Water Management and Environmental Decision Making.](#)" Subsequently analyst with Utah Department of Environmental Quality and lecturer in USU Dept. of Civil and Env. Engineering.
3. Adel Abdallah, MS, May 2012, "[Heterogeneous Water and Energy End-Uses and Implications for Residential Water and Energy Conservation and Management](#)". Now PhD student, Utah State University, Hydroinformatics.
4. Melina Santos Vanderliner, BS, May 2012, "Remotely sensing vegetation response and secondary succession to improve wetland management." Now environmental, social, health and safety manager of the biggest government-owned thermoelectric power plant, Dominican Republic and Pontificia Universidad Católica Madre y Maestra, Dominican Republic.
5. Bereket Tesfatsion, MS, December 2011, "[Managing Water Shortages in the Weber Basin Using the Water Evaluation and Planning \(WEAP\) System](#)". Now at Franson Civil Engineers.

6. Francisco Suero, MS, September 2010, "[Estimating and Verifying Household Potential to Conserve Water](#)." Now at Instituto Nacional de Recursos Hidráulicos of the Dominican Republic (INDRHI) and Instituto Tecnológico de Santo Domingo (INTEC)

SELECT INVITED + CONFERENCE PRESENTATIONS

Adel Abdallah, David E. Rosenberg (2017), "A New Method to Organize, Identify, and Compare Water Management Data for Systems Models." Environmental Water Resources Institute Conference, May 21-25, 2017: Sacramento, CA.

Jim Stagge, **David E. Rosenberg**, R. Justin DeRose, Tammy Rittenour (2016). "Monthly Paleostreamflow Reconstruction from Tree-Ring Chronologies for Water Systems Analysis." GC13E-1231. American Geophysical Union Fall Meeting, December 12, 2016: San Francisco, CA.

Ayman Alafifi, **David E. Rosenberg** (2016). "Systems Modeling to Measure Performance and Evaluate Management Alternatives to Improve River and Riparian Habitat Quality". American Water Resources Association Annual Conference, November 13-17, 2016: Orlando, FL.

David E. Rosenberg, Adel Abdallah (2016), "Synergistic Water and Energy Demand Modeling and Management." Smart Systems for Water Management, August 23, 2016: Monte Verita, Switzerland.

David E. Rosenberg (2015) "Blended near-optimal tools for flexible water resources decision making." European Geophysical Union General Assembly. April 13, 2015: Vienna, Austria.

Adel Abdallah, **David E. Rosenberg** (2015). "WaM-DaM: A Data Model to Organize and Synthesize Water Management Data." Utah Water Data Users Group 2nd Meeting, Salt Lake City, Utah: Jan. 27, 2015.

David E. Rosenberg (2015). "[Participatory Modeling to Improve Ecosystems](#)." Zayander Rud River Sustainability, Expert Meeting, Isfahan Iran: January 9-10, 2015.

Adel Abdallah, **David E. Rosenberg** (2014). "[WaM-DaM: A Data Model to Organize and Synthesize Water Management Data](#)." International Environmental Modelling and Software Society (iEMSs) 7th Intl. Congress on Env. Modelling and Software, San Diego, CA, USA, Daniel P. Ames, Nigel W.T. Quinn and Andrea E. Rizzoli (Eds.).

Ayman Alafifi, **David E. Rosenberg** (2014). "[Rethinking Riverine Habitat Quality: Integrated Systems Modeling to Improve Watershed Habitat Management and Decision Making](#)." International Environmental Modelling and Software Society (iEMSs) 7th Intl. Congress on Env. Modelling and Software, San Diego, CA, USA, Daniel P. Ames, Nigel W.T. Quinn and Andrea E. Rizzoli (Eds.).

Adel Abdallah, **David E. Rosenberg** (2014). "[Identifying Collaborative Water Energy Conservation Programs](#)." World Environmental & Water Resources Congress, Portland, OR: June 1-5, 2014.

Amberlee Burrows, Leah Langdon, Ayman Alafifi, and **David E. Rosenberg** (2014). "Mapping Inflows, Diversions, and Vegetation along the Lower Bear River Basin." USU Spring Runoff Conference, Logan, UT: April 1-2, 2014.

Taylor Dudunake, Isaac Robertson, Ayman Alafifi, and **David E. Rosenberg** (2014), "Stage-Flow Relationship and Seasonal Fluctuations in Flow of the Lower Bear River." USU Spring Runoff Conference, Logan, UT: April 1-2, 2014.

Megan Gordon, Jordan Floyd, Ayman Alafifi, and **David E. Rosenberg** (2014), "Mapping the Lower Bear River Cross Section." USU Spring Runoff Conference, Logan, UT: April 1-2, 2014.

Adel Abdallah, **David E. Rosenberg** (2013). "A Relational Data Model for Water Management Data." CUASHI Conference on Hydroinformatics and Modeling, Logan, UT: July 17-19, 2013.

Steven Burian, Jeff Horsburgh, **David E. Rosenberg**, Dan Ames (2013). "Using Interactive Video Conferencing for Multi-Institution, Team-Teaching." 120th American Society of Engineering Education Annual Conference and Exposition, Atlanta, GA: June 23-26, 2013.

Adel Abdallah, **David E. Rosenberg** (2013). "Identifying Collaborative City-Wide Residential Water and Energy Conservation Programs." Environmental Water Resources Institute of the American Society of Civil Engineers, Cincinnati, OH: May 19 - 23, 2013.

Omar Alminagorta, **David E. Rosenberg**, Karin M. Kettenring (2012). "System Modeling to Improve the Hydro-Ecological Performance of Diked Wetlands". American Geophysical Union Annual Fall Conference, San Francisco, CA, Dec 3-7, 2012. H31I-1234.

David E. Rosenberg, Mark F. Roark, Brian Shirley (2012). "River-Based Experiential Learning: The Bear River Fellows Program," American Geophysical Union Annual Fall Conference, American Geophysical Union, San Francisco, CA: Dec 3-7, 2012, ED43C-0740.

David E. Rosenberg (2012) "Near-optimal water management to improve multi-objective decision making." 2012 International Congress on Environmental Modelling and Software: Managing Resources of a Limited Planet, Sixth Biennial Meeting, July 1-5, 2012: Leipzig, Germany.

Melina Vanderlinder, Christopher Neale, **David E. Rosenberg**, Karin Kettenring, Omar Alminagorta (2011). "Classifying Wetland Vegetation with Remote Sensing Techniques at Bear River Migratory Bird Refuge, Utah". National Conference - Society of Hispanic Professional Engineers: Anaheim, CA, October 26 - 29, 2011.

Omar Alminagorta, Bereket Tesfatsion, **David E. Rosenberg**, Bethany Neilson (2011). "Simple Optimization Method to Determine Best Management Practices to Reduce Phosphorus Loading n Echo Reservoir, Utah." Planning for Tomorrow's Water: Snowpack, Aquifers, and Reservoirs, Universities Council on Water Resources: Boulder, CO, July 11-14, 2011.

Bereket Tesfatsion, **David E. Rosenberg** (2011). "Managing water shortages in the Weber Basin using WEAP". Utah Section of the American Water Resources Association 39th Annual Water Resources Conference –Water Conservation: the Keystone of Sustainable Water Management, Salt Lake City, Utah, May 10, 2011.

Adel Abdallah, **David E. Rosenberg** (2011). "Water system Water and Energy Linkages and Implications for Household and City-Scale Systems Modeling." Spring Runoff Conference: Utah State University, Logan, Utah, March 29-30, 2011.

Melina Vanderlinder, Christopher Neale, **David E. Rosenberg**, Karin Kettenring, Omar Alminagorta (2011). "Classifying Wetland Vegetation Coverage with Remote Sensing Techniques at the Bear River Migratory Bird Refuge, Utah." Spring Runoff Conference: Utah State University, Logan, Utah, March 29-30, 2011.

David E. Rosenberg, Joanna Endter-Wada, Arthur Caplan, Diana Glenn, Guy Ballard, Katie Henderson (2011). "Building an interdisciplinary research program in water conservation: preliminary findings, approach, and next steps." The Sixth IWA Specialist Conference on Efficient Use and Management of Water-Water Demand Management: Challenges & Opportunities, Dead Sea, Jordan, March 29-April 2, 2011

David E. Rosenberg (2010). "Raising the Dead without a Red Sea-Dead Sea Canal? A hydro-economic-institutional analysis." American Geophysical Union Annual Fall Conference: San Francisco, CA, Dec 13-17. 2010.

David E. Rosenberg (2010). "Integrated Water Resources Modeling and Management at Multiple Spatial Scales." HydroFutures: Water Science, Technology, and Communities, UCOWR/NIWR Annual Conference: Seattle, WA, July 13-15, 2010.

Julien Harou, **David E. Rosenberg**, Amoury Tilmant, and Didrik Pinte (2010) "Promoting Water Resource Systems Analysis Models with Generic Software Platforms" World Environmental and Water Resources Congress 2010: Providence, RI, May 16-20, 2010.

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KEYWORDS

Integrated planning; modeling; water resources; water conservation; demand management; systems analysis; optimization; simulation; uncertainty; hydro-economic engineering.