

# CURRICULUM VITAE

6/01/2016

## 1. Personal Information

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## 2. Education

Ph.D. Environmental and Water Resources Engineering, University of Texas, Austin, TX, May 2008.

M.S. Environmental and Water Resources Engineering, University of Texas, Austin, TX, December 2004.

B.E. Civil Engineering, Korea University, Seoul, Korea, February 2000.

## 3. Registration

Professional Engineer, State of Texas, No.102144

## 4. Professional Experience

### 4.1 Current Position

**Associate Professor, Blackland Research Center (BRC), Texas A&M AgriLife Research, jointly affiliated with the Department of Biological and Agricultural Engineering, Texas A&M University, 2016 to present.**

**Position Description:** Responsible for developing and leading a nationally and internationally recognized research program at BRC that combines hydrology, physical/chemical and biological processes within biophysical simulation modeling frameworks including EPIC, APEX, and SWAT to effectively manage agricultural and urban stormwater practices at various spatial and temporal scales and to assess hydro-environmental effects of climate change. Develop and validate new modules for simulation models to address water management, anthropogenic effects and long-term soil and water health. D develop decision support tools to address issues such as climate change, urbanization, and droughts and floods. Conduct workshops and other outreach activities to make decision support tools, simulation models, and information systems accessible to a wide range of stakeholders. Elements of this research program include:

- Develop improvements for EPIC/APEX simulation models to incorporate more robust hydrologic and constituent transport algorithms, and the ability

to evaluate effects of conservation practices on cropland and rangeland at various spatial scales.

- Design and develop SWAT simulation algorithms for urban watershed managers, policy makers, and other concerned stakeholders to assess risk and adaptively manage urban stormwater in the face of drought, floods, and changing climate.
- Develop methods for integrating real-time field data monitoring sensors, remote sensing and simulation modeling for assessing forage conditions at landscape and regional scales, fire risk and fire movement, and reducing costs for stocking rate assessments.
- Assess impacts of climate change, land use, and vegetation change on water resources and develop strategies for mitigation and adaptation.

In addition, I am devoted to teaching (graduate students, training, guest lectures, and periodic classroom teaching) and to providing service activities (departmental committees, national organizations, invited presentations, review panels, collaboration with cooperative extension, presentations to stakeholder, etc.).

## 4.2 Past Positions and Experience

**Assistant Professor, Blackland Research Center (BRC), Texas A&M AgriLife Research, jointly affiliated with the Department of Biological and Agricultural Engineering, Texas A&M University, April 2012 to August 2016.**

**Assistant Research Scientist, Blackland Research Center, Texas A&M AgriLife Research, Temple, TX. March 2010 to March 2012.** PI on the USDA funded Application of the SWAT Model to Determine the Environmental Sustainability of Feedstock Production of Biofuels in Hawaii project. Primary responsibilities were to develop a web-based decision support tool for irrigation management and to assess the feasibility and sustainability of bioenergy feedstock production on the island of Maui, Hawaii. Also served as a Co-PI on the Development of SWAT Algorithms for Urban Stormwater BMPs funded by City of Austin, Texas.

**Postdoctoral Research Associate, Blackland Research Center, Texas A&M AgriLife Research, Temple, TX. March 2008 to February 2010.** Primary responsibilities were to develop SWAT algorithms for simulating subdaily rainfall-runoff processes, urban stormwater BMPs, and on-site septic systems.

## 4.3 Professional Improvement Activities

Invited to participate in Texas A&M AgriLife Research's Emerging Leaders Conference, September 2011. Participated in workshop to improve management and leadership skills for employee supervision and project management.

## 5. Research and Scholarly Work

### 5.1 Program Statement

**Area of Interest:** Integration of hydrologic processes with water, soil and crop interactions by developing simulation models to provide accurate and meaningful information for assessing risk, adapting management strategies, and assessing impacts of management on croplands, rangelands, and urban catchments.

**Objectives:** Develop a body of basic and applied research to better understand biophysical processes of cropping systems and urban catchments and to provide a framework for decision support system development. Evaluate the effectiveness of these models and information systems through scientific study and verification.

**Major Accomplishments:**

- After a four-year research project on the development of Irrigation Decision Support System (IDSS) using the SWAT hydrological model, ASP.NET, and Microsoft SQL Server Database, to provide a framework for irrigation decision support system for Hawaiian Sugar & Commercial Company, the web-based real-time IDSS is deemed to be of sufficient accuracy in predicting irrigation demands and reliability that the funding agency, USDA/US-Navy, plans to expand the system to the entire Hawaii islands.
- Research on urban catchment modeling and stormwater managements resulted in the urban SWAT model selected by the City of Austin watershed managers as a designing tool for Austin's urban watershed management.
- Member of a team of scientists who conduct the National Conservation and Effects Assessment Project (CEAP) for USDA Natural Resources Conservation Service. The CEAP modeling team in Temple, TX conducts national assessments to evaluate environmental benefit of the USDA's Conservation Program on the US croplands, rangelands, wetlands, and wildlife. After the 12-year of Phase-I assessments, the project continues in Phase-II for 10 years, starting 2015.
- Member of a team of scientists who develop and support internationally recognized simulation models including Soil and Water Assessment Tool (SWAT), Agricultural Policy/Environmental eXtender (APEX), and Environmental Policy Integrated Climate (EPIC) model. Over 20 years, these models have yielded more than 1,600 journal articles and taught in graduate and undergraduate classes in the US and other countries.

### 5.2 Role in obtaining external and internal funding to support research

Active engagement in obtaining external funding from sources such as the US Agency for International Development, and the US Department of Agriculture. Currently collaborating with teams of interdisciplinary scientists on proposals on water for agriculture and soil salinity modeling.

### 5.3 Refereed Journal Articles<sup>1</sup>

1. Francesconi W, Candiss W, Douglas RS, Jimmy W, **Jaehak J** (2016) “Phosphorus Modeling in Tile Drained Agricultural Systems Using APEX.” *J Fertil Pestic* 7: 166. doi:10.4172/2471-2728.1000166
2. Y. Park, Y. Pachepsky, D. Shelton; **J. Jeong**, G. Whelan (2016) “Survival of Manure-Bourne Escherichia Coli and Fecal Coliforms in Soil: Temperature Dependence as Affected by Site-Specific Factors”, *J. Environ. Qual.* 45:949–957
3. Y. Her, C. Seong, **J. Jeong** (2016) “Alternative CN averaging methods for determining representative CN of a watershed” *Journal of Irrigation and Drainage Engineering*, 142(6): 06016004
4. S.R. Ahn, **J. Jeong**, S.J. Kim (2016) “Assessing drought threats to agricultural water supplies under climate change by combining the SWAT and MODSIM models for the Geum River basin, South Korea” *Hydrological Sciences Journal*, DOI: 10.1080/02626667.2015.1112905
5. H. Yen<sup>\*</sup>, **J. Jeong**, D.R. Smith (2016) “Evaluation of the Dynamically Dimensioned Search Algorithm for Optimizing SWAT by Altering Sampling Distributions and Searching Range” *Journal of the American Water Resources Association*, 52(2):443-455
6. X. Wang, J. Williams, J. Nichols, **J. Jeong**, L. Norfleet (2015) “Development of a Tool to Predict New Soil Moisture and Soil Temperature Regimes” *Soil Horizon*, 56(3): Published online May, 1, 2015, DOI:10.2136/sh14-09-0012
7. H. Yen<sup>\*</sup>, Y. Hoque, R.D. Harmel, **J. Jeong** (2015) “The Impact of Considering Uncertainty in Measured Calibration/validation Data during Auto-calibration of Hydrologic and Water Quality Models”, *Stochastic Environmental Research and Risk Assessment*, 29:1891–1901, DOI: 10.1007/s00477-015-1047-z
8. C. Furl, H. Sharif, **J. Jeong** (2015) “Analysis and Simulation of Large Erosion Events at Central Texas Unit Source Watersheds” *Journal of Hydrology*, 527: 494-504
9. H. Yen<sup>\*</sup>, **J. Jeong**, Q. Feng, D. Deb (2015) “Assessment of Input Uncertainty in SWAT Using Latent Variables”, *Water Resources Management Journal*, 29(4): 1137-1153
10. P. Daggupati, N. Pai, S. Ale, K.R. Doulgas-Mankin, R. Zeckoski, **J. Jeong**, P. Parajuli, D. Saraswat, M. Youssef (2015) “A recommended Calibration and Validation Strategy for Hydrologic and Water Quality Models” *Transactions of the ASABE*, 58(6): 1705-1719
11. H. Yen<sup>\*</sup>, **J. Jeong**, S. Lu, M. Kim, Y. Su (2015) “Assessment of Model Configuration Effect by Alternative Evapotranspiration, Runoff, and Water

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<sup>1\*</sup> indicates post-doc, <sup>†</sup>graduate student for whom I was a committee member, <sup>‡</sup>visiting scientist

- Routing Functions on Watershed Modeling Using SWAT” Transactions of the ASABE, 58(2): 393-404
12. **J. Jeong**, J. R. Williams, X. Wang, and C. G. Rossi (2015) “Development of the Spatial Rainfall Generator (SRGEN) for the Agricultural Policy/Environmental Extender Model”, Journal of the American Water Resources Association, 51(1): 154-167
  13. R.A.J. Taylor, **J. Jeong**, M. White, J.G. Arnold (2015) “Code modernization and modularization of APEX and SWAT watershed simulation models”, International Journal of Agricultural and Biological Engineering, 8(3):81-94. DOI: 10.3965/j.ijabe.201503.1081
  14. J. G. Arnold, M. A. Youssef, H. Yen, M. J. White, A.Y. Sheshukov, A.M. Sadeghi, D. N. Moriasi, J. L. Steiner, D.M. Amatya, R.W. Skaggs, E. B. Haney, **J. Jeong**, M. Arabi, P. H. Gowda (2015) “Hydrological processes and model representation: Impact of soft data on calibration”, Transactions of the ASABE, 58(6): 1637-1660
  15. H. Yen\*, M.J. White, **J. Jeong**, M. Arabi, J.G. Arnold (2015) “Evaluation of Alternative Surface Runoff Accounting Procedures Using the SWAT Model”, International Journal of Agricultural and Biological Engineering, 8(3): 54-68. DOI: 10.3965/j.ijabe.20150803.833
  16. X. Wang, H. Yen, **J. Jeong**, J.R. Williams (2014) “Accounting for Conceptual Soil Erosion and Sediment Yield Modeling Uncertainty in APEX Model using Bayesian Model Averaging”, ASCE Journal of Hydrologic Engineering, 20(6):C4014010
  17. H. Yen\*, **J. Jeong**, W. Tseng, M. Kim, R.M. Records, M. Arabi (2014) “Computational Procedure for Evaluating Sampling Techniques on Watershed Model Calibration”, ASCE Journal of Hydrologic Engineering, 20(7):04014080
  18. **J. Jeong**, J. Williams, W. Merkel, J. Arnold, X. Wang, C. G. Rossi (2014) “Improvement of the Variable Storage Coefficient with Water Surface Gradient as a Variable”, Trans. ASABE, 57(3): 791-801
  19. M. Seo<sup>†</sup>, H. Yen, **J. Jeong** (2014) “Transferability of Input Parameters between SWAT2009 and SWAT2012”, J. Environ. Qual., 43(3):869-880
  20. J. Osorio\*, **J. Jeong**, J. G. Arnold. (2014) “Influence of evapotranspiration estimates on the water balance of sugarcane cropping system in the Hawaiian island of Maui”, J. Water Resour. Protect., 6:852-868
  21. **J. Jeong** and R. J. Charbeneau (2014) “An analytical model for predicting LNAPL distribution and recovery from multi-layered soils.” J. Contam. Hydrol. 156:52-61, <http://dx.doi.org/10.1016/j.jconhyd.2013.09.008>
  22. C.W. Oliver, D.E. Radcliffe, L.M. Risse, M. Habteselassie, R. Mukundan, **J. Jeong**, and N. Hoghooghi (2014) “Quantifying the Contribution of On-Site Wastewater Treatment Systems to Stream Discharge Using the SWAT Model”, J. Environ. Qual. 43:539-548

23. **J. Jeong**, N. Kannan, J. G. Arnold (2014) “Effects of Urbanization and Climate Change on Stream Health in North-Central Texas” *J. Environ. Qual.*, 43:100-109, doi: 10.2134/jeq2011.0345
24. N. Kannan, **J. Jeong**, J.G. Arnold, L. Gosselink, R. Glick, and R. Srinivasan, (2014). "Hydrologic Modeling of Retention Irrigation System." *J. Hydrol. Eng.*, 19(5), 1036–1041.
25. **J. Jeong**, N. Kannan, J. Arnold, R. Glick, L. Gosselink, R. Srinivasan, and M. E. Barrett (2013) “Modeling Sedimentation-Filtration Basins for Urban Watersheds in SWAT.” *ASCE J. Environ. Eng.* 139(6): 838-848
26. Somura<sup>‡</sup>, H., Takeda, I., Arnold, J. G., Mori, Y., **Jeong, J.**, Kannan, N., and Hoffman, D. (2012) "Impact of suspended sediment and nutrient loading from land uses against water quality in the Hii River basin, Japan." *J. Hydrol.* 450–451(0), 25-35.
27. X. Wang, J.R. Williams, P.W. Gassman, C. Baffaut, R.C. Izaurralde, **J. Jeong**, J. R. Kiniry (2012) “EPIC and APEX: Model Use, Calibration, and Validation” *Trans. ASABE* 55(4): 1447-1462
28. **J. Jeong**, C. Santhi, J.G. Arnold, R. Srinivasan, K. Flynn (2011) “Development of Algorithms for Modeling Onsite Wastewater Systems within SWAT” *Trans. ASABE* 54(5): 1693-1704
29. **J. Jeong**, N. Kannan, J. Arnold, R. Glick, L. Gosselink, R. Srinivasan, and D. Harmel (2011) “Development of Subdaily Erosion and Sediment Transport Models in SWAT” *Trans. ASABE* 54(5): 1685-1691
30. N. Kannan, **J. Jeong**, R. Srinivasan (2011) “Hydrologic Modeling of a Canal-Irrigated Agricultural Watershed with Irrigation Best Management Practices: Case Study” *ASCE Journal of Hydrologic Engineering*, 16(9): 746-757
31. N. W. Kim, Y. S. Won, J. Lee, J. E. Lee, **J. Jeong** (2011) “Hydrological Impacts of Urban Imperviousness in White Rock Creek Watershed” *Trans. ASABE* 54(5): 1759-1771
32. **J. Jeong**, N. Kannan, J. Arnold, R. Glick, L. Gosselink, R. Srinivasan (2010). “Development and integration of sub-hourly rainfall-runoff modeling capability in a watershed model” *Water Resources Management*, 24(15): 4505-4527
33. **J. Jeong**, R. J. Charbeneau (2010). “Diffusion wave model for simulating stormwater runoff on highway pavement surfaces at superelevation transition”, *Journal of Hydraulic Engineering*, 136(10) 770-778
34. R. J. Charbeneau, **J. Jeong**, and M. E. Barrett (2009). “Physical Modeling of Sheet Flow on Rough Impervious Surfaces” *ASCE Journal of Hydraulic Engineering*, 135(6): 487-494
35. W. F. Hunt, N. Kannan, **J. Jeong**, and P. W. Gassman (2009). “Stormwater Best Management Practices: Review of Current Practices and Potential Incorporation in SWAT”, *International Agricultural Engineering Journal*, 18(1-2): 73-89.

#### 5.4 Refereed Journal Articles in Review<sup>2</sup>

1. N. Clark, J-C Bizimana, Y. Dile, A. Worqlul, J. Osorio, B. Herbst, J.W. Richardson, R. Srinivasan, T.J. Gerik, J. Williams, C.A. Jones, J. Jeong\* Evaluation of New Farming Technologies in Ethiopia using the Integrated Decision Support System (IDSS), Agricultural Water Management
2. A. W. Worqlul, E. K. Ayana, H. Yen, J. Jeong, C. McAlister, R. Taylor and T. S. Steenhuis “Predicting Discharge Disparities of nearby Watersheds using Physical Catchment Characteristics by SWAT in the Lake Tana Basin, Ethiopia”
3. M. Seo, F. Jaber\*, R. Srinivasan, J. Jeong “Modeling the Impact of Land Use Change using Different Urban Developments on Water Quantity and Quality using SWAT”
4. F. Aziza, E. Obuobie, B. Syllac, J. Jeong, P. Daggupati “Trends and Projections of Climatic Extremes in the Black Volta Basin, West Africa” Hydrological Sciences Journal
5. Y. Her, I. Chaubey, J. Frankenberger, J. Jeong “Implications of spatiotemporally varied effects of conservation practices on water management strategies” Agricultural Water Management
6. Y. Jung, K.J. Lim, B.A. Engel, J. Jeong “Assessment of river streamflow characteristics at the national level using the web-based BFlow system” Environmental Modelling & Software, Submitted on March 12, 2015
7. Strehmel<sup>‡</sup>, K. Bieger, J. Jeong, H. Somura, B. Schmalz, N. Fohrer “Analysis of flow components in the SWAT model for the development of an improved correction algorithm for the runoff curve number on steep slopes” Hydrological Processes, Submitted March 13, 2015

#### 5.5 Book Chapters<sup>2</sup>

1. M. Kim<sup>‡</sup> and J. Jeong. (2015) APEX User Guide for Assessing Agricultural Nonpoint Sources Pollution (written in Korean), ISBN: 978-89-480-3184-3. National Academy of Agricultural Science, Rural Development Administration, Suwon, Republic Korea.
2. M. Kim<sup>‡</sup> and J. Jeong. (2014) APEX Theoretical Documentation for Assessing Agricultural Nonpoint Sources Pollution (written in Korean), ISBN: 978-89-480-2631-3. National Academy of Agricultural Science, Rural Development Administration, Suwon, Republic Korea.
3. J. Jeong, R. Taylor, C. Santhi, C.G. Rossi & J. Osorio. (2013) Field to watershed scale water quality adaptations to address a changing world. pp. 96-105. In: Understanding Freshwater Quality Problems in a Changing World. Edited by Trevor M. Daniell. ISBN: 978-1-907161-39-1. IAHS, CEH Wallingford, Oxfordshire OX10 8BB, UK.

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<sup>2\*</sup> indicates post-doc, <sup>†</sup> graduate student for whom I was a committee member, <sup>‡</sup> visiting scientist

## 5.6 Papers Published in Conference Proceedings

1. J. Williams, W. Merkel, **J. Jeong**, J. Arnold (2011) “Flood Routing for Continuous Simulation Models” 2011 International SWAT Conference, Toledo, Spain (June 15-17, 2011)
2. **J. Jeong**, N. Kannan, J. Arnold, R. Glick, L. Gosselink, and R. Srinivasan (2010) “Development of Subdaily Erosion and Sediment Transport Models in SWAT” 2010 International SWAT Conference, Seoul, Korea (Aug 4-6, 2010)
3. **J. Jeong**, N. Kannan, P. Tuppad, D. Waidler, S. Wang, M. White, S. Chinnasamy, C. Wolfe, R. Srinivasan, A. Jones (2010) “Use of SWAT for Urban Water Management Projects in Texas” 2010 International SWAT Conference, Seoul, Korea (Aug 4-6, 2010)
4. **J. Jeong**, C. Santhi, J.G. Arnold, R. Srinivasan (2010) “Development of Algorithms for Modelling Onsite Wastewater Systems in SWAT”, 2010 International SWAT Conference, Seoul, Korea (Aug 4-6, 2010)
5. **J. Jeong**, R. J. Charbeneau, (2007) “Numerical Simulation of Stormwater runoff from Highway Pavements through Superelevation Transitions”, Proceedings of 32nd IAHR Congress, Venice, Italy
6. R. J. Charbeneau, **J. Jeong**, E. Reeder, W. S. Chan, (2007) “Physical Model of Sheet Flow on Highway Pavement Surfaces”, Proceedings of 32nd IAHR Congress, Venice, Italy

## 5.7 Computer Programs and Software

1. APEX-CUTE. 2014. This tool was developed to help APEX users in calibrating APEX models with an automatic sampling procedure and to assist conducting sensitivity analysis of the model. The tool is available at <http://epicapex.tamu.edu/model-executables/>
2. APEX Check. 2013. This tool is a postprocessor program that helps APEX users analyze model output and check the quality of the simulation result. The tool is available at <http://epicapex.tamu.edu/model-executables/>

## 5.8 Research Agency and Donor Publications

1. **J. Jeong**. 2015 Assessment of water and environmental impacts of sugarcane and bioenergy feedstock production in Hawaii. Final report. Submitted to USDA-ARS
2. **J. Jeong**. 2014. Development of Algorithms for Simulating Irrigation Management and Discharge Water Quality on Rice Paddies in APEX. Submitted to NAAS-RDA, Republic of Korea.
3. **J. Jeong**, N. Kannan, R. Srinivasan. 2011. Development of SWAT Algorithms for Modeling Urban Best Management Practices. BREC Report No. 11-03.



4. N. Kannan and **J. Jeong**. 2011. An Approach for Estimating Stream Health Using Flow Duration Curves and Indices of Hydrologic Alteration. BREC Report No. 11-02.
5. **J. Jeong**, C. Santhi, R. Srinivasan. 2011. Development and Application of Biozone Algorithm in SWAT for Modeling Onsite Wastewater Systems. BREC Report No. 11-01.
6. **J. Jeong**. 2010 Groundwater Resources Management: Current technology of Texas USA, submitted to Korea Institute for Construction Technology.
7. R. J. Charbeneau, **J. Jeong**, and M. E. Barrett. 2008 Highway Drainage at Superelevation Transitions. CTR Research Report: 4875-1, The University of Texas at Austin.

### 5.9 Training Manuals

1. **J. Jeong** (2015) APEX Basics: Theory and File System. Blackland Research and Extension Center, Texas A&M AgriLife Research, Temple, TX.
2. **J. Jeong** (2015) APEX User Guide for Model Calibration. Blackland Research and Extension Center, Texas A&M AgriLife Research, Temple, TX.
3. **J. Jeong**, X. Wang (2015) APEX Sensitivity Analysis and Automatic Calibration using APEX-CUTE. Blackland Research and Extension Center, Texas A&M AgriLife Research, Temple, TX.
4. **J. Jeong** (2012) Chapter 34-35 SWAT Input Data: SEPTWQ and SEP. pp. 501-519. In: Soil and Water Assessment Tool Input/Output File Documentation Version 2012. Edited by J.G. Arnold. TR-439. Texas Water Resources Institute, Texas A&M University System, College Station, TX.
5. **J. Jeong** (2011) Chapter 6.4 Septic Systems. pp. 394-407. In: Soil and Water Assessment Tool Theoretical Documentation Version 2009. Edited by S.L. Neitsch et al. TR-406. Texas Water Resources Institute, Texas A&M University System, College Station, TX.

### 5.10 Invited Presentations

1. **J. Jeong**, M. Kim, R. Tsuchiya, T. Kato (2015). Keynote Speaker. “Assessment of water quality and quantity effects of rice paddies.” International SWAT-Asia Conference IV (SWAT-Asia IV), October 19-23, 2015, Tsukuba, Japan.
2. **J. Jeong**, M. Kim. (2014). Keynote Speaker. “A framework for modeling paddy fields: linking agricultural managements and biophysical responses in APEX”. TUAT-MARCO Joint International Workshop on Rice Paddy Module Development in SWAT– Development of a tool for sustainable rice production in Asia and world. November 18–21, 2014, Tokyo, Japan.
3. **J. Jeong** (2014) “Implementation of Urban Best Management Practices and Onsite Wastewater Treatment Systems (OWTS) in SWAT” Invited speaker, ASA, CSSA, & SSSA International Annual Meeting, Nov. 2-5, 2014, Long Beach, CA.

4. **J. Jeong**, R.A.J. Taylor, X. Wang, C.G. Rossi, T. Gerik, R. Srinivasan, P. Gassman, E. Steglich, J.R. Williams (2014) “Recent and forthcoming developments within the Agricultural Policy/Environmental eXtender (APEX) Model” 2014 ASABE Annual International Meeting, July 13-16, 2014, Montreal, QC Canada.
5. **J. Jeong**, R. Taylor, C. Santhi, C. Rossi, J. Osorio (2013) “Field to watershed-scale water quality adaptations to address a changing world” Proceedings of H04, IAHS-IAPSO-IASPEI Assembly, Gothenburg, Sweden, July 2013 (IAHS Publ. 361: 96-105).

### 5.11 Volunteer Presentations

1. Nicole Goehring, Laurel Saito, Paul Verburg, **Jaehak Jeong**, Laosheng Wu (2016) “Modeling Salt Movement in Agricultural Lands: A Comparison of Existing Models”, 2016 NWRA Annual Conference, February 29-March 3, 2016, Las Vegas, Nevada
2. N. Pai, M. Winchell, **J. Jeong** (2016) “QAPEX: A QGIS interface to the USDA APEX model” 2016 ASABE Annual International Meeting, Jul 17-20, 2016, Orlando, Florida
3. K. N. Le, M. Reyes, **J. Jeong**, L. Hok (2016) “Soil Organic Carbon Modeling Using the EPIC Model for Conservation Agriculture and Conventional Tillage Systems in Kampong Cham, Cambodia” 2016 ASABE Annual International Meeting, Jul 17-20, 2016, Orlando, Florida
4. R. Tsuchiya, T. Kato, **J. Jeong** (2015) “SWAT Model Improvement for Discharge Process in Rice Paddies” PAWEES-INWEPF Joint International Conference, 19-21 August, 2015, Kuala Lumpur, Malaysia
5. J. Park, A. Srinivasulu, R. Teague, **J. Jeong** (2015) “Evaluating the Landscape Scale Impacts of Using Traditional and Multi-Paddock Grazing on Runoff, Sediment and Nutrient Losses” 2015 ASABE Annual International Meeting, July 26-29, 2015, New Orleans, Louisiana
6. **J. Jeong**, M. Kim “Effects of Paddy Irrigation Management on Rice Yields” 2015 International SWAT Conference, June 22-26, Sardinia, Italy
7. **J. Jeong**, M. Kim “Assessment of Environmental Benefits of Paddy Fields in Monsoonal Climate of East Asia” EWRI Congress 2015, May 17-21, 2015, Austin, Texas
8. Y. Her, **J. Jeong** “Assessment of LIDs for managing urban stormwater runoff at the watershed scale” EWRI Congress 2015, May 17-21, 2015, Austin, Texas
9. Y. Park, Y.A. Pachepsky, **J. Jeong** (2014) “Extending Apex to Model Microorganism Fate and Transport” ASA, CSSA, & SSSA International Annual Meeting, Nov. 2-5, 2014, Long Beach, CA
10. Y. Hoque, **J. Jeong**, J. Osorio (2014) “Modeling Water Quality and BMP Performance in the Arroyo Colorado Watershed, Texas” 2014 AWRA Annual Water Resources Conference, November 3-6, 2014, Vienna, Virginia

11. **J. Jeong**, J. R. Williams, W. H. Merkel, J. G. Arnold, X. Wang, C. G. Rossi (2014) “Enhanced Streamflow Routing Methods for Watershed Models” 2014 International SWAT Conference, July 28 - August 1, 2014, Pernambuco, Brazil
12. J. Osorio, **J. Jeong**, K. Bieger, N. Meki, J. Arnold (2014) “Use of SWAT for optimizing irrigation strategy for sugarcane production on the island of Maui, Hawaii” 2014 International SWAT Conference, July 28 - August 1, 2014, Pernambuco, Brazil
13. X. Wang, **J. Jeong**, H. Yen (2014) “Integrating uncertainty in model parameters, input, and model structure in watershed modeling” 2014 International SWAT Conference, July 28 - August 1, 2014, Pernambuco, Brazil
14. Strehmel, B. Schmalz, K. Bieger, **J. Jeong**, N. Fohrer (2014) “Towards an Improvement of the Water Balance on Steep Slopes - Development of a Correction Algorithm of the Runoff Curve Number for Slope Angles up to 100%” 2014 International SWAT Conference, July 28 - August 1, 2014, Pernambuco, Brazil
15. T. DeRuyter, L. Saito, R. Nowak, C. Rossi, **J. Jeong**, K. Toderich (2014) “Modeling Halophytic Plants in APEX for Sustainable Agriculture and Water Resources” 2014 NWRA Annual Conference, February 3 - 6, 2014, Las Vegas, Nevada
16. **J. Jeong**, J. Osorio, N. Kannan (2013) “Assessment of conservation practices for controlling nonpoint sources in a rapidly urbanizing agricultural watershed” 2013 AWRA Annual Water Resources Conference, November 4-7, 2013, Portland, Oregon
17. J. Osorio, **J. Jeong**, J. Arnold, R. Tirado-Corbala, and R. Anderson (2013) “Comparison of soil properties and weather datasets to assess the influence of evapotranspiration estimates on the water balance of sugarcane cropping system in the Hawaiian island of Maui” 2013 AWRA Annual Water Resources Conference, November 4-7, 2013, Portland, Oregon
18. **J. Jeong**, J. Osorio, J.G. Arnold, R. Srinivasan (2013) “Integration of SWAT into a real-time web-based DS tool for sugarcane irrigation management” 2013 International SWAT Conference and Workshop, July 17-19, 2013, Toulouse, France
19. J. Osorio, **J. Jeong**, J.G. Arnold (2013) “Influence of evapotranspiration estimates on the water balance of sugarcane cropping system in the Hawaiian island of Maui” 2013 International SWAT Conference and Workshop, July 17-19, 2013, Toulouse, France
20. R.A.J. Taylor, **J. Jeong**, J. Osorio (2013) “An APEX bibliography since 2004” 2013 International SWAT Conference and Workshop, July 17-19, 2013, Toulouse, France
21. R.A.J. Taylor, J.G. Arnold, **J. Jeong**, M. White (2013) “The future evolution of SWAT and APEX” 2013 International SWAT Conference and Workshop, July 17-19, 2013, Toulouse, France

22. **J. Jeong**, J.G. Arnold (2013) “Use of APEX and SWAT for Assessing Conservation Effects in U.S. Croplands” The 6th Conference of the Asia Pacific Association of Hydrology and Water Resources, Aug. 19-12, 2013, Seoul, Korea
23. J.G. Arnold, R. Bingner, J. Williams, D. Bosch, T. Veith, K. King, C. Baffaut, A. Sadeghi, D. Moriasi, M. Tomer, C. Huang, M. White, **J. Jeong** (2012) “SWAT, AnnAGNPS, and APEX Modeling Advancements” 67th SWCS International Annual Conference, July 22-25, 2012, Fort Worth, Texas
24. **J. Jeong**, J.G. Arnold, C. A. Jones, R. Srinivasan, M. Nakahata (2012) “Development of irrigation decision support tool for sugarcane fields using real-time data and SWAT model” ISSCT Agronomy and Agricultural Engineering Workshop, Sep. 9-14, 2012, Townsville, Australia
25. G. Martinez, Y. Pachepsky, G. Whelan, D. Shelton, M. Marirosa, Z. Richard, **J. Jeong**, J. Williams (2012) “Survival and release of animal waste-borne E. coli in field conditions” ASA, CSSA, and SSSA International Annual Meetings, Oct. 21-24, 2012, Cincinnati, Ohio
26. **J. Jeong**, J.G. Arnold, C. A. Jones, R. Srinivasan, M. Nakahata (2012) “A SWAT-based decision support tool for Hawaii Sugarcane Plantation” 2012 ASABE Annual International Meeting, July 29 - August 1, 2012, Dallas, Texas
27. **J. Jeong**, J.G. Arnold, C. A. Jones, R. Srinivasan, M. Nakahata (2012) “Application of the SWAT model to support feedstock production of biofuels in Hawaii” 21st Century Watershed Technology Conference and Workshop, May 27-June 1, 2012, Bari, Italy
28. **J. Jeong**, N. Kannan, J. Arnold, R. Glick, L. Gosselink, and R. Srinivasan (2011) “Development of Algorithms for Sedimentation-Filtration Basins in SWAT” 2011 International SWAT Conference, Toledo, Spain (June 15-17, 2011)
29. J. Williams, W. Merkel, **J. Jeong**, J. Arnold (2011) “Flood Routing for Continuous Simulation Models” 2011 International SWAT Conference, Toledo, Spain (June 15-17, 2011)
30. **J. Jeong**, N. Kannan, J. Arnold, R. Glick, L. Gosselink, and R. Srinivasan (2010) “Development of Subdaily Erosion and Sediment Transport Models in SWAT” 2010 International SWAT Conference, Seoul, Korea (Aug 4-6, 2010)
31. **J. Jeong**, N. Kannan, P. Tuppad, D. Waidler, S. Wang, M. White, S. Chinnasamy, C. Wolfe, R. Srinivasan, A. Jones (2010) “Use of SWAT for Urban Water Management Projects in Texas” 2010 International SWAT Conference, Seoul, Korea (Aug 4-6, 2010)
32. **J. Jeong**, C. Santhi, J.G. Arnold, R. Srinivasan (2010) “Development of Algorithms for Modelling Onsite Wastewater Systems in SWAT”, 2010 International SWAT Conference, Seoul, Korea (Aug 4-6, 2010)

33. **J. Jeong**, N. Kannan, J. G. Arnold, R. Glick, L. Gosselink, R. Srinivasan (2009) “Development of Urban Modeling Tools in SWAT”, 2009 International SWAT Conference, Boulder, CO (Aug 6-7, 2009)
34. N. Kannan, **J. Jeong**, J. Arnold, L. Gosselink, R. Glick (2009) “New development in SWAT model”, SWAT-SEA, Chiang Mai, Thailand
35. **J. Jeong**, R. J. Charbeneau, (2007) “Numerical Simulation of Stormwater runoff from Highway Pavements through Superelevation Transitions”, Proceedings of 32nd IAHR Congress, Venice, Italy
36. R. J. Charbeneau, **J. Jeong**, E. Reeder, W. S. Chan, (2007) “Physical Model of Sheet Flow on Highway Pavement Surfaces”, Proceedings of 32nd IAHR Congress, Venice, Italy

### 5.12 Popular Articles

Urbanization and Climate Change Affect Stream Health. Soil Science Society of America, News. July 2013. <https://www.soils.org/discover-soils/story/urbanization-and-climate-change-affect-stream-health>

## 6. Teaching

### 6.1 Program Statement

In my current position I have no formal requirement for teaching in my current position. However, I have worked to develop training materials and conducted short-term classroom training on APEX and SWAT simulation models. Furthermore, I have involved in graduate student committees for graduate students at Texas A&M University and North Carolina A&T University.

### 6.2 Graduate Student Committee Involvement

1. Co-Chair, Graduate Committee, Fernando Jarrin from Ecuador, Ph.D program in Biological and Agricultural Engineering (BAEN), Texas A&M University, College Station, TX, Admitted to the BAEN graduate school to start the first semester in Fall 2015. Chair: Clyde Munster (BAEN)
2. Co-Chair, Graduate Committee, Kieu, Ngoc Le, Ph.D. candidate, Energy & Environmental Systems (EES) Department, North Carolina A&T University, Greensboro, NC, Graduation expected in 2016. Chair Manuel Reyes (EES)
3. Member, Graduate Committee, Nicole Goehring, M.S., Department of Natural Resources and Environmental Science, University of Nevada, Reno, Reno, Nevada, Graduation expected in 2016. Chair: Laurel Saito
4. Member, Graduate Committee, Dat Tran, Ph.D. candidate, Energy & Environmental Systems (EES) Department, North Carolina A&T University, Greensboro, NC, Graduation expected in 2016. Chair: Luba Kurkalova (EES)

5. Member, Graduate Committee, Elizabeth Haney, Ph.D. candidate, Department of Ecosystem Science and Management (ESM), Texas A&M University, College Station, TX, Graduation expected in 2015. Chair: Raghavan Srinivasan (ESM)
6. Member, Graduate Committee, Jose Chavez Ortiz, Ph.D candidate. Biological and Agricultural Engineering, Texas A&M University, College Station, TX, Graduated in December 2015. Chair: Juan Enciso (BAEN)
7. Member, Graduate Committee, Teshome Sintayehu, M.S., Department of Ecosystem Science and Management (ESM), Texas A&M University, College Station, TX, Graduation expected in 2017. Chair: Raghavan Srinivasan (ESM)
8. Member, Graduate Committee, Mijun Seo, Ph.D. Biological and Agricultural Engineering, Texas A&M University, College Station, TX, Graduated in December 2014. Chair: Raghavan Srinivasan (ESM)

### **6.3 Seminars and Guest Lectures**

#### **Seminars**

1. An Overview of the APEX Model. The APEC Climate Center, February 29, 2016, Busan, Korea.
2. Environmental Assessment of the National Conservation Programs in U.S. Croplands. Texas A&M University Fall 2014 Interdisciplinary Lecture Series, September 17, 2014, College Station, Texas.
3. Analysis of sheet flow on highway surfaces, Seminar Lecture at Korea University, August 12, 2010, Seoul, Korea.

#### **Guest Lectures**

1. Decision Support for Sustainable Natural Resources and Food Security. March 3, 2016, Daegu University, Daegu, Korea
2. A National Project to Assess the Environmental Impacts of US Conservation Programs. Gwangju Institute of Science and Technology (GIST), August, 2013, Gwangju, Korea.
3. SWAT sensitivity analysis and calibration. Lecture at Texas A&M University, Small Watershed Modeling course, April 22, 2010, College Station, TX.

### **6.4 Training**

1. IDSS-APEX Training, February 1-5, 2016, CSIR Water Research Institute, Accra, Ghana
2. APEX Training Workshop, January 26-28, 2016, Blackland Research and Extension Center, Temple TX
3. SWAT Training Workshop for Advanced Users, October 20-22, 2015, Tsukuba, Japan
4. APEX Training Workshop, June 22-23, 2015, CRS4, Sardinia, Italy

5. APEX Training Workshop, May 11-14, 2015, Beltsville Agricultural Research Center, Beltsville, MD
6. IDSS-APEX Training, February 2-6, 2015, Bahir Dar, Ethiopia.
7. APEX Workshop: Small watersheds modeling using APEX, International Water Management Institute, June 9-13, 2014, Addis Ababa, Ethiopia.
8. ArcSWAT Training, November 2, 2013, Preconference workshop at the 2013 AWRA conference, Portland, Oregon.
9. ArcAPEX Training, June 5-6, 2013, Texas A&M University, College Station, TX.
10. APEX Training Course for Grazing Land Modeling, Temple, TX (2013).
11. SWAT Workshop for Beginners and Advanced Users, Preconference workshop, 21st Watershed Technology Conference and Workshop, May 26-27, 2012, Bari, Italy.
12. Recent development in SWAT for modeling urban processes, Training workshop, Jacobs Engineering, October 28, 2011, Dallas, Texas.

## **6.5 Students training**

1. Kieu Ngoc Le, PhD Candidate at North Carolina A&T University, Modeling best management practices for carbon sequestration using EPIC, January 3, 2016 – July 1, 2016
2. Dat Tran, PhD Candidate at North Carolina A&T University, Tillage dynamics simulation in UMRB using SWAT, January 3, 2016 – July 1, 2016
3. Fati Aziz, PhD Candidate at Université d'Abomey-Calavi, Ghana, Modeling the Impact of Climate and Land Use/Land Cover Change on Stream Flow and Sediment Yield in the Black Volta Basin. May 1st, 2015 - October 31st, 2015
4. Tewodros Assefa, PhD student at North Carolina A&T University, Modeling home gardens in Ethiopia using APEX, November 2-6, 2015
5. Kieu Ngoc Le, PhD Candidate at North Carolina A&T University, Modeling best management practices for carbon sequestration using EPIC, August 17-26, 2015
6. Ryota Tsuchiya, MS student at Tokyo University of Agriculture and Technology, SWAT modeling for rice paddy simulation, 10/20/2014-1/20/2015
7. Will Stence, Student internship, Computer Science at UMHB, APEX-CUTE program development, 6/01-8/31, 2015

## **7. Service**

### **7.1 Departmental**

Search Committee, Water/Wastewater Extension Specialist Position. 2014.

## 7.2 Professional

1. Associate Editor, Journal of the American Water Resources Association (JAWRA), 2014 to present.
2. Associate Editor, Journal of Environmental Quality (JEQ), 2014 to present.
3. Scientific Committee Member, International SWAT Conference, 2010 to present.
4. Organized a technical session S. 1.2 Rice Paddies: Ecosystem Services Provider, or Sources of Nonpoint Pollution, 7th World Water Forum, April 12-17, 2015, Daegu, Korea.
5. Panelist for the CGIAR Research Program 1.1 Dryland Systems. Hosted by International Center for Agricultural Research in the Dry Areas (ICARDA), November 26-28, 2012, University of Reading, Reading, UK.

## 7.3 Professional Societies

1. Member, Wetlands Hydrology Technical Committee, EWRI-ASCE, 2014 to present.
2. American Water Resources Association (AWRA), 2013 to present.
3. American Society of Agricultural and Biological Engineers (ASABE), 2012 to present.

## 8. Grants and Contracts

### 8.1 Awarded

1. Resource assessment framework for dependable feedstock supply to produce advanced biofuels in Hawaii, USDA. #59-308-5-003.  
Total Award: \$193,081  
Duration: September 15, 2015-June 20, 2017  
Role: Principal Investigator  
Amount Allocated to Jeong: \$193,081
2. Technical Assistance on the Conservation Effects Assessment Project (CEAP), USDA-NRCS. # 68-7482-15-513.  
Total Award: \$965,930  
Duration: September 30, 2015- December 31, 2016  
Role: Co-PI  
Amount Allocated to Jeong: \$321,944  
Co-PIs: Thomas Gerik, Jay Angerer
3. Sustainable Bioenergy Research: A water and risk management tool for sustainable production of bioenergy feedstock, USDA-NIFA.  
Total Award: \$937,000  
Duration: September, 2013-August 31, 2017  
Role: Co-PI  
Amount Allocated to Jeong: \$100,000  
Principal Investigator: John Jifon, Texas A&M AgriLife Research @Weslaco



CO-PIs: Luis Ribera, and Juan Enciso, Texas A&M AgriLife Research @Weslaco, Robin Taylor, Texas A&M AgriLife Research @Temple, James Kiniry, USDA-ARS @Temple.

4. Technical Assistance on the Conservation Effects Assessment Project, USDA-NRCS  
Total Award: \$401,181  
Duration: October 1, 2012-August 31, 2014  
Role: Co-PI  
Amount Allocated to Jeong: \$401,181  
Principal Investigator: Thomas Gerik, Texas A&M AgriLife Research, Temple, TX
5. Characterization of agricultural non-point source pollution discharge and development of its integrated management model, National Academy of Agricultural Science (NAAS) of the Rural Development Administration (RDA), Korea.  
Total Award: \$100,000  
Duration: January 1, 2013 - December 31, 2014  
Role: Principal Investigator  
Amount Allocated to Jeong: \$100,000
6. Citywide Water Quality Modeling Project: Urban Modeling Project-Phase 2, City of Austin, TX.  
Total Award: \$100,000  
Duration: September 1, 2013 - August 31, 2015  
Role: Co-PI  
Amount Allocated to Jeong: \$100,000  
Principal Investigator: Raghavan Srinivasan
7. Development of Web-Based Conservation Planning Tools, USDA-ARS  
Total Award: \$97,500  
Duration: November 1, 2012 – April 30, 2015  
Role: Principal Investigator  
Amount Allocated to Jeong: \$97,500
8. Arroyo Colorado Watershed Protection Plan (WPP) Update: SWAT application for simulating Bacteria loads, TCEQ.  
Total Award: \$76,228  
Duration: January 1, 2014 – December 31, 2015  
Role: Co-PI  
Amount Allocated to Jeong: \$76,228  
Principal Investigator: Troy Berthold
9. Arroyo Colorado Watershed Protection Plan (WPP) Update: SWAT application for simulating Dissolved Oxygen in the tidal segment, TCEQ.  
Total Award: \$476,001  
Duration: September 1, 2012 – August 31, 2015  
Role: Co-PI  
Amount Allocated to Jeong: \$46,662  
Principal Investigator: Troy Berthold

10. Application of the SWAT model to determine the environmental sustainability of feedstock production of biofuels in Hawaii, USDA-ARS.  
Total Award: \$706,225  
Duration: January 15, 2011 – January 14, 2016  
Role: Principal Investigator  
Amount Allocated to Jeong: \$410,000

## 8.2 Submitted/In preparation/Rejected

1. Translating short-term global climate projections and uncertainties into localized flood responses. SEED, STRATEGIC ENVIRONMENTAL RESEARCH AND DEVELOPMENT PROGRAM (SERDP), FY2017, Co-PI, \$171,716 (submitted)
2. Spatial and Temporal Biomass Yields, Associated Environmental Impacts and Potential Climate Change Effects on Biomass Sorghum and Energy Cane Production Potential in Texas and Missouri. Sun Grant Program, SGP-SCR Sun Grant, FY2016-17, Co-PI, Total budget: \$150K (Submitted)
3. Population Growth, Land Use Change and Reservoir Sustainability Under Climatic Variability: Decision Support Mechanisms for Sustainable Water Resources. Water Resources Research. National Competitive Grants Program, USGS-NIWR, Total budget: \$520,985 (submitted)
4. Determination of amount of nitrogen needed for optimum yield of inbred corn. Submitted to Monsanto Company, FY2016-2017, Principal Investigator, Budget allocated: \$300K (Under review)
5. Development of Water Quality Sustainability Metric using the APEX model. Field to Market, FY2016, Principal Investigator, Budget allocated: \$79,433 (Rejected)
6. Assessment of the vulnerability of water resources under climate change and urban sprawl in Central Texas, Texas A&M AgriLife Research Water Seed Grant FY'16-17, Principal Investigator, Budget allocated: \$173,134 (Rejected)
7. Using halophytic plants to improve food security in irrigated arid and semi-arid ecosystems, RFP#: USDA-NIFA-AFRI-004875, Co-Project Director, Budget allocated: \$270,967 (Rejected)
8. Modeling the footprint of dairy production systems on surface and ground water systems in the western United States (April 2015), RFP#: USDA-NIFA-AFRI-004468, Sub-contractor, Budget allocated: \$77,976 (Rejected)
9. National Center for Sustainable Water Infrastructure Modeling Research (March 2014), EPA-G2014-STAR-H1, Co-Investigator, Budget proposed: \$4Mil (Rejected)
10. Guidance to Predict and Mitigate Dynamic Hydroplaning on Roadways, NCHRP 15-55 [RFP], 2014, Collaborator, Budget proposed: \$500K (Rejected)
11. WSC-Category 3: Sustainability of Water Resources in Central Texas: Impacts of Attitudes, Population, and Land Management on Reservoir Management Under Climatic Variability (September 2013), NSF 13-535, Co-PI, 2013, Budget proposed: \$1.8Mil (Rejected)
12. Geospatial Approach to Transportation Planning for a Bio-based Economy (March 2013), University Transportation Centers Program FY 2013 Grant

Solicitation, US Department of Transportation, Co-PI, Budget allocation:  
\$227,648 (Rejected)

## **9. Professional Honors and Awards**

1. Given the honorary title of “Honorary Research Advisor” by Korean Rural Development Administration, South Korea, 2013 to present.
2. Outstanding Presentation Award, The 6th Conference of the Asia Pacific Association of Hydrology and Water Resources, Aug. 19-12, 2013, Seoul, Korea.
3. Young Scientist of the Year Award, 2013 International SWAT Conference and Workshop, July 17-19, 2013, Toulouse, France.