

# Curriculum Vitae

## Jaepil Cho

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## EDUCATION

- Ph.D.**            **Biological Systems Engineering**, Virginia Polytechnic Institute and State University (Virginia Tech), Blacksburg, Virginia, April 2007
- Dissertation: *A comprehensive modeling approach for BMP impact assessment considering surface and groundwater interaction*
  - Advisor: Dr. Saied Mostaghimi
- M.S.**            **Agricultural Engineering**, Seoul National University in Korea, August 1998
- Thesis: *Applications of AGNPS model with rural watersheds having complex land use characteristics*
  - Advisor: Dr. Seung-Woo Park
- B.S.**            **Agricultural Engineering**, Seoul National University in Korea, February 1995

## RESEARCH /TEACHING INTERESTS

- Research**
- Non-point source pollution control, monitoring, and modeling
  - Small watershed hydrology
  - Surface and groundwater interaction
  - Water resources management
  - Geographic Information Systems (GIS)
- Teaching**
- Non-point source pollution modeling
  - Geological Information Systems (GIS) in hydrologic modeling
  - Groundwater modeling
  - TMDL development and implementation

## EMPLOYMENT HISTORY

- July 2009 - Present**    **Research Agricultural Engineer**, Northwest Watershed Research Center, USDA-ARS, Boise, Idaho
- Weather and climate applications for rangeland vegetation management in the Great Basin.
  - Weather and climate applications for rangeland restoration planning

- November 2007 – June 2009**      **Agricultural Engineer**, Southeast Watershed Research Laboratory, USDA-ARS, Tifton, Georgia
- Evaluating the long-term water quality responses to conservation practices in nested coastal plain watersheds.
  - Developing and testing methods for incorporating riparian buffer practices into watershed scale models.
- May 2007 – November 2007**      **Temporary Postdoctoral Research Associate**, Biological and Agricultural Engineering, The University of Georgia, Tifton, Georgia
- Evaluating the long-term water quality responses to conservation practices in nested coastal plain watersheds.
- January 2000 - April 2007**      **Graduate Research Assistant**, Biological Systems Engineering Department, Virginia Tech, Blacksburg, Virginia
- Developing a comprehensive NPS modeling tool
    - Developing a distributed parameter, continuous simulation, physically based, and watershed scale NPS model using FORTRAN: Dynamic Agricultural Non-point Source Assessment Tool (DANSAT)
    - Developing the interface using Visual Basic for DANSAT
    - Considering surface and ground water interactions using existing ground water models, MODFLOW and MT3DMS
  - The Polecat Creek Watershed Monitoring Project : organized the measured data and wrote executive summary report
  - TMDL clearing house: gathered and summarized state TMDL information
  - From landscapes to waterscapes- Integrating frame work for urbanizing watersheds: simulated ground water using MODFLOW to consider urbanization impacts
- May 1999 - December 1999**      **Visiting Scholar**, Department of Biosystems Engineering, Auburn University, Auburn, Alabama
- BMP monitoring on pasture
  - GPS survey of the study plot to create contour map
  - Model application on pasture (AGNPS and WEPP)
- August 1997- February 1998**      **Research Associate**, GIS Enterprising Center, Korea Institute of Construction Technology, Ilsan-gu, Koyang, Kyounggi-do, Republic of Korea
- Evaluation of National-GIS (NGIS) and researches on improvement plans.

- February 1996 - August 1998**      **Graduate Research Assistant**, Agricultural Engineering Department, Seoul National University, Suwon, Korea
- Hydrologic and Water Quality Monitoring and Modeling of Irrigation Return Flow from Small Agricultural Watersheds
  - Monitoring Agricultural Non-point Source Pollution Loadings from Land Uses and Treatments - A Case Study at the Banwol Reservoir Watershed
  - Monitoring Agro-ecological Environments and Developing Comprehensive Agricultural Environmental Management Systems
  - Surveying Irrigation Water Uses and Return Flow Rates in the Han River Basin
  - Planning and Evaluating Practice Water Delivery Systems for Conserving and Managing Efficient Agricultural Water Uses
- February 1995 - February 1996**      **Research Assistant**, Agricultural Engineering Department, Seoul National University, Suwon, Korea
- Developed Agricultural Information System

## RESEARCH GRANT PROPOSALS

- Cho, J. 2005. A comprehensive modeling approach for BMP impact assessment considering surface and groundwater interaction. \$125. *Graduate Research and Development Program*, Virginia Tech.

## TEACHING AND ADVISING EXPERIENCE

- Fall, 2006**      ▪ Teaching Assistant for the *Introduction to Biological Systems Engineering* (BSE 2105) , Biological Systems Engineering Department at Virginia Tech
- Fall, 2003 - Spring, 2004**      ▪ Developed and maintained the homepage of the Biological Systems Engineering Department at Virginia Tech
- Spring, 2004**      ▪ On-line course developer for the *TMDL Development and Implementation*  
- Research best ways to implement on-line courses
- Fall, 2003**      ▪ On-line course developer for the *Non-point source pollution* (BSE 4324)  
- Research best ways to implement on-line courses  
- Converted existing course materials to formats for an on-line course
- Fall, 1997**      ▪ Teaching Assistant for the *Agricultural Land Conservation Engineering Lab* ,College of Agriculture and Life Sciences, Seoul National University

## PUBLICATIONS AND PRESENTATIONS

- Refereed Publications**      Im, S.J., K.M. Brannan, S. Mostaghimi, and **J. Cho**. 2004. Simulating Fecal Coliform Bacteria Loading from an Urbanizing Watershed. *Journal of Environmental Science and Health, Part A-Toxic/Hazardous Substances & Environmental Engineering* , V39(3): 663-679.

- Im, S. J., S. W. Park, and **J. Cho**, 2000, Optimal Layout for Irrigation Pipeline Networks using Graph Theory, *Journal of the Korean Society of Rural Planning(KSRP)*, Vol. 6, No. 2, pp.12-19 (in Korean).
- Cho, J.**, S.W. Park, and S.J. Im. 2008. Evaluation of Agricultural Nonpoint Source (AGNPS) model for small watersheds in Korea applying irregular cell delineation, *Agricultural Water Management*, 95(4): 400-408.
- Cho, J.**, V.A. Barone, and S. Mostaghimi. 2009. Simulation of land use impacts on groundwater levels and streamflow in a Virginia watershed, *Agricultural Water Management*, 96(1): 1-11.
- Cho, J.** and S. Mostaghimi. 2009. Dynamic Agricultural Nonpoint Source Assessment Tool (DANSAT): Model Development, *Biosystems Engineering*, 102(4):486-499.
- Cho, J.** and S. Mostaghimi. 2009. Dynamic Agricultural Nonpoint Source Assessment Tool (DANSAT): Model Application, *Biosystems Engineering*, 102(4):500-515.
- Cho, J.** and S. Mostaghimi. 2009. Evaluating cell-based components of DANSAT for predicting surface and subsurface transport of pesticides, *Biosystems Engineering*, 102(4):473-485.
- Cho, J.**, J.A. Chun, and S. Mostaghimi. 2009. Development of a comprehensive modeling system for assessing impact of temporally and spatially changing BMP , *Journal of the Korean Society of Agricultural Engineers*, 51(2):1-13.
- Cho, J.**, S. Hwang, and S. Mostaghimi. 2009. Three-dimensional Sensitivity Analysis of Dynamic Agricultural Nonpoint Source Assessment Tool, *Journal of the Korean Society of Agricultural Engineers*, 51(1):1-13.
- Cho, J.**, S. Mostaghimi, M.S. Kang, and J.A. Chun. 2009. Sensitivity to Grid and Time Resolution of Hydrology Components of DANSAT, *Transactions of ASABE* , 52(4):1121-1128.
- Kang, M.S., **J. Cho**, J.A. Chun, and S.W. Park. 2009. Assessment of Cell Based Pollutant Loadings in an Intensive Agricultural Watershed. *Journal of the Korean Society of Agricultural Engineers*, 51(5):87-94.
- Cho, J.**, S. Mostaghimi, and M.S. Kang. 2010. Development and Application of a Modeling Approach for Surface Water and Groundwater Interaction, *Agricultural Water Management* 97(2010): 123-130.
- Cho, J.**, D. Bosch, R. Lowrance, T. Strickland, and G. Vellidis. Effect of Spatial Distribution of Rainfall on Temporal and Spatial Uncertainty of SWAT Output. *Transactions of ASABE* 52(5):1545-1555.
- Chun, J.A., R.A. Cooke, J.W. Eheart, and **J. Cho**. Numerical Modeling of Nitrate-N Transport in Field-Scale Subsurface Bioreactors, *Biosystems Engineering* (in press)
- Cho, J.**, D. Bosch, R. Lowrance, T. Strickland, G. Vellidis, and Y. Her. Effect of Watershed Subdivision and Filter Width on SWAT Simulation of a Coastal Plain Watershed, *Journal of American Water Resources Association* (accepted, in revision)
- Cho, J.**, G. Vellidis, D. Bosch, R. Lowrance, and T. Strickland. Water quality effects of simulated conservation practice scenarios in the Little River Experimental Watershed, *Journal of Soil and Water Conservation* (accepted, in revision)

***Manuscripts  
in Preparation***

Cho, J., D. Bosch, G.Vellidis, R. Lowrance, and T. Strickland. Calibrating and Validating SWAT for Conservation Practice Assessment at the Watershed Scale, Transactions of ASABE (accepted, in revision)

Cho, J., D. Bosch, G.Vellidis, R. Lowrance, and T. Strickland. Simulated Impacts of Conservation Practices and Riparian Buffers in the Little River Watershed, Transactions of ASABE (accepted, in revision)

Cho, J., D. Bosch, G.Vellidis, R. Lowrance, and T. Strickland. Multi-site Evaluation of Hydrology Component of SWAT in the Coastal Plain of Southwest Georgia, Transactions of ASABE (submitted and withdrawn from J. Hydrology. Being reformatted for Transactions of ASABE)

Choi, M, S. kim, and J. Cho. Operational Capability of Evapotranspiration (ET) Model Using Landsat-TM Image in Korea. (in preparation)

***Conference  
Proceedings &  
Presentations***

**Cho, J.**, G. Vellidis, D. Bosch (Speaker), R. Lowrance, and T. Strickland. 2009. Evaluation of Alternative Scenarios for Conservation Practice Application within the Little River Watershed. 2009 ASABE Annual International Meeting, June 21-24, 2009, Reno, NV ([Lecture](#)).

Vellidis, G., **J. Cho (Speaker)**, D. Bosch, R. Lowrance, and T. Strickland. 2009. Long-term water quality response to conservation practices in nested Coastal Plain watersheds. USDA-CSREES National Water Conference, February 8-12, 2009, St. Louis, MO ([Lecture](#)).

**Cho, J.**, D. Bosch, R. Lowrance, T. Strickland, and G. Vellidis. 2008. Evaluation of long-term impacts of conservation practices within the Little River Watershed using the SWAT model. 50 Years of Soil and Water Research in a Changing Agricultural Environment, September 3-5, 2008, Oxford, MS ([Poster](#)).

**Cho, J.**, D. Bosch, G. Vellidis, R. Lowrance, and T. Strickland. 2008. Multi-site Evaluation of Hydrology Component of SWAT in the Coastal Plain of Southwest Georgia. 2008 ASABE Annual International Meeting, Providence, Rhode Island ([Lecture](#)).

**Cho, J.**, D. Bosch, G. Vellidis, R. Lowrance, and T. Strickland. 2008. Evaluation of hydrologic and water quality impacts of crop management in the Little River watershed using SWAT. 2008 ASABE Annual International Meeting, Providence, Rhode Island ([Poster](#)).

**Cho, J.**, and S. Mostaghimi. 2007. Modeling the hydrologic impacts of crop rotations using different level of rotation information. 2007 ASABE Annual International Meeting, Minneapolis, Minnesota ([Poster](#)).

**Cho, J.**, and S. Mostaghimi. 2006. Application of Dynamic Agricultural Nonpoint Source Assessment Tool (DANSAT) to an Agriculture Watershed in Virginia. 2006 ASABE Annual International Meeting, Portland, Oregon ([Lecture](#)).

**Cho, J.**, and S. Mostaghimi. 2004. A Comprehensive Modeling Approach for BMP Impact Assessment Considering Surface and Groundwater Interaction. ASAE/CSAE 2004 Annual International Meeting, Ottawa, ON Canada ([Poster](#)).

**Cho, J.**, and S. Mostaghimi. 2003. A Model for Evaluating the Impacts of Spatial and Temporal Land Use Changes on Water Quality at Watershed Scale. 2003 ASAE Annual International Meeting, Las-Vegas, Nevada, USA ([Lecture](#)).

**Cho, J.**, S.J. Im, and S.W. Park. 2001. Applications of Irregular Cell-based AGNPS

Model to Small Agricultural Watersheds in Korea. 2001 ASAE Annual International Meeting, ASAE, Sacramento, California, USA ([Lecture](#)).

**Cho, J.**, V.A. Barone, and S. Mostaghimi. 2001. Simulating the Impact of Land Use Activities on Subsurface Flow Regime Using MODFLOW. 2001 ASAE Annual International Meeting, Sacramento, California, USA ([Lecture](#)).

**Cho, J.**, S. W. Park, and M. S. Kang, 1998, Application of AGNPS model with rural watersheds having complex land use characteristics, Proceeding of the KSAE, pp. 353-358. (In Korean)

**Cho, J.**, S. W. Park, and H. W. Lee, 1996, Monitoring Agro-Ecological Ecological Environments, Proceeding of the KSAE, pp. 223-227.

## HONORS/AWARDS

- Outstanding Ph.D. Student Award, BSE Department, Virginia Tech, 2005
- Special Recognition Award, BSE Department, Virginia Tech, 2004
- Honor Societies Membership
  - Alpha Epsilon (Agricultural Engineering)
  - Gamma Sigma Delta (Agricultural Science)

## PROFESSIONAL ACTIVITIES

### *Membership*

- American Society of Agricultural Engineers, Member, 2001 - present
- American Water Resources Association, 2003 – present
- Korean Society of Agricultural Engineers

### *Service*

- Board for preparing the Blacksburg Korean Language School, 2004
- College of Engineering Graduate Student Committee, 2002
- Secretary, Southern Virginia Chapter of Korean-American Scientists and Engineers Association (KASE), 2001
- Secretary, Korean Student Association at Virginia Tech

## COMPUTING AND MODELING SKILL

- Operating Systems : DOS, Windows, Unix, and Linux
- Languages: FORTRAN, Visual Basic, JAVA, and PHP
- Software: GIS (ArcView, ArcGIS, ARC/INFO, and GRASS), MatLab, Minitab, and GMS
- Hydrology/Water Quality/ Groundwater Models: AGNPS, ANSWERS-2000, WEPP, HSPF, SWAT, and MODFLOW

## REFERENCES

Dr. Saied Mostaghimi  
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