

WOONSUP CHOI

EDUCATION

University of Illinois at Urbana-Champaign, Urbana, Illinois, USA
Ph.D. in Geography, 2005

Seoul National University, Seoul, Republic of Korea
M.A. in Geography, 1997
B.A. in Geography, 1995

POSITIONS HELD

Associate Professor, Department of Geography, University of Wisconsin-Milwaukee (08/2014-present)

Assistant Professor, Department of Geography, University of Wisconsin-Milwaukee (08/2008-08/2014)

Post-doctoral Research Fellow, Department of Civil Engineering, University of Manitoba (01/2006-08/2008)

Visiting Assistant Professor, Department of Geography, University of New Orleans (08/2005-12/2005)

Graduate Research Assistant, Land use Evolution and impact Assessment Model Laboratory, University of Illinois at Urbana-Champaign (08/2000-08/2005)

Full-time Lecturer, Department of Environmental Sciences, Korea Military Academy (10/1997-06/2000)

VISITING/FELLOWSHIP APPOINTMENTS

Visiting Professor (International Scholar), Kyung Hee University (03/2015-02/2016)

PUBLICATIONS (* INDICATES MY CORRESPONDING AUTHORSHIP)

SCHOLARLY PUBLICATIONS IN REFEREED JOURNALS INDEXED IN WEB OF KNOWLEDGESM OR SCOPUS[®]

Choi, W., K. Nauth, J. Choi, and S. Becker, "Urbanization and rainfall-runoff relationships in the Milwaukee River basin," accepted for publication in *Professional Geographer*

- Choi, W.*, S.J. Kim, M. Lee, K. Koenig, and P. Rasmussen, “Hydrological impacts of warmer and wetter climate in Troutlake and Sturgeon River basins in central Canada,” *Water Resources Management*, vol. 28, pp. 5319–5333, 2014
- Kult, J., L.M. Fry, A.D. Gronewald, and **W. Choi**, “Regionalization of hydrologic response in the Great Lakes basin: Considerations of temporal scales of analysis,” *Journal of Hydrology*, vol. 519, pp. 2224–2237, 2014
- Kult, J., **W. Choi**, and J. Choi, “Sensitivity of the Snowmelt Runoff Model to snow covered area and temperature inputs,” *Applied Geography*, vol. 55, pp. 30-38, 2014
- Choi, W.*, R. Tareghian, J. Choi, and C.-s. Hwang, “Geographically heterogeneous temporal trends of extreme high precipitation in Wisconsin, USA during 1950-2006,” *International Journal of Climatology*, vol. 34, pp. 2841-2852, 2014
- Kang, S. and **W. Choi***, “Forest cover changes in North Korea since the 1980s,” *Regional Environmental Change*, vol. 14, no. 1, pp. 347-354, 2014
- Choi, W., “Editorial: Climate change, urbanization and hydrological disasters,” *Disaster Advances*, vol. 6, no. 5, pp. 1-2, 2013
- Kang, S., **W. Choi*** and T.M. Schierenbeck, “Spatial characteristics of storm damage in rice paddy and residential areas in Gyeonggi-do (province), Korea,” *Disaster Advances*, vol. 5, no. 4, pp. 524-535, 2012
- Choi, W.*, U. Galasinski, S. Cho and C. Hwang, “A spatiotemporal analysis of groundwater level changes in relation to urban growth and groundwater recharge potential for Waukesha County, Wisconsin,” *Geographical Analysis*, vol. 44, no. 3, pp. 219-234, 2012
- Kult, J., **W. Choi*** and A. Keuser, “Snowmelt runoff modeling: Limitations and potential for mitigating water disputes,” *Journal of Hydrology*, vol. 430-431, pp. 179-181, 2012
- Choi, W.*, A.P.M. Keuser and S. Becker, “Identification of mid-latitude regional and urban temperature variabilities based on regional reanalysis data,” *Theoretical and Applied Climatology*, vol. 107, no. 1, pp. 87-98, 2012
- Choi, W.*, A.P.M. Keuser and S. Becker, “Air temperature variability in Illinois based on weather station records and the North American Regional Reanalysis from 1979 to 2006,” *Physical Geography*, vol. 32, no. 4, pp. 338-355, 2011
- Choi, W.*, P.F. Rasmussen, A.R. Moore and S.J. Kim, “Simulating streamflow response to climate scenarios in central Canada using a simple statistical downscaling method,” *Climate Research*, vol. 40, pp. 89-102, 2009
- Choi, W., S.J. Kim, P.F. Rasmussen, and A.R. Moore, “Use of the North American Regional Reanalysis for hydrological modelling in Manitoba,” *Canadian Water Resources Journal*, vol. 34, no. 1, pp. 17-36, 2009
- Choi, W.* and B.M. Deal, “Assessing hydrological impact of potential land use change through hydrological and land use change modeling for the Kishwaukee River basin (USA),” *Journal of Environmental Management*, vol. 88, no.4, pp. 1119-1130, 2008
- Choi, W. “Catchment-scale hydrological response to climate—land-use combined scenarios: A case study for the Kishwaukee River basin, Illinois,” *Physical Geography*, vol. 29, no. 1, pp. 79-99, 2008
- Choi, W., “Assessing land-use change impact on direct runoff and non-point source pollutant loads in the Richland Creek basin (Illinois, USA) by applying L-THIA model,” *Journal of Spatial Hydrology*, vol. 7, no. 1, pp. 47-65, 2007

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- Wang, Y., **W. Choi*** and B.M. Deal, "Long-term impacts of land use change on non-point source pollutant loads for St. Louis Metropolitan Area, USA," *Environmental Management*, vol. 35, no. 2, pp. 194-205, 2005
- Choi, W., "Climate change, urbanisation, and hydrological impacts," *International Journal of Global Environmental Issues*, vol. 4, no. 4, pp. 267-286, 2004

SCHOLARLY PUBLICATIONS IN REFEREED JOURNALS INDEXED IN KOREA CITATION INDEX

- Thoenen, C., **W. Choi** and J. Choi, "Early summer dissolved oxygen characteristics in restored streams in Seoul," *Journal of the Korean Geographical Society*, vol. 48, no. 3, pp. 336-347, 2013
- Caldwell, M., **W. Choi** and C. Hwang, "The spatial and socioeconomic features of drop-off sites for CAS farms within the Milwaukee metro area," *The Geographical Journal of Korea*, vol. 44, no. 3, pp. 281-288, 2010
- Choi, W., "Subbasin characteristics and hydrological response to anticipated urbanisation," *The Geographical Journal of Korea*, vol. 42, no. 4, pp. 553-562, 2008
- Choi, W.* and Z. Sun, "Calibration of land use change drivers in support of dynamic urban growth modeling," *The Geographical Journal of Korea*, vol. 39, no. 3, pp. 325-335, 2005
- Choi, W., "Korea Center for City and Environment: Ecological City - Analysis and Alternative of Urban Environmental Problems of Korean Cities," *Journal of the Korean Geographical Society*, vol. 34, no. 1, pp. 121-122, 1999 (book review; in Korean)

SCHOLARLY PUBLICATIONS IN OTHER REFEREED JOURNALS

- Choi, W., "Degradation of urban environment and development of ecological city theories," *Journal of Korea Military Academy*, vol. 55, no. 2, pp. 7-23, 1999 (in Korean)
- Choi, W., "Spatial organization of waste collection service in Seoul Metropolitan City," *Journal of Geography*, vol. 29, pp. 131-162, 1997 (in Korean)

CONFERENCE PROCEEDINGS

- Choi, W.*, A. Moore, K. Koenig, and P.F. Rasmussen, "Response of hydrological systems to statistically downscaled GCM output in the northern Manitoba (Canada) boreal forest region," *Proceedings for the IWRA 13th World Water Congress*, Montpellier, France, 13 pages, 1-4 September 2008
- Kim, S.J., M. Lee, **W. Choi**, and P.F. Rasmussen, "Utilizing North American Regional Reanalysis for climate change impact assessment on water resources in central Canada," *Proceedings for the IWRA 13th World Water Congress*, Montpellier, France, 14 pages, 1-4 September 2008
- Rasmussen, P.F., S.J. Kim, and **W. Choi**, "Hydrologic modeling of two Canadian watersheds using the North American Regional Reanalysis data," *Proceedings of the XXV Nordic Hydrological Conference*, Reykjavik, Iceland, 10 pages, August 2008
- Choi, W.*, A. Moore, and P.F. Rasmussen, "Evaluation of temperature and precipitation data from NCEP-NCAR global and regional reanalyses for hydrological modeling in

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- Manitoba,” *Proceedings of the 18th Canadian Hydrotechnical Conference & Symposium*, Winnipeg, Manitoba, 10 pages, 2007
- S.J. Kim, **W. Choi**, and P.F. Rasmussen, “Calibration of the SLURP hydrological model using North American Regional Reanalysis (NARR) data,” *Proceedings of the 18th Canadian Hydrotechnical Conference & Symposium*, Winnipeg, Manitoba, 10 pages, 2007
- Choi, W., “Spatial frequency analysis (SFA) of urban land cover in dynamic spatial modeling of urban development,” *Student Paper Sessions of the University Consortium for Geographic Information Science (UCGIS) 2003 Summer Assembly*, Pacific Grove, California, 11 pages, 2003

BOOKS AND MONOGRAPHS

- Choi, W., *Modeling Hydrological Response to Potential Climate Change and Urbanization in the Kishwaukee River Basin*, doctoral dissertation (Advisor: Dr. Bruce Hannon), University of Illinois at Urbana-Champaign, 210 pages, 2005
- Westervelt, J.D., K. Brock, **W. Choi**, and Y.W. Kim, *Development of Input Maps for the military Land use Evolution and Assessment Model (mLEAM) Land Use Change (LUC) Simulation Model*, Technical Report, U.S. Army Engineer Research and Development Center (ERDC) Construction Engineering Research Laboratory (CERL): Champaign, Illinois, Report Number ERDC/CERL TR-04-24, 101pages, 2004
- Lee, H., U. Han, D. Kim, S. Jeong, **W. Choi**, Y. Kheem, J. Cho, C. Lee and R. Park, *Science of the Natural Environment: Weather and Landforms*, Kyohaksa: Seoul, Korea, ISBN 89-354-0277-X 93530, 361pages, 2001 (in Korean)
- Choi, W., *Spatial Organization of Waste Collection in Seoul*, Master’s thesis (Advisor: Dr. Woo-ik Yu), Seoul National University, 107 pages, 1997 (in Korean)

BOOK CHAPTERS AND OTHER SHORT ARTICLES

- Choi, W. “Streams, gaining and losing,” accepted for inclusion to *The International Encyclopedia of Geography: People, the Earth, Environment, and Technology*, AAG-Wiley
- Kim, T. and **W. Choi**, “Regional Development of Korea,” in Kwon, Y. and J. Lee (Editors-in-Chief), *The Geography of Korea*, National Geographic Information Institute, Suwon, Korea, pp. 357-389, 2010
- Choi, W., “Climatic data, reanalysis,” in Philander, S.G. (ed.), *Encyclopedia of Global Warming and Climate Change*, vol. 1, SAGE Publications, pp. 243-245, 2008

CONFERENCE ABSTRACTS PRESENTED BY OTHERS

- Choi, W., A.P.M. Keuser and S. Becker, “Mapping Temperature Variations over Minnesota and Wisconsin from North American Regional Reanalysis,” 2011 Annual Meeting of the Association of American Geographers: Seattle, Washington, 14 Apr 2011
- Keuser, A.P.M. and **W. Choi**, “Spatio-temporal patterns of urban climate in Wisconsin and Minnesota,” University of Wisconsin-Milwaukee Undergraduate Research Symposium, Milwaukee, Wisconsin, 24 April 2009 (poster)

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Kim, S.J., **W. Choi**, and P.F. Rasmussen, "Calibration of a hydrological model in remote regions in central Canada using North American Regional Reanalysis data," American Water Resources Association Annual Water Resources Conference: Albuquerque, New Mexico, 12-15 November 2007 (poster)

OTHER NON-REFEREED PUBLICATIONS

Deal, B., L.D. Hopkins, V. Pallathucheril, W. Hartel, Z. Sun, Y. Kim, R. Valentin, M. Wempe, N. Kaza, D. Finn, **W. Choi**, and D. Lim, *McHenry County Legacy Planning: A Process-Based Approach to Resource Protection*, LEAM: Champaign, Illinois, 7 pages, 2005

Hannon, B. and **W. Choi**, "Exploring sustainability via dynamic modeling," in KRIHS (ed.), *Space and Theories: e-Interviews with Distinguished Scholars*, pp. 385-395, Hanul Academy: Paju, Korea, ISBN 89-460-3350-9, 2005 (in Korean)

Choi, W., *Hydrological and Water Quality Modeling in the St. Louis Region*, Technical Note for Gateway Blueprint Model Workshop 2005, East-West Gateway Council of Governments: St. Louis, Missouri, 11 pages, 2005

PUBLIC PRESENTATIONS/LECTURES

- "Urbanization and rainfall-runoff relationships in the Milwaukee River basin," Department of Geosciences Colloquium, University of Wisconsin-Milwaukee, 14 November 2013
- "Restoration of small waterways in Seoul, Korea," UWM's Academic Adventure Series, American Geographical Society Library: Milwaukee, Wisconsin, 27 Sep 2013
- "Morphological changes of forest cover in North Korea, 1980-2000," Department of Geography, Kyung Hee University: Seoul, Korea, 20 June 2013
- "Effects of climate change and urban development on water resources," Department of Geography Education, Pusan National University: Busan, Korea, 13 June 2012
- "Urban growth and groundwater recharge: The case of Waukesha County," Department of Geography Colloquium, University of Wisconsin-Milwaukee, 19 November 2010
- "Climate change and spatial response," Korea Research Institute for Human Settlements: Anyang, Gyeonggi, Korea, 1 June 2010
- "How will climate change affect Manitoba's water resources?" Association of Korean-Canadian Scientists and Engineers Manitoba Chapter: Winnipeg, Manitoba, 25 March 2008
- "GIS for water resource research: modeling land use change impacts on hydrology and water quality," Department of Geography, University of South Florida: Tampa, Florida, 19 February 2008
- "Interdisciplinary research on the impacts of urban growth and climate change on water resources," Department of Geography, University of Wisconsin-Milwaukee: Milwaukee, Wisconsin, 24 January 2008
- "Hydrological impacts of climatic and land use changes," Department of Geography, University of Regina: Regina, Saskatchewan, 15 January 2007

RESEARCH GRANT APPLICATIONS

EXTERNAL FUNDS

- “Impacts of climatic and land use changes on streamflow and water quality in the Milwaukee River basin,” US Geological Survey 104(B) Research Grants Program, **awarded** \$78,556 (including 50% internal match) for 2013-2015. Co-PI: C. Wu (UW-Milwaukee).
- AAG-NSF Travel Grant for IGU Conference, **awarded** \$1,250 for the 32nd International Geographical Congress in Köln, Germany, 2012
- “Impact of climate change in Canadian river basins and adaptation strategies for the hydropower industry,” Natural Science and Engineering Research Council of Canada, Collaborative Research and Development Grant, **awarded** \$150,000 CDN for 2007-2010. PI’s: R. Leconte (L’École de technologie supérieure) and P. Rasmussen (University of Manitoba). I wrote a draft of the proposal.
- “Use of North American Regional Reanalysis data for hydrologic modeling and climate downscaling,” Natural Science and Engineering Research Council of Canada, Collaborative Research and Development Grant, **awarded** \$50,000 CDN for 2007-2009. PI: P. Rasmussen (University of Manitoba). I contributed more than 70% to the proposal.

INTERNAL FUNDS

- Faculty Travel Award, University of Wisconsin-Milwaukee Center for International Education, **awarded** \$500 for 2014
- Faculty Travel Award, University of Wisconsin-Milwaukee Center for International Education, **awarded** \$300 for 2012
- Faculty/Academic Staff Travel Awards to Develop/Implement Overseas Field Research Experiences for Undergraduates, University of Wisconsin-Milwaukee Center for International Education, **awarded** \$2,525 for 2012
- Faculty/Academic Staff Travel Awards to Develop/Implement Overseas Field Research Experiences for Undergraduates, University of Wisconsin-Milwaukee Center for International Education, **awarded** \$3,000 for 2011
- “Effect of climatic variability and change on the Milwaukee River streamflow,” University of Wisconsin-Milwaukee Office of Undergraduate Research, 2010-2011 Salary for Undergraduate Research Fellows, **awarded** \$2,816. Student employed: Ulrike Galasinski.
- Faculty Travel Award, University of Wisconsin-Milwaukee Center for International Education, **awarded** \$500 for 2010
- Faculty/Academic Staff Travel Awards to Develop/Implement Overseas Field Research Experiences for Undergraduates, University of Wisconsin-Milwaukee Center for International Education, **awarded** \$2,653 for 2010
- “Spatio-temporal patterns of urban climate in Wisconsin and Minnesota,” University of Wisconsin-Milwaukee, Graduate School Research Committee Award, **awarded** \$10,000 for 2009-2010. Success rate: 16/40

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- “Spatio-temporal patterns of urban climate in Wisconsin and Minnesota,” University of Wisconsin-Milwaukee Office of Undergraduate Research, Summer 2009 Stipends for Undergraduate Research Fellows, **awarded** \$3,000. Student employed: Anke Keuser.
- “Spatio-temporal patterns of urban climate in Wisconsin and Minnesota,” University of Wisconsin-Milwaukee Office of Undergraduate Research, Stipends for Undergraduate Research Fellows, **awarded** \$1,950 for 2008-2009. Student employed: Anke Keuser.

SERVICE

UNIVERSITY

Senator, Faculty Senate, 2012-2013

Member, Information Technology Policy Committee, 2009-2012

Member, Undergraduate Overseas Research Awards review committee, 2011-

DEPARTMENT/COLLEGE

Member, Department of Geography Graduate Program Committee, 2010-

Member, Department of Geography Public Relations Committee, 2010-

Member, Department of Geography Technical Committee, 2008-2010

PROFESSIONAL

President, Korea-America Association for Geospatial and Environmental Sciences, 2014-2015

Member, Membership Committee, Association of American Geographers, 2013-2016

Vice-President, Korea-America Association for Geospatial and Environmental Sciences, 2013-2014

Chair, Awards Committee, Association of American Geographers Water Resources Specialty Group, 2011-2013

Member, Awards Committee, Association of American Geographers Water Resources Specialty Group, 2010-2011; 2013-2014

Public Relations Director, Korean-American Association for Geospatial and Environmental Sciences, 2011-2013

Treasurer, Korean American University Professors Association, 2010-

Discussant, Korea Day Symposium “Korean Maps of the 19th Century: The Korean National Treasure *Daedongyeojido* at the University of Wisconsin-Milwaukee,” American Geographical Society Library, Milwaukee, Wisconsin, 20 November 2009

Editorial board membership

2015-01-23

- *International Journal of Geospatial and Environmental Research*, 2014-
- *The Geographical Journal of Korea*, 2009-

Book reviewer for

2010 R.W. Christopherson and C. Thomsen, 2009, *Applied Physical Geography: Geosystems in the Laboratory*, 7th ed., Pearson/Prentice Hall (paid)

Proposal reviewer for

- 2014 U.S. Geological Survey and National Institutes for Water Resources – National Competitive Grants Program
- 2013 National Science Foundation – Hydrological Science Program
- 2012 Natural Environment Research Council (UK) – Changing Water Cycle Programme
- 2011 National Science Foundation – Hydrological Science Program (2)

Manuscript reviewer for

- 2014 *Geographical Analysis*; *SCIENTIA AGRICULTURAE BOHEMICA*; *International Journal of Geospatial and Environmental Research* (2); *Physical Geography*; *Annals of the Association of American Geographers*; *Journal of the Korean Geographical Society*; *Landscape and Ecological Engineering*; *Journal of Flood Risk Management*
- 2013 *Journal of Mountain Science* (2); *Hydrology and Earth System Sciences*; *Annals of the Association of American Geographers*; *Water Resources Research*; *The Geographical Journal of Korea*; *Water Resources Management*
- 2012 *Journal of Hydrology*; *Hydrological Processes*; *Journal of Environmental Management*; *Geographical Analysis*; *Water Resources Research*
- 2011 *Hydrological Processes* (2); *Landscape and Urban Planning*; *Environmental Management*; *International Journal of Climatology*
- 2010 *The Professional Geographer*; *Journal of Environmental Management*
- 2009 *The Professional Geographer* (2); *Journal of Hydrology*; *Hydrological Sciences Journal* (2)
- 2008 *Journal of Environmental Management*
- 2006 *Journal of Spatial Hydrology* (2); *Landscape and Urban Planning*
- 2003 *Climatic Change*

Secretary, Organizing Committee of the Third International Geography Competition, Seoul, Republic of Korea, 01/1999~06/2000

COMMUNITY

Volunteer, Bastilles Days 2010, Milwaukee, Wisconsin, 8 July 2010

Volunteer, Bastilles Days 2009, Milwaukee, Wisconsin, 9 July 2009