

Abbreviated (5-yr) Curriculum Vitae

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Section 1 Education and Employment History

Section 1.1 Education History

North Carolina State University, Ph.D., Biological and Agricultural Engineering, 2010-2015

Dissertation Topic: Groundwater transit times and the fate of aquifer nitrate: Observations from sampling in stream channels and well nests in an agricultural watershed, North Carolina, USA.

North Carolina State University, B.S., Civil Engineering, Water Resources Emphasis, 2008-2010, Summa Cum Laude

Section 1.2 Employment History:

University of Nebraska, Lincoln, NE

- *Groundwater Hydrologist/Assistant Professor* (October 2015 – present)
 - School of Natural Resources, Conservation and Survey Div. (70%)
 - Biological and Agricultural Engineering Department (30%)

North Carolina State University, Raleigh, NC

- *Graduate Research Assistant*, Marine Earth and Atmospheric Sciences Department (July 2011 – July 2015)
- *Graduate Research Assistant*, Biological and Agricultural Engineering Department (August 2010 – July 2011)
- *Provost's Fellow* (August 2010 – July 2011)
- *Dean's Fellow* (August 2010 – July 2011)
- *Undergraduate Research Assistant*, Biological and Agricultural Engineering Department (June 2009 – August 2010)
- *Undergraduate Research Assistant*, Civil Engineering Department (August 2009 – December 2009)

Section 2 Research Accomplishments

Section 2.1 Publication Record

Section 2.1.1 Peer Reviewed Journal Publications in print (% contribution)

1. **Gilmore, T.E.**, F. Birgand and K. Chapman. 2013. Source and magnitude of error in an inexpensive image-based water level measurement system. *Journal of Hydrology* 496: 178–186. doi:10.1016/j.jhydrol.2013.05.011 (80%)
2. Solomon, D. K., **Gilmore, T.E.**, Solder, J. E., Kimball, B., Genereux, D. P. (2015). Evaluating an unconfined aquifer by analysis of age-dating tracers in stream water. *Water Resources Research*, n/a–n/a. <http://onlinelibrary.wiley.com/doi/10.1002/2015WR017602/abstract> (15%)
3. Solder, J. E., **Gilmore, T.E.**, Genereux, D. P., Solomon, D. K. (2015). A Tube Seepage Meter for In Situ Measurement of Seepage Rate and Groundwater Sampling. *Groundwater*, n/a–n/a. <http://onlinelibrary.wiley.com/doi/10.1111/gwat.12388/abstract> (30%)

Section 2.1.2 Peer Reviewed Journal Publications accepted for publication (% contribution)

1. **Gilmore, T.E.**, Genereux, D. P., Solomon, D. K., Solder, J. E., Kimball, B. A., Mitasova, H., Birgand., F. (in press). Quantifying the fate of agricultural nitrogen in an unconfined aquifer: stream-based observations at three different scales. *To appear in Water Resources Research*. (80%)

Section 2.1.3 Peer Reviewed Journal Publications submitted for review but not yet accepted or accepted with “re-review required” or equivalent. Include the name of journal, author list, date submitted and % of your contribution

1. Heilweil, V. M., Solomon, D. K., Darrah, T. H., **Gilmore, T.E.**, Genereux, D. P. A gas-tracer injection for evaluating the fate of stream methane: Atmospheric loss versus oxidation. *Environmental Science and Technology*. Submitted: October 2015, Revising to Resubmit. (10%)
2. **Gilmore, T.E.**, Genereux, D. P., Solomon, D. K., Farrell, K. M., Mitasova, H. Aquifer nitrate legacy and dynamics observed through groundwater sampling in streambeds and well nests. *Water Resources Research*. Submitted May 2015, Revising to Resubmit. (90%)
3. **Gilmore, T.E.**, Genereux, D. P., Solomon, D. K., Solder, J. E. Groundwater transit time distribution and mean from streambed sampling in an agricultural coastal plain watershed, North Carolina, USA. *Water Resources Research*. Re-submitted: September 2015, Revising to Resubmit. (80%)

Section 2.1.4 Numbered list (in reverse chronological order) Conference Presentations

1. **Gilmore, T.E.** 2015. Tools for Measuring Groundwater-Surface Water Interaction in Western Nebraska. Poster presented at the Joint Nebraska Cooperative Extension Association and UNL Extension Fall Conference, Kearney, NE. November 13, 2015.
2. **Gilmore, T.E.**, D. Genereux, K. Solomon, K. Farrell, H. Mitasova. 2015. Aquifer nitrate legacy and dynamics: observations from well nests and streambed sampling. Oral presentation at the American Society of Agricultural and Biological Engineers Annual International Meeting, New Orleans, LA. July 29, 2015.
3. **Gilmore, T.E.**, D. Genereux, K. Solomon, H. Mitasova, M. Burnette. 2014. Vertical Sampling in recharge areas versus lateral sampling in discharge areas: Assessing the agricultural nitrogen legacy in groundwater. Poster presented at the American Geophysical Union Fall Meeting, San Francisco, CA. December 16, 2014.
4. **Gilmore, T.E.**, D. Genereux, K. Solomon, J. Solder, B. Kimball, F. Birgand, H. Mitasova, M. Burnette, S. Becker. 2014. Using groundwater discharge to assess an agricultural nitrogen legacy: three approaches to sampling in stream channels at different scales. Oral presentation at the American Society of Agricultural and Biological Engineers Annual International Meeting, Montreal, QC. July 16, 2014.

5. **Gilmore, T.E.**, J. Solder, K. Solomon, D. Genereux, B. Kimball, H. Mitasova, M. Burnette, S. Becker. 2014. Estimating groundwater and nitrogen fluxes through a streambed: Effects of sampling integration scale. Oral presentation at the North Carolina Water Resources Research Institute Conference, Raleigh, NC. March 20, 2014.
6. **Gilmore, T.E.**, J. Solder, K. Solomon, D. Genereux, B. Kimball, M. Burnette, S. Becker. 2013. How sampling integration scale affects estimates of coupled groundwater and nitrogen fluxes into an agricultural stream. Oral presentation at the American Geophysical Union Fall Meeting, San Francisco, CA. December 9, 2013.
7. Solder, J.E., D.K. Solomon, **T.E. Gilmore**, D.P. Genereux, D.O. Rosenberry. 2013. Development and testing of Shelby tubes as an in-situ discharge and hydraulic conductivity measurement device. Oral presentation at the Geological Society of America Annual Meeting, Denver, CO. October 27, 2013.
8. Birgand, F., **T.E. Gilmore**, A. Brown and K. Chapman. 2012. Hydrology for all: measuring water levels using webcams. Stewards of the future: Research for Human Health and Global Sustainability, a conference hosted by College of Agriculture and Life Sciences, NC State University. Raleigh, NC. April 17, 2012.
9. **Gilmore, T.E.**, F. Birgand, K. Chapman, and A. Brown. 2011. GaugeCam: An Image-based internet connected system to measure water level in streams. Presented at the American Society of Agricultural and Biological Engineering Annual International Meeting, Louisville, KY. August 9, 2011.
10. **Gilmore, T.E.**, F. Birgand, K. Chapman, and A. Brown. 2010. Providing real-time hydrologic data using webcams. Poster presented at the National Academy of Engineering Grand Challenge Regional Summit, Raleigh, NC. March 03-05, 2010.

Section 2.1.5 Numbered list of Conference Proceedings: Peer reviewed abstract and/or peer reviewed paper.

Not applicable

Section 2.1.6 Numbered list of Conference Proceedings: Other than peer reviewed.

Not applicable

Section 2.2 Grantsmanship Record

Section 2.2.1 Numbered list of Internally Funded Research Grants.

Not applicable

Section 2.2.2 Numbered list of Externally Funded Research Grants. See also Appendix B.

1. "Evaluation of changing irrigation management on ground water recharge and quality" (March 2016 – February 2017)
Sponsor: U.S. Geological Survey
PI: T.E. Gilmore

Co-PI: D. Snow
Amount: \$15,000
UNL Cost Share: \$31,888
Total Amount: \$46,888

The proposed research is designed to evaluate the use of groundwater age-dating tracers, isotopes, and dissolved nitrogen measurement to quantify the impact of recent watershed-scale changes in irrigation management on groundwater recharge rates, source, and quality. The research will be conducted in an alluvial aquifer where groundwater recharge rates and quality were assessed in the 1990s, prior to a recent shift from flood to center pivot irrigation.

Section 2.2.3 Numbered list of External Research Grants that have been submitted.

Not applicable.

Section 2.2.4 Numbered list of Externally Research Grants Submitted but not Funded

Not applicable.

Section 2.3 Research Patents and Awards

Section 2.3.1 Numbered list of Patents, List of all patent holders

Not applicable.

Section 2.3.2 Numbered list of all National and International Research Awards and Recognition

Not applicable.

Section 2.3.3 Numbered list of all Regional and Local Research Awards and Recognition

Not applicable.

Section 2.4 Other Research Accomplishments

Not applicable.

Section 3 Teaching Accomplishments (other than classroom instruction)

Section 3.1 PhD Students

Section 3.1.1 Numbered list of PhD students supervised.

Not applicable.

Section 3.1.2 Numbered list of PhD students currently in progress under your supervision.

Not applicable.

Section 3.2 MS Students

Section 3.2.1 Numbered list of MS students (thesis option) supervised with graduation dates

Not applicable.

Section 3.2.2 Numbered list of MS students (thesis option) currently in progress under your supervision

Not applicable.

Section 3.2.3 Total number of non thesis option graduate students advised

Not applicable.

Section 3.2.4 Total number of graduate student independent research projects supervised

Not applicable.

Section 3.3 Undergraduate Students

Section 3.3.1 Numbered list of undergraduate students supervised in independent research study.

1. Josiah Johnson, 2015, Fall (not for credit)

Section 3.4 Teaching Awards and Recognition

Section 3.4.1 Numbered list of International and National Teaching Awards and Recognition

Not applicable.

Section 3.4.2 Numbered list of regional, local and University Teaching Awards and Recognition

Not applicable.

Section 3.5 Other Teaching Accomplishments

Section 4 Service Accomplishments

Section 4.1 Professional Service

Section 4.1.1 Numbered List of Journal Editorships including dates of service

Not applicable.

Section 4.1.2 Journals for which you review papers including dates of service.

1. Water Resources Research

- August 2015 (1 paper)

Section 4.1.3 Numbered list of Leadership Positions in International and National Organizations

Not applicable.

Section 4.1.4 Numbered list of Leadership Positions in Regional and Local Organizations

Not applicable.

Section 4.1.5 Numbered list memberships in Professional Organizations

1. American Society of Biological and Agricultural Engineers, 2010 – present
2. American Geophysical Union, 2012 – present
3. National Groundwater Association, 2012 - present

Section 4.1.6 Numbered list of National and International Service Awards

Not applicable.

Section 4.1.7 Numbered list of Regional and Local Service Awards

Not applicable.

Section 4.1.8 Numbered list of Research Review panels and dates of service

Not applicable.

Section 4.2 University Service

Section 4.2.1 Numbered List of leadership positions on university wide committees.

Not applicable.

Section 4.2.2 Numbered list of membership positions on university wide committees.

Not applicable.

Section 4.3 College Service

Section 4.3.1 Numbered List of leadership positions on college wide committees.

Not applicable.

Section 4.3.2 Numbered list of membership positions on college wide committees.

Not applicable.

Section 4.4 Unit Service

Section 4.4.1 Numbered List of leadership positions on unit committees.

Not applicable.

Section 4.4.2 Numbered list of membership positions on unit committees.

1. School of Natural Resources Curriculum Review Committee, November 2015
- present, Member
2. Biological Systems Engineering Department Awards Committee, October
2015 – present, Member

Section 4.5 Other Service Accomplishments

Not applicable.

Section 5 Other Accomplishments