

FRANÇOIS BIRGAND, Ph.D.

Department of Biological and Agricultural Engineering
North Carolina State University, Raleigh, NC 27695-7625

Professional Preparation:

Ecole Nationale Supérieure Agronomique de Rennes, France, Agronomic Engineering, Ingénieur Agronome, 1994
North Carolina State University. Biological and Agricultural Engineering, Ph.D., 2000

Appointments:

2014-present	Associate Professor, Biological and Agricultural Engineering, North Carolina State University
2008-2014	Assistant Professor, Biological and Agricultural Engineering, North Carolina State University
2004-2008	Engineering Researcher, Cemagref Antony (IRSTEA), France
2000-2004	Engineering Researcher, Cemagref Rennes (IRSTEA), France
1995-2000	Research Assistant, Biological and Agricultural Engineering, North Carolina State University

Specialization:

Biogeochemical processes for ecologically engineered and natural systems; Impacts of land use changes on hydrology and water quality at the watershed scale; Wetland and stream monitoring, restoration and modeling; Continuous sensor development and metrology; UV-vis spectrometry for continuous water quality measurements; Image-based sensors; Evaluation of nutrient load uncertainties at the watershed scale

Selected Referred Publications (25 publications, 11 in last 2 years, complete list at

http://www.bae.ncsu.edu/people/faculty/birgand/publications/refereed_articles.html) * Graduate Student Chair

- Polizzotto, M.L., **F. Birgand**, A.B. Badruzzaman and M.A. Ali. 2014. Amending irrigation channels with jute-mesh structures to decrease arsenic loading to rice fields in Bangladesh Ecol. Eng. 74: 101-106. doi: 10.1016/j.ecoleng.2014.10.030
- Etheridge*, J. R., **F. Birgand**, J. A. Osborne, C. L. Osburn, M. R. Burchell II and J. Irving. 2014. Using in situ ultraviolet-visual spectroscopy to measure nitrogen, carbon, phosphorus, and suspended solids concentrations at a high frequency in a brackish tidal marsh. Limnol. Oceanogr. Meth. 12: 10-22 doi 10.4319/lom.2014.12.10
- Etheridge*, J.R., **F. Birgand**, M.R. Burchell II, A. Lepistö, K. Rankinen and K. Granlund. 2014. Technical Note: Alternative in-stream denitrification equation for the INCA-N model. Hydrol. Earth Syst. Sci., 18, 1467-1473. doi 10.5194/hess-18-1467-2014. www.hydrol-earth-syst-sci.net/18/1467/2014/
- **Birgand, F.** G. Lellouche and T.W. Appelboom. 2013. Measuring flow in non-ideal conditions for short-term projects: Uncertainties associated with the use of stage-discharge rating curves. J. Hydrol. 503: 186-195. doi 10.1016/j.jhydrol.2013.09.007
- Etheridge*, J.R., **F. Birgand**, M.R. Burchell II and B.T. Smith. 2013. Addressing the fouling of in-situ UV-Visual spectrometers used to continuously monitor water quality in brackish tidal marsh waters. J. Environ. Qual. 42: 1896-1901. doi:10.2134/jeq2013.02.0049
- Gilmore*, T.G., **F. Birgand** and K. Chapman. 2013. Source and magnitude of error in an inexpensive image-based water level measurement system. J. Hydrol. 496: 178-186. doi 10.1016/j.jhydrol.2013.05.011
- Brown, R.A., **F. Birgand** and W.F. Hunt III. 2013. Analysis of Consecutive Events for Field Monitored Bioretention Cells. Water, Air & Soil Pollution 224(6): 1581. doi 10.1007/s11270-013-1581-6
- Billy* C., **F. Birgand**, M. Sebilo, G. Billen, J. Tournebize and C. Kao. 2011. Nitrate dynamics in artificially drained nested watersheds. J. Phys. Chem. Earth. 36(12):506-504. doi: 10.1016/j.pce.2008.09.007.
- **Birgand F.**, C. Faucheux*, G. Gruau, F. Moatar and M. Meybeck. 2011. Uncertainties in assessing annual nitrate loads and concentration indicators: Part 2. Deriving sampling frequency charts in Brittany, France. Trans. ASABE. 54(1): 93-104.

Award:

Kenneth R. Keller Research Award for graduate excellence at NC State University in 2000.

Synergistic Activities:

- *Federal Projects Panelist:* USDA/ARS Panel member (2011)
- *Scientific and Professional Societies:* American Society of Agricultural and Biological Engineers (ASABE), Member Engineer, 1999-, SW-21, Hydrology, member, 2008-, SW-25, member, 2012-, BE-22 Ecological Engineering, member; American Geophysical Union (AGU), 2013-

Collaborators and Co-Editors During the Past Four Years:

- T.M. Appelboom, M. Burchell, G.M. Chescheir, D. Genereux, W. F. Hunt, G. E. Jennings, M. Polizzotto, C. Osburn, B. Reich, W. Showers, R.W. Skaggs, M.A. Youssef, North Carolina State University
- Cayelan C. Carey, Virginia Tech
- R. Muñoz-Carpena, University of Florida
- J. Tournebize, IRSTEA Research Institute, France
- G. Gruau, University of Rennes, France
- F. Moatar, University of Tours, France
- M. Meybeck, G. Billen, University of Paris, France
- A. Lepistö, University of Helsinki (Finland)

Graduate Advisors and Postdoctoral Sponsors

Ph.D. Advisors: R.W. Skaggs, G. M. Chescheir, G.W. Gilliam, J.M. Burkholder, North Carolina State University

Thesis Advisor and Postgraduate-Scholar Sponsor

M.S. Students w/ Thesis: (Total = 6); *Last 5 years:* C. Faucheux, V. Faure, E. Passeport, J. A. Crouse, M.T. Horstman, E.M. Bennett; *In Progress:* B.M. Maxwell, T. Carter.

Ph.D. Students: (Total = 7); *Last 5 years:* C. Billy, J.R. Etheridge; *In Progress:* E.L. Allen, T. Gilmore, N. Dobbs, C.-W. Lin