

JOHN A. HARRISON
CURRICULUM VITAE
AUGUST 17, 2011

Room 230B, Engineering and Life Sciences
School of Earth and Environmental Sciences
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***Long-term goal:** develop and maintain a diverse, vibrant, nexus of excellence for research, education, and outreach, focused on biogeochemical function and change.*

EDUCATION

Ph.D., Geological & Environmental Sciences, Stanford University 2003

Bachelor of Science (Honors), Biological Sciences, Brown University 1995

POSITIONS HELD

2006 – Present **Assistant Professor**, School of Earth and Environmental Sciences,
Washington State University, Vancouver

2009 – Present **U.S. Environmental Protection Agency Expert Hire**, Ecosystem
Services Research Program Nitrogen Theme

2005 – 2006 **CALFED Science Fellow**, Department of Land, Air, and Water
Resources, University of California, Davis

2003 – 2005 **Postdoctoral Associate**, Institute of Marine and Coastal Sciences, Rutgers
University

1995 – 1996 **Samuel T. Arnold Science and Policy Fellow**, Brown University, Costa
Rica, Taiwan, and England

HONORS AND AWARDS

WSU College of Science Young Faculty Performance Award 2010
U.S. Environmental Protection Agency Expert 2009 – Present
Co-Chair of Global NEWS UNESCO-IOC Work Group 2008 – Present
California Bay Delta Authority Fellowship 2006
NSF DIALOG Participant 2005
President IMCS Postdoctoral Association 2003 – 2005
NSF Dissertation Enhancement Award 2001 – 2002
NASA Earth System Science Graduate Fellowship 1999 – 2002
NSF Pre-doctoral Fellowship 1997 – 2000

HONORS AND AWARDS CONTINUED

Two McGee Fellowships, Stanford University	1998 & 2000
Samuel T. Arnold Fellowship, Brown University	1995 – 1996
Antarctic Service Medal	1995
Brown University Writing and Rhetoric Fellowship	1993 & 1994
Two NSF Research Experience for Undergraduates Grants	1993 & 1994
Woods Hole Research Consortium Fellowship Award	1992

FUNDED GRANTS (2005 – PRESENT)

(TOTAL: \$4,933,907)

(TOTAL TO HARRISON AT WSU: \$876,499)

2011 – 2013	NSF Hydrology/Ecosystems/Geobiology and Low Temperature Geochemistry: <i>Emerging Topics in Biogeochemical Cycles (ETBC): Interacting hydrological and biogeochemical controls on nitrogen transformation hot spots and hot moments in a eutrophic reservoir</i> , \$129,996; PI: Harrison, Co-PI: Henderson
2011 – 2016	NSF Earth System Modeling (EaSM), ultimately funded by USDA: <i>Collaborative Research: Understanding biogeochemical cycling in the context of climate variability using a regional Earth system modeling framework</i> , \$3,053,000; PI: Adam (Harrison Co-PI)
2011-2012	WSU Vancouver Faculty Mini-grant: <i>Quantifying temperature effects on denitrification in wetland sediments</i> , \$5,000; PI: Harrison (co-written with A. Jacobs)
2010 – 2012	Collaborative Research: NSF ULTRA-Ex: <i>Collaborative Research: How do feedbacks between governance and biophysical systems affect resilience of urban socio-ecological systems?</i> (\$184,416, Overall Project PI: Yeakley, WSU, Vancouver portion: \$31,341; WSU PI: Bollens, S.M., Co-PIs: Harrison, Rollwagen-Bollens, Stephan, and Thiers)
2010 – 2011	WSU Vancouver Faculty Mini-grant: <i>Agriculture's role as a source of dissolved organic nitrogen to surface waters</i> , \$4,995; PI: Harrison (co-written with R. Martin)
2010 – 2011	USGS 104b Program: <i>Developing a Novel, Interdisciplinary Approach to Understand Hot Moments in Reservoir Nutrient Transformation</i> , \$28,000; PIs: Harrison and Henderson
2009 – 2010	U.S. Bureau of Reclamation: <i>Modeling nitrogen loads and sources in central valley watersheds: taking existing monitoring data to the next stage</i> , \$42,000; PI: Harrison
2007 – 2010	NASA-ROSES: <i>Further tests on a modeling framework to detect and analyze changes in land-to-coastal fluxes of freshwater and constituents</i> , \$1,200,000; PI: Vörösmarty (Harrison Co-PI)

- 2008 – 2009 USGS 104b Program: *Reservoir sediments: biofilter or environmental liability?* \$25,000; PI: Harrison
- 2008 – 2009 WSU Vancouver Faculty Mini-grant: *Summer spill events and nutrients in the Columbia River*, \$4,000; PI: Harrison (co-written with D. Sobota)
- 2007 – 2008 USGS 104b Program: *Lacamas lake and other northwest reservoirs as bioreactors: how do dams affect downstream nutrient transport?* \$24,000; PI: Harrison
- 2007 – 2008 WSU Vancouver Faculty Mini-grant: *Soil phosphorus availability and lupines during primary succession*, \$4,000; PI: Harrison (co-written with M. Murashkina)
- 2005 – 2008 California Bay Delta Authority: *Modeling nutrient and organic carbon loads and sources in central valley watersheds: taking existing monitoring data to the next stage*, \$229,500; PI: Harrison

GRANTS PENDING

- 2011 – 2015 (Pre-proposal approved) World Bank Global Environment Facility funding to UNEP and UNESCO-IOC: *Global partnership for nutrient management* \$3,618,182 (Harrison Co-PI)
- 2012-2017 NSF Ecosystems: *CAREER: Fundamental understanding of the role dams play in controlling nutrient transport and use of the related research to improve water management and inspire the next generation* \$546,713 (Harrison PI)

PEER-REVIEWED PUBLICATIONS

(ISI Web of Science total citations: 604; h-index: 13)

(*Postdoc or student directly supervised by Harrison)

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33. *B. Deemer, *Goodwin, K.E., K. Birchfield, *K. Dallavis, *J. Emerson, *D. Freeman, *E. Henry, *T. Lee, *L. Wynn, and **J.A. Harrison** (Submitted) Patterns and controls of N and P concentrations and loads in Clark County, WA streams. *Northwest Science*.
32. *Goodwin, K.E., **J.A. Harrison**, and *D.J. Sobota. (Submitted) Increasing the resolution of a global nitrogen export model: applications and advances in central California. *Journal of Environmental Quality*.
31. *Martin, R., and **J.A. Harrison** (In Press) Are hydrologic pulse events important for the delivery of dissolved organic nitrogen (DON) to stream ecosystems? *Ecosystems*.
30. Ahrens, T., **J.A. Harrison**, J.M. Beman, P.A. Matson, P. Jewett, and I. Ortiz-Monasterio (In Press) Nitrogen in the Yaqui Valley: sources, transfers, and consequences, Chapter 9 in: P.A. Matson (Ed.) *Seeds of Sustainable Agriculture: Lessons from the Birthplace of the Green Revolution*, Island Press, Washington D.C..

29. *Sobota, D.S., **J.A. Harrison**, and R.A. Dahlgren (2011) Phosphorus in central California rivers: forms of export and relationship with anthropogenic nutrient inputs. *Journal of Environmental Quality*. 40(4): 1290-1302, doi: 10.2134/jeq2011.0010.
28. Compton, J.E., **J.A. Harrison**, R.L. Dennis, T.L. Greaver, B.H. Hill, S.J. Jordan, H. Walker, and H.V. Campbell (2011) Ecosystem services altered by human changes in the nitrogen cycle: A new perspective for US decision making. *Ecology Letters*. 1-12, doi: 10.1111/j.1461-0248.2011.01631.x.
27. *Deemer, B.R., **J.A. Harrison**, and *E.W. Whitling (2011) Microbial nitrogen removal and nitrous oxide production in a small eutrophic reservoir: an *in situ* approach to quantifying hypolimnetic process rates. *Limnology and Oceanography*, 56(4) 1189-1199, doi:10.4319/lo.2011.56.4.1189.
26. Seitzinger, S.P., E. Mayorga, C. Kroeze, A.F. Bouwman, A.H.W. Beusen, G. Billen, G. Van Drecht, E. Dumont, B.M. Fekete, J. Garnier, and **J.A. Harrison** (2010) Global river nutrient export: a scenario analysis of past and future trends. *Global Biogeochemical Cycles*, 24, GB0A08, doi:10.1029/2009GB003587.
25. Mayorga, E., S.P. Seitzinger, **J.A. Harrison**, E. Dumont, and A.H.W. Beusen (2010) Riverine sources, retention and export of nutrients and carbon: An enhanced framework and integrated scenarios application of the Global Nutrient Export from WaterSheds (NEWS) model, *Environmental Modelling & Software*, 25(7) 837–853.
24. **Harrison, J. A.**, A. F. Bouwman, E. Mayorga, and S. Seitzinger (2010), Magnitudes and sources of dissolved inorganic phosphorus inputs to surface fresh waters and the coastal zone: A new global model, *Global Biogeochemical Cycles*, 24, GB1003, doi:10.1029/2009GB003590.
23. **Harrison, J.A.**, J.H. Cohen, E. Hinchey, A. Moerke, and P. von Dassow (2009), Developing and implementing an effective public outreach program. *Eos*, 90(38), 333-334.
22. Van Drecht, G., A.F. Bouwman, **J.A. Harrison**, and J. Knoop (2009), Global nitrogen and phosphate in urban waste water for the period 1970-2050. *Global Biogeochemical Cycles*, 23, GB0A03, doi:10.1029/2009GB003458.
21. *Sobota, D. J., **J.A. Harrison**, and R. A. Dahlgren (2009), Influences of climate, hydrology, and land use on input and export of nitrogen in California watersheds. *Biogeochemistry*, DOI 10.1007/s10533-009-9307-y.
20. **Harrison, J.A.**, R. Maranger, R.B. Alexander, A. Giblin, P.-A. Jacinthe, E. Mayorga, S.P. Seitzinger, *D.J. Sobota, and W. Wollheim (2009), The regional and global significance of nitrogen retention in lakes and reservoirs. *Biogeochemistry*, 10.1007/s10533-008-9272-x.
19. Liu, K.-K., S. Seitzinger, E. Mayorga, **J. Harrison**, and V. Ittekkot (2008), Fluxes of nutrients and selected organic pollutants carried by rivers, Chapter 8 in: E. Urban & S. Greenwood (Eds.) *PACKMEDS - Dynamics and vulnerability of semi-enclosed marine systems: the integrated effects of changes in sediment and nutrient input from land*. Scientific Committee on Progress in the Environment (SCOPE), New York.

18. Ahrens T., M.Beman, **J. A. Harrison**, P. Jewett, P. Matson (2008), Nitrogen transformations and transfers from land to the sea in the Yaqui Valley agricultural region. *Water Resources Research*, 44, W00A05, doi:10.1029/2007WR006661.
17. Glibert, P., et al. (**J.A. Harrison** 30th of 55 authors) (2008), Ocean urea fertilization credits pose high ecological risks. *Marine Pollution Bulletin*, 56(6), 1049–1056.
16. Wollheim, W.M., C.J. Vorosmarty, A.F. Bouwman, P. Green, **J.A. Harrison**, M. Meybeck, B.J. Peterson, S.P. Seitzinger, and J.P. Syvitski (2008), A spatially distributed framework for aquatic modeling of the Earth system (FrAMES). *Global Biogeochemical Cycles*. 22, GB2026, doi:10.1029/2007GB002963.
15. Seitzinger, S.P. and **J.A. Harrison** (2008), Sources and delivery of nitrogen to coastal systems, Chapter 8 in *Nitrogen in the Marine Environment*, 2nd edition. D. Capone, D.A. Bronk, M.R. Mullholland, E. Carpenter Eds., Academic Press, New York.
14. Chow, A., R.A. Dahlgren, and **J. Harrison** (2007), Watershed sources of disinfection byproduct precursors in the Sacramento and San Joaquin Rivers, California. *Environmental Science & Technology*, 41(22), 8645-7652.
13. Seitzinger, S.P., **J.A. Harrison**, J.K. Bohlke, A.F. Bouwman, R. Lowrance, B.J. Peterson, C. Tobias, and G. Van Drecht (2006), Denitrification across landscapes and waterscapes: a synthesis, *Ecological Applications*, 16(6), 2064–2090.
12. Glibert, P.M., **J.A. Harrison**, C. Heil, and S.P. Seitzinger (2006), Escalating worldwide use of urea: a global change contributing to coastal eutrophication, *Biogeochemistry*, doi:10.1007/S10533-3070-0, 1-23.
11. **Harrison, J.A.**, N.F. Caraco, and S.P. Seitzinger (2005), Global distribution and sources of dissolved organic matter export by rivers: results from a spatially explicit, global model (NEWS-DOM), *Global Biogeochemical Cycles*, 19 (4), GB4S04, doi:10.1029/2005GB002480, 1-16.
10. **Harrison, J.A.**, S.P. Seitzinger, A.F. Bouwman, N.F. Caraco, A.H.W. Beusen and C. Vörösmarty (2005), Dissolved inorganic phosphorus export to the coastal zone: results from a spatially explicit, global model (NEWS-DIP), *Global Biogeochemical Cycles*, 19, GB4S03, doi:10.1029/2004GB002357, 1-15.
9. **Harrison, J.A.**, P.A. Matson and S. Fendorf (2005), Effects of a diel oxygen cycle on nitrogen transformations and greenhouse gas emission in a eutrophied, subtropical stream, *Aquatic Sciences*, doi:10.1007.s00027-005-0776-3, 1-8.
8. Seitzinger, S.P., **J.A. Harrison**, E. Dumont, A.H.W. Beusen, and A.F. Bouwman (2005), Sources and delivery of carbon, nitrogen, and phosphorus to the coastal zone: an overview of Global NEWS models, *Global Biogeochemical Cycles*, GB4S05, doi:10.1029/2005GB002453, 1-11.
7. Dumont, E., **J.A. Harrison**, C. Kroeze, E.J. Bakker and S.P. Seitzinger (2005), Global distribution and sources of DIN export to the coastal zone: results from a spatially explicit, global model (NEWS-DIN), *Global Biogeochemical Cycles*, 19, GB4S02, doi:10.1029/2005GB002488, 1-14.

6. Beusen, A.H.W., A.L.M. Dekkers, A.F. Bouwman, W. Ludwig and **J.A. Harrison** (2005), Estimation of global river transport of sediments and associated particulate carbon, nitrogen, and phosphorus, *Global Biogeochemical Cycles*, 19, GB4S05, doi:10.1029/2005GB002453, 1-19.
5. Deegan, L.A., H.E. Golden, **J. Harrison**, K. Kracko (2005), Swimming performance and metabolism of 0+ year *Thymallus arcticus*, *Journal of Fish Biology*, 67(4), 910-918.
4. **Harrison, J.A.** and P.A. Matson (2003), Patterns and controls of nitrous oxide (N₂O) emissions from drainage waters of the Yaqui Valley, Sonora, Mexico. *Global Biogeochemical Cycles*, 17, (3), 1080, doi:10.1029/2002GB001991, 1-13.
3. **Harrison, J.A.** (2003), *Nitrogen Dynamics and Greenhouse Gas Production in Yaqui Valley Surface Drainage Waters*, Doctoral Thesis, Stanford University.
2. Deegan, L.A., A. Wright, S.G. Avayzian, J.T. Finn, H. Golden, R.R. Merson and **J.A. Harrison** (2002), Nitrogen loading alters seagrass ecosystem structure and support of higher trophic levels. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 12:193-212.
1. **Harrison, J.A.** and P.A. Matson (2000), The atmosphere as a global commons, Chapter 10 in *Protecting the Commons*, Burger, J., R. Norgaard, E. Ostrom, D. Policansky, and B.D. Goldstein (eds.), Island Press, Washington D.C..

OTHER PUBLICATIONS

10. Davidson, E.A., M.B. David, J.N. Galloway, C.L. Goodale, R. Haeuber, **J.A. Harrison**, R.W. Howarth, D. Jaynes, R. Lowrance, B.T. Nolan, J.L. Peel, R. Pinder, E. Porter, C.S. Snyder, A.R. Townsend, M.H. Ward, P. Whitney (In Press), Minimizing Releases and Impacts of Excess Nitrogen in the Environment, *Issues in Ecology*.
9. Bouwman, A.F., **J.A. Harrison**, S.P. Seitzinger, and E. Mayorga (2010), Linking watersheds to coastal marine ecosystems: global nutrient river export trajectories 1970-2050. ISSN 2070-2442, 2010, Issue 2, pp. 5-13.
8. **Harrison, J.A.** (2009), *Nitrogen Pollution and Greenhouse Gases in Yaqui Valley Streams: Understanding the Downstream Legacy of the Green Revolution*. 114 pp. Lambert Academic Publishing, Köln, Germany, ISBN 978-3-8383-1486-0.
7. Bouwman, A.F., and **J.A. Harrison** (2009), The challenge of coastal nutrient over-enrichment, *GPA Outreach: Oceans and Coasts Newsletter*, January-March 2009, UN Environment Programme Press.
6. **Harrison, J.A.**, Notes from the Southern Ocean (2007), *Open Spaces Magazine*.
5. **Harrison, J.A.**, R. Lee., E. Dumont, and S. P. Seitzinger (2005), Workshop user manual for IOC Global NEWS-DIN watershed nutrient export model.
4. **Harrison, J.A.** (2003), The carbon cycle (what goes around comes around), (www.visionlearning.com) - Online Textbook Module.

3. **Harrison, J.A.** (2003), The nitrogen cycle (of microbes and men), (www.visionlearning.com) - Online Textbook Module.
2. **Harrison, J.A.** (2001), Agriculture and pollution in the developing world: understanding the link between fertilizer use, greenhouse gases, and coastal change in Sonora, Mexico, (<http://www.stanford.edu/group/i-rite/statements/2001/harrison.html>), Stanford Research Communication Web Page.
1. L. Haimson et al. (1995), *A Moment of Truth*, **J.A. Harrison** (contributor) Environmental Defense Fund Press, New York.

MANUSCRIPTS IN ADVANCED STAGES OF DEVELOPMENT

(*Postdoc or student directly supervised by Harrison; Manuscripts available upon request)

Harrison, J.A., P. Frings, and D. Conley, Controls and significance of dissolved silica retention in lakes and reservoirs. For *Global Change Biology*.

McCrackin, M., **J.A. Harrison**, and J.E. Compton, Using model comparisons to understand sources of nitrogen in US surface waters, for *Ecological Applications*.

Sobota D.J., J.E. Compton, and **J.A. Harrison**, Toward a national inventory of nitrogen input to the United States, For *Frontiers in Ecology and the Environment*.

TEACHING AND ADVISING

WSU COURSES

Watershed Biogeochemistry (ES/RP 592) , Alternate Years	2006 – Present
Global Biogeochemistry (ES/RP 492 [M]/592) , Alternate Years	2006 – Present
Earth System Science (ES/RP 492) , Annually	2010 – Present
Second Semester General Chemistry (CHEM 106 [P]) , Annually	2006 – 2010

OTHER TEACHING-RELATED ACTIVITIES

Organizer/Leader Nutrient Loading and Large Marine Ecosystems Workshop, World Bank/GEF, Paris, France, 1/2006, with S. Seitzinger, designed, developed and taught a short course on the application of global river nutrient export models; participants included 8 leading scientists from 7 distinct developing world regions

Supervisor for Technicians, Stanford University, Rutgers University, and WSU-Vancouver 2000 -Present, Trained and supervised 5 technicians for periods up to 3 years.

Founder/Organizer of Stanford Biogeochemistry Seminar, Stanford University, 1999 - 2000 Conceived, attained funding for, organized, and led the first Stanford Biogeochemistry Seminar, which subsequently lasted for at least 5 years (20+ participants/year, 12 speakers/year, budget \$5000/yr)

Writing and Rhetoric Fellow, Brown University, Providence, RI, 1993 - 1994, Taught writing and speaking skills to Brown University undergraduates for 3 semesters.

MENTORING AND ADVISING

Current Postdoctoral Associates:

Dr. Michelle McCrackin (2010-Present) - NRC Postdoc; Co-advised with Jana Compton at EPA's-Western Ecology Division
Dr. Daniel Sobota (2010-Present) - NRC Postdoc; Co-advised with Jana Compton at EPA's-Western Ecology Division

Past Postdoctoral Associate:

Dr. Daniel Sobota (2007-2010)

Current Graduate Students (*Harrison primary advisor)

*Bridget Deemer (Ph.D.) – NSPIRE IGERT Fellow
*Allison Jacobs (M.S.) – NSF GK-12 Fellow
*Rebecca Martin (Ph.D.) – NSF Predoctoral Fellow, NSPIRE IGERT Fellow

Past Graduate Students (*Harrison primary advisor)

Louise Wynn (M.S.) - 2011
Jennifer Blaine (M.S.) - 2010 NSF GK-12 Fellow
Kassi Dallavis (M.S.) - 2010 NSF GK-12 Fellow
*Bridget Deemer (M.S.) - 2010 NSF GK-12 Fellow (Currently pursuing a Ph.D. at WSU)
*Kara Goodwin (M.S.) - 2010 NSF GK-12 Fellow (Currently at EPA)
Ray Yurkewycz (M.S.) - 2010 NSF GK-12 Fellow
Jennifer Duerr (M.S.) - 2009 NSF GK-12 Fellow
Kate Olsen (M.S.) - 2009 NSF GK-12 Fellow
Nathan Reynolds (M.S.) - 2009

Undergraduate Research Assistants (¹WSU, ²Current, ³Received Award for Research)

Rachel Sipler
Weihan Chang
Cali Benfit¹
Dawn Freeman^{1,3}
Elliott Whitling^{1,3}
Kathleen Denlinger¹
Abraham Robles¹
Zack Budiselic^{1,3}
Maria Glavin^{1,2}
Drew Houston¹

Undergraduate Academic and Career Advising

2011	10 Students
2010	10 Students
2009	10 Students
2008	25 Students
2007	14 Students
2006	8 Students
Total	77 Students

SELECTED PUBLISHED ABSTRACTS

(First-authored only)

Harrison, J.A., A.F. Bouwman, E. Mayorga, and S.P. Seitzinger, *Magnitudes and Sources of Dissolved Inorganic Phosphorus Inputs to Surface Fresh Waters and the Coastal Zone: A New Global Model*, NABS/ASLO, Santa Fe, NM: 6/10.

Harrison, J.A., A.F. Bouwman, E. Mayorga, and S.P. Seitzinger, *Global and continental-scale dissolved inorganic phosphorus export by rivers: results from a new regional-global model*, Coastal and Estuarine Research Federation, Portland, OR: 11/09.

Harrison, J.A., A.F. Bouwman, E. Mayorga, and S.P. Seitzinger, *Continental-scale dissolved inorganic phosphorus export by rivers: results from a regional-global modeling approach*, Ecological Society of America, Albuquerque, NM: 8/09.

Harrison, J.A. *Continental-scale dissolved inorganic phosphorus export by rivers: results from a regional-global modeling approach*, AGU, San Francisco, CA: 12/08.

Harrison, J.A., R.M. Maranger, R. Alexander, A. Giblin, P.-A. Jacinthe, E. Mayorga, S. Seitzinger, D. Sobota, and W. Wollheim, *The regional and global significance of nitrogen removal in lakes and reservoirs*, Ecological Society of America, Milwaukee, WI: 8/08.

Harrison, J.A. *Rivers, nutrients, and greenhouse gases: insights from a case study and a global model*, SIL, Montreal, QC: 8/2007.

Harrison, J.A., *Urban areas as sources of pollution*, Ecological Society of America, Merida, Mexico: 1/2006.

Harrison, J.A., N.F. Caraco, and S.P. Seitzinger, *Global patterns and sources of dissolved organic matter export to the coastal zone: results from a spatially explicit, global model*, Estuarine Research Federation, Norfolk, VA: 10/2005.

Harrison, J.A., N.F. Caraco, and S.P. Seitzinger, *Global patterns and sources of dissolved organic matter export to the coastal zone: results from a spatially explicit, global model*, Ecological Society of America, Montreal, QC: 8/2005.

Harrison, J.A., S.P. Seitzinger, N. Caraco, A.F. Bouwman, A. Beusen, and C.J. Vörösmarty, *Dissolved inorganic phosphorus export to the coastal zone: results from NEWS-DIP*, Ecological Society of America, Portland, OR: 8/2004.

- Harrison, J.A.**, S.P. Seitzinger, C. Kroeze, N.F. Caraco, and E. Dumont, *Dissolved nitrogen and phosphorus export to the coastal zone: early results from a multi-element, multi-form approach at the regional scale*, American Geophysical Union-Ocean Sciences, Portland, OR: 1/2004.
- Harrison, J.A.**, S.P. Seitzinger, C. Kroeze, N.F. Caraco, and E. Dumont, *Dissolved nitrogen and phosphorus export to the coastal zone: early results from a multi-element, multi-form approach at the regional scale*, Estuarine Research Federation, Seattle, WA: 9/2003.
- Harrison, J.A.**, S.P. Seitzinger, C. Kroeze, N.F. Caraco, and E. Dumont, *Dissolved nitrogen and phosphorus export to the coastal zone: early results from a multi-element, multi-form approach*, Gordon Conference, New London, NH: 7/2003.
- Harrison, J.A.**, *Nitrogen dynamics and greenhouse gas production In Yaqui Valley surface drainage waters*, Thesis Defense, Stanford University, Stanford, CA: December 2002.
- Harrison, J.A.**, and P.A. Matson, *Rapid-onset anoxia, greenhouse gas production, and nitrogen transfer in a Mexican stream*, National meeting of the Ecological Society of America, Tucson, AZ: 8/2002.
- Harrison, J.A.**, and P.A. Matson, *Nitrogen dynamics and nitrous oxide (N₂O) in coastal streams of an intensively farmed, subtropical valley*, Estuarine Research Federation, St. Petersburg, FL: 10/2001.
- Harrison, J.A.**, and P.A. Matson, *Nitrogen dynamics and nitrous oxide (N₂O) in coastal streams of an intensively farmed, subtropical valley*, National meeting of the Estuarine Research Federation, St. Petersburg, FL: 11/2001.
- Harrison, J.A.**, and P.A. Matson, *Nitrous oxide (N₂O) emissions from drainage waters in an intensively farmed, subtropical valley*, National meeting of the Ecological Society of America, Madison, WI: 8/2001.
- Harrison, J.A.**, and P.A. Matson. *Nitrous oxide (N₂O) emissions from drainage waters in an intensively farmed, subtropical valley*, Open Science Conference, Amsterdam, ND: 7/2001.
- Harrison, J.A.**, and P.A. Matson. *Nitrous Oxide (N₂O) emissions from drainage waters in an intensively farmed, subtropical valley*, National meeting of The American Geophysical Union, San Francisco, CA: 12/2000.
- Harrison, J.A.**, and P.A. Matson. *Greenhouse gas emissions from drainage waters in an intensively farmed, subtropical valley*, Snowbird, UT: 8/2000.
- Harrison, J.A.**, P.A. Matson. *Greenhouse gas emissions from drainage waters in an intensively farmed, subtropical valley*, National meeting of the Ecological Society of America: 8/2000.
- Harrison, J.A.** Honors thesis presentation I, *Young-of-the-Year Arctic Grayling (Thymallus arcticus) Metabolism, Swimming Ability, and Temperature*, Ecosystems Center, The Marine Biological Laboratory, Woods Hole, MA: 12/1995.

Harrison, J.A. Honors thesis presentation II, *Ibid.* Brown University, Providence, RI: 12/1995.

Harrison, J. A. *Food web dynamics in Waquoit Bay's Hamblin Pond, a ¹⁵N tracer study*, Ecosystems Center, The Marine Biological Laboratory Woods Hole, Summer Research Symposium, Woods Hole, MA: 8/1992.

INVITED SYMPOSIA

Harrison, J.A., *Rivers, nutrients, humans: insights from a case study and a global model*, USGS Oregon Water Science Center, Portland, OR: 6/2010.

Harrison, J.A., *Chancellor's Seminar: Coastal Nutrient Over-enrichment: A Pressing 21st Century Issue*, Vancouver, WA: 3/09. (video-taped and re-broadcast on Vancouver Public Access Television multiple times)

Harrison, J.A. and D. J. Sobota, *Insights into Stream and River Biogeochemistry from a Few Large-Scale Analyses*, Oregon State University, Corvallis, OR: 11/08.

Harrison, J.A., *Nutrient Delivery to the Coastal Zone: Insights from a Case Study and a Global Model*, Western Washington University, Bellingham, WA: 11/08.

Harrison, J.A., *Regional and Global Approaches to Understanding N-related Ecosystem Services*, Environmental Protection Agency, Portland, OR: 8/08.

Harrison, J.A., *Nutrient transport through watersheds: how much do people and lakes matter?* Washington State University, Civil and Environmental Engineering Department, Pullman, WA: 11/2007.

Harrison, J.A., *Rivers, nutrients, and greenhouse gases: insights from a case study and a global model*, USGS Cascade Volcanoes Observatory, Vancouver, WA: 1/2007.

Harrison, J.A., *Rivers, nutrients, and greenhouse gases: insights from a case study and a global model*, Zoology Department Seminar, Oregon State University: 11/2006.

Harrison, J.A., *Rivers, nutrients, and greenhouse gases: insights from a case study and a global model*, Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA: 5/2006.

Harrison, J.A., *Rivers, nutrients, and greenhouse gases: insights from a case study and a global model*, San Diego State University, San Diego, CA: 3/2006.

Harrison, J.A., *Human impacts on watershed fluxes of bioactive chemicals: insights from modeling and field-based approaches*, Washington State University, Vancouver and Pullman (2 lectures), WA: 3/2006.

- Harrison, J.A.**, *Rivers, Nutrients, and Greenhouse Gases: Insights from a Case Study and a Global Model*, University of Texas, Austin, TX: 3/2006.
- Harrison, J.A.**, *Human impacts on watershed biogeochemistry: insights from modeling and field-based approaches*, Bodega Bay Marine Lab, Bodega Bay, CA: 2/2006.
- Harrison, J.A.**, *Urban areas as sources of pollution*, Ecological Society of America, Merida, Mexico: 1/2006.
- Harrison, J.A.**, *Human impacts on watershed biogeochemistry: insights from modeling and field-based approaches*, University of California-Davis, Davis, CA: 4/2005.
- Harrison, J.A.**, *Dissolved Inorganic Phosphorus Export to the Coastal Zone: Results from a Spatially-explicit, Global Model*, University of California-Davis, Davis, CA: 4/2005.
- Harrison, J.A.**, *Rivers, Nutrients, and Greenhouse Gases: Insights from a Case Study and a Global Model*, Purdue University, West Lafayette, IN: 3/2005.
- Harrison, J.A.**, *Human impacts on watershed biogeochemistry: insights from modeling and field-based approaches*, Indiana University, Bloomington, IN: 1/2005.
- Harrison, J.A.**, *Global-NEWS models and global dissolved nitrogen and phosphorus export to the coastal zone: early results from a multi-element, multi-form approach*, Institute of Ecosystem Studies, Millbrook, NY: 1/2005.
- Harrison, J.A.**, S.P. Seitzinger, N.F. Caraco, A.F. Bouwman, A. Beussen, and C.J. Vörösmarty. *Global NEWS models and global dissolved nitrogen and phosphorus export to the coastal zone: early results from a multi-element, multi-form approach*. UNESCO, Paris, France: 5/2004.
- Harrison, J.A.**, *Global NEWS models and global dissolved nitrogen and phosphorus export to the coastal zone: early results from a multi-element, multi-form approach*. RIVM, Bilthoven, Netherlands: 12/2003.
- Harrison, J.A.**, *Spatially explicit models for river export of dissolved organic nitrogen and soluble reactive phosphorus: successes and challenges*. UNESCO, Paris, France: 3/2003.
- Harrison, J.A.**, *Nitrogen dynamics and nitrous oxide (N₂O) production in drainage waters and estuaries of an intensively farmed, subtropical valley*, Department of Environmental Science, Policy, and Management, UC Berkeley, CA: 1/2002.
- Harrison, J. A.**, *Nitrogen dynamics in Yaqui Valley drainage waters*, Annual meeting of the Yaqui Valley research group, San Carlos, Mexico: October 2001.
- Harrison, J.A.**, *Nitrogen dynamics and nitrous oxide (N₂O) production in drainage waters and estuaries of an intensively farmed, subtropical valley*, Water Resources Group at USGS, Menlo Park, CA: 12/2001.

Harrison, J.A., *Nitrogen dynamics and nitrous oxide (N₂O) in the drainage waters of the Yaqui Valley*, Annual meeting of the Yaqui Valley research group, Stanford University, CA: 10/2001.

Harrison, J.A. *Climate change: Is it real?* Portland chapter of the World Affairs Council: 11/2000.

Harrison, J.A. *The role of natural scientists in Taiwanese and Costa Rican environmental policy formulation: successes and challenges*: Presentation of Arnold Fellowship research results, Taiwan Forestry Research Institute; Taipei, Taiwan: 7/1996.

Harrison, J.A. *The role of tropical ecologists in Costa Rican environmental policy*, La Selva Tropical Research Station, Costa Rica: 3/1996.

ACADEMIC SERVICE

SERVICE AT WSU

Member: Environmental Geophysicist Search Committee - WSU Vancouver, (2006-2007)

Member: Ecohydrologist Search Committee - WSU Pullman, (2007-2008)

Member: SEES Reorganization Research Subcommittee (2009)

Member: SEES Water hire pre-search committee (2009)

Member: SEES Visioning Committee (2010-2011)

Coordinator: WSU, Vancouver Science Programs Seminar, (Spring 2007)

Undergraduate Advisor: 77 WSU Vancouver undergraduates, (Fall 2006 - present)

PROFESSIONAL SERVICE OUTSIDE WSU

Panelist: NSF Ecosystems, Division of Environmental Biology

Project Co-Chair (with Lex Bouwman) and North American Chair: UNESCO-IOC-funded Global Nutrient Export from WaterSheds (Global NEWS) project, (2003-Present)

U.S. Environmental Protection Agency Expert: Consultant for U.S. EPA's Ecosystem Services Research Program, Nitrogen Focus, (2009-Present)

Organizer/Co-chair special session on Continental Scale Nutrient Transport at ASLO/NABS joint meeting, Santa Fe, NM, (2010)

Organizer/Co-chair special session on Climate and Nitrogen Dynamics in Aquatic Systems at ASLO/NABS joint meeting, Santa Fe, NM, (2010)

Organizer/Co-chair special session on Nitrogen Sources in the Continental US, San Francisco, CA (2011)

President: Rutgers-IMCS Postdoctoral Association, (2003 - 2005)

REVIEWS WHILE AT WSU

(number of reviews if more than 1)

Proposals:

2011: *National Science Foundation – Ecosystem Science Panel Member*

2010: *National Science Foundation*

2009: *National Science Foundation*

2008: *Kearney Foundation, Icelandic Science Centre for Research*

2007: *Kearney Foundation*

Journals and Books:

2011: *Science, JGR-Biogeoscience*

2010: *Journal of Environmental Quality, Environmental Modelling and Software, Estuaries and Coasts*

2009: *Limnology and Oceanography, Freshwater Biology, Elsevier Book Proposal*

2008: *Biogeochemistry(2), Journal of Environmental Quality, J. Hydrology, J. North American Benthological Society, Marine and Freshwater Research*

2007: *Biogeochemistry, Environmental Pollution, JGR Biogeosciences*

2006: *Ecological Applications, Global Biogeochemical Cycles, Journal of Environmental Quality, UNEP-Global Environmental Outlook 4, Water Research*

PROFESSIONAL MEMBERSHIPS

American Association for the Advancement of Science

American Geophysical Union

American Society of Limnology and Oceanography

Ecological Society of America

Coastal and Estuarine Research Federation

Sigma Xi

WORKSHOPS ATTENDED

Connecting the Dots II: Understanding Linkages Between Hypoxia and Fisheries,
Smithsonian Environmental Research Center, Annapolis, MD, 2010

National Nitrogen Assessment Workshop, Boulder, CO, 2010

National Meeting of U.S. E.P.A. Ecosystem Services Research Program, Athens, GA,
2009

Connecting the Dots: Understanding Linkages Between Hypoxia and Fisheries,
Smithsonian Environmental Research Center, Annapolis, MD, 2009

Global Nutrient Export from Watersheds Workshops, UNESCO, Paris, France, 2003, 2004, 2005, 2007, 2008, and 2009

NSF Research Coordination Network in Modeling Denitrification, Institute of Ecosystem Studies, Millbrook, NY, 2007

Dissertations Initiative for the Advancement of Limnology and Oceanography (DIALOG VII), Dauphin Island, AL, 2005, Selective symposium for recent Ph.D. recipients in the aquatic sciences

The First Global and Regional Scenarios Workshop of GEO-4, Bangkok, Thailand, 2005, One of ten representatives from North America to United Nations Environment Programme-organized workshop to explore environmental consequences of four distinct regional and global development scenarios

Nitrate Stable Isotopes Workshop, USGS, Menlo Park, 2002

Integrating Research in a Teaching Environment Program (I-RITE), Stanford University, 2001, short course on communicating research to public

Stable Isotope Ecology Course, University of Utah, 1999, selective short course in the use of stable isotopes in environmental research

REFERENCES AVAILABLE UPON REQUEST