

Agenda Item 5a: Discussion of Vacancies on Councils and Boards of Trustees

Situation: There is a term ending September 30, 2016, on the State Advisory Council on Indian Education.

Background: Brandi Brooks Davis has served as a UNC Board of Governors appointment to the State Advisory Council on Indian Education (SACIE) since 2010. Her term expired September 30. She is not eligible for appointment.

Assessment: Dr. Ryan Emanuel has been nominated to fill this vacancy. This is supported by President Ross and by North Carolina State University Chancellor Randy Woodson and Provost Warwick Arden.

Action: This item requires a vote.

The Role of the State Advisory Council on Indian Education

In 1988, the State Board of Education (SBE) adopted an Indian education policy to provide a process for identifying issues pertaining to the education of American Indian students in grades K–12. In the same year, the N.C. General Assembly enacted Article 13A (NCGS § 115C-210 et seq) to establish a fifteen member State Advisory Council on Indian Education to serve as the mechanism for advocating on the behalf of American Indian students. Membership consists of American Indian parents and educators, legislative members from the N.C. Senate and House of Representatives, representatives from the UNC Board of Governors, and the North Carolina Commission of Indian Affairs.

The Council serves a vital role in advising the State Board of Education on issues pertaining to the education of American Indian students. More specifically, the Council is charged with the following duties:

- to advise the SBE on effective educational practices for American Indian students;
- to explore programs that raise academic achievement and reduce the dropout rate among American Indian students;
- to advise the SBE and the Department of Public Instruction on ways to improve coordination and communication for the benefit of American Indian students affected by state and federal programs administered at the state level;
- to prepare and present an annual report to the SBE, tribal organizations, and to conferees at the annual North Carolina Indian Unity Conference; and
- to advise the SBE on any other aspect of American Indian education when requested by the State Board, educators, parents, students, business leaders, and other constituents.

Article V: Membership

Section 1. Appointments

The Council, by legislative mandate, shall consist of 15 members, as follows:

a) Two legislative members (one senator appointed by the President of the Senate and one representative appointed by the Speaker of the House);

b) Two American Indian members from higher education to be appointed by the Board of Governors of the University system;

c) One Indian member from the North Carolina Commission on Indian Affairs to be appointed by that Commission; and

d) Eight Indian parents of students enrolled in public schools and two Indian educators from public elementary/secondary schools to be appointed by the State Board of Education from a list submitted by the North Carolina Commission on Indian Affairs.

Section 2. Term of Office

The term of office shall be:

a) The legislative members shall serve for an unspecified term at the pleasure of their appointing authorities.

b) The higher education members shall serve for a term of two years at the pleasure of their appointing authority. The appointing authority may re-appoint said members for an additional two-year term.

c) The North Carolina Commission of Indian Affairs member shall serve for a term of two years at the pleasure of his or her appointing authority. The appointing authority may re-appoint said member for an additional two-year term.

d) The public school educators and the Indian parents shall each serve for a term of two years at the pleasure of the appointing authority. These members shall serve no more than two consecutive terms.

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Education

- 2007 Doctor of Philosophy, Environmental Sciences, University of Virginia, Charlottesville, VA
- 2003 Master of Science, Environmental Sciences, University of Virginia, Charlottesville, VA
- 1999 Bachelor of Science, Geology, Duke University, Durham, NC

Primary Appointments

- 2010 – Pres. Assistant Professor of Hydrology, Department of Forestry and Environmental Resources, North Carolina State University, Raleigh, NC
- 2007 – 2010 Assistant Professor and Faculty Fellow, Department of Geology, Appalachian State University, Boone, NC
- 2007 Postdoctoral Research Associate, Center on Global Change, Duke University

Secondary Appointments

- 2010 – 2014 Research Affiliate, Department of Land Resources and Environmental Sciences, Montana State University, Bozeman, MT
- 2010 – 2012 Adjunct Assistant Professor, Department of Geology, Appalachian State University

Research Interests

Hydrology, Environmental Sciences, Biogeochemistry, Terrestrial Ecosystem Ecology, Land-Atmosphere Interaction

Honors and Awards

- 2013 Invited Participant, Decadal US-Japan Joint Seminar on Catchment Hydrology and Forest Biogeochemistry
- 2011 Thank a Teacher Award, North Carolina State University
- 2010 Invited Participant, Dissertations Initiative for the Advancement of Climate Change Research (DISCCRS) V Symposium
- 2007 Award for Excellence in Scholarship in the Sciences and Engineering, Vice President for Research and Graduate Studies, University of Virginia
- 2007 First Prize in Natural Sciences and Mathematics, Robert J. Huskey Graduate Research Exhibition, University of Virginia
- 2004 Fred Holmsley Moore Teaching Award, Department of Environmental Sciences, University of Virginia
- 2004 Teaching Resource Center Graduate Teaching Award, University of Virginia
- 2003 Honorable Mention, Ford Foundation Predoctoral Fellowship, National Research Council of the National Academies
- 2003 Graduate Hydrology Award, Department of Environmental Sciences, University of Virginia
- 2003 Governor's Fellowship, Graduate School of Arts and Sciences, University of Virginia
- 2003 Outstanding Master's Presentation, 18th Annual Environmental Sciences Research Symposium, University of Virginia
- 2002 Outstanding Master's Presentation, 17th Annual Environmental Sciences Research Symposium, University of Virginia
- 1999 Graduation with High Distinction, Division of Earth and Ocean Sciences, Duke University
- 1995 On-the-Spot Award, US Geological Survey, Water Resources Division
- 1994 Eagle Scout, Boy Scouts of America

Teaching Experience

NC State University (2011 – Present)

FOR 420L/520L	Watershed and Wetland Hydrology (Undergrad/Grad)
NR 421/521	Wetland Delineation, Assessment and Regulation (Undergrad/Grad)
FOR 595	Mountain Ecohydrology Field Course (Grad)

Appalachian State University (2007 – 2010)

GLY 1101L	Introduction to Physical Geology Laboratory (Undergrad)
GLY 1103	Introduction to Environmental and Applied Geology (Undergrad)
GLY 1103L	Environmental and Applied Geology Laboratory (Undergrad)
GLY 3549	Mountain Ecohydrology (Undergrad)
GLY 4210	Senior Seminar (Undergrad)
GLY 4630/5630	Hydrogeology (Undergrad/Grad)

University of Virginia (2001 – 2006)

EVSC 148	Resources and the Environment (Undergrad Course, Grader)
EVSC 340L	Physical Hydrology Laboratory, (Undergrad Course, Head TA)
EVHY 544L	Catchment Hydrology Laboratory (Grad Course)
EVHY 545L	Hydrological Transport Processes Laboratory (Grad Course)
EVHY 546L	Forest Hydrology Laboratory (Grad Course)
EVHY 547L	Environmental Fluid Mechanics Laboratory (Grad Course)

Peer-Reviewed Research Publications (* = student/postdoc first author, X = submitted)

- X. Nippgen F*, McGlynn BL, **Emanuel RE**, (submitted) “The temporal evolution of variable contributing areas”
- X. Nippgen F*, McGlynn BL, **Emanuel RE**, Vose JM (submitted) “Watershed memory at the Coweeta Hydrologic Laboratory: The effect of past precipitation and storage on hydrologic response”
- X. Rice JS*, **Emanuel RE**, Vose JM, Nelson SAC (submitted) “Continental U.S. streamflow trends from 1940 - 2009 and relationships with watershed spatial characteristics”
- X. Mitchell SR*, **Emanuel RE**, McGlynn BL (submitted) “Atmospheric water demand yields divergent responses in evapotranspiration and net ecosystem production in a subalpine forest ecosystem”

- 17. Rice JS*, **Emanuel RE** (in press) “Landscape Position and Spatial Patterns in the Distribution of Land Use within the Southern Appalachian Mountains” *Physical Geography*
DOI:10.1080/02723646.2014.909218
- 16. Band LE, McDonnell JJ, Barros A, Bejan A, Burt T, Dietrich WE, **Emanuel RE**, Duncan J, Hwang T, Katul G, Kim Y, McGlynn BL, Miles B, A. Porporato A, Scaife C, Troch P (2014) “Ecohydrological flow networks in the subsurface” *Ecohydrology* DOI: 10.1002/eco.1525
- 15. Liang L, Riveros-Iregui DA, **Emanuel RE**, McGlynn BL (in press) “A simple framework to estimate distributed soil temperature from discrete air temperature measurements in data-scarce regions” *Journal of Geophysical Research* DOI: 10.1029/2013JD02059
- 14. **Emanuel RE**, Hazen AG, McGlynn BL, Jencso KG (in press) “Vegetation and topographic influences on hillslope-stream connectivity” *Ecohydrology* DOI: 10.1002/eco.1409
- 13. Kaiser KE*, McGlynn BL, **Emanuel RE** (2013) “Ecohydrology of an outbreak: Mountain pine beetle impacts trees in drier landscape positions first” *Ecohydrology* 6(3) DOI: 10.1002/eco.1286
- 12. Riveros-Iregui DA, McGlynn BL, **Emanuel RE**, Epstein HE (2012) “Complex terrain modulates bi-directional responses of soil respiration to inter-annual water availability” *Global Change Biology* 18(2) doi:10.1111/j.1365-2486.2011.02556.x

11. Nippgen F*, McGlynn BL, Marshall LA, **Emanuel RE** (2011) "Landscape structure and climate influences on hydrologic response" *Water Resour. Res.* 47, W12528, doi:10.1029/2011WR011161
10. **Emanuel RE**, Riveros-Iregui DA, McGlynn BL, Epstein HE (2011) "On the spatial heterogeneity of NEP in complex landscapes" *Ecosphere* 2(7) doi:10.1890/ES11-00074.1
9. Riveros-Iregui DA, McGlynn BL, Marshall L, Welsch DL, **Emanuel RE**, Epstein HE (2011) "A Landscape-Scale Assessment of a Process Soil CO₂ Production and Transport Model" *Water Resources Research* 47 doi:10.1029/2010WR009941.
8. LeDee OE, Barnes RT, **Emanuel RE**, Fisher PB, Henkel SK, Marlon JR (2011) "Training a New Scientist to Meet the Challenges of a Changing Environment" *Eos, Transactions, American Geophysical Union* 92(16) doi:10.1029/2010ES003309.
7. **Emanuel RE**, Epstein HE, McGlynn BL, Welsch DL, Muth, DJ, D'Odorico P (2010) "Spatial and temporal controls on watershed ecohydrology in the northern Rocky Mountains" *Water Resources Research* 46, W11553, doi:10.1029/2009WR008890.
6. Anderson WP, **Emanuel RE** (2010) "Effect of interannual climate oscillations on rates of submarine groundwater discharge" *Water Resources Research* doi:10.1029/2009WR008212.
5. Anderson WP, **Emanuel RE** (2008) "Role of interannual and interdecadal climate oscillations on groundwater in North Carolina" *Geophysical Research Letters* 35:L23402 doi:10.1029/2008GL036054.
4. Riveros-Iregui DA, **Emanuel RE**, Muth DJ, McGlynn BL, Epstein HE, Welsch DA, Pacific VJ, Wraith JM (2007) "Diurnal hysteresis between soil CO₂ and soil temperature is controlled by soil water content" *Geophysical Research Letters* 34:L17404 doi:10.1029/2007GL030938.
3. **Emanuel RE**, D'Odorico P, Epstein HE (2007) "Evidence of optimal water use by vegetation across a range of North American ecosystems" *Geophysical Research Letters* 34, L07401 doi:10.1029/2006GL028909.
2. **Emanuel RE**, D'Odorico P, Epstein HE (2007) "A dynamic soil water threshold for vegetation water-stress derived from stomatal conductance models" *Water Resources Research* 43, W03431 doi:10.1029/2005WR004831.
1. **Emanuel RE**, Albertson JD, Epstein HE, Williams CA (2006) "Carbon dioxide exchange and early old-field succession" *Journal of Geophysical Research* 111, G01011 doi:10.1029/2005JG000069.

Other Scholarly Writing

5. Reinhardt K, **Emanuel RE** (2009) "Christmas tree carbon science, Part 2: Current research" *Limbs and Needles* 36(4), North Carolina Christmas Tree Association
4. Reinhardt K, **Emanuel RE** (2009) "Christmas tree carbon science, Part 1: What is it and why should you be interested?" *Limbs and Needles* 36(2), North Carolina Christmas Tree Association
3. Soulé PT, **Emanuel RE**, Neufeld HS, Perry LB, Sherman JP, Taubman BF (2008) *Report from Appalachian State University to the North Carolina General Assembly on Climate Change*, UNC General Administration Climate Change Technical Committee
2. **Emanuel RE** (2006) Book Review of *Thought and Knowledge: An Introduction to Critical Thinking* by Diane F. Halpern. in *Teaching Concerns*, University of Virginia, Fall 2006
1. **Emanuel RE** (1998) "The Long Valley Caldera: Geomorphological observations during summer 1998." *Vertices: Duke University Magazine of Science and Technology*. Vol. 15

Presentations at National/International Conferences (* = student/postdoc presenter)

80. **Emanuel RE**, McGlynn BL, Riveros-Iregui DA (2014) "A Template for an Intensive Ecohydrology Field Course" *Eos Transactions AGU*, 95(53), Fall Meeting Suppl. (Poster Presentation - Forthcoming)
79. Mitchell SR*, **Emanuel RE**, McGlynn BL (2014) "Vapor Pressure Deficit, Soil Moisture, and Stream Flow Relationships to Land-Atmosphere Fluxes of Water and Carbon" *Eos Transactions AGU*, 95(53), Fall Meeting Suppl. (Postdoc Oral Presentation - Forthcoming)

78. Nippgen F*, McGlynn BL, **Emanuel RE** (2014) "Spatial patterns of catchment water redistribution: The intersection of topography and vegetation structure" *Eos Transactions AGU*, 95(53), Fall Meeting Suppl. (Student Poster - Forthcoming)
77. Bernhardt ES, Singh NK*, Reyes WM*, Bhattacharya R, Meyer JL, Knoepp JD, **Emanuel RE** (2014) "Long-Term Trends in DOC Concentrations and Fluxes in a Southern Appalachian Headwater Stream" *Eos Transactions AGU*, 95(53), Fall Meeting Suppl. (Poster - Forthcoming)
76. Singh NK*, **Emanuel RE**, McGlynn BL (2014) "Space-time Variability of Baseflow in Headwater Streams of the Southern Appalachians" *Eos Transactions AGU*, 95(53), Fall Meeting Suppl. (Student Poster - Forthcoming)
75. Reyes WM*, **Emanuel RE** (2014) "Terrain Complexity Influences on the Temporal Sensitivity of Terrestrial Ecosystem Carbon Exchange to Climate" *Eos Transactions AGU*, 95(53), Fall Meeting Suppl. (Student Poster - Forthcoming)
74. McGlynn BL, Nippgen F, Jencso KG, **Emanuel RE** (2014) "On the role of spatial patterns of watershed storage in observed storage-discharge relationships" *Eos Transactions AGU*, 95(53), Fall Meeting Suppl. (Contributing Author - Forthcoming)
73. Jones RT, Du Z, Riveros-Iregui DA, Dore JE, **Emanuel RE**, McGlynn, BL, McDermott T, Li X (2013) "Soil bacterial and archaeal communities of the Stringer Creek Watershed in relation to soil moisture, chemistry, and gas fluxes" *Eos Transactions AGU*, 94(53), Fall Meeting Suppl., Abstract B51D-0312. (Poster – Contributing Author)
72. Reinhardt K, **Emanuel RE**, Johnson DM (2013) "Islands in the Sky: Ecophysiological Cloud-Vegetation Linkages in Southern Appalachian Mountain Cloud Forests" *Eos Transactions AGU*, 94(53), Fall Meeting Suppl., Abstract A44D-06. (Oral Presentation – Contributing Author)
71. McGlynn BL, Nippgen F, Jencso KG, **Emanuel RE** (2013) "Spatial and temporal patterns of hydrologic connectivity between upland landscapes and stream networks" *Eos Transactions AGU*, 94(53), Fall Meeting Suppl., Abstract H43K-03. (Invited Oral Presentation – Contributing Author)
70. Kaiser KE*, McGlynn BL, **Emanuel RE** (2013) "Assessing Mountain Pine Beetle infestation patterns in space and time using high resolution QuickBird imagery and LiDAR" *Eos Transactions AGU*, 94(53), Fall Meeting Suppl., Abstract H33H-1494. (Student Poster)
69. Nippgen F*, McGlynn BL, **Emanuel RE**, Vose JM (2013) "The effects of climate variability on the rainfall runoff response of catchments from monthly to annual timescales" *Eos Transactions AGU*, 94(53), Fall Meeting Suppl., Abstract H13N-01. (Student Oral Presentation)
68. McGlynn BL, Kaiser KE, Lorenzo TM, Dore JE, Liang L, Riveros-Iregui DA, **Emanuel RE**, Seybold EC (2013) "Watershed scale soil biogeochemistry and greenhouse gas fluxes: Space-time dynamics of CO₂, CH₄, and N₂O" *Eos Transactions AGU*, 94(53), Fall Meeting Suppl., Abstract B12A-05. (Oral Presentation – Contributing Author)
67. Lorenzo TM*, Riveros-Iregui DA, Liang L, **Emanuel RE**, McGlynn BL, Kaiser KE, Seybold EC, Dore JE (2013) "Hydrologic and Geomorphic Effects on the Spatial and Temporal Variability of the $\delta^{13}\text{C}$ of Soil CO₂ and CO₂ Efflux in Complex Terrain" *Eos Transactions AGU*, 94(53), Fall Meeting Suppl., Abstract B11C-0384. (Student Poster)
66. **Emanuel RE**, Hazen AG, McGlynn BL, Jencso KG (2013) "Vegetation and topographic influences on hillslope-stream connectivity" *Geological Society of America Abstracts with Programs* 45(7) p.46, Paper 10-1. (Invited Oral Presentation)
65. **Emanuel RE** (2013) "Spatial variability of vegetation water stress and implications for catchment-scale water and carbon fluxes." US-Japan Joint Seminar on Responses of Catchment Hydrology and Forest Biogeochemistry to Climatic and Environmental Change, Honolulu, HI (Invited Oral Presentation).
64. **Emanuel RE** (2012) "Lessons and Perspectives on Balancing Research and Diversity-Oriented Service" *Eos Transactions AGU*, 93(53), Fall Meeting Suppl., Abstract ED13A-0777. (Poster)

63. McGlynn BL, Jencso KG, Nippgen F, **Emanuel RE**, Marshall LA, Gooseff MN (2012) “Spatial and temporal patterns of hydrologic connectivity between upland landscapes and stream networks” *Eos Transactions AGU*, 93(53), Fall Meeting Suppl., Abstract PA53A-2078 (Contributing Author – Invited)
62. Nippgen F*, McGlynn BL, **Emanuel RE** (2012) “The combined effects of topography and vegetation on catchment connectivity” *Eos Transactions AGU*, 93(53), Fall Meeting Suppl., Abstract H51E-1409 (Student Poster)
61. Rice JS*, **Emanuel RE** (2012) “Land use as an influence on runoff generating processes: A comparison of agricultural and forest land uses in the Southern Appalachian Mountains” *Eos Transactions AGU*, 93(53), Fall Meeting Suppl., Abstract H51E-1393 (Student Poster)
60. Riveros-Iregui DA, Liang L, **Emanuel RE**, McGlynn BL, Dore JE, Kaiser K, Seybold EC, Covino TP (2012) “Soil Carbon Transformation in Heterogeneous Landscapes” *Eos Transactions AGU*, 93(53), Fall Meeting Suppl., Abstract B51B-0541 (Contributing Author)
59. Seybold EC, Kaiser K, McGlynn BL, Dore JE, Riveros-Iregui DA, **Emanuel RE**, Liang L, Covino TP (2012) “Trace gas fluxes in complex terrain: The space-time dynamics of soil methane, carbon dioxide, and nitrous oxide” *Eos Transactions AGU*, 93(53), Fall Meeting Supplement, Abstract B51B-0540 (Contributing Author)
58. Mitchell SR*, **Emanuel RE**, McGlynn BL, Riveros-Iregui DA (2012) “Oscillating controls on carbon sequestration in a subalpine forest ecosystem” *Eos Transactions AGU*, 93(53), Fall Meeting Supplement, Abstract B51B-0497. (Contributing Author)
57. Singh NK*, **Emanuel RE**, McGlynn BL (2012) “Spatial and temporal variability of runoff and streamflow generation within and among headwater catchments: a combined hydrometric and stable isotope approach” *Eos Transactions AGU*, 93(53), Fall Meeting Supplement, Abstract B32A-02. (Student Oral Presentation)
56. Liang L, Riveros-Iregui DA, **Emanuel RE**, McGlynn BL (2012) “A Simple Framework To Estimate Distributed Soil Temperature From Discrete Air Temperature Measurements At High Temporal And Spatial Resolutions In Complex Terrain” *Eos Transactions AGU*, 93(53), Fall Meeting Supplement, Abstract H31H-1220. (Contributing Author)
55. Rice JS*, **Emanuel RE** (2012) “Land Use as an Influence on Runoff Generating Processes: A Comparison of Agricultural and Forest Land-Uses in the Southern Appalachian Mountains” *Geological Society of America Abstracts with Programs* 44(7) p.577, Paper 244-9. (Student Poster)
54. Singh NK*, **Emanuel RE**, McGlynn BL (2012) “Spatial and Temporal Variability of Runoff and Streamflow Generation Within and Among Headwater Catchments: A Combined Hydrometric and Stable Isotope Approach” *Geological Society of America Abstracts with Programs* 44(7) p.577, Paper 244-10. (Student Poster)
53. Batchelor C*, Singh NK, Anderson JL, Rice JS, **Emanuel RE** (2012) “Seasonality of Rainfall Isotopes in a Southern Appalachian Watershed” *Geological Society of America Abstracts with Programs* 44(7) p.578, Paper 244-11. (Student Poster)
52. Jones CE*, **Emanuel RE**, Anderson JL, Rice JS, Singh, NK (2012) “Hydraulic Conductivity Across a Range of Hillslopes in the Little Tennessee River Watershed” *Geological Society of America Abstracts with Programs* 44(7) p.577, Paper 244-8. (Student Poster)
51. McGlynn BL, Jencso KJ, Nippgen F, Carlson S, Mallard J, Covino T, **Emanuel RE**, Marshall L, Gooseff M, Bencala K, and Wondzell S (2012) “Climate & watershed structure effects on hydrologic connectivity & stream network influences on watershed signatures” Woo Lecture, Canadian Geophysical Union. (Invited – Contributing Author)
50. Nippgen F*, McGlynn BL, Marshall LA, **Emanuel RE** (2012) “Spatial and temporal similarity analysis: Linking landscape structure and climate to hydrologic response” *Geophysical Research Abstracts, European Geosciences Union 14*: EGU2012-14056. (Student Oral Presentation)

49. Nippgen F*, McGlynn BL, **Emanuel RE** (2012) “The combined effect of topography and vegetation on the temporal evolution of catchment connectivity” *Geophysical Research Abstracts, European Geosciences Union 14*: EGU2012-12431. (Student Poster Presentation)
48. Kaiser K*, McGlynn BL, **Emanuel RE** (2012) “Mountain pine beetle infestation impacted by water availability” *Geophysical Research Abstracts, European Geosciences Union 14*: EGU2012-12851. (Student Poster Presentation)
47. **Emanuel RE**, McGlynn BL, Nippgen F (2011) “Competing for water: Tension between biological and physical influences on runoff in vegetated watersheds.” *Eos Transactions AGU*, 92(53), Fall Meeting Supplement, Abstract B11B-0485. (Poster – San Francisco)
46. McGlynn BL, Riveros-Iregui DA, **Emanuel RE**, Epstein HE (2011) “Organization and scaling of carbon dynamics in complex landscapes: Implications of water, life, and landform feedbacks for terrestrial carbon cycling” *Eos Transactions AGU*, 92(53), Fall Meeting Supplement, Abstract EP31G-08 (Invited – Contributing Author)
45. Riveros-Iregui DA, Jencso KG, **Emanuel RE**, Pacific VJ, McGlynn BL (2011) “Emerging Patterns in Coupled Terrestrial-Aquatic Processes” *Eos Transactions AGU*, 92(53), Fall Meeting Supplement, Abstract B34A-08 (Invited – Contributing Author)
44. Nippgen F*, McGlynn BL, Marshall LA, **Emanuel RE** (2011) “Landscape structure and climate influences on hydrologic response” *Eos Transactions AGU*, 92(53), Fall Meeting Supplement, Abstract H24D-03 (Student Oral Presentation)
43. Singh NK*, Rice JS, Nippgen F, Jencso KG, McGlynn BL, **Emanuel RE** (2011) “Catchment isotope ecohydrology: Unraveling the combined influences of vegetation and topography on runoff generation in forested headwater catchments” *Eos Transactions AGU*, 92(53), Fall Meeting Supplement, Abstract B31E-0361 (Student Poster)
42. Rice JS*, Singh NK, **Emanuel RE** (2011) “The use of stable isotopes of H and O as indicators of shifts in hydrological processes across multiple land-use types at the hillslope scale in the southern Appalachian Mountains” *Eos Transactions AGU*, 92(53), Fall Meeting Supplement, Abstract H31A-1128 (Student Poster)
41. Kaiser K*, McGlynn BL, **Emanuel RE**, Nippgen F, Mallard JM (2011) “Ecohydrology of an Outbreak: Impacts of vegetation pattern and landscape structure on mountain pine beetle disturbance” *Eos Transactions AGU*, 92(53), Fall Meeting Supplement, Abstract B33B-0455 (Student Poster)
40. **Emanuel RE**, Barthel ZE, Jackson J, Jackson M, Johnson J, Kreza RG, Mentzer MC, Mutai E, Smith DA, Souther TJ, Sue R, Sutton CJ, Talley M, West A, Fail Jr. JL, Jernigan LS, Kloeppel BD, Sabaratnam S (2011) “Assessment of secondary succession in North Carolina: Advancing understanding of successional vegetation through coupled field and remote sensing studies” Ecological Society of America 96th Annual Meeting, Abstract PS53-176. (Poster)
39. Souther TJ*, Kreza RG, Mentzer MC, Kloeppel BD, **Emanuel RE** (2011) “Secondary forest succession quantification using LIDAR analysis in the southern Appalachians” Ecological Society of America 96th Annual Meeting, Abstract PS53-174. (Student Poster)
38. Barthel ZE*, Smith DA, Sutton CJ, **Emanuel RE**, Jernigan LS (2011) “Assessment of secondary ecosystem succession in Hoke County, NC” Ecological Society of America 96th Annual Meeting, Abstract PS8-85. (Student Poster)
37. Johnson J*, Mutai E, West A, Sabaratnam S, **Emanuel RE** (2011) “Assessing secondary ecosystem succession in Livingstone Forest, NC” Ecological Society of America 96th Annual Meeting, Abstract PS7-67. (Student Poster)
36. Sue R*, Fail Jr. JL, Jackson J, Talley M, Jackson M, Grimsley C, **Emanuel RE** (2011) “Ground truthing LIDAR data within a successional diverse piedmont forest” Ecological Society of America 96th Annual Meeting, Abstract PS8-76. (Student Poster)

35. Kloeppel, BD, Kreza RG, Mentzer MC, Souther TJ, **Emanuel RE** (2011) “Analysis of secondary forest succession using LIDAR analysis in the southern Appalachians” 72nd Annual Meeting of the Association of Southeastern Biologists, Huntsville, AL (Contributing Author)
34. McGlynn BL, Jencso KG, Riveros-Iregui DA, **Emanuel RE**, Covino TP, and Mallard J (2011) “Process interactions and synthesis in catchment hydrology” Vienna Catchment Sciences Symposium (Invited - Contributing Author)
33. Kaiser, K*, McGlynn BL, **Emanuel RE**, Nippgen F, and Mallard J (2011) “Ecohydrology: Disturbance and the intersection of vegetation pattern and landscape structure” *Geophysical Research Abstracts, European Geosciences Union 13*: EGU2011-9612. (Student Poster – Vienna, Austria)
32. Moody AC*, **Emanuel RE** (2011) “Mountain Ecohydrology: Modeling runoff production and streamflow in two distinctly vegetated headwater catchments” *Geophysical Research Abstracts, European Geosciences Union 13*: EGU2011-9401. (Student Poster – Vienna, Austria)
31. George Hazen A*, **Emanuel RE**, McGlynn BL, Jencso KG (2011) “Hillslope Ecohydrology: Vegetation influences on hillslope-stream connectivity in the northern Rocky Mountains, USA” *Geophysical Research Abstracts, European Geosciences Union 13*: EGU2011-9453. (Student Poster – Vienna, Austria)
30. Riveros-Iregui DA, McGlynn BL, **Emanuel RE**, Epstein HE (2011) “Spatial and Temporal Variability and Non-Monotonic Responses of Landscape-Scale Soil CO₂ Efflux” *Geophysical Research Abstracts, European Geosciences Union 13*: EGU2011-11012. (Contributing Author – Vienna, Austria)
29. McGlynn BL, Riveros-Iregui DA, **Emanuel RE**, Pacific VJ, Epstein HE, Welsch DL (2010) “Landscape structure controls on biogeochemical fluxes in complex terrain” *Eos Transactions AGU*, 91(53), Fall Meeting Supplement, Abstract U33B-06. (Invited – Contributing Author).
28. **Emanuel RE**, Riveros-Iregui DA, McGlynn BL, Epstein HE, Welsch DL (2010) “A Watershed Context for Interpreting the Landscape-Scale Spatial Heterogeneity of Biosphere-Atmosphere Carbon Exchange in Complex Terrain” *Eos Transactions AGU*, 91(53), Fall Meeting Supplement, Abstract B11D-0404. (Poster – San Francisco)
27. George Hazen A*, **Emanuel RE**, McGlynn BL, Jencso KG (2010) “Vegetation influences on hillslope-stream connectivity in a forested northern Rocky Mountain watershed” *Eos Transactions AGU*, 91(53), Fall Meeting Supplement, Abstract H53B-1011. (Student Poster – San Francisco)
26. Riveros-Iregui DA, Pacific VJ, McGlynn BL, **Emanuel RE**, Marshall LA, Epstein HE, Welsch DL (2010) “A Process-Based Assessment of Soil-Plant-Atmosphere Interactions in Complex Terrain.” *Eos Transactions AGU*, 91(53), Fall Meeting Supplement, Abstract B31E-0353. (Contributing Author)
25. **Emanuel RE**, McGlynn BL (2009) “Interpreting the propagation and filtering of hydrological and biogeochemical signals in forested watersheds through the intersection of vegetation organization and topography” *Eos Transactions AGU*, 90(53), Fall Meeting Supplement, Abstract H34E-04. (Invited Talk – San Francisco)
24. George Hazen A*, **Emanuel RE**, McGlynn BL, Jencso KG (2009) “Joint topographic and vegetation controls on hillslope water table dynamics in a forested, northern Rocky Mountain watershed” *Eos Transactions AGU*, 90(53), Fall Meeting Supplement, Abstract H33B-0867. (Student Poster – San Francisco)
23. McGlynn BL, Riveros-Iregui DA, Marshall LA, Welsch DL, **Emanuel RE**, Epstein HE (2009) “The Role of Spatially Variable Soil Moisture in Modeling Landscape-Scale Soil Respiration” *Eos Transactions AGU*, 90(53), Fall Meeting Supplement, Abstract B51B-0314. (Poster)
22. Taubman BF, Sherman JP, Sheridan PJ, Perry LB, Neufeld HS, **Emanuel RE**, Tashakkori R, Bowman D, Long C (2009) “Aerosol Direct Radiative Forcing in the Southern Appalachian

- Mountains: Initial Results from the Appalachian Atmospheric Interdisciplinary Research (AppalAIR) Facility” *Eos Transactions AGU*, 90(53), Fall Meeting Supplement, Abstract A53B-0261. (Contributing Author)
21. Riveros-Iregui DA, McGlynn BL, Epstein HE, Welsch DL, **Emanuel RE**, Muth DJ (2009) “Landscape Structure Controls Soil CO₂ Efflux Variability in Complex Terrain: Scaling from Point Observations to Watershed-Scale Fluxes” 2nd North American Carbon Program All-Investigators Meeting, February 17-20, San Diego, CA. (Contributing Author)
 20. **Emanuel RE**, D’Odorico P, Epstein HE (2008) “Effects of Spatially Heterogeneous Vegetation Water Stress on Hydrological Processes within a Forested, Mountain Watershed” *Eos Transactions AGU*, 89(53), Fall Meeting Supplement, Abstract H11C-0774. (Poster)
 19. Anderson WP, **Emanuel RE** (2008) “Role of interannual climate oscillations on coastal groundwater conditions in North Carolina.” Geological Society of America *Abstracts with Programs*, 40(5), p. 212 (Contributing Author)
 18. Wood TE, **Emanuel RE**, Tully K, Lawrence DE (2008) “Species effects on stand-level nutrient economy of a Costa Rican rainforest” Ecological Society of America 93rd Annual Meeting. (Contributing author)
 17. Motsinger A*, **Emanuel RE**, Anderson WP (2008) “Effects of El Niño/Southern Oscillation on hydrological conditions in North Carolina.” Geological Society of America *Abstracts with Programs*, 40(4), p. 74. (Student Poster)
 16. Washington-Allen RA, Therrell MD, **Emanuel RE** (2007) “Theory and practice in determining the long-term spatial productivity of drylands: a California blue oak case study.” *Eos Transactions AGU*, 88(52), Fall Meeting Supplement, Abstract B42B-03. (Invited, Contributing Author)
 15. Wood TE, **Emanuel RE**, Tully K, Lawrence D (2007) “Species effects on stand-level nutrient economy of a Costa Rican rain forest.” *Eos Transactions AGU*, 88(52), Fall Meeting Supplement, Abstract B31A-0071. (Contributing Author)
 14. McGlynn BL et al. (2007) “Diurnal Hysteresis between soil CO₂ and soil temperature is controlled by soil water content.” (2007) *Eos Transactions AGU*, 88(52), Fall Meeting Supplement, Abstract B23A-0917. (Contributing Author)
 13. Muth DJ, Epstein HE, **Emanuel RE**, McGlynn B, Welsch D (2007) *Eos Transactions AGU*, 88(52), Fall Meeting Supplement, Abstract B21D-06. (Contributing Author)
 12. Riveros-Iregui DA, McGlynn BL, Epstein HE, Welsch DL, Pacific VJ, Muth DJ, **Emanuel RE**, Jencso KG, Wraith JM (2007) “Tenderfoot Creek Experimental Forest, Montana: Measuring and modeling carbon and water fluxes from point to watershed scales (Part I)” *AmeriFlux Annual Meeting*, October 17-19, Boulder, CO. (Contributing Author)
 11. Riveros-Iregui DA, McGlynn BL, Epstein HE, Welsch DL, Pacific VJ, Muth DJ, **Emanuel RE**, Jencso KG, Wraith JM (2007) “Tenderfoot Creek Experimental Forest, Montana: Measuring and modeling carbon and water fluxes from point to watershed scales (Part II)” *AmeriFlux Annual Meeting*, October 17-19, Boulder, CO. (Contributing Author)
 10. **Emanuel RE**, D’Odorico P, Epstein HE (2006) “Optimal Water use by Vegetation Across a Range of North American Ecosystems.” *Eos Transactions AGU*, 87(52), Fall Meeting Supplement, Abstract H13A-1361. (Poster – San Francisco, CA)
 9. Muth DJ, Epstein HE, **Emanuel RE**, McGlynn B, Welsch D (2006) “Estimating Net Ecosystem Exchange in Complex Terrain: A Case Study from a Subalpine, Montane Forest System.” *Eos Transactions AGU*, 87(52), Fall Meeting Supplement, Abstract B52B-05. (Contributing author)
 8. McGlynn BL, Epstein HE, Welsch DL, Gooseff M, Riveros-Iregui DA, Pacific VJ, Muth DJ, **Emanuel RE**, Jencso KG, Payn R, Wraith J, Marshall LA, Skidmore M, McCaughey W (2006) “Tenderfoot Creek Experimental Forest, Montana: Measuring and modeling carbon and water

- fluxes from point to watershed scales.” *Eos Transactions AGU*, 87(52), Fall Meeting Supplement, Abstract B53A-0337. (Contributing author)
7. Wood T, Lawrence D, **Emanuel RE** (2006) “Nutrient resorption in nine common canopy trees of a secondary wet tropical forest in Costa Rica.” Ecological Society of America 91st Annual Meeting. (Contributing author)
 6. **Emanuel RE**, D’Odorico P, Epstein HE, Muth DJ (2006) “Data assimilation for a watershed-scale model of transpiration and vegetation water stress.” *Eos Transactions AGU*, 87(36) Joint Assembly Supplement, Abstract H43B-05. (Poster – Baltimore, MD)
 5. **Emanuel RE**, D’Odorico P, Epstein HE (2005) “A Soil Moisture Dependent Model of Stomatal Conductance.” *Geophysical Research Abstracts, European Geosciences Union* 7:01357. (Oral Presentation – Vienna, Austria)
 4. **Emanuel RE**, Albertson JD, Epstein HE, D’Odorico P and Williams CA (2003) “Carbon Dioxide Exchange over an Evolving Successional Landscape.” Ecological Society of America 88th Annual Meeting. (Poster – Savannah, GA)
 3. **Emanuel RE**, Albertson JD, Epstein HE, D’Odorico P and Williams CA (2002) “Modeling Ecosystem Respiration over an Evolving Successional Landscape.” *Eos Transactions AGU*, 83(47), Fall Meeting Supplement, Abstract H52A-0832. (Poster – San Francisco, CA)
 2. **Emanuel RE**, Albertson JD, Epstein HE, D’Odorico P and Williams CA (2002) “Partitioning net ecosystem exchange of carbon dioxide over a successional landscape using micrometeorological and eddy covariance measurements.” *Eos Transactions AGU*, 83(19), Spring Meeting Supplement, Abstract H52C-07. (Oral Presentation – Washington, DC)
 1. **Emanuel RE**, Albertson JD, Williams CA and Epstein HE (2001) “An investigation of soil moisture status and rates of carbon sequestration in a successional environment.” *Eos Transactions AGU*, 82(47), Fall Meeting Supplement, Abstract H31F-08. (Oral Presentation – San Francisco, CA)

Extramural Research Funding (\$1,145,929 awarded to home institution)

8. “Assessing and Communicating the Effects of Land Use and Climate Change on Water Resources of the Lumbee Tribe: A Partnership with the American Indian Science and Engineering Society, the Southern Research Station, and North Carolina State University” (**Lead PI**) *U.S. Dept. of Agriculture*, 2014-2016, NCSU Budget: \$49,799
7. “Coastal SEES Collaborative Research: Salinization of the inland coastal plain through saltwater intrusion: landscapes in transition along the leading edge of climate change” (**Lead PI**) *National Science Foundation* EF-1427188, 2015-2019, NCSU Budget: \$360,393, Total Collaborative Budget: \$1,500,000
6. “Soil Carbon Transformation in Heterogeneous Landscapes” (**Co-PI**), *U.S. Dept. of Agriculture NIFA-2012-67019-19360*, 2012-2015, NCSU Budget: \$115,208
5. “Southern Appalachia on the Edge: Exurbanization and Climate Interaction in the Southeast” (**Co-PI**), *National Science Foundation DEB-0823293*, NCSU Budget \$77,884
4. “Assessing Swamp Forest Die-Off at Goose Creek State Park” (**Lead PI**), *North Carolina Sea Grant Mini-Grant*, 2011-2012, Total Budget: \$5,375.
3. “Acquisition of a Mobile Tower System for Interdisciplinary Atmospheric Research” (**Lead PI**), *National Science Foundation EAR-0949263/1114292*, 2011-2013, Total Budget: \$191,397.
2. “Collaborative Research: The intersection of vegetation organization and watershed topology: Ecohydrologic imprints in runoff generation and stream discharge” (**Lead PI**), *National Science Foundation EAR-0838193*, 2009-2012, ASU Budget: \$145,935, Total Collaborative Budget: \$311,566 (Co-PI: Brian McGlynn, Montana State University).
1. “RIG: Assessment of Secondary Succession in North Carolina: Advancing understanding of successional vegetation through coupled field and remote sensing studies” (**Lead PI**), *National Science Foundation DEB-0920421*, 2009-2011, Total Budget: \$199,938.

Intramural Research Funding (\$872,427 total awarded)

7. "Socio-Ecological Solutions to the Salinization of Albemarle-Pamlico Peninsula: An Interdisciplinary Assessment of Land and Water Resources and Community Climate Readiness" (*NCSU College of Natural Resources*, **\$845,927**).
6. "Assessment of Wind Turbine Impacts on Downwind Micrometeorology" *Office of Business Affairs, Appalachian State University*, 2009, **\$15,000**.
5. "University Research Council Grant" *Appalachian State University*, 2009, **\$5,000**.
4. "Robert J. Huskey Travel Fellowship" *Graduate School of Arts and Sciences, University of Virginia* (to attend AGU Fall Meeting in San Francisco), 2006, **\$500**.
3. "Robert J. Huskey Travel Fellowship" *Graduate School of Arts and Sciences, University of Virginia* (to attend AGU Joint Assembly in Baltimore), 2006, **\$500**.
2. "Moore Research Grant: Modeling Plant Water-Stress and Stomatal Conductance from Leaf to Catchment Scales" *Department of Environmental Sciences, University of Virginia*, 2006, **\$4,000**.
1. "Exploratory Research Grant: Micrometeorological Measurements of Secondary Succession" *Department of Environmental Sciences, University of Virginia*, 2003, **\$1,500**.

Graduate Students Advised or Co-Advised (4 Current, 5 Complete)

- Curr. Mr. Wilmer Reyes (Ph.D. Student), NC State University
 Curr. Mr. Joshua Rice (Ph.D. Student), NC State University
 Curr. Mr. Nitin Singh (Ph.D. Student), NC State University
 Curr. Ms. Liz Ward (Master of Natural Resources Student), NC State University
 2014 Mr. Fabian Nippgen (Ph.D.), Montana State University (Co-advised with Brian McGlynn, Duke University)
 2014 Ms. Susan Gale (M.S.), NC State University
 2013 Mr. Cormac O'Doherty (M.S.), NC State University
 2013 Mr. John Buckley (Master of Natural Resources), NC State University
 2013 Mr. Joshua Rice (M.S.), NC State University

Graduate Student Committees (8 Current, 12 Complete)

- Curr. Mr. Whalen Dillon (Ph.D. Student), NCSU-FER
 Curr. Ms. Sarah Waickowski (M.S. Student), NCSU-BAE
 Curr. Ms. Kristen McSwain (Ph.D. Student), NCSU-Soil Science
 Curr. Ms. Nicole Dobbs (M.S. Student), NCSU-BAE
 Curr. Ms. Kelly Suttles (M.S. Student), NCSU-FER
 Curr. Mr. Shawn Shifflett (Ph.D. Student), NCSU-FER
 Curr. Mr. Michael Just (Ph.D. Student), NCSU-Plant Biology
 Curr. Ms. Keren Cepero-Pérez (Ph.D. Student), NCSU-MEAS
 2014 Mr. Andrew Radecki (M.S.), NCSU-FER
 2014 Dr. Colby Moorberg (Ph.D.), NCSU-Soil Science
 2013 Mr. Eric Jaeschke (M.S.), NCSU-FER
 2013 Mr. Frank Davis (M.N.R.), NCSU-FER
 2013 Dr. Damian Maddalena (Ph.D.), NCSU-FER
 2012 Ms. Amanda Johnson (M.N.R.), NCSU-FER
 2012 Ms. Julie Canavin (M.N.R.), NCSU-FER
 2012 Mr. Stephen Holland (M.S.), NCSU-Soil Science
 2012 Mr. John Mallard (M.S.), Montana State University
 2012 Ms. Laura Nagy (M.S.), NCSU-MEAS
 2011 Ms. Kimberly Hamlin (M.N.R.), NCSU-FER
 2010 Dr. Kelsey Jencso (Ph.D.), Montana State University

Undergraduate Researchers Mentored (2 Current, 8 Past)

- Curr. Ms. Taylor Kiker (B.S. Student) NCSU-FER
 Curr. Ms. Jocelyn Painter (B.S. Student) NCSU-Engineering
 2014 Mr. Dale Prihoda (B.S.), NCSU-FER
 2013 Ms. Brittany Anstead (B.S.), NCSU-FER
 2012 Mr. Adam Shelton (B.S.), NCSU-FER
 2012 Mr. Brian Hyde-Licon (B.S.), National Agricultural University, Honduras
 2012 Mr. Alan Shafer (B.S.), NCSU-FER
 2011 Ms. Anna George Hazen (B.S.), Appalachian State University
 2011 Mr. Alex Moody (B.S.), Appalachian State University
 2011 Mr. Michael Oxendine (B.S.), Appalachian State University

Postdoctoral Scholars Mentored (1 Past)

- 2012 Dr. Stephen Mitchell, Duke University

Honors and Awards to Mentored Students

- 2014 *Russell E. Train Scholarship* World Wildlife Fund to W. Reyes
 2014 *Faculty Fellowship for Excellence in Graduate Education* NCSU DFER to N. Singh
 2014 *Global Change Fellowship* DOI Southeast Climate Science Center to N. Singh
 2013 *Horton Research Grant* American Geophysical Union to F. Nippgen
 2013 *Graduate Research Grant* Geological Society of America to N. Singh
 2013 *Undergraduate Research Award* NCSU Office of Undergraduate Research to D. Prihoda
 2012 *Graduate Research Fellowship* National Science Foundation to J. Rice
 2012 *Graduate Research Fellowship* National Science Foundation to K. Kaiser
 2012 *Ph.D. Research Scholarship* NC Association of Environmental Professionals to N. Singh
 2010 *Undergraduate Research Award* ASU to A. Moody
 2009 *Undergraduate Research Award* ASU to H. Morgan
 2008 *Undergraduate Research Award* ASU to W. Beuttell
 2008 *Undergraduate Travel Award* ASU to A. Motsinger

Service to the University Community

- 2013 – Pres. Member NCSU-DFER Seminar Committee
 2012 – Pres. Member NCSU-DFER Graduate Committee
 2011 – Pres. Coordinator NCSU Wetland Assessment Minor
 2011 – Pres. Member NCSU Water Resources Graduate Minor Committee
 2010 – Pres. Member NCSU-DFER Building Future Faculty Ad-Hoc Review Committee
 2010 – Pres. Member NCSU-DFER Department Advisory and Management Committee
 2013 – 2014 Member NCSU-CNR Strategic Planning Committee
 2012 – 2014 Member NCSU Chancellor's Faculty Excellence Cluster Search Committee
 (Geospatial Analytics, 3 positions)
 2011 – 2012 Member NCSU-DFER Teaching Peer Review Committee
 2009 – 2010 Chair ASU-Geology Department Curriculum Committee
 2008 – 2010 Member ASU-Geology Department Personnel Committee
 2008 – 2010 Advisor InterVarsity Christian Fellowship, Appalachian State University
 2008 – 2009 Member UNC General Administration Climate Change Technical Committee
 2007 – 2009 Member ASU-Geology Department Faculty Search Committee

Service to the Scientific Community

- 2014 – Pres. Member Education and Outreach Committee, Consortium of Universities for the Advancement of Hydrologic Sciences, Inc.

- 2011 – Pres. Delegate Universities Council on Water Resources
- 2010 – Pres. Proposal Reviewer NSF-Ecosystem Studies (2012-Present), NSF-Instrumentation and Facilities (2010-Present), NSF-Hydrologic Sciences (2009-Present), DOI-Climate Science Center (2014), Rico Sea Grant (2013), Dissertations Initiative for Climate Change Research (2011-2012), NSF-Geography and Spatial Sciences (2010-2012), NSF-Major Research Instrumentation (2010), DOE-National Inst. for Climate Change Research (2010)
- 2008 – Pres. Convener American Geophysical Union Fall Meeting Sessions (2008, 2011, 2014)
- 2007 – Pres. Manuscript Reviewer Water Resources Research (2007-present), Journal of Geophysical Research (2008-present), Geophysical Research Letters (2010-present), Hydrological Processes (2010-present), Journal of Hydrometeorology (2011-present), Geoderma (2011-present), Ecosphere (2011-present), Journal of Hydrologic Engineering (2012), Koedoe: African Protected Area Conservation and Science (2011), Environmental Management (2011), Applied Geography (2011), Ecohydrology (2013), Hydrology and Earth System Science (2013-present), PLOS ONE (2013), Journal of Hydrology (2013), Hydrology and Earth System Science (2014), Agricultural and Forest Meteorology (2014), Geomorphology (2014)
- 2001 – Pres. Member American Geophysical Union
- 2012 – 2014 Proposal Review Panelist National Science Foundation, Water Resources Research Institutes, Sea Grant, Department of Interior
- 2010 – 2014 Member Ecohydrology Technical Committee, American Geophysical Union
- 2007 – 2009 Reader Advanced Placement Environmental Science Exam

Service to the American Indian Community

- 2014 – Pres. Member Environmental Justice Committee, NC Commission of Indian Affairs
- 2013 – Pres. Co-Advisor NCSU Chapter of the American Indian Science and Engineering Society
- 2011 – 2014 Chair Wake County Public School System Title VII Indian Education Parent Committee
- 2012 Contributor NC State Advisory Council on Indian Education Annual Report
- 2010 – 2011 Secretary Wake County Public School System Title VII Indian Education Parent Committee
- 2008 – 2010 Advisor Native American Council, Appalachian State University

Outreach, Recruitment and Retention Activities

- 2014 – Pres. Mentor Lighting the Pathway to Faculty Careers for Natives in STEM, American Indian Science and Engineering Society
- 2012 – Pres. Facilitator High School Environmental Science Field Day, Robeson County Schools
- 2011 – Pres. Host National Agricultural University, Honduras (Annual NCSU College Tours)
- 2011 – Pres. Guest Speaker AISES Region 7 Conference (2013, 2014), HBCU-UP Program, Johnson C. Smith University (2011), Terry Sanford High School, Fayetteville, NC (2011), Western Carolina University (2009), Livingstone College (2009), UNC Pembroke (2009), Robeson County Schools Indian Education Program (2007, 2011)
- 2011 – Pres. Host American Indian high school students (Annual NCSU Departmental Tours)
- 2008 – 2010 Mentor Geology Cluster, Appalachian Undergraduate Academy of Science
- 2007 – 2010 Host Church Hill Academy, Richmond, VA (Annual ASU College Tours)

Synergistic Activities

- 2014 Participant American Indian Summit on Higher Education
- 2013 Participant American Indian UNC System Faculty Forum

- 2013 Participant Ecohydrological Flow Networks in the Subsurface Workshop, UNC
 2011 Organizer Chancellor's Faculty Excellence Cluster Hire Proposal in Integrated Environmental Biology and Earth Science
 2007 Co-Founder Appalachian Atmospheric, Interdisciplinary Research (AppalAIR) Program, ASU-NCSU-UNCA

Invited Academic Seminars

- 2014 Department of Marine Earth and Atmospheric Sciences, NCSU
 2014 Department of Forestry and Environmental Resources, NCSU
 2014 National Agricultural University, Catacamas, Honduras
 2013 Geospatial Analytics Forum, NCSU
 2013 US-Japan Joint Seminar on Catchment Hydrology, Honolulu, HI
 2013 University Global Partnership Network, NCSU
 2012 Department of Plant Biology, NCSU
 2011 Nebraska Water Center, University of Nebraska
 2010 NC Water Science Center, US Geological Survey
 2010 Institute of the Environment, University of Arizona
 2010 Coweeta Hydrologic Laboratory, US Forest Service
 2009 North Carolina Christmas Tree Association
 2008 Department of Biology, University of North Carolina – Pembroke
 2008 Department of Geography and Planning, Appalachian State University
 2007 Department of Environmental Sciences, University of Virginia

Recent Media Coverage and Public Outreach

- 2014 Featured in UNC-TV (Public Television) series Exploring North Carolina, November 20, 2014 episode "Where Rivers are Born"
 2012 Winds of Change Magazine, American Indian Science and Engineering Society: "At Home on the Water"
 2010 Raleigh News and Observer: "A persistent people's long quest for justice"
 2009 Focus on Ecologists, Ecological Society of America
 2009 Asheville Citizen-Times: "AppalAIR: Atmospheric Research Collaboration"

Other Experience

- 2001 - 2007 *Graduate Teaching Assistant*, Department of Environmental Sciences, Univ. of Virginia
 2002 – 2007 *Whitewater Kayaking Instructor*, Intramural and Recreational Sports, Univ. of Virginia
 2002 - 2006 *Graduate Research Fellow*, Blandy Experimental Farm, University of Virginia
 2004 - 2005 *Graduate Student Associate*, Teaching Resource Center, University of Virginia
 2001 *Enterprise Software Integrator*, Trex Company, LLC, Winchester, VA
 1999 - 2000 *Administrator and Regional Materials Coordinator*, Trex Company, LLC, Winchester, VA
 1996 – 1999 *Salesperson*, Great Outdoor Provision Company, Durham, NC
 1995 - 1998 *Hydrologic Aid*, US Geological Survey, Water Resources Division, North Carolina

Research Mentors

- Postdoctoral Robert B. Jackson (Duke)
 Ph.D. Paolo D'Odorico and Howard E. Epstein (U.Va.)
 M.S. John D. Albertson (U.Va.)
 B.S. Stuart Rojstaczer and Peter Malin (Duke)

Skills and Training

Software and Programming:

Mathworks *Matlab*, ESRI *ArcGIS*, Golden
Software *Surfer*, ERDAS *Imagine*, Campbell
Scientific *PC208W*, *Loggernet*, Visual Basic,
C++, HTML

Specialized Training and Certifications:

OSHA-certified tower climbing, safety and rescue
Authorized ASTER User – *NASA*
LI6400 Training – *Licor Biosciences*
Winter Mountaineering – *American Alpine Institute*

Tribal Affiliation

Lumbee Tribe of North Carolina (Pembroke, NC)