

Elizabeth Shay, PhD, AICP

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EDUCATION

PhD	City and Regional Planning, University of North Carolina, Chapel Hill NC, 2007
MLS	School of Information and Library Science, University of North Carolina, Chapel Hill NC
MS	Russian, Jackson School of International Studies, University of Washington, Seattle WA
BS	Biology, Southern Oregon University, Ashland OR
AICP	American Institute of Certified Planners: exam-based professional accreditation, 2011

PROFESSIONAL EXPERIENCE

2020-	Associate professor, Geography and Planning, Appalachian State University, Boone NC Director, Planning Program
2020-2023	Associate director, North Carolina Transportation Center of Excellence in Advanced Technology Safety & Policy (tsap.unc.edu) led by UNC Highway Safety Research Center
2015-2020	Assistant professor, Geography and Planning, Appalachian State University, Boone NC
2014-2015	Community planner, North Carolina Department of Transportation, Raleigh NC
2003-2014	University of North Carolina—Chapel Hill: director, Sustainable Triangle Field Site, Institute for the Environment, UNC-Chapel Hill (2010-2014); research assistant professor (2013-2014); research associate—Institute for the Environment; lecturer—Curriculum for the Environment and Ecology, UNC-Chapel Hill
Pre-2003	Editing, translating, publishing Manuscript office, <i>Environmental Science & Technology</i> , ACS, UNC—Chapel Hill Associated Publishers, St. Paul MN (translating <i>Pravda</i> into English, editing) Centre for Water Research, University of Western Australia, Perth (editing, writing) Current Digest of the Soviet Press, Columbus OH (translating, abstracting)

TEACHING

Appalachian State University, 2015-

Town, city & regional planning	Planning tools & techniques	Land, property, and law
Transportation planning	Inside the sustainable city	Community development
Planning studio	Honors/graduate theses	Independent research

UNC—Chapel Hill, 2007-2014

Taught	Urban transportation planning 2008, 2010
Directed	Environmental Capstones, fall and spring semesters, for on- and off-campus clients
Designed, developed, taught	Principles of sustainability; Sustainable urban planning in Germany, Sweden, Denmark; Seminars: Cross-Atlantic sustainability, Sustainable food systems, Sustainability primer, Sustainable community, Sustainable UNC

RESEARCH

- 2024-25 NC Dept Transportation, Understanding drivers of change in vehicle availability and ownership in North Carolina. Subcontract with UNC-Chapel Hill (PI Combs)
- 2024- Appalachian State University, Graduate Research Assistant Mentoring program. Three cycles (2024-26, co-PI Quattro; 2019-21, 2016-2018 co-PIs Dempsey, Sugg)
- 2023-24 Appalachian State, University Research Council and Undergraduate Research Assistantship. Planning in high places: NW North Carolina and Scottish Highlands
- 2020-23 NC Department of Transportation Center of Excellence in Advanced Technology Safety and Policy. Five-university consortium (led by UNC-Chapel Hill)
- 2022 GEAR-UP Teaching for Community Resilience, Legos activity for middle school & university students; Education, Planning, Social Work (MacNamara, Shay, Smith)
- 2020-21 Appalachian State University, Campus COVID-19 grant. Trail cameras to monitor greenway use, social distancing (Christiana, Battista, Broce, Hege, Shay, Venrick)
- 2020-21 Chancellors Innovation Scholars, Appalachian State U, Collaborative client-service curriculum to develop sustainable communities (Kowalczyk, MacNamara, Shay)
- 2019-20 Appalachian State University, Research Institute for Environment, Energy & Economics. CONCERT grant—social work/planning (MacNamara, Shay)
- 2018 Appalachian State University, Research Institute for Environment, Energy & Economics. Communication grant—public health messaging (Hege, Shay, Sugg)
- 2018 Appalachian State University, Research Institute for Environment, Energy & Economics. SCORE grant—trans-disciplinary teaching (MacNamara, Shay)
- 2017-18 Collaborative Sciences Center for Road Safety, University of Tennessee (sub-contract). Connected and automated vehicles, safety, and walkability (PI Khattak)
- 2017-19 Appalachian State University, University Research Council Grant. Student travel behavior at an off-campus private apartment complex (Combs, Shay)
- 2016 Appalachian State University, summer faculty grant. Development of new applied-learning course on aging-in-place and elder-friendly built environment (Shay)
- 2016-18 Appalachian State University, Research Institute for Environment, Energy & Economics. CONCERT grant—mountain resilience (Dempsey, Shay, Sugg)
- 2012-14 NC Dept of Transportation. *Defining North Carolina's Transportation-Disadvantaged Populations*. UNC-Chapel Hill subcontract, NC State University (PI Lane)
- 2012-13 National Inst Health. *System for Observing Play and Recreation in Communities*. Review of park/recreation plans; physical activity in dog parks. (PI Evenson)
- 2012 Preparedness & Emergency Response Research Center, UNC-Chapel Hill School of Public Health. *Emergency planning and response for vulnerable populations; emergency sheltering*. (PIs Berke, Horney)
- 2010-11 Lincoln Institute of Land Policy. *Built environment and transport-related greenhouse gas emissions in Charlotte NC metro: An integrated model*. (PI Rodriguez)
- 2009-10 US EPA Region 4. *Sustainable small and medium enterprises*. UNC-Chapel Hill Institute for the Environment and Duke University (Gallagher, Shay)
- 2007-11 National Heart, Lung and Blood Institute (RAND). *Away from home and out of school: Adolescent PA and BMI, Trial of Activity in Adolescent Girls 2*. UNC-Chapel Hill Center for Urban and Regional Studies (PIs Evenson, Rodriguez)

- 2005-09 EPA STAR. *Regional development, population trend and technology change impacts on future air pollution emissions*. Auto ownership and travel behavior. UNC-CH Center for Urban & Regional Studies (PIs Rodriguez, Song)
- 2007-08 Robert Wood Johnson Foundation, Active Living Research. *Testing associations between physical activity and the built environment*. Built environment and walking behavior. UNC- Center for Urban & Regional Studies (PI Rodriguez)
- 2007 Robert Wood Johnson Foundation, Active Living Research. *Collaborative intergovernmental school planning and active travel to school*. UNC-Chapel Hill Center for Urban & Regional Studies (Salvesen, Shay)

PUBLICATIONS

Peer-reviewed research

- Schado, T, **E Shay**, B Thapa, T Combs, “Preparing for connected and automated vehicles: Insights from North Carolina transportation professionals,” under review at *Case Studies on Transport Policy*
- Sugg, M, S Ryan, T Spurlock, S Duncan, A Hege, M Ogwu, J Tyson, **E Shay**, K Renwick, C Hendren, M Roy, J Runkle, “Climate change and health in rural mountain environments: Summary of a workshop on knowledge gaps, barriers, and opportunities for action,” *GeoJournal*, 88, 5397-5409, 2023
- Shay**, E, M MacNamara, “Planning and social work: Teaching pre-professional university students across colleges.” *Journal of Community Practice*, 31: 1, 11-23, 2023
- Christiana, R, S Daily, T Bias, V Haas, A Dwyer, **E Shay**, A Hege, R Broce, H Venrick, C Abildso, “Effectiveness of a point-of-decision prompt to encourage physical distancing on greenways and rail-trails during Covid19 pandemic,” *Environment & Behavior*, 54:6, 2022
- Bagli, H, **E Shay**, T Combs, “AVs—Use, share, own? Young adults’ perceptions of connected and automated vehicles,” *Transportation Research Record*, 2676: 11, 2022
- Bonevac, A, **E Shay**, T Combs, “Key informant perceptions of flooding and landslides in Western NC following 2018 floods and landslides,” *Southeastern Geographer*, 62: 2, 2022
- Mitchell, J, J Runkle, L Andersen, **E Shay**, M Sugg, “Inequalities in life expectancy across North Carolina: A spatial analysis of the social determinants of health and the Index Concentration at Extremes,” *Family and Community Health*, 45:2, 77-90, 2022
- Bias, T, S Daily, C Abildso, H Venrick, **E Shay**, S Moyers, A Hege, V Haas, A Dyer, R Broce, R Christiana, "Systematic observation of physical distancing behaviors of trail users during the COVID-19 pandemic," *Journal of Healthy Eating and Active Living*, 1:3, 2021
- Sugg, MM, L Andersen, **E Shay**, J Tyson, J Runkle, “Climate, environment, and public health in Western North Carolina,” *Sustainable Health—Journal of the BCBSNC Institute for Health and Human Services*, Appalachian State University, Volume 1, March 2021
- Shay**, E, M MacNamara, “Rural community development as a teaching environment for cross-professional training in macro social work and community and regional planning,” *Contemporary Rural Social Work*, 11, No. 1, 2019
- Andersen, LM, A Bonevac, L Thompson, K Dempsey, **E Shay**, M Sugg, “Understanding key informant experiences and perceptions of the 2016 drought and wildfires in western North Carolina,” *Weather, Climate and Society*, 11, 2019
- Shay**, E, AJ Khattak, B Wali, “Walkability in the connected and automated vehicle era: A U.S. perspective on research needs,” *Transportation Research Record* 2672, Washington DC, 2018

- Shay, E, T Combs, D Findley, C Kolosna, M Madeley, D Salvesen,** “Identifying transportation disadvantage: Mixed-methods analysis.” *Transport Policy*, 48, 2016
- Combs, T, E **Shay**, D Salvesen, C Kolosna, M Madeley, “Understanding the multiple dimensions of transportation disadvantage: The case of rural North Carolina.” *Case Studies on Transport Policy*, 4, 2016
- Evenson, KR, E **Shay**, S Williamson, DA Cohen, “Use of dog parks and the contribution to physical activity by their owners,” *Research Quarterly for Exercise and Sport*, April, 2016
- Shay, E, S Caplow,** “Integrated traditional and applied education in a public US university— Exploring sustainable cities and regions in classrooms and communities.” *Journal of Environmental Studies and Sciences*, 4 (4), 2014
- Shay, E, T Combs, DA Salvesen, D DeTrizio, J Horney,** “Closing the gap: Assessing disaster preparedness of officials and residents in two North Carolina counties,” *Journal of Geography and Natural Disaster*, 4 (2), 2014
- Shay, E,** “Sustainability capstones: Data-driven, policy-relevant projects to enhance learning,” *Journal of Sustainability Education*, June, 2013
- Rodriguez, DA, G-H Cho, JP Elder, TL Conway, KR Evenson, B Ghosh-Dastidar, E **Shay**, D Cohen, S Veblen-Mortenson, J Pickrell, L Lytle, “Identifying walking trips from GPS and accelerometer data in adolescent females,” *J Physical Activity & Health*, 9 (3), 2012
- Shay, E, AJ Khattak.** "Travel decision chains: Residential environment, automobile ownership, trips, and mode choice," *International Journal of Sustainable Transportation*, 6 (2), 2011
- Shay, E, DA Rodriguez, G Cho, KJ Clifton, KR Evenson,** "Comparing objective measures of environmental supports for pedestrian travel in adults," *Inter J Health Geographics*, 8(62), 2009
- Shay, E, AJ Khattak,** “Toward sustainable transport: conventional and disruptive approaches.” *International Journal of Sustainable Transportation*, 4 (1), 14-40, 2009
- Lees, E, DA Salvesen, E **Shay**, “Collaborative school planning and active schools: A case study of Lee County, Florida.” *Journal of Health Politics, Policy and Law*, 33 (3), June, 2008
- Shay, E, AJ Khattak,** “Automobiles, trips, and neighborhood type: Comparing environmental measures.” *Transportation Research Record*, #2010, 73-82, Washington DC, 2007
- Fan, Y-L, AJ Khattak, and E **Shay**, “Intelligent Transportation Systems: What do patents and publications tell us?” *Journal of Intelligent Transportation Systems*, 11 (2), 91-103, 2007
- Shay, E, Y Fan, DA Rodriguez, AJ Khattak,** “Drive or walk? Utilitarian trips within a neo-traditional neighborhood.” *Transportation Research Record*, #1985, Washington DC, 2006
- Shay, E, and AJ Khattak,** “Auto ownership and use in neo-traditional and conventional neighborhoods.” *Transportation Research Record*, #1902, 18-25, Washington DC, 2005

Book chapters

- Riggs, W, M Schlossberg, E **Shay**, A Millard-Ball, “Transforming street design: Approaches to reengineering our neighborhood streets,” Ch 5 in: *Disruptive Transport: Driverless Car, Transport Innovation and the Sustainable City of Tomorrow*, W Riggs ed, Routledge, 2019
- Rodriguez, DA, E **Shay**, P Winn, “Comparative review of Portable GPS units,” *Global Positioning Systems: Signal Structure, Applications, Sources of Error and Biases*, Nova, 2013

White papers and articles

- Schlossberg, M, W Riggs, A Millard-Ball, E **Shay**, “Rethinking the street in an era of driverless cars,” UrbanismNext, 2018: https://urbanismnext.uoregon.edu/files/2018/01/Rethinking_Streets_AVs_012618-27hcyv6.pdf

Salvesen, D, E **Shay**, L Ringaert, E Smith, “Going visitable.” *Urban Land*, ULI, May, 2008

Salvesen, D, E Lees, E **Shay**. “Can mega-schools be tamed?” *Planning Magazine*, Feb, 2007

Reports

Pulugurtha, SS, N Gore, DS Diba, C Akbari, E **Shay**, R Crepeau, T Schado, “Plan for advanced technology data readiness,” NCDOT TCE 2020-01, 2023

Combs, TS, E **Shay**, “Impacts of CAV-ready infrastructure on vulnerable road users: Guidance for North Carolina’s local and state transportation agencies,” NCDOT TCE 2020-01, 2023

McDonald, NC, TS Combs, AJ Khattak, E **Shay**, “Connected and automated vehicles and safety of vulnerable road users: A systems approach,” Collaborative Sciences Center for Road Safety, CSCRS-R6, 2018

Rodriguez, DA, BJ Morton, Y Song, E **Shay**, J Huh, “Built environment and transport-related greenhouse gas emissions in the Charlotte NC metropolitan area: An integrated transportation-land development model,” working paper, Lincoln Institute of Land Policy, 2011

Shay, E, AJ Khattak, SC Spoon, “Walkable Environments and Walking Activity.” Southeastern Transportation Center, Knoxville TN, 2003

Shay, E, et al. “A sustainable future for North Carolina,” *CEP Environmental Policy Papers*, December, 2003, http://www.cep.unc.edu/level_3/outreach/policy_papers.html

PROFESSIONAL MEMBERSHIPS; PROFESSIONAL AND COMMUNITY SERVICE

American Institute of Certified Planners, accredited since 2011

American Planning Association

Appalachian State University Faculty Senate; Parking Committee; Non-Tenure Track Committee

Appalachian State University, Teaching for Community Resilience design fellow, 2022

Appalachian State University, Inclusive Excellence (DEI), department liaison, 2021-2022

Appalachian State University, Service-Learning faculty fellows, 2016

NOAA Regional Integrated Sciences and Assessment program, peer review panel, March 2022

Town of Boone NC, Planning Commission, member 2016 – 2018; chair, 2018 – 2023

Town of Carrboro NC, Transportation Advisory Board, 2000-2004

Transportation Research Board, Standing Committee on Social and Economic Factors of Transportation—ADD 20, member, 2015-

Transportation Research Board/National Academies: National Cooperative Highway Research Program project panel #20-101, “Framework for Analyzing Costs and Benefits of Adaptation Measures in Preparation for Extreme Weather Events and Climate Change,” 2014-2016

Peer reviewer for multiple journals in land use, transportation, and sustainability

PRESENTATIONS AND PANELS

World Town Planning Day. **Shay** and Bruer, “Planning in High Places: North Carolina High Country and the Scottish Highlands,” APA International Division, November 8, 2023

Appalachian State University Global Symposium. **Shay** and Bruer, “Planning in High Places: North Carolina High Country and the Scottish Highlands,” November 15, 2023

Research and Creative Activity at Appalachian conference. Christiana, Daily, Bias, Haas, Dyer, **Shay**, Hege, Broce, Venrick, Abildso, “A point-of-decision prompt to encourage physical distancing on multi-use trails during the COVID-19 pandemic.” Boone, NC, Oct 2022

- American Public Health Assoc Annual Meeting. Christiana, Daily, Bias, Haas, Dyer, **Shay**, Hege, Broce, Venrick, Abildso, “Encouraging physical distancing on greenways and rail-trails during the COVID-19 pandemic using a point-of-decision prompt.” Boston, MA, Nov 2022
- Transportation Research Board 101st Meeting. Bagli, **Shay**, Combs, “Use, share, own? Young adults’ perceptions of connected and automated vehicles,” Washington, January 2022
- North Carolina Department of Transportation Research and Innovation Summit, **Shay** and Combs, “Impact of CAV-ready infrastructure on vulnerable road users: Guidance for North Carolina’s local and state transportation agencies.” Raleigh NC, October 2021
- Active Living Conference. Christiana, Daily, Bias, Abildso, Broce, Dyer, Haas, Hege, **Shay**, Venrick, “Systematic observations of physical distancing behaviors of trail users during the COVID-19 pandemic.” Virtual (hosted from San Diego CA), April 2021
- Association of Collegiate Schools of Planning. Combs and **Shay**, “Identifying municipal strategies for CAV-readiness through a transportation justice lens.” Greenville SC, October 2019
- American Planning Association—North Carolina Chapter, Annual Meeting. **Shay** and MacNamara, “Rural community development—Planning and macro social work perspectives.” Wilmington NC, October 2019
- Rural Social Work Caucus. MacNamara and **Shay**, “Innovative collaborations to enhance sustainable development in rural communities.” Paducah, KY, July 2019
- Post-graduate Social Service Workforce Development Ulster University and Southern Health and Social Care Trust for Northern Ireland. MacNamara and **Shay**, “Innovative collaborations to enhance sustainable development.” Belfast, Northern Ireland, April 2019
- Transportation Research Board 98th Annual Meeting. **Shay**, Khattak, Boggs, “Safety in the connected and automated vehicle era: A U.S. perspective on research needs.” Washington, 2019
- Joint World Conference on Social Work, Education and Social Development. MacNamara and **Shay**, “Innovative collaborations to enhance sustainable development in rural communities.” Dublin, Republic of Ireland, July 2018
- Transportation Research Board 97th Annual Meeting. **Shay**, Khattak, Wali, “Walkability in the connected and automated vehicle era: A U.S. perspective on research needs”; Zheng, Khattak, **Shay**, “Analysis of Crashes Involving Pedestrians across the United States: Implications for Connected and Automated Vehicles.” Washington DC, January 2018
- Association of Collegiate Schools of Planning, Annual Meeting. Combs and **Shay**, “Anticipating travel behavior change among relocating university students.” Denver CO, October 2017
- North Carolina Association of Metropolitan Planning Organizations, Annual Meeting. **Shay** and Combs, “Before-and-after travel choices of university students in newly constructed private off-campus mixed-use housing.” April 2017, New Bern NC
- Appalachian Global Symposium, Kowalczyk, MacNamara, Ruseva, **Shay**, “Conceptualizing an Interdisciplinary Study-Away Course in Rural Sustainable Development.” Boone NC, 2016
- Centralina Council of Governments conference ‘Creative solutions for thriving communities.’ Morton, Rosemond and **Shay**, “Aging in the suburbs: Changes in the built environment that support well-being and mobility as we age.” Gastonia NC, December 2015
- Transportation Research Board 94th Annual Meeting. **Shay**, “Identifying transportation disadvantage: Mixed-methods analysis.” Washington DC, January 2015
- Global Sustainability Symposia, UNC-Chapel Hill. Member of planning committee, 2011-2014

- North Carolina Association of Metropolitan Planning Organizations. Co-author and graduate adviser, "Identifying transportation-disadvantaged populations: Preliminary findings and draft tool," Toolkits and Technical track. Wilmington NC, May 2014
- Center for Global Initiatives Photo Competition/Presentation, Advised student presenters from 2013 Honors Study Abroad in Germany, Denmark, Sweden. Chapel Hill NC January 2014
- North Carolina Association of Metropolitan Planning Organizations. Combs and **Shay**, "Identifying NC's Transportation-Disadvantaged Populations," Winston-Salem NC, May 2013
- EnvisionEAST-2050, 9-county planning exercise. Facilitator, Trenton NC, October 2012.
- North Carolina School of Science and Math—Sustainability Project kickoff. Invited speaker: "Sustainability—What it is, what it isn't." Durham NC, August, 2012
- North Carolina Emergency Management Association, spring conference. Salvesen and **Shay**, "Academic-community partnerships: Pilot projects in emergency, planning, response & sheltering for vulnerable populations." Sunset Beach NC, March 2012
- North Carolina Conference on Aging Roundtable. "Accessible housing and age-integrated communities: Policies and programs for visitability and universal design." October 2011
- Workshop: Sustainable Small & Medium Enterprises. Co-convener Durham NC, October 2010
- Summer Planning Institute, North Carolina Chapter, Amer Planning Assoc. **Shay**, "Planning and public health—The critical synthesis for sustainable communities." Greenville NC, 2010
- Round Table on Sustainable Small Business, co-convener. Chapel Hill NC, March 2009
- Transportation Research Board 88th Annual Meeting, **Shay**, "Relation of residential environment to automobile ownership and travel choice." Washington DC, January 2009
- Active Living Research Conference. Pre-conference workshop, "Using GPS and accelerometers in neighborhood research." Washington DC, April 2008.
- Transportation Research Board 86th Annual Meeting, **Shay**, "Automobiles, trips, and neighborhood type: Comparing environmental measures." Session: The Built Environment and Travel Behavior. Washington DC, January 2007
- Transportation Research Board 85th Annual Meeting. **Shay**, "Drive or walk? Utilitarian trips within a neo-traditional neighborhood." Session: The Built Environment and Travel Choices: Unraveling the Relationships. Washington DC, January 2006
- Transportation Research Board 84th Annual Meeting. **Shay**, "Auto ownership and use in neo-traditional and conventional neighborhoods." Washington DC, January 2005

ADVISING

Honors theses—advisor

- Krell, A. "Solutions to food insecurity through automated vehicle technology," 2022, Appalachian State University
- Andersen, L. "An Impact Assessment of Extreme Drought and Unprecedented Wildfire in the Southern Appalachian Mountains," 2017, Appalachian State University

Honors theses—reader

- Royster, B. "Evolution and impediments of NC's methane capture pilot program," 2011, UNC-Chapel Hill
- Band, D. "Energy Information Systems and Conservation Psychology and their Potential for Reducing Energy Consumption at UNC," 2010, UNC-Chapel Hill

Graduate theses—adviser and chair, Appalachian State (ASU) / UNC-Chapel Hill (UNC-CH)

Rundgren, Q., “Investigative review of North Carolina county greenspaces with an analysis of Covid19 death rate and health factors,” ASU, 2024

Schado, T., “Preparing for connected and automated vehicles and associated data needs: Perceptions of North Carolina Transportation Experts,” ASU, 2023

Bagli, H. “Use, share, own? Young adults’ perceptions of connected & automated vehicles,” ASU, 2020

Bonevac, A. “Key informant perceptions of flooding and landslides in western North Carolina, USA, following the 2018 floods and landslides,” ASU, 2019

Bushell, M. “Design, policy, and bicycle ridership: A comparison between Berlin, Germany and Washington D.C.,” UNC-CH, 2010

Callaway, B. “Town of Chapel Hill greenhouse gas emissions inventory municipal operations: 2005 through 2009,” best master’s paper, UNC-CH City and Regional Planning, 2010

Michler, R. “Vehicular cycling advocacy: A case study of Chapel Hill,” UNC-CH, 2010

Graduate theses—committee member, Appalachian State University

Miller, E., “Equity, justice, and school lunches,” 2023

Minor, T., “Examining the mental health and temperature relationship in North Carolina,” 2022

Handwerger, L. “An assessment of social and physical vulnerability to hydroclimate extremes in Appalachia,” 2021

Harden, Stella. “The impact of environmental and social characteristics on severe material morbidity: A spatiotemporal analysis in South Carolina,” 2020

Andersen, L., “An assessment of wildfire vulnerability in western North Carolina, USA, following the 2016 wildfires,” 2018

Thompson, L. “Adolescents in crisis: A geographic exploration of help-seeking behavior using data from Crisis Text Line,” 2018

Down, E. “A Business Model for Local Agriculture,” 2017

Interns—academic supervisor

Interns, Appalachian: 2024—Molinari, Pitts; 2023—Bruer, Matz, McGregor; 2022—Cherubala, DiGiacomo, Werner; 2021—Poupart, Schado, Webster; 2020—DiGiacomo, Krell, Leach, Potts, Reed-Kelly, Reid, Shmurak; 2019—Bagli, Guigou, Mielenz, Mitchell; 2018—Allred, Everhart, Harris, Karlson, Kelley, Kern, Reid; 2017—Archer, O’Reilly; 2016—Williams

Environmental and Sustainability internships, 2008-2014, UNC-Chapel Hill, >70 undergraduates

ENVIRONMENTAL CAPSTONES 2007-14: *Managed capstones—advanced undergraduate R&D projects for clients; taught many. *Projects led by graduate student or directed by other faculty/staff*

Projects for campus clients

*Efficient campus buildings—UNC Energy Management

Tarheel Bikes performance review, spatial analysis—UNC Tar Heel Bikes Steering Committee
Campus water—past and present

*Green labs—Green Labs Committee, Office of Waste Reduction and Recycling

Transportation deserts—NC Dept of Transportation-funded research team at UNC-Chapel Hill

*Campus carbon sequestration inventory and analysis—UNC emissions specialist

*Campus rainwater management—UNC stormwater engineer, Environment, Health and Safety

Carolina Dining Services and local producersWater conservation for long-range planning—advisory board for the Jordan Lake Rules**Campus bicycling environment**Water quality in rainwater harvesting cisterns—UNC’s Environment, Health and Safety**DELTA tracking/analysis—Environmental Resource Program, UNC Institute for Environment**Waste audit, strategic waste management plan—UNC Office of Waste Reduction and Recycling**Energy efficiency in UNC buildings—UNC emissions specialist**Green sustainable athletics—Carolina Athletics, Office of Waste Reduction and Recycling**Sustainability research inventory—UNC Sustainability Office**Laboratory recycling—UNC Office of Waste Reduction and Recycling, lab manager**Campus foodprint—Carolina Dining Service**Campus sustainability curriculum inventory—UNC Sustainability Office**Campus Green Guide—UNC Sustainability Office**Preserving Focus the Nation—student leader with Focus the Nation national teach-in**Evaluating student energy use—UNC Institute for the Environment***Air travel emissions—UNC emissions specialist, Vice-Chancellor’s Sustainability Advisory C****Projects for community (off-campus) clients****Community sustainability self-assessment—Town of Chapel Hill**Vulnerability assessment of North Carolina communities—eight counties, 2010-2014***Jordan Lake nutrient load—Jordan Lake nutrient advisory board***Stream restoration/water quality—faculty for: Ecosystem Enhancement Program, NC DENR**Organics collection feasibility study—Orange County Department of Solid Waste Management**Community carbon—Town of Chapel Hill***Recreation, conservation and economic development—Conservation Fund**Re-use economy feasibility study—small business collective in reuse and salvage***Converting waste to protein with black soldier flies—Pickards Mountain Eco-Institute***Planning for climate change—New Bern NC**Green purchasing—Piedmont county sustainability planner**Triangle Green Business Challenge—Triangle J Council of Governments**Energy-efficient public housing—Town of Chapel Hill**Energy-efficient rentals—Chapel Hill WISE (Worthwhile Investments Save Energy) program**Landfill expansion—Cedar Grove Institute for Sustainable Communities***Recycling at apartment complexes—Orange County Solid Waste Management**Carrboro greenhouse gas emissions inventory—Town of Carrboro NC**OWASA energy management—Orange Water and Sewer Authority***Homeowners Associations (HOAs) and sustainable neighborhoods—Town of Carrboro**Anti-idling policy and program pilot—Sustainable Sandhills, Fayetteville NC**Managing biosolids from municipal wastewater—Orange Water and Sewer Authority***Scope 3 GHG emissions—Town of Chapel Hill**Environmentally preferable purchasing program—Town of Chapel Hill***Chapel Hill carbon reduction/fleets and streets—Town of Chapel Hill**Chapel Hill carbon reduction/Transit survey and marketing—Chapel Hill Transit, Chapel Hill**Plastic film recovery—Orange County Dept of Solid Waste Mgmt, American Chemistry Council**Chapel Hill Transit carbon reduction—Town of Chapel Hill**Frozen food packaging environmental footprint—small commercial client**Greenbridge education center—investors in mixed-use complex**Wachovia employee education module—Wachovia*