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INDIVIDUAL TEACHING EXPERIENCES:

ES 197: Principles of GIS Analysis II, 2008	Intermediate GIS (12 hours) workshop, 2001-04
ES 196: Principles of GIS Analysis I course, 2006-07	Introduction to GIS (12 hours) workshop, 2001-04
Fundamentals of GIS II (12 hours) workshop, 2004-05	GIS for Faculty (35 hours) workshop, 2002
Fundamentals of GIS I (12 hours) workshop, 2004-05	Advanced ArcView (12 hours) workshop, 2001
Advanced GIS (12 hours) workshop, 2002-04	Introduction to ArcView (12 hours) workshop, 2001

COLLABORATIVE TEACHING EXPERIENCES:

Note: In the projects listed below, responsible for the following: developing course materials including labs, assignments, and readings, consulting faculty and students on projects, capturing, managing, and analyzing spatial data, documenting methods and data sources, producing maps, tables, and graphs, preparing and presenting guest lectures, etc.

- DeHart, J. 2008. GIS Analysis of Relationships Between Socioeconomic Characteristics and Voter Participation in NWPA. GPS Data Collection of Forested Tracts at Firth Maples Products. ES 410: Environmental Spatial Analysis.
- Pallant, E., Palmer, J. 2008. The World Around You Represented as Layers: An Introduction to Geographic Information Systems. ES 210: Environmental Research Methods.
- Geffen, A. 2007. Physical Features at Shadybrook Park and Mapping of Mill Run Watershed Limits. INTDS 301: Envisioning Environmental Futures.
- Grote, T. 2007. Geomorphic Mapping of the Woodcock Creek Drainage Basin. Geo 310: Process Geomorphology.
- Whitney, G. 2007. Determining Changes in Spatial Patterns of Sugar Maple Abundance in the Allegheny National Forest. ES 320: Forest Ecosystems and Management.
- Pallant, E. 2007. Geographical Analysis of Environment and Culture in Israel, Palestine, Ghana, and Pennsylvania. ES 340: World Geography.
- Ostrowsky, M. 2007. Lake Morphometry and Geography of Canadohta Lake using GIS. Bio580: Limnology.
- Bowden, R. 2007. Biofuels: Using GIS to Determine the Most Cost-effective Route Between Local Restaurants for Vegetable Oil Retrieval. ES 210: Environmental Research Methods.
- Sargent, S. 2007. Using GIS to Quantify Wetland Area in the Erie National Wildlife Refuge. ES/Bio 335: Conservation Biology.
- DeHart, J. 2007. GIS Analysis of Voter Turnout in Butler County, PA. Mapping the Physical and Cultural Characteristics of Mill Run. ES 410: Environmental Spatial Analysis.
- Whitney, G. 2007. Using GIS to Examine Changes in Historical Wetland Communities in the Erie National Wildlife Refuge. ES 490: American Environmental History.
- Bowden, R. 2006. Using GIS to Assess the Health of Riparian Zones. ES 210: Environmental Research Methods.
- Bowden, R. 2006. Are Forests Making a Comeback in Northwest Pennsylvania? Spatial Analysis of Changes in Historical and Current Land Use Patterns. ES 320: Forest Ecosystems and Management.

- Wissinger, S. 2006. Biomonitoring in the French Creek Watershed: Spatial Analysis of Relationships Between Land Cover and Fish Communities in 2nd and 3rd-order Tributaries. ES/Bio344: Stream Ecology.
- Wissinger, S. 2006. GIS Analysis of Land Use Patterns within the French Creek Watershed. FS 101: Ecology and Conservation of French Creek.
- Comber, M. 2006. Mapping Educational Attainment and Level of Income for Females in Pennsylvania. PS 230: Women, Suffrage, and Political Participation.
- Bowden, R., Waggett, C. 2006. Forest Management Plan for the Allegheny National Forest: Identification of Suitable Sites for Wilderness Areas. ES 210: Environmental Research Methods.
- Wissinger, S. 2006. Mapping Wetland Gains and Losses in Pennsylvania State Gamelands Between the 1970's and 1990's. GPS Data Collection of Wetlands at the Bousson Experimental Forest. ES/Bio346: Wetlands.
- DeHart, J. 2006. Methods of Spatial Data Capture: Mapping Landowners along Mill Run. Local (student-designed) GIS/GPS Final Project. ES 410: Environmental Spatial Analysis.
- Bensel, T. 2005. Using GIS and Satellite Imagery to Examine Sprawl in Metro Erie, PA: 1970–2000. FS 101: Suburban Sprawl and Loss of Community in the U.S.
- Bowden, R., Whitney, G. 2005. Forest Management Plan for the Allegheny National Forest: Identification of Suitable Sites for Old-growth Forests. ES 210: Environmental Research Methods.
- Bowden, R. 2005. Using GIS/GPS to Map Research Plots at the Bousson Experimental Forest and Robertson Field Complex. ES 320: Forest Ecosystems and Management.
- Sargent, S. 2005. Using GIS to Quantify Wetland Area and Identify Areas Suitable for Wetlands in the Erie National Wildlife Refuge. ES/Bio 335: Conservation Biology.
- Wissinger, S. 2005. Using GIS/GPS to Map Stream Sampling Locations Along Mill Run. Bio580: Freshwater Ecology.
- Palmer, J., Waggett, C. 2005. Spatial Analysis of Coliform Concentrations within Mill Run (collaborative project with ES 410). ES 210: Environmental Research Methods.
- DeHart, J., Waggett, C. 2005. Using GIS to Understand Mill Run (collaborative project with ES 210). Local (student-designed) GIS/GPS Final Project. ES 410: Environmental Spatial Analysis.
- O'Brien, R. 2004. Construction of a Groundwater Recharge Potential Map for Mill Run. Geo 400: Hydrogeology.
- Wissinger, S. 2004. Using GIS to Examine Land Cover Patterns in the French Creek Watershed. FS 102: History of Human-Environmental Interactions.
- DeHart, J. 2004. Methods of Spatial Data Capture and Analysis: Identification of Forested Lands and Landowners in Northwest Pennsylvania. ES 490: Environmental Spatial Analysis.
- Pallant, E., Geffen, A. 2003. Understanding Our Surroundings: Maps of French Creek, Mill Run, and Meadville. INTDS 301: Envisioning Environmental Futures.
- Waggett, C. 2003. Using GIS to Examine Demographic Patterns and Relationships in Meadville, PA. ES 201: Environmental Problem Analysis.
- Bensel, T., Whitney, G. 2003. Using GIS to Examine the Spatial Characteristics of Forest Cover in Riparian Zones. ES 210: Environmental Research Methods.
- Wissinger, S. 2003. Study Sites: Identification of Watersheds of Similar Size using GIS. ES/Bio344: Stream Ecology.
- Waggett, C. 2003. Assessing the Risk for Lead Contamination in Meadville using GIS. ES 496: Environmental Health

- Ostrofsky, M. 2003. Geographical Characteristics of Lake LeBoeuf: GIS-based Development of a Nutrient Budget and GPS Accuracy Assessment of Historical Bathymetry Map. Bio580: Limnology.
- Bensel, T., DeHart, J. 2003. Using GIS to Examine the Spatial Characteristics of Forest Cover in Riparian Zones. ES 210: Environmental Research Methods.
- Sargent, S. 2003. Using GIS to Perform Site Suitability Analysis (lab). An Introduction to Geographic Information Systems (guest lecture). ES/Bio 335: Conservation Biology.
- Wissinger, S. 2003. Mapping Wetland Gains and Losses in the French Creek Watershed Between the 1970's and 1990's. Assessing Wetland Gains and Losses in the Erie National Wildlife Refuge. ES/Bio346: Wetlands.
- Appiah-Opoku, S. 2002. Using GIS to Perform Landfill Site Suitability Analysis (lab). An Introduction to Geographic Information Systems (guest lecture). ES 201: Environmental Problem Analysis
- Whitney, G., DeHart, J. 2002. Reconstructing Historical Forest Ranges by Mapping Witness Trees in Warren County, PA. ES 210: Environmental Research Methods.
- Sargent, S. 2002. Using GIS to Perform Site Suitability Analysis (lab). An Introduction to Geographic Information Systems (guest lecture). ES/Bio 335: Conservation Biology.
- Palmer, J. 2002. Using GIS to Understand Pesticide Concentrations in French Creek. ES/Bio342: Toxicology.
- Bowden, R., DeHart, J. 2001. Predicting the Spread of the Hemlock Woolly Adelgid Across Pennsylvania using GIS. ES 210: Environmental Research Methods.
- Appiah-Opoku, S. 2001. Using GIS to Perform Landfill Site Suitability Analysis (lab). An Introduction to Geographic Information Systems (guest lecture). ES 201: Environmental Problem Analysis
- Palmer, J., Cameron, M. 2001. Using GIS to Examine Land Cover Patterns in the Woodcock Creek Watershed. ES 210: Environmental Research Methods.
- Bowden, R. 2001. Using GIS/GPS to Map Research Plots at Robertson Field Complex. ES 320: Forest Ecosystems and Management.