

Bridget M. Wadzuk

Assistant Professor
Department of Civil & Environmental Engineering
Villanova University

Education

Ph.D. The University of Texas at Austin, Civil Engineering, 2004
M.S. The University of Texas at Austin, Environmental and Water Resources Engineering, 2002
B.S. Villanova University, Civil and Environmental Engineering, 2000
Philosophy minor and Honors concentration

Research Experience

Graduate Research Assistant, Environmental and Water Resources Engineering, The University of Texas at Austin, 2000 – 2004.

- Designed and implemented a dynamic pressure solver into an existing hydrostatic model. Performed comparison studies between hydrostatic and non-hydrostatic models to determine which model is most applicable to different scenarios. Supervisor: Dr. Ben R. Hodges.
- Constructed a method to straighten bathymetric data to conserve computational space in a numerical model. Supervisor: Dr. Ben R. Hodges.

Undergraduate Research Assistant, Civil Engineering, Villanova University, 1999-2000.

- Data analysis of field measurements in a water quality study. Supervisor: Dr. Robert Traver.

Undergraduate Research Assistant, National Science Foundation Research Experience for Undergraduates, Civil and Environmental Engineering, University of Massachusetts – Amherst, *Summer 1999*.

- Performed sensitivity analysis on a hydrodynamic model, and site collection and processing of data for a fate and transport study. Supervisors: Dr. John E. Tobiason and Dr. David P. Ahlfeld.

Teaching Experience

Professor, Hydraulic Engineering and Hydrology, Villanova University, *Spring 2005*.

Teaching Assistant, Fluid Mechanics Laboratory, The University of Texas at Austin, *Fall 2004*.

Awards

2nd place Student University Forum, Texas Water, 2003.

Endowed Presidential Scholarship, Civil Engineering, The University of Texas at Austin, 2000, 2001, 2002, 2003.

Presidential Scholar, Villanova University, 1996-2000.

Publications

Hodges, B.R., B. Laval and **B.M. Wadzuk** 2005, "A Temporal Horizon for Internal Waves in Hydrostatic Models." *Ocean Modelling*, submitted.

Wadzuk, B.M. and B.R. Hodges 2003, "Comparing Hydrostatic and Non-hydrostatic Navier-Stokes Models of Internal Waves." 16th ASCE Engineering Mechanics Conference, July 16-18, 2003 University of Washington, Seattle, Electronic Proceedings (CD-ROM)

Wadzuk, B.M. and B.R. Hodges 2003, "The Limitation of the Hydrostatic Approximation for Nonlinear Internal Waves." Texas Water 2003, April 1-4, 2003, Corpus Christi, TX.

Waduzk, B.M. 2002. *Evolution of Internal Waves in Hydrostatic Models: A Study of Dynamic Pressure*, M.S. Report, Department of Civil Engineering, University of Texas, Austin, May, 2002.

Waduzk, B.M. and B.R. Hodges 2001, "Model Bathymetry for Sinuous, Dendritic Reservoirs," 6th Workshop on Physical Processes in Natural Waters," University of Girona, Catalonia-Spain, 27-29 June 2001, pp. 205-209.

Conferences & Workshops

ASCE Engineering Mechanics Conference, *July 2003, June 2004, June 2005*, presented.

Texas Water 2003, *April 2003*, presented.

"Physical Limnology," Short course, Universität Stuttgart, Instructor: Dr. Jörg Imberger, *September 2001*, attended.

Professional and Honorary Affiliations

American Geophysical Union

American Society of Civil Engineers

American Water Resource Association

Chi Epsilon

Engineers Without Frontiers

Tau Beta Pi