
Curriculum Vita - Kendra M. Dresback

Address

School of Civil Engineering and Environmental Science
University of Oklahoma
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Professional Experience

- Graduate Research Assistant** *University of Oklahoma, Norman, OK*
8/97 to Present
- Visiting Researcher** *Naval Research Laboratory, Stennis Space Center, MS*
3/01 to 5/01
- Engineering Intern** *Trust Environmental Services, L.L.C., Norman, OK*
3/95 to 8/97
- Undergraduate Research Assistant** *University of Oklahoma, Norman, OK*
9/93 to 8/94
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Education

- Ph.D. Civil Engr.** *University of Oklahoma, Norman, OK*
anticipated graduation May, 2004
Dissertation: "Algorithmic Improvements and Analyses of the Generalized Wave Continuity Equation Based Model, ADCIRC." Advisor: Associate Professor Randall L. Kolar.
- M.S. Civil Engr.** *University of Oklahoma, Norman, OK*
May, 1999
Thesis: "An Alternative Time-Marching Algorithm for ADCIRC." Advisor: Assistant Professor Randall L. Kolar.
- B. S. Civil Engr.** *University of Oklahoma, Norman, OK*
May, 1997
Graduated With Distinction
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Professional and Honorary Societies

- Tau Beta Pi National Engineering Honor Society
 - Chi Epsilon National Civil Engineering Honor Society
 - Golden Key National Honor Society
 - Oklahoma Society of Professional Engineers
 - National Society of Professional Engineers
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Honors and Awards

- Graduate**
- U.S. Department of Education GAANN Fellow (2002-present)
 - ASEE Midwest Section Meeting Outstanding Paper Award - Second Place (2003)
 - NDSEG Fellowship-Honorable Mention (1999)
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Undergraduate

- John and Delores Owensby Family Scholarship (1996-1997)
- Wylie Hamilton Barbour Memorial Scholarship (1995-1996)
- Visiting Council Scholarship (1992-1993)
- Oklahoma Fee Waiver Scholarship (1992-1993)
- Presidential Honor Roll -4.0 GPA (Spring 1996)
- Engineering Dean's Honor Roll (5 semesters)

Licenses/Registration

- Engineering Intern (State of Oklahoma)

Research Interests

Primary research interest involves the following topics:

- numerical methods in water resources
- hydrodynamic models
- environmental applications
- algorithm development

Teaching Experience

Courses taught (team taught)

Undergraduate Courses (# times)

- Engineering Computing-Fortran (1)
- Open Channel Flow (2)

Teaching assistant

Undergraduate Courses (# times)

- Open Channel Flow (2)
- Numerical Methods (1)

Graduate Courses (# times)

- Water Quality Management (1)
- Environmental Modeling (1)

Publications

Journals (3)

- 1) K. M. Dresback and R. L. Kolar, "An Implicit Time-Marching Algorithm for Shallow Water Model Based on the Generalized Wave Continuity Equation", *Int. J. Numer. Meth. Fluids*, 36, 925-945, 2001.
- 2) K. M. Dresback and R. L. Kolar, "An 2D Implicit Time-Marching Algorithm for Shallow Water Model Based on the Generalized Wave Continuity Equation," *Int. J. Numer. Meth. Fluids*, in review, 2003.
- 3) K. M. Dresback, R.L. Kolar and J.C. Dietrich, "On the Form of the Momentum Equation for Shallow Water Models Based on the Generalized Wave Continuity Equation: Conservative vs. Non-Conservative," *Advances in Water Resources*, in review, 2003.

**Conference Proceedings,
Abstracts, and Other Articles (5)**

- 1) K. M. Dresback, J. H. Atkinson and R. L. Kolar, "Mentoring through Team Teaching," ASEE Midwest Section Meeting, University of Missouri-Rolla, Paper No. 40, 2003 (Outstanding Paper Award - Second Place)
- 2) K. M. Dresback, R. L. Kolar and J.C. Dietrich, "Impact of the Form of the Momentum Equation on Shallow Water Models Based on the Generalized Wave Continuity Equation," CMWR XIV Volume 2: Computational Methods, Surface Water Systems and Hydrology, et al. (eds.), pp. 1573-1580, 2002.

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- 3) K. M. Dresback, C. A. Blain and R. L. Kolar, "Methods to Compute Baroclinic Pressure Gradients in FE Models," *Estuarine and Coastal Modeling, Proceedings of the Seventh International Conference*, M.L. Spaulding and K. Bedford (eds.), American Society of Civil Engineers, pp. 103-119, 2002.
 - 4) K. M. Dresback and R. L. Kolar, "An Implicit Time-Marching Algorithm for 2-D GWC Shallow Water Models," *CMWR XIII Volume 2: Computational Methods, Surface Water Systems and Hydrology*, L. R. Bentley et al. (eds.), pp. 913-920, 2000.
 - 5) L. Chen, K. Dresback, R. Culp and P. Fitter, Jr., "Risk-Based Corrective Action at Petroleum Sites in Oklahoma - Case Studies", *ASCE/CSCE Environmental Engineering Conference*, Vol. 1, Stanley et al. (eds.), pp. 39-52, 1997.

Professional Presentations
(16; * presenter other than KMD)

- 1) K. M. Dresback, J. H. Atkinson and R. L. Kolar, "Mentoring through Team Teaching," *ASEE Midwest Section Meeting*, University of Missouri-Rolla, Sept. 10-12, 2003.
- 2) K. M. Dresback, R. L. Kolar and J. C. Dietrich, "Conservative Form vs. Non-conservative Form of the Momentum Equation in the ADCIRC Hydrodynamic Code," *SIAM Conference*, Austin, Texas, March 17-20, 2003.
- 3) K. M. Dresback, R. L. Kolar and C. A. Blain, "Algorithmic and Resolution Influences on the Baroclinic Pressure Gradient in Hydrodynamic Models," *SIAM Conference*, Austin, Texas, March 17-20, 2003.
- 4) J. H. Atkinson, K. M. Dresback, C. A. Blain and R. L. Kolar, "Towards a full 3D Prognostic Baroclinic Code - a medley of results and questions," *7th ADCIRC Model Workshop*, Stennis Space Center, MS., February 26-27, 2003.
- 5) K. M. Dresback, R. L. Kolar and J. C. Dietrich, "Updates on Conservative vs. Non-Conservative Form of the Momentum Equations in 2DDI ADCIRC," *7th ADCIRC Model Workshop*, Stennis Space Center, MS., February 26-27, 2003.
- 6) K. M. Dresback, R. L. Kolar and J. C. Dietrich, "Updates on Benchmarking of the Combined Parallel/Predictor-Corrector Algorithm in 2DDI ADCIRC," *7th ADCIRC Model Workshop*, Stennis Space Center, MS., February 26-27, 2003.
- 7) K. M. Dresback, R. L. Kolar and J. C. Dietrich, "Impact of the Form of the Momentum on Shallow Water Models Based on the Generalized Wave Continuity Equation," *CMWR-XIV Conference*, Delft, The Netherlands, June 23-28, 2002.
- 8) K. M. Dresback, R. L. Kolar and J. C. Dietrich, "A Look at the Momentum Equation in ADCIRC: A Comparison of Non-Conservative vs. Conservative Form," *6th Army-Navy ADCIRC Model Workshop*, Stennis Space Center, MS., February 27-28, 2002.
- 9) K. M. Dresback, C. A. Blain and R. L. Kolar, "Baroclinic Pressure Gradients: A Preliminary Comparison of Z-, Sigma- and Hybrid Methods," *6th Army-Navy ADCIRC Model Workshop*, Stennis Space Center, MS., February 27-28, 2002.
- 10) K. M. Dresback, C. A. Blain and R. L. Kolar, "Comparison of Methods of Computing Baroclinic Pressure Gradients in FE Models," *ECM 7*, St. Pete's Beach, FL., November 5-7, 2001.
- 11) K. M. Dresback, J. C. Dietrich and R.L. Kolar, "Updates on an Implicit Time-Marching Algorithm for ADCIRC," *5th Army-Navy ADCIRC Model Workshop*, Stennis Space Center, MS., February 20-21, 2001.
- 12) K. M. Dresback, J. C. Dietrich and R. L. Kolar, "The Momentum Equation of ADCIRC: Non-Conservative vs. Conservative Form," *5th Army-Navy ADCIRC Model Workshop*, Stennis Space Center, MS., February 20-21, 2001.

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- 13) K. M. Dresback and R. L. Kolar, "An Implicit Time-Marching Algorithm for 2-D GWC Shallow Water Models," CMWR-XIII Conference, Calgary, Alberta, Canada, June 25-29, 2000.
 - 14) K. M. Dresback and R. L. Kolar, "An Implicit Time-Marching Algorithm for ADCIRC: 2-D Evaluation," 4th Army-Navy ADCIRC Model Workshop, Stennis Space Center, MS., February 2-4, 2000.
 - 15) K. M. Dresback and R. L. Kolar, "An Alternative Time-Marching Algorithm for ADCIRC," 3rd Army-Navy ADCIRC Model Workshop, Stennis Space Center, MS., January 5-6, 1999.
 - 16) R. Kolar*, J. Westerink and K. Dresback., "A Look Back at 20 Years of Wave Equation Models," SIAM conference, San Antonio, TX., March 24-27, 1999.
 - 17) L. Chen, K. Dresback, R. Culp and P. Fitter, Jr., "Risk-Based Corrective Action at Petroleum Sites in Oklahoma - Case Studies," ASCE/CSCE Environmental Engineering Conference, Edmonton, Alberta, Canada, July 22-26, 1997.

Service

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| External | 1) Assistant Proctor, FE Examination, October 1998-April 2003. |
| University of Oklahoma | 1) Graduate Student Representative, ECS Advisory Board, 2002-Present. 2) Graduate Student Representative, Teach Tests, 2000-2002. 3) Graduate Student Representative, CEES Director Search Committee, 2000. 4) EMGIS Lab, assist with network administration, 1999-Present. 5) Graduate Liaison, ASCE, 1999. 6) Treasurer, Chi Epsilon Civil Engineering Honor Society, 1997-1998. 7) Secretary/Treasurer, Chi Epsilon Civil Engineering Honor Society, 1996-1997. 8) Vice-President, ASCE, 1996 |

Workshops, Seminars, and Specialized Courses

- 1) "Observing Outstanding Teachers," Faculty Luncheon Discussion Group presented by Instructional Development Program at the University of Oklahoma, Norman, OK., September - December 2003.
- 2) "Second Sooner City Workshop on Integrated Design," CEES, University of Oklahoma, Norman, OK., Aug. 4-5, 2003.
- 3) NSF Proposal Preparation and Funding Opportunity Workshop, University of Tulsa, Tulsa, OK., January 17, 2003
- 4) ASEE Midwest Section Conference, University of Oklahoma, Norman, OK., Sept. 13-14, 2002.
- 5) ASEE Annual Conference and Exposition, Albuquerque, N.M., June 24-27, 2001.
- 6) "Sooner City Workshop on Integrated Design," CEES, University of Oklahoma, Norman, OK., July 31-Aug. 2, 2000.
- 7) ASEE Annual Conference and Exposition, St. Louis, MO., June 18-21, 2000.
- 8) ASEE Annual Conference and Exposition, Charlotte, N.C., June 20-23, 1999.
- 9) ASEE Midwest Section Conference, Oklahoma State University, Stillwater, OK., April 14-16, 1999.

10) "The Changing Nature of Higher Education," Faculty Luncheon Discussion Group presented by Instructional Development Program at the University of Oklahoma, Norman, OK., January-April 1999.

11) "Risk-Based Corrective Action," OCC RBCA Workshop presented by Trust Environmental Services, L.L.C., Norman, OK, August 1996.