Collaborative Research: Resource of Open Problems for Education (ROPE)

Biographical Sketch

Dana C. Ernst

(a) Professional Preparation

George Mason University	Mathematics	BS, 1997
Northern Arizona University	Mathematics	MS, 2000
University of Colorado at Boulder	Mathematics	PhD, 2008

(b) Appointments

Northern Arizona University, Flagstaff, AZ
Assistant Professor, Mathematics & Statistics Department   Aug 2012–Present

Plymouth State University, Plymouth, NH
Assistant Professor, Mathematics Department   Aug 2008–May 2012

(c) Products

(i) Most closely related to project

D.C. Ernst, A. Hodge, and A. Schultz. Enhancing Proof Writing via Cross-Institutional Peer Review. Accepted to *PRIMUS*.

B. Beaudrie, D.C. Ernst, and B. Boschmans. Redesigning an Algebra for Precalculus Course. In T. Bastiaens & G. Marks (Eds.), Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education, 2013. Chesapeake, VA: AACE. [EdITLib:115001]

B. Beaudrie, D.C. Ernst, and B. Boschmans. First Semester Experiences in Implementing a Mathematics Emporium Model. In R. McBride & M. Searson (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference*, 2013. New Orleans, LA: AACE. [EdITLib:48098]

D.C. Ernst. *An Introduction to Proof via Inquiry-Based Learning*. IBL course materials for an introduction to proof course. [dcernst.github.io/IBL-IntroToProof]

D.C. Ernst. *An Inquiry-Based Approach to Abstract Algebra*. IBL course materials for an abstract algebra course. [dcernst.github.io/IBL-AbstractAlgebra]

(ii) Additional

D.C. Ernst and N. Sieben. Impartial achievement and avoidance games for generating finite groups. [arXiv:1407.0784]

T. Boothby, J. Burkert*, M. Eichwald*, D.C. Ernst, R.M. Green, and M. Macauley. On the Cyclically Fully Commutative Elements of Coxeter Groups. *J. Algebraic Combin.*, 36(1), 2012. [arXiv:1202.6657]

D.C. Ernst. Non-cancellable elements in type affine C Coxeter groups, *Int. Electron. J. Algebra*, 8, 2010. [arXiv:0910.0923]

D.C. Ernst. Diagram calculus for a type affine C Temperley–Lieb algebra, I. *J. Pure Appl. Alg.*, 216(11), 2012. [arXiv:0910.0925]

D.C. Ernst. A diagrammatic representation of an affine C Temperley-Lieb algebra, PhD Thesis, University of Colorado, 2008. [arXiv:0905.4457]

(d) **Synergistic Activities**

Provosts Award for Excellence in Undergraduate Inquiry & Creativity   Spring 2014
Award honors a faculty mentor who has demonstrated initiative, productivity, and dedication in contributing to the university community in the areas of research, scholarly, and/or creative activities.

Columnist for "Math Ed Matters"   Spring 2013–Present
Monthly column sponsored by the Mathematical Association of America. The column explores topics and current events related to undergraduate mathematics education.

Special Projects Coordinator for Academy of Inquiry-Based Learning   Fall 2012–Present
Help organize, promote, and run IBL-related events including workshops, special sessions, and conferences. Mentor for small cohort of mathematics instructors. Includes annual stipend.

Member of Editorial Board for "Math Horizons"   Spring 2014–Present
Math Horizons is the undergraduate magazine of the Mathematical Association of America.

Plymouth State University Distinguished Professor of Mathematics   2009 & 2011
Teaching award determined by mathematics majors at Plymouth State University.

(e) **Collaborators and Other Affiliations**

(i) **Collaborators & Co-editors**
Tom Boothby (University of Washington), Jeffrey Burkert* (Harvey Mudd College), Morgan Eichwald* (University of Montana), Richard M. Green (University of Colorado at Boulder), Angie Hodge (University of Nebraska at Omaha), Dane Jacobson* (Northern Arizona University), Matthew Macauley (Clemson University), Andrew Schultz (Wellesley College), Nándor Sieben (Northern Arizona University)

(ii) **Graduate and Postdoctoral Advisors**
PhD Advisor: Richard M. Green (University of Colorado at Boulder).
MS Advisor: Michael J. Falk (Northern Arizona University).

(iii) **MS Thesis Students**
Kirsten Davis (Northern Arizona University)
Brooke Fox (Northern Arizona University)