Gregory D. Foley
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Specialties: Dr. Greg Foley received B.A. and M.A. degrees in mathematics and a Ph.D. in mathematics education from The University of Texas at Austin. Foley serves as the Robert L. Morton Professor of Mathematics Education in OHIO's Patton College of Education. He has taught basic arithmetic through graduate-level mathematics, as well as upper division and graduate-level mathematics education classes. Dr. Foley is interested in mathematics learning, mathematics teaching, and mathematics teacher preparation at all levels. His research, curriculum development, and professional development for teachers focus on incorporating technology, especially hand-held devices and computer software, into mathematics instruction in Grades 6–14. He currently is studying mathematics language acquisition, conducting research on teacher professional development, revising curriculum materials for an innovative fourth-year high school mathematics course.

Research Interests: Mathematics education research and development: Using inquiry-based methods and cognitive tools to enhance student construction of knowledge; conducting curriculum research and development; studying mathematics language acquisition, mathematical proficiency for teaching, and technological pedagogical mathematical and statistical knowledge.

Recent Publications:

Demana, F. D., Waits, B. K., Foley, G. D., & Kennedy, D. (2011). *Precalculus: Graphical, numerical, algebraic* (8th ed.). Boston: Pearson–Addison Wesley.

Foley, G. D. (2011). The shape of an ellipse. *Mathematics Teacher*, *105*, 274–279. Plus appendix available at http://www.nctm.org/mt004 Reprinted in 2012 in *The Centroid*, *38*(1), 8–13.

Foley, G. D., Butts, T. R., Phelps, S. W., & Showalter, D. A. (2012). *Advanced quantitative reasoning: Mathematics for the world around us* (Field test edition). Austin, TX: AQR Press.

Foley, G. D., Khoshaim, H. B., Alsaeed, M., & Er, S. N. (2012). Professional development in statistics, technology, and cognitively demanding tasks: Classroom implementation and obstacles. *International Journal of Mathematical Education in Science and Technology*, *43*, 177–196. doi:10.1080/0020739X.2011.592616

Foley, G. D., Strayer, J. F., & Regan, B. (2010). High school mathematics teacher professional development in data analysis, probability, and statistics. *Journal of the Research Center for Educational Technology*, *6*(2), 4–17 and three appendices. Available at www.rcetj.org/index.php/rcetj/article/view/132/217

Henning, J. E., McKeny, T., Foley, G. D., & Balong, M. (2012). Mathematics discussions by design: Creating opportunities for purposeful participation. *Journal of Mathematics Teacher Education*. Advance online publication. doi:10.1007/s10857-012-9224-1

McKeny, T. S., & Foley, G. D. (2012/2013). Tales, task, tools, and talk. *Teaching Children Mathematics*, *19*, 316–323.

Current Projects:

- Advanced Quantitative Reasoning (AQR) student materials development
- Advanced Teacher Capacity (ATC) teacher professional development
- Choose Appalachian Teaching (CAT) teacher preparation scholarships

Current Grants:

Foley, G. D. (PI), Dani, D., & Howley, A. (Co-PIs). (2009, July – 2014, June). *Choose Appalachian teaching: Building a community of mathematics and science teachers for southeastern Ohio*. Ohio Board of Regents, Choose Ohio First scholarship program, $1,000,000.

Foley, G. D. (PI), & Lin, W. (co-PI). (2012, January–2013, May). *Advanced teacher capacity: Addressing the Ohio Core and the Common Core for mathematics*. Ohio Board of Regents, Improving Teacher Quality program, Grant No. 11-35, $158,054.

Recent Presentations with Graduate Students:

Bubp, K. M., Foley, G. D., & Smith, M. A. (2012, June). *Connections between mathematics education research and R. L. Moore's legacy.* Contributed paper presented at the Legacy of R. L. Moore Conference, Austin, TX.

Dogbey, G. Y., & Foley, G. D. (2009, November). *(How) do attitudes of developmental students toward mathematics matter?* Refereed report presented at the meeting of the American Mathematical Association of Two-Year Colleges, Las Vegas, NV.

Foley, G. D., & Showalter, D. A. (2012, October). *Advanced Quantitative Reasoning: A new course for high school seniors.* Lecture-demonstration presented at the meeting of the Ohio Council of Teachers of Mathematics, Columbus, OH.

Lafreniere, M., & Foley, G. D. (2011, November). *Tablet PCs: A tool for instructional collaboration*. Workshop presented at the meeting of the American Mathematical Association of Two-Year Colleges, Austin, TX.

Regan, B., & Foley, G. D. (2010, October). *QUANT program evaluation and revisions based on an analysis of TPACK growth among the participants*. Paper presented at the meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Ohio State University, Columbus.