

QUANT Professional Development Program

Data Analysis, Probability, and Statistics for Mathematics Teachers in Grades 8–12



Quantifying Uncertainty and Analyzing Numerical Trends (QUANT) is a yearlong professional development program based at **Ohio University—Chillicothe for commuters only**. This Southern Ohio QUANT program begins with a three-part summer component:

1. One-week institute at OU Chillicothe, June 14–18, 2010.
2. Six weekly 3-hour online instructor-led modules.
3. Two-day workshop at OU Chillicothe, August 5–6, 2010.



OHIO
UNIVERSITY

This *Southern Ohio QUANT* program is offered through Ohio University and the OU–Chillicothe Continuing Education Program. It is supported by the *Advanced Teacher Capacity (ATC)* grant from the Ohio Board of Regents Improving Teacher Quality Program. Partners include Southern Local Schools in Perry County, the Athens–Meigs Educational Service Center, the Southeast Ohio Center for Excellence in Mathematics and Science (SEOCEMS), the Coalition of Rural and Appalachian Schools (CORAS), the Ohio University College of Arts and Sciences and Gladys W. and David H. Patton College of Education, the Departments of Mathematics and Teacher Education, and the Morton Chair Endowment. The total estimated costs for the 2010–2011 ATC project are \$255,276, which includes a \$134,827 grant of federal funds from the Improving Teacher Quality Program administered by the Ohio Board of Regents, covering approximately 53% of the total costs. A separate *Central Ohio QUANT* program is offered for both residential and commuter participants. For more information, visit <http://sites.google.com/site/CentralOhioQUANT>.

QUANT Professional Development Program Details

Instructors: Greg Foley, Jeff Connor, Blake Regan, Michael Lafreniere, Doug Roberts, and Tom Burr

Participant benefits and take-away materials

- Low registration costs (\$70) to be returned to participants in the form of stipends.
- Institute instructional materials packet, plus CD. Statistical resource books and textbooks.
- TI-*nspire* CAS teacher bundle: handheld unit and corresponding computer software.
- Workshop lunches are provided. Stipends: \$280 for the summer institute (\$40/day).
- Graduate credit option available: \$600 for 6 graduate quarter hours of credit (\$100/qtr hr).

Target Audience *Mathematics teachers in Grades 8–12.* To participate, teachers must have an implementation plan and the support of their school principal. Teachers are encouraged, but not required, to apply in pairs so that they can support each other’s implementation of the ideas and methods learned in the *QUANT* program. Selection priorities include teachers who are not “highly qualified,” who are from schools rated as “academic watch” or “academic emergency,” and teachers from districts identified as high poverty. *All 8–12 math teachers are welcome!*

What Students entering ninth grade in autumn 2010 will need to take 4 years of mathematics in high school to meet the Ohio Core Curriculum graduation requirements. Most of these students will follow career paths that do not require calculus, so they will benefit from a senior-level mathematics course that is different from traditional Pre-Calculus. *QUANT* is a yearlong professional development program that explores Data Collection, Data Analysis, Probability, and Statistics concepts and problems using technology and inquiry as tools for teaching and learning mathematics. *QUANT* will focus on the mathematics and statistics used in college and in workforce applications. The program includes 1 week of face-to-face instruction, followed by 6 online modules and 2 days of participant presentations in Summer 2010, then online support, and two follow-up workshops on Fridays during the 2010–2011 school year. *Substitute teacher pay (up to \$85/day) will be provided for follow-up workshop participants.*

Where Ohio University–Chillicothe. The follow-ups will be held in Athens and Chillicothe.

When *Classes:* **14–18 June** 9:00 AM – 4:00 PM Mon.–Fri. at OU–Chillicothe
21 June – 30 July Weekly 3-hr on-line classes
5–6 August 9:00 AM – 4:00 PM Thurs.–Fri. at OU–Chillicothe

Follow-up workshops: 1 October 2010 and 4 March 2011, 10:00 AM – 4:00 PM.

Content

- Types of data, measurement and data collection
- Representing data graphically and numerically
- Understanding and anticipating variability
- Designing simple statistical studies
- Combinations and permutations
- Probability, including compound and conditional probability, odds, and expected values
- Informal statistical inference: making decisions based on data
- Planning and presenting lessons involving data, probability, and statistics

Technology TI-*nspire* CAS handheld and computer software, data collection and connectivity devices

Objectives

- To give teachers activities and strategies for delivering the Ohio Data Analysis and Probability standard and for improving student achievement in this standard in Grades 8–12.
- To engage teachers in investigating rich mathematical tasks as a way to learn mathematics.
- To enhance the capacity to teach the Probability and Statistics unit of Ohio’s new [*Modeling and Quantitative Reasoning course*](#).
- To develop teachers’ comfort level and facility in using the TI-*nspire* CAS, CBR 2, EasyTemp, EasyLink, and connectivity and statistical software.
- To help teachers develop lessons and 4th-year coursework alternatives to pre-calculus that incorporate data and technology in meaningful ways.
- To help teachers integrate formative assessment of student learning into their teaching.

QUANT Registration Form *Registration Deadline: 31 May 2010*

Please mail your completed two-page registration form with one or two checks to the following address:

Mary Harmison
QUANT Program
Ohio University
107A McCracken Hall
Athens OH 45701-2979

Please note: Your registration will not be accepted without proper payment. For questions or concerns regarding this form, please email Mary Harmison at <harmison@ohio.edu>, or contact her by telephone at 740-597-3164. Please check with your school principal and school district to see whether they will pay your registration fee and your travel mileage for the institute and follow-up workshops.

Name _____	School _____
Address _____	District _____
City _____	Day Phone _____
State _____ Zip _____	Evening Phone _____
	E-mail address _____

Please check one box for each of the listed options:

Tee shirt size

Participants will receive a QUANT tee shirt at no additional charge. Please indicate the desired size.

Small Medium Large X Large XX Large XXX Large

Graduate Credit¹

- No. (Enclose a single check payable to Ohio University in the amount of \$70.)
- Yes. (Enclose a first check payable to Ohio University in the amount of \$70 for institute registration. In addition, enclose a second check for graduate credit: make the second check payable to Ohio University in the amount of \$600. *Please note: by accepting this reduced tuition from Ohio University, you are accepting a \$1560 taxable scholarship.*)

Technology Experience (information used for program planning, not selection)

Beginner Intermediate Advanced

How long have you taught using technology in your teaching, which technology, and in which classes?

Statistics Experience (information used for program planning, not selection)

Beginner Intermediate Advanced

What Statistics courses have you taken? What statistics have you taught?

Selection Priorities (Check all that apply to you or your school)

Not highly qualified teacher Academic watch or emergency High poverty school

Comments:

¹ To receive graduate credit, you must attend all class sessions and follow-up workshops and complete specific assignments. The cost for the graduate course will be \$600 (6 quarter hours at \$100 per quarter hour) through Ohio University-Chillicothe Continuing Education. Participants will not be allowed to change their graduate credit-seeking status after 1:00 PM on the first day of the summer portion of the program.

Why do you wish to participate in the QUANT Program?

Please state your reasons for wishing to participate in this program. Include your plan for using what you learn with your students (Implementation Plan). You may wish to pick a particular class upon which to focus your implementation plan. This tentative plan can and should be revised during your participation in the QUANT Program.

In general, why are you interested in QUANT?

Implementation Plan (required)

Applicant’s Signature

I have read the *QUANT* flier and information on pages 1 and 2 of this form and have reviewed this application. I am committed to participating in the *QUANT* professional development program during 2010–2011, carrying out my Implementation Plan, which I will have an opportunity to revise during Summer 2010, and maintaining lines of communication with the *QUANT* office.

Applicant’s Signature

Date

Principal’s Signature

I have reviewed this application and discussed it with the applicant. I am committed to supporting the applicant’s full participation in the *QUANT* professional development program during 2010–2011, including attending follow-through workshops on 1 October 2010 and 4 March 2011, as well as the applicant’s implementation of the ideas and methods of the *QUANT* program.

Principal’s Signature

Date