

# DPI~AIG Professional Development Webinar Series Partnership with NC School of Science and Mathematics

ADVANCED CONTENT FOR TEACHERS OF ADVANCED LEARNERS IN MATH AND SCIENCE

Teachers may attend one or all sessions. Registration is required, as there is limited seating in the "GoTo" webinar room. Sessions will be archived and posted on the NCDPI iTunesU site.

## MATH SESSIONS

Usually 4th Tuesdays – Jan. 2013 to Apr. 2013

The math-focused sessions are intended to share advanced content and instructional strategies that relate to a variety of mathematics courses. All sessions will directly relate to the NCSCOS in Mathematics as well as other advanced mathematics standards to support middle and high school courses.

### SESSION 4: Tuesday, January 22, 2013, 3:45-4:45

*Introduction to Parametric Equations: We can use linear and quadratic equations to model the motion of various objects in the plane. In this session we will use parametric equations to build a model for the motion of a Mars rover. Then we can use the distance formula to create a model to find out how close the rover gets to its intended target. We will use the TI calculator to graph the parametric equations and the distance function.*

Reserve your Webinar seat now at: <https://www1.gotomeeting.com/register/155578920>

### SESSION 5: Tuesday, February 26, 2013, 3:45-4:45

*Parametric Equations, Part II: In this session we will extend what we learned in Session 4: Introduction to Parametric Equations to model the motion of a swinger. We will demonstrate how to capture the data from a video and then use our knowledge of trigonometry to write parametric equations for the horizontal and vertical positions of the swinger.*

Reserve your Webinar seat now at: <https://www1.gotomeeting.com/register/767793281>

### SESSION 6: Tuesday, March 26, 2013, 3:45-4:45

*Half-Life and Doubling Time – In this session we will explore some hands-on data collection activities that will lead us to creating models for exponential growth and decay. Using these real-world simulations we can help students interpret the constants in their exponential models in the context of the problems.*

Reserve your Webinar seat now at: <https://www1.gotomeeting.com/register/779654712>

### SESSION 7: Tuesday, April 23, 2013, 3:45-4:45

*Undecided: This session topic will be decided as the semester continues. In this session we will define the modeling process and create models to help us solve real-world problems that have multiple solution methods. These problems give students a chance to explore their own ideas, construct their arguments and critique the reasoning of others. Appropriate for Math I, Math II, AFM and Precalculus.*

Reserve your Webinar seat now at: <https://www1.gotomeeting.com/register/910584729>

## SCIENCE SESSIONS

Usually 2nd Tuesdays – Jan. 2013 to Apr. 2013

These science-focused sessions will directly address the NCSCOS, Science Essential Standards across grades 6-12. A goal of each session will be to discuss strategies for teaching students to be independent learners and accepting of additional challenges for differentiated learning.

### SESSION 4: Tuesday, January 29, 2013, 4:30-5:30

*Nano-biotechnology: As scientific tools have developed with the ability to 'see' at the atomic level, what we know about science is changing. In this session we will explore some of the new applications of nano and bio technologies. Discussions will include bioengineering organism's to respond to light; synthesis and analysis of nano scale drug delivery systems; physical properties behaviors at the nano-level; and other related topics.*

Reserve your Webinar seat now at: <https://www1.gotomeeting.com/register/532276489>

### SESSION 5: Tuesday, February 12, 2013, 4:30-5:30

*Energy and Sustainability: This session will focus on a variety alternate energy applications and current new efforts in sustainability. How does one build a house based on methods used by termites in arid regions? What is the role of black ice in glacier melting? These questions and many other sustainability issues will be discussed.*

Reserve your Webinar seat now at: <https://www1.gotomeeting.com/register/604276329>

### SESSION 6: Tuesday, March 12, 2013, 4:30-5:30

*Space Exploration: What's new in space exploration and where are NASA and private enterprise going in the future? Discussions will include current experiments being design and flown aboard NASA's Reduced Gravity Plane; what we are learning from Curiosity's trip to Mars; and new research findings from the International Space station.*

Reserve your Webinar seat now at: <https://www1.gotomeeting.com/register/681412632>

### SESSION 7: Tuesday, April 30, 2013, 4:30-5:30

*Motivating Independent Learners - How to teach students to be independent learners and accepting additional challenges for differentiated learning will be the main focus of this session. Also numerous opportunities for students to become involved in state and national competitions will be shared. Examples: Conrad Innovation Summit – Exploravision, NCSAS, Sr Projects, Junior Science and Humanities Symposium ISEF, etc.*

Reserve your Webinar seat now at: <https://www1.gotomeeting.com/register/309689104>

MARK YOUR  
CALENDARS



## REGISTRATION

Registration links will be posted to the DPIMG Wiki by Jan. 18, 2013.

<http://ncaig.ncdpi.wikispaces.net/home>



Public Schools of North Carolina  
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NORTH CAROLINA SCHOOL  
OF SCIENCE AND MATHEMATICS