

# 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

4th Tuesdays – Oct. 2012 to Apr. 2013 (except Dec)

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.

SESSION 1: **Tuesday, October 23, 3:45-4:45**  
**Using Data to Explore Linear Functions**

This session will use linear regression to find linear models for various real world data sets. We will interpret the constants in our models in context and assess the goodness of fit using the concept of residuals. Appropriate for teachers of advanced students in courses 8th grade Math to Precalculus.

TO REGISTER: <https://www1.gotomeeting.com/register/862592984>

SESSION 2: **Tuesday, November 27, 3:45-4:45**  
**Using Recursion to Explore Real World Problems, Part 1**

This session will explore the basics of recursion. This will include using the graphing calculator to explore recursive equations. Exploring real-world problems such as the amount of a drug in the body or how money grows in an interest-earning account, we will build both the recursive equations and use those equations to find closed form functions for the scenarios. Appropriate for teachers of advanced students in courses 8th grade Math to Precalculus. No prior experience with recursive equations is necessary.

TO REGISTER: <https://www1.gotomeeting.com/register/531095224>

SESSION 3: **Tuesday, December 4, 3:45-4:45**  
**Using Recursion to Explore Real World Problems, Part 2**

This session will extend what we learned in Part 1. Exploring real world problems such as the payment of a loan or how pollution moves through The Great Lakes, we will build the recursive equations and explore when a system has an equilibrium value. Appropriate for teachers of advanced students in courses 8th grade Math to Precalculus.

TO REGISTER: <https://www1.gotomeeting.com/register/790405289>

### SCIENCE SESSIONS

2nd Tuesdays – Oct. 2012 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 1: **Tuesday, October 9, 4:30-5:30**  
**Integrating the "E" in STEM classes**

Currently most of us integrate mathematics and some technology in our science classes. This session will focus on the Grand Challenges of Engineering and strategies for integrating engineering into your existing Essential Standards curriculum. Appropriate for teachers of advanced students in grades 6-12 science courses.

TO REGISTER: <https://www1.gotomeeting.com/register/206788656>

SESSION 2: **Tuesday, November 13, 4:30-5:30**  
**Biomimicry**

The Earth has been around for about 4 billion years and organisms have found solutions to many problems we currently face. This session will focus on how nature has adapted to solve engineering problems. We will explore questions such as: How does a beetle in the desert get water? How do leaves stay clean? How can a sea shell take chemicals from water and make such a smooth, hard surface? Appropriate for teachers of advanced students in grades 6-12 science courses.

TO REGISTER: <https://www1.gotomeeting.com/register/606949393>

SESSION 3: **Tuesday, December 11, 4:30-5:30**  
**Color: What is color? IR, Visible, and Infrared – the Electromagnetic Spectrum**

This session will focus on exploring what is color and related topics to color. We will explore questions such as: How can we get useful work from energy in this wavelength? And how do plants do this? How is optogenetics, a new field in medicine, utilizing light to activate drugs? Appropriate for teachers of advanced students in grades 6-12 science courses.

TO REGISTER: <https://www1.gotomeeting.com/register/713205752>

## MARK YOUR CALENDARS

### FUTURE SESSIONS

Registration will be open in December.

#### MATH

January 22, 2013

February 26, 2013

March 26, 2013

April 23, 2013

#### SCIENCE

January 8, 2013

February 12, 2013

March 12, 2013

April 9, 2013



Public Schools of North Carolina  
State Board of Education  
Department of Public Instruction



NORTH CAROLINA SCHOOL  
OF SCIENCE AND MATHEMATICS