# Extending Advanced Geosciences to High Schools

### Via Online Programs and University Partnerships

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### What is NCSSM?

Extending Advanced Geosciences to High Schools

### UNC system campus

680 boarding and 160 online students

# Model for 18 similar

institutions

KY School of Science and Math - 2007

# Part of a larger shift in 11th-12th

### grade and university partnerships

As seen in North Carolina and Ohio

### E-Learning in United States

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Age is becoming less relevant

11/12 grade and 100-level college delivery format is moving online

Scalable partnerships and proposed bridge programs are moving online

### **Existing Framework**

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#### **Virtual Schools**

Only high school students in a course for college/high school credit. Open admissions

#### High School @ College

High school students are mixed with undergraduates. Basic admission screening.

#### **Selective Programs**

High school students doing college-level expectations in high school environment.

### Where are we going?

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Central Clearinghouse for Opportunities

#### **Virtual Schools**

Expand geoscience catalog courses in 9-12 grade. Provide online supplements "learning objects" to local teachers

#### 10000s of students

#### University-K-12 Dual Enroll

Create special "honors" sections or courses for exceptional students.

500-1000 students

Selective Programs for Gifted Students

Provide research/field experiences and advanced geoscience content

#### 100s students

# **Existing Opportunities**

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#### **NCVirtual Public Schools**

Honors Environmental-Earth Science

#### UNC Chapel Hill—Carolina Online Courses

Intro to Geology Violent Earth Prehistoric Life

#### Meredith College— Governor's School

Geology ("Mining, Energy, and Natural Disasters as They Relate to Geology and Everyday Life"), Summer Ventures---App. State and UNC-W

Field Geology Coastal Geology

#### NCSSM

Environmental Geology Intro to Climate Change Research Independent Research

#### **UNC Greensboro iSchool**

#### Intro to Earth Sciences

# NCSSM Online Program

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- AP Calculus AB
- Applied Finite Math
- AP Calculus BC
- Applications of Calculus
- Multivariable Calculus

# HUMANITIES

MATH

- Science, Catastrophe, & Culture
- Intro to International Relations
- Ecocriticism: Nature in Thought & Writing
- Intro to Western Political Thought

# **SCIENCES**

- Genetics & Biotechnology
- 'Green' Environmental Geology
- Intro to Forensic Science
- Intro to Research
   Experience: Climate Change
- AP Chemistry
- Computational Chemistry
- Medicinal Chemistry
- Intro to Applied Chemistry & Engineering

# NCSSM Online Program

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### Green Env. Geology Online

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At Indiana University (IUPUI)	At NCSSM	
40-120 students	Up to 25 students	
15 week semester	18 week semester	
No synchronous components	Weekly mandatory web videoconference	
Optional field trips	Required campus visit	
~4 small projects required	~8 small projects required	
Minimal feedback on assignments	Individual tailored feedback on all assignments	
Age range 16-68 years old	Age range 15-18 years old	
Minimal participation requirements	Enhanced participation requirements	

### Online components



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### Synchronous Components

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### File Session View Tools Window Help

#### S Participants





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# **Collaborative Projects**

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### Face to face components

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### Acknowledgements and Follow Up

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