

NICE

NASA Innovations In Climate Education

*Engaging Minority University STEM Education
Professors In the Science of Climate Change*

(1) Title of the grant

**Engaging Minority University STEM Education
Professors in the Science of Climate Change**

(2) Type of report: Progress

(3) Name of the principal investigator

Dr. Linda Bailey Hayden

(4) Period covered by the Annual

September 2012 through August 2013

(5) Name and address of the recipient's institution

Elizabeth City State University

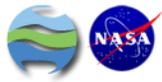
Box 672 1704 Weeksville Road

Elizabeth City, NC 27909

(6) Grant number

NASA NICE NNX11AM97A

An annual progress report is required each year no later than 60 days prior to the anniversary date of the project start date. The report should, at a minimum, document:



- Project activities over the period of performance of the cooperative agreement;

	Fall'12	Winter'12	Spring'13	Summer'13
Workshop Planning	X	X	X	
MSII Recruitment	X	X	X	
Summer Workshop				X
Program Evaluation		X	X	X
Quarterly Report	X	X	X	X
Follow-up and Help Desk			X	

Black X indicates that the activity took place as scheduled. Red X indicates that the activity has not yet taken place but will occur July 29 - August 2, 2013.

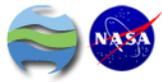
(OBJECTIVE 1: Workshop Planning): *ECSU faculty and graduate students will worked with UNH faculty on implementation of the summer workshops. Travel for site visits, joint-planning meetings, and video conferencing is budgeted to ensure the cementing of partnership connections.*

Workshop Planning: Program staff met twice during the spring 2013 semester to plan for the summer workshop. The first meeting was held face to face during the ECSU research week. http://nia.ecsu.edu/ur/1213/rw13/rw13wednesday_s2.html. Participating in the session were Drs. Linda Hayden and Josiah Sampson from ECSU. Drs. Steve Hale and Barry Rock represented UNH. The second workshop planning session was held on Friday May 31st. Participating were Drs. Darnell Johnson, Linda Hayden, Steve Hale and Barry Rock.

Separate meetings were held involving only UNH staff. Dr. Hayden then met with them on her suggested changes that need to be made to the workshop agenda and organization based on the initial evaluator reports. A copy of the report is attached.

(OBJECTIVE 2: MSI Recruitment): *Drs. Johnson and Sampson will recruit science education faculty from minority serving institutions for participation in the summer workshops. Logistical arrangements for summer workshops will be made during spring semester.*

Recruitment: On November 9-10, 2012, Dr. Darnell Johnson, Education Coordinator for the Center of Excellence in Remote Sensing Education and Research (CERSER), attended the Quality Education for Minorities (QEM) Network Workshop on Evidence-based STEM Instructional Strategies. This event was supported by the National Science Foundation (NSF) at the Four Points by Sheraton Hotel at BWI Airport in Baltimore, Maryland. During the workshop Dr. Johnson worked to identify MSI faculty to participate in cohort 2 of the NASA NICE program. <http://nia.ecsu.edu/nice/2012/121109nice/> Seventeen MSI faculty members have been selected to participate in the summer 2013 workshop to be held on the campus of UNH.



(OBJECTIVE 3: Summer Workshops): *We will conduct a 1-week workshop for 16-science education faculty from MSIs at ECSU during the first summer.*

Summer Workshops: This objective has not been completed. The workshop for MSI faculty will be held July 29 - August 2, 2013 on the campus of UNH. Seventeen MSI STEM Education faculty will be involved in the one-week workshop. Faculty will conduct fieldwork that emphasizes place-based pedagogy. They will work with an ecological model in STELLA that utilizes authentic inputs from historical and future climate scenario parameters, with NASA satellite imagery data from the MODIS and SeaWiFS sensors, and have discussions of the challenges and approaches to integrating all or some of the lessons into their courses. Faculty will receive travel support and a stipend. This year two of the faculty are from cohort 1. They will focus their work on submitting papers to AGU. Dr. Loretta Jagers will work with Dr. Darnell Johnson while Mr. Ervin Howard will work with Dr. Mary Martin to submit papers. Drs. Linda Hayden and Steve Hale will also submit a paper to AGU. MSIs represented in cohort 2 include:

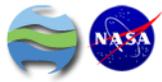
Talladega College (2)
Elizabeth City State Univ. (2)
Fort Valley State Univ. (2)
Delaware State Univ.
Alcorn Univ.
Virgin Union Univ.

Tuskegee Univ.
Grambling State Univ.
Tougaloo College (2)
Alabama A&M Univ.
Texas Southern Univ.
Virginia Union Univ. (2)

(OBJECTIVE 4: Program Evaluation): *Learning Innovations at WestEd will be contracted to perform the evaluation via a subcontract from Elizabeth City State University. The evaluation start and end dates are Sept. 18, 2011 to March 17, 2014.*

Program Evaluation: Nancy Hurley, the evaluator has been sent the list of names and email addresses of this year's summer workshop participants so she can send out the pre-workshop survey. A focus group protocol for the summer workshop and also a draft protocol for a debrief with the UNH team at the end of the day on Wednesday when she will observe has been approved and is attached to this report.

Program Evaluation: WestEd evaluators sought to reach 16 Cohort 1 workshop participants for telephone interviews in April 2013. Six workshop participants were interviewed at the time this report was prepared; another attempt will be made to reach additional participants in early May. The purpose of the interviews was to gather feedback about experiences at the workshop and since the workshop; how participants have used the new learning, skills or tools; successes and challenges of implementation; and any suggestions for improving the workshop. We have instructed the evaluator to continue to reach past participants in an effort to get a more representative size sample.



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Program Evaluation: Time has been set-aside during the summer workshop for the evaluator to come to UNH and conduct a focus group with participants. She will probably do two separate face-to-face focus groups.

(OBJECTIVE 5: Quarterly Reports): *ECSU will assume responsibility for all reports required by the funding agency. Included in the reports will be the program activities and information from the evaluator's findings.*

Quarterly reports: Quarterly reports for the Engaging Minority University STEM Education Professors in the Science of Climate Change project have been submitted through the online NASA NICE website. This includes information on milestones.

(OBJECTIVE 6: Follow-up and Help Desk): *ECSU graduate students will provide Help Desk services to participants as they work to implement the climate change modules into the classes for pre-service teachers. Science and education experts on the team will serve as resources for the graduate students and as collaborators with the MSI faculty.*

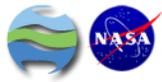
Help Desk: One ECSU graduate student will travel to UNH to assist with the summer 2013 workshop. This will strengthen her ability to support workshop participants through the help desk service.

- Project accomplishments measured against the proposed goals and objectives;

The team has met all goals for recruitment of MSI faculty for participation in both the proposed summer workshops. There exist evidence to show that the MSI faculty who participate in the workshop are using the information learned to engage their pre-service teachers in teaching and learning about global climate change through the use of NASA Earth observation sets. More information is included in the next section of this report under "Evidence of how project activities have furthered stakeholder priorities"

- Evidence of how project activities have furthered stakeholder priorities;

Evidence 1: On November 15, 2012, students in the Center of Excellence in Remote Sensing Education and Research (CERSER) program took part in a Polycom conference with students at [Grambling State University](#) as part of the American Education Week Teaching and Learning Symposium. This conference was sponsored by the NASA Innovations in Climate Education (NICE) and allowed CERSER students to observe various activities and projects that the teacher candidates and advanced candidates have completed to incorporate the NASA NICE Climate Education Concepts into the Teacher Education component.



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The project at Grambling State University is headed by [Dr. Loretta Jagers](#) and served to document activities that students in the Curriculum and Instruction Department (College of Education) have implemented while serving as a participant in the Elizabeth City State University (ECSU) and the University of New Hampshire (UNH) NASA Climate Education Grant Program. Dr. Linda Hayden, PI of the NASA NICE project is the director of the CERSER program at ECSU. The full program of the event and more photos of the interactions with students can be found on links off of <http://nia.ecsu.edu/nice/2012/121115gsu/>.

Evidence 2: The pre-service students of the EDUC 203 Introduction to Computer Instructional Technology course continue their development of creating STEM lessons for Birth-Pre K and K-12 curriculum using a software tool, the webquest from the Zunal website located at <http://www.zunal.com>. Zunal is a website that allows educators to create a hypermedia products for delivering instructional content of subject areas. The pre-service students create their webquest based on connecting STEM themes with subject areas such as arts, music, geography, earth science, biology, physical education, science, and math. The pre-service student teachers' webquests have designed learning objectives that align with curriculum and technology standards. The pre-service student teachers selected media forms such as graphs, videos, animations, and audio that are incorporated in connecting the K-12 learners to various pathways of instructional learning using STEM themes and 21st century themes. Other hypermedia products were used in conjunction with the webquests are material generators (rubric and puzzle generators), and hyperlinks to software learning tools. Listed below are sample hyperlinks to the pre-service student teachers' webquests. See this site for more details <http://nia.ecsu.edu/nice/2013/130424stem/>

- Extent to which collaborations and/or partnerships have evolved;

ECSU and UNH have expanded their partnership to include Grambling University. We have invited their representative to participate again in the summer 2013 workshop. While there she will work on developing a paper to be submitted to AGU.

- Plan of activities for the next year.

Help Desk services are planned for next year along with extensive evaluation activities. UNH will participate in the Research Week activities at ECSU in early Feb. 2014. ECSU will participate in the Undergraduate Research Conference at UNH. Meetings on the NASA NICE project are planned for each of these interactions.