ABOUT OUR PROGRAMS

Northeast Bioenergy & BioProducts (NBB) Professional Development for Educators is funded through an Agriculture and Food Research Initiative (AFRI) grant from the US Department of Agriculture National Institute of Food and Agriculture (NIFA). The program serves teachers (grades 8-16, pre-service and in-service) through the expertise and collaboration of eight institutions and over 40 experts in the Northeast region, where multiple bioenergy and bioproducts production systems are currently under development and expected to be part of the Northeast's future landscape.

An "industrial ecology" approach is used to provide educators multi-disciplinary content and research-based training materials and activities linked to the Northeast's bioeconomy feedstock systems (i.e., shrub willow and perennial grasses for the production of sugars, and soybean, algae, and waste-oils for the production of biopolymers and biodiesel). A supply-chain framework is used to provide teachers with information about the range of technical, educational, socio-economic and scientific competencies required in the emerging bio-economy. To inspire students to consider science, technology, engineering and math (STEM) career paths, a "Meet the Bio-economy Workforce" video is presented with stories, interests, and examples of real people working in the broad supply-chain segments of the industry today.

The program provides teaching tools (lab kits), training on use of the kits, and operates through a main Certified NBB Master Teacher Training Site at Cornell University's Biofuels Research Laboratory and The Boyce Thompson Institute, five mirror NBB Master Teacher Training Sites (in NY, MD, OH, DE), and six Internship Sites to provide 66 training positions annually. NBB Master Teachers will be trained on the use of Interactive White Boards and provided a suite of learning-standard-ready teaching tools including bioenergy and bioproducts white board lessons, workbooks, lab-kits and engagement activities for classrooms (with school-year follow up support from each mirror site).

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NORTHEAST BIOENERGY & BIOPRODUCTS

PROFESSIONAL DEVELOPMENT FOR EDUCATORS

2011

PROGRAMS and LOCATIONS

This project is supported by Agriculture and Food Research Initiative Competitive Grant no. 2011-67009-30055 from the United States Department of Agriculture (USDA) National Institute of Food and Agriculture.

INTERNSHIPS
Summer Field Experience

Summer Interns will report to their work sites for a stay of up to 12 weeks. Some sites also will consider two six-week rotations with other sites. Intern site supervisors will set the work goals based on the needs of their research programs. Details are available on the registration website. Interns will have the opportunity to a give presentation on their experiences at a regional conference or symposium.

An Internship will be hosted at each of the following locations in 2011:

1. **Ithaca, NY:** Boyce Thompson Institute (Perennial grass genetics);
2. **Geneva, NY:** Cornell University & New York State Agricultural Experiment Station, (Willow genetics; grasses; pretreatments);
3. **Columbus, Ohio:** Ohio Bioproducts Innovation Center, (Food processing waste to biopolymers);
4. **White Plains, NY:** Pace University Energy and Climate Center (Environment, Economics, and Policy;);
5. **Big Flats, NY:** USDA Plant Material Center, (Perennial grass production field work);
6. **Rochester, NY**: Rochester Institute of Technology (Transportation logistics & upstream emissions)

INTERNSHIP STIPENDS
The summer internship position provides a $575/week stipend to participants to help defray cost of participation (lodging, meals, sustenance). Number of hours per week are worked out with supervisor and timing of stipend payments will be determined prior to the start of the program.

NBB MASTER TEACHER (MT) TRAINING
One-Week Workshops

Educators will leave the workshop with the ability to teach basic bioenergy and bioproducts concepts to other teachers in their school using prepared lab kits and interactive white board activities provided by the program. The program provides school year follow-up support to NBB Master Teachers (MTs) using the kits and activities in their school. One-week workshops will be held at five locations in the summer of 2011. Visit the registration website for dates and times.

- **Columbus Ohio** (Ohio State Fairgrounds, organized by Ohio Bioproducts Innovation Center)
- **Dover, Delaware** (organized by Delaware State University)
- **Ithaca, NY** (Boyce Thompson Institute, organized by BTI and Cornell University)
- **New York City** (Pace University, organized by Pace Energy & Climate Center)
- **Princess Anne, Maryland** (organized by University of Maryland, Eastern Shore)

PARTICIPATION and NBB-MT SCHOLARSHIPS
Each of the five workshop sites will provide full scholarship packages to 10 educators (including workshop registration, teaching-kits, workbooks to bring back to your classroom, and a stipend of $500 provided after completion of the program to help defray costs of participation.) Scholarships will be based on 1) demonstrated enthusiasm for the topic area (40%), 2) plans to incorporate the program topic/materials into your classroom (40%), and 3) school located in an underserved district (20%). Additional applicants may be invited to participate based on space availability and a registration fee of $100. Additional workbooks and kits may be purchased at the workshop site.

CERTIFIED NBB MASTER TEACHER TRAINERS
Six-Week
Train-the-Trainer Program

We are seeking motivated Educators (and Educators-in-training) wishing to help with our NBB Master Teacher Training sessions! The program is open to Educators (including undergraduate and graduate students preparing to be science, math and engineering educators) and to Extension Educators.

Teachers (pre-service and in-service) selected for the Certified Master Teacher Trainers (NBB CMTTs) Program will travel to Cornell University approximately six to eight weeks prior to the NBB Master Teacher (MT) Training session in your area. During the first three weeks at Cornell, participants will be trained on the current year's suite of NBB laboratory kits and workbook contents. CMTTs will receive SmartBoard Certification Training (Train-the-trainer certification from Smart Technologies) on the Cornell campus. CMTTs will become proficient in NBB program kits and engagement activities. A lab practicum and online SmartBoard Certification test will be conducted to verify CMTTs are prepared to teach other teachers on the use of the NBB lab kits, workbooks and NBB SmartBoard tools. The newly Certified NBB Master Teacher Trainers then return to their Mirror Master Teachers training site for set-up and preparations and help Site Directors carry out the one-week NBB MT Training workshop.

PARTICIPATION
Each of the five training sites will select two CMTTs. A total of 10 CMTTs will be trained in 2011. CMTT training begins with lodging check-in at Cornell University June 12, 2011. The CMTT program at Boyce Thompson Institute and Cornell University runs from Monday June 13 through Thursday June 30, 2011. Dates for an additional 3 weeks at the Mirror site near you are arranged with each mirror site Director and will depend on MT training dates at your Mirror site.

NBB CMTT PROGRAM SCHOLARSHIPS
Each of the five workshop sites will provide full scholarship packages to at least 2 participants (including program registration, teaching-kits and workbooks to bring back to your classroom and mirror training site, lodging (single room in Cornell University dormitory), Cornell University meal plan, travel costs to Cornell University, and a stipend of $3000 provided after completion of the program to help defray costs of participation. Scholarships will be based on 1) demonstrated enthusiasm for the topic area (40%), 2) plans to incorporate the program topic/materials into your classroom/ outreach education activities (40%), and 3) school/workplace located in an underserved district (20%).

ELIGIBILITY

Educators interested in disseminating information about bioenergy and bioproducts using hands-on tools and engagement activities may apply. The program gives preference to applicants who are middle school, high school and undergraduate level teachers interested in providing sustainable bio-based science, math and engineering concepts to their students. This program is open to US Citizens and legal residents who are teaching or preparing to teach in the US. Applications are being accepted through March 31, 2011. Notification of placement and/or waitlist will be provided by April 30, 2011. Approximately 65 full program scholarships are available for 2011.

HOW TO APPLY

Application is through our online registration site. There is a small non-refundable application fee ($10) to help cover application processing costs. The single application fee allows you to register for consideration in one, two, or all three training programs and places you in our database for notification of next year's program details and any additional workshops scheduled for 2011.

https://www.regonline.com/BioenergyTeachers2011