

## National Hispanic Environmental Council



### THE NHEC

## MINORITY YOUTH ENVIRONMENTAL TRAINING INSTITUTES

### AN ENVIRONMENTAL STEM PROGRAM

New Mexico—New York City—S. California

### INSTITUTES OVERVIEW:

- The National Hispanic Environmental Council’s “Minority Youth Environmental Training Institutes” are an intensive, residential, high-level, strongly science-based, outdoor/nature focused, 11 day program. For the last 12 years our Institute model has employed **a rigorous Environmental STEM curriculum, coupled with extensive use of environmental professionals (mostly minority) serving as role models** to teach top students deeply interested in and actively pursuing a natural resource/envir science major and a later career in these fields.
- The curriculum includes many high-level presentations on a range of natural resource and environmental issues. Students also conduct daily “environmental field studies” including air, water and soil testing, biological assessments, and more using high tech, professional-grade environmental equipment.
- **NHEC operates three Institutes each summer** – our national in New Mexico, and two regionals in New York City and S. California.
- **Confirmed 2014 Institute dates:** the CA Institute will be held June 17—21; the NYC Institute will be held June 26—July 3; and the NM Institute held July 20—31.
- Each Institute has an average of 30 students and all are competitively selected. The regional Institutes are based directly on the NM model as described below. Through the 3 Institutes **NHEC trains 80--90 top college science students every summer – the next generation of diverse environmental stewards, professionals and especially scientists.**
- **These competitively selected, high-GPA, science-focused, STEM students are exactly the kind that federal agencies state they are seeking.**

- **The Institutes are designed to educate, engage, and inspire** top minority students – i.e. high GPA college students aged 17 – 19 -- on key environmental and natural resource issues, and actively assist these students to further pursue their college degrees and related careers in those fields.
- The Institutes are both a conservation education AND an environmental career awareness program. **Specifically, it is an Environmental STEM initiative.**
- Regarding STEM, our Institutes fully meet the mandates outlined in the White House “5 Year Federal Science, Technology, Engineering, and Mathematics (STEM) Education Strategic Plan”, released in May 2013. As outlined below, especially met is the Report’s call for “authentic STEM experiences” for students.
- The Institutes are primarily (although not exclusively) funded by federal environmental and natural resource agencies. **Over the years these have included U.S. Environmental Protection Agency, USDA Forest Service, USDA Natural Resources Conservation Service, US Dept of Energy, U.S. Fish & Wildlife Service, and others.** Sponsor funding covers all costs for students to attend. Sponsors play an active role in the Institutes, providing role models, science equipment/instruction, and multiple presentations on each agencies’ environmental mission and especially the opportunities within for students.
- By funding/participating, federal agencies are meeting their oft stated goal of building a diverse, scientifically-trained cadre of hireable STEM students. While an education program, the Institutes are also a recruitment pipeline, one where students are intensively trained/focused on these sponsors’ environmental mission and workforce, **including thru federal student programs like Pathways.**
- **Institute hiring/job component:** Institute students are a rich source of high GPA, science-oriented students for federal agencies, and over the years a number have been hired, either in the former STEP and SCEP programs, and now Pathways. Regarding Pathways, in 2014 NHEC is partnering with U.S. Forest Service (FS) and the Natural Resources Conservation Service to develop and implement a **“Pathways Pilot Program”** to help increase hiring of Latino and minority students into Pathways. **NHEC is proud to state this Pilot Program will be held during our NM Institute.** NHEC is also partnering with US Fish & Wildlife Service on the unveiling of their new student hiring authority; details to follow.
- **However -- the NYC Institute has a specific, linked federal environmental job component.** Since its inception 8 years ago, students go through the intensive NYC Institute and are then interviewed by federal staff; those selected are hired to work in a Youth Conservation Corps (YCC) job for the rest of that summer. This program started with the National Park Service for the first 5 years and continues now with the U.S. Forest Service (FS).

- **In 2014, 16 students hired from the NYC Institute will work this summer for the FS Eastern Region in YCC at 5 forests and labs:** the NYC Urban Research Field Station; White Mountain Forest in New Hampshire; Green Mountain Forest in Vermont; Wayne National Forest in Ohio; and the Northeastern Research Station in Delaware, OH. In their YCC jobs students perform a range of tasks, but will also continue their environmental studies through hands-on learning on-site.
- **NM INSTITUTE:** since its inception 12 years ago the national Institute has been held in northern New Mexico.
- Students are housed and fed and classroom instruction held at **the Glorieta Conference Center**, located 18 miles north of Santa Fe in a beautiful mountain area. Students travel daily by chartered bus to explore a wide range of sites, as well as conduct environmental field studies. Sites include national forests, national parks, wildlife refuges, fish hatcheries, national laboratories, hydro-electric plants, dams, waste water treatment facilities, and more. Students visit, learn in, and camp (for 2 days) at some of the most beautiful and ecologically diverse public lands in the U.S. This is an 11 day long residential program.
- **NYC INSTITUTE:** for the last 8 years the regional NYC Institute has been held at Gateway National Park in Staten Island. **However in 2014 students will be housed and fed and classroom instruction held at Wagner College in Staten Island.** Wagner is a small, private, liberal arts college located on a scenic campus high on a hill overlooking NY Harbor. Students travel daily by chartered bus to a variety of sites to explore, learn, camp, and conduct field studies at national parks, national wildlife refuges, national seashores, coastal wetlands, city parks, landfills, and more. This is an 8 day long residential program.
- **CA INSTITUTE:** the previous 4 regional CA Institutes have been held at CA State University Channel Islands (CSUCI) located in Ventura, CA. CSUCI is a beautiful campus built in the historic “Spanish Mission” style. Students are housed and fed at CSUCI and classroom instruction held there. Students travel daily by chartered bus for a range of site visits, and to conduct field studies at national parks, state parks, national forests, coastal wetlands and tidal pools, water treatment plants, as well as by chartered boat to hike on/explore Channel Islands National Park 15 miles off the CA coast. Students visit and learn in some of the most scenic/diverse areas of CA. This is a 7 day long residential program.
- **The Institute is an award winning program.** In 2007 it was one of just 8 out of 100 programs selected by USDA (with a panel including Richard Louv, the famed author of “No Child Left Inside”) in a national competition seeking innovative, successful environmental education models. Our 2012 NYC Institute also received an award from the U.S. Forest Service Eastern Region as a best practice, innovative diversity outreach/environmental education program.

- For the national NM Institute, NHEC recruits from all 50 states and Puerto Rico. For the NYC Institute students apply from the tri-state area (NY, NJ, CT). For the CA Institute students apply from CA, AZ, and OR. In each Institute, top students are competitively selected through a rigorous process.
- **With funding from sponsors, NHEC covers all costs for students** to attend each Institute. This includes airfare; housing; meals; chartered bus; textbooks; science equipment and other specialized equipment; camping gear; and more;

### **SPECIFIC PROGRAM GOALS:**

1. **Provide a high level, content rich, academically challenging, Environmental STEM curriculum** on environmental, natural resource, and related science topics for students already pursuing these majors that over each day becomes progressively more advanced and rigorous.
2. **In the Environmental STEM curriculum, students use a variety of high-tech, professional grade environmental science equipment** so as to better learn the physical, chemical and biological science principles being taught. Students gain valuable experience learning about and operating such equipment, especially as preparation for later internships or jobs, especially with our sponsors.
3. **Provide environmental career information and guidance**, i.e. teaching students about the many careers in enviro/conservation fields, especially with our sponsors
4. **Provide environmental college information and guidance**, i.e. informing students about the many and varied environmental and natural resource majors at colleges across the country. This includes identifying these schools and how to apply. This especially includes a focus on environmental related majors, science programs, and research fellowships in graduate school.
5. **Provide a singular transformative experience that, through the beauty of nature and outdoors New Mexico, California and New York changes students' lives forever and propels them to become the next generation of environmental leaders, professionals and especially scientists.**
6. **Use of "role models"** – i.e. minority enviro. educators as paid instructors, combined with minority environmental professionals from many disciplines, especially the sciences, serving as volunteer role models. This role model component targets a key reality: **the "believability gap" -- how can students of color ever believe they can pursue a natural resource career –especially in the sciences-- if they almost never see faces that look like them doing this work?**

Through the extensive use of such role models at the Institutes, NHEC is successfully addressing this critical need.

7. **Provide federal agency sponsors with a proven, effective, and convenient vehicle to hire top minority environmental science students** in federal internships and jobs, through a program that has already intensively trained these students in the mission of and opportunities with our sponsors.

### **INSTITUTES CURRICULUM:**

- Created by NHEC to be high level, substantive, strongly environmental and conservation science-based, and hands-on; the Institutes are “Environmental STEM” in action. Institutes are an intensive mix of daily classroom and field work; for example after dinner students return to the classroom until 9 pm for more presentations. Student put in 15 hour days every day in the rigorous Institutes.
- Students conduct environmental field studies that includes sampling/testing of the air, water, and soil at multiple and diverse ecological sites, coupled with daily classroom learning on many environmental issues and science topics that reinforce the field work. Students collect/analyze specimens including macro invertebrates, conduct biological assessments, do plant and vegetation surveys, do birding, conduct forest studies/measurements, and more.
- Students conduct field studies in multiple sites to gather data from varying terrain, temperatures, micro-climates, ecology, habitats, elevation, and time of day. Students can then compare and contrast their findings and use this data to underscore the classroom science presentations.
- To conduct the field studies students use a mix of professional-grade scientific equipment, taught by NHEC’s instructors and role models. These include the Hanna 9828 Multi Parameter Water Quality Meter; the Robotic Field Surveying Station with CAD Software; the DELTA Geochemistry Handheld X-Ray Soil Analyzer; the Smith-Root Electroshock Fish Backpack Unit; the GASTEC Precision Gas Analysis device; the Hydrologic flow meter and headphones, and more.
- **The Institutes are also a part of the growing “citizen science” movement.** Through their field studies students collect an extensive set of biodiversity data. **NHEC will submit this data to the World Water Monitoring Challenge and other research entities who utilize citizen scientists.**
- The last day of each Institute culminates in Final Presentations by student teams. Students create detailed power points using all their field test data, measurements, observations, and biological assessments.

Final Presentations are made to NHEC Instructors who evaluate and give feedback and corrections to ensure students have learned/used the applicable science principles.

- **Nature Focused:** the Institutes are highly nature focused, place-based, and meet the nature experience, outdoor exploration, and environmental stewardship goals for under-served youth as outlined in efforts like America's Great Outdoors initiative (AGO). In the Institutes students hike trails, climb mountains, wade rivers, enter waterfalls, explore high elevation pinon/pine or oak/sycamore forests, walk windswept high-desert plains, enter caves, explore deep canyons and unique geological formations, visit archeological ruins, explore riparian streams, wetlands, beaches and coastal tidal pools, camp overnight, and much more. **Students exposure to nature and the great outdoors is daily, deep, and indeed – given the beautiful landscapes visited -- transformative.**

### **STUDENTS AND SELECTION CRITERIA:**

- NHEC utilizes its extensive network of national and regional contacts developed over the last 12 years to seek, identify, and select students.
- The Institutes are for top academic achieving students with high GPA's. 100% of students are either in college already or been accepted to college, i.e. starting in September as freshmen. Students must have a minimum 3.0 GPA to be admitted into the program; 80+% of accepted students have 3.3—4.5 GPA's.
- **For example, of the 30 students in the 2013 NM Institute, 6 students had a GPA of 3.0 to 3.49; 12 students had a GPA of 3.5 to 3.99; and 12 students had a GPA of 4.0 to 4.5. Students in the NYC and CA Institutes have similar high GPA's.**
- Further, NHEC is proud to state that in each Institute over the last 4 years at least **two thirds of selected students were female.**
- Selected students are aged 17—19. Most are freshmen and sophomores in college, with some being seniors in high school who are about to start their freshman year in college in September.
- Regarding selection criteria -- students must have taken or be taking relevant, sufficiently extensive environmental coursework in school, plus have a proven background in some environmental program, internship, job, or experience. Often, the depth of environmental experiences/background these stellar students possess is not only impressive but amazing, given their age.

- Students must be declared majors in an environmental or natural resource discipline, and almost always in the sciences. If a senior in high-school, the student must be demonstrably focused on the environment -- i.e. have proven environmental academic and related experiences -- and be headed to an environmental/natural resource major in college.
- In addition to accepted students, the caliber of applicants is equally high, a result of the Institutes' intellectual rigor, challenging curriculum, and growing reputation among students, parents and teachers as a highly beneficial, highly competitive program.

### **ROLE MODEL PARTICIPATION:**

- The Institutes are unique in that they extensively use paid minority environmental educators (who are also working environmental professionals) as instructors, coupled with dozens of volunteer role models.
- For example, in 2013 all 5 of the paid instructors in the NM Institute were minority. NHEC's Lead Instructor has a Ph.D in Wildlife Biology; all instructors have at least a masters degree in their environmental field. In 2013 of the 37 volunteer role models participating in the NM Institute, 28 were minority. Several role models a day are present for each Institute, typically for 1-3 days at a time. Some role models attend for 3-5 days.
- These role models are working environmental professionals from a variety of disciplines who share their technical knowledge, life experiences, and heritage. They help our Instructors teach and inspire students by providing information and presentations. Many role models come from our Institute sponsors.
- **Role models come from many environmental fields, however the majority are from the sciences** – wildlife biologists, ecologists, fish biologists, soil scientists, foresters, hydrologists, geologists, toxicologists, envir. engineers, and more.
- Through minority environmental role models, students can see how career challenges are navigated and how to follow in their footsteps. In this way, **students have their "own" to be inspired by, to emulate, and who have a story of success to tell.**

## **FEDERAL DIVERSITY--OUTREACH--HIRING NEEDS MET BY THE INSTITUTES:**

- The Institutes meet the requirements of the on-going Diversity and Inclusion (D&I) efforts of this Administration and federal agencies. Further, the Institutes meet the 2 Presidential Executive Orders (EO) which apply specifically to Hispanics. These are: EO 13171 (Oct. 2000), “Increasing Hispanic Employment in the Federal Government” and EO 13555 (Oct. 19, 2010) “Improving Educational Excellence for Hispanics”.
- Agency D&I programs and the EO’s cited above mandate outreach and diversity initiatives to Latinos, and NHEC strongly believes the Institutes are a successful example of a program that directly fulfills these requirements. **The Institutes are a “deliverable” for agencies seeking to meet these employment, education, and outreach goals to Hispanic Americans under these EO’s and D&I efforts.**

## **INSTITUTES SUMMARY:**

- **The NHEC Institutes are an intellectually rigorous, academically challenging, Environmental STEM/education program for top Latino/minority college students with high GPA’s who love and are pursuing the sciences; possess proven, existing environmental or natural resource experience; and who have a passion for the environment and a later environmental or natural resource science career.**
- Each summer NHEC finds, does the vetting, and then intensively trains 80—90 of precisely the kinds of top environmental/conservation, science oriented diversity students that federal environmental agencies are seeking to meet and hire.
- Over the last 12 years the Institutes have become an effective, respected, proven vehicle for sponsors to build the next generation of environmental stewards, professionals and especially scientists. **If utilized by agencies, the Institutes are a rich, targeted recruitment pool.**

**For more information please contact Roger Rivera, NHEC President, at 703-683-3956 or [rrivera@nheec1.org](mailto:rrivera@nheec1.org) Or Juan Rodriguez, NHEC Programs Coordinator, at 703-861-6064, [jrodriguez@nheec1.org](mailto:jrodriguez@nheec1.org) Or [www.nheec1.org](http://www.nheec1.org)**

## **NHEC OVERVIEW:**



The National Hispanic Environmental Council is a national, non-profit, membership based organization founded in 1998, and located just outside Washington, D.C.

NHEC is an advocacy, policy, and programmatic organization. With over 4,000 members across the country, NHEC is the oldest and largest national Latino environmental **and** natural resource organization in the country.

NHEC seeks to educate, engage and empower our community on environmental and conservation issues; encourage Latinos to preserve and protect our environment; and provide an advocacy voice for Latinos before government and green group decision-makers. We operate programs that accomplish this mission, and furthers our guiding credo: “**...because it’s our environment too**”.