National Hispanic Environmental Council

14th NY/NJ ENVIRONMENTAL STEM INSTITUTE

JUNE 21--30, 2024

To be held at

FEDERAL, STATE, COUNTY, AND OTHER PUBLIC/PRIVATE LANDS AND SCIENCE FACILITIES IN NORTHERN NEW JERSEY AND STATEN ISLAND

"10 DAYS OF LEARNING, A LIFETIME OF EXPERIENCE"

FACT SHEET

PROGRAM OVERVIEW

NHEC is accepting applications from top college STEM students -- **especially from underrepresented/people of color communities --** for our upcoming **14th NY/NY Environmental STEM Institute.** NHEC will hold its 19th NM Environmental STEM Institute on July 26-August 4.

Students are competitively selected from across the U.S. and Puerto Rico based on a variety of criteria, including a minimum 3.0 GPA; science major and background; demonstrable interest/experience in the environment; and diversity. NOTE: as this is a federally-funded program all selectees must be U.S. Citizens or Legal Permanent Residents. There is no fee to apply or to attend. As a federally-funded program NHEC Institutes are open to all, and students from all backgrounds are welcome to apply.

With funding from our federal sponsors – the U.S. Forest Service, USDA Natural Resources Conservation Service, and U.S. Environmental Protection Agency -- **NHEC covers all major costs for those students selected to attend -- roundtrip airfare, lodging, meals, local transportation** on-site (by chartered bus), science equipment, and more.

Further — with the strong support and funding of the U.S. Forest Service, a long-standing sponsor--there is a new feature to our Institutes for 2024.

The students selected will receive an educational stipend provided by FS for their hard work in this intensive program. Thus, upon successful completion of the NY/NJ Institute (as determined

by NHEC), each student will receive a check from NHEC **for $600**. Students will receive their checks by mail soon after the Institute.

Like all our Institutes, the NY/NJ Institute is an intensive, residential, strongly-science based, hands-on, 10 day residential environmental STEM program for top undergraduate college students deeply interested in science and the environment. The Institutes are designed to **provide a high-quality, in-depth, transformative science experience.**

Further, after having worked collaboratively for the length of the program, every Institute concludes with **each student team giving a Final Presentation** on one of the four Environmental Field Study sites, using all the data, field observations, samples, lab results, and more collected over the 10 days.

To be eligible, students must be actively pursuing a **science degree in an environmental, natural resource, or agricultural major, and want a related career in this field, especially with federal agencies.**

Overall, NHEC's Institutes are designed **to help build the next generation of diverse/of color scientists/researchers/professionals in environmental and natural resource science fields**, an area within STEM that still remains severely underrepresented for people of color.

Students will see, learn, and use sophisticated, professional-grade environmental science equipment and instrumentation. Participating facilities include the USGS NJ Water Science Center; the Somerset-Raritan Wastewater Treatment Plant, and the U.S. Forest Service's Silas Little Experimental Forest, a part of the FS Northern Research Station. Further, scientists and staff from these facilities, many with Ph.D's, are also participating on-site. These agencies are offering an array of research, science instrumentation, and methodologies to learn/use in the field and lab. NHEC also owns/brings science equipment for students to use.

Regarding transportation and logistics: once a student is selected NHEC will quickly call to discuss all travel arrangements, typically airfare, for which NHEC must give final approval. Once in NY/NJ, NHEC will transport students to/from each site by chartered bus; provide breakfast, lunch, dinner, and snacks/water; provide lodging—**at the SpringHill Suites in Woodbridge, NJ**; provide science equipment; and coordinate all logistics/travel. **See below for a detailed description of the 2024 NY/NJ Program.**

Also participating are "role models" from NHEC's federal sponsors and other partners. These are environmental professionals/scientists, most in the science/research/technical arena, and many of diverse/of color backgrounds. They will be on-site to share information, research and technology, and engage/mentor students – but especially to inspire – to show students there is a path forward as they pursue science majors and careers. **This role model component – so students see faces that look like them who actually do environmental science work** -- has been a core element since the first Institute almost 20 years ago.

Students should especially note that our **agency sponsors will be on-site to actively meet/recruit students for a range of new federal STEM opportunities** in jobs/internships, science and research, and more, in 2024 and beyond.

Further, these agencies are particularly **seeking students with majors that meet a number of high-demand federal "mission critical occupations"**, including forestry, ecology, soil science, civil and environmental engineering, range management, and more. Students with these majors are especially urged to apply.

HOW TO APPLY

Applicants must first answer the questions in the Preliminary Questionnaire (below) and email NHEC. This response will give NHEC a solid overview of your eligibility and qualifications, and save you and us time and effort.

Please answer the questions in the order they are asked:

1.--what college or university do you currently attend and where?
2.--what is your current GPA? (A minimum of 3.0 is required).
3.--what is your current major? Please state the exact name of the program.
4.--what is your grade level, meaning sophomore, junior, etc?
5.--describe in several paragraphs past and/or present **experiences** in the environment, natural resources, or agriculture, especially in the sciences or research, that qualify you for the Institute.
6.--describe in several paragraphs past and/or present **academic coursework and labs** in the environmental, natural resource, or agricultural sciences that qualify you for the Institute.
7.--describe in several paragraphs past and/or present **internships, fellowships, part or full time jobs, etc.** in environmental, natural resource, or agricultural sciences that qualify you for the Institute.
8.--if you have attended an NHEC Institute or program before, state where, when, and which.
9.—how did you learn about the Institute? If from a professor, counselor, etc. please identify. If from a past Institute student please identify.
10.--what is the closest airport you could fly out of should you be selected? What is the next closest airport?
11.-- you understand that the age range for this program is 18—22?
12.--how old are you?
13.--what is your date of birth?
14.--list your race, ethnicity, and/or other demographic factor you wish NHEC to know--optional.
15.--are you interested in a potential job or other opportunity in summer 2024, and/or beyond with the Institute's sponsors—the U.S. Forest Service, USDA NRCS, and US EPA? If interested, how interested are you? Please state if you have a preference among these agencies. If not these, indicate which others you are interested in.
16.--you understand that only US Citizens or Legal Permanent Residents are eligible for positions with a federal agency?
17.--are you a US Citizen or Legal Permanent Resident? You must state which one.
18.--you understand that only students who are fully Covid vaccinated can be selected?
19.--are you fully Covid vaccinated and can provide the CDC proof-of-vaccination card?
20.--provide a home and cell number, and school **and** personal email address so NHEC may contact you promptly.
21.--provide your full home and school address.

NHEC will contact you soon after receiving your email to further discuss your environmental, natural resource, or agricultural interests, qualifications, and background, **and review the remaining application process, which includes a Phone Interview**. The formal application materials will be sent to you shortly after.

So--if you are passionate about the environment, love science, have a minimum 3.0 GPA, AND been seeking an internship or job in the enviro science arena, this program is for you.

TO ANSWER SOME COMMON FAQ's

1.-- yes, slots are available although these are going fast.
2.--there is no deadline per se; NHEC reviews applications/selects students on a **rolling basis** until all slots are filled. **Thus students are strongly urged to apply asap**.
3.--as this is a 100% federally funded program only U.S. Citizens or Permanent Legal Residents are eligible.
4.--while students from underrepresented and communities of color are especially urged to apply, this is a federally funded program. Thus students from all ethnic and racial backgrounds, as well as those representing other diversity backgrounds are eligible to apply.
5.—due to the intensive science content and activities, to be eligible you must be able to complete the entire Institute; partial attendance is not permitted.

TO APPLY: email your completed Questionnaire to Sochi Uwakweh, Institutes Coordinator, at suwakweh@nheec1.org and NHEC President Roger Rivera at rrivera@nheec1.org

For questions, email or call NHEC at 703-683-3956 or Sochi Uwakweh directly at 703-861-6064. Or see the NHEC website at www.nheec1.org

2024 NY/NJ ENVIRONMENTAL STEM INSTITUTE—SUMMARY PROGRAM

Thursday, June 20 –

Students will fly into Newark Airport and other NYC airports throughout this day and into the evening. Note--most students will fly into Newark. On arrival students collect their luggage, then met by NHEC staff who will escort them to a central waiting area at Newark Airport. Here, students will wait together for others to land, and also begin getting to know one another. Once enough students have arrived to fill the hired van, the van will depart for the **SpringHill Suites Woodbridge, 1010 US-9, Woodbridge Township, NJ 07095**. 848-999-5910. This van will run throughout the day. SpringHill Suites is where students will be lodged, meals provided, and classroom instruction held for the Institute.

On arrival at SpringHill Suites Woodbridge, students will check-into their rooms (two to a room), unpack, have a meal, and prepare for the start of the Institute.

Day 1 – Friday, June 21 –

Breakfast at SpringHill Suites. Students then go to the Classroom where the Institute begins—Introductions, Orientation, Institute Overview, and more. After this NHEC Instructors conduct a series of in-classroom environmental and natural resource issue and science presentations and related activities. Lunch and Dinner at SpringHill Suites Woodbridge. After Dinner, students return to the Classroom for more presentations.

Day 2 – Saturday, June 22 —

Breakfast at SpringHill Suites. A full day of science and issue presentations by Institute Instructors. Lunch and Dinner at the hotel. In the afternoon, board chartered bus **for Site Tour to Mill Road Park, in nearby Edison,** where Instructors will lead a nature walk-around to observe/learn about this Mid Atlantic wooded riverine ecosystem in an urban setting.

Afterwards, return to SpringHill Suites for Dinner and presentations. Then, depart **for Site Tour of Fort Wadsworth at Gateway National Park/Recreation Area, at the entrance to NYC Harbor**. Spectacular views of Manhattan and NYC, and of the Atlantic beyond the mighty Verrazano Narrows Bridge, which is almost overhead. After this return by bus to SpringHill Suites.

Day 3 – Sunday, June 23 —

Breakfast at SpringHill Suites. Presentations continue in morning, then Lunch, then additional presentations. In mid-afternoon travel by chartered bus **for Site Tour of the Raritan River**, along the Edison Riverwalk. Walk the trail alongside the Raritan. **See/learn the history and condition of this river -- once a place at the center of America's Industrial Revolution in the 1800's -- but becoming, due to waste dumping, landfill runoff, manufacturing pollution, and more, one of the nation's (and NJ's) most polluted rivers.** However, due to combined federal/state/local remediation efforts, the Raritan is beginning to recover. After this, return to SpringHill Suites for Dinner, followed by presentations in the Classroom that evening.

Day 4 -- Monday, June 24 —

Breakfast at SpringHill Suites. Presentations in the morning, including by scientists and staff from **the U.S. Geological Survey (USGS)--their NJ Water Science Center.** USGS is the main science agency for the U.S. Department of Interior. Presentations will be held on their mission, programs, research priorities, intern and job opportunities, and more. USGS staff will also bring, demonstrate, and instruct on the use of specialized environmental equipment/instrumentation used by USGS scientists in their work.

After Lunch at SpringHill Suites, presentations by scientists and staff from **the USDA Natural Resources Conservation Service**, a long-standing Institutes sponsor. NRCS is the only federal agency that works exclusively on private, not public lands, i.e. with private landowners such as farmers, ranchers, growers, more on conservation issues. After presentations and instrumentation demonstration/instruction by NRCS staff, especially in soil conservation,

students will depart by chartered bus for the **Rutgers Ecological Preserve**, a 300 acre nature area at prestigious Rutgers University in New Brunswick.

There, students begin the **First Environmental Field Study—Buell Brook at Rutgers Ecological Preserve.** Led by NHEC Instructors, students in their teams will conduct air sampling/testing; water testing/monitoring; biological assessments; soil testing/assessment; plant/vegetation surveys; forest ecology and tree mensuration; birding; and more. Providing on-site technical information/expertise are scientists from participating sponsors—USGS, NRCS, and U.S. FS.

After this, students return by bus to SpringHill Suites for Dinner. Following Dinner, several presentations in the Classroom. Beginning this evening students in teams work together to research, analyze, and collate the data, samples, and more from the environmental field studies, in preparation for Final Presentations on Day 10.

Day 5 – Tuesday, June 25 —

Breakfast at SpringHill Suites. Then depart by chartered bus **for Site Tour of the Silas Little Experimental Forest and Laboratory**, a part of the Northern Research Station, Office of Research and Development—U.S. Forest Service, in New Lisbon, NJ. U.S. FS is a long-standing Institutes sponsor.

On arrival, presentations by FS senior leaders, scientists, and technical experts. FS is a major federal agency with significant national environmental/natural resource responsibilities. Escorted by FS staff, students will do a walk-around to see/learn the work of this experimental forest. Afterwards, presentations to be held on their mission, programs, research priorities, intern and job opportunities for STEM students, and more.

Also held will be presentations on the NJ Pine Barrens, a mysterious but unique coastal plain woodland ecosystem that is the largest surviving forest on the Eastern Seaboard between Maine and Florida. The Pine Barrens contain unusual plant/tree species and landscapes, including carnivorous plants, pitch pines, and Atlantic White Cedars. FS scientists will demonstrate and instruct on the use of environmental equipment/instrumentation used by them. This will include the specialized equipment at Silas Little, such as laser scanning and flux towers.

After a box lunch, students will begin the **Second Environmental Field Study—Bisphams Mill Creek and Deep Hollow Pond at Silas Little Experimental Forest—New Lisbon.** Led by NHEC Instructors, students in their teams will conduct air sampling/testing; water testing/monitoring; biological assessments; soil testing/assessment; plant/vegetation surveys; forest ecology and tree mensuration; birding; and more. FS and other role models join to share their expertise, assist with instrumentation, and provide guidance with the field study.

After this, students return to main area of Silas Little for presentations. Dinner catered at Silas, after which students depart for SpringHill Suites by chartered bus. Depending upon arrival time, student teams may continue working to research, collate, and analyze the data, samples, and more from the field studies, in preparation for Final Presentations on Day 10.

Day 6—Wednesday, June 26 —

Breakfast at SpringHill Suites. Further presentations by FS scientists and staff on the U.S. FS. Specific topics will include overviews of FS programs in Urban and Community Forestry, their Urban Connections initiative, and the FS stewardship partnership program being conducted in major cities like NY. Also presented will be STEW-MAP, a software program and vital tool created by FS social scientists to identify and map out multiple data and networks used in FS stewardship partnerships/coalitions.

Following this, FS human resource/recruiting staff will give a real-time, on-line tutorial on USA Jobs--the main federal jobs portal. This session will walk students through the process of creating their on-line profiles in USA Jobs; search for open job vacancies at FS and other agencies, such as in Pathways, Resource Assistant, other hiring authorities; and more.

After this, students and role models will participate in **the Round Robin Interview Session**. Here, role models will rotate through stations where student teams can interview these scientists and experts to pose a variety of questions of interest/relevance to students – their science research, academic and grad school backgrounds, their work duties and career paths, the opportunities for STEM students, and more.

Then, Lunch at SpringHill Suites, followed by presentations by FS staff. In mid-afternoon, depart for **the Third Environmental Field Study—Mill Road Park and Stream and Woodland/Riparian Area—Edison Township.** Led by NHEC Instructors, students in their teams conduct air sampling/testing; water testing/monitoring; biological assessments; soil testing/assessment; plant/vegetation surveys; forest ecology and tree mensuration; birding; and more. Accompanied by participating sponsor staff (FS, NRCS, USGS) joining to share their expertise, assist with instrumentation, and provide guidance with the field study.

After this, return to SpringHill Suites for Dinner. After this student teams continue working to research, collate, and analyze the data, samples, and more from the environmental field studies, in preparation for Final Presentations on Day 10.

Day 7 – Thursday, June 27 —

Breakfast at SpringHill Suites. Presentations in the morning, including by scientists and staff from **the U.S. Environmental Protection Agency --the Region 2 Laboratory at the Edison Environmental Center--Edison, NJ.** The Edison Center is part of EPA's Office of Research and Development. EPA is a major federal environmental regulatory, analysis, and science agency. Presentations will be held on their mission, programs, research priorities, internship and job opportunities for STEM students, and more. EPA staff will also bring, demonstrate, and instruct on the use of specialized environmental equipment/instrumentation used by EPA scientists in their work. EPA is a long-standing Institutes sponsor.

After Lunch at SpringHill Suites, presentations continue. In afternoon, depart by chartered bus **for Site Tour of an EPA Superfund Site** in northern NJ (exact site to be determined).

Created in 1980, Superfund is a major national program that stems from America's industrial legacy and disregard for environmental consequences. Superfund gives EPA the authority to clean up contaminated sites. It also forces the parties responsible for the contamination to either perform cleanups or reimburse the government for EPA-led cleanups. As of December 2023, NJ had 115 Superfund sites listed on EPA's National Priorities List—the most in the U.S.

Superfund is shorthand for the **Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).** During the 20th century thousands of sites were contaminated due to hazardous waste dumping, improperly stored/managed pollution, abandoned facilities, or waste, often toxic, that was just left in the open. The sites vary widely, but include factories, processing plants, landfills, mines and more.

This vital EPA program has the on-going responsibility for cleaning up some of the nation's most contaminated land in the U.S., so as to protect human health and environment. Superfund also gives EPA authority to respond to environmental emergencies, oil spills and natural disasters.

Following this tour, students depart by chartered bus **for Site Tour of the Somerset-Raritan Valley Sewerage Authority Waste Water Treatment Plant**, located in Bridgewater, NJ. Established in 1958, this is a regional wastewater treatment facility serving a number of nearby towns and counties. The Plant operates a 23.0 MGD secondary advanced treatment system. In addition to the processing of wastewater, the facility accepts deliveries of graywater, septage, and sludge; sludge is managed with a fluidized bed incinerator. After this, students depart by chartered bus for SpringHill Suites and Dinner. After dinner, student teams continue working to research, collate, and analyze the data, samples, and more from the environmental field studies, in preparation for Final Presentations on Day 10.

Day 8 – Friday, June 28 —

Breakfast at SpringHill Suites. Presentations continue. After this, depart for the **Fourth Environmental Field Study—Bound Brook at Dismal Swamp Preserve, Edison Township.** Led by NHEC Instructors, students in their teams will conduct air sampling/testing; water testing/monitoring; biological assessments; soil testing/assessment; plant/vegetation surveys; forest ecology and tree mensuration; birding; and more. Scientists and staff from sponsors join to share their expertise, assist with instrumentation, and provide guidance with the field study. Box Lunch in field.

After this, depart **for Site Tour of a Nearby Farm (to be identified by NRCS)** receiving technical assistance, especially on conservation issues, from USDA NRCS. As the only federal agency that works exclusively on private land, USDA scientists and field staff offer our nation's farmers, ranchers and forestland owners the knowledge and tools they need to conserve, maintain and restore the natural resources on their lands, and improve the state of farm production. NRCS offers this assistance at no cost to the producers they serve.

NRCS's goal is to give landowners personalized advice and information, based on the latest science and research, to help them make informed decisions. If a producer chooses to take the next step towards improving their operations, NRCS works with them to develop a Conservation Technical Assistance Plan (CTA), with suggested practices to help them reach their production

and conservation goals. The CTA identifies conservation objectives and assesses/analyzes the natural resource issues on that land. Producers can also choose to apply for NRCS financial assistance for help in putting the CTA into action.

At the Farm, and escorted by NRCS staff, students will meet the landowners and tour the facilities and land. Students will also see/learn about the NRCS conservation assistance provided and the benefits/impact achieved. NRCS originated in the 1930's as the Soil Conservation Service, to assist farmers through the infamous Dust Bowls. Thus technical knowledge of and research **in soil science is a major priority/function of NRCS**. NRCS scientists will also bring/demo/instruct on various specialized equipment/instrumentations especially used in soils and related science.

After this, students depart for SpringHill Suites and Dinner. After dinner, student teams continue working to research, collate, and analyze the data, samples, and more from the environmental field studies, in preparation for Final Presentations.

Day 9 – Saturday, June 29 —

Breakfast at SpringHill Suites. Presentations continue. After this, depart for **Site Tour of Gateway National Park/Recreation Area in Staten Island.** Gateway was/is intended to be a recreation area for millions of NYC residents, as well as an urban oasis with natural areas.

After this, depart for **Site Tour of the Community of Oakwood Beach, in Staten Island**, located on its southern shore. In 2012 Oakwood Beach was a tight-knit, working-class community of about 300 affordable homes--close to the beach, with quiet streets, real backyards, and a suburban feel atypical for New York City.

Then, on October 29, 2012 Superstorm Sandy hit NY, NJ, and New England. Coastal, low-lying communities were devastated—and Oakwood Beach was one of the hardest hit. A 14 foot storm surge flooded the community, ripped houses off foundations, put neck-high water in homes, and killed 3 people. Today, Oakwood Beach is unrecognizable--a landscape of empty lots, leveled homes, and when it rains, flooded streets.

Further, the long-term prospects for Oakwood and similar low-lying areas are dire. Research by NOAA and others indicate that Oakwood could be permanently flooded in 30 years.

Thus many residents chose to move. A federal program purchased the lots and removed ruined homes, providing money for residents resettle elsewhere. But the program had conditions—in particular, that residents not rebuild in Oakwood, and the area not be redeveloped in any way.

With the absence of people and human impact, nature is reclaiming Oakwood. The lots and open spaces are rapidly filling with vegetation/trees, becoming wetlands, meadows, and more.

The goal was/is **"managed retreat"**—the concept of letting nature retake these areas, thus creating a natural barrier of open areas --free of people –as a practical solution to fight superstorms and sea-level rise due to climate change. But what happens when there are

holdouts—people who refuse to move or sell their homes? In Oakwood today about 15 households remain—and who expect city services in full.

Is managed retreat possible and practical? What are the environmental justice and climate justice implications of this policy? This site tour will let students see Oakwood Beach and explore these questions, and more.

After this, depart for SpringHill Suites and Dinner. After dinner, student teams continue working to research, collate, and analyze the data, samples, and more from the environmental field studies, in preparation for Final Presentations.

Day 9 – Saturday, June 30 —

Breakfast at SpringHill Suites. In teams, students continue working on their Final Presentations. Lunch at the hotel, then teams continue their work. In mid-afternoon **students begin Final Presentations.** Following each presentation Instructors, NHEC Instructors intensively question students, probe their data analysis and conclusions, and more, to ensure they have learned/applied the correct science principles and data, and field techniques/methodologies.

After Final Presentations, most students depart by chartered bus for Newark Airport, or vans to other NY airports. Due to flight times and distances to travel, some students will fly home the next day. For those students overnighting at SpringHill Suites, dinner will be provided.

14th NY/NJ Environmental STEM Institutes Ends.

"10 DAYS OF LEARNING, A LIFETIME OF EXPERIENCE"

ABOUT NHEC:

The National Hispanic Environmental Council (NHEC) is a national, non-profit membership organization founded in 1998 and based in Alexandria, VA (just outside Washington, D.C). With over 3,000 members, NHEC is the oldest national Latino environmental and natural resource organization in the country, and we advocate for policies and run programs that further our mission.

NHEC seeks to educate and engage Latinos and people of color on environmental and natural resource issues; encourage Latinos and especially students to actively preserve and protect our environment; provide a voice for Latinos before federal and other national environmental decision-makers; and assist our community to pursue the many career, educational, programmatic, and policy opportunities in the environmental and conservation arena. **Our guiding credo is: "….because it's our environment too".**