

HIRES 2016 Kick-off Ceremony



June 16, 2016
NAC Faculty Dining Hall
The City College of New York
New York, 10031

Outline

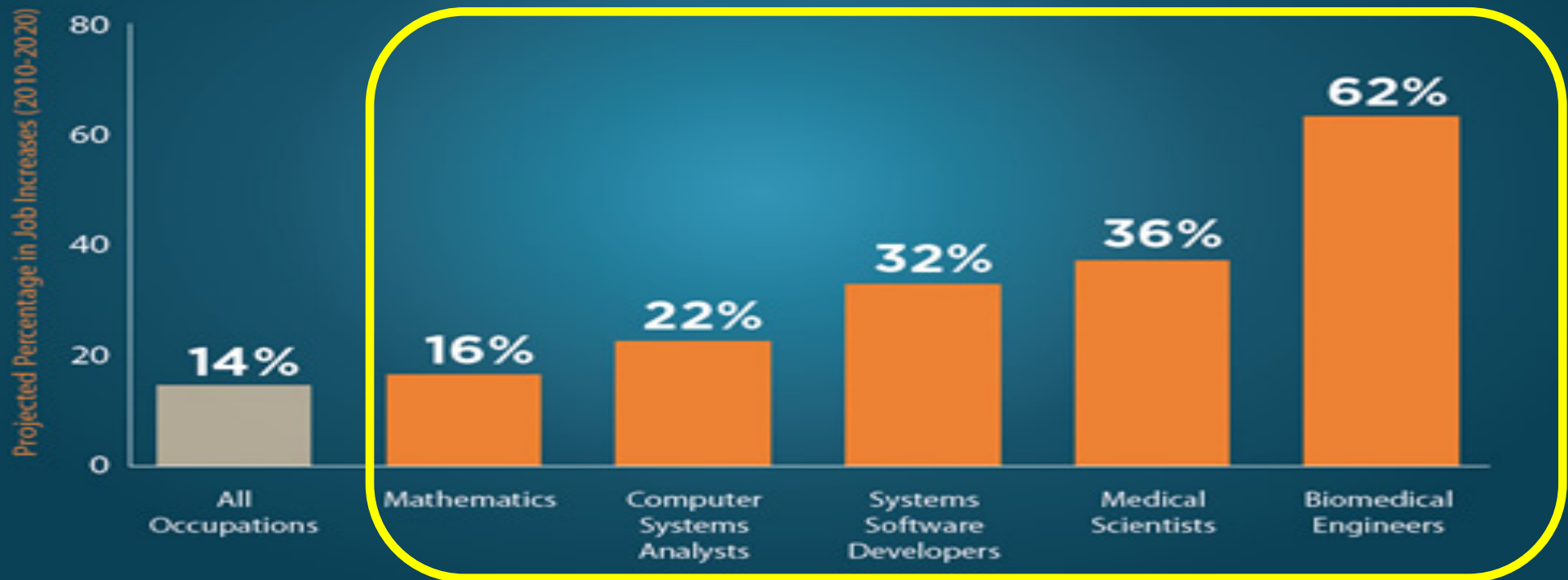
- ▶ Motivation
- ▶ About CCNY, NOAA, and CUNY CREST
- ▶ CREST facilities and state-of-art-technology
- ▶ History of SHIP and its transition to HIRES
- ▶ HIRES core Elements
- ▶ Timeline and expectations/outcomes
- ▶ Summer 2014 timetable - at-a glance
- ▶ Meet your HIRES team and Research Advisors
- ▶ Other logistics & Conclusion

The need for K12 STEM

- Only **16 percent of American high school seniors** are proficient in mathematics and interested in a STEM career.
- Even among those who do go on to pursue a college major in the STEM fields, only about **50 percent** choose to **work in a related STEM career**.
- The United States is falling behind internationally, was **ranking 25th (now 29th) in mathematics and 17th (now 22nd) in science among industrialized nations**.

Source – Department of Education, www.ed.gov/stem

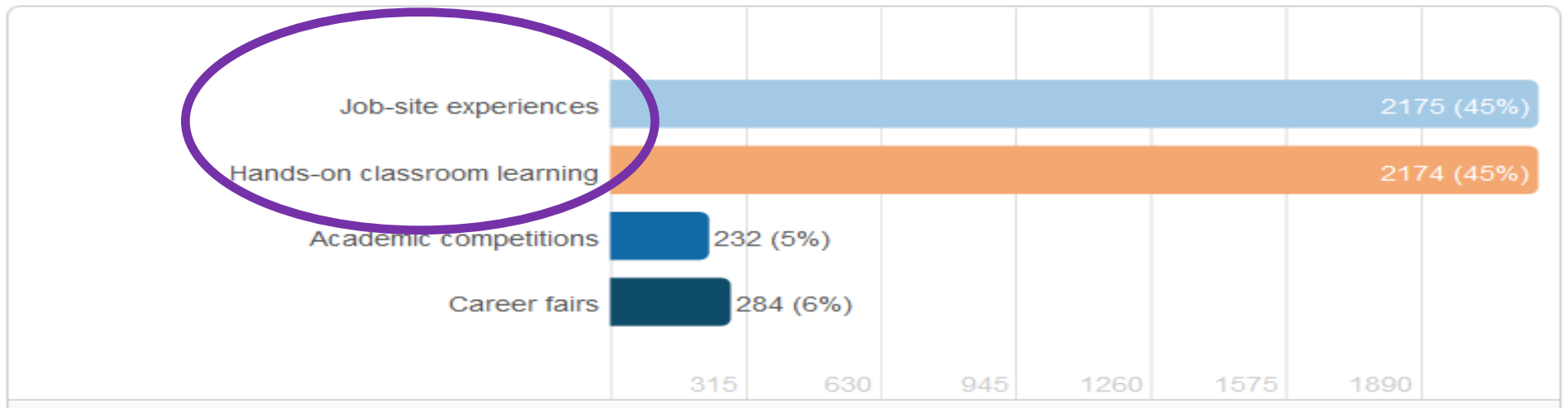
PROJECTED PERCENTAGE INCREASES IN STEM JOBS: 2010-2020



Source – Department of Education, www.ed.gov/stem

Which factor might best encourage young people to explore STEM careers?

4865 votes • 104 comments • About 2 months left



Source – LinkedIn Poll K12 -STEM Education Forum/Group

About the City – your gateway to seek knowledge and college career...



The flagship college of the City University of New York.

The City College offers **outstanding teaching, learning and research**, for a truly interactive learning environment.

CCNY is a home for a diverse student population representing **160 nationalities**, and **speaking 90 languages**.

More than **300 undergrads** work alongside senior researchers in funded projects in the science, engineering, architecture, political science, as examples.

These baccalaureate graduates go on to graduate programs at **Stanford, Columbia or MIT or they remain in CCNY to further their studies** in one of the **fifty (MS and PhD) programs** in engineering, sciences, arts and social sciences.

CCNY graduates get hired by one of the best employers in the country and abroad:

FEDERAL - NOAA, NASA, EPA, FEMA,

INDUSTRIES - Northrop Grumman, Raytheon, ConEdison, MTA

ACADEMIA - CUNY, and many such institutions



About NOAA-CREST – *your gateway to research and training towards professional careers*

Our FOCUS.....

- Education & Workforce Development
- Science & Engineering



Our Mission is...

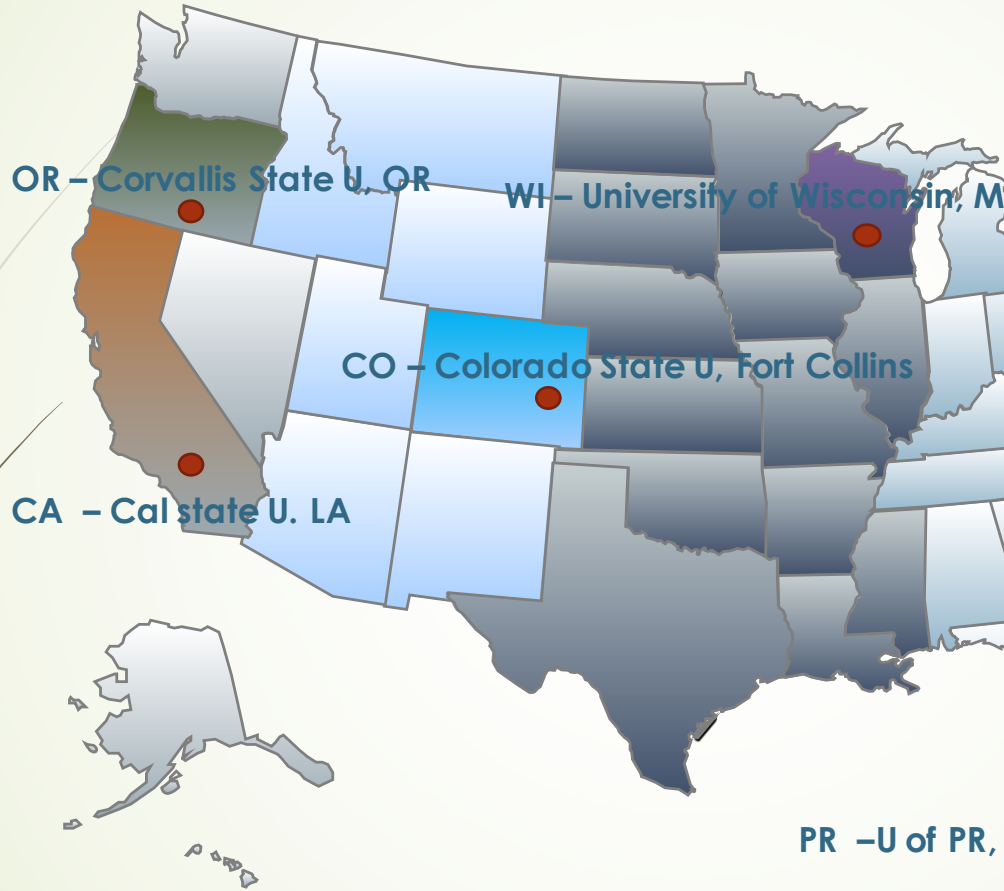
to increase number of educated, trained
and graduated students especially from
underrepresented communities in NOAA
related sciences and advance NOAA
sciences



NOAA's University Partner

- Established in 1807, NOAA [National Oceanic and Atmospheric Administration] is a Federal Agency, under the United States Department of Commerce, that enriches life through science.
- NOAA's reach goes from the surface of the sun to the depths of the ocean floor to keep citizens informed of the changing environment around them.

CREST Consortium across US Region



CREST Industrial Partners

- Northrop Grumman Corporation (NCG)
- Raytheon
- Earth Research Technology, Inc. (ERT)
- Science Systems and Applications, Inc (SSAI)



NOAA CREST Summer High School Internship (SHIP)

Started in .. 2007

4-7 students in the first cohort

Introduced computer aided analysis course in 2009

Experiential Site visits and learning opportunities in 2009

CUNY-wide Summer Research Symposium 2013

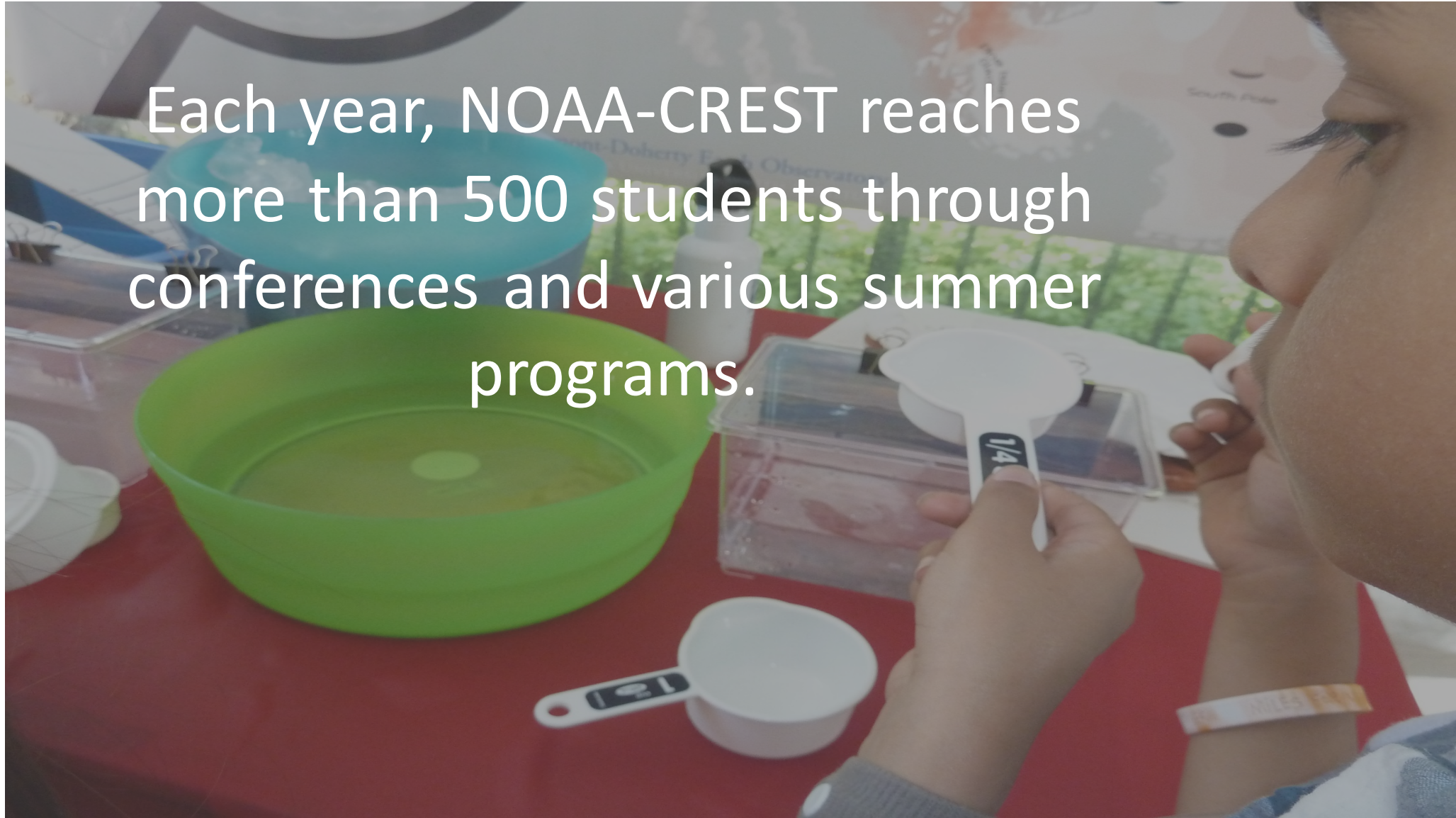
Full fledged pre-college course and research training - 2014 (first cohort)



From SHIP to HIRES...

- High School Initiative in Remote Sensing of the Earth Systems Science and Engineering (HIRES)
www.crest.cuny.edu/HIRES
- Funded by **Pinkerton Foundation** – we are a part of the American Museum of Natural History consortium – **Science Research Mentoring Program (SRMP)**
- Our partners – City College Academy of Arts (CCAA), entire College community

Each year, NOAA-CREST reaches more than 500 students through conferences and various summer programs.



HIGH SCHOOL INITIATIVE IN REMOTE SENSING OF THE EARTH SYSTEMS SCIENCE & ENGINEERING (HIRES) CUNY CREST INSTITUTE THE CITY COLLEGE OF THE CITY UNIVERSITY OF NEW YORK, CREST SUMMER 2016 TENTATIVE SCHEDULE

HIRES, funded by Pinkerton Foundation, is one of the twelve Science Research Mentoring Program (SRMP) consortium member of AmNH. HIRES is an expansion of the existing CREST-SHIP and will be a seven-week internship program that integrates (1) pre-college credit courses (computer analysis; GIS and Remote Sensing); (2) hands-on research; along with (3) learning modules in ESE and experiential opportunities for nearly 30 HS students especially underrepresented minorities.

PROJECT PHASE	STARTING	ENDING
HIRES RECEPTION-NETWORKING	6.16.2016	6.16.2016
HIRES ORIENTATION & INTRODUCTIONS	6.30.2016	7.6.2016
PRE-COLLEGE CREDITS/CLASSES [9:00 TO 12:00NOON)	7.7.2016	8.8.2016
RESEARCH HANDS-ON LEARNING	7.7.2016	8.8.2016
CUNY STEM SUMMER RESEARCH SYMPOSIUM	8.9.2016	8.9.2016
EXIT SURVEYS/ALUMNI/CLOSING EVENT	8.10.2016	8.12.2016

Special Dates/Events:

July 8, 2016
CARY Institute, Millbrook, NY

July 15, 2016 (tentative)
NWS/BNL - Balloon Launch & Learning Modules on Weather and Climate

July 22, 2016
Palmyra Cove Nature Visit, NJ

July 29, 2016 (tentative)
CREST Picnic/Family Day

August 9, 2016
CUNY STEM Summer Research Symposium

August 10, 2016
American Museum of Natural History, NY

August 12, 2016
Closing ceremony

Weekly Wednesdays
STEAM Training by Iroindale (with Brown bag session)

Week One – June 30-July 6, 2016

Orientation Week

June 30, 2015

- 9:00 - 9:30 AM Arrive and Welcome and introductions (Steinman Hall T124)
- 9:30 - 10:00 AM Pre-survey and distribution of MTA Monthly Pass (Steinman Hall T124)
- 10:00 - 10:30 AM CREST and HIRES Program (Steinman Hall T124)
Shakila Merchant, CREST Assistant Director
- 10:30 - 10:45 AM CREST HIRES Internship Paperwork (Steinman Hall T124)
Sanchia Peterson, Administrative Assistant
- 10:45 - 11:00 AM Break
- 11:00 - 11:45 AM Research talks – **15 minutes each including Q&A** (Steinman Hall T124)
 - **Reza Khanbilvardi, NOAA-CREST Director, Civil Engineering**
 - **Maria Tzortziou, Associate Professor, Earth and Atmospheric Science**
 - **Jimmy Booth, Assistant Professor, Earth and Atmospheric Science**
- 11:45 - 12:30 PM Lunch (provided) (NAC Patio/Rotunda – Pizza)
- 12:30 - 1:00 PM CUNYfirst training and blackboard training (NAC 6/150)
Sophia Bagues, Early College School Liaison
- 1:00 - 3:00 PM** How to think like a computer scientist (NAC 6/150)
Hannah Aizenman, Graduate Student
- 3:30 - 4:45 PM Research talks – **15 minutes each including Q&A** (Steinman Hall T124)
 - **Fred Moshary, NOAA CREST Deputy Director, Electrical Engineering**
 - **Nir Krakauer, Associate Professor, Civil Engineering**
 - **Prathap Ramamurthy, Assistant Professor, Mechanical Engineering**
 - **Alex Gilerson, Professor, Electrical Engineering**
 - **Tarendra Lakhankar, NOAA-CREST Research Scientist**

July 1, 2015

- 9:30 AM -10:00AM HIRE Program Instruction and Schedule
Shakila Merchant
- 10:00 AM-10:30 AM Fostering a better Mentor-Mentee Relations
Shakila Merchant
- 10:30 to 12:00 PM Research talks – **15 minutes each including Q&A** (Steinman Hall T105)
Jose Pillich, Research Assistant, NOAA CREST
Simon Kraatz, Research Assistant, NOAA CREST
Yoribaldis, Graduate Student, NOAA CREST
Luis Ortiz, Research Assistant, NOAA CREST
Moises Angeles, Postdoctoral Fellow, NOAA CREST
Paul Alabi, Data Mining Manager, NOAA CREST
- 12:00 - 1:00 PM Lunch (School Meals @AP Randolph HS)
- 1:00 – 3:00 PM Statistical Analysis Boot Camp- Part I (Steinman Hall T105)
Hannah Aizenman, Graduate Student
- 3:00 – 3:45 PM Research talks – **15 minutes each including Q&A** (Steinman Hall T105)
Naresh Devineni, Assistant Professor, Civil Engineering
Michael Grossberg, Associate Professor, Computer Science
Brian Vant Hull, CREST Research Scientist
- 3:45 –4:45 PM Satellite Receiving Station (Steinman 513) Research talk, **Paul Alabi,**
Satellite Receiving Station Manager, NAC Roof

July 5, 2015

- 9:30 AM -12:00 PM Statistical Analysis Boot Camp- Part 2 (Steinman Hall T 105)
Naresh Devineni, Assistant Professor of Civil Engineering
- 12:00 - 1:00 PM Lunch (School Meals @AP Randolph HS)
- 1:00 PM- 1:30 PM Research Talk – **15 minutes each including Q&A** (Steinman Hall T105)
Kyle McDonald, Andrea Gomez
Kyle McDonald, Jessika Alvarez
- 1:30 – 4:30 PM** **Introduction to Remote Sensing and hands-on activities (Steinman Hall T105 and Steinman lobby)**
Brian Vant-Hull, Research Scientist
- 4:30 – 5:00 PM Research Project Assignments and Lab Placement (Steinman Hall T105)
Recap and Q&A

July 6, 2015

- 9:30 AM Return Research Project Assignments and Lab Placement Forms (T105)
- 10:00 AM -12:00 PM STEAM IRONDALE Activity (T105 and lobby)**
- 12:00 - 1:00 PM Lunch (School Meals)
- 1:00 – 3:00 PM CCNY campus tour (Wille Administration Building, 1st Floor)
- 3:00 – 5:00 PM Meet your advisors/mentors and visit your labs

July 7 to August 8, 2016

9:00 AM to 12:00 Noon **College Credit Courses in Earth
Systems Science and Engineering**

12:00 to 1:00 PM **LUNCH (School Meals)**

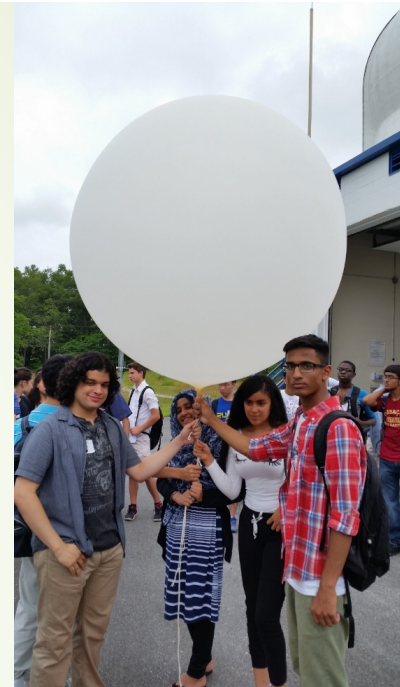
1:00 to 5:00PM **Research**

Weekly Wednesdays

9:00 AM to 12:00 Noon	No Classes IRONDALE STEAM Activities Seminars Sessions
12:00 to 1:00 PM	Lunch (School Meals)
1:00 to 5:00PM	Research

Weekly Fridays

- CARY Institute, Millbrook, NY
- NWS/BNL – Balloon Launch & Learning Modules on Weather and Climate
- Palmyra Cove, Nature Park, NJ
- CREST Picnic Family Day
- American Museum of Natural History



HIRES COURSE OUTLINE (3 College Credits)

- **Python** - Over the course of the Python module, students will explore introductory time-series analysis and mapping using the NumPy, SciPy, and Matplotlib Python libraries. Students will also learn numerical computations, data analysis of experiments and sensor measurements, and graphical displays of spatial and temporal data.
- **Remote Sensing** - The remote sensing portion of the course will explore how satellites observe the environment in both the visible and thermal spectrum. The main project will be to devise an algorithm that will detect clouds both in day and night, and will classify the remaining surface into vegetated, urban, and water. MatLab programming will be used to read, analyze and display the satellite data.
- **GIS** - Geographic Information Systems (GIS) is a computer-based tool that uses spatial data to analyze and solve real-world problems. This course is designed to introduce the student to the basic principles and techniques of GIS with as objective to develop an understanding of geographic space and how maps represent geographic space

RESEARCH SYMPOSIUM

- CCNY - **AUGUST 09, 2016**
- Poster /Oral Presentations
- Showcase your research and what you have learned
- Networking opportunities



Meet our *HIRES STAFF*



NOAA CREST Center Director



NOAA CREST Center Assistant Director



NOAA CREST Academic Center Manager



NOAA CREST Outreach Coordinator



NOAA CREST Administrative Assistant



NOAA CREST IT Manager

Meet our *HIRES MENTORS*



Dr. Reza Khanbilvardi



Dr. William Rossow



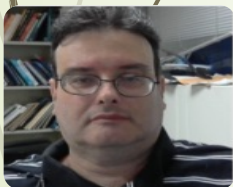
Dr. Fred Moshary



Dr. Sam Ahmed



Dr. Kyle McDonald



Dr. Barry Gross



Dr. Alex Gilerson



Dr. Nir Krakeur



Dr. Tarendra Lakhankar



Dr. Brian Vant Hull

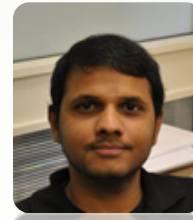
Meet our *HIRES MENTORS*



Dr. Hangsong Tang



Dr. James Booth



Dr. Naresh Devineni



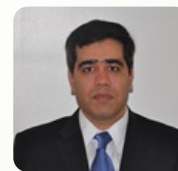
Dr. Jorge Gonzalez



Dr. Michael Grossberg



Dr. Maria Tzortziou



Dr. Hamidreza Norouzi



Dr. Prathap Ramamurthy

Meet our *HIRES Graduate MENTORS*



El-Habashi



Behzad Asadih



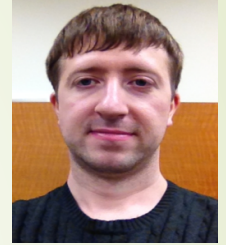
Ehsan Najafi



Elius Etienne



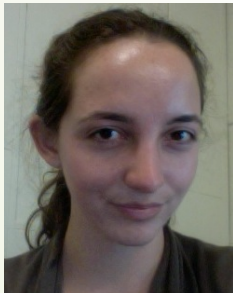
Carlos Perez



Simon Kraatz



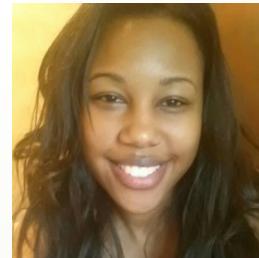
Paul Alabi



Katherine Jensen



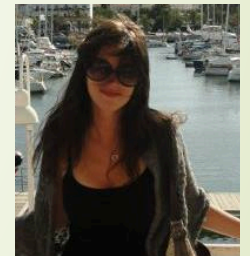
Luis Ortiz



Equisha Glenn



Jose Pillich



Morann Dagan

Meet our *HIRES Lab Instructors*



Hannah Aizenman
PYTHON



Dr. Tarendra Lakhankar
REMOTE SENSING

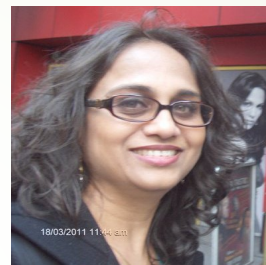


Dr. Brian Vant Hull
GIS

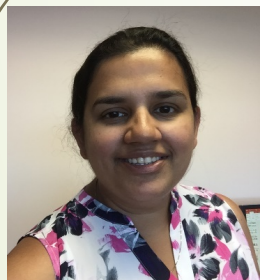
Meet our HIRES TEAM



Dr. Reza Khanbivardi
NOAA CREST Center Director



Dr. Shakila Merchant
NOAA CREST Center Assistant Director



Neelambari Save
NOAA CREST Outreach Coordinator



Sanchia Peterson
Administrative Assistant



Paul Alabi
NOAA CREST IT manager

The City College
of New York

The Pinkerton Foundation

CUNY CREST
SCIENCE & TECHNOLOGY TO SUSTAIN THE EARTH

CUNY
The City
University
of
New York



Certificate of Participation
Awarded to:

**FOR SUCCESSFULLY COMPLETING THE
2016 HIGH SCHOOL INITIATIVE IN REMOTE SENSING OF
THE EARTH SYSTEMS SCIENCE & ENGINEERING (HIRES)
AT THE CUNY REMOTE SENSING EARTH SYSTEM (CREST) INSTITUTE,
THE CITY COLLEGE OF THE CITY UNIVERSITY OF NEW YORK, NY**

Date: _____

Dr. Shakila Merchant
Assistant Director, NOAA CREST
Center
Director, NOAA CREST HIRES
The City College of the CUNY, NY

The Pinkerton

SCIENCE SCHOLARS

Scholar's Name

has successfully completed the academic, laboratory and research requirements
to be named a Pinkerton Science Scholar



Date

A blue ink signature of Richard M. Smith.

Richard M. Smith
President

LOGISTICS

- MEALS
- TRANSPORTATION INFO
- SYMPOSIUM- PARENTS INVITED
- RETURN PERMISSION SLIPS
- BRING PAPERWORK DOCUMENTS FOR DAY 1 FOR PAYMENT
- CHEQUES WILL BE GIVEN on **August 12, 2016 (closing ceremony)**
- STUDENTS –NEED TO BRING CAMERA EVERYDAY

POST HIRES – beyond Summer

- AmNH colloquium – in AmNH
- Seminars, college, work, time management workshops
- Rising juniors- come back next year
- Modules – afterschool program
- Facebook Networking (Alumni)

- Shakila Merchant
- Edit Profile
- Your Posts
- FAVORITES**
- News Feed
- Messages 3
- Events 16
- Saved 16
- Sale Groups
- PAGES**
- NOAA CREST 2
- CREST Student Ass... 6
- Pages Feed 20+
- Like Pages
- Create Ad
- Create Page
- FRIENDS**
- Close Friends
- Family
- Edison, New Jerse...
- New York, New Yor...
- City University of N...
- Mount Carmel Girls...
- City College of New...
- APPS**
- Live Video
- Games 2
- On This Day
- GSN Casino
- Photos
- Suggest Edits 1
- Games Feed 20+
- GROUPS**
- Water Resilient Bu...

CREST HIRES

Education

Steinman Hall, Grove School of Engineering
New York, New York 10031

+12126508099

Liked Save Message Share



CREST HIRES
Official Page

What CREST HIRES is Saying



CREST HIRES updated their profile picture.

June 6 at 2:58pm ·



1

Like Comment Share

See more posts by CREST HIRES

What's Nearby

TRENDING

- Barack Obama:** US President Meets LGBT Nightclub Shooting Survivors, Victims' Families in Orlando, Fla.
- Evan Peters:** Actor Says He Would Like Film Featuring His 'X-Men' Character, Quicksilver, and Deadpool
- University of Pennsylvania:** 'Traffic Light' Calorie Labeling Reduced Calorie Consumption, Researchers Found
- Chad Johnson:** Luxury Real Estate Agent Watches His Performance on Season 12 of 'The Bachelorette'
- Shrewsbury River:** Small and Venomous Clinging Jellyfish Found in New Jersey River, Officials Say
- Transportation Security Administration:** Man Sues Agency for \$506.85 Ticket Cost After Missed Flight
- UEFA Euro 2016:** Group Stage Matches of Men's International Tournament Continue in France
- Fermi Paradox:** Study Says It Will Take Longer Than Theory Suggests to Encounter Aliens
- Cliff Richard:** Sexual Assault Charges Dropped Against Singer Due to Lack of Evidence, Prosecutors Say
- Taylor Swift and Tom Hiddleston:** Photos Show Singer and Actor Kissing in Rhode Island

PEOPLE TO FOLLOW

What's This?



Mark Zuckerberg
Founder and CEO at Facebook
68,486,380 followers

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HIRES

HIGH SCHOOL INITIATIVE IN REMOTE SENSING OF THE EARTH SYSTEMS
SCIENCE & ENGINEERING

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HIRES is the High School Initiative in Remote Sensing of the Earth Systems Science and Technology



HIRES is a program within the CREST CUNY Institute which offers high school students an opportunity to work closely with scientists



in the field and in labs, collect and analyze data, present at conferences, and more! Its aim is to provide NYC high school student research experience especially in STEM

We leverage our connections and resources to increase student recruitment, share experiences and expertise, and identify specific opportunities, challenges, and strategies for effectively supporting students in developing science research skills and competencies.

We also jointly develop and implement a set of experiences to support students in developing a shared community and college and career readiness.

HIRES is part of the Consortium of the [Science Research Mentoring Programs \(studentresearchnyc.org\)](#) funded by the [Pinkerton Foundation](#).

HIRES focuses on STEM education which is an increasingly important part of the today's workforce and economy. HIRES provides and encourages high-quality science and technology activities and initiatives in after-school programs

Abstracts of projects for 2016

1. Satellite Detection of Harmful Algal Blooms in the West Florida Shelf. – Ahmed
2. Interpretation of satellite measurements over the ocean – Gilerson
3. The Urban Livability Index – a geospatial tool that identifies vulnerable populations that are susceptible to increased temperatures in New York City.
4. Wind Instrument Comparison
5. Crop Yields, Multiple Linear Regression, Food Security
6. Lidar testing
7. Examine the annual cycle of precipitation and precipitation extremes in the greater region of New York City.
8. CREST Urban Summer Field Study – Convection, aerosol, and synoptic effects in the Tropics (CAST) experiment
9. Characterization of Tropical Wetlands Ecosystems with Radar Remote Sensing
10. Laboratory Studies of Coral Bleaching
11. Data Science – Statistical Analysis of NASA's Collection 6 Snow Product
12. A Novel Climate Impacts Tool for Managing Risks in Water Utilities
13. Trends in water, wind and solar resources over recent decades and connections with climate forcings and variability
14. Satellite Data processing Mapping and Visualization
15. Impact of urban climate on running and jogging
16. The impact of urbanization and climate change on streamflow variation
17. Statistical modeling of river ice
18. Mapping and Characterizing Chesapeake Bay Wetlands Using Landsat Imagery
19. Potential of Detecting Freeze and Thaw States Using Microwave Land Surface Emissivity
20. Evaluation of satellite-based precipitation estimates over the tropical oceans
21. Sea Ice Concentration Sensitivity Study

