

Initiatives for Under- Represented Minorities at CFNS

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Annual Review of CFNS operations in 2020

February 2, 2021

- In the 2019 annual review the IAC emphasized the importance of special considerations for under-represented minorities at CFNS. Encouraged training in addressing (hidden) biases....
 - Early post-doc hires: 45:55 (female:male); for joint CFNS post docs 1:5
 - Most Workshop Organizer Groups are encouraged to have gender diversity
 - All CFNS committees embedded diversity considerations
 - **But clearly a lot more needs to be done**
- Happenings around George Floyd's murder was a jolt
- Locally there was a small group meeting on this, included folks from BNL and Stony Brook, which evolved: in to two initiatives

Two initiatives have emerged

- Collaboration of five minority serving institutions (MSI's, 4 HBCU and 1 HSI), Stony Brook University (**CFNS**), and BNL (Office of Educational Programs). Will expose, excite and train Under-Represented Minorities (URMs) **undergraduate students** in Nuclear Physics through research experience, mentorship, encourage them to take graduate school in physics (NP preferably).
 - **Traineeship funding solicitation to DOE/NP**
- The Edward Bouchet Initiative in QCD for URMs in Nuclear Science. A group of 7 MSI institutions, along with MIT, U Mass, U. Virginia, Stony Brook (**CFNS**) University & BNL/JLab will collaborate to bring URM students to SBU **graduate school** for MA or Masters in Scientific Instrumentation (MSI) or Ph.D. Coursework & early mentorship at SBU, research with any PI/faculty of collaborating (R1) institutions at BNL or Jefferson Lab.
 - **Research traineeship solicitation to NSF**

Undergraduate Research Traineeship solicitation to DOE/NP

BNL, Stony Brook (CFNS) and five URM Institutions

Initiative 1

UG Traineeship

- Up to 8 students/yr and 5 mentors will spend a summer at BNL and follow up for two additional semester with the BNL Mentors on the research project. Two semesters can be at parent institution.
- They will be able to take classes at Stony Brook (summer or remote in-semester) – advanced UG or intro Grad that may not be available at their parent institutions
- Traineeship will pay for their costs during the summer
- CFNS will pay their UG tuition if Stony Brook can not waive them
- CFNS/SBU will also provide graduate school orientation to these students as we do to our normal UG students (Dir. Of UG study's office and staff)
- Aim at supporting ~16 students and 5-10 MSI-mentors over 2 years

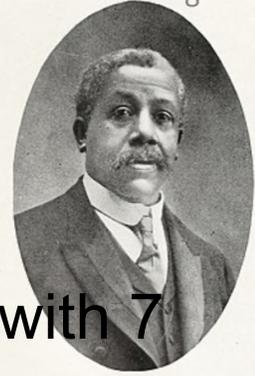
UG Research Traineeship

- PI : M. Chiu (BNL), Co-PI: A. Deshpande (SBU/CFNS)
- Office of Educational Program: Noel Blackburn
- Other scientists as scientific mentors & topics:
 - M. Chiu, D. Morrison : sPHNIX
 - L. Ruan (CFNS), E. Aschenauer, O. Eyser : STAR
 - A. Deshpande (CFNS), E. Aschenauer, O. Eyser: EIC
 - R. Venugopalan for Nuclear Theory
 - K. Kleese Van Dam for Nuclear Physics computing
 - L. Hammond for Collider Accelerator Division
 - K. Assamagan, A. Deshpande (CFNS) and J. Jia (CFNS)
- Collaborating MSI Institutions and contact people:
 - Florida A&M (Carol Scarlet), Howard U. (Marcus Alfred), Morgan State (Willie Rockward), Texas Southern (Mark Harvey), U. of Puerto Rico (Ratnakar Palai)

National Research Training Solicitation to NSF (MA, MSI and Ph.D.)

Stony Brook/CFNS + 4 R1 Universities and 7 URM Schools + 2 National Labs

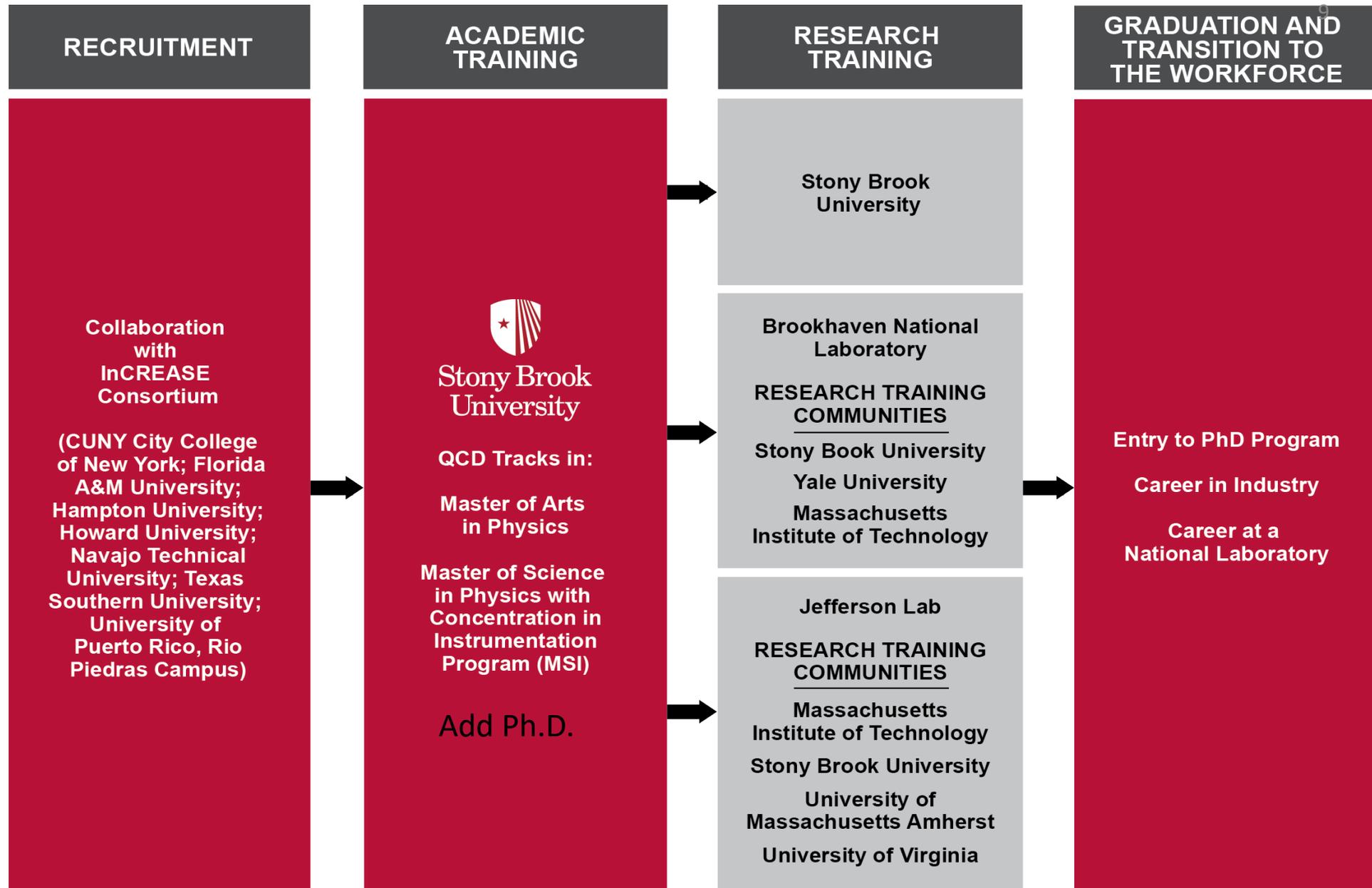
Initiative 2



Edward Bouchet Initiative in QCD

- **Stony Brook/CFNS will lead this Research traineeship proposal** to NSF with 7 MSI institutions (CUNY, Florida A&M, Hampton U., Howard U., Navaho Technical U., Texas Southern, U. of Puerto Rico), 4 R1 Universities (MIT, UMass, UVa, Yale & Stony Brook)¹ & BNL and JLab to bring 3-4 students/yr to grad school at Stony Brook for MA, MSI or Ph.D. program, on topics related to QCD/EIC. After the 1st two years of course work at SBU, they could work with any mentor at the participating R1 universities for research theses (1-1.5 years for Master's degree) or more for Ph.D. degree.
- Ph.D. Degrees could be formally attained from any of the R1 universities
- Research projects in QCD: related to EIC Physics but on current projects at RHIC and JLab.
- **Aim to fully fund about 12-16 students total over 5 years.**

NRT Program Ecosystem



Sample courses for MA/MSI

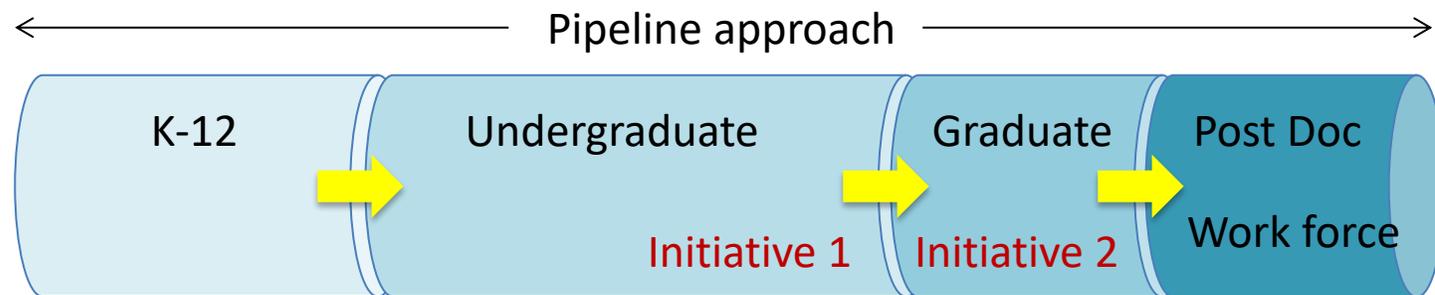
	Example Courses for QCD Track (Master of Scientific Instrumentation)	Example of Courses for QCD Track (M.A.)
Foundational Courses (required for trainees with uneven preparation, e.g., having an undergraduate degree in engineering rather than physics)	<ul style="list-style-type: none"> • Senior Laboratory • Advanced Quantum Physics • Nuclear and Particle Physics 	<ul style="list-style-type: none"> • Nuclear and Particle Physics • Laser and Atomic Physics
Core Courses	<ul style="list-style-type: none"> • Current Research Instruments • Methods of Experimental Research • Graduate Seminar 	<ul style="list-style-type: none"> • Quantum Mechanics I • Current Research Instruments • Graduate Seminar
Elective Courses	<ul style="list-style-type: none"> • Quantum Electronics I/II • Special Topics in Accelerator Physics 	<ul style="list-style-type: none"> • Special Topics in Accelerator Physics • Elementary Particle Accelerators

Bouchet Initiative: People

Current participants, may change/increase

- Stony Brook (PI: Deshpande, Co-PI: H. Metcalf), T. Hemmick, J. Kiryluk, et al.
- BNL: N. Blackburn, T. Ullrich et al.
- Jefferson Lab: Latifa Elouadrhiri & Cynthia Keppel, (R. Ent)
- Arizona State: Wendy Barnard – Program Evaluation and Assessment
 - Individual development, vocational counseling, Scientific Communication (Allen Alda Center)
- MIT: Richard Milner
- UMass (Amherst): Krishna Kumar
- Yale University: Keith Baker & Helen Caines
- U Virginia: Nilanga Liyanage
- Sr. Advisors: Sekazi Mtingwa & Eric Sheppard (Hampton) of InCREASE consortium

What would be success?



Success to be defined as after funding both programs we get 5-8 students in Ph.D. programs at one of the R1 institutions working at JLab or BNL (or at any other national lab, or pursue research career, or a carrier in industry as advanced scientific work force).

We would know by Fall/Winter 2021 if any of the initiatives would be funded