

Appendix C

Letters of Support

YORKCollege
The City University of New York
Jamaica, NY 11451
718 262-2654

Department of Earth & Physics Sciences

October 3, 2024

To Whom It May Concern:

I write in support of the proposed Astronomy specialization in the BS in Physics at the New York City College of Technology. I can attest to the likely popularity of this track and its potential to boost the physics course enrollment. Besides my role as Chair of the Dept. of Earth & Physical Sciences at York College since 2012, I am also Director of the NSF mentoring program AstroCom NYC. Our goal with AstroCom NYC is to improve the diversity in astrophysics by recruiting, mentoring, and supporting students from under-represented groups in research in the unique environments of our collaborative centers at the American Museum of Natural History and the Flatiron Institute Center for Computational Astrophysics. We recruit from all CUNY campuses and have had several City Tech scholars involved (recent alumni are in graduate programs at Strasbourg and Rutgers, and another defended her PhD at Harvard last year). As PI of AstroCom NYC since 2012 I have overseen the mentoring of 74 students and served as a direct research mentor to eight. I also run our joint CUNY/AMNH NSF Research Experiences for Undergraduates program at the museum. Between AstroCom NYC, the REU, and other programs, we typically host 25-30 research scholars every summer at AMNH and the CCA. Additionally, I have been a research mentor to many more undergraduates over the years, including nine in our REU. Nearly all of these students have gone on to grad school, one as an NSF Graduate Research Fellow. I have also been the advisor to four PhD students, one of which is currently active, and the last degree conferral was in 2022. I also helped create our new masters program here at the CUNY Graduate Center, which now has 20 students enrolled and five alumni.

The proposed Astro track will feature new advanced courses – to cover stellar and galactic astrophysics, and cosmology – which are unique and will complement the currently required courses for the Machine Learning track for Physics & Astro (Computational Methods and Research internship). The skills and content knowledge students can gain from these courses will prepare them very well for research, graduate study, or immediate employment after graduation.

CUNY-wide, AstroCom NYC usually attracts about 20 applications for just 5-6 openings. This is an ample pool for e-permit students to the proposed City Tech courses. I have enjoyed having such e-permit students in my own classes at York over the years, whether recruited through AstroCom NYC or other university partnerships. This Fall 2024 semester the advanced E&M course I am teaching has filled to a record number (10!) due to these synergies. Further, we have elective courses in our own physics major which should be direct equivalencies in T-Rex: Phys 492 and 493, also cross-listed as Astr 492 and 493.



Borough of Manhattan Community College 199 Chambers Street
The City University of New York New York, NY 10007-1097
www.bmcc.cuny.edu tel. 212-220-1305
fax 212-748-8929

25 Sept 2024

To our colleagues at CityTech:

We are the CUNY Astro-affiliated faculty at Borough of Manhattan Community College and write to support the proposal by CityTech to introduce an option for astronomy specialization within the existing Physics BS program. We see several students each year with an interest in pursuing a career in astronomy, who would benefit from such a specialization as an option within their undergraduate program. In particular, many students at the community college level discover an interest in astronomy during their first 2 years while enrolled in such diverse degree programs as Science, Math, or Computer Science, and the structure of the CityTech degree program is well suited to any of these incoming majors. We would strongly encourage our astronomy-inclined students to transfer to CityTech, were such a program in place. In particular due to the relative closeness (via mass transit) of our two institutions, we would view this as an especially good transfer option for our students.

Sincerely,

Prof. K. E. Saavik Ford
Prof. D. Barry McKernan
Prof. Quinn Minor

From: Yuki Chen <xchen4@gc.cuny.e

M.S. in Astrophysics Program

365 Fifth Avenue
New York, NY 10016-4309
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<https://www.gc.cuny.edu/astrophysics>



10/7/24

Dear New York City College of Technology Physics Program,

I am the founder and director of the CUNY Graduate Center Masters in Astrophysics program, and I am writing in support of an Astro specialization within the BS in Physics in your department.

The MS in Astrophysics program is in its third year at the GC, but it is already attracting top-level applicants. Competitive applicants have a physics degree with one or more astronomy courses. Our students are finding that the skills they acquire in our program make them great candidates not only for PhD programs, but also for careers in data science, software engineering, and education. Astrophysics graduates are highly sought after in industry because of their excellent problem-solving skills. Our graduates have also entered PhD programs at places such as University of Colorado - Boulder and Cornell University.

The proposed City Tech Astro track, including courses in Stars/Galaxies, Cosmology, Machine Learning, and Computational Methods will make students excellent candidates for the *fully funded* MS in Astrophysics program at the GC. With this path, students can be propelled into STEM careers and graduate programs that would otherwise be inaccessible to them. I highly support such a track at City Tech that can increase the social and economic mobility of New York City students into successful careers as STEM professionals.

Sincerely,

Jillian Bellovary
Director, M.S. in Astrophysics
CUNY Graduate Center
jbellovary@gc.cuny.edu

du>

Date: Monday, March 4, 2024 at 5:32 PM



DEPARTMENT OF PHYSICS

10/7/24

Dear New York City College of Technology Physics Program,

I am a Physics professor at Queensborough Community College, and I am writing to strongly support the Astro track for you BS in Physics program.

As the only faculty in my department with a PhD in Astronomy, I am often sought after for research projects by our students. I have funding to support two per year, but there are at least twice that who express interest. QCC has an articulation agreement with City Tech, making transfer fairly straightforward. The students I work with would be eager to pursue further astronomical studies there, as opposed to somewhere like Queens College which has few options for them.

Studies have shown that the field of astronomy is often a target for marginalized students who are interested in physics, and I have found this to be the case as well. In my experience with the astronomy community (including CUNY, the greater NYC area, and nationally), women and minority students communicate that the professional culture of astronomy is more welcoming and less intimidating than that of physics. At the moment there are no CUNY undergraduate programs with an Astro track, and based on my experience with CUNY undergraduates it would be very popular. Whether via direct enrollment or e-Permit, Astro Track courses would likely have high enrollment just for the sake of being the only high-level astronomy option available in all of CUNY.

CUNY is a flagship for community, and an Astro track at City Tech would also enable CUNY to be a leader in producing highly qualified astronomically-trained physics majors, who are sought after in the workforce. I highly support the creation of the Astro Track at City Tech.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jillian Bellovary'.

Jillian Bellovary
Associate Professor of Physics
Queensborough Community College
City University of New York

718-631-6366
FAX 718-281-5480
Science, Room 340
222-05 56th Avenue
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ONE COMMUNITY. INFINITE POSSIBILITIES.

Prof. Rein V Ulijn, M.Sc., Ph.D., FRSC, FRSC
Founding Director, Nanoscience Initiative
Advanced Science Research Center (ASRC)
Einstein Professor of Chemistry
City University of New York (CUNY)
85 Saint Nicholas Terrace
New York, NY 10031 USA

**ADVANCED SCIENCE
RESEARCH CENTER**
THE GRADUATE CENTER
CITY UNIVERSITY OF NEW YORK



March 31, 2023

To Whom It May Concern:

I am writing this letter to express my support for the development of a “Quantum Technology” track in the Applied Computational Physics bachelors program at City Tech and to elucidate the synergy between the ASRC (Advanced Science Research Center of the CUNY Graduate Center) and the proposed new track.

It is a well known fact that the rapid development of quantum technologies and the expansion of US-based semiconductor and advanced manufacturing industries are going to exacerbate the existing workforce shortage in those industries. Due to this demand, the recently signed CHIPS Act allocates large funding for universities and educational institutions to create programs and educational opportunities that will address the semiconductor workforce shortage.

I believe that the proposed program would provide students a valid foundation to answer the need of the job market related to emerging technologies. In addition to a traditional physics curriculum, and a strong computational background, the new courses added to the program provide an additional edge by providing students with experiential activities which are valuable for their future employment.

In particular, the proposers aim at adding an introductory general survey course (The Semiconductor World) in which students are provided background information about the semiconductor industries and the related job market, two semesters of hands-on laboratory activities (Experimenta Design I and II) which include automation, laser physics, and semiconductor physics, as well as a more advanced theoretical foundation course (Semiconductor Physics). The program is capped by an internship that can be performed either in one of our ASRC-CUNY laboratories, or directly in the manufacturing companies. While all the proposed activities match well with the needs of the job market, the experiential part of the program is essential to build a qualified workforce. This is where the synergies between our institution become crucial to the success of the program.

As the Director of the Nanoscience Initiative, I confirm our interest to work together with Dr. Kolmakov and the faculty team at City Tech. In particular, ASRC will contribute to the program by providing access to our facilities (after the appropriate training, as required by the current regulations) to students enrolled in the Experimental Design II course for the duration of the laboratories that require the use of software and technologies that are only available within our Institute. We will also provide opportunities for Internships, as well as facilitate the interaction of the students in the Quantum Track with manufacturers in the semiconductor industry. Moreover, these synergistic activities between the Physics Program at City Tech and the Nanoscience Initiative at ASRC line up well with ASRC Strategic Plan: 2020-2024, in particular with the “Goal 3: Integration of the ASRC Into CUNY-Wide Research and Education”.

Please feel free to reach out to me, if any further comment is needed.

Sincerely,

A handwritten signature in purple ink, appearing to read 'R. Ulijn'.

Rein V. Ulijn, Ph.D.

Director of the Nanoscience Initiative
Advanced Science Research Center (ASRC)

Professor of Chemistry, Hunter College
City University of New York (CUNY)

<http://asrc.cuny.edu> // <http://ulijnlab.com>

phone: 212.413.3380

Appendix D

Evidence of Interaction with GlobalFoundries (GF)

To: Tavis Ezell <tezell@gc.cuny.edu>, German Kolmakov <GKolmakov@CityTech.Cuny.Edu>, Vitaliy Dorogan <VDorogan@CityTech.Cuny.Edu>
Cc: Tasnim Jackson <tjackson1@gc.cuny.edu>
Subject: Re: [GF visit to City Tech Thurs March 8th lunch/afternoon] e: Follow up GF <> City Tech Leadership

Hi German and Vitaliy,

Hope you both had a nice weekend! This plan sounds perfect!

We're excited to bring the GF team to City Tech.

I wanted to provide a list of names for folks coming to City Tech. Our team here has never been so not sure how security is over there, but sending the list of names in case it's needed to enter the building.

Name	Company	Role/Title
Bryan Marra	GF	Mgr. Talent Acquisition
Tara McCaughey	GF	Workforce Development Lead
James Thomas	GF	Mgr. Equipment Engineering
Lucas Mistler	GF	Sr. Lead Technician Equipment Engineering
Susana Redrovan	GF	Mgr. Facilities
Tavis Ezell	ASRC	Director, Business Development
Tasnim Jackson	ASRC	Program Coordinator
Yuki Chen	ASRC	Workforce Development Coordinator

Please let me know if you need anything else from us in the meantime!

Looking forward.

Best Regards,
Yuki

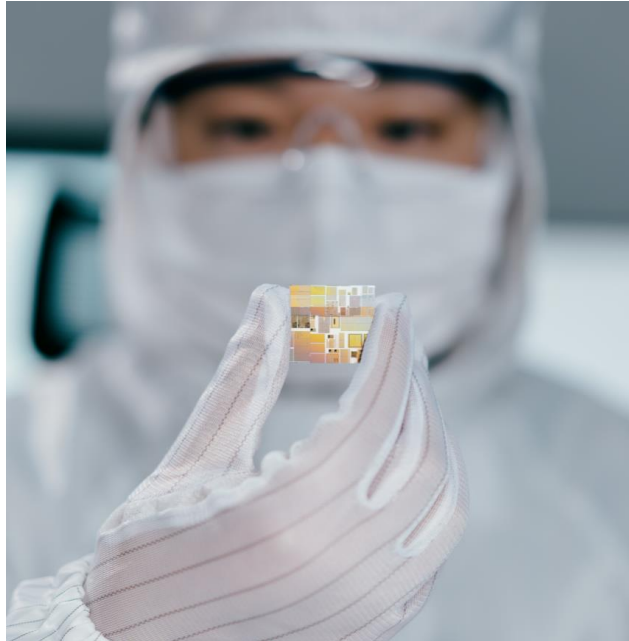
“GlobalFoundries (GF) is pleased to see the proposed Quantum Technology Specialization within the Applied Computational Physics program at CUNY New York City College of Technology (City Tech). The inclusion of the semiconductor survey class, hands-on physics labs, general chemistry, and semiconductor physics will help students gain knowledge about semiconductors and prepare them for the growing career opportunities in Upstate NY. As the industry faces a shortage of technicians and engineers to meet the demand for semiconductors ([SIA: State of the U.S. Semiconductor Industry, 2024](#)), it is wonderful to see partners like City Tech building curriculum to inspire and prepare students for these opportunities.”
–Tara McCaughey, Strategic University Partnership Manager, GlobalFoundries

Tara McCaughey

Strategic University Partnership Manager

tara.mccaughey@gf.com





Now Hiring Technician Internship Positions!

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Must be 18
years or older

Scan here or visit
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SUMMER INTERNSHIP AT GLOBALFOUNDRIES

A Virtual Info Session for CUNY Students



Paid Internships for Associate and Bachelors-level students pursuing careers in the STEM field including but not limited to: Advanced Manufacturing, Automotive Technology, Chemical, Computer Science, Electrical, Materials Science, Mechatronics, Mechanical Engineering, HVAC, Industrial Engineering, Semiconductor, Physics, and more!

FEB | 15th | 2024

12:30 - 1:30 PM

REGISTER: [LINKTR.EE/CUNYCAT](https://linktr.ee/cunycat)





CAT NEWSLETTER

Who We Are

The CUNY-ASRC Center for Advanced Technology (CAT) provides matching funds for collaborative research partnerships between New York State companies and the City University of New York (CUNY). The program supports workforce development and early-stage technology development on the pathway from the lab to the marketplace.

Community Announcements!



VentureWell E-Team Program
\$25,000 in grants, entrepreneurial training, mentorship, and networking opportunities!
 Apply by October 2, 2024!



2024 NYS Innovation Summit
 We're going to be at this year's NYSTAR Innovation Summit up in Syracuse! See you there!



Nanofabrication Research Symposium

The ASRC Nanofab Facility is thrilled to announce the first-ever Research Showcase Day, bringing shared-user cleanroom community together for a day of connection, collaboration, and learning.

CAT Community gets 50% off registration using code: ASRCCAT
 Students and Nanofab users, submit an abstract for a full waiver!



ASRC's 10th Anniversary

Together with CUNY's Chancellor, the CAT will be celebrating ASRC's 10th Birthday - we're hosting an industry panel featuring companies like [Volastra](#), [Estée Lauder](#), [NextGen Actives](#), [Lime Therapeutics](#), and [Vvir!](#)
Come celebrate with us!

www.ASRCCAT.com



Message from the Team

Take a journey with the CAT as we wrap up another eventful summer of student training programs and industry collaborations. Join our daily ASRC commute here in a [new video highlighting the West Harlem Innovation Triangle](#). Among many achievements, we take pride today in our efforts to inspire and support the next generation of CUNY scientists and industry leaders. For instance, the prestigious [Activate Fellowship program](#) has now awarded its **4th CUNY grad a 2-year Fellowship** to fund their R&D efforts (with CAT matching \$ funds) to further develop potentially ground-breaking technologies tackling Climate Change and other Global Challenges (read more about James, Ilse, Sonia, and Jiye [here](#)). These startups and others are now reaping the benefits of a multi-year effort by the CAT to create and fund \$ CUNY student STEM training opportunities through the core facilities at ASRC (7 students) and in partnerships like that with NYCEDC/LifeSci NYC (57 students) making them viable hires with hands-on lab experience. We continue to pursue building a pathway for these students into jobs in industry. Large-scale efforts have been made in collaboration with Columbia U., SUNY-FIT, and Genspace to establish an upcoming **Materials Innovation Hub** in the neighborhood (more exciting news on this coming soon!)
 -[Tavis Ezell](#)
 Director, Business Development

Company Highlights

PathMaker Neurosystems

President and CEO, Nader Yaghoubi, M.D., Ph.D., was



introduced to **College of Staten Island's (CSI) Prof. Zaghoul Ahmed** for his scientific expertise in neuromodulation and focus on bioelectronics. Now nearing a decade of work together, the company's core technology has been built around this partnership leading to successful funding awards, international prizes, and pre-seed investment ([NIH '21](#)), most recently with a [DoD-funded \\$2.16M award](#) (June '24) to conduct a second and larger clinical trial to validate its experimental, non-invasive multi-site direct current stimulation (multi-site DCS) device – in people with amyotrophic lateral sclerosis (ALS). To get to this stage, significant research milestones in the last 2 years were reached in Prof. Ahmed's lab studying SOD1 (relevant to 3% of ALS patients) and TDP-43 protein aggregation (relevant to 97% of ALS patients) in the spinal cord and brain of transgenic ALS mice to validate the therapeutic effects of their technology – **the CAT matched this funding**. In addition to the recent DoD award, Prof Ahmed's post-doc presented exciting findings at the recent ALS NEXUS conference around specific mechanisms that activate the TDP-43 protein degradation pathway.

Workforce Development

As the CAT continues to ramp up our workforce development efforts, we remain committed to building career pathways for CUNY students. In [our previous newsletter](#), we highlighted our visit to the GlobalFoundries headquarters in Malta, NY, where we learned about the growing semiconductor industry and its workforce demand. Following this successful trip, the CAT hosted a series of workshops with our partnering CUNY community colleges introducing students to opportunities at GF. These efforts culminated in 4 CUNY students completing technician internships at GF this summer. We were delighted to hear about the incredible experiences our students had during their internships in Malta. Read what they shared with us below!

"I had an amazing time learning what it was really like to experience engineering in the corporate setting, and I worked on many different and fascinating projects. GlobalFoundries has really demonstrated that they are looking to grow and achieve great things through their workforce, and I could see myself being with the company full time to begin my career once I complete the necessary education pathway. I hope my experience there blossoms into greater opportunities for myself, the company, and future CUNY students."



CUNY students at the end of the summer GF Intern Poster Session. From left to right: Keven Cruz (City Tech), Jamie Labriell (City Tech), Eric Adams (GF), Ricardo Madho (QCC), and Kendall Claggett (LaGCC)

- **Kendall Claggett, Electrical Engineering (A.S.), LaGuardia Community College**

"Overall, I couldn't have asked for a better experience. The amount of knowledge I gained from working with my crew was invaluable. I've learned a lot more about the semiconductor industry than I could've hoped for. Through the good and the bad I enjoyed it all and look forward to returning next summer!"

- **Jamie Labriell, Computer Engineer Tech (BTECH), New York City College of Technology**

We thank our partners from LaGuardia Community College, Queensborough Community College, and City Tech for this year's effort. We're bringing GF to CCNY Career Fair this Fall (Oct 10th) to expand this to more CUNY colleges.

ASRCSensorCAT@gc.cuny.edu

[linkedin.com/company/ASRCCAT](https://www.linkedin.com/company/ASRCCAT)