

# I. CHESTER COUNTY COMMUNITY FOUNDATION GRANT PROPOSAL SUMMARY SHEET

*One page only. This page will be shared electronically with Grant Panel Members & Fund Advisors.*

*Note: If Philanthropy Network's Common Grant Application is used, CCCF's **Summary Sheet MUST accompany application.***

*To obtain an electronic version of this application, visit [www.chescocf.org](http://www.chescocf.org)*

**Date 4/17/2023**

## **Contact Information**

Organization Name: The Wistar Institute  
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Board Chair Name: Richard Horowitz  
Board Chair Approval (check here):   
Primary Contact Name: Dara Lieberson

## **Organization Information:**

### **Field/s of Interest:**

Arts, Culture & Humanities       Environment/Animal Welfare       Education  
 Health       Human Services       Religion

**Mission:** The mission of The Wistar Institute is to marshal the talents of outstanding scientists through a highly-enabled culture of biomedical collaboration and innovation, in order to solve some of the world's most challenging and important problems in the field of cancer, immunology, and infectious diseases, and produce groundbreaking advances in world health. Consistent with a pioneering legacy of leadership in not-for-profit biomedical research and a track record of life-saving contributions in immunology and cell biology, The Wistar Institute aims to pursue novel and courageous research paths to life science discovery, and to accelerate/potentiate the impact of those discoveries by shortening the path from bench to bedside.

### **Geographic Area Served** (If not all of Chester County, specify primary Chester County regions served):

Greater Philadelphia and surrounding counties, including Chester and Delaware counties.

**Describe Population Served & Annual Number of People Served:** Approximately 95 post-doctoral trainees/students per year. Education programs serve students starting from age 16 and up, with a focus on populations from diverse backgrounds who are underrepresented in STEM.

**Annual Budget:** \$86,920,000

80.7 % of budget for program expenses  
17.0 % of budget for administrative expenses  
2.3 % of budget for fundraising expenses  
*100 % total*

287 # of Full-Time Equivalent Paid Staff

27 # of Board Volunteers

n/a # of Active Non-Board Volunteers

2 hours/week # of Volunteer Hours

### **Top 3-5 funding sources:**

- 1) Federal grants
- 2) Non-federal gifts, grants, and contracts
- 3) Investment draw and other income

**Is this grant proposal for:** Capacity Building  or General Operating  ?

**Grant Amount Requested from the Community Foundation:** \$ 7,500

**Proposal Summary:**

The Wistar Institute, the nation's first independent, non-profit biomedical research institute, recruits an inclusive community of students to biomedical research learning and laboratory opportunities with the goal of promoting and creating an equitable workforce pipeline for future generations of scientists. Wistar's signature Biomedical Technician Training (BTT) Pre-apprenticeship Program is a one-year curriculum that provides hands-on instruction and authentic laboratory experiences for students at community colleges, including Delaware County Community College serving Chester County students. This one-of-a-kind program positions BTT graduates to successfully enter the workforce, providing students with the skills necessary to obtain positions in biomedical research laboratories and other areas of STEM. Wistar's collaboration with Cheyney University of Pennsylvania, the nation's first Historically Black University or College (HBCU), located in Chester and Delaware counties, offers professional and workforce development opportunities. The program incorporates Wistar research education and training as part of Cheyney's four-year curriculum, facilitating pathways to continuing education and meaningful employment for Cheyney students while expanding life science partnerships in Chester County.

Workforce development is vital to creating a thriving community. The Wistar Institute creates a sustainable life sciences workforce pipeline by providing education, training, and mentorship to students while engaging local industry and academic institutions. Wistar is seeking funding to support our BTT Pre-apprenticeship Program and Cheyney University collaboration. Support will offset the costs of running the programs and directly benefit the students, including student salary, consumable laboratory supplies such as pipettes and reagents, laboratory coordinator and mentorship support, and transportation costs. Thank you for the opportunity to present this proposal and for considering our request.

## II. CHESTER COUNTY COMMUNITY FOUNDATION GRANT PROPOSAL NARRATIVE

*Provide clear, concise information. 3 pages maximum.*

### 1. Nonprofit's history, goals, key achievements & distinctiveness

#### Bold Science, Global Impact:

The Wistar Institute, America's first independent, non-profit biomedical research institute, has been the home of breakthrough scientific discovery in cancer, immunology, and infectious disease research for more than 125 years. The Institute evolved from its beginnings as an anatomical teaching museum in Philadelphia to its present-day status as an international leader in basic biomedical research, becoming prominent in vaccine research in the 1950's and holding the prestigious Cancer Center designation from the National Cancer Institute (NCI) continuously since 1972.

Wistar's innovations have changed the course of human health around the world, saving millions of lives. The first live-virus polio vaccine was developed at Wistar in the 1950's, many years prior to the Salk vaccine. Wistar also developed vaccines against rubella (1969), rabies (1970's), and rotavirus (2000) which remain standards of disease treatment and prevention today. Wistar scientists were among the first to develop monoclonal antibodies, which detect and destroy cancer cells, and have also identified important genes associated with breast, lung, and prostate cancer. Together with its partners and based upon a next-generation technology platform, Wistar designed a vaccine with unprecedented safety and efficacy against the Zika virus in 2017. These achievements, which comprise only a part of Wistar's body of work, tell a singular story: saving lives is our purpose and our call to action.

#### Training the Next Generation:

The Wistar Institute also takes seriously its commitment to the community through targeted public programs under the newly named [Hubert J. P. Schoemaker Education and Training Center](#). The Institute hosts the entire spectrum of research trainees, from high school to undergraduate and graduate students, and postdoctoral fellows, always with the goal of developing their careers in biomedical research while providing workforce opportunities. Our commitment to education initiatives and workforce development is reflected in Wistar's 2021-2026 Strategic Plan and subsequent Bold Science//Global Impact programmatic campaign. Education and training comprise one of the plan's three pillars, with the goal of expanding Wistar programs to create a diverse, inclusive life science talent pipeline.

### 2. Funding request

#### **Description of key initiatives:**

##### Biomedical Technician Training (BTT) Pre-apprenticeship Program:

The Wistar Institute's Biomedical Technician Training (BTT) Pre-apprenticeship Program was started in 2000 as a partnership with the Community College of Philadelphia (CCP) to address the lack of diversity in the biomedical research field and to fill an immediate need for lab technicians. After the success of Wistar's BTT partnership with CCP, we now serve more community college students in the counties surrounding Philadelphia, with successful inclusion of Chester County, Montgomery County, Delaware County, and a planned expansion into Bucks and Camden counties. In acknowledgement of the program's success, the Pennsylvania Department of Labor and Industry formally approved the BTT

Program in February 2019 as the first state-registered, nontraditional pre-apprenticeship program in biomedical research in the country.

Originally a two-year program, the BTT Program was restructured to an accelerated one-summer version in response to the COVID-19 pandemic. We saw impressive outcomes after piloting this new structure immediately: all 12 students who started the program in May 2021 finished in August 2021 with 7 students (58.3%) obtaining related positions within 6 months and 11 students (91.6%) continuing their education this year. Accelerating the program attracts and retains more nontraditional students who may not be able to commit to two consecutive summers of training. By collapsing the program into one year, we are also providing a fast-track into Wistar's Fox Biomedical Research Technician (BRT) Apprenticeship. Combined with the BTT Pre-apprenticeship, the Fox BRT Apprenticeship provides 2,000 hours of on-the-job training and at least 144 hours of related technical instruction with salary support for employers through Philadelphia Works or other state workforce boards.

The BTT program begins with a two-week, hands-on Laboratory Orientation in Wistar's state-of-the-art training lab. Onboarding includes required training on laboratory safety, information technology, intellectual property, and conflicts of interest at Wistar. Students then engage in real research taking place in the lab of Maureen Murphy, Ph.D., Deputy Director of Wistar's Ellen and Ronald Caplan Cancer Center. The novel curriculum centers on the study of genetic variants more common in individuals of African and Hispanic descent. These variants increase cancer risk, but also provide opportunities to improve cancer treatment through personalized medicine. Engaging in research with real world implications gives trainees an appreciation for how and why research is being done. Students also interact with a variety of Wistar staff and guest lecturers, providing exposure and networking opportunities to the many paths available in biomedical research.

Students are then placed, with their input, in two different paid laboratory internships for five weeks each. Internships can be at Wistar or at one of our academic or industry partners. These ten weeks of on-the-job training allow students to apply their newly acquired laboratory skills while being paid. Students who successfully complete the program receive a certificate from The Wistar Institute to confirm their competency to perform skills used in biomedical labs. With the help of BTT Program leadership and their networks of scientific mentors, students identify appropriate employment opportunities and/or plan for further education.

During and after the BTT Program, trainees are supported by BTT Program staff and additional laboratory mentors. We use a low trainee-to-instructor ratio (often 3-6 trainees for each instructor) during the Laboratory Orientation and then trainees are paired with individual mentors during their laboratory internships. Trainees are given individual attention to ensure they are learning the biomedical research concepts and performing laboratory techniques correctly and have ample opportunities to ask questions or receive additional assistance, from both their peers and the BTT Program staff.

BTT Program trainees are highly attractive candidates to potential employers. They receive industry-recognized credentials and the unique experience of learning and training at a world-renowned, NCI-designated Cancer Center with connections throughout the region. Within six to twelve months of graduating, BTT trainees are obtaining positions in basic, clinical, biotechnology and biopharmaceutical research laboratories at premier institutions, including Wistar, Fox Chase Cancer Center, University of Pennsylvania, Children's Hospital of Philadelphia (CHOP), Jefferson, Merck Research Laboratories, Johnson and Johnson Pharmaceuticals, GlaxoSmithKline, Integral Molecular, and Invisible Sentinel. The BTT Program is also a springboard for students to pursue additional bachelor's, master's, and Ph.D. training.

### Cheyney University-Wistar Institute Collaboration:

Through our partnership with Cheyney University located in Chester and Delaware counties, Wistar expands our legacy of creating career pathways in the life sciences by providing education, hands-on job skills training, and a paid apprenticeship component. Under the leadership of President Aaron Walton, Cheyney has recruited a highly talented staff and restored its financial stability and academic accreditation over the past five years. Cheyney's revitalization has centered on its intention to create a biosciences center of excellence on campus that focuses on student enrichment, research, and entrepreneurship. The University is on track to meet this goal, beginning with the launch of the Life Sciences and Technology Hub in 2021. This unique collaboration between Cheyney and Wistar contributes to building Cheyney's reputation in the life sciences sector.

Wistar Education & Training staff work with Cheyney staff on recruitment, which includes seminars and outreach events on campus. Interested students who have taken the prerequisite courses in Biology and Chemistry enroll in a one-semester Biomedical Research Methods (BRM) course taught jointly with Wistar faculty. BRM students travel weekly to Wistar, where they learn cutting-edge biomedical research techniques in Wistar's dedicated training laboratory and attend lectures taught by faculty and staff. Students do not just learn techniques: they explore real research taking place now in the lab of Wistar researcher Dr. Maureen Murphy, studying the impact of genetic variants on cancer risk in people of African descent. The program also includes guest speakers on a range of topics, including resume writing and interview preparation. We have consistently met our benchmark for success, with sixteen out of 18 students (88.8%) completing BRM with a "C" or better in Spring 2021 and 2022.

Cheyney students who complete the BRM course have opportunities to participate in paid summer research internships in Wistar laboratories to augment their skills. These internships can also progress into Wistar's credentialed apprenticeship program. Participants can also enroll in Wistar's Life Science Innovation (LSI) course, which provides students with experience in biotechnology entrepreneurship and leverages intellectual property (IP) developed in Wistar labs. Students work in teams to develop business plans for commercializing Wistar IP and end the semester with a "Shark Tank"-style pitch competition. This training also prepares students for employment at the biotechnology companies on Cheyney's campus, or in other academic or industry laboratories in the Philadelphia region. Six Cheyney students completed the LSI course this past Spring 2022.

Students participating in both the BTT Program and Cheyney collaboration learn in Wistar's renovated teaching laboratory and education suite. Construction was completed in June 2020, providing over 2,000 sq. feet of dedicated training space for participants of Wistar's education programs. Built with full functionality and practicality, the lab improves efficiency, productivity, and ultimately allows us to serve many more students year-round. Trainees are provided with all the resources they need, including a laptop computer, textbook, access to online resources, laboratory manual, and lab supplies during the programs.

### **Specific needs & issues to be addressed:**

There is high demand for workforce training opportunities in the region and an urgent need to remove barriers to careers in STEM that lead to a family-sustaining income. Community college students are more likely to be underrepresented in terms of race/ethnicity, are often older than traditional undergraduate students, and may have pursued other careers and majors before starting our BTT Program. 29% of all community college students are the first in their families to attend college (American Association of Community Colleges). Per a 2021 Pew Research Center report, Black and Hispanic workers remain underrepresented in the science, technology, engineering, and math (STEM)

workforce compared with their share of all workers. And while the long-term outlook for diversity in the life science workforce is closely tied to representation in the STEM educational system, particularly across colleges and universities, Black and Hispanic adults are less likely to earn degrees in STEM than any other degree. STEM occupations continue to rank higher on the pay scale, with the typical STEM worker earning more than those in other occupations.

Wistar's programs create the possibility of a future career in science and technology for those who have never imagined it, with emphasis on providing training in technical disciplines that will serve the biomedical research community in our region.

**Why it is important to fund this now:**

The Greater Philadelphia life sciences sector, including Chester County, has seen explosive growth over the past few years, partially led by innovations in gene and cell therapy. The transformation of the region as a key biotechnology hub is driving economic growth and creating a broader range of opportunities for under-resourced communities. A highly trained and skilled workforce is crucial to a strong economy, and the COVID-19 pandemic intensified disparities in education and shed light on increasing income inequality. The BTT Program and Cheyney collaboration were made for this moment, bridging the divide between students seeking technical skills and employers seeking talent.

**How impact & results will be demonstrated:**

Since 2000 we have tracked participation, completion, related job attainment, and continuing education for the BTT Program. To date, 181 students have completed the program (78%), including 49.7% underrepresented students and 69.6% women. While 47% of program completers have started laboratory positions, 64.1% have continued their education within the first year following the program. We have added a new alumni network site and are attempting to collect longer-term outcomes. Last year, we also added new online mentor surveys and the Student Assessment of their Learning Gains (SALG)- Undergraduate Research Student Self-Assessment (URSSA).

For our collaboration with Cheyney University, we track successful course completion data for Biomedical Research Methods (BRM) and Life Science Innovation (LSI). Sixteen out of 18 students (88.8%) completed BRM with a "C" or better in Spring 2021 and 2022. Spring 2022 was the first semester for LSI to be offered and all six students (100%) who started successfully completed the course. We also added the Classroom Undergraduate Research Experience (CURE) survey (Denofrio et al., 2007) for BRM and Research on the Integrated Science Curriculum (RISC) survey (Crisp and Muir, 2012) for LSI students this year. In addition, we are tracking the number of students who go on to do summer internships and the outcomes as noted above for the BTT Program.

**Conclusion:**

As Wistar continues to expand its education footprint across the region and engage with collaborators who share our goal to increase opportunity in the life sciences, we envision a thriving biomedical workforce for generations to come. We are thrilled to bring Wistar's proven training programs to Chester County and to contribute to growing local workforce development opportunities. Thank you again for this opportunity. We stand ready to field any questions.

### III. ATTACHMENTS

*E-mail or mail this support information*

1. Copy of 501 (c) (3) federal tax-exempt letter
  2. List of Board of Directors, with their affiliations
  3. Most recent annual report & financial statement, audited if available
  4. Itemized organizational operating budget with actual results for prior fiscal year & current fiscal year to date
  5. If capacity building initiative, itemized budget (including external consultant's proposal, if applicable)
  6. Current strategic plan. If your nonprofit does not have a current strategic plan, explain why.
- Use this form @ [www.chescof.org](http://www.chescof.org) to apply online for grants from all Community Foundation Funds.
  - **Email proposals to [grants@chescof.org](mailto:grants@chescof.org)**
  - Proposals are considered "complete" when CCCF has **confirmed** receipt of the **Grant Proposal Summary Sheet, Narrative & Attachments**.
  - Proposals are shared electronically and online with Fund Advisors, Donors & Grant Panels.
  - Per IRS Regulations, applicants must be charitable, tax exempt organizations with 501(c)(3) certification & cannot be individuals.

Please contact Grants Administrator Kevin Baffa at  
(610) 696-8211 [grants@chescof.org](mailto:grants@chescof.org) with questions.

