

Departmental BPC Plan Toyota Technological Institute at Chicago (TTIC)



Effective dates of Plan: 07/05/2023 - 07/05/2025

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1. Context

TTIC is a single-department PhD-granting academic institution located on the University of Chicago campus, focused on fundamental computer science and information technology. TTIC has 13 tenure-track faculty and approximately 40 PhD students. Its fraction of female students has risen from 6.7% in 2017-18 to 22.5% in 2022-23. TTIC also maintains a summer internship program consisting of PhD students, undergraduates, and high-school students, with typically 10-20 interns each summer. TTIC is in the Woodlawn neighborhood of Chicago, whose population is 82% Black and 3% Hispanic. Internally, our main high-level BPC goal is to maintain TTIC as a welcoming, positive, and productive environment for students, interns, postdocs, and faculty from under-represented groups in computing (UGC) including women and those who are Black, Hispanic, or American Indian. Externally, our main high-level BPC goals are to provide exposure to the excitement of computer science research to K-12, undergraduate, and graduate students from under-represented groups in computing, both via stand-alone efforts and through partnering with local and national organizations. This includes working with the Chicago Public Schools (CPS), the third largest public-school system in the nation (>360k students, 83% Black or Hispanic, 77% lower socio-economic status), and utilizing resources at the University of Chicago.

2. Goals, Activities, and Measurement

G1: By the end of summer 2025, at least 50% of faculty will have sponsored a summer research opportunity for a student identifying as belonging to a UGC, or have mentored a postdoc identifying as belonging to a UGC.

A1a: Faculty will encourage students from UGCs to apply by giving presentations at workshops, conferences, colleges, and universities, and will send project descriptions to the UChicago Leadership Alliance Summer Research Early Identification Program (SR-EIP). (Contact: Greg Shakhnarovich)

A1b: Faculty will mentor undergraduate and graduate interns, and postdocs, from UGCs. (contact: Avrim Blum)

A1c: Faculty will mentor Chicago Public Schools (CPS) students from UGCs through their Career and Technical Education (CTE) program. (Contact: Matt Walter)

M1: Demographic information for summer interns and postdocs, application statistics, number of project descriptions sent to SR-EIP, and counts of faculty involved in mentoring will be measured. Also, surveys will be given out to interns to measure overall satisfaction.

G2: By the end of 2025, at least 50% of faculty will have participated in an outreach activity for students identifying as belonging to a UGC at the K-12 or undergraduate level, or for teachers of students at the K-12 level belonging to a UGC.

A2a: Faculty will Facilitate Girls Who Code clubs at CPS schools including Kenwood Academy, and at the Bessie Coleman branch of the Chicago Public Library. (Contact: Rose Bradford)

A2b: Faculty will engage with the Chicago Pre-College Science and Engineering Program (ChiS&E), a weekend program for CPS students underrepresented in STEM fields. This includes working with ChiS&E to develop a robotics curriculum and program for 8-9th graders to be hosted at TTIC. (Contact: Rose Bradford)

A2c: Faculty will organize or participate in summer schools and workshops, such as New Horizons in Theoretical Computer Science <https://newhorizons.ttic.edu/> aimed towards undergraduate and graduate students from UGCs. (Contact: Madhur Tulsiani)

A2d: Faculty will give guest lectures in the Chicago Public Schools. (Contact: Karen Livescu)

A2e: Faculty will present at workshops for high-school teachers, via partnering with Mathcircles of Chicago. (contact: Avrim Blum)

A2f: Faculty will participate in outreach activities to the general public with significant UGC attendance, including at the Museum of Science and Industry. (Contact: Matt Walter)

A2g: Faculty will participate in career fairs for students from UGCs. (Contact: Rose Bradford)

M2: Each summer, faculty will report their outreach activities to the Chief Academic Officer in their Annual Report information due July 31st each year, and statistics of participation will be maintained.

G3: Ensure our female PhD students thrive and receive offers for top academic and research positions. 100% of our female PhD graduates in 2023-2025 will receive postdoc, faculty, or research scientist offers, or notable scientific awards.

A3a: Faculty will provide high-quality 1-on-1 advising and mentoring, and further develop their mentoring skills to meet the needs of a diverse range of students. This includes attending lunch meetings on mentoring, utilizing resources provided by University of Chicago Faculty Development. (Contact: Avrim Blum)

A3b: Faculty will lead workshops providing students opportunities to present research work and receive constructive feedback to aid in the job market, and will organize and participate on career-focused panels (Contact: Madhur Tulsiani)

M3: Each fall and spring, faculty will report on the status of their advisees to the Director of Graduate Studies (DGS). Each year the Associate DGS (ADGS) will send out a student survey, including questions on mentoring quality. Faculty will review the results annually.

G4: Reach an overall female and UGC PhD student enrollment of 25% by the end of 2024 and maintain this level through 2025, and maintain TTIC as a welcoming environment for all students from underrepresented groups.

A4a: Faculty will conduct outreach to schools with large undergraduate populations from groups underrepresented in computing, to inform them about the PhD program at TTIC.

A4b: Faculty will facilitate and participate in internal infrastructure including Peer Mentors, Women@TTIC, and Women in Science conference support (Contact: Karen Livescu)

A4c: Activities A1b, A2c, and A3a, and goal G3 will also aid in this goal.

M4a: Measuring the percentage of PhD applicants from different demographic groups, and maintaining statistics of enrollment for current students.

M4b: Surveys given to current students and alumni to measure their satisfaction with their experience at TTIC.

G5: Maintain a DEI Committee including at least 2 faculty and at least one staff member and PhD student, that will produce a yearly report while meeting at least once per quarter.

A5: Faculty will serve on the DEI committee, attend meetings, and contribute to the report.

M5: Recording existence of the committee, faculty service on the committee, meeting dates, and submission of annual report. TTIC will also provide regular climate surveys that include questions related to DEI.