

# IEEE Computer Science Juniors

Grant Report for **ChiTech Discovery Days**

Discovery Partners Institute

## Event Dates & Location

Each ChiTech Discovery Day is scheduled from 9:30 AM to 1:00 PM, pending bus arrival to the Discovery Partners Institute (DPI) Offices. Utilizing the school district calendars and holiday schedules, we have identified the following 15 dates for the SY25-26 school year, having already **completed five events** in the Fall of 2025:

- **Wednesday, October 15, 2025**
- **Wednesday, October 22, 2025**
- **Wednesday, October 29, 2025**
- **Wednesday, November 5, 2025**
- **Wednesday, December 3, 2025**
- Wednesday, January 28, 2026
- Wednesday, February 4, 2026
- Wednesday, February 11, 2026
- Wednesday, February 25, 2026
- Wednesday, March 4, 2026
- Wednesday, March 11, 2026
- Wednesday, April 8, 2026
- Wednesday, April 15, 2026
- Wednesday, April 22, 2026
- Wednesday, April 29, 2026

ChiTech Discovery Days are half-day, discrete events held in-person at the DPI Downtown Offices located at 200 South Wacker in Chicago, Illinois. These events are hosted in a large multipurpose room, which provides space for active engagement and all activities.

## Attendance

Through the first five ChiTech Discovery Days events of the SY25-26 school year, DPI has hosted **208 visiting students** and **at least 19 education professionals**. With 10 remaining events scheduled in SY25-26, **we anticipate serving 600 additional students and 60 education professionals** through the ChiTech Discovery Days initiative. This considers 60 students per event as well as the six required teacher/staff chaperones.

*Kindly note: Chicago Public Schools requires a 10:1 ratio between students/chaperones.*

Event Date	Attending School(s)	Attendance	Hands-On Learning Activity
October 15, 2025	Amundsen High School	60 students	Chi-Craft (Minecraft)
October 22, 2025	John Hancock College Preparatory High School Carver Military Academy High School	29 students 28 students	Quantum 101
October 29, 2025	Christian Fenger Academy High School	22 students	Chi-Craft (Minecraft)
November 5, 2025	Disney II Magnet High School	21 students	Chi-Craft (Minecraft)
December 3, 2025	Wendell Phillips Academy High School	48 students	Quantum 101

## Target Audience

Working closely with staff from the CPS (Chicago Public Schools) Office of Computer Science, schools which offer limited access to computer science or tech-related courses or out-of-school time opportunities are recruited to participate in a ChiTech Discovery Day. Typically, visiting students have been high school-aged youth, ranging from **9th to 12th grade**.

## Event Description

Discovery Partners Institute (DPI) is committed to expanding opportunities for students interested in computer science and technology. Our programs range from one-day learning experiences to six-week immersive programs, ensuring students at varying levels of interest and experience can engage meaningfully. One of the critical on-ramps to additional programming offered at DPI is a one-day learning opportunity branded as **ChiTech Discovery Days (CTDD)**.

CTDD provides visiting students with an engaging introduction to the world of technology careers, offering hands-on learning and industry insights. Through our partnerships with **Chicago Public Schools – Department of Computer Science** and other school districts, we specifically recruit schools with limited access to computer science education. Each CTDD event is designed for **one school at a time, accommodating up to 60 students**, ensuring a focused and impactful experience. Our goal is to spark curiosity, build foundational awareness, and inspire students to see themselves in future tech careers.

The day begins with a warm welcome and introductions from DPI staff, setting the stage for the experience ahead. We then invite a representative from **World Business Chicago** to speak with students about Chicago's leadership in the tech industry, the city's role in fostering startups, and the vast career possibilities within technology and innovation.

Following this introduction, students dive into the **experiential learning session**, where they engage in hands-on activities exploring **current topics in tech** or the **design thinking process**. These activities allow students to develop problem-solving skills and gain insight into real-world technology applications – and are detailed in the *Technical Scope* section of this grant report.

To conclude the day, students engage in a **'Riverside Chat'**, an interactive discussion modeled after a traditional fireside chat. This session features an undergraduate student studying **computer science or engineering** at a **local community college or four-year university**, who shares their journey into tech, challenges they've navigated, and their aspirations for the future. We have also invited professionals currently working in the technology sector join the conversation to provide insight into their career paths, industry lessons, and advice for students considering a future in tech.

## Purpose of Event

Computing is the top source of new wages in the United States, and computer science accounts for the majority of new STEM jobs, according to Code.org. However, Black and Latine populations currently make up just 12-14 percent of Chicago's tech workforce overall, an inequity driven largely by **inadequate and uneven access to high quality computer science education opportunities**.

In an effort to address this issue, Discovery Partners Institute (DPI) established a **partnership with Chicago Public Schools (CPS)** in Fall 2022 to bring high school computer science students to DPI's downtown offices for an enriching field trip experience – now branded as ChiTech Discovery Days. These half-day field trip experiences aim to **increase the visiting students' exposure to and connectivity with post-secondary institutions and the tech ecosystem** in their own backyard.

Major priorities of this initiative are **(1) to serve students from Chicago Public Schools who have limited access to computer science course offerings, (2) inspire them to continue exploring opportunities that will foster their interests in computer science, and (3) build relationships with a collection of stakeholders who engage with the program** – this includes but is not limited to: individuals visiting from the school (ie: students, educators, and other chaperones), the staff of the CPS Office of Computer Science, volunteer tech

professionals and current graduate/undergraduate students at local universities who guest speak and/or facilitate hands-on activities.

Through **ChiTech Discovery Days**, we aim to **bridge gaps in computer science education, introduce students to industry leaders, and inspire the next generation of innovators**. With the support of this grant, we can expand these opportunities, reaching more students who may not otherwise have access to these critical learning experiences.

## Technical Scope

Visiting students engage in one of six 75-minute hands-on activity sessions which are determined by the availability of our partner and volunteer facilitators. These hands-on activities explore the design thinking process as well as five distinct areas of computer science and technology: data science, mobile app development, simple circuits, coding, and quantum. Each activity allows for visiting students to engage more deeply with a specific area of technical content as well as practice soft skills. **These soft skills include, but are not limited to active listening, teamwork, communication, problem-solving, critical thinking, creativity, empathy, and time management.**

In Fall 2025, the six visiting schools have experienced the following two activities:

- **Minecraft** – Students explore the principle of quantum entanglement by working in pairs to solve a puzzle within a custom Minecraft world building experience (designed by partners in the Office of Computer Science at Chicago Public Schools). Students then create components of their own Minecraft world through a design thinking challenge.
- **Quantum 101** – Students explore the principles of quantum superposition by playing modified versions of tic-tac-toe wherein game pieces have the probability to change based on the outcome of a spinner. Students also learn about quantum measurement and entanglement through a game-based coin spinning activity and demonstration of light brightness with polarized filters.

For the remainder of the events scheduled in SY25-26, we anticipate facilitating each of the following lessons:

- **Data Science Activity** – Students learn about the design thinking process and how data can drive decisions. They explore the Chicago Data Portal to find, review, and share about a public data set which aligns to a community issue in which they are interested.
- **Mobile App Wireframe** – Students are guided through the design thinking process to create a wireframe of a unique app which identifies and serves an unmet need in their community.
- **Electricity & Simple Circuits** – Students learn the basics of electricity and circuitry by building a mini-breadboard project through custom made kits which allow for take-away souvenirs.
- **Coding a micro:bit** – micro:bits are pocket-sized, programmable computers designed to support youth in learning coding and physical computing principles. Students are guided through a lesson which scaffolds simple control flow for input/output elements such as buttons, speaker, and the LED screen on a micro:bit controller.

## Event Publicity

Each ChiTech Discovery Day event is publicized through a LinkedIn post – and flyers to promote awareness of the events are often shared by with Educators in Chicago by the CPS Team and the DPI Teacher Training Unit. All assets related to event publicity can be accessed using [this link](#).

## Detailed Budget

The budget below reflects how the IEEE CS Juniors Program grant funds have been used to meet the needs of the events (including building facility costs, food & beverage costs, and speaker incentives) as well as the activity supplies required (both general and specific) for various curriculum presentations described above in the *Technical Scope* section.

Type of Cost	Description	Total
Non-Consumable	Quantum 101 Activity Supplies	\$684.90
Non-Consumable	micro:bit Club Kits	\$1,219.20
Non-Consumable	micro:bit Protective Cases	\$86.00
Consumable	General Event Supplies <ul style="list-style-type: none"><li>post-it notes, markers, pens, cleaning supplies, etc.</li></ul>	\$275.05
Consumable	Electricity & Simple Circuit Activity Supplies	\$868.65
Food/Beverage	Catered Lunches	\$2,750.76
Food/Beverage	Lunch & Breakfast Supplies	\$487.85
Building/Facility	Large gondola labor	\$185.00
Personnel	Speaker Incentive (\$50 gift card)	\$100.00
	<b>TOTAL</b>	<b>\$6,657.41</b>

## Invitation to Attend an Event!

Our team would like to share our most sincere gratitude for the support of the IEEE CS Juniors Program Grant! We would also like to extend an invitation for the Grant Committee or other IEEE Members of the Chicago Chapter to attend any upcoming scheduled events (outlined in the first section of the grant report). To arrange a visit, kindly reach out to Alvin Chin ([Alvin.Chin@ieee.org](mailto:Alvin.Chin@ieee.org)) and Lindsey Vetvick, Associate Director of Student Programs at DPI ([lvetvick@uillinois.edu](mailto:lvetvick@uillinois.edu)). Thank you!