Computer Science Summer Professional Learning Programs hosted by Marquette University's PUMP-CS Project are designed to promote growth by providing space for you to become comfortable with curricula materials, CS content, and pedagogy. Prior CS experience is not required for most PDs. All programs use freely available curricula and tools. These programs support teachers with diverse teaching backgrounds as they prepare to teach any of the following courses:

Elementary level (K-5)

- **Code.org CSF (Computer Science Fundamentals)** Course is optimized for grades K-5, very fun and engaging blend of online and "unplugged" non-computer activities. Students create their own games, art, and digital stories. Marquette offers this program at no-cost throughout the school year.

Middle level (6-8)

- **Code.org CSD (Computer Science Discoveries)** is an introductory computer science course that empowers students to create authentic artifacts and engage with computer science as a medium for creativity, communication, problem solving, and fun. The curriculum is recommended for middle and high school students (grades 6-8), and can be taught either as a semester or full-year offering.

- **Project GUTS (Growing Up Thinking Scientifically)** is designed to integrate Computer Science concepts into existing middle school science classes, especially in contexts in which a standalone CS course is not available. Helps students from all different backgrounds to engage in scientific inquiry by investigating topics of interest to their local communities and sharing their experiments and findings.

High School level (9-12)

- **ECS (Exploring Computer Science)** is a year-long introductory high school computer science curriculum and teacher professional development program that focuses on broadening participation in computing. The ECS curriculum is structured to facilitate inquiry and equity-based instructional practices so that all students are introduced to the problem solving, computational practices, and modes of inquiry associated with computer science. Marquette recommends this as the first course for high school teachers new to CS, and the first course for high school students with little or no prior computer science exposure.

- **Code.org CSP (Computer Science Principles, can be taught as an AP® course)** is a higher level introductory course for 9th-12th grade students that introduces students to the foundational concepts of computer science while challenging them to explore how computing and technology can impact the world. Introductory level computer science background is ideal, but not required for students or teachers.

- **BJC (Beauty and Joy of Computing)** is an AP Computer Science Principles curriculum that emphasizes the joy and complexity of creating visual computer programs and apps, using the visual programming language Snap! and a collaborative approach. BJC presents programming ideas in the context of how students interact with computers in their daily lives. The Beauty and Joy of Computing adheres to the College Board's new AP Computer Science Principles course requirements.

- **Code.org AP Computer Science A** includes content expected to be covered in an introductory college computer science course and recommended for any high school student who wishes to continue their computer science education after completing an introductory course, such as Computer Science Principles (CS Principles) or Computer Science Discoveries (CS Discoveries).

All curricula support teachers new to the discipline (except CSA – recommended for teachers with some prior CS experience) with a complete set of lesson plans that include inquiry-based activities, online supports, assessment support, and educational tools.

Expanded Learning Program

- **Expanded Learning Program** is a two-day summer professional development for educators who previously participated in a CS Fundamentals, CS Discoveries or CS Principles. Educators can deepen their computer science pedagogy, explore additional facets of the CSF, CSD or CSP curriculum and build community.

Commitments:

Professional Learning Programs are designed to prepare teachers before and during their first years teaching Computer Science.

Timeline and locations

5-day, in-person	School Year (September - June)
Summer Workshops	**Ongoing Support**
Milwaukee, WI - **July 22 through 26, 2024**: ▪ ECS ▪ CS Discoveries ▪ Project GUTS ▪ CS Principles ▪ CSA	▪ 4 in-person sessions (usually on Saturdays) for: ▪ CS Discoveries ▪ CS Principles ▪ ECS ▪ CSA ▪ Continued support and resources for all programs
2-day, virtual	
June 23 and 24, 2022: • Expanded Learning Program for CS Fundamentals, CS Discoveries and CS Principles alumni teachers	

Scholarships:

Do you teach in a high needs school, or a school with a diverse student population? Is funding for computer science limited in your district? We have scholarships available for teachers in Wisconsin thanks to the generous support of Code.org, National Science Foundation, and others. Please see contact details below and let us know if you need more information!

"I do not have a computer science background. I would change nothing about the training. It was an incredible experience, and I felt valued and respected."

"They make it so that you can understand the material and they make it so you want to come back!"

For additional information on the curricula, including course overviews, application links, FAQs, and more, visit:

- **Marquette's PUMP-CS Project website:** https://pumpcs.mu.edu/
- **Code.org's CS Fundamentals:** https://code.org/educate/curriculum/elementary-school
- **Exploring Computer Science:** http://www.exploringcs.org/
- **Code.org's CS Discoveries:** https://code.org/csd
- **Project GUTS:** http://www.projectguts.org/
- **Code.org's CS Principles:** https://code.org/csp
- **Code.org's Computer Science A**: https://code.org/educate/csa
- **Beauty and Joy of Computing:** https://bjc.berkeley.edu/
- **Questions on Computer Science licensure (for AP level courses):** https://urban-learning.org/csi/

PUMPCS
Preparing the Upper Midwest for Principles of Computer Science

For questions about summer 2024 courses, including application process, scholarships, logistics, cost etc., please contact Katya Winkler at: code@marquette.edu.

Do you know a teacher who can be a Computer Science champion? Nominate them for a scholarship to attend Computer Science professional development! Nominate a Teacher HERE