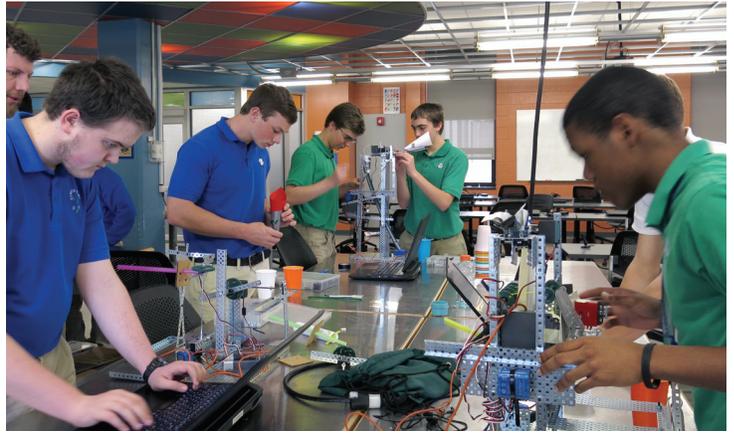


CJ STEMM

Science, Technology, Engineering, Math, Medicine

D E P A R T M E N T



Faculty

Meg Draeger Coordinator

BS University of Illinois
MBA University of Dayton
18 years of experience

Biomedical Science

Amy O'Loughlin '86

BA University of Notre Dame
MSE University of Dayton
15 years of experience

Engineering

Matthew Fuhs

BS Indiana University
8 years of experience

Anna Blair*

BS University of Dayton
MS University of Dayton
1 year of experience

Chengkun Liu*

BS Beijing University of Posts
MS Beijing University of Posts
1 year of experience

Sydney Lundell*

BE University of Dayton
1 year of experience

Vinayak Vijayan*

BS University of Dayton;
MS University of Michigan
3 years of experience

**Through a partnership with the University of Dayton, Project Lead the Way engineering courses are taught by Graduate Teaching Fellows.*

Department Highlights

- ✓ CJ was the first Catholic high school in Ohio to be dually certified to provide the *Project Lead the Way (PLTW)* Engineering and Biomedical Science programs.
- ✓ The *PLTW* curriculum is rigorous and contemporary, inquiry/project-based, and supported by ongoing teacher professional development.
- ✓ Three of CJ's *PLTW* engineering courses are taught by University of Dayton graduate engineering students, allowing a unique perspective and collaboration with a Marianist partner university.
- ✓ Beyond *PLTW* courses, all students are provided numerous opportunities to explore STEMM fields in college and career preparation.
- ✓ Students participate in events and competitions at CJ, in the local community, at area colleges and universities, and nationwide.
- ✓ Students use design thinking, and learn through real world experiences from hands-on activities, field trips, and presentations from experts and professionals in STEMM fields.
- ✓ Parents and alumni are involved, serving as mentors to students, job shadowing hosts, work site tour hosts, and judges for competitions.
- ✓ Students, faculty, and staff conduct outreach to K-8 school students and teachers by way of annual STEMM summer camps, interactive learning experiences at CJ, and in the community, and a Gems of STEMM Club coordinated with the South Ohio section of the Society of Women Engineers.
- ✓ Lab software includes: Autodesk Inventor Professional, Autodesk Revit, ROBOTC, LoggerPro, West Point Bridge Designer, and Inspiration 9.2.
- ✓ College credit is available for students who successfully complete the *PLTW* coursework and national exams.

CJ STEMM — *continued*

Project Lead The Way Courses

If your student shows interest in science, technology, engineering, math, healthcare, or medicine, you may want to ask if they are interested in the *Project Lead the Way* curriculum. There are two pathways, biomedical or science engineering, but these are some things to know about both pathways:

- Students DO NOT have to take all four courses, but the courses are sequential.
- Courses DO NOT take the place of a regular science or math course, but must be taken concurrently with a regular science or math class.
- Students have to be creative with their schedules to fit in *PLTW* course: fewer (if any) study halls, summer gym/health, etc.
- *PLTW* classes are hands-on, based in real-world experiences, and fun for students and teachers. We set the highest standards for rigorous, focused, and engaging study, developing students' innovative, collaborative, cooperative, and problem-solving skills.
- The biomedical science courses are considered science electives. To graduate with the required three science credits, a student still needs biology and chemistry, but a *PLTW* course may count as the third credit.

There are two pathways in this curriculum:

1) Biomedical Science

- This is a four-year program with four different course options.
- Think CSI meets ER. Students will learn about the human body, medicine, and real-life careers in healthcare, medical, and biomedical fields.

Courses:

Principles of Biomedical Science
Human Body Systems
Medical Interventions
Biomedical Innovation

2) Engineering

- This is a four-year program with four different course options.
- These courses are designed to expose students to the design process, research and analysis, teamwork, communication, global challenges, engineering standards, and technical documentation.

Courses:

Introduction to Engineering Design
Principles of Engineering
Civil Engineering and Architecture
Engineering Design and Development