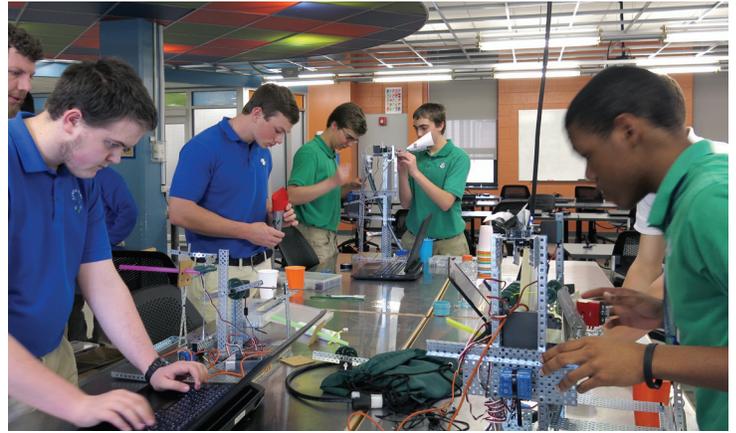




CJ STEMM

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
22 years of experience

Biomedical Science

Amy O'Loughlin '86

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

Amanda Ooten

BS Ohio State University
MSE University of Dayton
10 years of experience

Engineering

Matthew Fuhs

BS Indiana University
6 years of experience

Bro. Tchamie Kadja, SM*

BSET University of Dayton
2 years of experience

Saad Qureshi*

MAE University of Dayton
BS University of Glasgow
2 years of experience

Brandon Payne '13*

BS University of Dayton
1 year of experience

Amanda Delaney*

BS University of Dayton
1 year of experience

Vinayak Vijayan*

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

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 partnership with a Marianist partner university.
- ✓ Beyond *PLTW* courses, all students are provided numerous opportunities to explore STEMM fields of college and career preparation.
- ✓ Students participate in events and competitions at CJ, in the local community, at area colleges and universities, and nationwide.
- ✓ The STEMM Idol Speaker Series is open to all students, and features alumni, educators and professionals in STEMM fields.
- ✓ 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.
- ✓ Numerous parents and alumni are involved, serving as STEMM Idol speakers, mentors to students, job shadowing hosts, work site tour hosts, and judges for competitions.
- ✓ Students, faculty, and staff conduct extensive 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.

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

cjeagles.org

Catholic Faith . Excellent Academics . Enriched Community

CJ's Project Lead the Way biomedical science is funded in part by Premier Health Partners

Curriculum —*continued*

Project Lead The Way Courses

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

- They do not have to take all four years, but the courses are sequential
- They DO NOT take the place of a regular science or math course, but must be taken concurrently with a regular science or math class
- Because of this, the students have to be creative with their schedules: 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 courses are considered science electives. To graduate with the required three science credits, a student would still need biology and chemistry courses, but a *PLTW* course would count as the third credit.

There are two pathways in this curriculum:

1) Biomedical Science

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

Courses:

Principles of Biomedical Science
Human Body Systems
Medical Interventions
Biomedical Innovation
Environmental Sustainability

2) Engineering

- A four-year program with five different course options
- These courses are designed to expose students to the design process, research and analysis, teamwork, communication methods, global and human impacts, engineering standards and technical documentation.

Courses:

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