

[◀ Back to CST Home](#)
 [Printer Friendly](#)
 

Explore our academic offerings...

- ▶ Academics
- ▶ Departments
- ▶ Undergraduate Programs
- ▶ Graduate Programs
- ▶ Residential College
- ▶ Online/Off-Campus
- ▶ International studies



With the support of a National Science Foundation grant, statistics professor Carl Lee has been helping reform statistics education by developing a real-time database that allows students to learn statistics with actual data sets.

## Departments

Central Michigan University's College of Science and Technology (CST) offers quality academic programs for students interested in studying various areas of applied science, technology and mathematics.

Eight College of Science and Technology departments and nearly 200 full-time faculty members offer a diverse combination of required and elective courses supporting 37 undergraduate majors, 11 master's programs, a doctoral program, and the science core curriculum taken by all CMU students. CST also participates in 13 interdisciplinary programs offered in concert with other academic divisions.

Although they are active scholars and scientists, CST's distinguished professors make teaching their No. 1 priority by engaging students in collaborative research, hands-on internships, and other career-preparation activities.

- ▶ [Click here to read department newsletters.](#)

### CST departments and information:

- ▶ [Biology](#)
- ▶ [Chemistry](#)
- ▶ [Computer Science](#)
- ▶ [Engineering and Technology](#)
- ▶ [Geography](#)
- ▶ [Geology](#)
- ▶ [Mathematics](#)
- ▶ [Physics](#)

### College of Science and Technology Department Chairpersons

**Biology** ▶ [Web site](#)  
Dr. Stephen Roberts

**Chemistry** ▶ [Web site](#)  
Dr. David Ash

**Computer Science** ▶ [Web site](#)  
Dr. Michael Stinson

**Engineering and Technology**  
▶ [Web site](#)  
Dr. Terry Lerch

**Geography** ▶ [Web site](#)  
Dr. Bin Li

**Geology** ▶ [Web site](#)  
Dr. Sven Morgan

**Mathematics** ▶ [Web site](#)  
Dr. En-Bing Lin

**Physics** ▶ [Web site](#)  
Dr. Koblar A. Jackson

## Biology

[◀ Back to top](#)

Modern life sciences are desirable fields of study for several important reasons:

- ▶ Molecular-level discoveries in the mechanics of life
- ▶ Innovations in health-related biology
- ▶ New imperatives for sustaining environmental balance

The CMU Department of Biology offers strong programs that prepare students to meet the demands of these rapidly growing and changing areas. In-depth study opportunities range from cell and molecular biology, genetics, and microbiology to developmental biology, physiology, botany, ecology, and conservation biology.

Biology students are immersed in challenging and integrated field and laboratory experiences that build scientific skills and prepare them for future careers.

The Department of Biology maintains numerous instructional classrooms and laboratories, some of which are devoted entirely to research. Facilities include an animal room, a 24-station computer laboratory, multiple electron microscopes, and a greenhouse. Field studies are supported at CMU's Biological Station on Beaver Island and at Neithercut Woodland just north of the Mount Pleasant campus.

Discovery is an essential component of learning. Biological research at CMU pushes new frontiers in many disciplines. From molecular, cellular, and organismal levels to large-scale population and ecosystem studies, the search for insights about the living world is active and varied. Strong mentoring relationships develop between faculty and students as they become involved together in day-to-day collaborative activities.

### Biology Department Chair :: Dr. Stephen Roberts

**E-mail:** [stephen.roberts@cmich.edu](mailto:stephen.roberts@cmich.edu)

**Phone:** (989) 774-3227

**Fax:** (989) 774-3462

**Mailing address:**  
Department of Biology  
Central Michigan University  
217 Brooks Hall  
Mount Pleasant, MI 48859

- ▶ [Click here to learn more about Biology at CMU.](#)

## Chemistry

[◀ Back to top](#)

Never before have so many areas of chemical research opened so many career opportunities for students interested in working at the molecular interface of today's world.

Advances in molecular science drive modern scientific research. Discovery of new drugs, innovative engineering materials, and environmentally friendly industrial systems all are made possible through advances in chemistry.

Well-known for both its research and teaching strengths, CMU's Department of Chemistry values research as a foundation for both teaching and learning. Faculty members also value the mentoring relationships they develop while working with undergraduate and graduate students one-on-one and in small groups.

The chemistry major is a challenging and rewarding program that integrates classroom learning with hands-on laboratory experiences.

The Chemistry Department maintains numerous instructional rooms and laboratories, a student computing center, and contemporary instrumentation available for use by undergraduate and graduate students. Resources include:

- ▶ Gas chromatograph/mass spectrometer
- ▶ X-ray diffractometer
- ▶ Thermal analysis systems
- ▶ High temperature chromatographic systems
- ▶ Ultraviolet, Fourier transform infrared, Raman, and high field nuclear magnetic resonance spectrometers

All chemistry majors complete a capstone research project and submit a written thesis under the direction of a faculty member. This research requirement is an essential component in preparing students to succeed in chemical sciences careers.

### Chemistry Department Chair :: Dr. David Ash

**E-mail:** [ash1de@cmich.edu](mailto:ash1de@cmich.edu)

**Phone:** (989) 774-3981

**Fax:** (989) 774-3883

**Mailing address:**

Department of Chemistry  
Central Michigan University  
268 Dow Science Complex  
Mount Pleasant, MI 48859

- ▶ [Click here to learn more about Chemistry at CMU.](#)

## Computer Science

[◀ Back to top](#)

Computer science has revolutionized our ability to manage and store information, communicate ideas, automate tasks, model complex systems, and extend to machines traditional human thinking activities like learning and reasoning. The escalating technological advances that rely on computer design, programming, networking, and data processing continue to accelerate demands for skilled computer science professionals.

The computer science and information technology programs prepare students with the logical and precise thinking skills needed to meet these demands. Undergraduate students may choose a program through the Department of Computer Science as well as through interdisciplinary programs that combine the study of computer science with other disciplines.

Students work closely with faculty on many topics including:

- ▶ Artificial intelligence
- ▶ Computer architectures
- ▶ Computer graphics
- ▶ Database management systems
- ▶ Distributed systems and computer networks
- ▶ Image processing and computer vision
- ▶ Multimedia
- ▶ Operating systems
- ▶ Programming languages
- ▶ Compilers and software engineering

Computer science faculty members take pride in the personal attention they extend to their students both in the classroom and in the research lab. Both classroom work and student research projects reflect the department's commitment to using instructional approaches that emphasize active student participation.

Courses are taught in computer-equipped classrooms enabling students to explore and experiment with fundamental ideas and their applications. Computing facilities include a UNIX workstation lab, a LINUX workstation lab, general PC labs, and various special-purpose labs for computer graphics, software engineering, operating systems, computer networks, and databases. The 24-hour computer center in Pearce Hall offers ready access for students to work on programs and research projects.

### Computer Science Department Chair :: Dr. Michael Stinson

**E-mail:** [michael.stinson@cmich.edu](mailto:michael.stinson@cmich.edu)

**Mailing address:**

Department of Computer Science

**Phone:** (989) 774-3774

Central Michigan University

**Fax:** (989) 774-3728

411 Pearce Hall  
Mount Pleasant, MI 48859

► [Click here to learn more about Computer Science at CMU.](#)

## Engineering and Technology

◀ [Back to top](#)

Electrical and mechanical engineering breakthroughs supply the technological push for creating new industries as well as improving old ones. Teams of engineering professionals translate advances in basic sciences into improved equipment, techniques, processes, and management skills that deliver products and services to consumers.

The Department of Engineering and Technology promotes change and growth by educating talented engineers and technology specialists, and by pushing the limits of applied research. Students may pursue majors in mechanical or electrical engineering, as well as a number of options in industrial and engineering technology, construction management, and industrial education.

ET faculty members bring both academic and technical expertise to CMU programs. They hold combinations of academic degrees and technical certificates, professional state engineering registrations, and other forms of certification as appropriate for their respective disciplines.

The department has more than 30 research and instructional labs and classrooms for student use. Facilities are provided for computer-aided engineering, automotive technology, plastics technology, solid mechanics, thermal/fluid dynamics, mechanical measurements, robotics, materials testing, metal fabrication, manufacturing systems, construction/wood technology, industrial education, electronics instrumentation and design, and engineering design graphics.

Internship opportunities in ET laboratories and at cooperating industrial sites provide students with valuable experiences.

### ET Interim Department Chair :: Dr. Terry Lerch

**E-mail:** [lerch1t@cmich.edu](mailto:lerch1t@cmich.edu)

**Phone:** (989) 774-3033

**Mailing address:**  
Department of Engineering and  
Technology  
Central Michigan University  
100 ET Building  
Mount Pleasant, MI 48859

► [Click here to learn more about Engineering and Technology at CMU.](#)

## Geography

◀ [Back to top](#)

Geography is changing rapidly as new technological tools are adapted to the study of human-environment interactions. Today's geographers use multiple data arrays obtained from satellites and other airborne remote-sensing units to map areas around the globe. These data sets supply the details needed for environmental, population, and land use analyses and predictive modeling studies.

In preparing students for careers in modern geography, CMU offers programs that require students to combine sophisticated technical know-how with high-level thinking skills. The Department of Geography provides broad selections of cultural, and technical undergraduate programs to ensure strong academic and technical preparation for its graduates.

The Department of Geography classrooms and laboratories include two geographic information science labs and a soils lab.

Faculty members actively support and encourage one-on-one mentoring relationships with majors who wish to engage in research or independent study. Student projects include work in cartography, remote sensing, geographic information systems, environmental analysis, land use planning, and methods of physical geography instruction.

### Geography Department Chair :: Dr. Bin Li

**E-mail:** [bin.li@cmich.edu](mailto:bin.li@cmich.edu)

**Phone:** (989) 774-3323

**Fax:** (989) 774-2907

**Mailing address:**  
Department of Geography  
Central Michigan University  
279 Dow Science Complex  
Mount Pleasant, MI 48859

► [Click here to learn more about Geography at CMU.](#)

## Geology

◀ [Back to top](#)

By combining sophisticated technologies with sound investigative strategies, today's geologists and meteorologists are unlocking secrets of our planet that enable the resolution of old and new problems. Geologic studies contribute to the effective management of energy, water, and minerals, and provide long-term views of global climatic change. Geologists also predict natural hazards such as earthquakes and volcanoes based on precise measurements using modern instruments. Meteorologists use scientific

principles to observe, explain, and forecast atmospheric phenomena. Aspects of meteorology include forecasting, analysis of storm systems, and climatology.

CMU's Department of Geology maintains a rigorous academic program that prepares students for professional entry into geology, meteorology, and related areas by providing them with the content knowledge and critical thinking skills necessary to be successful. Geology and meteorology faculty members incorporate extensive field, computer, and laboratory-based research into the undergraduate curriculum. Student organizations provide additional opportunities for engagement with both faculty and other students.

Laboratory facilities support teaching and research in:

- ▶ Environmental geochemistry and hydrogeology
- ▶ Mineralogy and ion chromatography
- ▶ Paleontology and palynology
- ▶ Igneous and metamorphic petrology and geochemistry
- ▶ Sedimentology, stratigraphy, and fluid inclusion studies
- ▶ Structural geology and geophysics
- ▶ Geologic mapping and geospatial analysis
- ▶ Meteorology

Geology and meteorology faculty members embrace investigative study as an essential methodology that promotes student growth. Students participate in research projects in many courses, employing field, laboratory, and computer methods to investigate problems. Independent study opportunities and a senior thesis option enable students to work one-on-one with faculty on projects devoted to original discovery. Students completing senior thesis projects typically present their work at national or regional meetings of professional organizations and also have opportunities to publish their work in professional journals.

#### Geology Department Chair :: Dr. Sven Morgan

<b>E-mail:</b> <a href="mailto:sven.morgan@cmich.edu">sven.morgan@cmich.edu</a>	<b>Mailing address:</b> Department of Geology Central Michigan University 314 Brooks Hall Mount Pleasant, MI 48859
<b>Phone:</b> (989) 774-3179	
<b>Fax:</b> (989) 774-2142	

▶ [Click here to learn more about Geology at CMU.](#)

## Mathematics

[◀ Back to top](#)

Mathematicians develop and employ models that can be applied to solve problems in the scientific world.

The mathematics curriculum at CMU provides a solid foundation for students interested in specializing in mathematics or in fields that use mathematics. Courses develop logical thinking and quantitative abilities and enable students to become analytical problem solvers.

Students gain professional development through research and independent study projects mentored by faculty. The scholarly interests of faculty members include statistics, approximation theory, combinatorics and graph theory, number theory, functional analysis, operator theory, algebra, algebraic geometry, and differential geometry. An applied mathematics group is involved in polymer fluid dynamics and computational fluid dynamics research. Mathematics education research is an area of particular strength at CMU.

The Department of Mathematics maintains microcomputer laboratories equipped with Macintosh and PC computers.

#### Mathematics Department Chair :: Dr. En-Bing Lin

<b>E-mail:</b> <a href="mailto:enbing.lin@cmich.edu">enbing.lin@cmich.edu</a>	<b>Mailing address:</b> Department of Mathematics Central Michigan University 214 Pearce Hall Mount Pleasant, MI 48859
<b>Phone:</b> (989) 774-3596	
<b>Fax:</b> (989) 774-2414	

▶ [Click here to learn more about Mathematics at CMU.](#)

## Physics

[◀ Back to top](#)

Advances in physics continually contribute to new levels of understanding concerning the nature of matter and energy. This in turn fosters the development of cutting edge technologies such as superconducting electronics and nanomaterials science. These contributions are based on research and study that combine observation and reasoning with imagination and creative thought.

The Department of Physics offers programs in physics, physical science, and astronomy. Courses and programs are rigorous and promote thoughtful inquiry. Students work in small groups with faculty and are engaged in active learning in classrooms, laboratories, and independent research studies.

Faculty members pursue research in condensed matter physics, materials science, optics, nuclear physics, computational physics, astronomy, and

astrophysics. They provide many opportunities for undergraduate and graduate students to develop individual projects.

The department's classrooms, laboratories, and faculty offices are located in the Leon and Frances McDermott wing of the Dow Science Complex. The observatory and associated facilities are in Brooks Hall. Tutors are available during the evening hours in a departmental reading room. The department maintains its own servers, several workstations, and a cluster of high-performance systems.

Facilities available for student learning include laboratories equipped for laser spectroscopy, magnetic resonance, rheology, thin films, and X-ray diffraction.

**Physics Department Chair :: Dr. Koblár A. Jackson**

**E-mail:**  
[koblár.alan.jackson@cmich.edu](mailto:koblár.alan.jackson@cmich.edu)  
**Phone:** (989) 774-3321

**Mailing address:**  
Department of Physics  
Central Michigan University  
203 Dow Science Complex  
Mount Pleasant, MI 48859

► [Click here to learn more about Physics at CMU.](#)