College of Science & Technology

Founded 1998

Michael Klein, Dean
400 Carnell Hall
1803 North Broad Street
215-204-2888
https://cst.temple.edu/
cst@temple.edu

Introduction

Science and technology were responsible for a profound transformation of the world in the 20th century and will drive the economy of the 21st century. The objectives of the undergraduate programs of the College of Science and Technology are to prepare students for careers in these important areas and to graduate informed, responsible citizens.

The college approaches science and technology as a body of knowledge that has an advancing frontier and a complex interface with society. The traditional mandate for a university is to provide undergraduate students with a comprehensive education and the opportunity to focus closely on a particular area of study. The College of Science and Technology embraces this mandate and extends additional opportunities to our students. Science and Technology students are encouraged to participate in faculty research projects and thus experience the advancement of this body of knowledge.

Bachelor of Science programs offer a greater concentration in major coursework, while Bachelor of Arts programs offer a greater variety of coursework. All programs offer undergraduates the opportunity to work with distinguished faculty and a richly-diverse and stimulating student body as they prepare for active roles in society.

Mission Statement

The mission of the College of Science and Technology is to seek academic excellence by providing outstanding instruction in the sciences, and to foster scientific research of the highest quality. In pursuing its mission the College is committed to meeting the needs of a diverse student body, and is truly dedicated to the founding principles of Temple University in providing a superior education to the prepared student. The educational mission of the College is pursued through offering a current curriculum that incorporates the fundamental principles as well as the latest discoveries in the major scientific disciplines.

Interdisciplinary degree programs and independent research projects allow the student to explore scientific boundaries. The College offers a general education curriculum that provides the opportunity for non-science majors to be better informed of the complex scientific and ethical issues facing society. The College also strives to improve science and mathematics education in the Philadelphia schools. All of these aspects of the educational mission of the College are achieved through the dedicated efforts of the faculty, who are leading scholars in their field.

The research mission of the College is pursued through a sustained effort to recruit the best and brightest new faculty, to aggressively develop promising research initiatives, and to create a modern science campus with facilities fully supportive of cutting-edge research. The College also strives to support the scholarly pursuits and professional activities of its faculty, who in turn advance their respective disciplines. In doing so, the College provides an outstanding environment for graduate and undergraduate research, with the Departments and Centers as focal points for interdisciplinary research initiatives and graduate degree programs. In pursuing its research mission the College of Science and Technology will be a vital participant in establishing Temple University as a recognized center of excellence in scientific research and development.

Admissions

See Undergraduate Admissions for more details.

Financial Aid / Scholarships

See Financial Aid: Scholarships & Grants for more details.

Special Programs

For a complete list, see Accelerated Degree Programs in the About Temple University section of the Undergraduate Bulletin.

Accelerated Bachelor of Arts/Professional Programs

Temple Professional School Programs (within the Lewis Katz School of Medicine at Temple University, Temple University Kornberg School of Dentistry, Temple University School of Podiatry, and Temple University School of Pharmacy) agree to cooperate in providing an accelerated 3 + 4 undergraduate/professional school education leading to both a Bachelor of Arts degree in the College of Science and Technology and a Doctorate degree from the Professional School. The Temple University College of Public Health agrees to cooperate in providing an accelerated 3 + 3 undergraduate/graduate
education leading to both a Bachelor of Arts degree in the College of Science and Technology and a Doctorate of Physical Therapy in the College of Public Health.

Students in the College of Science and Technology who are in the joint program above, have been admitted to the professional program at the end of their third year, and have completed 90 semester hours, including all course requirements for the major, College and University, may transfer their first year in professional study toward the completion of the credit requirements for the degree of Bachelor of Arts. Biology and Chemistry majors may also transfer approved courses in their first year of professional study toward the elective courses in their major.

Students in the College of Science and Technology who have been admitted to other health-related professional schools at the end of their third year with a cumulative GPA of at least 3.5 and who have completed 90 semester hours, including all course requirements of the major, College and University, may petition the dean for the transfer of their first year of professional study toward the completion of the credit requirements for the degree of Bachelor of Arts. University residency requirements must also be met.

**Accelerated Bachelor of Science/Professional Programs**

The Temple University School of Pharmacy agrees to cooperate in providing an accelerated 3 + 4 undergraduate/professional school education leading to both a Bachelor of Science degree in Pharmaceutical Sciences in the College of Science and Technology and a Doctor of Pharmacy degree from the Temple University School of Pharmacy.

Students in the College of Science and Technology who are in the joint program above, have been admitted to the professional program at the end of their third year, and have completed 90 semester hours, including all course requirements for the major, College and University, may transfer their first year in professional study toward the completion of the credit requirements for the degree of Bachelor of Science.

**Accelerated Bachelor/Master and Bachelor/Professional Science Master (PSM) in CST Programs**

Many departments in the College of Science and Technology cooperate in providing an accelerated +1 undergraduate/graduate education leading to a Bachelor of Arts or Science degree as well as a Master of Arts or Science, or a Professional Science Master (PSM) degree from the Graduate School.

**Accelerated Bachelor/Master of Education Programs with Teacher Certification**

Temple's College of Education cooperates in providing an accelerated +1 undergraduate/graduate education leading to a Bachelor of Arts or Science degree in the College of Science and Technology as well as a Master of Education degree from the College of Education. The Biology, Chemistry, Earth & Environmental Science, Mathematics, and Physics Departments enable talented students to complete both a Bachelor's degree in one of the above departments and a Master of Education degree typically in a total of five years. After completing the Bachelor's degree in one of the aforementioned disciplines, students spend an additional year as a graduate student in the College of Education. Students must apply for the accelerated +1 Bachelor/Master of Education program during their sophomore year. If accepted, they will take both undergraduate major courses as well as Master of Education courses beginning in their junior year. They typically complete their undergraduate major in their fourth year and their Master of Education degree in their fifth year. Students who complete this program earn a Master of Education degree and may apply for a Pennsylvania Instructional I Teaching Certificate after passing all required licensure examinations. See the College of Education for more details.

**CST Science Scholars Program**

The CST Science Scholars Program offers exceptional and motivated students additional paid research opportunities and academic and professional development. Students must be invited to apply based on their admissions information or performance in their first year of courses.

**CST TTeach Certification for Secondary Education**

Eight Bachelor of Science programs enable students to prepare for secondary education certification while mastering the content of their field. The programs are: Biology with Teaching, Chemistry with Teaching, Earth and Space Science with Teaching, General Science with Teaching, Mathematics with Teaching, Mathematics and Computer Science with Teaching, Mathematics and Technology with Teaching, and Physics with Teaching. See the TTeach Programs for more details.

**CST Undergraduate Research Program**

The CST Undergraduate Research Program offers students in the College of Science and Technology an opportunity to work directly with world-class scientists on real-world research. Completing hands-on independent research is critical to the next step in a student's educational or professional career.

**Study Abroad**

See Education Abroad in the Opportunities section of this Bulletin and Temple University’s Education Abroad and Overseas Campuses web site for more information about study abroad options, including the new Temple Rome program for Biology majors.
University Honors Program

Students in the College of Science and Technology may apply to the University Honors Program. Honors students are eligible to enroll in CST honors courses, provided that they have satisfied the prerequisites and co-requisites. Honors courses are designated with a nine as the second digit in the four-digit number, e.g., MATH 1941 is Honors Calculus I. See Academic Opportunities: University Honors Program for more information.

Awards and Achievements

Awards & Scholarships

Rising sophomores, juniors and seniors are often honored for outstanding performance in a variety of academic areas and for exceptional service to the College and the University. The college offers both awards and scholarships.

Distinction in Major

Many programs allow exceptional students to receive a Distinction in Major. Please see the Bulletin program pages for the specific requirements for any particular major.

Honor Societies

Temple University is in partnership with several national honor societies including Phi Beta Kappa.

Student Associations

Many of the departments within the College of Science and Technology support student interest organizations known as Majors’ Associations and Societies. Each department organization provides an opportunity for students to interact with faculty and other students who share similar interests. It is through these venues that students may influence course offerings, faculty recruitment, and departmental policy. Temple University has many pre-professional health organizations that may interest students in the College of Science and Technology. These organizations allow students to interact with others with similar professional interests and gain more knowledge about admissions requirements and examinations.

Contact Information

For information about the College of Science & Technology, please contact the Center for Academic Advising and Professional Development, 215-204-2890 or at cstadv@temple.edu.

Contact information for academic programs can be found under the listing for each individual program.

Academic Policies & Regulations

Please see the Undergraduate Academic Policies in this Bulletin. Students are responsible for complying with all university-wide academic policies that apply to their individual academic status. Additional and unique policies, or exceptions for the College of Science and Technology (CST), appear below.

Changing Majors or Minors

CST Students

In order to add or change majors or minors within the College of Science and Technology, a CST student must meet with an advisor in the CST’s Center for Academic Advising and Professional Development. The advisor will evaluate the student’s record in accordance with the following policy:

1. CST students in their first semester at Temple University who wish to add or change majors or minors within the CST will be automatically approved.
2. Continuing CST students who wish to add or change declared majors or minors within the CST should have a cumulative grade point average (GPA) of 2.00 or higher. Continuing CST students who wish to change their major to undeclared will be automatically approved, provided that the total of completed and registered credits is fewer than 60 credits.
3. CST students can complete a second major in the CST. For more details, please refer to the Second Major section within the Requirements (p. 5) page.

Non-CST Students

To transfer into the College of Science and Technology (CST), a non-CST student must be in accordance with the following policy:

1. Students in their first semester at Temple University who wish to transfer into CST will be automatically approved.
2. Continuing students who wish to transfer into CST must have a cumulative grade point average (GPA) of 2.00 or higher.

Please see Changing your Major or Minor for further information.

Course Eligibility

The College of Science and Technology offers four types of undergraduate courses as well as graduate courses:
1. Preparatory courses numbered 0700-0799: open to all students, including non-degree seeking students who have completed appropriate course prerequisites and have completed or are in the process of completing required co-requisite courses. If required, students must complete these courses before enrolling in any higher level courses in the same department.

2. General Education courses numbered 0800-0999: open to all students, including non-degree seeking students who have completed appropriate course prerequisites and have completed or are in the process of completing required co-requisite courses. These courses satisfy University General Education requirements as indicated in the course description.

3. Lower-Level courses numbered 1000-1999: open to all students, including non-degree seeking students who have completed appropriate course prerequisites and have completed or are in the process of completing required co-requisite courses. These are general foundation level courses in the various disciplines.

4. Upper-Level courses numbered 2000-4999: open to all students, including non-degree seeking students who have completed appropriate course prerequisites and have completed or are in the process of completing required co-requisite courses. These courses build on the foundation courses (and on other upper-level courses) to provide a focused exploration of field-specific content.

5. Graduate-Level courses numbered 5000-9999: undergraduate students are generally prohibited from taking Graduate-Level courses. In rare circumstances, special permission may be granted for undergraduate students to take graduate courses. Graduate-Level courses numbered 5000-5999 require permission of the course instructor, the Undergraduate Faculty advisor for the student's undergraduate major, the Graduate Chair of the department housing the course, and the College of Science and Technology's Center for Academic Advising and Professional Development. Graduate-Level courses numbered 8000-8999 require permission from those listed above as well as the Vice Provost for Undergraduate Studies and the Vice Provost for Graduate Studies.

Courses Over Five Years Old
For transfer and re-enrolling students, courses over five years old will be reviewed by the College to determine whether they will be accepted toward the degree. Final determination of the acceptability of such courses is the responsibility of the Center for Academic Advising and Professional Development.

Dean's List
Each fall and spring semester, those undergraduates who have met the credit hour and academic criteria are placed on the Dean's List. See the Dean's List policy for specific GPA and credit-hour requirements.

Grading
Major, Minor, and GenEd courses must be completed with a letter grade of C- or higher unless otherwise specified. Certain courses require a higher minimum grade in order to advance to the next level.

Graduation Procedures
Fly in 4 requires students to complete a graduation review prior to the start of the senior year. To meet this requirement, all CST students will have a graduation review prepared by an advisor in Spring of the junior year. Students must apply for graduation online via Self-Service Banner (SSB) early in the semester in which they will complete their degree requirements. For application deadlines, see the University's Undergraduate Graduation Procedures.

Non-Traditional Credits
A maximum of 12 semester hours of credit will be allowed by CST for life experience, upper-level military science (ROTC) courses, and CLEP/DSST examinations.

CLEP
A maximum of 8 semester hours of credit will be allowed by CST for CLEP examinations.

Life Experience
A maximum of 8 semester hours of credit will be allowed by CST for Life Experience. Students are required to write what proficiencies are developed by their life experience and designate courses similar to their background. The experience will be reviewed by the appropriate faculty. Students need a 2.5 minimum cumulative GPA in order to apply.

ROTC
A maximum of 4 courses or up to 12 semester hours will be allowed for upper-level Military Science (Army ROTC), Naval Science (Navy ROTC) or Aerospace Studies (Air Force ROTC) courses.

Overload Requests
Students in the College of Science and Technology must petition through the Center for Academic Advising and Professional Development for approval of an overload when they request to take more than 18 credits in either the fall or spring semesters or more than 8 credits in either summer session. Credits over 18 carry additional tuition charges. The following items are considered when reviewing an overload petition:
• Minimum 2.75 GPA overall and in the last semester of graded coursework.
• The number of credits completed in previous semesters.
• The number of science and math courses taken previously in each semester.
• The amount of credits requested.
• The type of courses requested including requests for repeated coursework. The office focuses particularly on the number of science and math courses in the student’s proposed roster.

Placement Assessment
The results of placement assessments determine the best place for students to start in their English and Mathematics courses. Please see Placement Assessment for additional information. Both prior to completing the Placement Assessments and after to better be ready for classes, CST students should review their English and Mathematics work.

All CST transfer students are required to complete the Math placement assessment unless they transfer in the equivalent of MATH 1041, MATH 1042, MATH 2043 or MATH 3041.

Students enrolled in the College of Science and Technology who take the ALEKS Math Placement Assessment are required to take the assessment and any retakes in a proctored environment. To do this, students must register and make an appointment with ProctorU, a remote proctoring service. Students can find more information about the proctoring process by clicking on their Math Placement Assessment Next Step in TUportal.

Pre-Pharmacy Track Students
Students can be admitted to the Pre-Pharmacy track. Pre-Pharmacy students will need to declare a major before reaching 30 earned credits. Pre-Pharmacy students who have completed 30 or more credits without declaring a major will have a ‘declaration of major’ hold added to their account and will need to see an advisor to declare a major before being able to register for a future semester.

Prerequisites and Co-Requisites
Students will be de-enrolled from courses for which they do not meet prerequisites and co-requisites. Please see the University’s Prerequisites and Co-requisites and the CST prerequisites page for additional information.

Re-enrollment to the College of Science and Technology
College of Science and Technology students who have not enrolled for one or more semesters and are not on an approved Leave of Absence must submit a Request to Re-Enroll. Students are required to follow the most current curriculum or choose another current curriculum, upon return. Any existing holds, including financial, must be cleared prior to the re-enrollment deadline. Official transcripts must be submitted for any college-level courses completed after leaving Temple University by the re-enrollment deadline as well. The deadline for application to re-enroll for the fall semester is August 1; the deadline to re-enroll for the spring semester is December 1; and the deadline for summer semester I and II is April 1.

Repeating a Course
Students may attempt a course two times without restriction. Students in the College of Science and Technology should meet with an advisor prior to attempting a course for the second time to discuss changes to make prior to and during the next registration of the course. A third attempt of any course is not guaranteed and requires permission of the Center for Academic Advising and Professional Development. Approvals for a third attempt frequently require remediation, including additional coursework, and/or academic/personal planning. Third attempt petitions must be submitted at least one week prior to the start of Fall/Spring courses. Petitions will not be processed one week before the start of class and throughout the add/drop period of the Fall/Spring semesters. Please plan accordingly. Please refer to the University policy on Repeating a Course for further information.

Undeclared Majors
Due to the sequencing of our coursework, CST encourages undeclared students to declare a major by the time they have earned 30 credits. In accordance with University policy, students must declare a degree-earning major by the time they have earned 60 credits. Undeclared students who have 60 or more credits will have a ‘declaration of major’ hold added to their account and will need to see an advisor to declare a major before being able to register for a future semester.

General College Graduation Requirements
The College of Science and Technology offers two undergraduate degrees: a Bachelor of Arts (B.A.) and a Bachelor of Science (B.S.). The B.A. degree gives students a broad-based education, including the study of a foreign language. The B.S. degree is for those students who wish for more specialized training in their chosen disciplines.

Credit Hour Requirements
The College of Science and Technology requires that students complete a total of 123 credits for most programs. The TUteach programs (Biology with Teaching, Chemistry with Teaching, Earth & Space Science with Teaching, General Science with Teaching, Mathematics with Teaching, Mathematics and Computer Science with Teaching, Mathematics and Technology with Teaching, and Physics with Teaching) require students to complete a total of
124 credits. Of those totals, 90 credits must be in the College of Science and Technology or the College of Liberal Arts (CLA). A course shall count as a College of Science and Technology or College of Liberal Arts course if it is offered by a department or program in either of the respective colleges, or if it is in the department of Art History, or if it is taken to satisfy a major or minor requirement in the College of Science and Technology. Of those 90 credits, 45 must be in upper-level courses. Upper-level courses consist of course numbers at the 2000 level or above. Students receiving a Bachelor of Arts (as opposed to Bachelor of Science) degree must take at least two courses numbered 2000 or above in the College of Liberal Arts. Certain courses fulfill multiple requirements. In careful consultation with your advisor, you will be able to optimize curriculum choices.

**First Year Seminar Requirement**

All students in the College of Science and Technology are required to take a one credit first year seminar. SCTC 1001 CST First Year Seminar is the appropriate course option for every entering first year CST major. UNVS 1001 First Year Seminar I and HNRS 1901 Honors First Year Seminar I can also fulfill this requirement.

Transfer students and students changing their major to CST after the first year should use SCTC 2001 CST Transfer Seminar to fulfill this requirement. UNVS 2002 Transfer Seminar: Planning for Success can also fulfill this requirement.

**General Education**

All students are required to complete the General Education (GenEd) requirements.

**Grade Point Average (GPA) Requirement**

The College of Science and Technology requires that students have a GPA of at least 2.00 overall and at least 2.00 in the courses applicable to their major and/or minor GPA.

**Residency Requirements**

Students must satisfy general Temple University residency requirements. In addition, half of the courses required in the department of the major must be taken at Temple. Please refer to degree programs for the specific number of major, minor, or certificate courses required.

**Bachelor of Science Requirements**

**Major**

Students must also complete the requirements of a departmental major. The minimum acceptable grade in a course taken to fulfill major requirements is a C- unless otherwise specified. Bachelor of Science majors are offered in the following programs:

- Applied Mathematics
- Biochemistry
- Biology
- Biology with Teaching
- Biophysics
- Chemistry
- Chemistry with Teaching
- Computer Science
- Computer Science and Physics
- Data Science with Concentration in Computational Analytics
- Data Science with Concentration in Computation and Modeling
- Data Science with Concentration in Genomics and Bioinformatics
- Earth and Space Science with Teaching
- Environmental Science
- General Science with Teaching
- Geography
- Information Science and Technology
- Mathematics
- Mathematics and Computer Science
- Mathematics and Physics
- Mathematics with Teaching
- Mathematics and Computer Science with Teaching
- Mathematics and Technology with Teaching
- Natural Sciences
Bachelor of Arts Requirements

Language Requirement
In addition to the University General Education requirement, Bachelor of Arts candidates must complete a second language requirement. B.A. degree candidates are required to successfully complete the second semester (typically courses numbered 1002) of a second language or demonstrate proficiency in a second language. Languages available at Temple include: American Sign Language, Arabic, Chinese, French, German, Greek, Hebrew, Hindi, Italian, Japanese, Korean, Latin, Portuguese, Russian, Spanish, and Vietnamese.

Upper-level Distribution Requirements
Bachelor of Arts students must complete upper-level distribution requirements by taking two upper-level courses in one or more departments of the College of Liberal Arts or the department of Art History. Upper-level courses consist of course numbers at the 2000 level or above.

Major
Bachelor of Arts candidates must complete the requirements of a major. It is important to note that students enter the College of Science and Technology as Bachelor of Science majors. If students wish to change their degree choice to Bachelor of Arts, they must do so with an advisor in the Center for Academic Advising and Professional Development. The minimum acceptable grade in a course taken to fulfill major requirements is a C- unless otherwise specified. B.A. majors are offered in the following programs:

- Biology
- Chemistry
- Computer Science
- Geology
- Information Science and Technology
- Mathematics
- Mathematical Economics
- Natural Sciences
- Physics

Specific Program Requirements
Listed under each degree program are the courses students must successfully complete to earn that particular B.A. or B.S. degree.

Optional Minors, Certificates, and Second Majors

Minors
Students may also choose to complete the requirements for a minor. The minimum acceptable grade in a course taken to fulfill minor requirements is a C- unless otherwise specified. At least three of the courses credited towards the minor must be courses that were not credited towards a CST major, additional CST minor, or CST certificate. Minors are available in the following programs:

- Biology
- Chemistry
- Computer Science
- Data Science: Computational Analytics
- Digital Media Technologies (CIS/MSP)
- Geology
- Information Science and Technology
- Mathematics
- Physics
Certificates

Students may also choose to complete the requirements for a certificate. The minimum acceptable grade in a course taken to fulfill certificate requirements is a C- unless otherwise specified. At least two of the courses credited towards the certificate must be courses that were not credited towards a CST major, CST minor, or CST additional certificate. Certificates are available in the following programs:

- Computer Security & Digital Forensics
- Data Science: Computational Analytics
- Environmental Professional Training
- Fundamentals of Programming
- Genome Medicine

Second Major

Students may complete a second major by fulfilling all requirements for the primary and second majors, including at least four distinct courses in the primary major and four distinct courses in the second major. General Education requirements must be satisfied in accordance with the requirements of the primary major. In instances of a double major, only one degree will be conferred.

Academic Advising

The Center for Academic Advising and Professional Development
First Floor of the Paley Library
Suite 150
215-204-2890
https://cst.temple.edu/
cstadv@temple.edu

The College of Science and Technology's Center for Academic Advising and Professional Development utilizes best practices to facilitate undergraduate student development and academic growth while guiding students from pre-admission to degree completion. By establishing a support network of connections with faculty, campus resources and the Temple University community, our academic advisors encourage positive and independent thinking, provide professional planning, promote resource utilization and foster quality academic strategies for the students we serve. Through teamwork, collaboration and open lines of communication, we empower our students to take ownership of their decisions, choices, and goals relating to academic and professional aspirations.

Professional advisors help students plan courses, explore majors, research career opportunities, and understand Temple's resources. CST's advising model consists of a First Year Advising team, which serves students from the time of admission throughout the successful completion of the first academic year, and advising by two Discipline teams for sophomores through to graduation. One discipline team oversees the majors, minors, and certificates in the Biology, Chemistry and Earth and Environmental Science (BCE) departments and the other does the same for the Computer and Information Sciences, Mathematics and Physics (CMP) departments. This model allows students to develop a connection with advisors who specialize in their area of study.

CST also has Faculty advisors. Faculty advisors use their knowledge of departmental curriculum to help students choose courses consistent with their specific career objectives. Each faculty advisor is knowledgeable within their field and can help with questions involving research and real work experience within each field. Faculty advising is very important in developing ties between a student's academic program and his or her professional goals. Faculty advisors may assist students in finding research opportunities and professional internships and will help students choose courses that will best prepare them for their field of interest within a particular discipline. A list of Faculty Advisors may be found on the CST web site.

The Student Professional Development office prepares students for academic and professional careers through a variety of workshops, professional development training sessions, networking events, and job fairs. Hands-on independent research and internships are considered to be critical steps in a students' preparation for pursuing additional educational opportunities or their professional career.

The office facilitates the Undergraduate Research Program (URP) which provides world class research opportunities for undergraduate students in labs on campus as well as at the Temple University Health Science Campus.

Academic Advising and Student Responsibility

All academic advisors are trained to read and evaluate information carefully to give students the best possible advice. Every student must be aware of the requirements of his or her degree and should collaborate with an advisor regularly to ensure timely completion of his or her program.

Student Ambassadors/Ombudspersons

Each department in the College of Science and Technology has a Student Ambassador/Ombudsperson (SA/O) who is a qualified undergraduate student in that department. The SA/O is thoroughly familiar with requirements and curricula of the department and can competently advise fellow students on the courses and faculty members of the department. He or she also has information about career options for the department's graduates. The SA/O also coordinates the student grievance procedure. A list of Student Ambassadors/Ombudspersons is available on the CST web site.
Student Grievance Procedure
The SA/O is familiar with the College of Science and Technology Grievance Procedure and is the first person to consult in case of an academic grievance. The SA/O will serve as a student-faculty liaison and attempt to resolve the grievance through mediation. The College of Science and Technology grievance procedure is available on the CST web site. A list of Student Ambassadors/Ombudspersons is available on the CST web site.

Pre-Professional Advising
The College of Science and Technology works in conjunction with the Office of Pre-Professional Health Studies to advise students interested in professional schools. Knowledge gained in the College of Science and Technology curricula provides the foundation needed in preparing for Professional Health School entrance exams. Many of the courses required by professional programs such as dentistry, medicine, pharmacy, and veterinary medicine are incorporated into College of Science and Technology curricula. This approach allows our students to fulfill degree requirements, while at the same time meeting admissions criteria for professional and graduate programs. Students interested in professional health programs should contact the Office of Pre-Professional Health Studies early in their academic career for detailed advising.

CST offers a variety of ways in which students can pursue health professional programs.

• Students may complete a bachelor's degree and apply to health professional programs.
• Students may apply to the 3+4 and 3+3 accelerated programs linked to particular Temple health professional programs by which they may complete both their bachelor and professional degree.
• Students may apply to the direct admit 3+4 Pharmaceutical Sciences & Temple University School of Pharmacy by which students would complete a Bachelor of Science in Pharmaceutical Sciences (BS-PS) and a Doctor of Pharmacy (PharmD).
• Students who have completed prerequisite courses may apply to the Temple University School of Pharmacy without completing their Undergraduate degree requirements such that students would only complete a Doctor of Pharmacy (PharmD).
• Students who have completed prerequisite courses may apply to the Temple University School of Podiatric Medicine without completing their Undergraduate degree requirements such that students would only complete a Doctor of Podiatric Medicine (DPM).

Faculty
Please go to the College of Science & Technology web site at https://cst.temple.edu and click on the individual department at the bottom of the page for a list of faculty in each department. See also https://directory.temple.edu/

Abraham Abebe, Assistant Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; Ph.D., University of North Carolina at Greensboro.

Ergin H. Ahmed, Assistant Professor (Research), Department of Physics, College of Science and Technology; Ph.D., Temple University.

Robert M. Aiken, Professor Emeritus, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., Northwestern University.

Ola Ajaj, Assistant Professor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; Ph.D., Florida Atlantic University.

Tamer Aldwairi, Assistant Professor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; Ph.D., Mississippi State University.

Shohreh Amini, Professor, Department of Biology, College of Science and Technology; Ph.D., University of Pennsylvania.

Edwin J. Anderson, Professor Emeritus, Department of Earth and Environmental Science, College of Science and Technology; Ph.D., Brown University.

Rodrigo B. Andrade, Professor, Department of Chemistry, College of Science and Technology; Ph.D., Massachusetts Institute of Technology.

Eleni Anni, Associate Professor (Research), Department of Biology, College of Science and Technology; Ph.D., University of Patras.

Alla Arzumanyan, Assistant Professor (Research), Department of Biology, College of Science and Technology; Ph.D., Yerevan State University.

Leonard B. Auerbach, Professor Emeritus, Department of Physics, College of Science and Technology; Ph.D., University of California Berkeley.

Margaret (Max) Avener, Instructor, Department of Mathematics, College of Science and Technology; M.A., Temple University.

Jessica Babcock, Instructor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; M.Ed., Temple University.

Zachary Bailey, Assistant Professor, Department of Mathematics, College of Science and Technology; Ph.D., University of Delaware.

Darius Balciunas, Associate Professor, Department of Biology, College of Science and Technology; Ph.D., Uppsala University.
Michael Joseph Balsai, Assistant Professor (Teaching/Instructional), Department of Biology, College of Science and Technology; Ph.D., University of Pennsylvania.

Giora Baram, Associate Professor Emeritus, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., University of Toledo.

Sumah Batish, Assistant Professor (Teaching/Instructional), Department of Biology, College of Science and Technology; Ph.D., University of Cambridge.

Jocelyn Behm, Assistant Professor, Department of Biology, College of Science and Technology; Ph.D., University of Wisconsin-Madison.

Richard Beigel, Professor, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., Stanford University.

Gianfranco Bellipanni, Associate Professor (Teaching/Instructional), Department of Biology, College of Science and Technology; Ph.D., University of Palermo.

Abha Belorkar, Assistant Professor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; Ph.D., National University of Singapore.

Richard Berger, Assistant Professor (Research), Department of Mathematics, College of Science and Technology; Ph.D., Johannes Kepler University Linz.

Shiferaw S. Berhanu, Professor, Department of Mathematics, College of Science and Technology; Ph.D., Rutgers University.

Edgar A. Bering IV, Assistant Professor (Research), Department of Mathematics, College of Science and Technology; Ph.D., University of Illinois at Chicago.

Dorothy B. Berner, Professor Emerita, Department of Biology, College of Science and Technology; Ph.D., University of Pennsylvania.

Eugene Bichenkov, Assistant Professor (Research), Department of Biology, College of Science and Technology; Ph.D., Novosibirsk Institute of Bioorganic Chemistry.

Christopher J. Biehl, Instructor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; M.B.A., Temple University.

James L. Bloomer, Associate Professor Emeritus, Department of Chemistry, College of Science and Technology; Ph.D., University of London.

James D. Bloxton, Associate Professor (Teaching/Instructional), Department of Chemistry, College of Science and Technology; Ph.D., Temple University.

Silvia Boffo, Assistant Professor (Research), Department of Biology, College of Science and Technology; M.S., University of Trieste.

Vassil Boidiej, Assistant Professor (Teaching/Instructional), Department of Chemistry, College of Science and Technology; Ph.D., University of Wisconsin-Milwaukee.

Eric U. Borguet, Professor, Department of Chemistry, College of Science and Technology; Ph.D., University of Pennsylvania.

Elena Borovitskaya, Associate Professor (Teaching/Instructional), Department of Physics, College of Science and Technology; Ph.D., Institute of Applied Physics, Nizhni Novgorod, Russia.

Angela L. Bricker, Assistant Professor (Teaching/Instructional), Department of Biology, College of Science and Technology; Ph.D., University of Cambridge.

William S. Bringar, Professor Emeritus, Department of Chemistry, College of Science and Technology; Ph.D., University of Kansas.

Theodore W. Burkhardt, Professor Emeritus, Department of Physics, College of Science and Technology; Ph.D., Stanford University.

Ilya V. Buynevich, Associate Professor, Department of Earth and Environmental Science, College of Science and Technology; Ph.D., Boston University.

Vincenzo Carnevale, Assistant Professor (Research), Department of Biology, College of Science and Technology; Ph.D., International School for Advanced Studies, Trieste.

Elizabeth Cerkez, Assistant Professor (Teaching/Instructional), Department of Chemistry, College of Science and Technology.

Frank N. Chang, Professor Emeritus, Department of Biology, College of Science and Technology; Ph.D., University of Wisconsin.

Faycal Chaouqui, Assistant Professor (Research), Department of Mathematics, College of Science and Technology; Ph.D., University of Geneva.
Farzana Chaudhry, Associate Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; Ph.D., Oxford University.

Orin N. Chein, Professor Emeritus, Department of Mathematics, College of Science and Technology; Ph.D., New York University.

Steven M. Chemtob, Assistant Professor, Department of Earth and Environmental Science, College of Science and Technology; Ph.D., California Institute of Technology.

Je-Wei Chen, Assistant Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; Ph.D., State University of New York Stony Brook.

Ke Chen, Associate Professor (Research), Department of Physics, College of Science and Technology; Ph.D., Chinese Academy of Sciences.

Paul Christner, Associate Professor (Teaching/Instructional), Department of Biology, College of Science and Technology; Ph.D., University of Pennsylvania.

Francis T. Christoph Jr., Associate Professor Emeritus, Department of Mathematics, College of Science and Technology; Ph.D., Rutgers University.

Bruce P. Conrad, Associate Professor Emeritus, Department of Mathematics, College of Science and Technology; Ph.D., University of California Berkeley.

Martha Constantiou, Assistant Professor, Department of Physics, College of Science and Technology; Ph.D., University of Cyprus.

Erik Cordes, Professor, Department of Biology, College of Science and Technology; Ph.D., The Pennsylvania State University.

Raymond F. Coughlin, Associate Professor, Department of Mathematics, College of Science and Technology; Ph.D., Illinois Institute of Technology.

Edward T. Crotty, Assistant Professor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; Ph.D., University of Pennsylvania.

Hai-Lung Dai, Professor, Department of Chemistry, College of Science and Technology; Ph.D., University of California Berkeley.

David R. Dalton, Professor Emeritus, Department of Chemistry, College of Science and Technology; Ph.D., University of California Los Angeles.

Boris A. Datskovsky, Professor, Department of Mathematics, College of Science and Technology; Ph.D., Harvard University.

Alexandra Krull Davatzes, Associate Professor, Department of Earth and Environmental Science, College of Science and Technology; Ph.D., Stanford University.

Nicholas Davatzes, Associate Professor, Department of Earth and Environmental Science, College of Science and Technology; Ph.D., Stanford University.

Franklin A. Davis, Professor Emeritus, Department of Chemistry, College of Science and Technology; Ph.D., Syracuse University.

Timothy S. Davis, Instructor (Teaching/Instructional), Department of Earth and Environmental Science, College of Science and Technology; M.S., Temple University.

Nanjie Deng, Associate Professor (Research), Department of Chemistry, College of Science and Technology; Ph.D., Hyderabad University.

Louis F. Devicaris, Instructor (Teaching/Instructional), Department of Chemistry, College of Science and Technology; M.S., Villanova University.

Graham Dobereiner, Associate Professor, Department of Chemistry, College of Science and Technology; Ph.D., Yale University.

David Dobor, Instructor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; M.S., Temple University.

Vasily Dolgushev, Professor, Department of Mathematics, College of Science and Technology; Ph.D., Massachusetts Institute of Technology.

Marilena Downing, Assistant Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; M.A., Temple University.

Eduard Dragut, Associate Professor, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., University of Illinois at Chicago.

Enpeng Du, Assistant Professor (Research), Department of Physics, College of Science and Technology; Ph.D., Temple University.

Xiaojiang Du, Professor, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., University of Maryland College Park.
Leroy W. Dubeck, Professor Emeritus, Department of Physics, College of Science and Technology; Ph.D., Rutgers University.

Zbigniew Dziembowski, Associate Professor, Department of Physics, College of Science and Technology; Ph.D., Warsaw University.

Nina Edelman, Assistant Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; M.A., University of Pennsylvania.

Andrew Eisenberg, Assistant Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; Ph.D., Tufts University.

Khaled M. Elokely, Assistant Professor (Research), Department of Chemistry, College of Science and Technology; Ph.D., University of Mississippi.

Jennifer Emtage, Assistant Professor (Teaching/Instructional), Department of Biology, College of Science and Technology; Ph.D., Johns Hopkins University.

Ivan N. Erdelyi, Professor Emeritus, Department of Mathematics, College of Science and Technology; Ph.D., Victor Babes University of Cluj, Roumania.

Ananias A. Escalante, Professor, Department of Biology, College of Science and Technology; Ph.D., University of California Irvine.

Sarah R. Evangelista, Associate Professor Emerita, Department of Mathematics, College of Science and Technology; M.A., Temple University.

Catherine Fair, Assistant Professor, Department of Chemistry, College of Science and Technology; M.D., University of Alabama at Birmingham.

Mark A. Feitelson, Professor, Department of Biology, College of Science and Technology; Ph.D., University of California Los Angeles.

Joseph Feneuil, Assistant Professor (Research), Department of Mathematics, College of Science and Technology; Ph.D., Emmanuel Russ at Université.

Aleksey Filin, Assistant Professor (Research), Department of Chemistry, College of Science and Technology; Ph.D., Institute for Solid State Physics.

John Fiore, Assistant Professor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; M.S., University of Pennsylvania.

Giacomo Fiorin, Associate Professor (Research), Department of Mathematics, College of Science and Technology; Ph.D., International School for Advanced Studies, Trieste.

Leigh Flagg, Assistant Professor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; Ph.D., University of Tulsa.

Steven Fleming, Professor (Teaching/Instructional), Department of Chemistry, College of Science and Technology; Ph.D., University of Wisconsin.

Natalie P. Flynn, Assistant Professor (Teaching/Instructional), Department of Earth and Environmental Science, College of Science and Technology; M.A., Temple University.

Dieter Forster, Professor, Department of Physics, College of Science and Technology; Ph.D., Harvard University.

Jerrold Franklin, Professor Emeritus, Department of Physics, College of Science and Technology; Ph.D., University of Illinois.

Seema Freer, Associate Professor (Practice), Department of Biology, College of Science and Technology; Ph.D., Thomas Jefferson University.

Amy Freestone, Associate Professor, Department of Biology, College of Science and Technology; Ph.D., University of California Davis.

Frank L. Friedman, Professor Emeritus, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., Purdue University.

David Futer, Associate Professor, Department of Mathematics, College of Science and Technology; Ph.D., Stanford University.

Janos Galambos, Professor Emeritus, Department of Mathematics, College of Science and Technology; Ph.D., Eotvos University, Budapest, Hungary.

Leonard J. Garrett, Professor Emeritus, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., University of Pennsylvania.

Edward T. Gawlinski, Associate Professor, Department of Physics, College of Science and Technology; Ph.D., Boston University.

Eleonora Gianti, Assistant Professor (Research), Department of Chemistry, College of Science and Technology; Ph.D., University of the Sciences.

Jayakumar G. Gilbert, Associate Professor (Teaching/Instructional), Department of Chemistry, College of Science and Technology; Ph.D., Drexel University.

Antonio Giordano, Professor, Department of Biology, College of Science and Technology; Ph.D., University of Trieste.
Mary Grace Giraldo, Assistant Professor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; Ph.D., Syracuse University.

Amanda Glazier, Assistant Professor (Research), Department of Biology, College of Science and Technology; Ph.D., University of Massachusetts.

Antonio M. Goncalves, Professor Emeritus, Department of Chemistry, College of Science and Technology; Ph.D., University of Chicago.

Harry B. Gottlieb, Instructor (Teaching/Instructional), Department of Chemistry, College of Science and Technology; M.S., Villanova University.

Yury Grabovsky, Professor, Department of Mathematics, College of Science and Technology; Ph.D., New York University.

David E. Grandstaff, Professor, Department of Earth and Environmental Science, College of Science and Technology; Ph.D., Princeton University.

Jean-David Grattepanche, Assistant Professor (Research), Department of Biology, College of Science and Technology; Ph.D., University of Littoral.

Alexander Gray, Assistant Professor, Department of Physics, College of Science and Technology; Ph.D., Lawrence Berkeley National Laboratory and University of California, Davis.

Edward R. Gruberg, Professor Emeritus, Department of Biology, College of Science and Technology; Ph.D., University of Illinois.

Qingguang Guan, Assistant Professor (Research), Department of Mathematics, College of Science and Technology; Ph.D., Florida State University.

Qingze Guan, Assistant Professor (Research), Department of Physics, College of Science and Technology; Ph.D., Washington State University.

Yuhong Guo, Associate Professor, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., University of Alberta.

Cristian E. Gutiérrez, Professor, Department of Mathematics, College of Science and Technology; Ph.D., University of Buenos Aires.

Raymond Habas, Professor, Department of Biology, College of Science and Technology; Ph.D., State University of New York Stony Brook.

Seymour Haber, Professor Emeritus, Department of Mathematics, College of Science and Technology; Ph.D., Massachusetts Institute of Technology.

Peter Hagis Jr., Professor Emeritus, Department of Mathematics, College of Science and Technology; Ph.D., University of Pennsylvania.

Allan Haldane, Associate Professor (Research), Department of Physics, College of Science and Technology; Ph.D., Rutgers University.

Naheed Hamid, Assistant Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; M.S., Kean University.

Jun Han, Assistant Professor (Research), Department of Chemistry, College of Science and Technology; Ph.D., Texas A and M University.

Thomas E. Hanson, Professor Emeritus, Department of Biology, College of Science and Technology; Ph.D., Michigan State University.

William R. Harvey, Professor Emeritus, Department of Biology, College of Science and Technology; Ph.D., Harvard University.

Xubin He, Professor, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., University of Rhode Island.

Stephen Blair Hedges, Professor, Department of Biology, College of Science and Technology; Ph.D., University of Maryland.

Meredith M. Hegg, Assistant Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; Ph.D., Temple University.

Matthew Richard Helmus, Assistant Professor, Department of Biology, College of Science and Technology; Ph.D., University of Wisconsin-Madison.

Emanuel B. Hey, Professor, Department of Biology, College of Science and Technology; Ph.D., State University of New York Stony Brook.

S. Robert Hilfer, Professor Emeritus, Department of Biology, College of Science and Technology; Ph.D., Yale University.

David R. Hill, Professor, Department of Mathematics, College of Science and Technology; Ph.D., University of Pittsburgh.

David T. Hill, Assistant Professor Emeritus, Department of Chemistry, College of Science and Technology; Ph.D., Temple University.

Ralph Hillman, Professor Emeritus, Department of Biology, College of Science and Technology; Ph.D., Yale University.

S. Tonia Hsieh, Associate Professor, Department of Biology, College of Science and Technology; Ph.D., Harvard University.

Anthony Hughes, Associate Professor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; Ph.D., University of Illinois.

Peter Huwe, Assistant Professor (Teaching/Instructional), Department of Biology, College of Science and Technology; Ph.D., University of Pennsylvania.
Maria Iavarone, Professor, Department of Physics, College of Science and Technology; Ph.D., University of Napoli Federico II.

Mihaela Ignatova, Assistant Professor, Department of Mathematics, College of Science and Technology; Ph.D., University of Southern California.

Giorgio P. Ingargiola, Associate Professor Emeritus, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., University of Pennsylvania.

Robert L. Intemann, Professor Emeritus, Department of Physics, College of Science and Technology; Ph.D., Stevens Institute of Technology.

Indrajit Jana, Assistant Professor (Research), Department of Mathematics, College of Science and Technology; Ph.D., University of California Davis.

Susan A. Jansen-Varnum, Professor, Department of Chemistry, College of Science and Technology; Ph.D., University of Missouri-St. Louis.

Serge Jasmin, Assistant Professor (Teaching/Instructional), Department of Chemistry, College of Science and Technology; B.S., Temple University.

Bo Ji, Associate Professor, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., The Ohio State University.

Donald Jones, Assistant Professor (Research), Department of Physics, College of Science and Technology; Ph.D., University of Virginia.

Kelli Shepard El Jones, Instructor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; M.S., Temple University.

Joseph Jupin, Instructor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; M.S., Temple University.

Krishna Kant, Professor, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., University of Texas at Dallas.

James S. Karra, Associate Professor Emeritus, Department of Physics, College of Science and Technology; Ph.D., Rutgers University.

Gurpreet Kaur, Assistant Professor (Teaching/Instructional), Department of Biology, College of Science and Technology; Ph.D., Temple University.

Jaskiran Kaur, Assistant Professor (Teaching/Instructional), Department of Chemistry, College of Science and Technology; M.S., University of Pennsylvania.

Roy A. Keyer, Associate Professor (Teaching/Instructional), Department of Chemistry, College of Science and Technology; Ph.D., University of California Irvine.

Bojeong Kim, Assistant Professor, Department of Earth and Environmental Science, College of Science and Technology; Ph.D., Cornell University.

Isaac Klapper, Professor, Department of Mathematics, College of Science and Technology; Ph.D., New York University Courant Institute of Mathematical Sciences.

Michael L. Klein, Professor, Department of Chemistry, College of Science and Technology; Ph.D., University of Bristol.

Elliot B. Koffman, Professor Emeritus, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., Case Western Reserve University.

Axel Kohlmeyer, Professor (Research), Department of Mathematics, College of Science and Technology; Ph.D., Universität Ulm.

James F. Korsh, Professor, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., University of Pennsylvania.

Svetlana Kotochigova, Professor (Research), Department of Physics, College of Science and Technology; Ph.D., St. Petersburg State University.

Grant R. Krow, Professor Emeritus, Department of Chemistry, College of Science and Technology; Ph.D., Princeton University.

Rob J. Kulathinal, Assistant Professor, Department of Biology, College of Science and Technology; Ph.D., McMaster University.

Sudhir Kumar, Professor, Department of Biology, College of Science and Technology; Ph.D., The Pennsylvania State University.

Eugene Kwatny, Professor, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., Drexel University.

Sally Kyvernitis, Instructor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; M.S., Indiana University.

Mortimer M. Labes, Professor Emeritus, Department of Chemistry, College of Science and Technology; Ph.D., Massachusetts Institute of Technology.

Paul S. LaFollette Jr., Associate Professor, Department of Computer and Information Sciences, College of Science and Technology; M.D., Temple University.

Basu R. Lamicchane, Assistant Professor (Research), Department of Physics, College of Science and Technology; Ph.D., University of Missouri.
Sigurd Y. Larsen, Professor Emeritus, Department of Physics, College of Science and Technology; Ph.D., Columbia University.

Longin Jan Latecki, Professor, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., University of Hamburg.

Michael Lawlor, Assistant Professor (Teaching/Instructional), Department of Chemistry, College of Science and Technology; Ph.D., Massachusetts Institute of Technology.

David Letkovitz, Professor Emeritus, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., University of Pennsylvania.

Dominic Letarte, Assistant Professor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; Ph.D., École Polytechnique Montreal.

Edward S. Letzter, Professor, Department of Mathematics, College of Science and Technology; Ph.D., University of Washington.

Robert J. Levis, Professor, Department of Chemistry, College of Science and Technology; Ph.D., The Pennsylvania State University.

Ronald M. Levy, Professor, Department of Chemistry, College of Science and Technology; Ph.D., Harvard University.

Ming Li, Assistant Professor (Research), Department of Physics, College of Science and Technology; Ph.D., University of Toledo.

Xiuqi Li, Associate Professor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; Ph.D., Florida Atlantic University.

David A. Liberles, Associate Professor, Department of Biology, College of Science and Technology; Ph.D., California Institute of Technology.

Chyanlong Lin, Associate Professor, Department of Physics, College of Science and Technology; Ph.D., Temple University.

Seymour Lipschutz, Professor Emeritus, Department of Mathematics, College of Science and Technology; Ph.D., New York University.

Maria E. Lorenz, Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; Ph.D., University of Southern California.

Martin W. Lorenz, Professor, Department of Mathematics, College of Science and Technology; Ph.D., Universität Giessen.

Sheryl L. Love, Associate Professor (Teaching/Instructional), Department of Biology, College of Science and Technology; Ph.D., Temple University.

Mia Luehrmann, Associate Professor, Department of Physics, College of Science and Technology; Ph.D., University of Illinois at Urbana-Champaign.

James J. Lunden, Assistant Professor (Research), Department of Biology, College of Science and Technology; Ph.D., Temple University.

A. Marjatta Lyra, Professor, Department of Physics, College of Science and Technology; Ph.D., University of Stockholm.

Marcella Macaluso, Associate Professor (Research), Department of Biology, College of Science and Technology; Ph.D., University of Palermo.

Carol M. Manhart, Assistant Professor, Department of Chemistry, College of Science and Technology; Ph.D., University of Colorado Boulder.

C. Jeffrey Martoff, Professor, Department of Physics, College of Science and Technology; Ph.D., University of California Berkeley.

Spiridoula Matsika, Professor, Department of Chemistry, College of Science and Technology; Ph.D., The Ohio State University.

Kathleen E. McKinley, Instructor (Practice), Department of Mathematics, College of Science and Technology; M.S., Saint Joseph's University.

Rose Marie McGinnis, Assistant Professor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; M.B.A., Temple University.

Michelle Hedwig McGowan, Associate Professor (Teaching/Instructional), Department of Biology, College of Science and Technology; Ph.D., Rutgers University.

George Mehler, Assistant Professor (Practice), Department of Mathematics, College of Science and Technology; Ph.D., Temple University.

Gerardo A. Mendoza, Professor, Department of Mathematics, College of Science and Technology; Ph.D., Massachusetts Institute of Technology.

Bernard Meth, Professor Emeritus, Department of Mathematics, College of Science and Technology; Ph.D., University of Pittsburgh.

Andreas Metz, Associate Professor, Department of Physics, College of Science and Technology; Ph.D., Institut Für Kernphysik Universität Mainz.

Zein-Eddine Meziani, Professor, Department of Physics, College of Science and Technology; Ph.D., Université de Paris XI.
Ted W. Mihalisin, Professor Emeritus, Department of Mathematics, College of Science and Technology; Ph.D., University of Rochester.

Richard L. Miller, Professor Emeritus, Department of Biology, College of Science and Technology; Ph.D., University of Chicago.

Olena Mishchuk, Assistant Professor (Teaching/Instructional), Department of Biology, College of Science and Technology; Ph.D., Yuriy Fedkovych Chernivtsi National University.

Irina Mitrea, Professor, Department of Mathematics, College of Science and Technology; Ph.D., University of Minnesota.

Sayaka Miura, Assistant Professor (Research), Department of Biology, College of Science and Technology; Ph.D., The Pennsylvania State University.

Anna Moore, Assistant Professor, Department of Biology, College of Science and Technology; Ph.D., UCONN Health Center.

Karl Morris, Assistant Professor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; Ph.D., Florida International University.

Michael L. Mote, Professor Emeritus, Department of Biology, College of Science and Technology; Ph.D., University of California Los Angeles.

Atsuhiro Muto, Assistant Professor, Department of Earth and Environmental Science, College of Science and Technology; Ph.D., University of Colorado.

George H. Myer, Professor Emeritus, Department of Earth and Environmental Science, College of Science and Technology; Ph.D., Yale University.

James Napolitano, Professor, Department of Physics, College of Science and Technology; Ph.D., Stanford University.

William D. Nathan, Professor Emeritus, Department of Mathematics, College of Science and Technology; Ph.D., Syracuse University.

Stuart E. Neff, Professor Emeritus, Department of Biology, College of Science and Technology; Ph.D., Cornell University.

Frank E. Nelson, Assistant Professor (Teaching/Instructional), Department of Biology, College of Science and Technology; Ph.D., Oregon State University.

Donald E. Neville, Professor Emeritus, Department of Physics, College of Science and Technology; Ph.D., University of Chicago.

Matthew Newby, Assistant Professor (Teaching/Instructional), Department of Physics, College of Science and Technology; Ph.D., Rensselaer Polytechnic Institute.

Bach Nguyen, Assistant Professor (Research), Department of Mathematics, College of Science and Technology; Ph.D., Louisiana State University.

Allen W. Nicholson, Professor, Department of Biology, College of Science and Technology; Ph.D., University of Pennsylvania.

Rhonda H. Nicholson, Associate Professor (Teaching/Instructional), Department of Biology, College of Science and Technology; Ph.D., Wayne State University.

John Noel, Associate Professor (Teaching/Instructional), Department of Physics, College of Science and Technology; Ph.D., Texas A and M University.

John T. Nosek, Professor Emeritus, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., Temple University.

Jonathan Nyquist, Professor, Department of Earth and Environmental Science, College of Science and Technology; Ph.D., University of Wisconsin.

Zoran Obradovic, Professor, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., The Pennsylvania State University.

Johanan Odhner, Assistant Professor (Research), Department of Chemistry, College of Science and Technology; Ph.D., Temple University.

Elmer L. Offenbacher, Professor Emeritus, Department of Physics, College of Science and Technology; Ph.D., University of Pennsylvania.

Uloma Opara-Osuoha, Assistant Professor (Teaching/Instructional), Department of Biology, College of Science and Technology; Ph.D., University of Ibadan.

Michael Opferman, Assistant Professor (Teaching/Instructional), Department of Physics, College of Science and Technology; Ph.D., University of Pittsburgh.

Charles Osborne, Assistant Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; Ph.D., Temple University.

Maria A. Pacheco, Assistant Professor (Research), Department of Biology, College of Science and Technology; Ph.D., Universidad Simón Bolívar.

Amitangshu Pal, Assistant Professor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; Ph.D., University of North Carolina at Charlotte.
Karen B. Palter, Associate Professor, Department of Biology, College of Science and Technology; Ph.D., Princeton University.

Ellen Panofsky, Associate Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; Ph.D., Lehigh University.

Michael Paolone, Assistant Professor (Research), Department of Physics, College of Science and Technology; Ph.D., University of South Carolina Columbia.

Christopher Pascucci, Instructor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; M.S., University of Pennsylvania.

Eli A. Passow, Professor Emeritus, Department of Mathematics, College of Science and Technology; Ph.D., Yeshiva University.

Mohit Patel, Assistant Professor, Department of Chemistry, College of Science and Technology; Ph.D., Temple University.

Susan Patterson, Professor, Department of Biology, College of Science and Technology; Ph.D., University of Washington.

John A. Paulos, Professor, Department of Mathematics, College of Science and Technology; Ph.D., University of Wisconsin.

Jamie Payton, Associate Professor, Department of Computer and Information Sciences, College of Science and Technology; D.Sc., Washington University.

Haowei Peng, Assistant Professor (Research), Department of Physics, College of Science and Technology; Ph.D., Chinese Academy of Sciences.

Simona Percec, Professor (Research), Department of Chemistry, College of Science and Technology; Ph.D., Institute of Macromolecular Chemistry.

John P. Perdew, Professor, Department of Physics, College of Science and Technology; Ph.D., Cornell University.

Isaak Pesenson, Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; Ph.D., Academy of Science of the ASSR.

Hala O. Pflugfelder, Professor Emerita, Department of Mathematics, College of Science and Technology; Ph.D., Albert-Ludwigs-Universität Freiburg im Breisgau.

Claudia Pine-Simon, Instructor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; M.S., University of Pennsylvania.

Arthur T. Poe, Professor Emeritus, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., University of Illinois at Urbana-Champaign.

Athanasia Polychronopoulou, Assistant Professor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; Ph.D., Temple University.

Sergei L. Kosakovsky Pond, Professor, Department of Biology, College of Science and Technology; Ph.D., University of Arizona.

Edwin F. Posada, Assistant Professor, Department of Chemistry, College of Science and Technology; Ph.D., Temple University.

Matthew Posik, Assistant Professor (Research), Department of Physics, College of Science and Technology; Ph.D., Temple University.

Andrew Price, Associate Professor (Teaching/Instructional), Department of Chemistry, College of Science and Technology; Ph.D., Purdue University.

Sean Gillian Queisser, Associate Professor, Department of Mathematics, College of Science and Technology; Ph.D., Ruprecht-Karls University of Heidelberg.

Daniele Ramella, Assistant Professor (Teaching/Instructional), Department of Chemistry, College of Science and Technology; Ph.D., Boston University.

Harry P. Rappaport, Professor Emeritus, Department of Biology, College of Science and Technology; Ph.D., Yale University.

Robert Rarig, Assistant Professor (Teaching/Instructional), Department of Chemistry, College of Science and Technology; Ph.D., University of Michigan.

Sujith Ravi, Assistant Professor, Department of Earth and Environmental Science, College of Science and Technology; Ph.D., University of Virginia.

Louis Raymon, Professor Emeritus, Department of Mathematics, College of Science and Technology; Ph.D., Yeshiva University.

Daniel Reich, Professor Emeritus, Department of Mathematics, College of Science and Technology; Ph.D., Princeton University.

Brian Rider, Professor, Department of Mathematics, College of Science and Technology; Ph.D., New York University Courant Institute of Mathematical Sciences.

Peter S. Riseborough, Professor, Department of Physics, College of Science and Technology; Ph.D., Imperial College London.
Igor Rivin, Professor, Department of Mathematics, College of Science and Technology; Ph.D., Princeton University.

Shepherd K. Roberts, Professor Emeritus, Department of Biology, College of Science and Technology; Ph.D., Princeton University.

Dmitri Romanov, Professor (Research), Department of Physics, College of Science and Technology; Ph.D., Novosibirsk Institute of Semiconductor Physics, USSR Academy of Sciences.

Andrew B. Rosen, Associate Professor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; Ph.D., Georgia State University.

Kenneth Ruff, Assistant Professor, Department of Mathematics, College of Science and Technology; D.Ed., Temple University.

Prakash C. Rushi, Instructor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; M.Ed., Temple University.

Dumitru D. Rusu, Associate Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; Ph.D., University of Guelph.

Adrienn Ruzsinszky Perdew, Associate Professor, Department of Physics, College of Science and Technology; Ph.D., Budapest University of Technology and Economics.

Douglas T. Saladik, Associate Professor (Teaching/Instructional), Department of Biology, College of Science and Technology; Ph.D., Temple University.

Robert E. Salomon, Professor Emeritus, Department of Chemistry, College of Science and Technology; Ph.D., University of Oregon.

Robert W. Sanders, Professor, Department of Biology, College of Science and Technology; Ph.D., University of Georgia.

Biswajit Santra, Assistant Professor (Research), Department of Physics, College of Science and Technology; Ph.D., Fritz-Haber-Institute of the Max-Planck-Society.

Christian E. Schafmeister, Professor, Department of Chemistry, College of Science and Technology; Ph.D., University of California San Francisco.

John J. Schiller, Associate Professor, Department of Mathematics, College of Science and Technology; Ph.D., University of Pennsylvania.

William F. Schmitt, Professor Emeritus, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., University of Pennsylvania.

Joshua G. Schraiber, Assistant Professor, Department of Biology, College of Science and Technology; Ph.D., University of California Berkeley.

Robert L. Searls, Professor Emeritus, Department of Biology, College of Science and Technology; Ph.D., University of California Berkeley.

Benjamin Seibold, Associate Professor, Department of Mathematics, College of Science and Technology; Ph.D., University of Kaiserslautern.

Cinzia Sevignani, Assistant Professor (Teaching/Instructional), Department of Biology, College of Science and Technology; Ph.D., University of Modena.

Brent Sewall, Assistant Professor, Department of Biology, College of Science and Technology; Ph.D., University of California Davis.

Joel B. Sheffield, Professor, Department of Biology, College of Science and Technology; Ph.D., University of Chicago.

Xinghua Mindy Shi, Associate Professor, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., University of Chicago.

Yuan Justin Shi, Associate Professor, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., University of Pennsylvania.

Scott M. Siefurth, Professor, Department of Chemistry, College of Science and Technology; Ph.D., Harvard University.

Jeremy Sivek, Assistant Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; Ph.D., University of Pittsburgh.

Jonathan Smith, Associate Professor (Teaching/Instructional), Department of Chemistry, College of Science and Technology; Ph.D., Wesleyan University.

Gregory S. Smutzer, Associate Professor (Teaching/Instructional), Department of Biology, College of Science and Technology; Ph.D., State University of New York at Buffalo.

Richard Souvenir, Associate Professor, Department of Computer and Information Sciences, College of Science and Technology; D.Sc., Washington University.

Daniel D. Spaeth, Associate Professor (Teaching/Instructional), Department of Biology, College of Science and Technology; Ph.D., Temple University.
Francis C. Spano, Professor, Department of Chemistry, College of Science and Technology; Ph.D., Princeton University.

Nikolaos Sparveris, Assistant Professor, Department of Physics, College of Science and Technology; Ph.D., University of Athens.

Rachel Spigler, Assistant Professor, Department of Biology, College of Science and Technology; Ph.D., University of Georgia.

Ranganatha Srinivasan, Professor, Department of Mathematics, College of Science and Technology; Ph.D., Wayne State University.

Robert J. Stanley, Professor, Department of Chemistry, College of Science and Technology; Ph.D., The Pennsylvania State University.

Leon Steinberg, Professor Emeritus, Department of Mathematics, College of Science and Technology; Ph.D., University of Pennsylvania.

Alex Stopar, Assistant Professor (Research), Department of Biology, College of Science and Technology; Ph.D., University of Trieste.

Matthew Stover, Associate Professor, Department of Mathematics, College of Science and Technology; Ph.D., University of Texas at Austin.

Scott A. Stringfellow, Assistant Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; B.S., Lafayette University.

Daniel R. Strongin, Professor, Department of Chemistry, College of Science and Technology; Ph.D., University of California Berkeley.

Ang Sun, Professor (Research), Department of Biology, College of Science and Technology; Ph.D., Sbarro Institute for Cancer Research and Molecular Medicine.

Yugang Sun, Associate Professor, Department of Chemistry, College of Science and Technology; Ph.D., University of Science and Technology of China.

James Sundstrom, Assistant Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; Ph.D., University of Pennsylvania.

Bernd Surrow, Professor, Department of Physics, College of Science and Technology; Ph.D., University of Hamburg.

Daniel B. Szyld, Professor, Department of Mathematics, College of Science and Technology; Ph.D., New York University.

Raza A. Tahir-Kheli, Professor Emeritus, Department of Physics, College of Science and Technology; Ph.D., Oxford University.

Stephen T. Takats, Professor Emeritus, Department of Biology, College of Science and Technology; Ph.D., University of Wisconsin-Madison.

Chiu Chiang Tan, Associate Professor, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., College of William and Mary.

Hong Tang, Assistant Professor (Research), Department of Physics, College of Science and Technology; Ph.D., Northwestern Polytechnical University.

Jianmin Tao, Assistant Professor (Research), Department of Physics, College of Science and Technology; Ph.D., Tulane University.

Rongjia Tao, Professor, Department of Physics, College of Science and Technology; Ph.D., Columbia University.

Samuel J. Taylor, Assistant Professor, Department of Mathematics, College of Science and Technology; Ph.D., University of Texas at Austin.

Dennis O. Terry Jr., Associate Professor, Department of Earth and Environmental Science, College of Science and Technology; Ph.D., University of Nebraska.

Maria C. Tettamanzi, Assistant Professor (Teaching/Instructional), Department of Chemistry, College of Science and Technology; Ph.D., University of Buenos Aires.

Allan E. Thomas, Associate Professor (Teaching/Instructional), Department of Chemistry, College of Science and Technology; Ph.D., Temple University.

Jesse Thomburg, Assistant Professor (Teaching/Instructional), Department of Earth and Environmental Science, College of Science and Technology; M.S., Temple University.

H. Frank Thornton, Associate Professor Emeritus, Department of Mathematics, College of Science and Technology; M.A., Princeton University.

Giordano Tierra Chica, Assistant Professor (Research), Department of Mathematics, College of Science and Technology; Ph.D., Universidad de Sevilla, Spain.

Laura Toran, Professor, Department of Earth and Environmental Science, College of Science and Technology; Ph.D., University of Wisconsin.

Darius H. Torchinsky, Assistant Professor, Department of Physics, College of Science and Technology; Ph.D., Massachusetts Institute of Technology.
Georgia Triantafillou, Professor, Department of Mathematics, College of Science and Technology; Ph.D., University of Bonn, Germany.

Tsvetelin D. Tsankov, Associate Professor (Teaching/Instructional), Department of Physics, College of Science and Technology; Ph.D., Drexel University.

Allison Tumarkin-Deratzian, Associate Professor (Teaching/Instructional), Department of Earth and Environmental Science, College of Science and Technology; Ph.D., University of Pennsylvania.

Gene C. Ulmer, Professor Emeritus, Department of Earth and Environmental Science, College of Science and Technology; Ph.D., The Pennsylvania State University.

Shivaiah Vaddypally, Assistant Professor (Research), Department of Chemistry, College of Science and Technology; Ph.D., Hyderabad University.

Ann M. Valentine, Professor, Department of Chemistry, College of Science and Technology; Ph.D., Massachusetts Institute of Technology.

Francisco Villarroya, Assistant Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; Ph.D., University of Valencia.

Elena Ya Vishik, Assistant Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; Ph.D., Moscow Pedagogical Institute.

Vladimir Visnjic, Assistant Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; Ph.D., University of Bonn, Germany.

Evelyn Vleck, Assistant Professor (Teaching/Instructional), Department of Biology, College of Science and Technology; M.A., William Paterson College.

Vincent Voelz, Associate Professor, Department of Chemistry, College of Science and Technology; Ph.D., University of California San Francisco.

Slobodan Vucetic, Professor, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., Washington State University.

Doreen Wald, Instructor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; M.Ed., Temple University.

Anduo Wang, Assistant Professor, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., University of Pennsylvania.

Charles Wang, Associate Professor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; Ph.D., Wayne State University.

Pei Wang, Associate Professor (Teaching/Instructional), Department of Computer and Information Sciences, College of Science and Technology; Ph.D., Indiana University.

Rongsheng Wang, Associate Professor, Department of Chemistry, College of Science and Technology; Ph.D., Washington University in St. Louis.

Xingting Wang, Assistant Professor (Research), Department of Mathematics, College of Science and Technology; Ph.D., University of Washington, Seattle.

Yan Wang, Assistant Professor, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., Stevens Institute of Technology.

Yu Wang, Professor, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., Illinois Institute of Technology.

Richard B. Waring, Associate Professor, Department of Biology, College of Science and Technology; Ph.D., Essex University.

Stephen S. Washburne, Associate Professor Emeritus, Department of Chemistry, College of Science and Technology; Ph.D., Massachusetts Institute of Technology.

Patrick Waters, Assistant Professor (Research), Department of Mathematics, College of Science and Technology; Ph.D., University of Arizona.

Bradford B. Wayland, Professor, Department of Chemistry, College of Science and Technology; Ph.D., University of Illinois.

Robert B. Weinberg, Professor Emeritus, Department of Physics, College of Science and Technology; Ph.D., Columbia University.

Richard C. Weisenberg, Professor Emeritus, Department of Biology, College of Science and Technology; Ph.D., University of Chicago.

Sarah Elizabeth Wengryniuk, Assistant Professor, Department of Chemistry, College of Science and Technology; Ph.D., Duke University.
Vladimira V. Wilent, Associate Professor (Teaching/Instructional), Department of Chemistry, College of Science and Technology; Ph.D., University of Pennsylvania.

Michael Wilhelm, Assistant Professor (Research), Department of Chemistry, College of Science and Technology; Ph.D., University of Pennsylvania.

Katherine A. Willets, Associate Professor, Department of Chemistry, College of Science and Technology; Ph.D., Stanford University.

John R. Williams, Professor Emeritus, Department of Chemistry, College of Science and Technology; Ph.D., University of Western Australia.

Jie Wu, Professor, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., Florida Atlantic University.

Wei Wu, Assistant Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; Ph.D., University of Leuven.

Wixan Wu, Associate Professor, Department of Physics, College of Science and Technology; Ph.D., Rutgers University.

Stephanie L. Wunder, Professor, Department of Chemistry, College of Science and Technology; Ph.D., University of Massachusetts.

Xiaoxing Xi, Professor, Department of Physics, College of Science and Technology; Ph.D., Peking University and Institute of Physics.

Xiaojun Xu, Assistant Professor (Research), Department of Physics, College of Science and Technology; Ph.D., Chinese Academy of Sciences.

Qimin Yan, Assistant Professor, Department of Physics, College of Science and Technology; Ph.D., University of California Santa Barbara.

Wei-Shih Yang, Professor, Department of Mathematics, College of Science and Technology; Ph.D., Cornell University.

Weidong Yang, Professor, Department of Biology, College of Science and Technology; Ph.D., Fudan University.

Atilla Yilmaz, Associate Professor, Department of Mathematics, College of Science and Technology; Ph.D., New York University.

Jie Yu, Assistant Professor (Research), Department of Physics, College of Science and Technology; Ph.D., University of California Santa Barbara.

Tan Yuen, Associate Professor, Department of Physics, College of Science and Technology; Ph.D., Temple University.

Michael J. Zdilla, Associate Professor, Department of Chemistry, College of Science and Technology; Ph.D., Princeton University.

Bailin Zhang, Assistant Professor (Research), Department of Biology, College of Science and Technology; Ph.D., Dalian Institute of Chemical Physics, Chinese Academy of Science.

Bin Zhang, Associate Professor (Research), Department of Physics, College of Science and Technology; Ph.D., University of Pittsburgh.

Kai Zhang, Associate Professor, Department of Computer and Information Sciences, College of Science and Technology; Ph.D., Hong Kong University of Science and Technology.

Kai Zhao, Assistant Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; Ph.D., Temple University.

Matthew Zumbrum, Assistant Professor (Teaching/Instructional), Department of Mathematics, College of Science and Technology; Ph.D., University of Delaware.