

## STEM Workers in Demand – But Can that Demand Be Filled?

In 2012, the number of jobs in STEM (Science, Technology, Engineering, and Mathematics) fields in the U.S. exceeded 7.4 million. By 2018, it's estimated that there will be at least 8,654,000 STEM-related jobs in this country, 477,000 of them in New York State.<sup>1</sup>

But there are doubts about how many people will be ready to fill these positions. At present, there are 1.7 STEM jobs for every one person looking for work in New York State, yet out of all the bachelor's degrees

granted in the state, only 23 percent are awarded to students pursuing STEM and related degrees.<sup>2</sup>

A report by My College Options, a college planning program run by the nonprofit National Research Center for College and University Admissions (NRCCUA), which annually surveys 5.2 million students in 22,000 public and private high schools, noted in 2012 that only 21 percent of 12th grade students declare an interest in a STEM career and that high school seniors are about 10 percent less likely than high school freshmen to indicate an interest in a STEM-related field. A new report by ACT, Inc., the nonprofit company that administers the ACT college readiness standardized tests, also reveals some troubling nationwide trends. Although almost half (48.3 percent) of students in the class of 2013 who were included in this study (1.8 million high school seniors) expressed an interest in STEM majors and occupations, only 16.3 percent had both an “expressed” and a “measured” interest in STEM, meaning that they were not only interested in these fields, but also had a measurable preference for tasks related to these fields. More than half of the students in this study had no interest in STEM fields at all.

All STEM fields – and increasingly a number of other fields – require some knowledge of mathematics, so fostering an attitude among students that they can learn and master math is crucial. On international tests, American 4th grade students, as a group, scored higher on average than those in 42 other countries while results for 8th grade American students were less encouraging, with 8th grade students scoring higher on average than students in 32 countries. And the trend continued with high school students significantly



*Goodwell Nzou '15, a chemistry major at Nazareth College, is doing research to improve a drug that enables doctors to test more easily for HIV.*

underperforming other countries' students. Something happens between middle school and high school to divert young people from STEM disciplines.

Increasing the number of students who wish to pursue study in science, technology, engineering and mathematics is critically important. Even those who don't plan on a STEM-related degree and occupation will need some knowledge of STEM subjects in order to better understand the increasingly important role of science and technology in our lives and make use of these valuable intellectual tools.

Sources: “Interest vs. Intent: The New STEM Gap?”, [www.usnews.com/news/stem-solutions/articles/2014/02/05/interest-vs-intent-the-new-stem-gap](http://www.usnews.com/news/stem-solutions/articles/2014/02/05/interest-vs-intent-the-new-stem-gap); My College Options/STEM Connector, [www.stemconnector.org/sites/default/files/store/STEM-Students-STEM-jobs-Executive-Summary.pdf](http://www.stemconnector.org/sites/default/files/store/STEM-Students-STEM-jobs-Executive-Summary.pdf); The Condition of Stem 2013, [www.act.org/stemcondition/13/pdf/National-STEM-Report-2013.pdf](http://www.act.org/stemcondition/13/pdf/National-STEM-Report-2013.pdf); “Change the Equation: STEM Vital Signs – New York,” <http://changetheequation.org/sites/default/files/vital-pdfs/NY-CTEq-vital-signs.pdf>; “Mathematics Achievement of Fourth and Eighth Graders in 2011,” [https://nces.ed.gov/TIMSS/results11\\_math11.asp](https://nces.ed.gov/TIMSS/results11_math11.asp); “OECD Education Rankings – 2013 Update,” <http://ourtimes.wordpress.com/2008/04/10/oecd-education-rankings/>

<sup>1</sup> Anthony Carnevale, Nicole Smith, and Jeff Strohl, *Help Wanted: Projections of Jobs and Education Requirements Through 2018*, Georgetown University Center on Education and the Workforce, June 2010. If self-employed people in STEM fields are included, the number of jobs in the U.S. increases to 14.9 million in 2012 and an estimated 15.68 million in 2018.

<sup>2</sup> It should be noted that 58 percent of bachelor's degrees earned in STEM fields in New York State are awarded by private, independent nonprofit colleges and universities.



*Albany College of Pharmacy and Health Sciences students using the laboratory facilities for research.*

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# QUIZ: Test Your Financial Aid Knowledge

1. Name three of the four major types of financial aid for college.
2. Which form do you have to fill out to apply for college financial aid from the federal government?
3. If I attend a college in another state, should I fill out the FAFSA?
4. Should only families with lower incomes complete financial aid forms?
5. What is the EFC?
6. True or False: All college loans are the same.
7. True or False: If you borrow for college with a federal student loan, you have to pay the loan back right away.
8. What is New York State TAP?
9. What do you apply for first, the college(s) or financial aid?
10. How do I decide which college is right for me?

Check your answers on page 7.

## The College Board Launches a New SAT

Beginning in the spring of 2016, students will be taking a new SAT exam. The redesigned three-hour test will be scored on the former 1,600-point system: 800 points for the reading comprehension part of the exam and 800 points for the mathematics portion. The essay, which will no longer be required, will take an additional 50 minutes and have a separate score. The new SAT will be offered in both paper and digital formats.

The College Board made these changes in response to charges that the old SATs did not adequately assess the skills students should master or accurately predict which students were most likely to succeed in college. Some changes were also designed to minimize the advantages students who can afford tutors, test coaching, and SAT prep classes may have in taking the tests.

Among the most important changes:

- On the optional essay, students will be asked to read and analyze a passage instead of, as they do now, receiving a prompt that asks them to write about their opinions and experiences.
- Vocabulary questions on the new exam will involve words often used in college courses, such as “synthesis” or “empirical,” instead of more obscure words students are unlikely to encounter in college.
- The reading and writing section will include documents from a number of disciplines, including science, social studies, and history. Students will have more questions about text and data that ask them to support their answers.

- Every exam will include a reading passage either from a “founding document” of the U.S., such as the Bill of Rights or the Declaration of Independence, or from an important piece of writing, such as Dr. Martin Luther King’s “I Have a Dream” speech.

- Students will no longer lose points for a wrong answer, meaning that they can maximize their scores by answering as many questions as possible. At present, points are deducted for incorrect answers while questions left unanswered do not count, thus encouraging test-taking strategies and the “gaming” of the SAT.

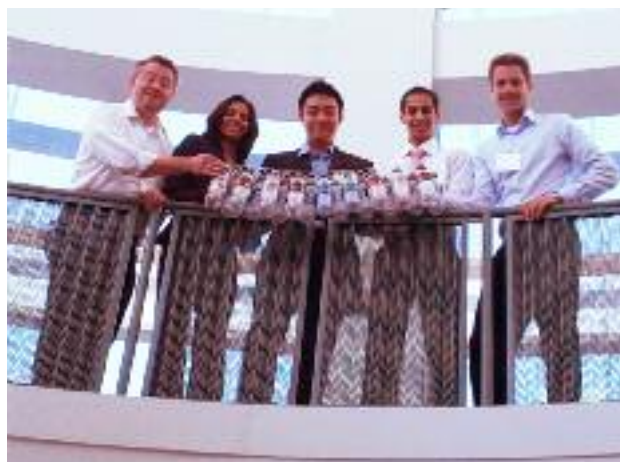
- Low-income students can receive fee waivers for SAT registration fees that also allow them to send four additional SAT score reports to colleges at no cost.

In spring 2016, the College Board, in partnership with Khan Academy, will offer free online test preparation, including practice problems and videos showing how to solve them.

High school grades have been shown to more accurately predict success in college than do standardized test scores. In fact, a growing number of colleges do not require applicants to submit SAT scores.

For more information about the redesigned SAT, visit the College Board website at [www.collegeboard.org](http://www.collegeboard.org). A chart comparing the new SAT to the current SAT is available at [www.collegeboard.org/delivering-opportunity/sat/compare](http://www.collegeboard.org/delivering-opportunity/sat/compare).

Sources: The College Board, [www.collegeboard.org](http://www.collegeboard.org); Balf, T., “The Story Behind the SAT Overhaul,” *The New York Times Magazine*, March 6, 2014, [www.nytimes.com/2014/03/09/magazine/the-story-behind-the-sat-overhaul.html](http://www.nytimes.com/2014/03/09/magazine/the-story-behind-the-sat-overhaul.html); Lewin, T., “A New SAT Aims to Realign with Schoolwork,” *The New York Times*, March 5, 2014, [www.nytimes.com/2014/03/06/education/major-changes-in-sat-announced-by-college-board.html](http://www.nytimes.com/2014/03/06/education/major-changes-in-sat-announced-by-college-board.html); Resnick, B., “Can the New SAT Solve the Test’s Inequality Problem?,” *The Atlantic*, March 6, 2014, [www.theatlantic.com/education/archive/2014/03/can-the-new-sat-solve-the-tests-inequality-problem/284265/](http://www.theatlantic.com/education/archive/2014/03/can-the-new-sat-solve-the-tests-inequality-problem/284265/); Ryan, J., “This Is What the New SAT Will Be Like,” *The Atlantic*, March 5, 2014, [www.theatlantic.com/education/archive/2014/03/this-is-what-the-new-sat-will-be-like/284245/](http://www.theatlantic.com/education/archive/2014/03/this-is-what-the-new-sat-will-be-like/284245/).



*New York Institute of Technology students won the “Energy/Sustainability” category in New York State’s Business Plan Competition regional event and the “People’s Choice Award” in the finals. Their business, Home20, would create a disaster aid package using the NYIT’s patented SodaBIB technology, a method of “upcycling” water to create emergency shelters for people in natural disaster areas.*



# Making the Most of Summer

## Middle School and High School Students on the Path to College

Here are some suggestions for middle and high school students who want to make the most of their summers.

### Middle School Students

- Read – books, newspapers, online magazines – anything. Read!
- Check out summer activities at local community organizations.
- Visit a local college campus.
- Check out enrichment activities at local schools, colleges and community organizations.
- Save money for college.

### HS Freshmen Students

- Read – anything! Keep a journal to practice writing.
- Check out summer enrichment programs.
- Consider volunteering or community service in something related to a possible career interest.
- Visit local college campuses.

- Explore potential careers and find out what their educational requirements are.
- Save money for college.

### HS Sophomores

- Read – anything! Write more.
- Visit colleges near your community.
- Explore careers. Think about what you might like to work at and what to study in college that would prepare you for that occupation.
- Look for a job or internship related to your interests.
- Take a class or find an enrichment activity in a field that interests you.
- Start researching colleges and financial aid.
- Start researching scholarships and grants – money for college that doesn't have to be paid back.

### HS Juniors

- Read! Keep writing.
- Keep researching colleges while narrowing down the list of colleges in which you are interested.
- Start working on your college application essays. Be prepared to rewrite them.
- Ask for letters of recommendation from teachers, counselors, coaches, and/or adult mentors.
- Pursue a class or enrichment activity in a field that interests you.
- Start working on your résumé.
- Visit colleges.
- Save and earn money for college.
- Begin working on college applications.

### HS Seniors

- Yes, continue reading and writing.
- Send final high school transcript to college.
- Coordinate with assigned college roommate(s).
- Read all information sent by the college to you and your family, including any list of what to bring – and what to leave at home.
- Contact any other students from your high school or community who are upperclassmen at your college. They can provide useful insights.

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## STEM Education and Daily Life

The arguments in favor of increasing the number of students pursuing an education in the STEM fields are familiar ones. Scientific and technological innovations have become increasingly important and pervasive. To maintain its position in the world, the U.S. will need even more skilled workers trained in the STEM disciplines; there is a growing need for engineers, physicians, scientific researchers, computer programmers, mathematicians, and other related professions. An increasing number of careers will require at least some education in math and science.

But even those who plan lives and careers that seem largely unrelated to the STEM fields will need to gain some understanding of them. Consider the following benefits of providing a solid STEM education to everyone:

- Most young children are naturally curious, so introducing them to STEM concepts early in life draws on their curiosity and desire to find out how things work as they develop problem-solving skills they'll find useful throughout their lives.

- Mathematical skills aren't only necessary for careers in science and technology; they are also required for basic financial literacy. Figuring out a budget for groceries or how much interest a loan could cost over time also require math.
- In the future, many of our most important decisions as citizens – which new sources of energy to invest in, which new technologies to develop, which medical advances might be helpful or harmful, how to live in and treat our environment – will require some familiarity with the STEM fields. Dealing with important issues such as climate change, genetic modification of organisms, and the role of vaccination in preventing epidemics requires some knowledge of science and its methods.

As astrophysicist Carl Sagan put it, "Science is a way of thinking much more than it is a body of knowledge." It is a way of thinking and investigating that can benefit anyone.

Sources: About.com College Admissions, <http://collegeapps.about.com/od/admissionstimeline/u/College-Preparation.htm#s1>; College Board/Big Future, <https://bigfuture.collegeboard.org/get-started/outside-the-classroom/5-ways-to-stay-on-track-in-summer>; *College Quick Tips*, [www.nycolleges.org/sites/default/files/College%20Q-Tips%202013%20web.pdf](http://www.nycolleges.org/sites/default/files/College%20Q-Tips%202013%20web.pdf).



Wes Testo '12 and two other young alumni received prestigious 2012 National Science Foundation Graduate Research Fellowships for research done at Colgate University and abroad. The award is arguably the most prestigious early-career accomplishment for a young biologist.

# Select STEM Summer Programs at New York State's Independent

Many of New York's independent colleges and universities offer programs to middle and high school students during the summer months. The list below is a small sampling of the opportunities available in summer 2014.

## For High School Students:

### Adelphi University

- **Basic Science Behind the Headlines**  
July 20 – August 2  
<http://precollege.adelphi.edu>
- **Introduction to Game Programming**  
July 20 – August 2  
<http://academics.adelphi.edu/hsp/precollege/gamedesign.php>
- **Exploring the Sciences and Health Professions**  
Session 1: July 21 – 25  
Session 2: July 28 – August 1  
<http://admissions.adelphi.edu/high-school-students/exploring-the-sciences-and-health-professions/>

### Albany College of Pharmacy and Health Sciences

- **Summer Enrichment Program**  
July, August  
[www.acphs.edu/elements](http://www.acphs.edu/elements)

### Barnard College

- **Summer Science Seminars**  
June 22 – June 28  
<http://barnard.edu/summer/programs/science>

### Clarkson University

- **Young Scholars/Food for Thought: Greening Our Schools**  
June 30 – July 6  
[www.clarkson.edu/youngscholars/current\\_project.html](http://www.clarkson.edu/youngscholars/current_project.html)

### College of Saint Rose, The

- **Pre-College Experience – Criminal Justice and Forensics**  
July 14 – 25  
[www.strose.edu/admissions/summeracademyforyouth/precollegesummertimeexperience/criminaljusticeforensics](http://www.strose.edu/admissions/summeracademyforyouth/precollegesummertimeexperience/criminaljusticeforensics)
- **Summer Academy for Youth Science & Technology I:**  
August 4 – 8  
**Science & Technology II:**  
August 11 – 15  
[www.strose.edu/admissions/summeracademyforyouth/summeracademyforyouth](http://www.strose.edu/admissions/summeracademyforyouth/summeracademyforyouth)

### Columbia University

- **Summer Programs for High School Students**  
Session 1: June 23 – July 11  
Session 2: July 15 – August 1  
<http://ce.columbia.edu/high-school/nyc>

### Cornell University

- **Museum of the Earth and Cayuga Nature Center of the Paleontological Research Institution (PRI)**  
Dates vary by program  
[www.museumoftheearth.org/index.php](http://www.museumoftheearth.org/index.php)

- **Summer College Programs**  
June 21 – August 5  
[www.sce.cornell.edu/sc/programs/index.php#](http://www.sce.cornell.edu/sc/programs/index.php#)

### Hartwick College

- **Summer College for High School Students**  
July 5 – 25  
[www.hartwick.edu/admissions/summer-college](http://www.hartwick.edu/admissions/summer-college)

### Hobart and William Smith Colleges

- **Environmental Studies Summer Youth Institute**  
July 13 – July 26, 2014  
<http://essyi.hws.edu>

### Hofstra University

- **Summer Camps**  
Session 1: June 30 – July 11  
Session 2: July 14 – 26  
Session 3: July 28 – August 8  
Session 4: August 11 – 15  
[www.hofstra.edu/Academics/CE/SC/index.html](http://www.hofstra.edu/Academics/CE/SC/index.html)

### Ithaca College

- **Health Sciences: Foundations and Careers**  
June 29 – July 18  
[www.ithaca.edu/summercollege/threeweek/threeweekcourses/?item=5674](http://www.ithaca.edu/summercollege/threeweek/threeweekcourses/?item=5674)

### Long Island University, Post

- **Gaming: Design and Development**  
July 7 – 11  
[www.liu.edu/CWPost/Admissions/HS-Students/SHI/ Game-Design](http://www.liu.edu/CWPost/Admissions/HS-Students/SHI/ Game-Design)
- **CSI: Real Life Investigation**  
August 4 – 8  
[www.liu.edu/CWPost/Admissions/HS-Students/SHI/CSI](http://www.liu.edu/CWPost/Admissions/HS-Students/SHI/CSI)

### Manhattan College

- **Summer Program for Minority and Women High School Students in Engineering & Science**  
June 26 – 28, June 30 – July 2  
July 7 – 10, 14 – 17, 21 and 22  
<http://manhattan.edu/academics/engineering/high-school-engineering-awareness-program>
- **Electronics 101**  
July 1 – 11  
<http://manhattan.edu/academics/science/science-program-high-school-students>

### Marist College

- **Summer Pre-College Program**  
July 13 – 26  
[www.marist.edu/summerinstitutes/](http://www.marist.edu/summerinstitutes/)

### Mercy College

- **Computer Arts & Design Summer Institute**  
July 7 – 11
- **Cybersecurity**  
July 14 – 18
- **Music Industry and Technology**  
September 20 – 21  
[www.mercy.edu/microsites/institutes/institutes](http://www.mercy.edu/microsites/institutes/institutes)

### New School, The/Parsons The New School for Design

- **Pre-College Academy**  
August 4 – 15  
[www.newschool.edu/parsons/pre-college-academy/](http://www.newschool.edu/parsons/pre-college-academy/)

### New York Institute of Technology (NYIT)

- **Technology and Engineering Camp**  
Session 1: July 7 – 18 (Manhattan Campus)  
Session 2: August 4 – 15 (Old Westbury Campus)  
[www.nyit.edu/engineering/summercamp/](http://www.nyit.edu/engineering/summercamp/)

### New York University

- **Girls' Science, Technology, Engineering, and Mathematics Summer Program (GSTEM)**  
July 7 – August 15  
[www.nyu.edu/admissions/visiting-students/nyu-gstem.html](http://www.nyu.edu/admissions/visiting-students/nyu-gstem.html)
- **High School Academy**  
Session 1: July 13 – 18  
Session 2: July 20 – 25  
Session 3: July 27 – August 1  
[www.scps.nyu.edu/academics/non-credit-offerings/hsacademy.html](http://www.scps.nyu.edu/academics/non-credit-offerings/hsacademy.html)
- **Pre-College Programs**  
July 6 – August 15  
[www.nyu.edu/admissions/precollege.html](http://www.nyu.edu/admissions/precollege.html)

### Pace University

- **Seidenberg Summer Scholars Experience**  
July 6 – 11  
[www.pace.edu/seidenberg/features-special-events/seidenberg-scholars-programs/summer-experience](http://www.pace.edu/seidenberg/features-special-events/seidenberg-scholars-programs/summer-experience)

### Rensselaer Polytechnic Institute

- **Summer Enrichment Programs**  
July, August  
<http://summer.rpi.edu/update.do?catcenterkey=4>

### Rochester Institute of Technology

- **WE Explore**  
July 17 – 18  
[www.rit.edu/kgcoe/women/we-explore](http://www.rit.edu/kgcoe/women/we-explore)
- **College & Careers**  
July 18 – 19  
August 1 – 2  
[www.rit.edu/emcs/admissions/careers/index.php](http://www.rit.edu/emcs/admissions/careers/index.php)
- **Kids on Campus Academy**  
July 7 – August 8  
[www.rit.edu/academicaffairs/kidsoncampus/workshops.php](http://www.rit.edu/academicaffairs/kidsoncampus/workshops.php)
- **Bioscience Exploration Camp**  
Session 1: July 7 – 11  
Session 2: July 14 – 18  
Session 3: July 28 – August 1  
Session 4: August 4 – 8  
[www.rit.edu/healthsciences/cbet/highSchool.php](http://www.rit.edu/healthsciences/cbet/highSchool.php)
- **Everyday Engineering Summer Camp**  
July 21 – 25  
[www.rit.edu/kgcoe/women/everyday-engineering-summer-camp](http://www.rit.edu/kgcoe/women/everyday-engineering-summer-camp)

### Sarah Lawrence College

- **Summer Pre-College Courses**  
July 7 – August 1  
[www.slac.edu/ce/pre-college/summer/credit/](http://www.slac.edu/ce/pre-college/summer/credit/)

### Siena College

- **High School Scholars Program**  
Session 2: June 16 – July 11  
Session 4: July 7 – August 1  
[www.siena.edu/pages/439.asp](http://www.siena.edu/pages/439.asp)
- **Electronic Music**  
July 21 – 25
- **Raspberry Pi**  
July 28 – August 1  
<https://campscui.active.com/orgs/SienaStemCamp#/selectSessions/565402>

### Skidmore College

- **Intensive Studies Summer Programs**  
Session 1: June 29 – July 18  
Session 2: July 20 – August 8  
<http://cty.jhu.edu/summer/grades7-12/intensive/coursebycourse.html#sar>
- **Pre-College Program**  
June 30 – August 1  
[www.skidmore.edu/precollege/index.php](http://www.skidmore.edu/precollege/index.php)

### St. Francis College

- **Summer Science Academy**  
July 7 – 24  
[www.sfc.edu/page.cfm?p=4047](http://www.sfc.edu/page.cfm?p=4047)

### St. John's University

- **High School Scholars Program**  
July 9 – August 12  
[www.stjohns.edu/academics/academic-resources/high-school-scholars-program](http://www.stjohns.edu/academics/academic-resources/high-school-scholars-program)

### Syracuse University

- **Summer College Programs**  
6-Week Programs:  
June 30 – August 8  
2-Week Session 1:  
June 28 – July 11  
2-Week Session 2: July 13 – 25  
2-Week Session 3:  
July 27 – August 8  
<http://summercollege.syr.edu/our-programs/>

### Union College

- **Robot Camp**  
July 7 – 11  
<http://logopolis.union.edu/RobotCamp/>
- **EDGE Workshop**  
July 13 – 25, 2014  
<http://engineering2.union.edu/edge/>

### University of Rochester

- **Taste of College**  
4-Week Session: June 30 – July 28  
6-Week Session:  
June 30 – August 8
- **Rochester Scholars**  
Session 1: July 14 – 25  
Session 2: July 28 – August 1
- **Hajim Engineering Pre-College Program**  
July 14 – August 1  
**Mini Medical School**  
<https://enrollment.rochester.edu/precollege/>
- **Summer Institute for the Gifted (SIG)**  
July 6 – 26  
[www.giftedstudy.org/residential/vassar/](http://www.giftedstudy.org/residential/vassar/)
- **Pre-College Experience in Physics (PREP)**  
July 7 – 30  
[www.pas.rochester.edu/PREP](http://www.pas.rochester.edu/PREP)



# Colleges and Universities

## STEP (Science and Technology Entry Program) with New York State's Independent Colleges and Universities

### Villa Maria College

- Animation
- Recording Studio
- Web Design
- July, August
- [www.villa.edu/summer-camps/](http://www.villa.edu/summer-camps/)

### For Middle School Students:

#### Adelphi University

- Introduction to Game Programming
- July 20 – August 2
- <http://academics.adelphi.edu/hsp/precollege/gamedesign.php>

#### Canisius College

- Science Camp
- August 4 – 8
- [www.canisius.edu/science camp/](http://www.canisius.edu/science%20camp/)

#### Clarkson University

- Horizons I and II
- Week 1: July 13 – 18
- Week 2: July 20 – 25
- [www.clarkson.edu/pipeline/programs/horizons/](http://www.clarkson.edu/pipeline/programs/horizons/)

#### College of Saint Rose, The

- Summer Academy for Youth Science & Technology I: August 4 – 8
- Science & Technology II: August 11 – 15
- [www.strose.edu/admissions/summeracademyforyouth/summeracademyforyouth](http://www.strose.edu/admissions/summeracademyforyouth/summeracademyforyouth)

#### Cornell University

- Museum of the Earth and Cayuga Nature Center of the Paleontological Research Institution (PRI)
- Dates vary by program
- [www.museumoftheearth.org/index.php](http://www.museumoftheearth.org/index.php)

#### Hofstra University

- Summer Camps
- Session 1: June 30 – July 11
- Session 2: July 14 – 26
- Session 3: July 28 – August 8
- Session 4: August 11 – 15
- [www.hofstra.edu/Academics/CE/SC/index.html](http://www.hofstra.edu/Academics/CE/SC/index.html)

### New School, The/Parsons The New School for Design

- Pre-College Academy
- August 4 – 15
- [www.newschool.edu/parsons/pre-college-academy/](http://www.newschool.edu/parsons/pre-college-academy/)

### Rensselaer Polytechnic Institute

- Summer Enrichment Programs
- July, August
- <http://summer.rpi.edu/update.do?catcenterkey=4>

### Rochester Institute of Technology

- Kids on Campus Academy
- June 23 – August 8
- [www.rit.edu/academicaffairs/kidsoncampus/workshops.php](http://www.rit.edu/academicaffairs/kidsoncampus/workshops.php)
- Science Exploration Camp
- Session 1: July 7 – 11
- Session 2: July 21 – 25
- Session 3: July 28 – August 1
- Session 4: August 4 – 8
- [www.rit.edu/healthsciences/cbet/middleSchool.php](http://www.rit.edu/healthsciences/cbet/middleSchool.php)

### Siena College

- Electronic Music
- July 21 – 25
- Learn to Program Camp
- Raspberry Pi
- July 28 – August 1
- Math Camp
- August 4 – 8
- <https://campscui.active.com/orgs/SienaStemCamp#/selectSessions/565402>

### Union College

- Robot Camp
- July 7 – 11
- <http://logopolis.union.edu/RobotCamp/>

### University of Rochester

- Summer Institute for the Gifted (SIG)
- July 6 – 26
- [www.giftedstudy.org/residential/vassar/](http://www.giftedstudy.org/residential/vassar/)

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Students participate in STEM-related activities as part of the Fordham University STEP program.

## Top 10 College Degrees for 4-year Graduates

Rank	Major	Starting Salary	Mid-Career Salary
1	Petroleum Engineering	\$103,000	\$160,000
2	Actuarial Mathematics	\$58,700	\$120,000
3	Nuclear Engineering	\$67,600	\$117,000
4	Chemical Engineering	\$68,200	\$115,000
5	Aerospace Engineering	\$62,800	\$109,000
6	Electrical Engineering	\$64,300	\$106,000
	Computer Engineering (tie)	\$65,300	\$106,000
7	Computer Science	\$59,800	\$102,000
8	Physics	\$53,100	\$101,000
9	Mechanical Engineering	\$60,900	\$ 99,700
10	Materials Science and Engineering	\$62,700	\$ 99,500

Source: 2013-2014 PayScale College Salary Report, [www.payscale.com/college-salary-report-2014/majors-that-pay-you-back](http://www.payscale.com/college-salary-report-2014/majors-that-pay-you-back). Only employees with a bachelor's degree and no higher degree are included in this report. Careers that require advanced degrees, such as law or medicine, and majors that are no longer bachelor's level degrees (such as pharmacy) are not included. Of the approximately 3,070 bachelor's degree-granting institutions in the U.S., the survey includes 1,016 colleges and universities that enroll more than 75 percent of the estimated undergraduate students in bachelor's degree programs. All reports are for graduates of colleges in the U.S. who also work in the U.S. Sample size of this survey is 1.4 million. PayScale is a company that researches salaries, regularly surveys workers, and maintains a database of information on compensation to workers. A number of publications and employers rely on its data.

# Resources for College-Bound Students

## College Board

[www.collegeboard.org](http://www.collegeboard.org)

The recently redesigned College Board site provides links to pages about the SAT and PSAT, including practice tests, dates and places for upcoming tests, study plans, test day checklists and tips, and more. One of the College Board's new initiatives is the AP STEM Access Program, designed to encourage traditionally underrepresented students to pursue STEM degrees.

## College Navigator

<http://nces.ed.gov/collegenavigator/>

The National Center for Education Statistics sponsors the College Navigator site, which can aid students in the college search process. Visitors can search for information about a specific college or university, build lists of institutions for side-by-side comparisons, and get information on college costs. The profile of each college includes general information, the number of full- and part-time faculty members, estimated expenses, the amount and type of financial aid received by students, average SAT scores of the student body, retention and graduation rates, programs offered, a list of varsity athletic teams, details on accreditation, and information about campus security. Visitors may explore the site in either English or Spanish.

## Go College New York!

[www.gocollegenewyork.org](http://www.gocollegenewyork.org)

At this site, sponsored by the New York State Higher Education Services Corporation (HESC), students can learn about how to prepare for college in high school, explore careers, search for colleges, find out how to pay for college, and learn how to succeed in college. Resources include fact sheets, checklists, tips for getting the most out of college fairs, and sections devoted to the needs of students with disabilities and youth in care. Students can also view videos of students discussing their paths to college as well as post links to their own videos. This site is accessible in both English and Spanish.

## KnowHow2Go

<http://knowhow2go.acenet.edu>

The KnowHow2Go campaign, sponsored by the American Council on Education, the Lumina Foundation, and the Ad Council, is an effort to encourage middle school students, high school students, and veterans of military service to prepare for college. This site offers clear, detailed advice about how to plan for college, choose a college, find mentors, and pay for college. Tips for veterans are tailored specifically for them and visitors to the site can also view and listen to a number of student success stories.

## Mapping Your Future

[www.mappingyourfuture.org](http://www.mappingyourfuture.org)

This portal is sponsored by several nonprofit student loan guarantee agencies from around the U.S. Here, middle school, high school, and college students can plan for college, explore careers, learn money management skills, and more. New links to relevant news stories and tips for students are regularly posted, and students can learn about careers or how to manage a budget with the interactive games CareerShip® and Show Me the Future®.

## Your College Search

[www.nycolleges.org/get-more-resources/finding-right-college](http://www.nycolleges.org/get-more-resources/finding-right-college)

The informative guide to New York State's independent colleges and universities, updated annually and available in print and as a download at no cost, offers advice on what to look for in a college, contact information for each institution, a college search worksheet, information about financial aid, a campus locator map, campus profiles, and a directory of academic programs.

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## Grants and Awards for Students in Environmental Studies

### Annie's Sustainable Agriculture Scholarships

[www.annies.com/giving-back/agricultural-scholarships/](http://www.annies.com/giving-back/agricultural-scholarships/)

These scholarships are awarded annually to college undergraduate and graduate students who are studying sustainable and organic agriculture. The minimum award is \$2,500.

### DoSomething.org Seed Grants and Scholarships

[www.dosomething.org/faqs#grants](http://www.dosomething.org/faqs#grants)

Any student who is 25 or younger and lives in the U.S. or Canada or is an American or Canadian citizen living abroad can apply for a Seed Grant of \$500 to fund projects that benefit their communities; activities

funded in the past have included starting a community-run organic farm. Applications are accepted on a rolling basis (throughout the year).

DoSomething.org scholarships are also available to students who engage in social action in their communities. Among the scholarships offered are Financial Education and Help the Homeless scholarships. For more information, visit [www.dosomething.org/scholarships](http://www.dosomething.org/scholarships).

### Eckenfelder Scholarship

[www.brownandcaldwell.com/Scholarships.asp?id=2](http://www.brownandcaldwell.com/Scholarships.asp?id=2)

College juniors and seniors majoring in civil, chemical, or environmental engineering are

eligible for this \$5,000 scholarship, named after environmental pioneer Dr. W. Wesley Eckenfelder.

### Siemens We Can Change the World Challenge

[www.wecanchange.com](http://www.wecanchange.com)

The Siemens Challenge is an effort to strengthen school science curricula through project-based learning while encouraging students to be good stewards of the environment. Scholarships and grants are given to students in grades K – 5, 6 – 8, and 9 – 12. Teachers and advisors can also find links to a number of STEM resources, sample projects, and lesson plans at the site.

# The Sloop Clearwater: Education Initiatives

Teachers, students, and community groups can learn about New York State's Hudson River and its natural surroundings aboard the Clearwater, a sailing ship that has been a pioneer in environmental education. The "Sailing Classroom" program offers students from grade 4 through college hands-on educational

activities during a three- to five-hour sail on the Hudson. Some grants and scholarships are available for schools and groups serving youth in underserved communities. An interdisciplinary "Tideline" program is conducted at the Esopus Meadows Environmental Center in Ulster Park, NY and at other riverfront locations. Resources for teachers are also available at the site.

Pace University is one of the regional educational institutions that has partnered with Clearwater to train teachers in environmental education.

Visit Clearwater's home page at [www.clearwater.org](http://www.clearwater.org); information about its educational programs can be found at [www.clearwater.org/education/](http://www.clearwater.org/education/).

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## Answers to Test Your Financial Aid Knowledge (from page 2)

1. The four major types of financial aid for college are: Grants, Scholarships, Loans, Work-Study. Financial aid is any grant or scholarship, loan, or paid employment offered to help a student meet his/her college expenses. Such aid is usually provided by federal and state agencies, colleges and universities, high schools, foundations, unions, and corporations.
2. FAFSA (Free Application for Federal Student Aid). The FAFSA is the starting point not only for government-sponsored loans and grants but also for state aid and awards from colleges and universities. You can fill out the form online at [www.fafsa.ed.gov](http://www.fafsa.ed.gov).
3. Yes. The FAFSA is a federal form and is used nationwide.
4. No. All families should submit the financial aid forms even if they are not likely to receive need-based aid. Applications for student aid are often used by the colleges to award merit-based aid (aid not dependent on financial need). Always ask the college which forms they require that you complete to be considered for all forms of financial aid.
5. The EFC is the Estimated Family Contribution, calculated from information students report on the FAFSA. It is calculated from each family's untaxed income, assets and benefits, family size and the number of family members attending college. From these elements, the EFC helps colleges determine how much financial aid you are eligible to receive.
6. False. Student loans offered by the federal government have better rates and repayment terms, and in some cases subsidized interest (the government pays the interest on the loan while you are in school). Private loans from banks or other lending entities, often have higher interest rates and other criteria such as credit score ranking. Federal loans to be aware of include the Federal Direct Loan, Perkins Loan and the PLUS loan. For more information about federal loans for college and other forms of student aid, visit: <http://studentaid.ed.gov/types>
7. False. There are several repayment plans available to students. You do not need to begin repaying your federal student loans until after you leave college or drop below half time. Students with demonstrated financial need may qualify for a loan where the government pays the interest while they are in school. There are flexible repayment options and with many federal loans students have up to 10 years to repay the loan, sometimes longer. Some loans are even forgiven under certain circumstances (for example, the Public Service Loan Forgiveness Program and the Teacher Loan Forgiveness Program)! For more information, visit: <http://studentaid.ed.gov/repay-loans/forgiveness-cancellation/charts>
8. TAP is the New York State Tuition Assistance Program. It is a grant program that helps New York residents pay for tuition at approved postsecondary institutions in the state. Currently, the maximum award for eligible students with the highest need is up to \$5,165. Because it is a grant it does not have to be repaid.
9. Typically, a student applies for admission to a college/university in the fall of their senior year of high school. Students and their parents/guardians then complete the Free Application for Federal Student Aid (FAFSA), after January of senior year. However, you should apply for private scholarships through local organizations (Kiwanis, Rotary, etc.), your parent/guardian's employer (if they offer scholarships to employee's dependents), or through other philanthropic organizations prior to completing the FAFSA. Once a student receives admission to the college/university to which they applied, they will then receive that institution's financial aid paperwork necessary to complete their financial aid package.
10. Finding the right "fit" is essential to success in college. Deciding what that fit is will depend on a student's answer to many questions. Does the college/university offer the program that you are interested in studying? What type of campus setting would you be most comfortable in – Urban? Rural? Do you want to attend a large university, or a smaller college or university? Does the college or university offer a financial aid package that meets the family's needs? To answer these questions, the best thing to do is visit the colleges that interest you. By setting foot on a college campus, you can see yourself in that environment and reflect on how you feel after the visit. Was the campus too large? Too far from home? You may feel right at home during the entire experience.





Visit:  
[nycolleges.org](http://nycolleges.org)

**Updated Features:**

- New preparing and planning for college resources for middle and high school students, transfer students, U.S. military veterans and international students
- Find academic programs by college or by program interest
- Search a locator map for colleges by zip code
- View campus profiles to find the college that is right for you



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# New York's 100+ Private Colleges and Universities

- Adelphi University
- Albany College of Pharmacy and Health Sciences
- Albany Law School
- Albany Medical College
- American Academy McAllister Institute
- American Museum of Natural History Richard Gilder Graduate School
- Bank Street College of Education
- Bard College
- Barnard College
- The Belanger School of Nursing
- Boricua College
- Bramson ORT College
- Canisius College
- Cazenovia College
- Clarkson University
- Cochran School of Nursing
- Colgate University
- College of Mount Saint Vincent
- The College of New Rochelle
- The College of Saint Rose
- Columbia University
- Concordia College
- Cooper Union
- Cornell University
- The Culinary Institute of America
- D'Youville College
- Daemen College
- Dominican College
- Dowling College
- Elmira College
- Excelsior College
- Fei Tian College
- Finger Lakes Health College of Nursing
- Fordham University
- Hamilton College
- Hartwick College
- Helene Fuld College of Nursing
- Hilbert College
- Hobart and William Smith Colleges
- Hofstra University
- Houghton College
- Institute of Design and Construction
- Iona College
- Ithaca College
- Keuka College
- The King's College
- Le Moyne College
- Long Island University
- Manhattan College
- Manhattan School of Music
- Manhattanville College
- Maria College
- Marist College
- Marymount Manhattan College
- Medaille College
- Memorial School of Nursing
- Mercy College
- Metropolitan College of New York
- Molloy College
- Montefiore School of Nursing
- Mount Saint Mary College
- Nazareth College
- The New School
- New York Chiropractic College
- New York College of Podiatric Medicine
- New York Institute of Technology
- New York School of Interior Design
- New York University
- Niagara University
- Nyack College
- Pace University
- Paul Smith's College
- Phillips Beth Israel School of Nursing
- Pratt Institute
- Rensselaer Polytechnic Institute
- Roberts Wesleyan College
- Rochester Institute of Technology
- The Rockefeller University
- The Sage Colleges
- Samaritan Hospital School of Nursing
- Sarah Lawrence College
- Siena College
- Skidmore College
- St. Bonaventure University
- St. Elizabeth College of Nursing
- St. Francis College
- St. John Fisher College
- St. John's University
- St. Joseph's College
- St. Joseph's College of Nursing at St. Joseph's Hospital Health Center
- St. Lawrence University
- St. Thomas Aquinas College
- Syracuse University
- Teachers College, Columbia University
- Touro College
- Trocaire College
- Union College
- Union Graduate College
- University of Rochester
- Utica College
- Vassar College
- Vaughn College of Aeronautics and Technology
- Villa Maria College of Buffalo
- Wagner College
- Watson School of Biological Sciences at Cold Spring Harbor Laboratory
- Webb Institute
- Wells College
- Yeshiva University