Student Newsletter

Spring 2020

Talent Search 30th Anniversary at Clarion University

Educational Talent Search was originally funded at Clarion University thirty years ago to begin serving students in 1991 by the US Department of Education. ETS began operations and outreach to students in Clarion and Venango Counties that year. In the early 1990s, the number served reached 950 annually. Today, Talent Search continues to provide services to these counties and part of Jefferson County while serving 835 students each year. Talent Search assists students with study skills, test taking strategies, campus visits, financial aid forms, college applications and more. ETS works collaboratively to help participants achieve high school graduation and assist them in enrolling in postsecondary education. Take a minute to enjoy a few photos of the past —

Chatham University – Eden Hall Campus:

Falk School of Sustainability and Environment

Are you interested in the environment? In making a difference in the world through promoting equality and managing resources appropriately? If so, then maybe a degree in Sustainability, Environmental Science or Food Science could be the career meant for you.

Last fall, Educational Talent Search visited Chatham University's Eden Hall Campus located on 388 acres in the North Hills of Pittsburgh. (Upward Bound is rescheduling a visit also.) The University specifically offers degrees in Environmental Science and Sustainability. All students are encouraged to play an active role in helping manage and develop the campus. Jobs that directly link to classes are available for students -- managing the woodlands, compiling data, working with energy systems that permeate the campus buildings, partnering with local businesses, and more. The Eden Hall experience is more than taking classes and living in the dorms.

The residence hall and the labs are completely net ZERO— meaning they create their own energy. The hot water and electricity are produced through solar panels on the roof. The heat and air conditioning are provided from the geothermal system, pulling heat and cool air from the ground.

The campus boasts many greenhouses and gardens for food production and showcases native plants with its own living water filtration. Chatham raises honeybees. They are currently researching the moth population, as moths are the top pollinators after the honeybees. The surrounding land hosts many native animal species as well --from eagles to a black bear family.

Sustainability is a growing STEM field that is rapidly gaining interest. There are four specific tracks you can choose from at Chatham: Sustainable Energy & Urban Systems, Sustainable Business, Natural Resource Management and Food Studies. The job possibilities in these fields are endless.

We give the Falk School of Sustainability and Environment a five star rating. If you are in grades 10, 11 or 12, you can attend their Sustainability Leadership Academy held for one week on campus in August or attend one of the Academic Visit Days each semester. Make sure to pre-register at Chatham.edu/visit-Chatham. We guarantee—it will be worth the visit!

"We do not inherit the Earth from our ancestors; we borrow it from our children."
– Native American Proverb

Seniors:
File your FAFSA by May 15, 2020.
Need help?
Call us at 814-393-2071
Or
1-888-533-6487

DON'T MISS THE DEADLINE!

Game Changing Jobs

Acquiring skills in computer science (CS) has never been more important. In this high demand field, computers and their interaction with data and people are studied. It is a common misconception that CS is only important for tech jobs. Over two-thirds of all computing-related positions are in non-tech fields. Computer science combined with various subjects is creating new and exciting opportunities:

> CS + Fashion = Wearable Electronics
> CS + Math = 3D Animation
> CS + Music = Streaming Apps
> CS + Medicine = Telemedicine

These are just a few emerging fields. Farmers and computer scientists are using data, math and coding skills to make farming greener, more productive and more efficient. Computer scientists are working for social good to feed the hungry, access government services, and crowdfunding. Coders develop software, create apps and analyze data in a wide range of fields, from food to military defense. Studying CS can prepare you for some of the most sought after jobs in the world. If you enjoy problem solving, playing strategy games, having a musical mind, winning arguments, making things, or investigating computer theory; are a team player and/or people person; and love technology, then CS could be for you.

Here are a few CS careers to consider:

- **Software developers** create and enhance applications for cell phones, tablets and other mobile devices. This career requires a "big picture" mentality that likes to work with others to bring ideas to life. Knowing coding and having an aptitude for math are key skills.

- **Web developers** are responsible for the look and function of a website. It is important to have good listening and problem solving skills when working to design the best possible website for a business or entity.

- **Computer systems engineers** identify solutions to complex application problems, systems administration issues or network concerns. They work to understand system needs and collaborate with developers to find solutions. This programming career is ideal for business-savvy individuals.

- **Database administrators** secure, organize and troubleshoot storage for large amounts of information and data. This coding is for problem-solvers who like analyzing and recovering information.

- **Computer system analysts** strategize how to merge a company's business and information technology initiatives. They evaluate computer systems and propose upgrades to meet needs. Analysts require a solid understanding of computer coding and business.

- **Business intelligence analysts** research the facts about software products and trends and determine which software solves business needs.

- **Computer programmers** write programs and rewrite programs until they are free of errors. They use a workflow chart and coding formulas until the desired information is set. Attention to detail and patience is needed for this career.

- **Network system administrators** maintain computing environments in their networks and prevent disasters by backing up data. Major tasks include providing network security and avoiding viruses, making sure code is free of errors, and protecting both the network and hardware of the system.

Develop your coding skills for free at www.codeacademy.com, www.freecodecamp.org, www.khanacademy.org or check out https://learntocodewith.me/posts/code-for-free/ for more of the best places to learn code.
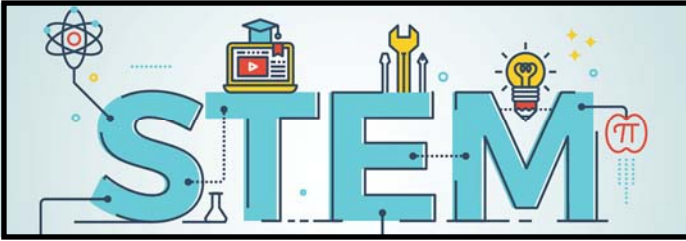
Resources:

Careers with Code, Issue 2, 2017/18, Refraction Media for Google

https://www.rasmussen.edu/degrees/technology/blog/programming-careers-for-coding-connoisseurs/

https://www.theguardian.com/careers/ten-signs-career-coding-software-development-right-for-you

Top Five Fastest Growing STEM Careers

It is no secret that STEM (Science, Technology, Engineering and Math) careers are in high demand. Here is a list of the top five according to expected job growth by the year 2026.

Physician Assistant - works under the supervision of a doctor to provide medical treatment and diagnose disease. Requires a bachelor's degree, a master's degree and a certification exam.

> **Median salary: $104,860**
> **Expected job growth by 2026: 37%**

Nurse Practitioner—provides medical care similar to that of a physician, but relies on nursing philosophy. They can authorize treatment, perform physical exams and prescribe medicines. Requires associate or bachelor's degree in Nursing plus National Council Licensure Examination, master or doctorate and APRN certification, board certification and state specific licensure.

> **Median salary: $103,880**
> **Expected job growth by 2026: 36%**

Statistician—uses data to make decisions. They collect information, analyze data and draw conclusions to inform businesses and governments. Requires a bachelor's degree, but a master's degree in statistics, mathematics or survey methodology is preferred. In order to teach or conduct research, professionals generally need to have a Ph.D.

> **Median salary: $87,780**
> **Expected job growth by 2026: 34%**

Mathematician—performs calculations, processes and analyzes a large amounts of numerical data while working in a range of jobs, including teaching and research. Requires a bachelor's or master's degree in mathematics. In order to teach, state certification is required. A Ph.D. may be necessary

for research positions.

> **Median salary: $101,900**
> **Expected job growth by 2026: 30%**

Operations Research Analyst—uses data mining and mathematical modeling tools to help companies operate efficiently and adhere to budget goals. Requires a bachelor's degree in math, business or industrial engineering. A master degree in operations research, analytics, management science or computer science may be preferred.

> **Median salary: $83,390**
> **Expected job growth by 2026: 27%**

Source: Money.usnews.com/careerscareeraddict.com/stem-careers, U.S. Bureau of Labor and Statistics

The Fourth Industrial Revolution and the Impact on Employment

You may be asking, what is the Fourth Industrial Revolution?

Modern society was initially transformed through the introduction of the steam engine and steam powered tools in the 1760s. Continued transformation occurred through a number of scientific advancements and inventions in the early 20th Century. With gas engines, airplanes, and assembly lines, production of goods and the availability of services increased our ability to travel faster and accomplish more during the day. The third industrial revolution was marked by the "digital revolution." Beginning in the 1940s and 1950s with the invention of early computers, and the shift from analog to digital in the 1980s, society greatly felt the impact of the "digital revolution" with the widespread use of the Internet in the 1990s/2000s. This brings us to the fourth revolution, the widespread use of artificial intelligence (AI), 3D printing, genetic sequencing/editing and additional technological advancements.

With established markers for the fourth revolution, a larger question overshadows the role these advancements play in workforce development and employment opportunities in the 21st Century. How does STEM impact future employment? More often than not, technology influences the nature of the job market. Your knowledge or skill-set will be impacted by a tech-driven world. STEM skills are in high demand as companies look to hire individuals who are tech-savvy, as well as critical thinkers, problem solvers, and informational, technological, and media literate. Employment projections released in 2017, by the U.S. Bureau of Labor Statistics (BLS), indicate the earning potential of those with STEM related degrees/training is almost three times the earning potential of those with a high school diploma (BLS, 2018).

STEM conferences and symposiums for middle and high school students are popping up all over the US, providing an opportunity for students to network with STEM employers and increase STEM related skills/proficiencies. Colleges and technical schools are shifting to meet the employment demands, rolling out major offerings and programs to prepare individuals for various jobs available to those with a STEM background and experience. As you begin to consider or decide on a career interest, consider what impact STEM has on your intended field.

Sources:

https://www.usnews.com/news/stem-solutions/articles/2019-06-05/watch-the-2019-workforce-of-tomorrow-conference

https://www.britannica.com/technology/assembly-line

https://www.weforum.org/about/klaus-schwab

https://www.bls.gov/emp/tables/stem-employment.htm

Will Automation Take Away All Our Jobs?   David Autor

Here's a paradox you don't hear much about: despite a century of creating machines to do our work for us, the proportion of adults in the US with a job has consistently gone up for the past 125 years. Why hasn't human labor become redundant and our skills obsolete? In this talk about the future of work, economist David Autor addresses the question of why there are still so many jobs and comes up with a surprising, hopeful answer. https://www.ted.com/talks/david_autor_will_automation_take_away_all_our_jobs?language=en

Stem Skills to Consider and Develop

STEM careers across various industries have some common skills that require development and mastery. Careers in the STEM fields have a common language rooted in an understanding of statistics and more specifically how probability and error rates factor into analysis of data. Error probability is a term used in statistical assessment to determine error rates on a given procedure. Developing a common understanding of the intricate language is essential to the pursuit of any STEM related endeavor. STEM fields in general are ones where procedures, products and eventual outcomes are based heavily on interpreting data. **Understanding statistics** is central to accurately assessing data and is a tool routinely used in the process of developing hypotheses and drawing conclusions.

STEM careers require a mastery of "modern skills" and one of those is rooted in the ability to solve problems. In general, STEM fields have a built-in component that requires a well-honed mind pliable enough to think outside the box and look for new solutions to old patterns. **Problem solving** represents a set of skills needed to effectively assess outcomes and identify factors that are contributors to that outcome. Once the component parts of the problem are examined and understood, the challenge of interjecting new approaches or hypothesis to the old pattern begins. It is not enough to put the old puzzle together, but a challenge to develop a new puzzle so to speak.

Creativity and critical thinking are also necessary. Thinking outside the box and having both the courage and the determination to identify new solutions to a given problem is a highly valued skill set. A willingness to embrace the critical thinking components of the creative process lends to taking a completely different view or perspective on ways of addressing a given problem. Creativity impacts problem solving by expanding the pool of possibilities when developing solutions.

Evidence-based argumentation skills are also important tools essential to success in STEM fields. The value of critical conversations as an element of problem solving cannot be understated. Workplaces are committed to quality improvement and designed to foster evidence-based argumentation, critical thinking and goal driven processing. The ability to have an evidence-based discussion without the trappings of emotional and unsupported assumptions is valuable. Few factors have a greater negative impact on organizations than ineffective communication. Evidenced-based data driven communication practices are skills that have a deep and positive impact in the field.

Intellectual curiosity is also essential. An active mind with curiosity to understand the components of the problem, procedure, or outcome is necessary to be successful. Students should challenge themselves by taking coursework outside of their intellectual comfort zones. Expanding the overall functionality of one's mind and increasing one's brainpower pays dividends. As power expands, so does intellectual curiosity. The benefit of learning Japanese for example goes far beyond simply learning new language.

These are important skills transferable and necessary for all STEM careers. Understanding statistics, problem solving, creative and critical thinking, evidence-based argumentation and intellectual curiosity will contribute to your success in these evolving careers.