



*August 27, 2011*

*Welcome Back!*

Hope this newsletter finds everyone rested from the summer and ready to get back to the robots. I already have 3 days in and 177 to go until summer break, not that I am counting.

Below is an article that I came across this week that demonstrates the importance of what we are doing in the promotion of STEM education. I would not normally include the entire article but I am hoping it will be something that you can use to show administrators and potential sponsors how important it is for their support in our programs and what we do.

#### **10 Highest-Paying Degrees**

By [OnlineDegrees.com](http://OnlineDegrees.com), Posted Aug 22nd 2011

**By Maryalene LaPonsie**

Recent media reports on the job market for new college grads are full of horror stories: sky high student debt and sub-par entry-level [salaries](#). But it isn't all bad news. The National Association of Colleges and Employers (NACE) found [salary](#) offers made to the class of 2011 increased 4.8 percent to an overall average of \$51,018.

What's more, a trio of recent reports indicates picking the right degree can mean the difference between a \$30,000 starting [salary](#) and a \$60,000 starting salary. The latest of these reports is the 2011-2012 [PayScale College Salary Report](#). PayScale survey confirms [engineering degree holders are top earners](#).

The annual [PayScale](#) survey results show that for those looking for the quickest financial return on their degree, engineering can be the way to go. Seven of the top ten degrees in terms of salary were in the engineering field. The PayScale results

are similar to a 2011 NACE survey that found four of the five best paying majors were in engineering. A Georgetown University study this spring also gave top honors to engineering when it ranked median [salaries](#) by major.

The same Georgetown University study showed that many students in the top-earning majors went on to work within their fields, suggesting a tight link between the most lucrative degree programs and eventual [employment opportunities](#).

Top dollar degrees according to PayScale

PayScale collected data from U.S. workers who have a bachelor's degree. Workers with advanced degrees were excluded from the survey to avoid skewing the income results. The survey analyzed starting and mid-career salaries for 120 of the most popular undergrad programs. Mid-career salaries measure earnings 15 years after graduation.

It's important to note, however, that just earning a degree doesn't mean today's grads will rake in the big bucks. Getting a job--and the healthy salary that can come with it--depend on everything a candidate can bring to his or her employer. Hiring managers cite work experience via internships, personality, specialties and more as factors when it comes to making hiring decisions.

Nonetheless, below are the 10 college degrees PayScale found to lead to the highest salaries, ranked by average mid-career earnings:

#### **1. [Petroleum Engineering](#)**

**Median starting salary:** \$97,900

**Mid-career average:** \$155,000

The survey numbers suggest that petroleum engineering can be by far the best paying major available today. According to the Society of Petroleum Engineers, a large number of workers in the industry are expected to retire during the next ten years. Add the global demand for energy and you have a scenario in which petroleum engineering majors should continue to be in-demand and well-compensated for years to come.

[Find Petroleum Engineer Jobs](#)

#### **2. [Chemical Engineering](#)**

**Median starting salary:** \$64,5000

**Mid-career average:** \$109,000

According to the American Institute of Chemical Engineers, professionals in this field are at the forefront of research in fields including energy, biomedicine, food production and electronics.

[Find Chemical Engineer Jobs](#)

### 3. Electrical Engineering

**Median starting salary:** \$61,300

**Mid-career average:** \$103,000

PayScale reports that while salaries for electrical engineers remain high, competition for jobs is expected to be stiff. While job experience is important, having a degree in electrical engineering can be key to filling positions created by retiring employees.

[Find Electrical Engineer Jobs](#)

### 4. Materials Science and Engineering

**Median starting salary:** \$60,400

**Mid-career average:** \$103,000

As one of the lesser known engineering disciplines, materials science studies, manipulates and improves on materials used in the biotechnology, energy and communications industries. Emerging fields such as nanotechnology also play a role in materials science and engineering.

[Find Material Engineer Jobs](#)

### 5. Aerospace Engineering

**Median starting salary:** \$60,700

**Mid-career average:** \$102,000

From self-guided machines to helicopters to spacecraft, aerospace engineers are involved in the design and creation of any vehicle that travels above the Earth's surface. The technical skills learned by those with aerospace engineering degrees place graduates in the top five highest-earning majors, PayScale reports.

[Find Aerospace Engineer Jobs](#)

### 6. Computer Engineering

**Median starting salary:** \$61,800

**Mid-career average:** \$101,000

In a relatively new field, qualified computer engineering graduates are few and far between. "We are desperate to find skilled employees, but simply cannot do so," says Sander Daniels, co-

founder of web start-up Thumbtack.com. With multiple companies vying for relatively few candidates, median starting salaries for computer engineering graduates are high. Sanders said, "I see supply slowly catching up to demand over the coming years--but at least today, there aren't enough computer engineers for all the available jobs."

[Find Computer Engineer Jobs](#)

### 7. Physics

**Median starting salary:** \$49,800

**Mid-career average:** \$101,000

Today, these professionals work in the fields of chemistry, oceanography, seismology and astronomy. Physics is the only major on the list with a median starting salary below \$50,000, but by mid-career, the average rises to more than double that amount.

[Find Physicist Jobs](#)

### 8. Applied Mathematics

**Median starting salary:** \$52,600

**Mid-career average:** \$98,600

According to the Society for Industrial and Applied Mathematics, employers across a number of industries hire mathematicians and computational scientists. Jobs can be found in the energy, finance, science, health care and publishing sectors among others.

[Find Applied Mathematics Jobs](#)

### 9. Computer Science

**Median starting salary:** \$56,600

**Mid-career average:** \$97,900

In a society that is increasingly dependent on computer technology, computer science graduates can expect to see lucrative starting salaries. Make no mistake, these professionals do more than simply provide tech support and program games. For instance, computer science researchers at Cornell University work in fields such as robotics, artificial intelligence, computer architecture and security.

[Find Computer Science Jobs](#)

### 10. Nuclear Engineering

**Median starting salary:** \$65,100

**Mid-career average:** \$97,800

*Rounding out the top ten on the PayScale list is nuclear engineering. James Madison, President of CoolHandNuke.com, a job site for nuclear professionals, says several factors help boost the incomes of nuclear engineers. These include the high caliber of nuclear engineering graduates, the sensitive nature of their work and a decreasing number of individuals entering the field.*

*In addition, Madison predicts an upswing in the need for nuclear engineers that could mean better salaries in the future. "Over the course of the next 10 plus years, these engineers will start being paid very, very well," he said. "And the benefits packages are already the best of any industry."*

*...and this is why we do what we do!*

*-Nancy Mc*



**Fall Classic:** September 24, 2011

John Burroughs High School

For additional information

<http://larobotics.org/FallClassic2011.html>

**Fall Workshop:** November 5, 2011

California State University Northridge

For more information:

<http://larobotics.org/Workshops2011.html>



**I am giving a FLL workshop in Orcutt, CA on September 10, 2011. The workshop will include how to start a team, how to mentor a team and how to host an event. The time will be 9:00am to noon.**

**I am looking to host a Rookie FRC workshop on Friday, September 16, 2011 from 4:30 to 8:00. The location will be the Condon Science Center at Chaminade College Preparatory in West Hills, CA. If any of you know of potential new FRC teams please have them contact me at [nmcintyre@chaminade.org](mailto:nmcintyre@chaminade.org)**

**FRC 2012 Kickoff Saturday, January 7, 2012 Local events are listed at :**

<http://www.usfirst.org/roboticsprograms/frc/local-kickoff-information>

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If you are looking for opportunities for your students this fall there are many options that you can take a look at.

JPL Invention Challenge:

The JPL Annual Invention Challenge is a friendly, yet challenging competition open to JPL employees and contractors, their family members, and students from local middle and high schools. Each year, a different engineering challenge is selected. The goal of the Invention Challenge is to show students that math, science, and engineering can be fun. The theme for this year's contest is: "Kick Into the Can Contest"

For more information check out their website.

<http://www.jpl.nasa.gov/events/inventionchallenge/>

Cyber Patriot:

CyberPatriot is the premiere national high school cyber defense competition created to inspire high school students toward careers in cybersecurity or other science, technology, engineering, and mathematics (STEM) disciplines critical to

our nation's future. The competition was conceived by the Air Force Association. Northrop Grumman is the presenting sponsor.

<http://www.uscyberpatriot.org/Pages/default.aspx>

#### Real World Design Challenge:

The Real World Design Challenge (RWDC) is an annual competition that provides high school students, grades 9-12, the opportunity to work on real world engineering challenges in a team environment. Each year, student teams will be asked to address a challenge that confronts our nation's leading industries. Students will utilize professional engineering software to develop their solutions and will also generate presentations that convincingly demonstrate the value of their solutions. The RWDC provides students with opportunities to apply the lessons of the classroom to the technical problems that are being faced in the workplace.

<http://www.realworlddesignchallenge.org/>

#### Zero Robotics:

Zero Robotics is a student competition that takes "arena robotics" to new heights, literally. The robots are miniature satellites called SPHERES, and the finals are aboard the International Space Station!  
<http://zerorobotics.mit.edu/>

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The LARFLL events page has been updated (<http://fll.larobotics.org/Events.html>) and the FLL Team Registration

LeRoy Nelson is the partner in Los Angeles  
[LeRoyNelson@earthlink.net](mailto:LeRoyNelson@earthlink.net)  
Lynn Crockett is the partner in San Diego  
[Lynn.Crockett@LEGOLAND.com](mailto:Lynn.Crockett@LEGOLAND.com)  
Sara Tamayose is the partner in Hawaii  
[stamayose@gmail.com](mailto:stamayose@gmail.com)  
<http://www.hawaiiifll.org/>

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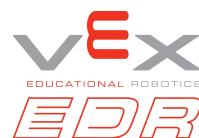


Kickoff September 10, 2011  
Information coming soon.

Los Angeles Partner Suparna Mukherjee  
[suparna.mukherjee@jpl.nasa.gov](mailto:suparna.mukherjee@jpl.nasa.gov)

San Diego Partner John Brooks  
[jbrooks6@att.net](mailto:jbrooks6@att.net)

San Diego Partner Marion Brooks  
[manybrooks@att.net](mailto:manybrooks@att.net)



Los Angeles Regional at CSUN:  
December 10, 2011.

The VEX World Championship returns to Southern California. The event will be at the Anaheim Convention Center April 19-21, 2012

I came across a wonderful book this summer that provides great teaching tools for Autodesk Inventor. I am going to use it this fall in my robotics class.

This book is designed for high school and college age students wanting to learn the fundamentals of computer aided design with AutoCAD and Inventor and how the two can be used together. No prior CAD experience is required.

Designed for the absolute beginning CAD student wanting to learn AutoCAD and Autodesk Inventor 2012. It covers 2D drawing, 3D modeling, assembly modeling, freehand sketching and finite element analysis. It includes an assembly project using a VEX

Robot Kit.

<http://www.vexrobotics.com/products/books/276-2187.html>

GATEWAY 2011- 2012 game information can be found at

<http://www.vexforum.com/wiki/index.php/Gateway>



For 2011, over **149 scholarship providers** are making available over **932 individual scholarship opportunities** with a total value of over **\$14.8 Million!**

<http://www.usfirst.org/aboutus/scholarships>



The MATE Center coordinates an international student ROV competition and a network of 20 regional ROV contests that take place across U.S. and in Canada, Hong Kong, and Scotland. Student teams from middle schools, high schools, home schools, community colleges, and universities participate in the events, which consist of different "classes" that vary depending on the sophistication of the ROVs and the mission requirements.

In addition to being fun and educational, these competitions connect students and educators with employers and working professionals from marine industries, highlight marine-related career opportunities, and promote the development of technical, problem solving, critical thinking, and teamwork skills.

Information for the upcoming season will be released in November.

[http://www.marinetech.org/rov\\_competition/](http://www.marinetech.org/rov_competition/)



Harvey Mudd College students are looking for an FRC team near Claremont, CA that needs mentors. We worked as mentors last season to rookie team 3473, and most of us have considerable experience from our own high school FIRST teams. If you are looking for mentors or want to hear more about what we do, please contact Sarah Ferraro at [sferraro@hmc.edu](mailto:sferraro@hmc.edu).



The **2011 Food Factor Challenge** will be released online on **September 2nd** at **12pm ET**.

<http://www.firstlegoleague.org/challenge/thechallenge>

#### Resources:

FIRST [www.usfirst.org](http://www.usfirst.org)

ANDYMARK <http://www.andymark.com>

VEX PRO  
<http://www.vexrobotics.com/products/vexpro/>

VEX [www.vexrobotics.com](http://www.vexrobotics.com)

Robotevents [www.robotevents.com](http://www.robotevents.com)

Carnegie Mellon Curriculum  
<http://www.education.rec.ri.cmu.edu/roboticscurriculum/index.html>

ROC <http://www.hawaiiroc.org/>

Autodesk Student Community  
<http://students.autodesk.com/>



Robot Magazine <http://www.botmag.com/>

Chief Delphi

<http://www.chiefdelphi.com/forums/index.php>

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Grants and Fund Raising Ideas:



**Fundraisers** – Needing to put more fun in your child's fundraisers? Ask your local McDonald's franchisee or restaurant manager about McTeacher's Night®, which invites teachers to go behind the counter at McDonald's to earn a percentage of the profits for their schools.

Also, visit your local restaurant to find out if there are other opportunities coming up in your area to join our crew and make a difference.

## Target Field Trip Grants

Learning opportunities extend far beyond the classroom. But schools are finding it more and more difficult to bring students to museums, historical sites and cultural organizations. Field Trip Grants help give children these unique, firsthand learning experiences.

<http://sites.target.com/site/en/company/page.jsp?contentId=WCMP04-031880>

## Kids In Need Teacher Grants Help

### Teachers Realize Their Dreams

Kids In Need Teacher Grants provide K-12 educators with funding to provide innovative learning opportunities for their students. The Kids In Need Foundation

helps to engage students in the learning process by supporting our most creative and important educational resource — our nation's teachers.

<http://www.kinf.org/grants/index.php>

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### Quote for the week:

"You don't have to be great to start, but you have to start to be great."

~Joe Sabah~

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### Reminders:

1. Recruit and Train New Members
  2. Recruit new mentors
  3. Recruit new sponsors
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-Nancy Mc

*FUTURE Founding Board Member*

*(My school e-mail is still the best way to reach me during the academic year.)*

[nmcintyre@chaminade.org](mailto:nmcintyre@chaminade.org)

[nancy@futurefound.org](mailto:nancy@futurefound.org)