

# Scholarship Workshop

*Focused on Tribal Citizens*

How to Find and Apply for Academic Scholarships  
Beginning in 4<sup>th</sup> Grade through Graduate School

*Compiled and Created Personally by*

## Dr. Cara Cowan Watts

Cherokee Nation Citizen • B.S. Mechanical Engineering,  
M.S. Telecommunications Management & PhD Biosystems Engineering –  
Oklahoma State University



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## GWY ZØB

*'Cherokee Star'*

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*Facilitation • Project Management • Communication Planning  
Innovative Education Solutions • Presentation Needs  
Working Knowledge of Indian Country*



# Communication in the Age of Social Media

**Objective:** What do you want to do? What do you want to portray? Who do you want to be?

## Phone Etiquette:

1. Example Answer – “Hello. This is <First Name> <Last Name> speaking.”
2. Example Calling – “Hello. This is <First Name> <Last Name>. I am calling to...”
3. Leaving Message – Same as calling plus leave your phone number. Be clear, use a moderate speed and repeat once. Do NOT leave emails, websites or multiple phone numbers unless asked to do so by the recipient.
4. Recorded Messages – Are they professionally recorded voicemails or loud music?

## Google AND PRACTICE: Interview Skills – Learn ‘Behavioral Interviewing’ (STAR)

1. Situation or Task
2. Action
3. Result or outcome

## Texting:

1. Limit texting to people you actually know and have a relationship with prior to texting unless the application says otherwise.
2. Limit texting to yes or no questions, factual exchange of information such as addresses or directions to an immediate meeting, etc.
3. Use texting only if situation is urgent or brief.
4. Great for exchange of information such as sharing another phone number or address for pending meeting.
5. Very personal communication tool for older folks which are likely your decision-maker(s).
6. Do not assume the receiver has your number programmed into their cell. Sign your text with your name.
7. Spell check and use proper grammar.

## Email:

1. Treat the same as written correspondence. Think formal business letter format.
2. Spell check. Proper grammar is still necessary in emails as it is written correspondence.
3. Format the email same as written correspondence. Check typing books for format examples!
4. Use a signature at the bottom with your contact information.

## Social Media:

1. Be cautious of purely social apps such as MySpace
2. Use Facebook, LinkedIn and Twitter
3. Pictures (Pinterest) and even Instagram
4. Articles/Research (Subject Matter Expert)
5. Status
6. Comments
7. Privacy - Personal Security and Security of Others
8. Your network of ‘Friends’ reflects on you

**LOST ART OF THANK YOU NOTES!** – Address to Giver, thank you for <be specific>, value of <gift> to you and/or tie to Giver and sign off with your name



Cara Cowan Watts &lt;caracowanwatts@gmail.com&gt;

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**(no subject)**

1 message

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**Cara Cowan Watts** <caracowanwatts@gmail.com>

Fri, Oct 31, 2014 at 10:07 AM

To: Cara Cowan &lt;cara@caracowan.com&gt;

poorly written email example

please add me to list

PLEASE ADD ME TO LIST

DOIUWOJGLKSADGLKNLADJNLKNDLNLDNGLNADGNDLG:NADL:  
GKNLKADNGLKDNLKDADNGLNADLGNADLN  
DLKANDGKLNADGLNDALKNADKNGLDANG  
LDANGLKDANGLKDANKLDANGLKDANLKD  
ANGLKDANGLADNGLAKDGNALKDGN

please add me to list mail me your papers

C



Cara Cowan Watts &lt;caracowanwatts@gmail.com&gt;

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## Professionally Formatted Email Example

1 message

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**Cara Cowan Watts** <caracowanwatts@gmail.com>  
To: Cara Cowan <cara@caracowan.com>  
Cc: Cara Cowan Watts <caracowanwatts@gmail.com>

Fri, Oct 31, 2014 at 9:01 AM

Dear Councilwoman Watts,

Please add me to the Oklahoma Professional Chapter (OPC) of the American Indian Science and Engineering Society (AISES) email listserv as well as the Cherokee Nation news and events email list at [cara@caracowan.com](mailto:cara@caracowan.com).

My name and address are below should you need it as well as my direct cell number.

Wado! (Thank you!)

Cara Cowan Watts  
P.O. Box 2922  
Claremore, OK 74018

Tribal Cell: (918) 752-4342  
Email: [cara@caracowan.com](mailto:cara@caracowan.com)

Website: [caracowan.com](http://caracowan.com)

Find me on Facebook, LinkedIn, Twitter, Google+, Pinterest and Instagram!

# Recommendation Letters

## **STOP and consider...**

1. Do you know the person you requesting a recommendation letter from enough to make the request?
2. Will the person who knows you well do a GREAT letter for you?
3. Are you providing all of the information to the individual they will need to write a letter for you and deliver it?
4. Are you being respectful in your request? How you request and how long you provide? (Never ask someone to do a recommendation letter in less than two weeks.)
5. If you do not provide the upfront information listed below, you are not being respectful of the Recommenders time and energy.
6. Do not text or call the Recommender for a Letter of Recommendation. Texts or calls may be used for follow-up and not primary request. A single email is all you should do.
7. If you use someone as a reference, you must have their permission and notify them.

## **What is 'enough' when considering 'knowing' a recommender?**

1. You should know them at least one year. There are exceptions, but they require work.
2. You should have actual in-depth interaction with them.
3. They should have multiple positive interactions/perceptions of you.
4. They should be a person of relevance and value. (Appropriate for opportunity.)
5. You should know about them as much or more than they know about you.
6. Their network and/or position should be of value to your opportunity.

## **What makes a GREAT letter for you?**

1. Spell check. Grammar. Components, below, included.
2. Feels familiar with the real you.
3. Highlights components of resume relevant/tailored to the opportunity.
4. Says positive things you cannot say about yourself.
5. Says positive things which are not included on your resume.
6. Connects you with your opportunity in a personal and well-rounded way.
7. Pitches you as if they were on the internal decision-making team.

## **Provide the following UP FRONT...**

1. Actual full name of Scholarship, Job, etc. you are being recommended for...
2. Name and address to address the letter of recommendation to...
3. Name and address to mail the letter of recommendation to...
4. Website for opportunity (scholarship, job, etc.) you are asking for recommendation to be written about...
5. Basic, core and brief information as text in the body of the email concerning information pertaining to opportunity...
6. Draft a letter for them and include in your single email.
7. Attach resume, so your information is readily available to person volunteering to write you a recommendation.
8. Date due to be mailed by recommender.

**DON'T FORGET to send a HANDWRITTEN THANK YOU LETTER or don't ask.**

## **Keith Jones**

Home: (555) 543-6543 · Cell: (456) 123-7654  
keith.jones@gmail.com  
244 Chestnut Street  
Southampton, PA 18966

### **Education**

**George Washington High School**, Southampton, PA, May 2011

Overall GPA 3.8; Honor roll each quarter

Honors: French Honors Society, National Honors Society, National Merit Scholar

Clubs: Political Science, Show Choir, Theater, Yearbook Committee

Athletics: Varsity Soccer Captain, Intramural Volleyball

### **Experience**

*Assistant*, **Berkshire County Playhouse**, Berkshire, PA

Summer 2010

- Coordinated rehearsal and performance schedules for the cast and crew of three one-week productions over one season
- Created and managed social media accounts for the playhouse to market each show and ongoing activities

*Cashier*, **Joe's Cafe**, Southampton, PA

Fall 2009 - present

- Was selected employee of the month for efficient, friendly service
- Promoted to Barista in September, 2010

*Tutor*, **Student Tutors at Washington**, Southampton, PA

January 2009 - present

- Helped elementary school students apply mathematic and scientific concepts to their homework assignments
- Helped coordinate a weekend trip to the Philadelphia zoo each season and designed a packet of math and science questions related to the animals and exhibits children encountered there
- Became a pen-pal to one student throughout the three and a half years, encouraging and assisting him with studies and adjusting to different grade levels

*Volunteer* **Soup Kitchen**, Philadelphia, PA

Fall 2008 - present

- Served meals to over 100 less fortunate individuals each week
- Created a brown bag lunch program collecting donations to pack bags of food for individuals to take home with them

*Volunteer*, **John Doe Campaign for House of Representatives**

Summer 2008

- Made over 1000 phone calls to local residents and businesses to inform them about Doe's positions on issues
- Helped organize and publicize a voter registration day at George Washington High School for the start of the school year

### **Other Experience**

- Lead role in *The Music Man*, Spring 2011
- Named MVP after leading soccer team to state finals victory in 2011 fall season

### **Computer Skills**

- Proficient with Microsoft Word, Excel, and PowerPoint, and Internet

# Tips to Applying for Scholarships

Scholarship applications should ultimately...

- Determine what they want.
- Give them what they want.
- Add something special to make you distinct.

## What do they want?

- ✓ Read the application package carefully.
- ✓ Give yourself plenty of time.
- ✓ Watch your deadlines-write the closing dates for applications in your diary.
- ✓ Research pays off.
- ✓ Networking pays off.

## Give them what they want.

- ✓ Target your application.
- ✓ Don't be too modest.
- ✓ Show them that you need it.
- ✓ Get references. Just because they did not ask does not mean they could not use them!

## Give them extra

- ✓ Why are you special? (What makes you different than the other applicants?)
- ✓ Check your application carefully.
  - Spell check.
  - Check it again – spell checks don't pick up everything, especially if the misspelling is a word in itself.
  - Check the application form to see you've included all the attachments they asked for – create a checklist upfront.
  - Ask someone to look it over for you.
  - Where there are a lot of good applications it doesn't take much to move you from the "possible" pile to the 'sorry, no' pile. Do not give them an excuse!

## Other stuff...

- ✓ Keep copies of your application.
- ✓ Send your application with return receipt and signature required.
- ✓ Follow-up on the phone to make sure it arrived.
- ✓ Ask questions (call) if you do not understand application/questions.
- ✓ Ask Scholarship Sponsor if they would consider you even though you don't quite fit profile.
- ✓ Save content whenever possible to make it easy to recreate if needed. Save the actual finished files plus the sections of the files that you may cut and paste in other applications. Consider Google Keep or Google Docs.

# Taxability of Scholarships

## Topic No. 421 Scholarships, Fellowship Grants, and Other Grants

A scholarship is generally an amount paid or allowed to a student at an educational institution for the purpose of study. A fellowship grant is generally an amount paid or allowed to an individual for the purpose of study or research. Other types of grants include need-based grants (such as Pell Grants) and Fulbright grants.

### Tax-Free

If you receive a scholarship, a fellowship grant, or other grant, all or part of the amounts you receive may be tax-free. Scholarships, fellowship grants, and other grants are tax-free if you meet the following conditions:

You're a candidate for a degree at an educational institution that maintains a regular faculty and curriculum and normally has a regularly enrolled body of students in attendance at the place where it carries on its educational activities; and

The amounts you receive are used to pay for tuition and fees required for enrollment or attendance at the educational institution, or for fees, books, supplies, and equipment required for courses at the educational institution.

### Taxable

You must include in gross income:

Amounts used for incidental expenses, such as room and board, travel, and optional equipment.

Amounts received as payments for teaching, research, or other services required as a condition for receiving the scholarship or fellowship grant. However, you don't need to include in gross income any amounts you receive for services that are required by the National Health Service Corps Scholarship Program, the Armed Forces Health Professions Scholarship and Financial Assistance Program, or a comprehensive student work-learning-service program (as defined in section 448(e) of the Higher Education Act of 1965) operated by a work college.

<https://www.irs.gov/taxtopics/tc421>



## Web Resources for Students

### Financial Aid, Scholarships and Choosing a College Information

Financial Aid for All Students  
(Within the website, there are instructions for Native American financial aid.)  
<http://www.finaid.org/>

Free Scholarship Search  
<http://www.fastweb.com>

Embark\*Com  
(College planning including a calendar with testing and other application deadlines.)  
<http://www.embark.com/>

Xap.Com  
(College Counseling Center)  
<http://www.xap.com/>

The Gates Millennium Scholars  
(January Deadline & Community Service Requirements)  
[www.thegatesscholarship.org](http://www.thegatesscholarship.org)

Fresch Free Scholarship Search  
(Grassroots Scholarship Site)  
<http://www.freschinfo.com>

Student Loan Center  
<http://www.estudentloan.com/>

Google – Any Search Engine  
<http://www.google.com>

National Science Foundation (NSF)  
<http://www.nsf.gov/>

College Net  
(Grassroots ran blog site where scholarships can be earned.)  
<http://www.collegenet.com>

Federal student aid from the U.S. Department of Education  
(Free and Safe)  
[www.studentaid.ed.gov](http://www.studentaid.ed.gov)

Free Scholarship Search  
<http://www.scholarships.com/>

Free Scholarship Search  
<http://www.scholarshipexperts.com/>

### Native American Specific Resources

American Indian College Fund  
<http://www.collegefund.org>

American Indian Graduate Center (AIGC)  
<http://www.aigc.com>

Indian Health Service  
<http://www.ihs.gov>

American Indian Science and Engineering Society-AISES  
<http://www.aises.org/>

2009 Financial Aid Available to American Indian Students  
<http://cahe.nmsu.edu/academics/ird/index.html#skipnav>

**OTHER:** Voc Rehab – CN & State  
<http://www.okrehab.org/>

### Oklahoma Resources

Oklahoma State Regents for Higher Education (OSRHE)  
<http://www.okhighered.org/>

OK Higher Learning Access Program (OHLAP)  
<http://www.okhighered.org/ohlap/>

Oklahoma Summer Academies  
<http://www.okhighered.org/student-center/jrhigh-highscl/summer-academies.shtml>

Oklahoma School Report Cards  
<http://www.schoolreportcards.org/>

### Resume and Job Search Information

1. Interview Basics & Sample Questions
2. Salary Calculator to Determine Cost of Living Differences
3. Sample Resumes
4. Online Resume Creation Tools
5. Tribal Career Services Offices

Trio - <https://offices.nsuok.edu/trio>  
TRIO is a set of federally-funded college opportunity programs that motivate and support students from disadvantaged backgrounds in their pursuit of a college degree. An estimated 790,000 low-income, first-generation students and students with disabilities — from sixth grade through college graduation — are served by over 2,800 programs nationally. TRIO programs provide academic tutoring, personal counseling, mentoring, financial guidance, and other supports necessary for educational access and retention. TRIO programs provide direct support services for students.



## OUR MISSION

For more than 35 years, the American Science and Engineering Society (AISES) has been working to substantially increase the representation of American Indians and Alaskan Natives in science, technology, engineering and math (STEM) studies and careers.

## OUR IMPACT

Through the quality and reach of our programs and the longevity and devoted commitment of its "family," AISES is the leader in STEM opportunity in Indian Country. Members from over 200 tribal nations are represented within AISES, and AISES enjoys the support and partnership of corporate, government, academic, and tribal decision-makers.

- ❑ 177 Chartered College and University chapters throughout the United States and Canada
- ❑ 13 Professional Chapters
- ❑ 160 Affiliated Schools that enroll more than 55,000 K-12 Native American students
- ❑ Approximately 3,000 current members
- ❑ Scholarship programs which have cumulatively awarded over \$8.7M to more than 5,000 students



## OUR PROGRAMS

**Pre-College** The focus of the Pre-College Program is "Awareness and Retention." AISES engages in a multitude of programs and events that aim to ensure students are given exposure to first-rate science, technology, engineering, and math (STEM) programs and events. These experiences and opportunities support students in discovering, pursuing, and sustaining their interest in STEM as they prepare for their college careers and beyond. The Pre-College Program supports early childhood through high school education and students in STEM studies through teacher training, regional science bowls, science fairs, leadership development, mentorship, scholarships, internships and other programming designed to support students and their families.

**College** The focus of the College Program is "Access and Success." AISES administers and is involved in many programs and events for American Indian and Alaska Native college students to increase access to, and boost success in, STEM. The College Program supports undergraduate and graduate education and students in STEM studies through college chapters, regional and national conferences, leadership development, mentorship, scholarships, internships and career resources.

**Professional** The focus of the Professional Program is "Leadership and Change." AISES is dedicated to supporting its professional members in STEM, providing a network of Professional Chapters an annual Professional Awards Program to celebrate excellence in the field. The Professional Program supports early, mid and executive professionals in STEM fields through professional development, career opportunities, networking and opportunities to mentor and support students in STEM.

## SCHOLARSHIPS AND INTERNSHIPS

**Scholarships** AISES offers a universe of opportunities to students! Year after year, our AISES scholars bring potential and limitless possibilities for the future of STEM, each working towards advancing his or her opportunities in STEM career fields.

**Summer Internships** Our Internship Program provides students with applied work experience and an opportunity to explore career options. Placing students in 10-week summer positions with partner agencies, the program also promotes advanced study to the graduate level and assists students in developing professional networks. To ensure you receive notification of all upcoming scholarship and internship opportunities, please be sure you sign-up for informational updates and our monthly newsletter at [www.aises.org](http://www.aises.org).





## MEMBERSHIP

AISES offers membership for individuals as well as for high schools, colleges and universities and professional groups. To learn more, or to become a member of AISES, visit our website at: [www.aises.org](http://www.aises.org).

### Individual Membership Information

#### Annual Membership Fees:

Pre-College Student	\$5
College Student	\$25
Professional	\$65
Retiree	\$40

#### Lifetime Membership Fees:

Sequoyah Fellow	\$1,000
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#### Membership Benefits:

- ☐ Strong Academic and Professional Networks
- ☐ Career Development
- ☐ Access to Job Board
- ☐ Access to Members-Only Website Content
- ☐ Discounted National Conference Registration
- ☐ Eligibility to Participate in AISES Events
- ☐ Eligibility to Apply for Internships, Scholarships and Awards
- ☐ Access to Opt-In Membership Directory
- ☐ Subscription to Winds of Change Magazine

To learn more about membership for high schools, colleges & universities, and professionals, please visit the "membership" section of our website: [www.aises.org](http://www.aises.org).

## CAREERS

Through AISES, members are connected with employers seeking to hire in STEM fields. With our corporate and agency partners, AISES maintains a job board to connect members to opportunities in a variety of STEM fields. Posting jobs on the AISES website enables employers to advertise opportunities within their organizations to AISES' top-talent membership of professionals, students, educators, and others in the STEM fields. Sign-up for AISES monthly *E-Opportunities Update* to receive information about job postings, scholarships, internships and other STEM opportunities at: [www.aises.org](http://www.aises.org).

### For Corporations, Government Agencies and Educational Institutions

AISES partners with a multitude of Corporations, Government Agencies and Educational Institutions to create mutually-beneficial goals that connect AISES members with our partners. To learn more about becoming an AISES partner, visit the "careers" section of our website at: [www.aises.org](http://www.aises.org).



AISES National Headquarters:  
2305 Renard SE, Suite 200  
Albuquerque, NM 87106  
P: 505.765.1052, F: 505.765.5608

AISES Mailing Address:  
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1630 Main Street, Suite 201  
Longmont, CO 80501  
P: 720.552.6123

# **A HIGH SCHOOL STUDENT'S QUICK GUIDE TO BECOMING AN ENGINEER**

## **Definition of an Engineer**

Engineers are team members who put abstract scientific discoveries into practical applications. Engineers are innovators who take a fresh look at science and technology in order to apply old knowledge to finding feasible solutions to new human problems.

Engineering is putting scientific knowledge into a wide variety of practical uses. An engineer, however, is not the same as a scientist. Engineers have a background in math and science, as would a chemist or physicist, but apply these basic principles to practical problems in some type of industry. A scientist is not as application-oriented as an engineer and is more dedicated to the understanding of basic principles. Essentially, engineers solve problems using math and science in innovative ways.

## **Indicators of a Potential Engineer**

Potential engineers usually demonstrate the following qualities in high school.

- ✓ The enjoy solving problems in math and science. (Try not to equate your enjoyment of the subject matter to the teacher or your grade.)
- ✓ They are logical and answer-oriented.
- ✓ They enjoy lab work and group work.

If you have any or all of the characteristics, then engineering may be the field for you.

## **How to Prepare for Engineering School**

As a high school student you have to start to prepare yourself to become an engineer.

- ✓ Take as many math and science courses as you can.
- ✓ Gain experience with computers
- ✓ Don't neglect your English and foreign language classes. They are important and may be required for admission to college.
- ✓ Get involved in some extracurricular activities. You don't have to be a bookworm to be an engineer, and you will gain organizational and teamwork experience.
- ✓ Take the standardized tests required for application to college.
- ✓ Apply to schools with good engineering programs.
- ✓ Visit schools that you may wish to attend. You will be able to make an informed decision.



## College Entrance Requirements

General High School Course Work By Subject and Number of Years Needed:

English 3  
Algebra 2  
Geometry 1  
Trigonometry 1  
Biology 1  
Chemistry 1  
Physics 1  
Social Studies 2  
Foreign Language 2

It is helpful to take advanced courses in Calculus, Chemistry and Physics, if your school offers the class. Advanced Placement (AP) courses in these subjects can really help when it comes to starting off in college! It also helps to be a good well-rounded student, and to join any science or engineering clubs in your area.

### Types of Engineers

**Aeronautical engineers** study, design, and evaluate air frames, under carriages and aircraft. And, they plan and supervise the development, construction, and maintenance of aircraft.

**Aerospace engineers** study, design, and evaluate flight systems and aero-vehicles for use in terrestrial atmosphere and in outer space.

**Agricultural engineers** study and evaluate applications of engineering technology to agricultural problems. They design farm machinery, structures, and equipment, and they plan and supervise manufacturing, construction, and installation

**Biomedical engineers** are trained to apply techniques of mathematics and science to solving problems in medicine and biology. Engineers investigate genetic engineering, tumor biology, cellular processes, design and choose materials for prosthetic devices, new ways of taking images of the human body, and a wide range of other aspects of both biology and other engineering disciplines.

**Ceramic engineers** study, design, and evaluate chemical processes and manufacturing plants which produce bricks, glass, and pottery.

**Chemical engineers** study, design, and evaluate the commercial processes for producing the chemical or physical transformation of substances, such as petroleum derivatives, metals, food, and synthetic materials. They plan and supervise the manufacturing plant and its construction, operation, and maintenance.

**Civil engineers** study, design, and evaluate large structures such as bridges, dams, roads, airports, railways, water disposal systems, and flood control systems. They also plan and supervise the construction and maintenance of such projects.

**Computer engineers** analyze and design physical systems, formulate mathematical models, and design, develop, and operate computers to solve scientific and engineering problems.

**Electrical/electronic engineers** design and evaluate electrical components, equipment, and systems, and plan and supervise their development, construction, installation, operation and maintenance.

**Engineering mechanics** are experts on how solids and fluids react under forces. They are specialists employed on sophisticated or highly complex design, research, or development problems.

**Geological engineers** apply a knowledge of geological sciences and engineering fundamentals to such engineering endeavors as the exploration, development, and utilization of mineral and petroleum resources or to the locations and construction of engineering projects.

**Industrial engineers** study and evaluate the organization of production processes and commercial and administrative procedures. They plan and supervise time motion studies; they make recommendations to promote efficiency, primarily in the manufacturing element of corporations.

**Materials engineers** study and evaluate characteristics of materials and they endeavor to develop new material for general or specific purposes or to find new uses for present materials.

**Mechanical engineers** study, design, and evaluate mechanically functioning equipment and they plan and supervise the development, manufacture, construction, installation, operation, and maintenance of such equipment.

**Metallurgical engineers** study properties of metals and alloys, develop new alloys, and they evaluate technical aspects of metal and alloy manufacture and processing.

**Mining engineers** study and evaluate the extraction of metallic and solid non-metallic minerals from the earth. They organize the preparation of minerals for distribution or processing.

**Nuclear engineers** study, design, and advise on plant and equipment for the release, control, and utilization of nuclear energy, and plan and supervise their development, installation. and operation.

**Petroleum engineers** study processes for the extraction and storage, the treatment and refining of petroleum and natural gas, designing plants and supervising their construction and operation.

**Sanitary engineers** design structures related to public health and hygiene, such as water-supply and waste-disposal systems. They supervise the construction and operation of these systems.

**Textile engineers** study, develop, and control the processes and plant for the manufacturing or processing of textile fabrics. Very few universities offer degrees in textile engineering.

**Welding engineers** develop and study applications for welding equipment and techniques to the design and fabrication of hard-to-weld metal alloys and assemblies.

## Engineer Misconceptions

There are some common misconceptions about engineers such as

- ❖ engineers are nerds

- ❖ all engineers are shy
- ❖ you have to be “super-smart” to be an engineer
- ❖ engineers have no outside interests.

These statements are no more true for engineers than they are for the population in general. Engineers are people just like you.

## **Types of Jobs for Engineers**

- ◆ Sales
- ◆ Production
- ◆ Research
- ◆ Design
- ◆ Product Management
- ◆ Consulting
- ◆ Management

There are many more jobs for engineers other than the ones listed. Engineers fulfill many positions in the corporate world, academic environment, governmental agencies and tribal governments. Engineers are a part of each aspect of your daily life.

## **How To Become An Engineer**

To become an engineer, a Bachelor of Science degree is required. An engineering degree takes four to five years of rigorous study and preparation. Entrance requirements for most colleges are similar. Most require the prospective student to be in the upper half of his or her high school graduating class and have a good ACT or SAT score. Obtain a catalog from the university you plan to attend. It has vital admission and financial aid information. You can receive a catalog from your high school counselor or write to the university admissions office for one. Many schools also have web sites that you may visit, and you may order a catalog through e-mail.

Many schools offer Engineering Technology programs. Engineering technology focuses on applied engineering. The program tends to be more hands-on and focuses on design more than analysis.

## **Engineering Career Opportunities**

The field of engineering is so diverse; there is almost no limit to the career opportunities available to engineers. Engineering has historically been considered a dignified and profession. Engineers can go into public or private industry, or academia. Engineers can work on project teams, as independent consultants, as sales personnel, work in the insurance industry, or work for local, state, or federal governments.

The engineering profession has few limits on career path. Engineers can become lawyers and specialize in patent law or the law of intellectual property. Engineers can go into law enforcement and work as forensic specialists. Engineers can go on to gain knowledge of economics and finance and evaluate the cost and profitability of new projects or systems. Astronauts, presidents of large corporations, and even Presidents of the United States have received an engineering education.

Engineers are also compensated well for the hard work that they do. Starting salaries for engineers in industry may range from the low \$20,000 to the high \$40,000 range, depending on the type of job offered, the location of the job, and the job discipline. Typically, Chemical, Petroleum, and Nuclear engineers' starting salaries are slightly higher than the starting salaries of Civil engineers. Mechanical and Electrical engineers' salary typically fall in-between. Regardless of the starting salary of a given discipline, the salary difference is typically diluted as the engineers gain more experience, and begin to specialize within their sub-disciplines. In time, salaries reflect the level of ability exhibited by the engineer than with their undergraduate major, therefore it is very important that a student select an engineering major that is best suited to her or his preferences and abilities.

## Engineering & STEM Salaries

### Highest Paying Jobs With a Bachelor's Degree

SOURCE: <https://www.payscale.com/college-salary-report/majors-that-pay-you-back/bachelors>

Your major can have an even bigger impact on future earnings than choice of school. Find out which majors pay you back, and which make it hard to pay back student loans.

Rank	Major	Degree Type	Early Career Pay	Mid-Career Pay	% High Meaning
1	<a href="#">Petroleum Engineering</a>	Bachelor's	\$94,500	\$176,900	72%
2	<a href="#">Electrical Engineering &amp; Computer Science (EECS)</a>	Bachelor's	\$88,000	\$142,200	44%
3	<a href="#">Applied Economics and Management</a>	Bachelor's	\$58,900	\$140,000	69%
4	<a href="#">Operations Research</a>	Bachelor's	\$77,900	\$137,100	48%
5	<a href="#">Political Economy</a>	Bachelor's	\$57,600	\$136,200	38%
6	<a href="#">Actuarial Mathematics</a>	Bachelor's	\$63,300	\$135,100	46%
7	<a href="#">Electrical Power Engineering</a>	Bachelor's	\$72,400	\$134,700	63%
8	<a href="#">Business Analysis</a>	Bachelor's	\$57,200	\$133,200	50%
9	<a href="#">Pharmacy</a>	Bachelor's	\$79,600	\$132,500	77%



Rank	Major	Degree Type	Early Career Pay	Mid-Career Pay	% High Meaning
10	<a href="#">Aeronautics &amp; Astronautics</a>	Bachelor's	\$73,100	\$131,600	59%
11	<a href="#">Econometrics</a>	Bachelor's	\$60,100	\$131,000	34%
12	<a href="#">Public Accounting</a>	Bachelor's	\$56,400	\$130,800	47%
13	<a href="#">Systems Engineering</a>	Bachelor's	\$72,300	\$130,400	55%
14	<a href="#">Quantitative Business Analysis</a>	Bachelor's	\$67,100	\$130,000	55%
15	<a href="#">Aerospace Studies</a>	Bachelor's	\$52,600	\$129,600	N/A
16	<a href="#">Chemical Engineering/Materials Science &amp; Engineering</a>	Bachelor's	\$76,100	\$127,900	56%
17	<a href="#">Economics and Mathematics</a>	Bachelor's	\$64,300	\$127,700	31%
18	<a href="#">Actuarial Science</a>	Bachelor's	\$63,700	\$127,300	43%
19	<a href="#">Chemical Engineering</a>	Bachelor's	\$72,800	\$127,200	56%
19	<a href="#">Geophysics</a>	Bachelor's	\$56,600	\$127,200	45%
21	<a href="#">Human Computer Interaction</a>	Bachelor's	\$74,300	\$126,200	40%
22	<a href="#">Aeronautical Engineering</a>	Bachelor's	\$70,600	\$124,800	66%
23	<a href="#">Marine Engineering</a>	Bachelor's	\$72,600	\$123,600	63%
24	<a href="#">Computer Systems Engineering</a>	Bachelor's	\$74,100	\$123,200	48%
25	<a href="#">Building Science</a>	Bachelor's	\$49,800	\$123,100	52%

*Note: Much of this is from an organization that I have been involved with for many years, SWE (Society of Women Engineers). You can find more information on these topics at <http://www.swe.org/>.*

# Cherokee Nation Education Resources

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

## Education Services

- Johnson O'Malley (JOM)
- Title VII
- Cultural & Language Camps
- Cultural & Language Competitions
- Science, Technology, Engineering & Mathematics (STEM) Focus
- American Indian Science & Engineering Society (AISES) Chapters
- Cherokee Nation Science & Engineering Fair (CNSEF)
- National AISES Conference Experience
- STEM Summer Camp
- Higher Education Scholarships (\$8.9 M FY10 - Undergraduate and Graduate)
- Directed Studies Program
- Teacher Training
- Sequoyah High School (Tahlequah)
- Cherokee Immersion School

## Career Services

- Resumes
- Day Work
- GED Classes & Testing
- CareerTech (VoTech)
- Job Bank
- Vocational Rehabilitation
- Summer Youth Work
- Talking Leaves Job Corp

## Community Services

- COTTA
- Community Youth Grants
- Summer Cultural Camps
- Cultural Presentation & Experiences

## Commerce

- Individual Development Accounts (IDAs)
- Youth Entrepreneurship Training & Experiences
- Cherokee Nation Foundation (CNF) Partner

## Leadership

- Cherokee Nation Youth Leadership Council
- Experiences
- Training
- Strategy & Goals
- Remember the Removal Bike Ride

## Cherokee Nation Foundation

<http://www.cherokeemnationfoundation.org>

- Privately Endowed Scholarships
- Pilot Loan Program
- Cherokee Scholars
- Counselor Training
- College Prep Workshops
- Cherokee College Boot Camp
- Cherokee Junior Achievement Program

## Cherokee Nation Businesses

<http://www.cherokeemnationbusinesses.com>

- \$3M Annual Commitment
- Limited High School Internships
- College Internships
- Mentoring K-12 & College Pipeline
- Defining Needed Careers/Degrees
- Employee Education Reimbursement

# Cherokee Nation

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

## \* Action Items & Take-Aways \*

- ✓ This is a TEAM EFFORT! Parents complete the FAFSA by January 1 of the student's Senior year of high school and possibly each year. Parents are the editors, mentors, etc.
- ✓ STUDENT does the WORK. If the parent(s) complete the application, writes the essay(s) or follows-up with the scholarship committee/contact, the \$ decision-makers will know and the opportunity will be lost.
- ✓ Don't be scammed! The FAFSA and scholarship process is FREE. Only schools may have application fees as a general rule and no one but you and your parents should be completing your tax information in the FAFSA.
- ✓ Create or compile a scrapbook of every award certificate, accomplishment and science fair ribbon, etc. for your running resume and scholarship applications.
- ✓ Write a running/long resume which can be easily tailored to a one-page resume tailored to a specific opportunity.
- ✓ Write a solid one-page resume for general use when not tailoring to an opportunity. (If your resume is not solid enough on content to get the money, identify your areas of need and then join, attend and participate in new organizations available to you!)
- ✓ Review and discuss social media – Facebook, LinkedIn, Twitter, Pinterest, Instagram, MySpace, etc. (Even where you are checking in throughout the day could be a lost (\$) opportunity!)
- ✓ Review and fix email. No [hotmomma69@hotmail.com](mailto:hotmomma69@hotmail.com) and create a professional signature with legal name (no odd nicknames unless you are truly only known by this name), (1) mailing address, (1) phone number you answer frequently and (1) professional email address.
- ✓ Buy simple, professional Thank You notes and practice writing Thank You notes so you are ready when mom and dad are not there to assist you.
- ✓ Research and practice 'Behavioral Interviewing.' (Should help you on essay answers, too.)
- ✓ Take college prep curriculum in 7<sup>th</sup> to 12<sup>th</sup> grade. GPA transcript for 9<sup>th</sup> through 12<sup>th</sup> grade typically counts towards scholarships (\$) opportunities and college admittance.
- ✓ Review phone messages/music, discuss and fix.
- ✓ Create a solid, general Recommendation Letter draft.
- ✓ Determine who your Recommendation Letter network targets are and if you need to work to broaden your network. Do you have enough individuals in leadership to write GREAT LETTERS for you?
- ✓ Set your college goals (what college and where), so you know what your \$ goals are for your scholarship search and application process.
- ✓ Determine how your parents taxes will impact your FAFAS (S Corp vs C Corp). Determine how your scholarship (\$) success might impact your parents tax brackets and money owed IRS.
- ✓ Take the ACT/SAT often and raise your score! Last chance to take ACT is December of your Senior year. Goal should be minimum of 25 on ACT and 30 plus is going for the Gold!
- ✓ Draft essays and practice. Know essay writing before you get into the application process.
- ✓ Find your office supply niche and have your calendar process determined for keeping you moving on scholarship applications when time is tight your Senior year or any time in your life.
- ✓ Research and understand your scholarship calendar BEFORE deadlines hit!
- ✓ Sign-up for Cara's email list(s).