College: Here we come!
This workshop is presented by the MATH CEO team, in collaboration with the Department of Mathematics at UCI and the Office of Financial Aid and Scholarships.
Preparing for college and STEM careers
Preparing for college and STEM careers

- Various systems of higher education in California
- Requirements to be admitted to college
- Costs of college, and financial aid resources
- Getting ready for college:
  - The student's role
  - The parent's role
- College as a step to great careers
- Jobs in STEM
- Importance of learning math
College
Just Ahead
Let’s talk about...

- Various systems of higher education in California
- Requirements to be admitted to college
Let’s Learn About College…

**Disclaimer**: All requirements discussed today, apply only *today*. It is your responsibility to remain aware.
4 Systems of Higher Education
Higher Education in California

✧ California Community Colleges (CCC)
✧ California State University (CSU)
✧ University of California (UC)
✧ Private/ Independent Colleges and Universities

We'll focus on these....
Higher Education in California

**Community Colleges**

- Almost everyone who applies is accepted
- Only earn a **two-year** “associate degree” (not what most people call a “college degree”)
- No class requirements. Can take classes your HS did not offer.
- Inexpensive

**Colleges and Universities**

- Harder to get into (GPA minimum requirement)
- Earn a **4-year** “college degree”
- Must take enough math in HS (or community college) before applying
- More expensive

May take first two years in community college, then transfer to a university
Community Colleges in the South of California

- Allan Hancock College
- Los Padres National Forest
- Santa Barbara
- Oxnard College
- The University of Southern California
- ICDC College
- San Bernardino Valley College
- Palm Springs
- South Orange County Community District
- San Diego Mesa College
- Grossmont College
- San Diego Community College District
California Community Colleges

✧ (114) two-year colleges

✧ Preparation for
  ❖ Technical professions/short careers
  ❖ Transfer to a 4-year school

✧ Most students live at home and commute to school
## California Community Colleges

### Programs of Studies
- ✧ Short Degrees
- ✧ Transferable Classes
- ✧ Degree
  - ❖ Bachelor of Arts/Sciences
  - ❖ Vocational Certificates
- ✧ Locations
  - ❖ Santa Ana College
  - ❖ Fullerton College
  - ❖ Orange Coast College
  - ❖ Irvine Valley College

### Cost
- ✧ $46/ per unit
- ✧ Full time: 12 units per semester ($552)
- ✧ $1200 - $1600/ per year

### Requirements
- ✧ No previous courses
- ✧ High School Diploma or equivalent (GED)
California State Universities (CSU)

✧ (23) 4-year institutions
✧ Offering liberal arts and sciences programs for a large variety of professional careers
✧ Admitted students are in the top 33% of their class
✧ Students live at home, at dorms or apartments
✧ It is possible to transfer after completing community college requirements
California State Universities (CSU)

**Programs of Studies**
- 4 year programs
  - Several study choices
- Degree
  - Bachelor of Arts or Bachelor of Science
  - Master
  - Teaching credentials

**Cost**
- Fee costs per year:
  - Fee = $5,472
  - Average Misc. = $1,306

**Requirements**
- A-G courses in HS
- Average grade of at least 2.0
- SAT or ACT exams unless GPA > 3.00
requirements
❖ A-G courses in HS
❖ Average grade of at least 2.0
❖ SAT or ACT exams unless GPA > 3.00

These are entrance exam (on math and English) used by most colleges and universities to make admissions decisions. The higher the score your kids gets, the more likely they are to be admitted to a 4-year college or university.

Take only one of these exams (perhaps 2-3 times to improve score) in junior year = 3rd year of HS = 11th grade
When should I take the exams?

Spring of 11th Grade SAT and ACT

Last day to take the exam:
December, in 12th grade

http://www.collegeboard.com

(Note: for the SAT you need Algebra II)
Requirements
❖ A-G courses in HS
❖ Average grade of at least 2.0
❖ SAT or ACT exams unless GPA > 3.00
The A-G / College Entrance Requirements are a sequence of 15 high school courses that students must complete (with a grade of C or better) to be minimally eligible for admission to the University of California (UC) and California State University (CSU).

- History/social science ("a")
- English ("b")
- Mathematics ("c")
- Laboratory science ("d")
- Language other than English ("e")
- Visual and performing arts ("f")
- College-preparatory elective ("g")
Academic Requirements A-G

Only certain courses count!
Check with school counselors to make sure your children are taking the right classes

- History/social science ("a")
- English ("b")
- **Mathematics ("c")**
- Laboratory science ("d")
- Language other than English ("e")
- Visual and performing arts ("f")
- College-preparatory elective ("g")

Must include geometry, elementary and advanced algebra

Pre-algebra in 9th grade will not count!
The A-G / College Entrance Requirements are a sequence of 15 high school courses that students must complete (with a grade of C or better) to be minimally eligible for admission to the University of California (UC) and California State University (CSU).

You cannot be admitted to UC or CSU without these classes.

Because admission to college is competitive, convince your kid to take MORE classes and MORE ADVANCED classes than the minimum requirement.
### Academic Requirements A-G

**What is the difference between a competitive applicant and a minimally eligible candidate?**

<table>
<thead>
<tr>
<th>Minimally Eligible</th>
<th>Competitively Eligible</th>
</tr>
</thead>
<tbody>
<tr>
<td>✧ 2 years of history / natural sciences</td>
<td>✧ 3 years of history / natural sciences</td>
</tr>
<tr>
<td>✧ 4 years English grammar</td>
<td>✧ 4 years of English grammar</td>
</tr>
<tr>
<td>✧ 3 years of mathematics</td>
<td>✧ 4 years of mathematics</td>
</tr>
<tr>
<td>✧ 2 year of lab science</td>
<td>✧ 3 years of lab science</td>
</tr>
<tr>
<td>✧ 2 years in foreign language</td>
<td>✧ 3-4 years in foreign language</td>
</tr>
<tr>
<td>✧ 1 year in visual arts</td>
<td>✧ 1 year of visual arts</td>
</tr>
<tr>
<td>✧ 1 year of electives</td>
<td>✧ 1 year of electives</td>
</tr>
</tbody>
</table>
University of California (UC)

✧ 9 Schools offering a large variety of 4-year programs
✧ Admitted students are among the top 12.5% of their class
✧ Dorms are guaranteed for all first-year students
✧ It is possible to transfer after completing community college requirements
University of California (UC)

**Programs of Studies**
- 4 year programs
  - Several study choices
- Degree
  - Bachelor of Arts or Bachelor of Science
  - Master
  - Doctorates
  - Professionals

**Cost**
- Cost of fees, per year: approximately = $13,900
- Avg. Misc. (living on campus) = $17,700

**Requirements**
- Academic courses A-G
- Minimum average of 3.0
- SAT and ACT exam
- 2 SAT subject tests are recommended
Quick comparison

Competitive admission:
- **CC** – everyone gets in
- **CSU** – top 33%
- **UC** – top 12.5%

Degree:
- **CC** – 2 year
- **CSU** – 4 year
- **UC** – 4 year

Cost:
- **CC** – $1,200-1,600/yr
- **CSU** – ~ $5,472 + $1,308 miscellaneous /yr
- **UC** – $13,500+ $20,500 miscellaneous /yr

• CC: Community College
• CSU: Cal State University
• UC: University of California
Quick comparison

GPA requirement:
- **CC** – none
- **CSU** – minimum 2.0
- **UC** – minimum 3.0

Course prerequisite:
- **CC** – none
- **CSU** – A-G courses in HS
- **UC** – A-G courses in HS

Exam requirement:
- **CC** – none
- **CSU** – SAT/ACT (unless GPA>3.0)
- **UC** – SAT/ACT (+2 SAT subject recommended)
Rumbo a la universidad

On my way to college

Stories to be heard
Let’s talk about...

- Costs of college, and financial aid resources
How to ask for financial help 2018-2019
Cost of education
Varies depending on Institution

*CCC: Cost estimated for living at home
*CSU, UC, Private: Cost estimated for living on campus
Sources of Financial Help

✧ Federal Government
✧ State Government
✧ Colleges and Universities
✧ Private agencies, organizations, foundations and employers
Types of Financial Aid

- **Grants** – money that does not need to be returned
- **Work and Study** – Money earned by the student in exchange for work inside or outside the school
- **Loans** – Money that the student borrows; needs to be paid back with interest to the borrower
Example of maximal Cal Grants and Pell Grants

Cal Grant* (From $547 to $12,570)
- FAFSA or Dream Act Application (if applicable)
- GPA Verification Form
- Application sent by 3/02/2019

+ Federal Pell Grant (up to $6,095)
- FAFSA

= up to $18,665
annually depending on the college/university attended and on financial need

*Must verify college eligibility at: www.csac.ca.gov
Cal Grants

✧ Cal Grant A –
  ✷ Minimum grade point average (GPA) 3.0+
  ✷ Family income and assets lower than state maximum
  ✷ Must prove financial need

✧ Cal Grant B Entitlement Awards –
  ✷ Minimum grade point average (GPA) 2.0+
  ✷ Coming from a low income family
  ✷ Family income and assets lower than state maximum
  ✷ Must prove financial need

✧ Cal Grant C -
for low income students pursuing vocational study programs
## 2018-19 Cal Grant Income and Asset Ceilings

**California Student Aid Commission**

For new Cal Grant Applicants and renewing Cal Grant Recipients

### 2018-19 Cal Grant Program Income Ceilings

<table>
<thead>
<tr>
<th>Family Size</th>
<th>Cal Grant A and C</th>
<th>Cal Grant B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Six or more</td>
<td>$114,300</td>
<td>$62,800</td>
</tr>
<tr>
<td>Five</td>
<td>$106,000</td>
<td>$58,200</td>
</tr>
<tr>
<td>Four</td>
<td>$98,900</td>
<td>$52,000</td>
</tr>
<tr>
<td>Three</td>
<td>$91,000</td>
<td>$46,700</td>
</tr>
<tr>
<td>Two</td>
<td>$88,900</td>
<td>$41,500</td>
</tr>
</tbody>
</table>

**Independent students**

<table>
<thead>
<tr>
<th></th>
<th>Cal Grant A and C</th>
<th>Cal Grant B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single, no dependents</td>
<td>$36,300</td>
<td>$36,300</td>
</tr>
<tr>
<td>Married, no other dependents</td>
<td>$41,500</td>
<td>$41,500</td>
</tr>
</tbody>
</table>

### 2018-19 Cal Grant Program Asset Ceilings

<table>
<thead>
<tr>
<th>Students</th>
<th>Ceiling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent</td>
<td>$76,500</td>
</tr>
<tr>
<td>Independent</td>
<td>$36,400</td>
</tr>
</tbody>
</table>

1 This ceiling also applies to independent students with dependents other than a spouse.
Covered 2018-19 system-wide fees ($12,570) for California residents whose families earned less than $80,000 a year and student qualified for financial aid.

Qualified students must be in their first four years of attendance (first two years for transfer students).

Complete information available at www.universityofcalifornia.edu/blueandgold/
**Types of Aid: Federal Stafford Loans**

- **No credit check required**
- **Subsidized Direct Loans:** The government pays the interest while a student is enrolled at least half-time.
  - Students must demonstrate $200+ of financial need.
  - Interest Rate is 5.04% for 2018-19
  - Origination fee of 1.066%
- **Unsubsidized Direct Loans:** Students are responsible for paying the interest during enrollment.
  - Interest Rate is 5.04% for 2018-19
  - Origination fee of 1.066%

<table>
<thead>
<tr>
<th>Annual Limits</th>
<th>Subsidized</th>
<th>Unsubsidized</th>
<th>Combined Sub &amp; Unsub</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dependent Students</td>
<td>Dependent Students</td>
<td>Dependent Students</td>
</tr>
<tr>
<td>Freshman</td>
<td>$3,500</td>
<td>$2,000</td>
<td>$5,500</td>
</tr>
<tr>
<td>Sophomore</td>
<td>$4,500</td>
<td>$2,000</td>
<td>$6,500</td>
</tr>
<tr>
<td>Junior/Senior</td>
<td>$5,500</td>
<td>$2,000</td>
<td>$7,500</td>
</tr>
</tbody>
</table>

* In addition to any unused subsidized eligibility
Complete and submit by March 2nd:

**Free Application for Federal Student Aid (FAFSA)**

If eligible under AB540 or DACA, students must complete DREAM Act application [www.caldreamact.org](http://www.caldreamact.org)
Some students may be required to verify the information reported to FAFSA.

If you are selected for verification, tax information will be verified by:
- IRS data Retrievalal Process
- IRS Tax Transcripts

People who don't declare taxes can be selected for:
- A declaration confirming that they did not present Federal Taxes in 2018 and were not obligated to do so by the IRS
- Copy of W2 form and other documentation of income, if the income was obtained through work

The educational institution has the authority to communicate with you and solicit documents confirming the information that you declared, such as:
- Household size and number
Submit all forms, including FAFSA, by the date that each school/university requires (complete everything by March 2)

Before March 2, submit the Cal Grant GPA Verification Form

Keep records of all the forms that you submit

Students and parent(s) must submit SAR and CAR for data verification

Evaluate all offers of financial help from each school where you have been admitted

Make sure to solicit financial help every year as soon as possible to receive priority for free money.

Do ask questions!
If you need help at any time

• The U.S. Department of Education is always willing to provide assistance to students and families completing the FAFSA and to answer questions relating to federal financial aid.

• The FOTW has help buttons right on the electronic form as you go through the application.

• In addition, you can use the following:
  • FAFSA on the Web – Live Help;
  • Phone 1-800-4-FED-AID (that’s 1-800-433-3243); or
  • E-mail the U.S. Department of Education at: FederalStudentAidCustomerService@ed.gov
Stories to be heard

Rumbo a la universidad

On my way to college

UC IRVINE MATH CEO
Community Educational Outreach
Let’s talk about

• Getting ready for college:
  o The student's role
  o The parent's role

• Personal experiences from UCI students
Preparing For College
The College Team

✧ The **student**
✧ The **family**: parents/guardians, siblings, extended family
✧ Good **friends**—with shared goals
✧ School **staff**: teachers, counselors
✧ Local **outreach organizations**...
College Tips for Parents

✧ Prioritize your kids education
✧ Schedule time for homework everyday
✧ Promote good study habits
✧ Be aware of school deadlines
✧ Encourage your kid academically
✧ Celebrate strong effort and good grades
✧ Set high academic standards for your kids
✧ **Be involved!** Help your kids choose interesting activities outside of class. Meet (and monitor) their friends...
✧ Talk to your kids about college and careers
✧ Look for school and community resources about college
✧ Keep motivating your kids
College Tips for Your Children

✧ Middle school is the time to learn study/time management skills
✧ Be serious about your grades
✧ Set your goals! Think about college and careers
✧ Do your research (online, counselors, parents)
✧ Make a plan!!
✧ Talk to your parents about HS, college, careers
✧ Meet with your counselor annually
✧ Stay motivated (friends with similar interests help!)
✧ Attend tutoring regularly, if needed
✧ Participate in extracurricular activities

Join an after school program that supports a college-going culture, such as THE UCI MATH CEO
Stories to be heard

Rumbo a la universidad

On my way to college

UC IRVINE MATH CEO
Community Educational Outreach
Let’s talk about...

- College as a step to great careers
- Jobs in STEM
- Importance of learning math
Why Should Your Child Go To College?

- Greater and more diverse career options
- Personal and educational growth
- It pays off...
Unemployment rates and earnings by educational attainment, 2017

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Unemployment Rate (%)</th>
<th>Median Usual Weekly Earnings ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctoral degree</td>
<td>1.5</td>
<td>1,743</td>
</tr>
<tr>
<td>Professional degree</td>
<td>1.5</td>
<td>1,836</td>
</tr>
<tr>
<td>Master's degree</td>
<td>2.2</td>
<td>1,401</td>
</tr>
<tr>
<td>Bachelor's degree</td>
<td>2.5</td>
<td>1,173</td>
</tr>
<tr>
<td>Associate's degree</td>
<td>3.4</td>
<td>836</td>
</tr>
<tr>
<td>Some college, no degree</td>
<td>4.0</td>
<td>774</td>
</tr>
<tr>
<td>High school diploma</td>
<td>4.6</td>
<td>712</td>
</tr>
<tr>
<td>Less than a high school diploma</td>
<td>6.5</td>
<td>520</td>
</tr>
</tbody>
</table>

Total: 3.6%  
All workers: $907

Note: Data are for persons age 25 and over. Earnings are for full-time wage and salary workers.  
Over 50 percent of the fastest growing jobs in the U.S. are math, science or technology related.
STEM Careers

Science  Technology  Engineering  Mathematics
STEM Careers

ANALYTICS MANAGER
APPLICATIONS ENGINEER
ARCHITECTURAL ENGINEER
BIG DATA ANALYST
BIOMEDICAL ENGINEER
CLINICAL ANALYST
CLINICAL INFORMATICS ANALYST
COMPUTER HARDWARE ENGINEER
COMPUTER NETWORK ARCHITECT
COMPUTER PROGRAMMER
COMPUTER SUPPORT SPECIALIST
COMPUTER SYSTEMS ADMINISTRATOR
COST ESTIMATOR
DATA ARCHITECT
DATA ENGINEER
DATABASE ADMINISTRATOR
ELECTRICAL ENGINEER
ELECTROMAGNETIC ENGINEER
GAMING ENGINEER
HEALTH INFORMATION TECHNICIAN
HEALTH INFORMATION TECHNOLOGIST
INDUSTRIAL ENGINEER
INFORMATION SECURITY ENGINEER
INFORMATION TECHNOLOGIST
LOGISTICS MANAGER
MANUFACTURING ENGINEER
MATERIALS MANAGER
MECHANICAL DESIGN ENGINEER
OPERATIONS ANALYST
PROCESS ENGINEER
QUALITY ASSURANCE MANAGER
QUALITY ENGINEER
RESEARCH & DEVELOPMENT ENGINEERS
RESEARCH SCIENTIST
SEMICONDUCTOR ENGINEER
SIMULATION SYSTEMS ENGINEER
SOFTWARE ARCHITECT
SOFTWARE DEVELOPER
SOLUTIONS ARCHITECT
STATISTICAL ENGINEER
SUPPLY CHAIN MANAGER
UX DESIGNER
Many jobs!

Why STEM Skills Matter
get.stemskills.online

Job Market Trends
STEM employees are in very high demand; the U.S. has a projected 2.4 million unfilled STEM jobs
- Problem Solving
- Critical Thinking
- Data Analysis
- Adaptability
- Technical Proficiency

Desired Skills
STEM employers are looking for workers with a combination of technical and social skills
- High School Graduates
- Associates Degrees
- Bachelor’s
- Masters’
- Ph.D.

Earnings gap
STEM professionals on average earn 26% more than non-STEM workers in all educational attainment categories
STEM jobs are growing fast in California

Between 2017 and 2027 in California

STEM jobs will grow 15%

- 17% Computing
- 5% Engineering
- 12% Advanced Manufacturing

All other jobs will grow 11%

Percentage of New STEM Jobs by Area Through 2022

US-BLS Total U.S. STEM Jobs Through 2022 by STEM %

- Computing: 60%
- Engineering: 26%
- Mathematics: 3%
- Physical Sciences: 5%
- Life Sciences: 5%

Systems analysis: 10%
Software development: 25%
Database admin.: 2%
Support specialist: 11%
Network/sysadmin: 7%
Security: 1.9%
Other: 2.3%

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STEM Jobs Pay More

The typical STEM worker now earns two-thirds more than non-STEM workers.

Median annual earnings of full-time, year-round workers ages 25 and older, in 2016 dollars.

- **STEM jobs**
  - 1990: $63,126
  - 2000: $70,635
  - 2010: $71,000
  - 2016: $71,000

- **Non-STEM jobs**
  - 1990: $44,870
  - 2000: $46,129
  - 2010: $43,000
  - 2016: $43,000

STEM workers tend to earn more than similarly educated non-STEM workers.

Median annual earnings of full-time, year-round workers ages 25 and older with positive earnings.

<table>
<thead>
<tr>
<th>Education Level</th>
<th>STEM jobs</th>
<th>Non-STEM jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>High school or less</td>
<td>$45,569</td>
<td>$33,000</td>
</tr>
<tr>
<td>Some college</td>
<td>$54,745</td>
<td>$40,505</td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>$75,948</td>
<td>$55,695</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>$91,137</td>
<td>$67,847</td>
</tr>
<tr>
<td>Professional/ doctoral degree</td>
<td>$120,000</td>
<td>$91,242</td>
</tr>
</tbody>
</table>
Why people choose STEM Jobs?

- 30%: To help protect the environment
- 26%: To improve society
- 25%: To pursue a passion
- 18%: To get famous and make money
- 1%: Other

What is STEM?
S = Science
T = Technology
E = Engineering
M = Mathematics

Change the World
Why STEM Skills Matter

getsmellskills.online

Job Market Trends
STEM employees are in very high demand; the U.S.
has a projected 2.4 million
unfilled STEM jobs

- Problem Solving
- Critical Thinking
- Data Analysis
- Adaptability
- Technical Proficiency

Desired Skills
STEM employers are looking for workers with a
combination of technical and social skills

Earnings gap
STEM professionals on average earn 26% more
than non-STEM workers in all educational
attainment categories

- High School Graduates
- Associates Degrees
- Bachelor's
- Masters'
- Ph.D.
Hands-on experience

Thinking skills

Technical ability

Communication skills

TO SUCCEED IN STEM
More than anything you need Math!!

Why STEM Skills Matter
get.stemskills.online

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Desired Skills
STEM employers are looking for workers with a combination of technical and social skills

- Computer fields
- Engineering fields
- Physical & Life Sciences
- Business fields
- Cyber Security

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- High School Graduates
- Associates Degrees
- Bachelor's
- Masters'
- Ph.D.
MATH APPRENTICE
Math is the path to anything you want to be.

- Bicycle Designer
- Biologist
- Artist
- Mechanic
- Inventor
- Sportscaster
- Architect
- Engineer
- Programmer
- Doctor
- Veterinarian
- Meteorologist
- Game Designer
- Engineer
- Chef
The UCI Math CEO

Department of Mathematics
UC Irvine Math CEO
Community
Educational Outreach
The UCI Math CEO

Upcoming Meetings: Feb 12, 19, 26; March 5, 13; April 9, 16, 23, 30; May 7, 14, 21

A bus will pick up the students at 1:25 from the school, and bring them to UCI

We will do some interesting math with the students for about 90 minutes

Then a bus will take the students back to school (expect them back by 4:30pm)
The UCI Math CEO waiting list

Ask your Math teacher to add you to the waiting list
Thanks for your attention!

We wish your child will be a UCI student some day!

A special thank to Roman Cardona (UCI, Office of financial aid and scholarship), Linda Doughty (Cal-Soap, UCSD) & Kika Friend (UCI, CAMP) for their help preparing this presentation.
Questions?
Thank you