



FOOTHILL COLLEGE

Physical Sciences,
Mathematics & Engineering

SEPTEMBER 19, 2013



PSME
Division Kick-Off Meeting 2013-
2014

PETER MURRAY

Agenda

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- 1:00 Alex Sarlin from Coursera Pedagogy
- 2:00 Nicole Gray: Productive Persistence
- 3:00 State (or lack of) of the PSME Division
- Tomorrow
 - Tenure
 - STEMway (Lori & Ion)
 - PSME Center (Eric & Rene)
 - Math 1A (clickers & pedagogy) (Math 1A faculty)
 - Math 1B Flipping (Brian & Mark)
 - Virtualization (Luis)
 - Technology; Clickers, Tablet Computers, LMS (What do you want ?)
 - Engineering Speaker Series
 - STEM Workforce Collaboratory; SRI & Purdue (Sarah P)
 - Committees & Announcements
 - Program reviews and SLOs



Budget

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- The B-Budget is 80% of 2012-13 year level + carryover
 - = \$87,095
 - Funding for Basic Skills TAs is unallocated
 - PSME Center uses NCBS 405
- Lottery is at the same level as 2012-13
- Reassign time unfunded
 - Using some funds for continued support
- 2013-14
 - If FHDA doesn't meet CAP loss in \$M



Enrollment

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		201321				201421				% Increase			
		17-SEP-12				16-SEP-13							
		Sec	Crse Enr	WSCH Estimate	Load	Sec	Crse Enr	WSCH Estimate	Load	Sec	Crse Enr	WSCH Estimate	Load
1PS	ASTR	7	339	1,449	0.823	7	330	1,436	0.708	0%	-3%	-1%	-14%
	C S	16	596	4,210	1.582	35	994	6,917	3.676	119%	67%	64%	132%
	CHEM	34	915	7,313	4.765	38	922	7,400	5.541	12%	1%	1%	16%
	ENGR	5	63	407	0.645	7	106	693	0.912	40%	68%	70%	41%
	MATH	86	2,945	16,026	10.527	89	2,936	15,710	10.545	3%	-0%	-2%	0%
	NANO	2	13	65	0.222	2	14	70	0.222	0%	8%	8%	-0%
	PHYS	15	331	2,471	1.857	16	332	2,451	2.101	7%	0%	-1%	13%
	PSE					2	3	3	0.000				
	Total	165	5,202	31,941	20.421	196	5,637	34,679	23.705	19%	8%	9%	16%
Total		1,168	30,392	151,052	104.809	1,151	29,238	148,973	107.307	-1%	-4%	-1%	2%

Plz ensure students on the waitlists can find a class to take !

PSME Center (NCBS 405) should generate approx 1,200 WSCH

New Faculty & Staff

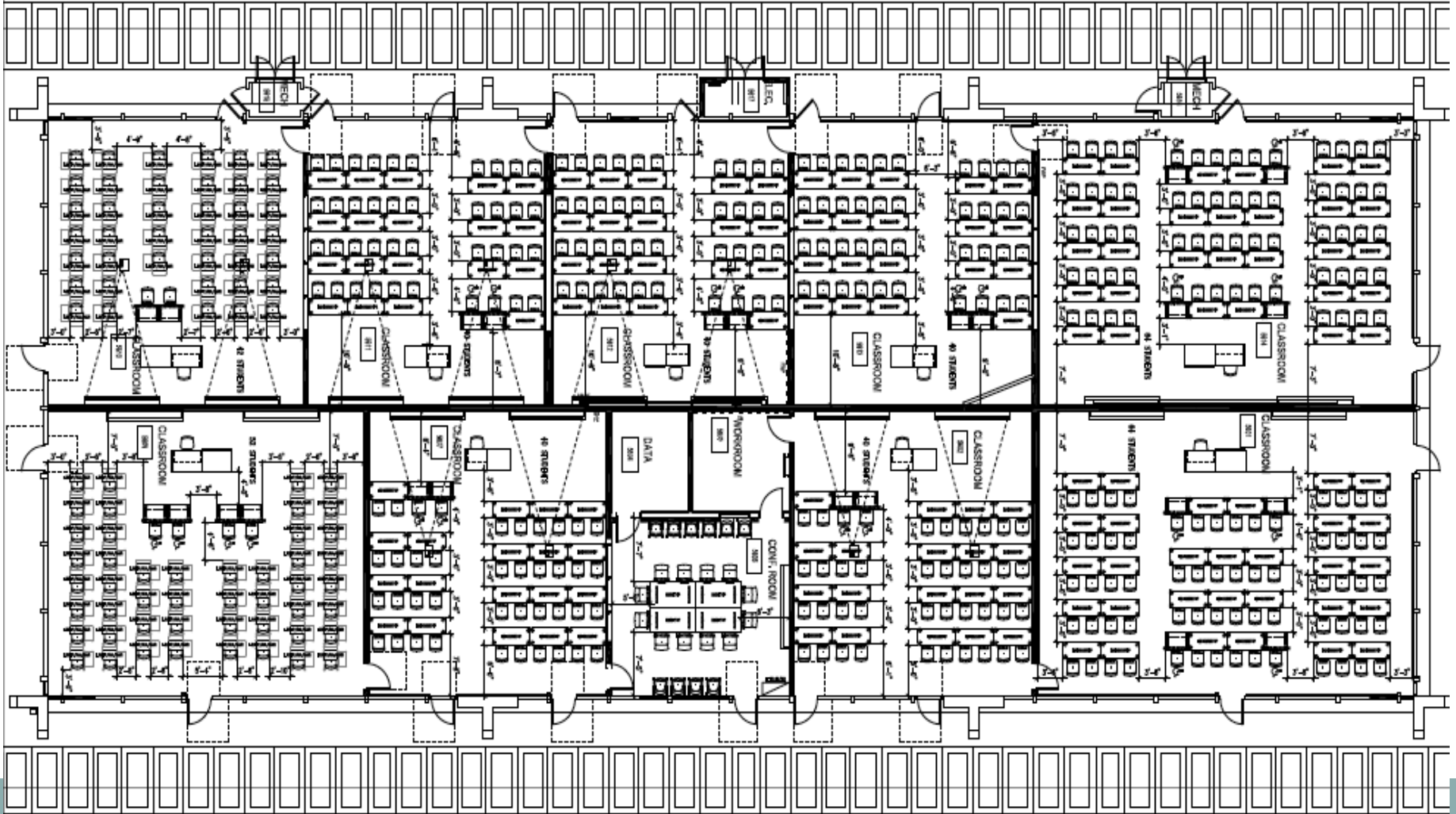
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- Faculty:
 - Sarah Williams (Math)
 - Jeff Anderson (Math)
 - Eric Reed (PSME Center)
 - Rosa Nguyen (Chem)
- Staff:
 - Sherman Lee (FT Chem Lab)

<u>Position</u>	<u>Overall Ranking</u>	<u>Total Score</u>	<u>Div Rank</u>	<u>VP Rank</u>
BSS: Psychology	1	132	1	1
*SS: Counselor (a)	2	121	1	3
PSME: Computer Science	3	111	1	4
LA: English (Generalist/Transfer)	4	100	1	5
BHS: Biology (Generalist/A&P)	5	94	1	2
BSS: Geography (GIS)	6	91	2	6
PSME: Chemistry	7	90	2	8

5600 Opens in 2014 Winter

- Need to identify furniture
- What type of computers?



Scholarships & Interns

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- Scholarships
 - Financial “need” based
 - Run thru Financial Aid Office
 - \$4,200 per year per student (+PELL + BOG will be FT student)
 - SLI scholarships for STEM students (6+ awards)
 - NSF S-STEM Award \$600K over 5 years (14+ awards)
 - Provides additional services to STEM Scholars
 - Mentorships/Internships (Mentorships: Sandhya Rao)
- STEM Summer Camp for HS 9-12 grades
 - Free to students
- Research Internships
 - Same as last 5 years at Stanford and NASA/ASL
 - Expanded to SJSU this summer with 6 chemistry interns
 - Will shift corporate internships to summer programs
 - Have “on campus” internships tied to “Living Laboratory” grant

On Campus Research Project

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Foothill College has created a working prototype of the OMEGA system developed at NASA Ames by Lead Scientist Jonathan Trent, Ph.D.

OMEGA is an innovative method to grow algae, clean wastewater, capture carbon dioxide, and to ultimately produce biofuel without competing with agriculture for water, fertilizer, or land.

IN ROOM 4703

STEM Summer Camp 2013

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Sessions on

- ⦿ Energy and Power,
- ⦿ Robotics,
- ⦿ Mathematics and
- ⦿ Water

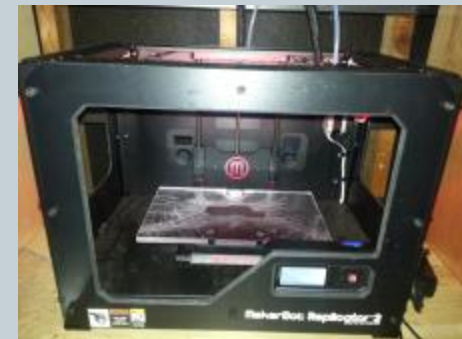
Instructors: Foothill Faculty and Los Altos High School teacher.

Students: 11 different high schools around the bay area. 70% women.



STEM Summer Camp 2013: Robotics: 3D Printed Quad-rotors

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STEM Summer Camp 2014

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3D Printing

Robotics

Biomedical
Engineering

Energy and
Power

Biotechnology

Water

Forensic
Technology

Understand your
Health

Astronomy

Nanotechnology

Anatomy

Green Chemistry

Amusement
Park Physics

Build your own
radio

Build an APP

Video Game
Design

Instructors:
Foothill Faculty
and Los Altos
High School
teachers.

Students:
x4 of STEM
2013 student
population.

Growth Areas

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- Computer Science
- BioMedical Devices
- Rapid Prototyping (3D printing)
- Energy Efficient Commercial Construction

Computer Science

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- Core programming languages and networks
 - ⦿ 19 courses available 2012-13
 - ⦿ Approx. 1,000 students/quarter
- 39 courses available starting summer 2013
- Dedicated CS server system using VMWare
- Focus areas:
 - ⦿ Mobile computing
 - ⦿ Databases
 - ⦿ Operating systems
 - ⦿ Web applications coordinated with Fine Arts Division
- New AS degree CS, Networks & Web development
- **Foothill's CS Transfer degree approved**

Computer Science 2014-15

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- New FT Faculty Fall 2014
- Potential new courses:
 - ⦿ Embedded hardware and software
 - ⦿ “Big data” and analytics
 - ⦿ Gaming
 - ⦿ Expand “virtualization”
 - ⦿ Cybersecurity
 - ⦿ Add Computer Engineering courses
- Potential Pilot for “large” online classes

Biomedical Devices for Transfer & Workforce

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Prosthetic devices



Biomedical Stents

Biomedical Technologist Program



12 months Certificate Program

This program prepares students for entry-level positions in biomedical companies. The Biomedical Technologist certificate provides a solid foundation as well as proficiency in problem solving, critical analysis, oral and written communication.

The critical component is a field internship at a local biomedical company.

Fall Quarter 2014	Winter Quarter 2015	Spring Quarter 2015	Summer Quarter 2015
<ul style="list-style-type: none"> • Intro to Biomedical Device/Industry 	<ul style="list-style-type: none"> • Design and Manufacturing in the Medical Device Industry + Laboratory 	<ul style="list-style-type: none"> • Introduction to Medical Device Regulations • Quality Assurance 	<ul style="list-style-type: none"> • <u>Internships and Field Experience</u>

Transfer Track to Colleges

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CalPoly San Luis Obispo, UC Berkeley, Stanford, UC San Diego, UC Davis, San Jose State

The critical component is a field internship at a local biomedical company.

Fall Quarter 2014	Winter Quarter 2015	Spring Quarter 2015	Summer Quarter 2015
<ul style="list-style-type: none"> • General Chemistry • Calculus • Physics • Intro to Biomedical Device/Industry 	<ul style="list-style-type: none"> • General Chemistry • Calculus • Physics • Design and Manufacturing in the Medical Device Industry + Lab 	<ul style="list-style-type: none"> • Calculus • Physics • Introduction to Medical Device Regulations • Quality Assurance 	<ul style="list-style-type: none"> • Calculus • <u>Project shadowing with groups from CalPoly or Start-ups</u>
Fall Quarter 2015	Winter Quarter 2016	Spring Quarter 2016	Summer Quarter 2016
<ul style="list-style-type: none"> • Circuit Analysis • Human Anatomy and Physiology • Engineering Graphics 	<ul style="list-style-type: none"> • Statics • Human Anatomy and Physiology • Programming C++ 	<ul style="list-style-type: none"> • Properties of Materials 	<ul style="list-style-type: none"> • <u>Internships and Field Experience</u>

What have we done so far?

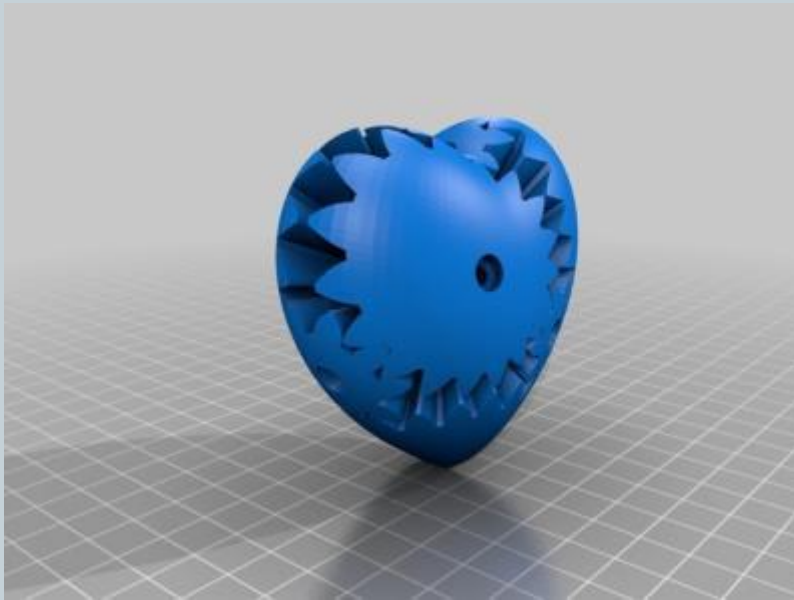
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- Approved (4/25) by SLI Advisors: Bruce Alberts, Bill Krause, Armand Neukermans, Richard Swanson, Art Swift, Marc Tarpenning & Jerry Cain
- Met with Joe Goodman (Stanford/x-Dean Engr)
- Met with Richard Levy (Chairman of Varian)
- Visited Biomedical Manufacturing Company, Phoenix DeVentures, (CEO, Jeff Christian)
- New Engr 28 “Introduction to BioEngineering” Course
- In contact with biomedical engineering program at Anoka Ramsey Community College, Coon Rapids, MN. Graduated 1000 students since 2002.
- Conference call: Gordon Miller Saul, BioDesign Executive Director July 29th
- Met Dr. Thomas Fogarty + Foundation on Sept 4th
- Visited CalPoly. Formed connections with the chair of BioMedical Department. Validated curriculum, potential articulation and project shadowing.
- Spoke with Dr. Paul Fogarty Sept 18th

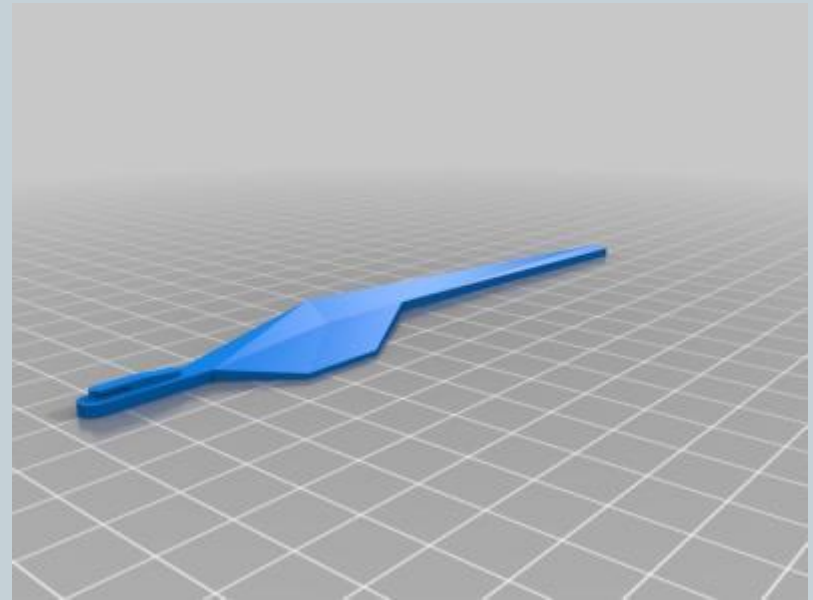


3D Printing

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Heart Gears



Scalpel Handle

Rapid Prototyping Courses

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- ⦿ Rapid Visualization
- ⦿ Basic Model Making
- ⦿ Advanced Model Making I
- ⦿ Advanced Model Making II
- ⦿ 3D Computer Design (Engineering 6)
- ⦿ 3D Rapid Model Making and Prototype Development I
- ⦿ 3D Rapid Model Making and Prototype Development II
- ⦿ Modeling and Prototyping Methods and Materials
- ⦿ Require: 3D Scanners, Objet Printer, laser cutter, CNC Mill & injection molding machine

Energy Efficient Construction

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- New Courses created in 2011-13 (grant funded):
 - ENGR 39 – Energy, Society, and the Environment
 - ENGR 40 – Clean Technology
 - ENGR 81 – Power Systems
 - ENGR 82 – Solar PV Systems
 - ENGR 83 – Smart Energy Systems (Smart Grid)
 - ENGR 102 – Building Science and Performance Engineering
- Dr. Jamie Orr & Robert Cormia awarded 2013-2014 Community Energy Champions Grant for \$70K
- Dr. Oxana Pantchenko paper best awarded at ASEE
- NSF ATE proposal in partnership with Hartnell College
 - Regional collaboration
- Focus on Veterans and underrepresented students
- Living Laboratory: student interns on campus

My Priorities

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- BioMedical Program
- Computer Science
- STEMway & S-STEM
- Sustainability Program
- SLI
- Enrollment for Fall 2014

Dropping & Late Adds

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- If student does not show up for class prior to census date
 - ✦ Deadline varies for each course. Generally, the deadline to drop is Friday of the second week for 12-week classes (Oct. 4). Each class may be different. To verify the exact date for your classes, access your MyPortal.fhda.edu account.
- **TOO MANY LATE ADDS, DROPS & WITHDRAWS**
 - ✦ Students sitting in classes
 - ✦ Faculty drop and then want to re-add
- Late Adds or Drops now take VP approval



The End

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- Rumors
- Questions