

2010 Computer Science Department Undergraduate Student Meeting

Meeting Agenda

- introduction of faculty
- overview of computer science undergraduate degree programs
- overview of minor in computer science
- general advice and suggestions
- ACM and ACM-W
- feedback from students

Computer Science Faculty

- Sudhir Aggarwal: CNT4406, COT4420
 - computer networks, digital forensics
- Ted Baker: CEN4020, CEN4021, COP4020
 - real-time systems, device drivers
- Mike Burmester: CIS4360, CNT4406
 - cryptography, computer security, network security
- Daniel Chang: CDA3100, CDA3101, CIS4250, CIS4930
 - legal/ethical issues in CS, applied computer security
- Zhenhai Duan: CNT4406, COP4342, COP4530
 - computer networks, multimedia, performance evaluation

Computer Science Faculty

- David Gaitros: CEN4020, CEN4021, COP4710
 - software engineering, database systems
- Lois Hawkes:
 - computer networks, fault tolerance, tutoring systems
- Piyush Kumar: CIS4930, COP4531
 - algorithms, computational geometry
- Chris Lacher: several DL/Panama City courses
 - machine learning, neural networks, geometric topology
- Randolph Langley: CIS4930, CNT4603, COP4342
 - system administration, network management

Computer Science Faculty

- Feifei Li: COP4710
 - security/performance of database systems
- Xiuwen Liu: CAP4730, COP3353, CDA3100
 - computer vision, image processing, artificial intelligence
- Michael Mascagni: COP4531, COT4420
 - Monte Carlo methods, random number generation
- Robert Myers: COP3014, COP3252, COP3330, COP3353
 - Java, object-oriented programming
- Daniel Schwartz: COP3252, COP4710, COT4420
 - logic programming, expert systems

Computer Science Faculty

- Ashok Srinivasan: CIS4930, COP4530, COP4531
 - high performance computing, parallel algorithms
- Ann Tyson: COP3014, COP3330
 - methods for teaching programming and debugging
- Gary Tyson: CDA3101, CDA4150, CIS4930
 - computer architecture, embedded systems
- Robert van Engelen: COP4020, COP4610
 - high performance computing, compilers, XML
- Andy Wang: COP4610
 - file systems, operating systems, performance evaluation

Computer Science Faculty

- David Whalley: CDA3101, COP4020, COP4342
 - compiler optimizations, embedded systems
- Xin Yuan: COP4530, COP4610
 - computer networks, high performance computing
- Zhenghao Zhang: CDA3100, CNT4504
 - computer networks, performance analysis

Computer Science Department

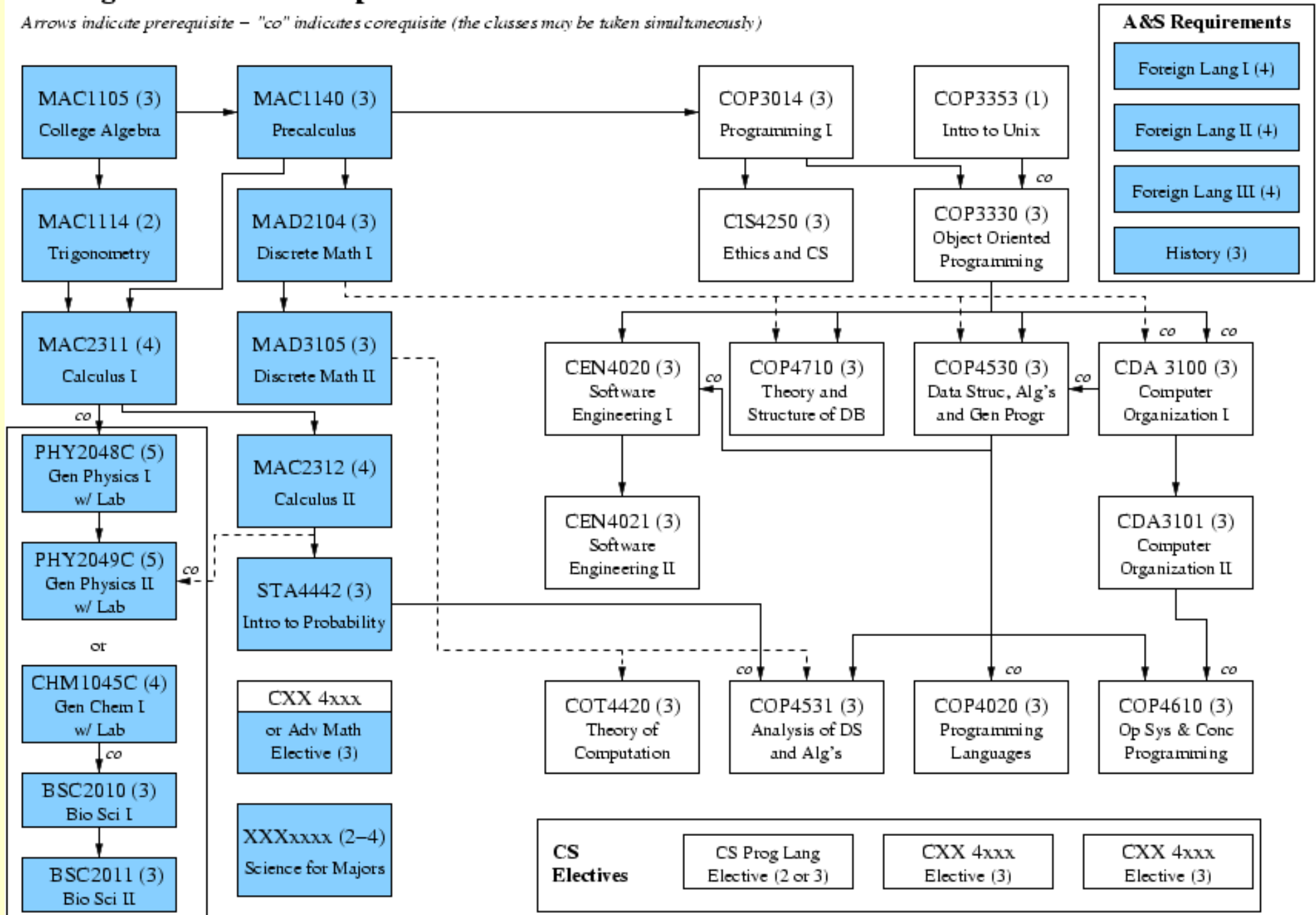
Undergraduate Degrees

- BS in Computer Science
 - 293 majors
- BA in Computer Science
 - 37 majors
- Computational Biology
 - 14 majors
- Computer Criminology
 - 98 majors

BS in Computer Science

Undergraduate BS in Computer Science Flowchart Draft v 2.7- 3/23/2010

Arrows indicate prerequisite - "co" indicates corequisite (the classes may be taken simultaneously)

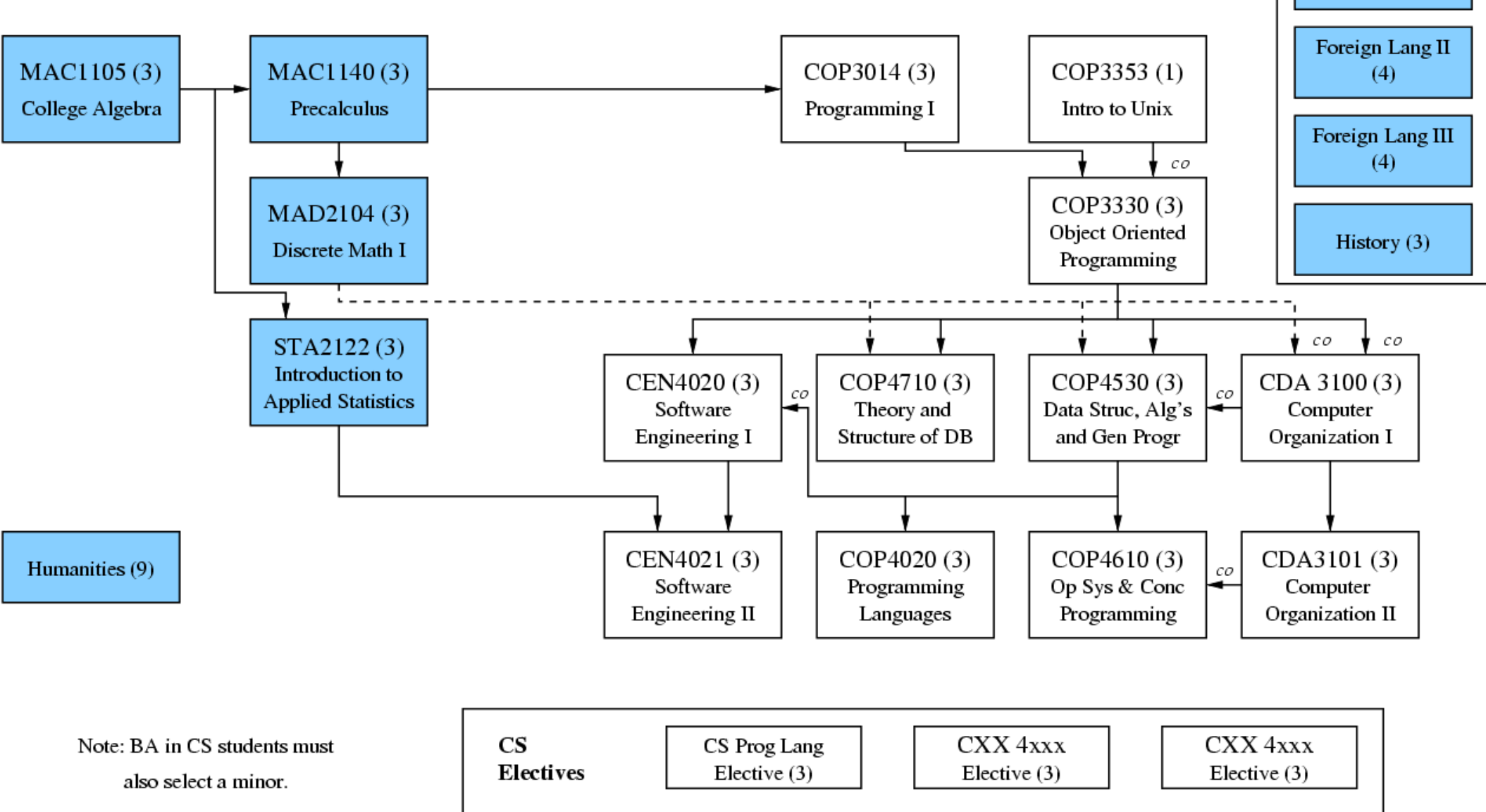


BA in Computer Science

Undergraduate BA in Computer Science Flowchart

Draft v 1.0 – 9/12/2009

Arrows indicate prerequisite – "co" indicates corequisite (the classes may be taken simultaneously)



Recent CS Electives

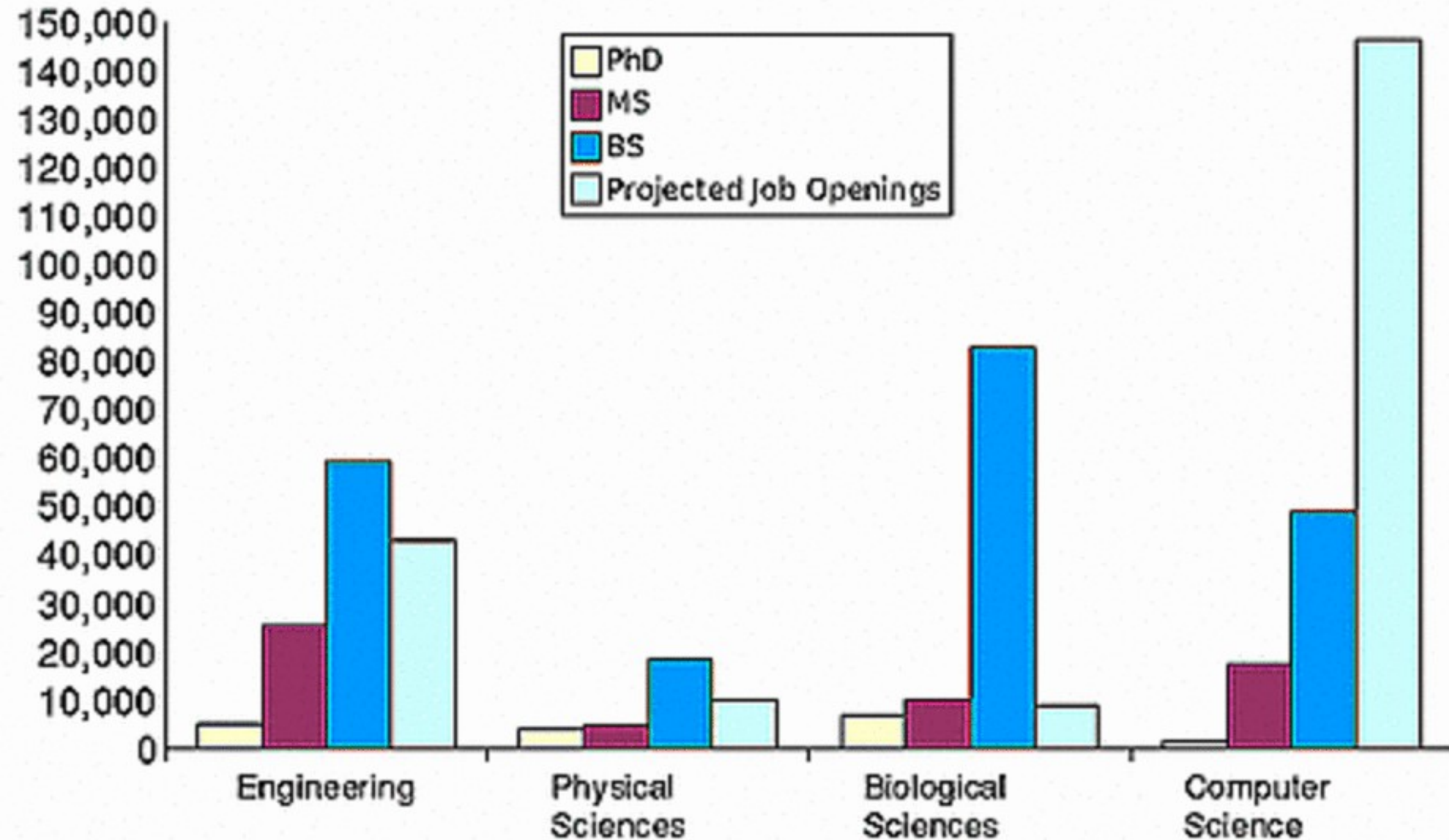
- recent general CS electives offered on main campus
 - CAP 4730 Computer Graphics
 - CDA 4150 Computer Architecture
 - CIS 4360 Introduction to Computer Security
 - CIS 4930 Cybercrime Detection and Forensics
 - CIS 4930 Kernel and Device Driver Programming
 - CIS 4930 Mobile Programming
 - CIS 4930 Parallel Programming on Multicore Processors
 - CIS 4930 Website Architecture
 - CNT 4406 Network Security and Cryptography
 - CNT 4504 Introduction to Computer Networks
 - CNT 4603 Computer & Network System Administration
 - CNT 4504 Introduction to Computer Networks
 - COP 4813 Web Applications Programming

Recent CS Electives (cont.)

- recent programming language CS electives offered on the main campus
 - COP 3252 Internet Applications Programming with Java
 - CIS 4930 C#
 - CIS 4930 Python Application Development

CS Majors Still Getting Jobs

- CS job openings far exceed number of CS graduates.



CS Majors Still Getting Jobs (cont.)

- employers of CS graduates from last 2 years
 - Lockheed Martin: Orlando, FL
 - Harris: Melbourne, FL
 - Cerner: Kansas City, MO
 - Infinity Software: Tallahassee, FL
 - Naval Surface Warfare Center: Panama City, FL
 - Nuance Communications: Melbourne, FL
 - Starwood Vacation: Orlando, FL
 - Motor Carrier Compliance, DOT: Tallahassee, FL
 - IIW Inc: Tallahassee, FL
 - Valencia CC: Orlando, FL

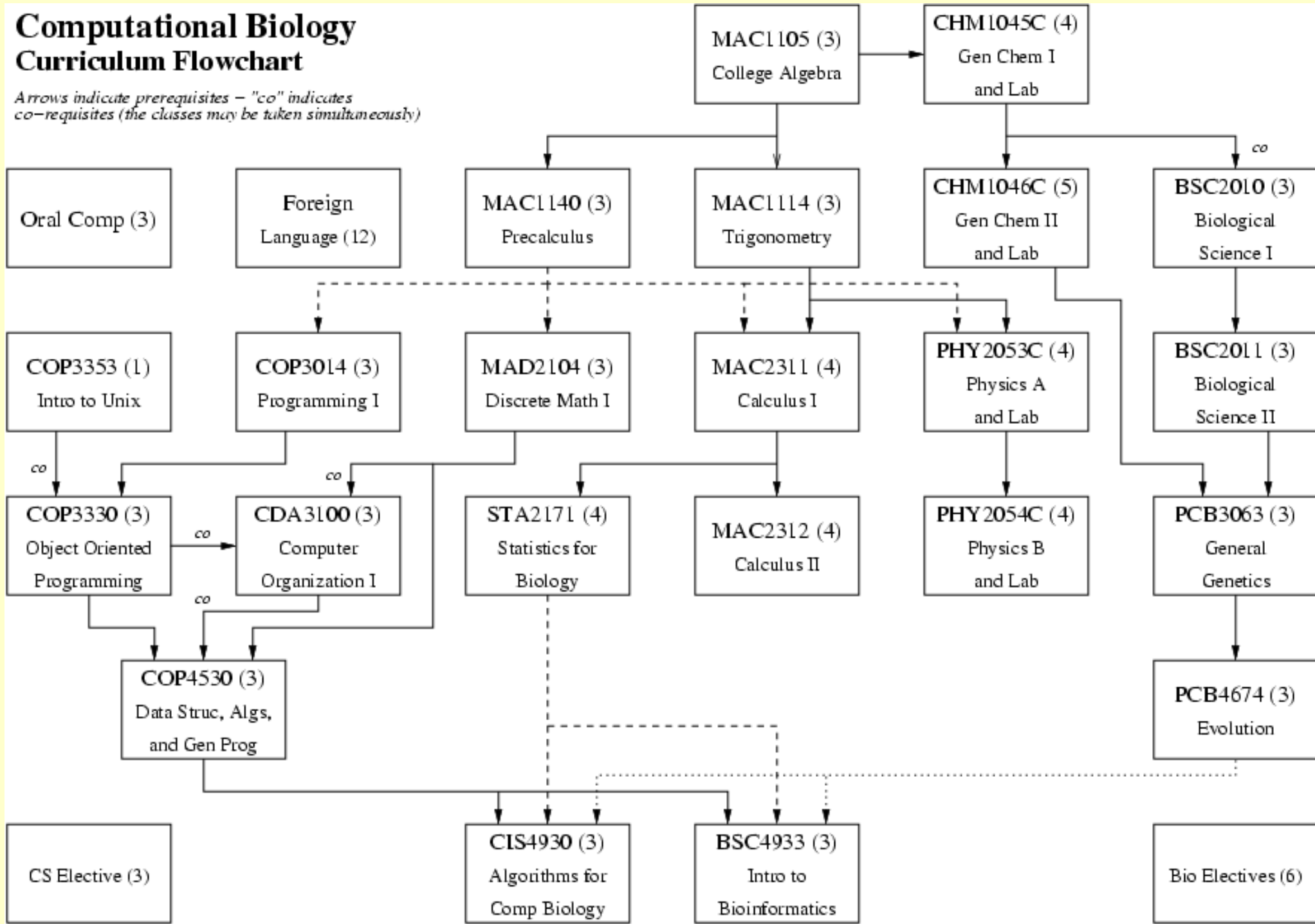
CS Majors Still Getting Jobs (cont.)

- Hewlett Packard: Tallahassee, FL
- BookIt.com: Panama City, FL
- DoD: Maryland
- Health Corporation of America: Nashville, TN
- average starting salary in mid \$50K-\$60K

Computational Biology

Computational Biology Curriculum Flowchart

Arrows indicate prerequisites – "co" indicates co-requisites (the classes may be taken simultaneously)



CS Electives for Computational Biology

- CS elective options for computational biology
 - CDA 3101 Computer Organization II
 - COP 4531 Complexity & Analysis of Data Structs & Algs
 - COP 4710 Theory and Structure of Databases
 - COT 4420 Theory of Computation

Why is computation MISSION CRITICAL to biological research?

- **We are entering a new age**
 - High throughput science vs. boutique science
 - Moore's law application to biology
 - Major centers had computation and analysis pipelines
 - Boutique scientists have caught up with respect to technology but not analysis
 - People like you work to fill that analysis-gap

Until ~5 years ago 90% all massive biological datasets came from 4 places



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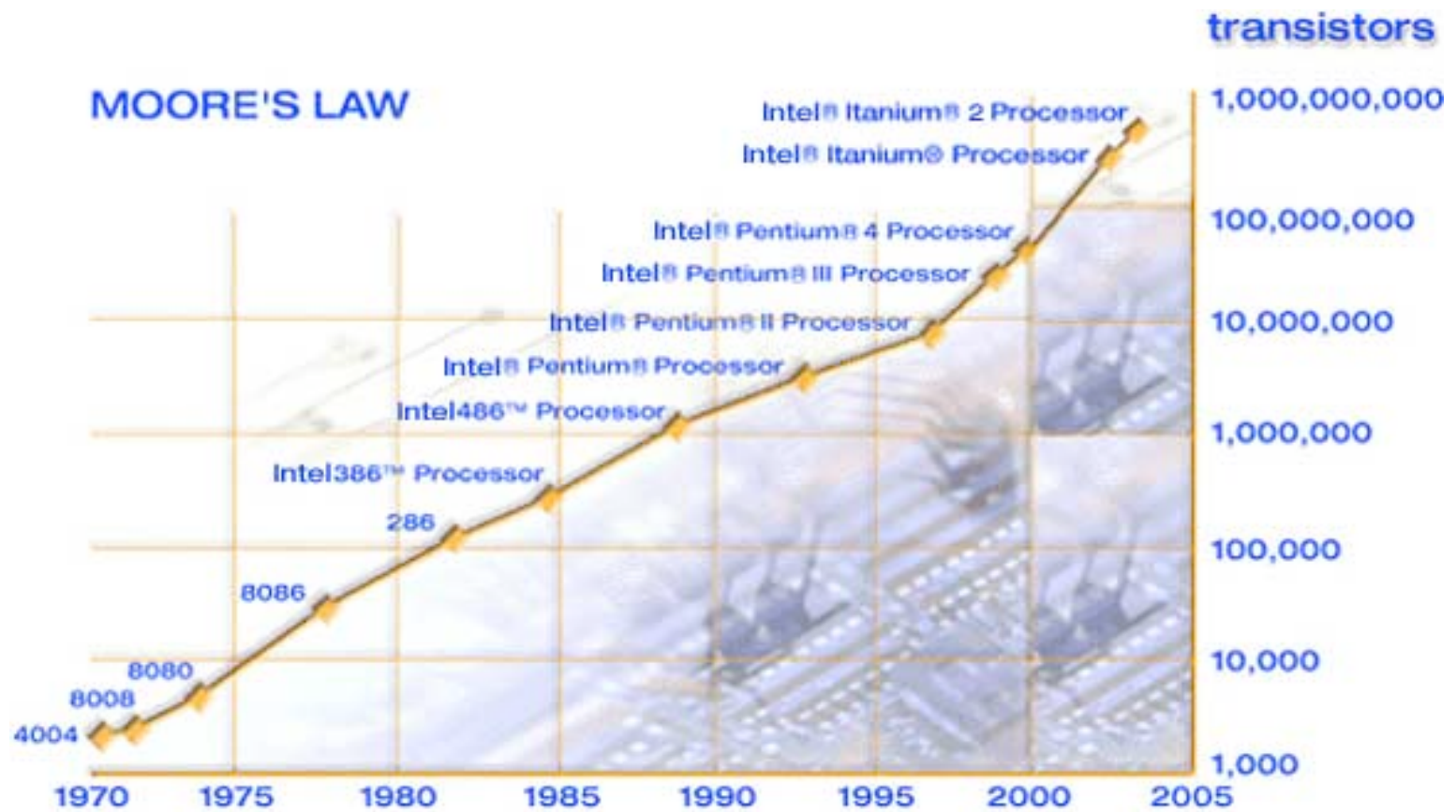
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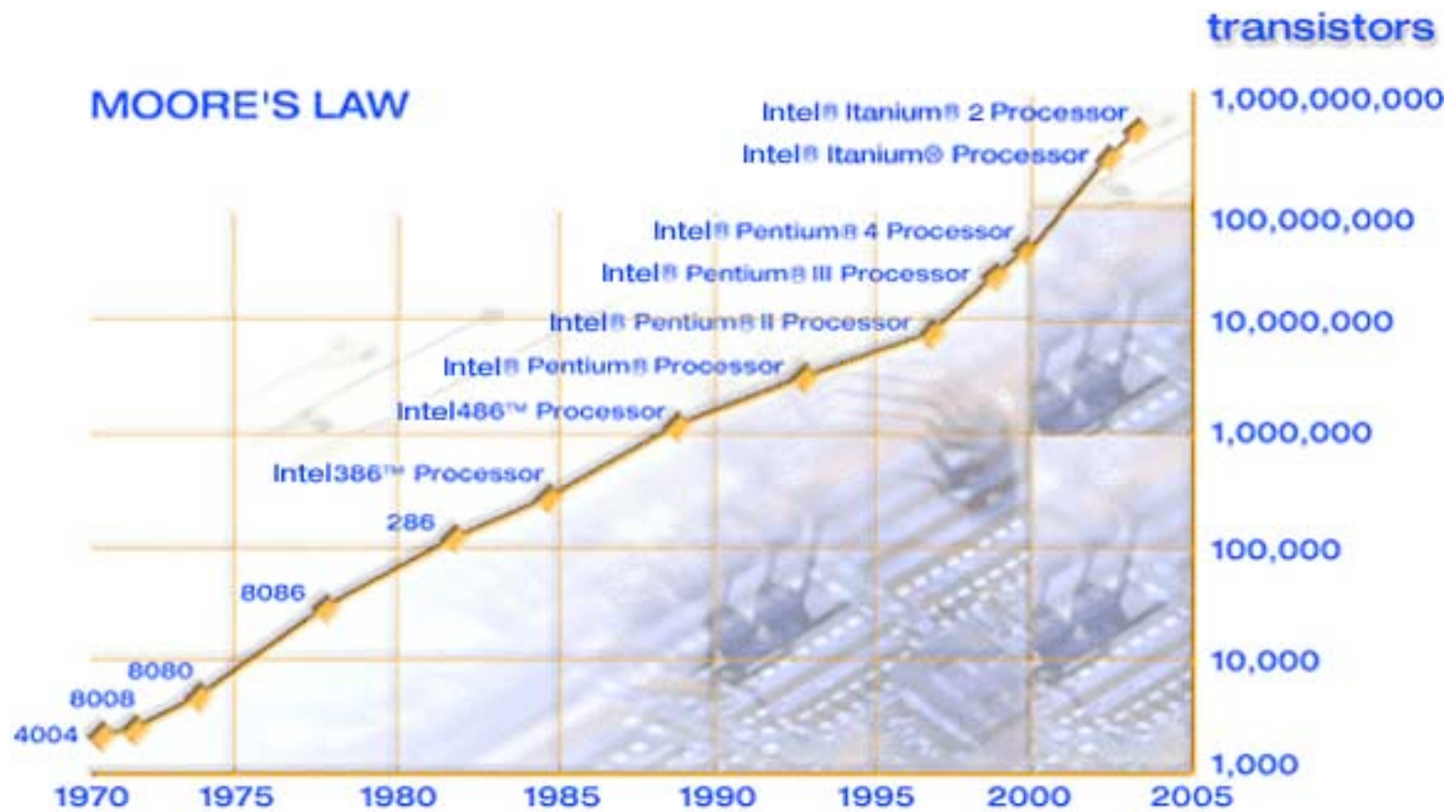


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The number of transistors that can be placed inexpensively on an integrated circuit has doubled approximately every two years. The trend has continued for more than half a century and is not expected to stop until 2015 or later.



THE AMOUNT OF BIOLOGICAL DATA THAT CAN BE GENERATED IN A SINGLE EXPERIMENT has doubled approximately every two years. The trend has continued for more than TEN YEARS and is not expected to stop ANYTIME SOON.

High throughput science is now available to ALL scientists

- **We are entering a new age**
 - High throughput science vs. boutique science



!!! THIS TREND MAKES HIGH-THROUGHPUT SCIENCE AVAILABLE TO ALL SCIENTISTS !!!

Who has access to these high throughput technologies

- Large Universities and Medical Schools
- Small Universities and Medical Schools
- Huge pharmaceutical companies
- Small startup biotech companies
- Medical practices
- Government agencies local and federal

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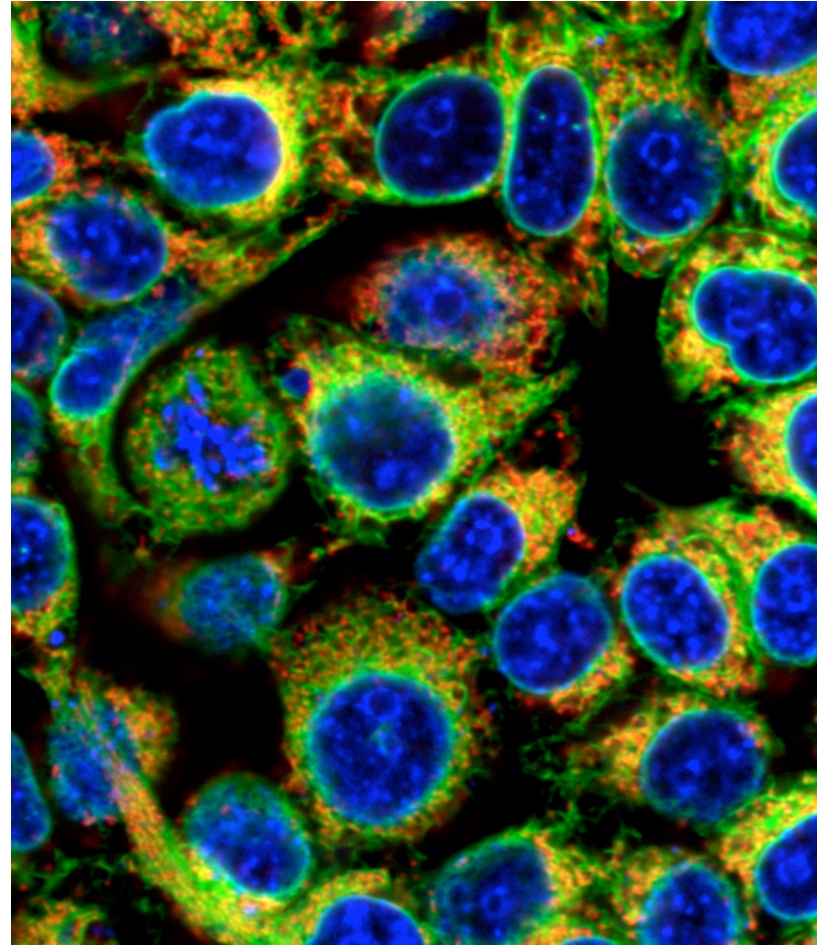
A few areas where technology advances outpace analysis advances

- \$1000 genome
- Fluorescence microscopy
- Protein ID
- Gene splice form ID
- New modes of regulation
- Interaction networks
- Microbial ecology
- Epidemiology



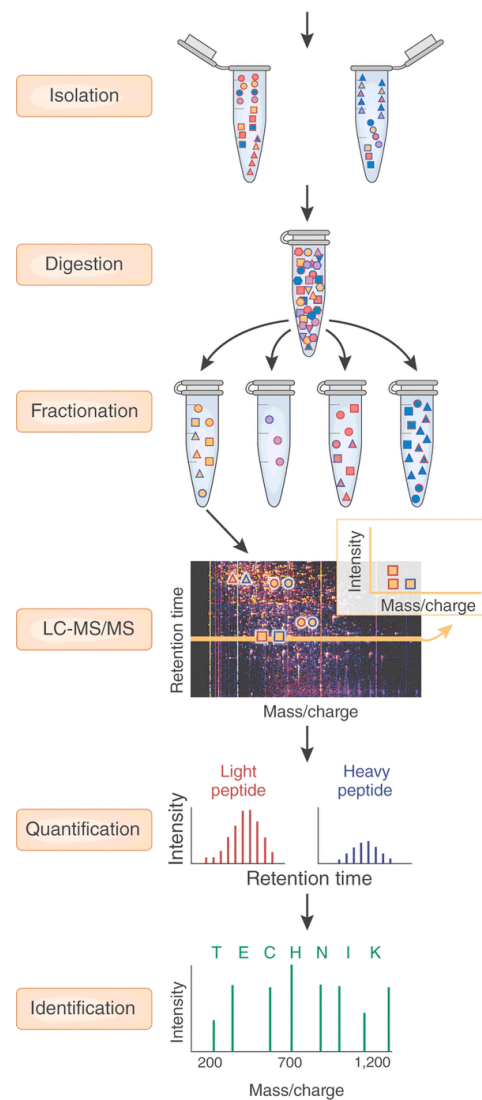
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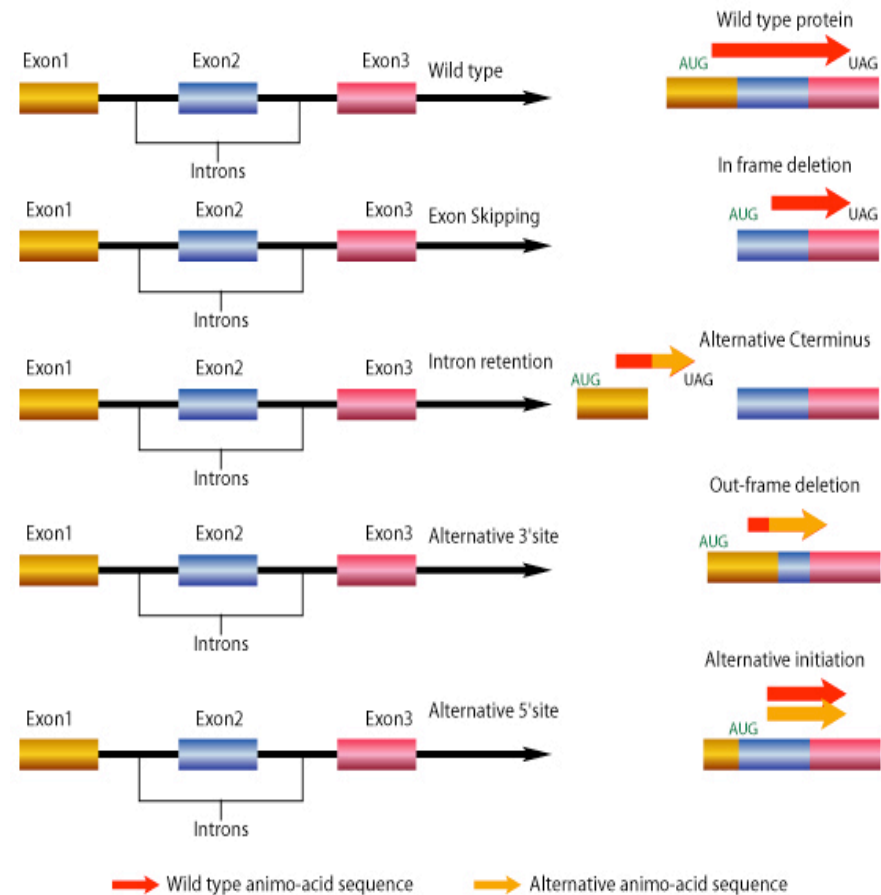
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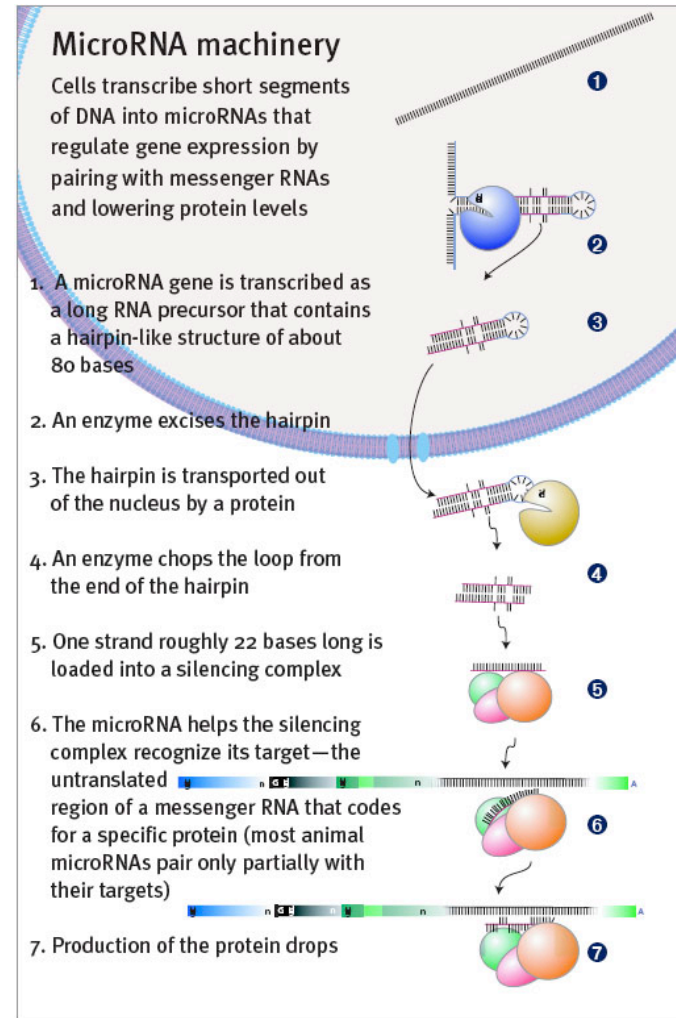
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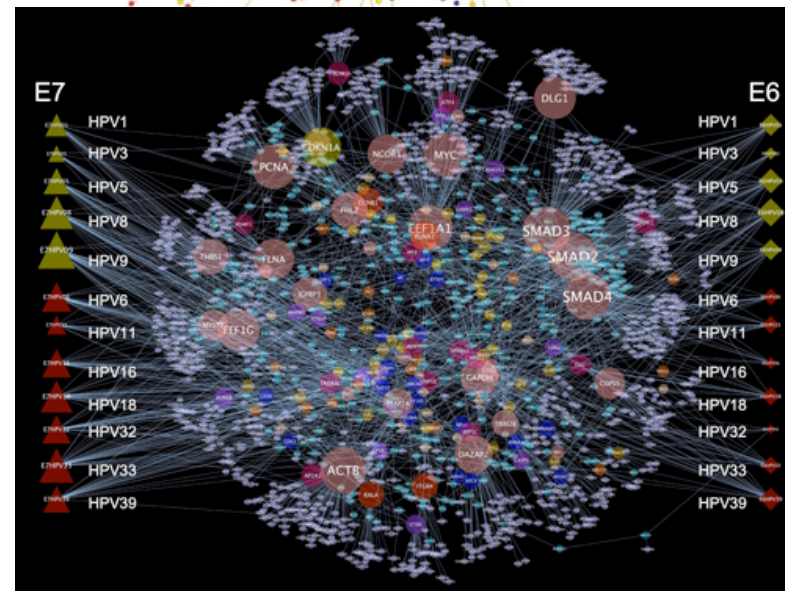
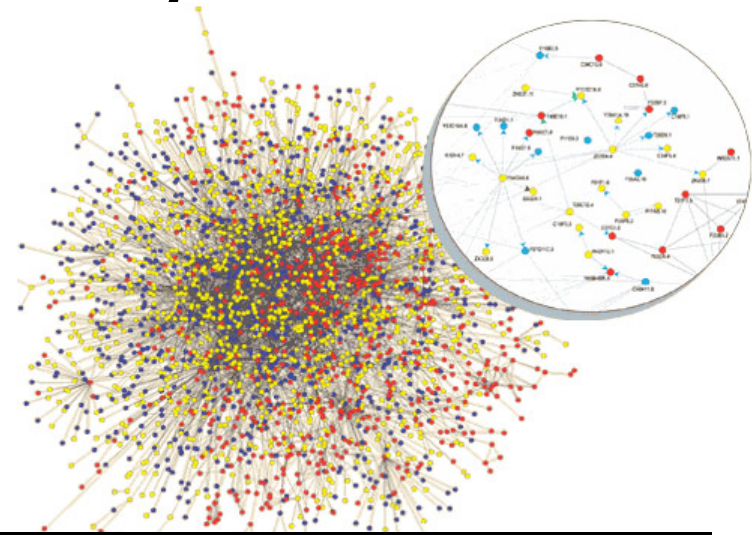
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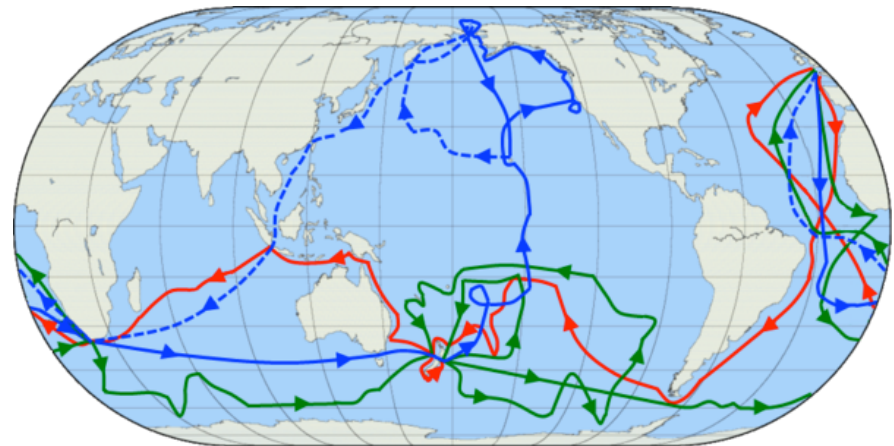
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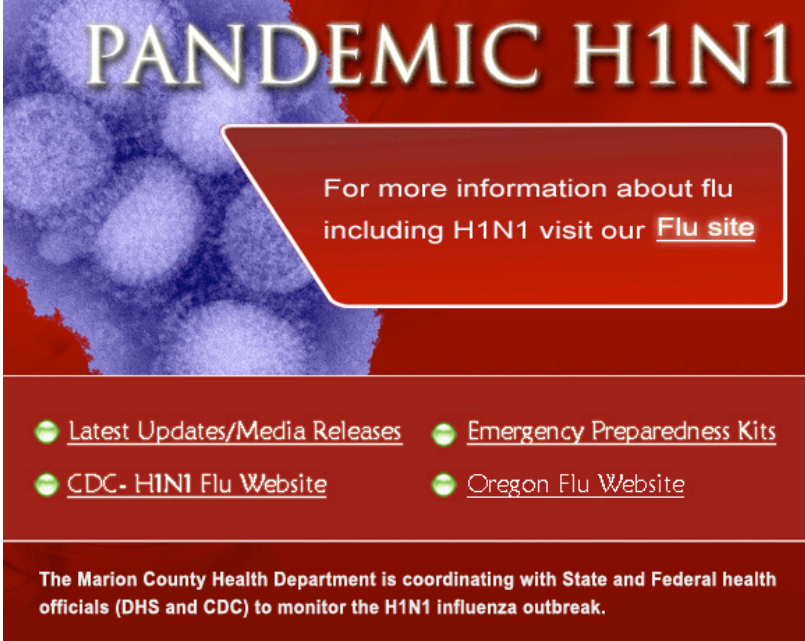
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PANDEMIC H1N1

For more information about flu including H1N1 visit our [Flu site](#)

- [Latest Updates/Media Releases](#)
- [Emergency Preparedness Kits](#)
- [CDC- H1N1 Flu Website](#)
- [Oregon Flu Website](#)

The Marion County Health Department is coordinating with State and Federal health officials (DHS and CDC) to monitor the H1N1 influenza outbreak.

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*SITUATIONS LIKE THESE
PUT STUDENTS WITH
DEGREES IN
**COMPUTATIONAL
BIOLOGY IN AN
OUTSTANDNG POSITION
TO FIND EMPLOYMENT
AND EDUCATION
OPPORTUNITIES AFTER
GRADUATION***

Who will hire computational biologists to help with HT data analysis?

- Large Universities and Medical Schools
- Small Universities and Medical Schools
- Huge pharmaceutical companies
- Small startup biotech companies
- Medical practices
- Government agencies local and federal

Who will hire computational biologists to help with HT data analysis?

Sr. Scientific Systems Engineer - 30154BR	SRA	NC - Durham
<i>From TheLadders.com...</i> Configure and add new computational services Provide... Skills B.S./M.S. in Computer Science or Computational Biology · Minimum of five (5) years experience in...		
Senior Scientist, Computational Biology	Regulus Therapeutics Inc.	CA - San Diego
<i>From Jobfax...</i> Scientist for Computational Biology (Bioinformatics... in molecular biology or computer science with 2+ years experience in bioinformatics/computational biology...		
Scientist I/Scientist II, Computational Chemistry	Takeda Pharmaceutical Company Limited	CA - San Diego
<i>From Jobfax...</i> for the Scientist I, Computational Chemistry; however... ACCOUNTABILITIES... Provides computational chemistry and biology support for lead discovery and lead...		
Algorithm Validation Developer	Manpower	MA - Woburn
<i>From Net Temps...</i> statistics, computational mathematics, signal processing, pattern classification and image analysis. Training in bioinformatics, molecular biology and RT-PCR...		
Senior Scientist - Bioinformatics	Qiagen	MD - Frederick
<i>From Jobfax...</i> Performs computational biology analysis to examine... Ph.D.) in Bioinformatics, Computational Biology, Statistics, Systems Biology or equivalent; plus minimum...		
Data Analyst	Brown University	RI - Providence
<i>From Jobfax...</i> BS degree in computational biology, bioinformatics or equivalent experience. MS preferred. -1-3 years experience in computational biology/bioinformatics...		
Staff Research Associate, Senior	Children's Hospital Oakland	CA - Oakland
<i>From Jobfax...</i> s Degree Systems biology approach for identifying... should have an MS with a background in computational biology, bioinformatics, statistics, or genetics. At...		
Bioinformatics Scientist	AVEO Pharmaceuticals, Inc	MA - Cambridge
<i>From Jobfax...</i> classification... Execute a wide range of computational and analytical tasks, including developing and... execute innovations (computational, statistical, and...		
Sr. Biomedical Informatic - Molecular Medicine	City of I	
<i>From Jobfax...</i> of high performance computational needs. Provide... Cou Molecular Biology. Preferred Field of Expertise is Bioinform		
Postdoctoral Fellow - Epidemiologist / Biologist	Lawren Nations	
<i>From Jobfax...</i> in Epidemiology, Computational Biology, Biostatistics... Ex proteomics or protein biology... Knowledge and experienc		

<p>Broaden Your Perspective Posted on 9/8/2010 Institute for Defense Analyses Alexandria-VA-United States As seen in the 10 September issue of Science: Institute for Defense Analyses For over half a century, the Institute for Defense Analyses has been successfully pursuing its mission to bring anal more »</p>	<input type="checkbox"/> Select <input type="checkbox"/> View <input type="checkbox"/> Save
<p>Sackler Scholars in Biophysics Posted on 9/8/2010 University of Washington, Seattle Seattle-WA-United States As seen in the 10 September issue of Science: Sackler Scholars in Biophysics The University of Washington announces The Sackler Scholars Program in Integrative Biophysics, a new postdoctoral program in inte more »</p>	<input type="checkbox"/> Select <input type="checkbox"/> View <input type="checkbox"/> Save
<p>SYSTEMS NEUROSCIENCE Posted on 9/8/2010 Cornell University Ithaca-NY-United States As seen in the 10 September issue of Science: SYSTEMS NEUROSCIENCE at Cornell University The Department of Neurobiology and Behavior (NBB) invites applications for a tenure-track position as ASSIST more »</p>	<input type="checkbox"/> Select <input type="checkbox"/> View <input type="checkbox"/> Save
<p>UC Davis Genome Center Posted on 9/8/2010 University of California, Davis Davis-CA-United States As seen in the 10 September issue of Science: The UC Davis Genome Center integrates experimental and computational approaches to address key problems at the forefront of genomics. The Center is housed in a new resear more »</p>	<input type="checkbox"/> Select <input type="checkbox"/> View <input type="checkbox"/> Save

1 2 3 4 5 6 7 8 9 10 11 12 Next

Job Title	Location	Company (sort by company name)
Senior Scientist/Scientist, Applied Molecular Biology - Agensys,...	US-CA	Astellas
Macromolecular Structure Analyst	US-MD	Lockheed Martin
Groton, Post Doctoral Fellow - Neuroscience Research Unit	US-CT	Pfizer
Bioinformatics Software Developer	US-MD	Lockheed Martin
Senior Scientist Bioinformatics Hematology Oncology	US-CA	Amgen

Speak with faculty in Biological Science about DIS and other opportunities

The screenshot shows a web browser window with the URL <http://www.bio.fsu.edu/index-research.php>. The browser's address bar shows "PRIVATE" and a search for "biotech jobs". The page title is "FSU Biology - Faculty and Research - Faculty Research Interests".

The website header includes the Florida State University logo and the text "THE FLORIDA STATE UNIVERSITY". A search bar labeled "SEARCH FLORIDA STATE" contains "FSU Biology" and a "GO" button.

The main content area features a large image of a pink flower with the text "Department of Biological Science" overlaid. Below this, a list of research interests is provided:

- [Cell Structure, Function, and Motility](#)
- [Cellular and Organismal Physiology](#)
- [Developmental Biology and Gene Expression](#)
- [Ecology and Evolutionary Biology](#)
- [Marine Biology](#)
- [Microbiology, Virology, and Immunology](#)
- [Molecular Biology, Genetics, and Genomics](#)
- [Neuroscience and Neurobiology](#)
- [Plant Sciences](#)
- [Population Biology and Ecological Genetics](#)
- [Structural Biology and Molecular Biophysics](#)

Below the list are links for "Obtain applications", "Prospective Student Survey", and "2009 Departmental Publications".

The left sidebar contains a navigation menu with links to: Biology Main Page, Directories, Faculty and Research, Research Facilities, Graduate Program, Undergraduate Studies, Seminars and Events, Related Programs, Outreach Programs, Course Materials, Position Openings, and What's News. At the bottom of the sidebar is the "Sheila B. Lutz Memorial Scholarship".

The right sidebar contains sections for "Upcoming Colloquia & Seminars" (listing a seminar on "Fisheries and the Deepwater" by Dr. Guy Harvey) and "Miscellaneous Upcoming" (listing a seminar on "Biological Science Faculty").

The "What's News" section reports that Peter J. Auster has been appointed as the Mote Eminent Scholar Chair in Fisheries Ecology for 2010-2011, and that Erin Simmons is one of 8 FSU students chosen as a Gubernatorial Fellow. It also mentions a "Novel approach to understanding pituitary function."

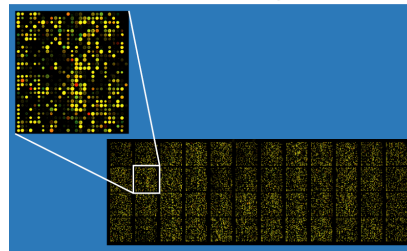
The footer of the page features a repeating pattern of "STRENGTH SKILL CHARACTER" and the following contact information: © The Florida State University, Department of Biological Science, 319 Stadium Drive, Tallahassee, FL 32306-4295. Phone: (850) 644-3700 Fax: (850) 645-8447.

Speak with faculty in Biological Science about DIS and other opportunities

- Titan Krios



- Microarray core facility



- Magnet Lab



THANK YOU

- Questions?
- Please feel free to contact me:
 - Jonathan Dennis
 - King Life Sciences Building, 2023
 - <http://www.bio.fsu.edu/faculty-dennis.php>
 - dennis@bio.fsu.edu

CS Electives for Computer Criminology

- CS elective options for computer criminology
 - CDA 3101 Computer Organization II
 - CIS 4250 Ethics and Computer Science
 - CIS 4360 Introduction to Computer Security
 - CIS 4361 Applied Computer Security
 - CNT 4504 Introduction to Computer Networks
 - CNT 4406 Network Security and Cryptography
 - CNT 4603 Computer & Network System Administration
 - COP 4342 Unix Tools
 - COP 4530 Data Structures, Algorithms, and Generic Prog
 - COP 4610 Operating Systems & Concurrent Prog
 - COP 4710 Theory and Structure of Databases

Employment Opportunities for CC Majors

- Office of the Attorney General of Florida: Tallahassee
 - Economic Crimes Unit, CyberFraud Division
 - The Child Predator CyberCrime Unit
- Florida Department of Law Enforcement (FDLE): Tallahassee - The Florida Computer Crime Center (FC3)
- National White Collar Crime Center (NW3C): Fairmont, WV
- Federal Bureau of Investigations: Washington, DC
 - Cyber Division: Washington, DC
 - Criminal Justice Information Services Division

Employment Opportunities for CC Majors (cont.)

- U.S. Department of Justice – Computer Crime and Intellectual Property Section: Washington, DC

NSA Approved Certificate in IA

- May be beneficial for students majoring in all UG degrees offered by the CS department.
- Can receive an information assurance certificate approved by NSA after taking the following courses.
 - CEN 4021 Software Engineering II
 - CIS 4360 Introduction to Computer Security*
 - CNT 4406 Network Security and Cryptography*
 - CNT 4504 Introduction to Computer Networks*
 - CNT 4603 Computer & Network System Administration*
 - COP 4610 Operating Systems and Concurrent Prog*
- Classes marked with * also can be used to fulfill a computer criminology elective.

Minor in Computer Science

- Science Track (13 hours)
 - Required:
 - COP3014 (3) – Programming I
 - COP3353 (1) – Introduction to Unix
 - COP3330 (3) – Object Oriented Programming
 - Need to take two of the following:
 - CDA3100 (3) – Computer Organization I
 - CDA3100 (3) – Computer Organization II
 - CEN4020 (3) – Software Engineering I
 - CNT4603 (3) – Computer and Network System Administration
 - COP3252 (3) – Internet Applications Programming with Java
 - COP4342 (3) – Unix Tools
 - COP4530 (3) – Data Structures, Algorithms, and Generic Prog
 - COP4710 (3) – Theory and Structure of Databases

Minor in Computer Science (cont.)

- General Track (12 hours)
 - Need to take one of the following:
 - CGS3416 (3) – Java Programming for Nonspecialists
 - CGS3406 (3) – Object-Oriented Programming in C++
 - COP3014 (3) – Programming I
 - Need to take three of the following:
 - CGS3406 (3) or CGS3416 (3) [can choose one not taken above]
 - CGS2060 (3) or CGS2100 (3) [credit not given for both courses]
 - CGS3066 (3) – Web Programming and Design
 - COP3502 (3) – Introduction to Computer Science
 - CIS4360 (3) – Introduction to Computer Security
 - any 3 hour course listed in the CS Science Track minor

General Advice

- Read e-mail from your CS account regularly.
- Meet with Matt Claypool for advising at least once a semester.
- Consider taking courses in summer semesters to reduce your academic hours taken in Fall/Spring and to graduate in a timely manner.
- Need extra money to pay for your education?
 - Consider applying for a Pell grant, which is based on financial need.
 - Try not work more than 20 hours a week as it will likely affect your GPA.

General Advice (cont.)

- Check the FSU academic calendar for important deadlines and dates.
 - Sep 27
 - Spring 2011 registration guide available.
 - Oct 08
 - last day to change a course to an S/U grade
 - last day to drop course without receiving a grade
 - financial aid deferments expire
 - Oct 11
 - registration for Spring 2011 begins

General Advice (cont.)

- **Start working on your programming assignments early!**
- Use the CS Majors Lab to do your CS programming assignments.
- See your instructor or teaching assistant if you encounter problems or have questions.
- Participate in undergraduate research projects if possible.

Suggestions

- Actively participate in ACM and/or ACM-W activities.
- Nominate CS faculty members for teaching awards if you enjoyed taking their courses.

ACM and ACM-W

- ACM: Frank Sposaro, president
- ACM-W: Caitlin Carnahan, president
- activities
 - programming contests
 - picnics and other social events
 - presentations
- assist the department

ACM

Association for Computing
Machinery

Purpose

- Promote an increased knowledge of the science design, development, construction, languages, management and applications of modern computing machinery
- To promote a greater interest in computing and its applications
- To provide a means of communication between persons having interest in computing
- To provide a wider understanding of computers and their use for the rest of the community

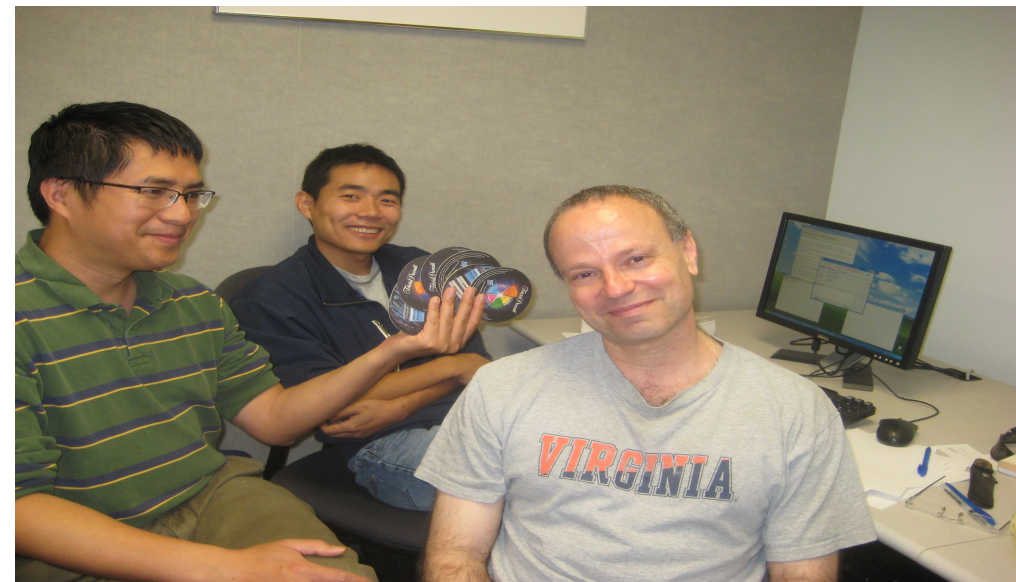
Who Can Join

- Anyone interested in the Science of Computing



Programming Contest

- Sat. 10/17/09 @ 10:00 in Majors Lab



Picnic



MMM. Burgers

Game Night



Google + EA Sports

CS Awards



Scholarships!



25 Years



What's Next??

- Co-Op Events with other groups
 - Market Wednesday
 - Homecoming Parade
 - Halloween Party
 - Christmas Fundraiser
-
- You can make a difference
 - www.acm.cs.fsu.edu

Other Feedback?

- Fill out the online questionnaire when you receive this request via e-mail from the department. Can provide any general concerns or suggestions in this questionnaire.
- Any suggestions or questions?

Pizza!

- Free pizza for attendees in 151 Love.