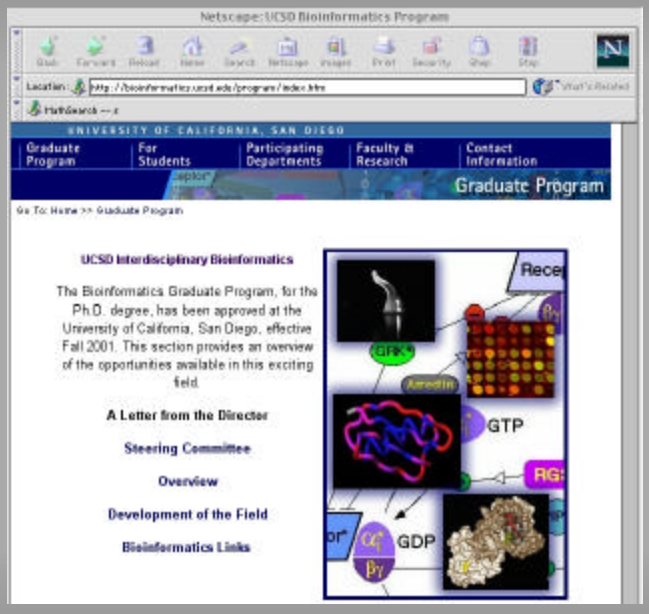
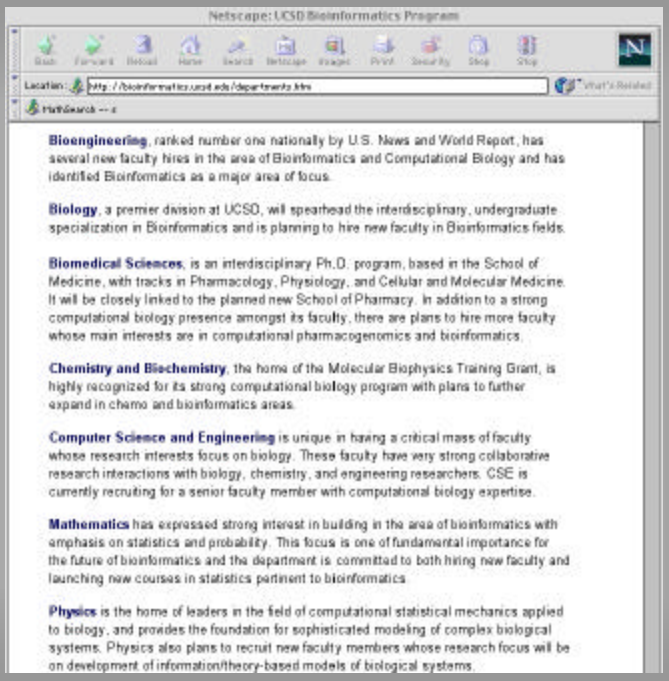
Bioinformatics Education at UC San Diego

Julie C. Mitchell
San Diego Supercomputer Center





Bioinformatics Curriculum

Core Courses

Bioinformatics I: Biological Data & Analysis Tools
Bioinformatics II: Sequence & Structure Analysis Methods and Applications
Bioinformatics III: Genetic Circuits and Modeling Pathways
Bioinformatics IV: Statistical Methods for Bioinformatics

Program Electives

~~Elective 1 - Biochemistry~~

BE 130	Molecular Physical Chemistry
BIBC 100	Structural Biochemistry
CHEM 114A	Biochemical Structure and Function
CHEM 213	Chemistry of Macromolecules
CHEM 218	Macromolecular Biochemistry

~~Elective 2- Data Structures~~

CSE 100	Advanced Data Structures
MATH 176	Advanced Data Structures

~~Elective 3- Algorithms~~

CSE 101	Design and Analysis of Algorithms
MATH 173	Mathematical Software–Scientific Programming

~~Elective 4- Information Retrieval, Databases & Data Mining~~

CSE 132A	Database System Principles
CSE 133	Information Retrieval
CSE 254	Machine Learning

~~Elective 5 - Molecular Genetics~~

BGGN 220	Advanced Molecular Biology
BGGN 223	Advanced Genetics
BICD 100	Genetics
BIMM 100	Molecular Biology

~~Elective 6 - Cell Biology~~

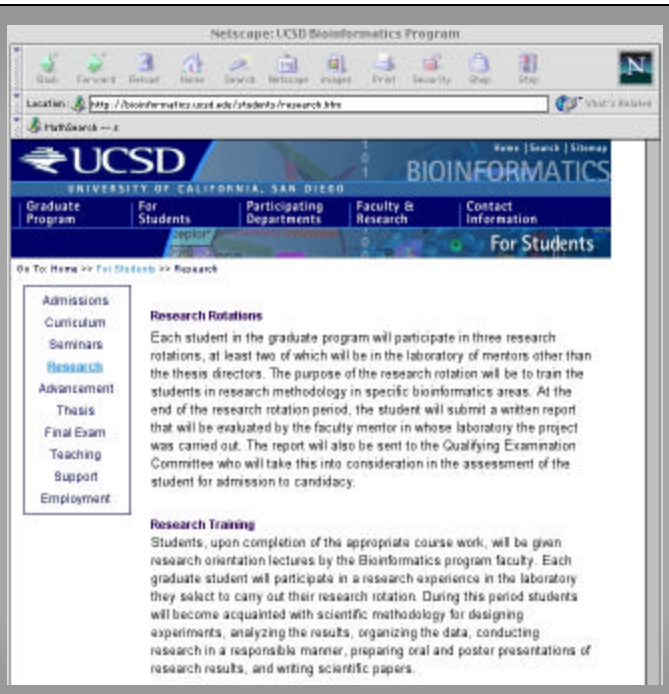
BGGN 222	Advanced Cell Biology
BICD 110	Cell Biology
BIOMED 210	Cellular Biology
BIOMED 212	Cellular and Molecular Pharmacology

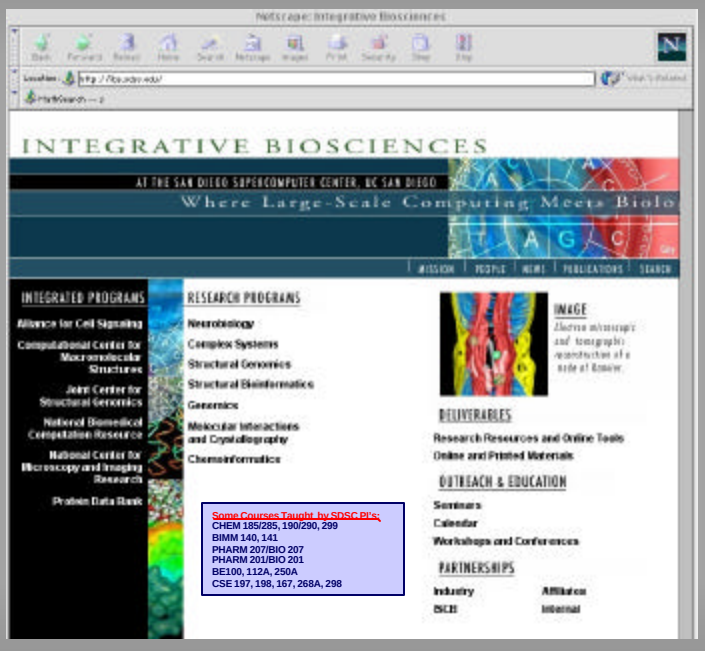
~~Elective 7- Physics and Engineering~~

BE253	Biomedical Transport Phenomena
BE275	Computational Biomechanics
CHEM 215	Modeling Biological Macromolecules
PHYS 210A	Equilibrium Statistical Mechanics

~~Elective 8 - Mathematics and Statistics~~

MATH 174	Numerical Methods in Science and Engineering
MATH 181E	Mathematical Statistics
MATH 280A	Probability Theory


Netscape: UCSD Bioinformatics Program
UCSD
UNIVERSITY OF CALIFORNIA, SAN DIEGO
BIOINFORMATICS
Graduate Program
For Students
Participating Departments
Faculty & Research
Contact Information
For Students
Admissions
Curriculum
Seminars
Research
Advancement
Thesis
Final Exam
Teaching
Support
Employment
Research Rotations
Each student in the graduate program will participate in three research rotations, at least two of which will be in the laboratory of mentors other than the thesis directors. The purpose of the research rotation will be to train the students in research methodology in specific bioinformatics areas. At the end of the research rotation period, the student will submit a written report that will be evaluated by the faculty mentor in whose laboratory the project was carried out. The report will also be sent to the Qualifying Examination Committee who will take this into consideration in the assessment of the student for admission to candidacy.
Research Training
Students, upon completion of the appropriate course work, will be given research orientation lectures by the Bioinformatics program faculty. Each graduate student will participate in a research experience in the laboratory they select to carry out their research rotation. During this period students will become acquainted with scientific methodology for designing experiments, analyzing the results, organizing the data, conducting research in a responsible manner, preparing oral and poster presentations of research results, and writing scientific papers.


INTEGRATIVE BIOSCIENCES
AT THE SAN DIEGO SUPERCOMPUTER CENTER, UC SAN DIEGO
Where Large-Scale Computing Meets Biolo
INTEGRATED PROGRAMS
Alliance for Cell Signaling
Computational Center for Macromolecular Structures
Joint Center for Structural Genomics
National Biomedical Computation Resource
National Center for Microscopy and Imaging Research
Protein Data Bank
RESEARCH PROGRAMS
Neurobiology
Complex Systems
Structural Genomics
Structural Bioinformatics
Genomics
Molecular Interactions and Crystallography
Chemoinformatics
Some Courses Taught by SDSC PI's:
CHEM 185/285, 190/290, 299
BIMM 140, 141
PHARM 207/BIO 207
PHARM 201/BIO 201
BE100, 112A, 250A
CSE 197, 198, 167, 268A, 298
IMAGE
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