SAMPLING OF FEDERAL AND UNIVERSITY BIOINFORMATICS PROGRAMS IN THE MID-ATLANTIC REGION

Bioinformatics Technology Forum
Universities of Maryland, Shady Grove Conference Center
Rockville MD

March 4, 2009

FEDERAL LABS

National Center for Biotechnology Information
www.ncbi.nlm.nih.gov

A key word search for "bioinformatics" yielded 3,761,303 citations.

Established in 1988 as a national resource for molecular biology information, NCBI creates public databases, conducts research in computational biology, develops software tools for analyzing genome data, and disseminates biomedical information - all for the better understanding of molecular processes affecting human health and disease.

As a national resource for molecular biology information, NCBI's mission is to develop new information technologies to aid in the understanding of fundamental molecular and genetic processes that control health and disease. More specifically, the NCBI has been charged with creating automated systems for storing and analyzing knowledge about molecular biology, biochemistry, and genetics; facilitating the use of such databases and software by the research and medical community; coordinating efforts to gather biotechnology information both nationally and internationally; and performing research into advanced methods of computer-based information processing for analyzing the structure and function of biologically important molecules.

Bioinformatics and Computational Biology
http://nihroadmap.nih.gov/bioinformatics/

The Bioinformatics and Computational Biology initiative has taken shape in the National Centers for Biomedical Computing. Through this program, the NIH Roadmap is paving a future "information superhighway" dedicated to advancing medical research. The initiative funded four Centers in 2004, and an additional three in 2005.

As the Centers begin to generate the software and data management tools to serve as fundamental building blocks for 21st century medical research, individual scientists are being funded to work together with the centers. "Big science" and "small science" work hand-in-hand in this program to advance all of biomedical research. Through continued efforts, researchers will be able to share data gathered from large experiments. Developers of the program envision a system that will ultimately resemble the integrated software packages for office tools installed on most home computers today, in which information can be traded seamlessly and cooperatively analyzed. The best minds will be able to work together effectively to tackle unsolved mysteries, such as the role of heredity in individuals'

different responses to medicines and the complex interplay of genetic and environmental factors in common diseases such as Alzheimer's disease, heart disease, cancer, and diabetes.

Genomics & Bioinformation Group, Laboratory of Molecular Pharmacology, Center for Cancer Research, NCI
http://discover.nci.nih.gov/

This bioinformatics program packages microarray data analysis information, and molecular databases for genomic and proteomic research.

Computational Bioscience and Engineering Laboratory, NIH Center for Information Technology
http://dcb.cit.nih.gov/cbel/

The Computational Bioscience and Engineering Laboratory (CBEL) is a research and development organization that provides engineering and computer science expertise to support biomedical research activities at the National Institutes of Health.

CBEL applies image processing and medical imaging technologies, high-performance parallel computing, high-speed networking, signal processing, state-of-the-art optical and electronic devices, bioinformatics, database technology, mathematical and statistical techniques, and modern hardware and software engineering principles to help solve biomedical research problems at NIH.

CBEL presently has projects in cancer genome anatomy data visualization and storage, cDNA microarray data analysis and visualization, computational radiotherapy, human genetic linkage analysis, laser capture tissue microdissection and chromosome microdissection instrumentation systems design, medical image archive system, positron emission tomography and electron paramagnetic resonance imaging, protein structure determination using x-ray crystallography and nuclear magnetic resonance spectroscopy, telemedicine with high resolution imaging, three-dimension echocardiography visualization, virus structure determination using electron microscopy, and computationally intensive biomedical applications.

High Performance Computing and Informatics Office, Division of Computational Bioscience Center for Information Technology, National Institutes of Health
http://dcb.cit.nih.gov/hpcio/

The High Performance Computing and Informatics Office (HPCIO), provides expertise and resources in high performance computing, computational science, biomedical informatics, and modern information technology to the NIH scientific community.

Bioinformatics and Molecular Analysis Section (BIMAS)

BIMAS develops computational methods for the analysis of data related to molecular biology and genetics; and provides bioinformatics guidance, support, and resources for the collection, management, and display of biological sequence and genomic information, for NIH scientists involved in genomics and genetic analysis. Research and development projects include:

- Protein and Nucleic Acid Sequence Analysis
- Genomic Analysis Support
- cDNA Microarray Gene Expression Analysis

NCI Center for Bioinformatics
http://ncicb.nci.nih.gov

The NCI Center for Bioinformatics (NCICB) helps speed scientific discovery and facilitates translational research by building many types of tools and resources that enable information to be shared along the continuum from the scientific bench to the clinical bedside and back.

NCICB offers critical open-source infrastructure components that others can use to develop valuable databases and software tools to meet specific research needs. NCICB's expanding suite of tools is built from these foundational components. Our projects bring tools and partners together to tackle key challenges.

BRC Central
www.brc-central.org/cgi-bin/brc-central/brc_central.cgi

BRC Central is a repository linking to eight Bioinformatics Resource Centers (BRCs) sponsored by the National Institute of Allergy and Infectious Diseases (NIAID). The BRCs are providing web-based resources to scientific community conducting basic and applied research on organisms considered potential agents of biowarfare or bioterrorism or causing emerging or re-emerging diseases.

These centers support existing and newly developed techniques for bioinformatics analysis aimed at obtaining a deeper understanding of the fundamental biology of a specific set of pathogenic organisms, and efforts to counter the threats posed by these pathogens.

DARPA
www.darpa.mil
Keyword site search for “informatics” gave 16 citations

Defense Technical Information Center
www.dtic.mil
Keyword site search for “informatics” gave 2102 citations

Edgewood Chemical Biological Center
AMSSB-RAS-C
5183 Blackhawk Road
Aberdeen Proving Ground, MD 21010-5424
Website: http://www.ecbc.army.mil/

U.S. Army Center for Environmental Health Research
http://www.usacehr.org/

The mission of the USACEHR is to plan, direct, and conduct research, development, testing and validation for occupational and environmental health surveillance (OEHS) and environmental health technology in support of Force Health Protection.

In response to changing requirements and the availability of new biotechnologies, the USACEHR is now focusing upon two research areas: Environmental Sentinel Biomonitoring Systems and Biomarker Discovery and Toxicogenomics.

Technology areas of expertise include Environmental Sentinel Biomonitor (ESB) systems, toxicity identification, cell- and tissue-based sensors, biological systems integration, biomarker discovery and toxicogenomics, biomarker identification, toxicology risk assessment, occupational health, epidemiology, bioinformatics and clinical chemistry testing.

USAMRMC - Telemedicine and Advanced Technology Research Center
www.tatrc.org

The Advanced Information Technology Group (AITG) oversees all health informatics related programs within Telemedicine and Advanced Technology Research Center (TATRC). AITG is designated as the IM/IT research arm for the MHS Joint Medical Information Program Office. Key focus areas include:

- Establishment of an AHLTA common development environment to allow rapid prototype and to leverage local innovations
- Establishment of a Research Data Cube/Clinical Data Mart to develop a de-identified longitudinal MHS data set to support the research community
- Establishment of an IM/IT platform (OASIS) for developmental testing and evaluation of emerging technologies in the deployed setting
- Management of an Operational Telemedicine program

Other IM/IT projects include Natural Language Processing, voice recognition; scanning paper based medical records, interoperability, usability testing of EHRs, and terminology services/ontologies. TATRC focus areas include (not limited to)

- Medical imaging technologies
- Computational biology
- Biomonitoring technologies
- Proteomics/genomics

National Security Agency
www.nsa.gov

The Computer and Information Sciences Research Group leads and manages an advanced technology program that can research, identify, understand, develop, and apply new and emerging technologies for transforming raw data items into actionable information.

The steady rise in available compute power and the development of novel compute platforms enables NSA/CSS to explore a new class of intelligence analytics that turns the huge volume of available data into an asset to be exploited rather than a chore to be waded through. To be successful, we must develop new information processing strategies and techniques, to include redefining the role of the computer in the analytic endeavor. Rather than act as a host platform for interactive tools, the computer must become an analytic partner in a mixed initiative activity and must be able to conduct long-running analytic activities and draw conclusions from the information it processes.

Our scientists and engineers, along with our academic and research partners, have developed cutting-edge technologies, which have not only satisfied our mission requirements, but have also served to improve the global technological leadership of the United States. In addition, these technical advances have contributed to the creation and improvement of many commercial products in America.

NSA has identified valuable advanced technologies in the following core areas, which are available for sharing:

- Advanced Computing
- Advanced Mathematics
- Communications and Networking
- Information Processing
- Microelectronics

National Science Foundation
www.nsf.gov

Searched for "bioinformatics;" 19 funding programs found
Showing records 1 to 19

Advancing Theory in Biology (08-513) ... and analysis (e.g., genomics, proteomics, bioinformatics) requires the development of new theory or ...

Biochemical Engineering (07-1402)
... resources of biological origin and bioinformatics originating from genomic and proteomic information ... relevant to biotechnology including bioinformatics, nanobiotechnology and biomimetics, and ...

Biochemical Engineering and Biotechnology ( )
... resources of biological origin and bioinformatics originating from genomic and proteomic information ... relevant to biotechnology including bioinformatics, nanobiotechnology and biomimetics, and ...

Biological Information Technology & Systems (01-102)
... p>Research in computational biology and bioinformatics includes developing data-analytical and ...

Biomedical Engineering (09-5345)
... to biotechnology including bioinformatics new & novel methods of ...

Biotechnology, Biochemical, and Biomass Engineering (09-1491)
... resources of biological origin and bioinformatics originating from genomic and proteomic information

Computing and Communication Foundations (CCF): Core Programs (08-577)
... new applications, including monitoring the Nation's critical infrastructures, bioinformatics ...

FY 2002: Interagency Announcement of Opportunities in Metabolic Engineering (02-037)
... metabolic pathways. - The use of bioinformatics to deduce the structure, function, and ...

Interagency Opportunities in Metabolic Engineering (08-588)
... metabolic pathways. The use of bioinformatics to deduce the structure, function, and ...

Interagency Opportunities in Multi-Scale Modeling in Biomedical, Biological, and Behavioral Systems (04-607)
... #8220;Computational Biology,” “Bioinformatics,” “Quantitative Systems

Maize Genome Sequencing Project: An NSF/DOE/USDA Joint Program (04-614)
Publicly available genome resources for maize include: Genetic and physical maps BAC libraries BAC-end sequences BAC sequences EST sequences Methyl-filtered and High C0t genome sequences enriched for genes Whole genome shotgun sequences In ...

Microbial Observatories (MO) and Microbial Interactions and Processes (MIP) (05-600)
... in molecular biology, genomics and bioinformatics, and cultivation technologies herald a new age of

NIBIB-NSF Bioengineering and Bioinformatics Summer Institutes Program (BBSI) (05-611)
... Solicitation NIBIB-NSF Bioengineering and Bioinformatics Summer Institutes Program (BBSI) A Joint ... bioinformatics. For the purpose of the Program Solicitation, bioengineering and bioinformatics ...

Pan-American Advanced Studies Institutes Program (03-506)
... on using modern tools in genomics and bioinformatics to explore themes in biology. Proposals ...

Petascale Computing Resource Allocations (08-529)
... and social science, neuroinformatics and bioinformatics, as well as many different topics within ...

Plant Genome Comparative Sequencing Program (06-555)
Types of sequence resource to be supported include, but are not limited to, whole genome sequences of varying coverage, survey sequences (including gene-enriched and end sequences of large insert clones), as well as Expressed Sequence Tags (ESTs). The Plant Genome Comparative Sequencing Program (PGCSP) is specifically soliciting proposals that focus on biological questions that would be enabled by a particular sequence or sequences. Sequence resources may include, but are not limited to, ...

Plant Genome Research Program (08-607)
... been made in technology development and bioinformatics, it should now be possible to begin ...

Quantum and Biologically Inspired Computing (02-017)
... for general-purpose computing are the bioinformatics (genomic/ proteomic) system and the ... efforts in computational neuroscience, in bioinformatics, and in general-purpose computing. This ...

Systematic Biology and Biodiversity Inventories (04-7374)
... two new taxonomic experts; and web-based bioinformatics for taxonomic resources. The deadline is

FDA Awards Up To $2.5 Billion to Modernize Information Technology Over Ten Years - Cornerstone of 21st Century Bioinformatics Initiative
www.medicalnewstoday.com/articles/124124.php
Article Date: 03 Oct 2008

NCTR Center for Toxicoinformatics at the FDA
www.fda.gov/nctr/science/centers/toxicoinformatics/index.htm

The Center for Toxicoinformatics conducts research in bioinformatics and chemoinformatics, and develops and coordinates informatics capabilities within NCTR, across FDA Centers, and in the larger toxicology community. The goal of the toxicoinformatics group is to develop methods for the analysis and integration of omics (genomic, transcriptomic, proteomic, and metabolomic) databases with the objective of knowledge discovery and the elucidation of mechanisms of toxicity.

Program areas include food safety, bioterrorism, biotechnology, information technology, fundamental and applied research, premarket activities, antimicrobial resistance, and HIV-AIDS.

NIST
www.nist.gov
506 site citations

Bioinformatics at the Chemical Science & Technology Lab of NIST
http://www.cstl.nist.gov/programs/data.htm#bioinformatics

One data area of increasing focus for CSTL is bioinformatics. CSTL researchers work to develop adaptive, automated methods of processing and presenting biological and chemical data using connection tables that are sufficiently flexible and easy to use and allow users to find, with confidence, information for the most structurally-relevant data used in structure-based drug design.

- NIST, in collaboration with NIH-NCI, unveiled the HIV Structural Database, an online database that contains the structures of HIV protease and compounds targeted against this enzyme.
- The Biological Macromolecule Crystallization Database (BMCD) contains crystal data and the crystallization conditions, which have been compiled from literature.
- The Short Tandem Repeat (STR) DNA Internet Database benefits research and application of short tandem repeat DNA markers to human identity testing.
- CSTL scientists also maintain other web-based bio-related databases: the Human Mitochondrial Protein Database, and the Thermodynamics of Enzyme-Catalyzed Reactions Database.

Cell & Tissue Measurements at NIST
http://www.cstl.nist.gov/biotech/Cell&TissueMeasurements/Bioinformatics%20page.htm

The principal difficulty in searching data on compounds is that structural features of interest to a user often cannot be defined (and indexed) in advance due to the natural complexity of structure/property relations, which can depend on discipline, task and user. The goal is to develop adaptive, automated method of processing and presenting Biological and Chemical data using connection tables that are sufficiently flexible and easy-to-use and allow users to find, with confidence, information for the most structurally-relevant data used in structure-based drug design.

- HIV Structural Reference Database (compounds targeting HIV protease) http://xpdb.nist.gov/hivsdb/hivsdb.html
- Human Mitochondrial Protein Database http://bioinfo.nist.gov:8080/examples/servlets/index.html
- Enzyme Thermodynamics Database http://xpdb.nist.gov/enzyme_thermodynamics/enzyme-_thermodynamics_data.html

Systems Integration for Manufacturing Applications at NIST
http://www.mel.nist.gov/msid/sima/09_bio.htm

The objective of the Data Standards for Structural Bioinformatics project is to develop standards for structural bioinformatics for pre-clinical data that includes X-ray and NMR structural data for biological macromolecules with particular emphasis to internet-based databases of importance to biotechnology and Semantic Web.

NIST Biometrics Consortium
www.biometrics.org

The Biometric Consortium serves as a focal point for research, development, testing, evaluation, and application of biometric-based personal identification/verification technology. The Biometric Consortium organizes a premier biometrics conference every fall (advertised below). Information about past conferences, current government and standards activity, a bulletin board service, and other biometric resources can be found throughout this web site.

UNIVERSITIES

Johns Hopkins University Master of Science in Bioinformatics
http://advanced.jhu.edu/academic/biotechnology/bioinformatics/?lid=14

Johns Hopkins University has developed an innovative graduate program that prepares bioscience professionals for success in bioinformatics. Drawing from the strengths of the Zanvyl Krieger School of Arts and Sciences and the Whiting School of Engineering this program fully integrates the computer science, bioscience, and bioinformatics needed to pursue a career in this dynamic new field.

This program is designed for working adults. All classes are offered in the evening or on weekends. Online classes offer students additional flexibility in scheduling. Students take 11 courses to complete degree requirements, five core courses, four concentration courses, an elective from bioscience and an elective from computer science. After completion of the core and concentration courses, students may choose an independent study project as one or both of their electives. Students have up to five years to complete the program.

Virginia Bioinformatics Institute (Virginia Tech)
https://www.vbi.vt.edu

Virginia Bioinformatics Institute (VBI) is a research institute dedicated to the study of the biological sciences. The research platform of VBI focuses on the "disease triangle" of host-pathogen-environment interactions.

By using bioinformatics, which combines transdisciplinary approaches to information technology and biology, researchers at VBI interpret and apply vast amounts of biological data generated from basic research to some of today's key challenges in the biomedical, environmental and agricultural sciences. Work at VBI involves collaboration in diverse disciplines such as mathematics, computer science, biology, plant pathology, biochemistry, systems biology, statistics, economics and synthetic biology.

The institute develops genomic, proteomic and bioinformatic tools that can be applied to the study of infectious diseases as well as the discovery of new vaccine, drug and diagnostic targets.

Mid-Atlantic Regional Center of Excellence (MARCE)
http://en.wikipedia.org/wiki/Virginia_Bioinformatics_Institute

The Middle-Atlantic Regional Center of Excellence for Biodefense and Emerging Infectious Diseases Research (MARCE) focuses on research to enable rapid defense against bioterror and emerging infectious diseases. Fourteen universities, seven government partners, and ten corporate partners are working together to improve our nation's public health response system. Specific diseases and disease-causing agents under investigation include anthrax, West Nile Virus, smallpox, and cryptosporidiosis, among others. The team is also working on needle-free vaccinations and new diagnostic tools. VBI serves as the Bioinformatics and Genomics Research Core for the MARCE, providing data generation, analysis, storage, and training services.

Computational Bioinformatics & Bio-imaging Laboratory (CBIL)
http://www.cbil.ece.vt.edu/
Virginia Tech , The Bradley Department of Electrical and Computer Engineering
Arlington, VA

We are electrical and computer engineering researchers by training who have developed a great interest in multiscale, computational, integrative, and systems biomedical sciences, mainly inspired by our curiosity about the process of discovery. We enjoy close collaborations with biologists and physicians, and these partnerships provide us with the opportunities to learn new things, to ask new questions, and to pursue new discoveries. Our major research partners include Georgetown University Medical Center, Children's National Medical Center, Johns Hopkins Medical Institutions, National Institutes of Health, Food and Drug Administration, and Howard Hughes Janelia Farm Campus.

We are developing a research and educational program of excellence in computational bioinformatics and bio-imaging, with an emphasis on the strategic frontier between computational intelligence and the biomedical sciences and on the truly interdisciplinary nature of educating future scientists and engineers.

Penn Center for Bioinformatics (University of Pennsylvania)
www.pcbi.upenn.edu

Our interdisciplinary center focuses on research and education in the rapidly emerging fields of bioinformatics and computational biology, disciplines which deal with the analysis and management of data generated by high-throughput techniques in genomics, molecular and cellular biology. The ultimate goal of our collaborative research is to integrate all levels of information, including the genome sequence, the state of the cell (e.g., transcriptome and the proteome) and the phenotype. PCBI brings together faculty from several schools - from biologists to computer scientists and mathematicians. We provide a home for the newly formed graduate group in Genomics and Computational Biology. Finally, for the broader Penn community, PCBI provides bioinformatics services and tools, through the Penn Bioinformatics Core.

Bioinformatics at the University of Sciences in Philadelphia
www.gradschool.usp.edu/programs/bioinformatics

The University of the Sciences in Philadelphia offers both bachelor's and master's degrees in Bioinformatics**.** If you complete the bachelor's degree at USP you can realistically expect to complete the requirements for a master's degree with only one additional year of study. Students whose background does not include extensive preparation in bioinformatics and/or computer science should anticipate a longer period of study.

USP's graduate program in Bioinformatics will prepare you to be a specialist involved in all aspects of collecting, assembling, and analyzing the staggering quantities of information that are being generated by the Human Genome Project, as well as genome projects for other animals, plants, and disease-causing microorganisms. The genetic information carried within us is the key to understanding how we function in health and what goes wrong when we suffer disease and why one patient will respond well to a certain drug while another will have debilitating side-effects. It also allows us to identify the best "molecular targets" to zero in on when designing agents to fight infecting bacteria or viruses.

Bioinformatics and Computational Biosciences Unit
http://bioinformatics.georgetown.edu/

This Georgetown University inter-disciplinary portal plans to host all research activities carried out in the fields of Computational genomics & proteomics, Methods and tools in Bio-molecular structure prediction etc. Interdisciplinary work and collaborations carried across the campus in other fields including gene and protein micro-arrays, annotation and curation of public databases in molecular biology will also be hosted on this site. The site also hopes to become a portal for all the Research teams and Groups in Bioinformatics at Georgetown University. With the recently proposed introduction of advanced degree courses in Computational biosciences and Bioinformatics, the site also plans to host curricula and syllabi for the students undertaking these courses.

The Biotechnology Institution of the University of Maryland
www.umbi.umd.edu/home.php

Key word site search for bioinformatics gives 50 citations

University of Maryland Center for Bioinformatics and Computational Biology
www.cbcb.umd.edu

The University of Maryland Center for Bioinformatics and Computational Biology is a multidisciplinary center dedicated to research on questions arising from the genome revolution. CBCB brings together scientists and engineers from many fields, including computer science, molecular biology, genomics, genetics, mathematics, statistics, and physics, all of whom share a common interest in gaining a better understanding of how life works.

The Center for Bioinformatics and Computational Biology is a joint effort between the College of Chemical and Life Sciences and the College of Mathematical, Computer, and Physical Sciences, and is organized as a center within the University of Maryland Institute for Advanced Computer Studies (UMIACS).

University of Maryland Human Computer Interaction Lab, Bioinformatics Visualization
www.cs.umd.edu/hcil and www.cs.umd.edu/hcil/bioinfovis

The Human-Computer Interaction Lab at the University of Maryland pursues several projects with applications to bioinformatics, especially analysis of genomic data from microarray gene chips. We cooperate with the Center for Bioinformatics and Computational Biology.

Work in this area uses the principles of Information Visualization to develop tools that can be used to interactively analyze the ever-larger data sets that result from continuing advances in bioinformatics. Current efforts have been focused on two types of data sets:

- Microarray data: Data sets containing expression levels for 100-20,000 genes under 2-40 experimental conditions
- Nucleotide Sequence data: Analyzing nucleotide sequences in order to find weak signals involved in splicing.

Delaware Biotechnology Institute, University of Delaware
www.dbi.udel.edu

19 faculty involved

The Delaware Biotechnology Institute is a partnership among government, academia and industry to help establish the First State as a center of excellence in biotechnology and the life sciences. The Institute mission is to facilitate a biotechnology network of people and facilities to enhance existing academic and private-sector research, catalyze unique cross-disciplinary research and education initiatives, and to foster the entrepreneurship that creates high-quality jobs.

In the DBI community, computational biology and bioinformatics research spans comparative genomics, microarray and EST informatics, in-silico biological structure and process modeling, immersive 3D visualization, and high-performance bioinformatics instrumentation research using massively parallel processing algorithms

Institute for Genomics, Proteomics and Bioinformatics
www.huck.psu.edu/institutes-and-centers/genomics-proteomics-bioinformatics

This institute brings together researchers from across Penn State in the areas of bioinformatics, computational genomics, evolutionary genomics, functional genomics, and proteomics.

Penn State University Center for Comparative Genomics and Bioinformatics
www.bx.psu.edu

The CCGB is part of the Huck Institutes of the Life Sciences. It has 11 research groups. The Center for Comparative Genomics and Bioinformatics (CCGB) was established within the Institute for Genomics, Proteomics and Bioinformatics of the Huck Institutes of the Life Sciences. Its mission is to bring together laboratories applying bioinformatic and experimental approaches to find functional sequences within genomic DNA and to assign function to proteins. These projects effectively harvest the physiologically important parts of the bountiful genomic sequences currently being determined.

Genomics of Cranial Morphology (Penn State)
www.hominid.psu.edu/BioinformaticsG.html

Bioinformatics is the management and analysis of biological data, such as whole genome sequences, with computer programs written to handle the massive quantities now available. Bioinformatics is particularly useful for our project as it allows comparison of genome sequences for different species such as chimpanzees, macaques, mice and humans. We are using bioinformatics to search for genes that we suspect are involved in skull shape to look for evidence of their involvement in the evolution of the primate head.

George Mason University
www.gmu.edu

Keyword site search for "bioinformatics" gave 37,100 citations.

Bioinformatics and Computational Biology
http://binf.gmu.edu/bioman.html

George Mason University's College of Science, Department of Bioinformatics and Computational Biology and the School of Management are proud to announce a new and exciting program that will award a Master's of Science in Bioinformatics Management.

The M.S. in Bioinformatics Management is intended for:

- Students seeking advancement in their current bioinformatics careers that requires an advanced degree in bioinformatics combined with management expertise.
- Students with a general background in biological science or computational methods who are planning to enter the field of bioinformatics as managers and would like to strengthen their bioinformatics and managerial expertise

Montgomery College TechLEAP Bioinformatics Elective Track
www.montgomerycollege.edu/iti/techleap/techleap_sequence-bio.htm

To prepare for bioinformatics career opportunities, qualified TechLEAP Programming Track students with biology backgrounds may elect to take the Bioinformatics Elective Track in the TechLEAP second semester. TechLEAP students eligible for the Bioinformatics track will also be eligible for the optional Internship Seminar course with internship placements in the second semester. The courses are subject to change and course conflicts in the second Spring semester.

Virginia Commonwealth University Bioinformatics Computational Core Laboratories
www.vcu.edu/csbc/bccl

The mission of the Bioinformatics Computational Core Laboratories (BCCL) of the Center for the Study of Biological Complexity is to support the application of high performance computational resources to basic and applied research in the life and biomedical sciences at VCU.

The masters programs in bioinformatics offer students not only a choice of three bioinformatics tracks, but also the option of pursuing either a traditional degree, the Master of Science in Bioinformatics, providing in-depth academic research experience toward a variety of entry-level research positions or a

Ph.D. program, or an accelerated, industry-oriented professional degree, the Master of Bioinformatics, which replaces the extensive thesis research with a summer-long industry externship and associated training

University of Virginia's Center for Biomathematical Technology
http://mljohnson.pharm.virginia.edu/biomath-ctr/biomath-home.html

The University of Virginia's Center for Biomathematical Technology was established in response to the universally growing need for nonstandard interdisciplinary quantitative approaches to complex biological, biomedical, and psychophysiological problems and is dedicated to 1) research; 2) education; and 3) service.

As our knowledge of the intricacies of nature increases, the complexity of the methods employed by the life sciences to study these systems must similarly expand. As opposed to traditional statistical data analysis, unique and non-standard biomathematical tools are being created to address specific modeling and quantitative needs.

Under the leadership of Michael Linn Johnson, the Program Director, and William S. Evans and Boris P. Kovatchev, the Associate Directors, the Center for Biomathematical Technology is designed to meet these non-trivial data analysis requirements by providing a continuous biomathematical presence amongst biologists, physicians, and mathematicians.

PRIVATE INSTITUTES

Howard Hughes Medical Institute (including Janalia Farms)
www.hhmi.org
Site word search for “bioinformatics” yielded 588 citations.

HHMI, a non-profit medical research organization that ranks as one of the nation's largest philanthropies, plays a powerful role in advancing biomedical research and science education in the U.S.