Here is information about NIH and BISTI opportunities in biomedical informatics and computational biology (BICB). The bottom of this document has a long list of funding opportunities, but I want to start with some general comments.

The Innovations in Biomedical Computational Science and Technology programs solicit applications for funding where, in addition to the usual requirement of relevance to the NIH mission, the preponderance of effort involves biomedical informatics and computational biology (of course, this is a judgment call). To get a good indication of computational funding opportunities at NIH visit the BISTI funding page, including computational tips Approaching NIH For Support For A Computational Project. As indicated below, this program has specialized contact persons from the various Institutes and Centers, and they welcome contacts related to their programs. You can get a view into current NIH-funded grants, and perform custom searches, using the Research Portfolio Online Reporting Tool (RePORT); in particular the RePORTer tool for Expenditures and Results. You may also be interested in my editorial April 2010 on the state of biocomputing at NIH in Stanford Simbios Biomedical Computational Review (BCR). Make sure to check the NIH Guide for grants and contracts and join their mail list. For an excellent general resource visit the NIAID tutorials about Grants.

Please follow the applications rules and guidelines very carefully. Check the latest information about the NIH Receipt schedule. NIH predominantly uses electronic submission, please read NIH SF424 carefully. If you do everything formally right, that gives program and review staff more time to deal with your scientifically substantive concerns, because they won’t have to work around procedural issues. Make sure to go to the Electronic Research Administration (eRA) page which provides IT solutions and support for the full life cycle of grants administration functions for the NIH and other agencies. In particular, go to the Electronic Submission page which describes the tips for submissions during all phases of the application lifecycle. Make sure to view the eRA Commons where grant applicants, grantees and federal staff can access and share administrative information relating to research grants. Plan well ahead – especially if your institution has little or no NIH support. Your business office/sponsored research office may need considerable time to accomplish the logistics of submitting the grant, let alone reviewing the budget and any supporting agreements. Also, go to Grants.gov which is the source to find and apply for federal government grants. The CSR has useful web pages including its resources for applicants; submission and assignment process; and evaluation of overlap. Finally, please check out the Enhancing Peer Review page.

Investigators who are familiar with NIH may put a request in the application cover letter for assignment to a specific Institute or Center (IC) and also assignment to a specific study (review) section. You can navigate the Center for Scientific Review (CSR) web site for information about study sections including rosters. However, you do not necessarily need to request IC assignment. You also don’t need to be concerned about assignment to study section since the CSR Division of Receipt and Referral DRR does a good job on both of these counts. Play close attention to the ICs which have signed on to the various announcements, and to the program contact person(s) named in each funding opportunity announcement.

I encourage you to look at list of announcements below, and to identify the types of projects that the participating organizations are seeking based on their research missions. NIGMS, for example, will consider projects that encompass cell biology,
biomolecular modeling, nanotechnology, genetics, developmental biology, pharmacology, physiology or biological chemistry, modeling social behavior, and computational science. Keep an eye on our blog. As always, one of the most difficult things to do is to develop focused specific aims.

Here are tips for writing a grant in Biomedical Informatics and Computational Biology

Finally, a summary of some useful notices:

- NIH Receipt Schedule
- NIH Office of Extramural Research Grant Writing Tip Sheets
- How to Approach NIH for Support for a Computational Project
- NIH Center for Scientific Review (CSR) Revealed (Videos on peer review process)
- NIAID Tutorials about Grants
- Evaluation of Overlap and Unallowable Resubmission, Notices on Resubmission Policy NOT-OD-10-080, NOT-OD-09-003
- Change in Timetable for Opportunity to Shorten the Review Cycle for New Investigator (R01)
- Appeals of NIH Initial Peer Review

NIH Programs and Initiatives in Biomedical Informatics and Computational Biology (BICB)

This is a list of NIH programs and initiatives with a preponderance of or a significant component of biomedical informatics and computational biology (BICB). A Program is an ongoing effort with prior and possibly future funding opportunity announcements, while an Initiative specifically refers to an active FOA. Some P&I appear twice.

*Active FOAs are identified by (A)

For an update on funding of computational grant applications at NIH read the recent editorial in Biocomputational Review.

Broad-based BISTI initiatives

- The Biomedical Information Science and Technology Initiative (BISTI)
- BISTI Innovations in Biomedical Computational Science and Technology (R01) – PAR-09-218; (R21) – PAR-09-219; BISTI keeps a list of R01 contact program staff (A)
- BISTI Continued Development and Maintenance of Software (R01) – PAR-11-028 (A)
- BISTI Innovations in Biomedical Computational Science and Technology Initiative (SBIR [R43/R44]) – PAR-09-220; (STTR [R41/42]) – PAR-09-221; BISTI keeps a list of SBIR/STTR contact program staff (A)
- Collaborations with National Centers for Biomedical Computing (R01) – PAR-12-001 (A). The R21 Exploratory FOA has been discontinued.
- NEW: NSF-NIH Interagency Initiative: Core Techniques and Technologies for Advancing Big Data Science and Engineering (BIGDATA) (NOT-GM-12-109) (A)

BREAKING NEWS: The broad-based BISTI Innovations R01, R21, SBIR/STTR have been extended until September 8, 2013. NOT-GM-12-112 NOT-GM-12-113 NOT-GM-12-114 NOT-GM-12-115
The Innovations program for regular grant applications (R01) (PAR-09-218) and exploratory high risk/high reward grant applications (R21) (PAR-08-219), and the program contact persons are at http://www.bisti.nih.gov/R01-contacts.cfm. The initiatives use standard receipt dates. As mentioned above, there should be a preponderance of effort in computing. Of course it is appropriate to budget some moneys for experimental data acquisition in support of the computational research. New investigators under these PAs are eligible for shortened review cycle http://grants1.nih.gov/grants/guide/notice-files/NOT-OD-07-083.html.

The Innovations program for SBIR/STTRs are (PAR-09-220) and (PAR-09-221), which use standard receipt dates, and the program contact persons are at http://www.bisti.nih.gov/SBIR-contacts.cfm. For additional information, the NIH SBIR Funding Opportunities page offers a wealth of information dealing with SBIR/STTR program (not just computing) http://grants.nih.gov/grants/Funding/sbir.htm.

Broad-based or multi Institute Programs and Initiatives

- Research Project Grant (Parent R01) – PA-11-260, NIH Exploratory Developmental Research Grant Program (R21) – PA-10-069, and the Omnibus Solicitation of the NIH for Small Business Technology Transfer Grant Applications – PA-12-089. The majority of computational applications go to mainline NIH study sections (BDMA, MABS, BCHI, NT, GCAT, MSFD, BMRD, BMIT, MEDI, and MIS) (A)
- NEW: Modeling Social Behavior (R01) – RFA-GM-13-006 (A)
- Interagency Modeling and Analysis Group (IMAG) and IMAG New Funding Opportunities (A)
- Collaborative Research in Computational Neuroscience (CRCNS): A Joint NSF-NIH initiative: NSF-11-505 (A)
- Predictive Multiscale Models for Biomedical, Biological, Environmental and Clinical Research (Interagency U01) – PAR-11-203 (A)
- IMAG Population Modeling Funding Announcements (A)
- OBSSR Funding Opportunity Announcements in Systems Science (A)
- Basic Behavioral and Social Sciences Network (OppNet) (A)
- Social Network Analysis and Health (R01) – PAR-10-145 (A)
- Systems Science and Health in the Behavioral and Social Sciences (R01) PAR-11-314 (R21) PAR-11-315 (A)
- Social Network Analysis and Health, One receipt date per year (R01) PAR-10-145 (R21) PAR-10-146 (A)
- Dissemination and Implementation Research in Health, PAR-10-038 (R01), PAR-10-039 (R03), PAR-10-040 (R21) (A)
- Mechanisms Underlying the Links between Psychosocial Stress, Aging, the Brain and the Body (R01) – PA-09-216 (A)
- The National Center for Research Resources (NCRR) program for Biomedical Technology Research Centers (BTRC). Some of these have computational focus. The National Institute of Biomedical Imaging and Bioengineering also has a program in Biotechnology Resource Centers. See Announcement for current status. (A)
- Climate Change and Health: Assessing and Modeling Population Vulnerability to Climate Change (R21) – PAR-10-235 (A)
- Transforming Biomedicine at the Interface of the Life and Physical Sciences (R01) – PAR-10-141 (A)
New Biomedical Frontiers at the Interface of the Life and Physical Sciences (R01) – PAR-10-142
Bioengineering Research Partnerships (R01) – PAR-10-234 (A)
Bioengineering Research Grants (R01) – PA-10-009 (A)
Exploratory/Developmental Bioengineering Research Grants (EBRG) (R21) – PA-10-010 (A)
Notice of Availability of Administrative Supplements for the U.S.-JAPAN Brain Research Cooperative Program – U.S. Component – NOT-NS-10-014 (A)
Exceptional, Unconventional Research Enabling Knowledge Acceleration (EUREKA) (R01) – RFA-GM-11-003 RETIRED and replaced by
NIH Director’s Transformative Research Awards (R01) – RFA-RM-11-006 (A)
Spatial Uncertainty: Data, Modeling, and Communication (R01) – PA-11-238, (R21) – PA-11-239, (R03) – PA-11-240 (A)
Lab to Marketplace: Tools for Brain and Behavioral Research (SBIR[R43/44]) – PA-11-134 (A)
SHIFT Award: Small Business Helping Investigators to Fuel the Translation of Scientific Discoveries [SBIR: R43/R44] – PAR-10-122 (A)

Institute Programs or Initiatives

- **NEW from NCI:** Revisions for Early-Stage Development of Informatics Technology (R01) – PAR-12-286 (A)
- **NEW from NCI:** Revisions for Early-Stage Development of Informatics Technology (P01) – PAR-12-290 (A)
- **NEW from NCI:** Revisions for Early-Stage Development of Informatics Technology (U01) (up to $150,000 DC/year for 2 years) – PAR-12-289 (A)
- **NEW from NCI:** Early-Stage Development of Informatics Technology (U01) (up to $250,000 DC/year for 3 years) – PAR-12-288 (A)
- **NEW from NCI:** Advanced Development of Informatics Technology (U24) (up to $500,000 DC/year for 5 years) – PAR-12-287 (A)
- NIDDK Interconnectivity Network Coordinating Unit (U24) – RFA-DK-11-030 (A)
- National Center for Biotechnology Information (NCBI)
- Informatics components of the NIH Intramural Program
- Center for Information Technology Division of Computational Bioscience
- Cancer Bioinformatics Grid (caBIG)
- Biomedical Informatics Research Network (BIRN)
- Neuroimaging Informatics Technology Initiative (NIfTI)
- Genetic Association Information Network (GAIN)
- NIAID Bioinformatics Resource Centers (BRC)
- NIAID Division of Allergy, Immunology, and Transplantation Centers and Resources (A)
- Clinical and Translational Science Awards (CTSA) Informatics Key Functional Committee
- NLM Grant Programs in Informatics and Knowledge Management (A)
- NLM Express Research Grants in Biomedical Informatics (R01) – PAR-11-208
- NHGRI Genome Informatics Program
- Genome Resource Grants for Community Resource Projects (U41) – PAR-11-095 (A)
- Centers of Excellence in Genomics Science (NHGRI) CEGS – PAR-10-202 (A)
- 1000 Genomes Project
• NIGMS National Centers for Systems Biology (P50) – PAR-12-187 (A)
• NHLBI Mechanistic Pathways Linking Psychological Stress and Behavior (R01) – RFA-HL-12-037 (A)
• NHLBI Systems Biology Collaborations (R01) – PAR-09-214 (A)
• Cardiovascular Research Grid (CVRG) Wiki
• Collaborative Research in Integrative Cancer Biology and the Tumor Microenvironment (U01) – PAR-11-146 (A)
• Quantitative Imaging for Evaluation of Responses to Cancer Therapies (U01) – PAR-11-150 (A)
• Development, Application, and Evaluation of Prediction Models for Cancer Risk and Prognosis (R01) – PA-10-025, (R21) – PA-10-026 (A)
• A Systems Biology Approach for Infectious Diseases Research
• Physical Science in Oncology Program
• The Cancer Genome Atlas
• Limited Pilot for NIGMS Legacy Community-Wide Scientific Resources (R24) – PAR-10-261 (A)
• Modeling the Scientific Workforce (U01) – RFA-GM-11-007
• Pilot Studies to Develop and Test Novel, Low-Cost Methods for the Conduct of Clinical Trials (R01) – RFA-HL-12-019
• Virtual Reality Technologies for Research and Education in Obesity and Diabetes (R43/R44) – RFA-HL-12-020, (R41/R42) – RFA-HL-12-024 (A)
• Modeling of Infectious Disease Agent Systems (MIDAS) has recurring FOAs
• The NIGMS also has a program in support of Program Project Grants (P01) – PAR-11-220 (A)
• Technology Development for Protein Modeling (R01) – PAR-10-076 ; (P01) – PAR-10-075 (A)
• NIGMS Administrative Supplements for Collaborative Science NOT-GM-11-105 (A)
• Pediatric Neuroimaging Initiative
• Theoretical and Computational Neuroscience Program (A)
• Cutting-Edge Basic Research Awards (CEBRA) (R21) – PAR-12-086 (A)
• Data Concepts and Terminology Standards for Clinical Research and Drug Development (R24) FDA – PAR-11-209 (A)
• Understanding the Effects of Emerging Cellular, Molecular, and Genomic Technologies on Cancer Health Care Delivery (R01) – PA-09-004 (A)

**Common Fund and Neuroscience Blueprint Programs or Initiatives**

• The NIH Common Fund
• Common Fund High-Risk Research, including the NIH Director’s Early Independence Awards (DP5), Transformative Research Awards (R01), New Innovator’s Awards (DP2), and Pioneer’s Awards (DP1)
• NEW: NIH Health Care Systems (HCS) Research Collaboratory – Coordinating Center (U54) – RFA-RM-11-021 and Pragmatic Trials Demonstration Projects (UH2/UH3) RFA-RM-11-002 (A)
• Single Cell Analysis; Studies to evaluate cellular heterogeneity using transcriptional profiling of single cells (U01) – RFA-RM-11-013 (A); Exceptionally Innovative Tools and Technologies for Single Cell Analysis (R21) – RFA-RM-11-014 (A); Accelerating the Integration and Translation of Technologies to Characterize Biological Processes at the Single Cell Level (R01) – RFA-RM-11-015 (A)
• National Centers for Biomedical Computing (NCBC)
• Health Care Economics
• Exploratory Centers for Cheminformatics Research
• Patient Reported Outcomes Measurement System (PROMIS)
• Technology Centers for Networks and Pathways (TCNP)
• Nanomedicine Initiative
• Epigenomics
• Library of Integrated Networked-Based Cellular Signatures (LINCS)
• Neuroimaging Informatics Tools and Resources Clearinghouse (NITRC)
• Neuroscience Information Framework (NIF)
• The Human Connectome Project
• Health Economics

Training Opportunities
• Top page NIH training.
• Short Courses on Mathematical, Statistical, and Computational Tools for Studying Biological Systems (R25) – PA-11-351 (A)
• Mentored Quantitative Research Development Award (K25) – PA-11-196 (A)
• Ruth L. Kirschstein National Research Service Award (NRSA) Institutional Research Training Grants (T32) – PA-11-184 (A)
• NIH Pathway to Independence (PI) Award (K99/R00) – PA-11-197 (A)
• Ruth L. Kirschstein National Research Service Awards (NRSA) for Individual Postdoctoral Fellows (F32) – PA-11-113 (A)
• NLM Independent Career Development Award for Biomedical Informatics – (K22) PAR-10-195

Multi-Agency Programs and Initiatives
• NEW: NSF-NIH Interagency Initiative: Core Techniques and Technologies for Advancing Big Data Science and Engineering (BIGDATA) (A) (NOT-GM-12-109)
• Interagency Modeling and Analysis Group (IMAG) (A)
• Collaborative Research in Computational Neuroscience (CRCNS) (R01) A Joint NSF-NIH initiative: NSF-11-505 (A)
• Joint DMS/NIGMS Initiative to Support Research in the Area of Mathematical Biology (A) to be reissued. See also NIGMS link and NOT-GM-12-111
• Petascale Computing Resource Allocations (PRAC), NSF Program Solicitation 08-529
• Advancing Health Services through System Modeling Research – 12-515 (A)

Other Agency, Foundation, and International Efforts
• NEW: NSF Smart Health and Wellbeing (SHB)
• NSF Dynamics of Coupled Natural and Human Systems (CNH)
• NSF Office of Cyberinfrastructure (OCI) and Directorate for Biological Sciences (BIO)
• DOE Genomics: GTL
• NSF Methodology, Measurement, and Statistics (MMS) NSF12-510
• NSF Science of Science and Innovation Policy (SciSIP)
• NSF Cognitive Neuroscience NSF09-563
• NSF Perception, Action, and Cognition
- NSF Science, Engineering, and Education for Sustainability NSF-Wide Investment (SEES)
- NSF Social-computational systems (SoCS) NF10-600
- NSF Cyber-enabled discovery and innovation (CDI) NSF11-502
- NSF Advances Biological Informatics (ABI) NSF10-567
- EPA funding opportunities
- The Virtual Physiological Human
- Notice of Availability of Administrative Supplements for the U.S.-Japan Brain Research Cooperative Program – U.S. Component

If you have any questions about the programs, feel to email: Peter Lyster
Updated 09/26/2012
All the best, Peter