

GSTP

Genomic Sciences Training Program Predoctoral Traineeships

I. General Information

The GSTP predoctoral traineeships are open to trainees who will work with GSTP trainers as mentors (see attached list). The predoctoral traineeships are awarded for a one-, two- or three-year period – with the second and third years dependent on the renewal of the NHGRI grant funding GSTP - and must take place at UW-Madison. In addition, the predoctoral trainees must be U.S. citizens or hold permanent resident status.

All applications should be emailed to lpape@wisc.edu or delivered to the GSTP Training Program by Friday, March 22nd, 2013:

**Genomic Sciences Training Program (GSTP)
Room 3445 Genetics/Biotechnology Center (new addition)
425 Henry Mall
UW-Madison
Madison, WI 53706**

II. Application Checklist

- A primary and secondary mentor should be chosen (primary trainer from Category A, B or C and the secondary trainer from a different category—see GSTP trainer list at the end of this application). The primary mentor must submit a letter of recommendation.
- 3 Letters of Recommendation, including: one letter from the major professor reviewing the student's research problem and progress (primary mentor), if the major professor has been determined. Otherwise, one letter should preferably be from a faculty member in the student's department, sent directly to the GSTP Office or emailed to dclark@wisc.edu. Letters used for admissions are acceptable.
- Curriculum Vitae* of nominee, including his/her work experience
- Include Undergraduate and, if applicable, Graduate Transcripts (copies); GRE scores, and Proof of Citizenship (a copy of your birth certificate, passport, driver's license, or social security card).
- Graduate School Application (copy)
- Include 7 copies of the entire application. (If you email it, we will make the copies.)

Nomination Form

**Traineeship in
Genomic Sciences Training Program (GSTP)**
Students Currently Enrolled in a UW Graduate Program

Name of Student
First Name Middle Initial Last Name

Sponsoring Professor
and Enrolling Department Professor, or Department Graduate Chair Enrolling Department

Secondary Advisor:

Undergraduate Major(s) B.S. or B.A./Year

Undergraduate School(s) GPA

GRE Scores

<u>VERBAL</u>		<u>QUANTITATIVE</u>		<u>ANALYTICAL</u>		<u>ADVANCED</u>		Subject
Score	%	Score	%	Score	%	Score	%	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

E-mail address:

Graduate degrees:

Graduate GPA (if applicable):

Please attach the student's statement of current research interests and relevance to GSTP program, including a title (1-2 pages, 1000 words maximum).

Please list any fellowships/traineeships or other financial support for this student while at UW-Madison. Include dates, as well as traineeships applied for.

Briefly outline the reasons why this candidate is particularly worthy of support in the Genomic Sciences Training Program (research interest/experience, stated interest in cross-disciplinary research, etc.).

Please list publications and research presentations by student.

GSTP trainees are expected to gain knowledge in the following areas:

- Biological Sciences
- Computational/Statistical Sciences
- Physical Sciences

The required and suggested courses in these three areas are listed below. Required courses are marked with an asterisk; the others represent some of the elective courses that will be useful for many of the trainees. The GSTP Trainee Advisory Committee will review each trainee's course curriculum and expects that approximately three courses will be taken to fulfill the core curriculum of GSTP. Courses taken as an undergraduate can be used, pending approval, to satisfy the GSTP course requirements. Substitutions can be made with the approval of the GSTP Trainee Advisory Committee. Courses taken can count for both the Ph. D. Minor, which typically involves four courses taken outside of one's home department, and for the GSTP requirements.

These courses will be required of all GSTP trainees receiving three-year fellowships, and a subset will be required for trainees awarded fewer years of support. Students will also be required to participate in a weekly GSTP seminar for the duration of their fellowship and in a one semester Scientific Ethics course (Microbiol 901).

Please indicate (by checking the box) which of the GSTP curriculum courses, or near equivalents, (see below) the applicant has already taken and the grade received. For near equivalents, please provide the course name, the offering institution, and the grade received.

- *Genomic Science (Genetics 677)**
Grade: _____
- *Introduction to Bioinformatics (Biostatistics and Medical Informatics 576)**
Grade: _____
- *Advanced Bioinformatics (Biostatistics and Medical Informatics 776)**
Grade: _____

or

- *Statistical Methods for Bioscience I (Statistics 571)**
Grade: _____
- Statistical Methods in Genomics (Statistics 692)**
Grade: _____
- Comparative Microbial Genomics (AHABS 375/875)**
Grade: _____
- Human Genetics (Genetics 565)**
Grade: _____
- Modeling Biological Processes (Chemical Engineering 562)**
Grade: _____
- Sequence Analysis and Laboratory (Biochemistry 711 and 712)**
Grade: _____

Please list other biological science courses the applicant is taking or has taken and the grades received.

Please list other computational/statistical courses the applicant is taking or has taken and the grades received.

Please list other physical science courses the applicant is taking or has taken and the grades received.

Racial/Ethnic Heritage (optional):

- American Indian or Alaska Native
- Asian
- Native Hawaiian or Other Pacific Islander
- Black or African American
- Hispanic
- White (not of Hispanic origin)
- More Than One Race

Disability (optional): Yes No

For the purposes of the GSTP Training Program, a person with a disability is defined as any person who has a physical or mental impairment, which substantially limits one or more

major life activities, has a record of such an impairment, or is regarded as having such an impairment.

Funding:

The NHGRI-supported predoctoral stipend level for FY13 is \$22,032. Any supplement is required to come from non-federal sources.

Please also include:

1. Graduate School Application (copy)
2. Undergraduate transcripts (include graduate work also, if applicable), copies
3. GRE scores (copy); proof of citizenship
4. 3 Letters of Recommendation, including: one letter from the major professor reviewing the student's research problem and progress, if the major professor has been determined. Otherwise, one letter should preferably be from a faculty member in the student's department. Letters used for admissions are acceptable.
5. *Curriculum Vitae* of nominee, including his/her work experience.
6. 10 copies of this application

Note: To be eligible as a trainee, a student must be: a U.S. citizen or non-citizen national of the U.S. or have been lawfully admitted to the United States for permanent residence, and have in their possession a permanent visa at the time of application.

Last updated 2/5/13

GSTP Faculty Name	Primary Department	Research Interests	Category
Ansari, Aseem	Biochemistry	Studying the regulation of gene expression at the interface of chemistry biology and genomics, dissecting genome-wide transcriptional cascades. http://www.biochem.wisc.edu/ansari/	B (Biological)
Asimakopoulous, Fotis	Medicine	Genomic approaches to characterize multiple myeloma http://www.cmp.wisc.edu/faculty/bio.php?name=fasimakopoulos	B (Biological)
Attie, Alan	Biochemistry	Molecular genetics of diabetes & insulin resistance; cell biology of lipoprotein assembly and cholesterol trafficking. http://www.biochem.wisc.edu/attie/attie/	B (Biological)
Beebe, David	Biomedical Engineering	Design, fabrication, and testing of novel micro fabrication techniques; microdevices and microsystems designed to facilitate advances in biology. http://www.engr.wisc.edu/bme/faculty/beebe_david.html	A (Physical)
Bresnick, Emery	Cell & Regenerative Biology	Multidisciplinary approaches to understand stem/progenitor cell function, blood cell development, and vascular biology http://www.crb.wisc.edu/faculty/bresnick.asp	B (Biological)
Broman, Karl	Biostatistics & Medical Informatics	Statistical problems in genetics, genomics and molecular biology. Development of improved methods for detecting and identifying genes contributing to variation in complex traits. http://www.biostat.wisc.edu/%7Ekbroman/	B (Biological)
Burkhard, Mark	Medicine; Hematology; Oncology	Identification of genetic alterations in cancer cells; cancer genomics; targeted treatment strategies for breast cancer. http://www2.medicine.wisc.edu/home/faculty-spotlight/mark-burkard-md-phd	B (Biological)
Coen, Michael	Biostatistics & Medical Informatics	Translational machine learning applied to medical datasets; applying machine learning to genomic analyses http://www.biostat.wisc.edu/People/faculty/coen.htm	C (Computational / Statistical)
Coon, Joshua	Chemistry	Development and application of new technologies and instrumentation for automated, large-scale whole protein characterization http://www.chem.wisc.edu/people/profiles/Coon.php	A (Physical)
Craven, Mark	Biostatistics and Medical Informatics	Machine learning for bioinformatics and information extraction; learning comprehensive models. http://www.medsch.wisc.edu/biostat/faculty/craven.html	C (Computational / Statistical)
Culbertson, Michael	Genetics	Mechanisms of synthesis, decay, and function of RNA using the yeast <i>Saccharomyces cerevisiae</i> as a model system. http://www.genetics.wisc.edu/faculty/culbertson.html	B (Biological)
de Pablo, Juan	Chemical & Biological Engineering	Investigating thermophysical properties of fluids and solids at a molecular level and using molecular-thermodynamic models. http://www.engr.wisc.edu/che/faculty/depablo_juan.html	A (Physical)
Dewey, Colin	Biostatistics and Medical Informatics	Algorithms for problems in comparative genomics http://www.biostat.wisc.edu/~cdewey/	C (Computational / Statistical)
Donohue, Timothy	Bacteriology	Studying synthesis and activity of proteins that function in critical energy	B (Biological)

generating pathways in *Rhodobacter sphaeroides*.

<http://www.bact.wisc.edu/GradStudies/DonohueTimothy.html>

Dyer, Charles	Computer Sciences	Developing basic tools for controlling in real-time, either autonomously or interactively, a virtual camera of a real environment. http://www.cs.wisc.edu/~dyer/	C (Computational / Statistical)
Fox, Catherine	Biomolecular Chemistry	Genomic and computational analyses of chromosome replication in eukaryotes http://www.bmolchem.wisc.edu/faculty/fox.html	B (Biological)
Gasch, Audrey	Genetics	The genomics of yeast responses to environmental stress and starvation http://gasch.genetics.wisc.edu/	B (Biological)
Gould, Michael	Oncology	Molecular genetics of mammary carcinogenesis and translation research in the area of breast cancer prevention and therapy. http://mcardle.oncology.wisc.edu/faculty_staff/gould_m.html	B (Biological)
Hittinger, Chris	Genetics	Diversity and evolution of yeast carbon metabolism networks. http://www.genetics.wisc.edu/user/329	B (Biological)
Hull, Christina	Biomolecular Chemistry	Molecular biology of human fungal pathogens. http://www.bmolchem.wisc.edu/faculty/hull.html	B (Biological)
Kendziorski, Christina	Biostatistics and Medical Informatics	Development of statistical methods and software for the analysis of data from high-throughput genomics projects, with particular interest in methods for identifying the genomic mechanisms underlying complex traits. http://www.medsch.wisc.edu/biostat/faculty/kendziorski.html	C (Computational / Statistic)
Kreeger, Pamela	Biomedical Engineering	Systems biology, ovarian cancer, endocrine signalling http://www.wisc.edu/search/?q=pamela+kreeger	A (Physical)
Krysan, Patrick	Horticulture	Signal transduction in <i>Arabidopsis thaliana</i> with a focus on MAP kinase signaling pathways. Functional genomics using <i>A. thaliana</i> . http://www.hort.wisc.edu/faculty/Krysan/default.htm	B (Biological)
Loewe, Laurence	Genetics	Evolutionary systems biology, evolutionary genetics, species extinction, antibiotics resistance evolution, population genetics, systems biology, simulation, parameter estimation, distributed computing http://www.evolutionary-research.net/people/loewe	B (Biological)
Markley, John	Biochemistry	NMR spectroscopy and its biological applications; structure function relationships in proteins; and stable-isotope assisted multinuclear NMR. http://www.biochem.wisc.edu/markley/	A (Physical)
Newton, Michael	Biostatistics and Medical Informatics	Developing statistical methods to address problems with the comparison of expression arrays. http://www.biostat.wisc.edu/faculty/newton.html	C (Computational / Statistical)
Page, C. David	Biostatistics and Medical Informatics	Data mining and machine learning, with applications to bioinformatics, chemoinformatics, and health sciences; inductive learning programming. http://www.biostat.wisc.edu/faculty/page.html	C (Computational / Statistical)

Pagliarini, David	Biochemistry	Investigation of the biochemical underpinnings of mitochondrial dysfunction in human diseases. http://www.pagliarinilab.org/	B (Biological)
Palecek, Sean	Chemical & Biological Engineering	Cellular engineering, intracellular signal transduction, cell and protein biosensors www.engr.wisc.edu/che/faculty/palecek_sean.html	A (Physical)
Palmenberg, Ann	Biochemistry	Molecular biology of RNA picornaviruses, protein translation, proteolytic processing, RNA synthesis, viral pathogenesis and vaccines. http://www.biochem.wisc.edu/palmenberg/	B (Biological)
Payseur, Bret	Genetics	Population genetic processes that determine patterns and levels of variation throughout the genome, including natural selection, recombination and mutations. http://www.genetics.wisc.edu/faculty/profile.php?id=471	B (Biological)
Perna, Nicole	Genetics	Development and application of computational and experimental tools to study the evolution of bacterial genomes. http://www.genetics.wisc.edu/faculty/profile.php?id=520	B (Biological)
Pfleger, Brian	Chemical & Biological Engineering	Synthetic biology, metabolic engineering, biotechnology, protein engineering, natural products http://www.engr.wisc.edu/che/faculty/pfleger_brian.html	A (Physical)
Pool, John	Genetics	New inference methods for population genomic sequence data; genetic basis of parallel melanin evolution in <i>Drosophila</i> . http://www.johnpool.net/research.html	B (Biological)
Ramanathan, Parmesh	Electrical & Computer Engineering	Characterization of the temporal dynamics of networks of gene interactions; longer-term goal, creation of a virtual foundry for genomic circuits http://www.engr.wisc.edu/ece/faculty/ramanathan_parameswaran.html	A (Physical)
Reed, Jennifer	Chemical & Biological	Systems biology, metabolic model development and analysis, metabolic engineering, biofuels, bioremediation, and biotechnology. http://www.engr.wisc.edu/che/faculty/reed_jennifer.html	A (Physical)
Roy, Sushmita	Biostatistics & Medical Informatics	Inference of structure and function of regulatory networks; Comparative analysis of expression modules across species http://pages.discovery.wisc.edu/~sroy/	C (Computational / Statistical)
Schwartz, David C. <i>GSTP Program Director</i>	Chemistry / Genetics	Chemistry and biology of single molecule systems with applications to genomic sciences. http://www.lmcg.wisc.edu/	A (Physical) and B (Biological)
Shavlik, Jude	Computer Sciences	Machine learning and datamining applied to biomedical tasks such as microarray ("gene chip") analysis and design, protein-structure determination, and information extraction from on-line biomedical text. http://www.cs.wisc.edu/~shavlik/	C (Computational / Statistical)
Shusta, Eric	Chemical & Biological Engineering	Development of an in vitro model of the Blood Brain Barrier (BBB); analysis of membrane proteome of the BBB	A (Physical)

		http://www.engr.wisc.edu/che/faculty/shusta_eric.html	
Skop, Ahna	Genetics	Cytokinesis and cell cycle proteomics. http://www.genetics.wisc.edu/faculty/profile.php?id=160	B (Biological)
Smith, Lloyd	Chemistry	Development and application of novel methods and approaches for the analysis and manipulation of biomolecules. http://www.chem.wisc.edu/main/people/faculty/smith.html	A (Physical)
Sussman, Michael	Biochemistry	Signal transduction in eukaryotes, development of genomic technologies, plasma membrane receptors and ion transporters, <i>Arabidopsis thaliana</i> . http://www.biochem.wisc.edu/sussman/	B (Biological)
Thomson, James	Anatomy; MIR	Understanding how primate embryonic stem (ES) cells choose between self-renewal, apoptosis, and differentiation into specific lineages. http://stemcells.wisc.edu/faculty/thomson.html	B (Biological)
van der Weide, Daniel	Electrical & Comp. Eng.	Multifunctional scanned probe microscopy; localized spectroscopy of biological and low-dimensional electronic systems. http://www.engr.wisc.edu/ece/faculty/vanderweide_daniel.html	A (Physical)
Wahba, Grace	Statistics	Development, testing and application of new methods for multivariate function estimation and statistical model building. http://www.biostat.wisc.edu/People/faculty/wahba.htm	C (Computational / Statistical)
Yandell, Brian	Statistics	Statistical genomics, with the goal of unraveling the complex relationships between observable traits and molecular signals http://www.stat.wisc.edu/~yandell/	C (Computational / Statistic)
Yin, John	Chemical & Biological Engineering	Developing experimental and theoretical approaches to study growth, adaptation, and inactivation of viruses. http://www.engr.wisc.edu/che/faculty/yin_john.html	A (Physical)