



Schedule

2004 BioQUEST Workshop: Systems Biology Education



Saturday, June 12

Noon	Welcome, Introductions, and Overview John R. Jungck, Workshop Director	Ruth Peterson Room
12:30 PM	BioQUEST Philosophy Ethel Stanley, Director, BioQUEST Curriculum Consortium	Ruth Peterson Room
1:00-2:00 PM	Systems Biology Herbert Sauro, Keck Graduate Institute	Ruth Peterson Room
2:00-2:20 PM	Break	

Phase I

During this phase, participants take on the role of students while exploring systems biology at the molecular, cellular, physiological, organismal, and ecological levels. Based on these explorations, participants will develop and present team projects.

2:20-3:30 PM	Systems Biology Education	
	Session A	
	Group 1: JDesigner Herb Sauro, Keck Graduate Institute Anton Weisstein, Bioinformatics Research Associate Anna Farbotko, Student Assistant	Chamberlin 202
	Group 2: GenMAPP Kam Dahlquist, Vassar College Sam Donovan, Director of BEDROCK Brandi Beals, Student Assistant	Chamberlin 208



Saturday, June 12

3:40-4:50 PM	Session B	
	Group 1: GenMAPP Kam Dahlquist, Vassar College Sam Donovan, Director of BEDROCK Brandi Beals, Student Assistant	Chamberlin 208
	Group 2: BioGrapher & javaBENZER Rama Viswanathan, Beloit College Tia Johnson, Assistant Director of BEDROCK John Jungck, Workshop Director Amber Blythe, Student Assistant	Chamberlin 214
5:00-6:10 PM	Session C	
	Group 1: BioGrapher & javaBENZER Rama Viswanathan, Beloit College Tia Johnson, Assistant Director of BEDROCK John Jungck, Workshop Director Amber Blythe, Student Assistant	Chamberlin 214
	Group 2: JDesigner Herb Sauro, Keck Graduate Institute Anton Weisstein, Bioinformatics Research Associate Brandi Beals, Student Assistant	Chamberlin 202
6:30 PM	Wine and hors d'oeuvres	Presidents Dining Room, Commons
7:00 PM	Dinner	Presidents Dining Room, Commons
8:00 PM	A piece of the physiome project: The "Eternal Cell" James B. Bassingthwaighte, University of Washington	Presidents Dining Room



Sunday, June 13

8:00 AM	Continental breakfast	Café Bio, Chamberlin 215
9:00-12:00 PM	Systems Biology Education Session D: Physiome Groups 1 and 2 James B. Bassingthwaighte, University of Washington Sam Donovan, Director of BEDROCK Anton Weisstein, Bioinformatics Research Associate	Ruth Peterson Room



Sunday, June 13

12:00-2:00 PM	Lunch and free time	Commons
2:00-3:30 PM	Systems Biology Education Session E Group 1: Ecosystem Science Robin Greenler, Editor, The BioQUEST Notes John Greenler, Biocomplexity Project Geni Werner, Student Assistant Group 2: Systems Ecology Stacey Kiser, BQ Staff & Lane Community College Ethel Stanley, Director of BioQUEST Brandi Beals, Student Assistant	Ruth Peterson Room Chamberlin 202
3:30-5:00 PM	Systems Biology Education Session F Group 1: Systems Ecology Stacey Kiser, BQ Staff & Lane Community College Ethel Stanley, Director of BioQUEST Brandi Beals, Student Assistant Group 2: Ecosystem Science Robin Greenler, Editor, The BioQUEST Notes John Greenler, Biocomplexity Project Geni Werner, Student Assistant	Chamberlin 202 Ruth Peterson Room
5:00 PM	Dinner	Commons
6:30-9:00 PM	Mini project work session	Chamberlin 202, 208, 214



Monday, June 14

8:00 AM	Breakfast	Commons
9:00-9:45 AM	Introduction to BEDROCK Sam Donovan, Director of BEDROCK	Ruth Peterson Room
9:45-10:30 AM	Molecular Phylogenetics Anton Weisstein, Bioinformatics Research Associate	Ruth Peterson Room
10:30-11:00 AM	Break	
11:00-12:00 PM	Mini project work session	Chamberlin 202, 208, 214
12:00-1:00 PM	Lunch	Commons
1:00-4:00 PM	Mini project work session	Chamberlin 202, 208, 214
4:00-5:35 PM	Mini project poster presentation	Pearsons Dining Hall



Monday, June 14

5:45 PM Dinner Commons

Phase II

During the second phase of the workshop participants take on the role of adopters, adapters, and reviewers to consider the potential of existing materials and tools.

7:30-9:00 PM **Overview of group project, materials development and expanded individual introductions** **2nd floor Pearsons**



Tuesday, June 15

8:00 AM Breakfast Commons

9:00-9:30 AM **Introduction to Biology Workbench Activity: 1 Cell, 3 Genomes** **Wood Room**
Sam Donovan, Director of BEDROCK

9:45-11:30 AM **Hands-on Exploration using Biology Workbench** **Chamberlin 208**
Tia Johnson, Assistant Director of BEDROCK **Chamberlin 202**
Anton Weisstein, Bioinformatics Research Associate

11:30-NOON **The Phylogenetic Tree Constructor - a web-based interface for constructing phylogenetic trees** **Ruth Peterson Room**
Brian White, University of Massachusetts at Boston

12:00-1:00 PM Lunch Commons

1:00-2:00 PM **Challenging Conceptions of Systems Biology Education** **Mathers Room in Pearsons**
John Jungck, Workshop Director
Ethel Stanley, Director, BioQUEST Curriculum Consortium

2:00-5:30 PM **Group formation and resource exploration** **Chamberlin 202, 208, 214, 218**
Sign up for group meetings with BioQUEST staff during one **Ruth Peterson Room**
of the eight afternoon and evening sessions below

3:30-4:00 PM **7:30-8:00 PM**
4:00-4:30 PM **8:00-8:30 PM**
4:30-5:00 PM **8:30-9:00 PM**
5:00-5:30 PM **9:00-9:30 PM**

5:30-6:30 PM Dinner Commons

6:30-7:30 PM **Emerging Diseases** **Ruth Peterson Room**
Marion Fass, Beloit College

6:30-9:30 PM **Resource exploration and meetings with BioQUEST staff** **Chamberlin 202, 208, 214, 218**
(continued) **Ruth Peterson Room**



Wednesday, June 16

8:00 AM	Breakfast	Commons
9:00-11:00 AM	The Complexity of HIV/AIDS-Where Politics Meet Biology Marion Fass, Beloit College	Mathers Room in Pearsons
11:00-2:00 PM	Lunch and Free Time Lunch on your own. Participants encouraged to explore Beloit	
2:00-3:30 PM	Group project work session BioQUEST Staff available for consultation Group 1: Group project work session, continued Group 2: BioQUEST software laboratory	Chamberlin Computer Labs Ruth Peterson Room
3:30-4:00 PM	Break	
4:00-5:30 PM	Group 1: BioQUEST software laboratory Group 2: Group project work session, continued	Ruth Peterson Room Chamberlin Computer Labs
5:45 PM	Dinner (The cafeteria stops replenishing food at 6:15. The doors close at 6:30. We recommend that you arrive at Commons before 6:15.)	Commons
6:30-9:00 PM	BioQUEST Curriculum Consortium Annual 4-H Show Participants share curricular materials	Mathers Room in Pearsons



Thursday, June 17

8:00 AM	Breakfast	Commons
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Phase III

During the third and final phase of the workshop, participants work on the development of new curricular materials that are primarily applicable to undergraduate education. These projects are submitted online and displayed on our web site for access by the broader BioQUEST community.

9:00-10:00 AM	Exploring 3D Molecular Structures Using NCBI Tools Eric Sayers, National Center for Biotechnology Information The Origin and Organization of Structure Data * How structures are determined * PDB files: content and formatting * How NCBI Curates Structure Data * Entrez Structure records * Entrez 3D Domain records * Entrez links	Mathers Room in Pearsons
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Thursday, June 17

- * Sequence-structure alignments with BLAST
- * Structural alignments with VAST
- * Curating Conserved Domains at NCBI
- * PSSM: The basis of multiple sequence alignments
- * Entrez Domains and CDD
- * Curating structure-based sequence alignments
- * Creating and editing alignments using Cn3D

10:20-10:35 AM Break

10:30-12:00 PM **Workshop I: Working with Structures in Cn3D** **Ruth Peterson Room**

Eric Sayers, National Center for Biotechnology Information

- * Searching for structures in Entrez
- * Gathering details from PDB files
- * Viewing NMR ensembles and crystal structures
- * When and how to use molecular rendering and display options
- * Annotating structures and producing figures
- * Saving images and data for use in Powerpoint or other applications

EXERCISE: Analyze a structure and prepare a figure illustrating particular features

12:00-1:30 PM Lunch **Commons**

1:30-3:00 PM **Workshop II: Working with Alignments in Cn3D** **Ruth Peterson Room**
Optional

Susan Dombrowski, National Center for Biotechnology Information

- * Finding model structures using pre-computed sequence alignments
- * Finding structural homologs using pre-computed structure alignments
- * Building sequence alignments to a model structure in Cn3D
- * Building structure alignments in Cn3D

EXERCISE: Discover and analyze a structural model for a query protein.

1:30-6:00 PM **Group Project Work time**

6:00 PM Picnic **Logan Museum**

7:00 PM Tour of Logan Anthropology Museum, Nicolette Meister

7:30 PM Tour of Wright Art Museum, Nicolette Meister

8:30-10:00 PM **Evolutionary Bioinformatics Book Session** **Ruth Peterson Room**
Participation optional



Friday, June 18

8:00 AM	Breakfast	Commons
9:00-10:00 AM	Comparative Genomics, large scale alignment, and comparison tools Ivan Ovcharenko, Lawrence Livermore National Laboratory	Mathers, Pearsons
10:00-10:30 PM	Break	
10:30-12:00 PM	Comparative Genomics, large scale alignment, and comparison tools Lab Session Ivan Ovcharenko, Lawrence Livermore National Laboratory	Mathers, Pearsons
12:00-2:00 PM	Lunch and free time	Commons
2:00-4:30 PM	Group Project Work time	
4:30-5:30 PM	Structural Biology Stephen Everse, University of Vermont at Burlington	Ruth Peterson Room
5:45 PM	Dinner	Commons

Participants may also go to Harry's Place on the Beloit riverfront for dinner (starting at 5:00 PM) and/or free live music (starting at 7:00 PM). Be sure to get there early for Otha's Ribs.



Saturday, June 19

8:00 AM	Continental breakfast	Café Bio, Chamberlin 215
8:30-12:00 PM	Group project work time	
12:00-1:30 PM	Lunch	Commons
1:30-3:00 PM	Group presentations, Session #1	Ruth Peterson Room
3:00-3:30 PM	Break	
3:30-5:00 PM	Group presentations, Session #2	Ruth Peterson Room
5:00 PM	Dinner	Commons
7:00 PM	Dessert at John Jungck's house (730 Harrison Avenue)	



Sunday, June 20

8:00 AM	Continental breakfast	Café Bio, Chamberlin 215
9:00-10:00 PM	Evaluation	Ruth Peterson Room
10:00-11:30 AM	Group presentations, Session #3	Ruth Peterson Room
11:30-12:00 PM	Planning Ahead & Wrapping Up	
12:00-1:00 PM	Lunch	Commons
Van Galder Shuttles depart for O'Hare Airport at 12:55 PM and at 2:25 PM.		