



## 2006 BioQUEST Workshop: Exploring Complex Data Sets



Saturday, June 10<sup>th</sup>

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- 1:00 PM**      **Welcome, Introductions, and Overview**      **Mathers, Pearsons**  
John R. Jungck, BioQUEST Curriculum Consortium
- 1:45 PM**      **Curriculum Reform:**      **Mathers, Pearsons**  
**What we do and why we do it**  
Ethel Stanley, BioQUEST Curriculum Consortium  
Margaret Waterman  
Sam Donovan  
Anton Weisstein  
Robin Greenler  
Marion Field Fass
- 3:00-3:30 PM**      Break (snacks available in Chamberlin 215 throughout the week)      **Café Bio, Chamberlin 215**

### Phase I

During this phase, participants take on the role of students while exploring complex data sets in biology. Based on these explorations, participants will develop and present team projects on Monday afternoon.

### 3:30-5:30 PM      Exploring Complex Data Sets, Session A

#### Group 1: BioQUEST: Investigative Case Based Learning

**Mayer 222**

Leaders: Margaret Waterman, Southeast Missouri State University  
Ethel Stanley, BioQUEST  
BioQUEST Staff: Beloit College

#### Group 2: BioQUEST: Evolutionary Bioinformatics

**Chamberlin 202**

Leaders: Sam Donovan, University of Pittsburgh  
Anton Weisstein, Truman State University  
BioQUEST Staff: Beloit College

<b>6:30 PM</b>	Wine and hors d'oeuvres	<b>President's Lounge, Chapin</b>
<b>7:15 PM</b>	Dinner	<b>President's Lounge, Chapin</b>
<b>8:15-9:30 PM</b>	<b>Complexity, Fractals, and Data Analysis</b> <b>Keynote Speaker:</b> Larry Liebovitch, Director, Center for Complex Systems and Brain Sciences, Florida Atlantic University	<b>President's Lounge, Chapin</b>



**Sunday, June 11<sup>th</sup>**

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<b>8:00 AM</b>	Breakfast	<b>Commons</b>
<b>9:00 – 11:00 AM Exploring Complex Data Sets, Session B</b>		
	<b>Group 1: Physioinformatics</b> Leader: Jeff Sale, San Diego Supercomputer Center BioQUEST Staff: Tom Hoogendyk	<b>Chamberlin 208</b>
	<b>Group 2: Multivariate Statistics</b> Leader: Danny Kaplan, Macalester College BioQUEST Staff: Ken Yasukawa, Yaffa Grossman, Beloit College	<b>Mayer 222</b>
<b>12:00-1:00 PM</b>	Lunch and free time	<b>Commons</b>
<b>1:00-3:00 PM Exploring Complex Data Sets, Session C</b>		
	<b>Group 1: Multivariate Statistics</b> Leader: Danny Kaplan, Macalester College BioQUEST Staff: Ken Yasukawa, Yaffa Grossman, Beloit College	<b>Chamberlin 202</b>
	<b>Group 2: BioQUEST: Investigative Case Based Learning</b> Leaders: Margaret Waterman, Southeast Missouri State University Ethel Stanley, BioQUEST BioQUEST Staff: Beloit College	<b>Mayer 222</b>
<b>3:15 – 5:15 PM Exploring Complex Data Sets, Session D</b>		
	<b>Group 1: BioQUEST: Evolutionary Bioinformatics</b> Leaders: Sam Donovan, University of Pittsburgh Anton Weisstein, Truman State University BioQUEST Staff: Beloit College	<b>Mayer 222</b>
	<b>Group 2: Physioinformatics</b> Leader: Jeff Sale, San Diego Supercomputer Center BioQUEST Staff: Beloit College	<b>Chamberlin 208</b>

5:15 PM Dinner Commons

6:30-9:00 PM Mini project work session: Group formation and mini-project design



**Monday, June 12<sup>th</sup>**

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8:00 AM Breakfast Commons

9:00 AM **The Biological ESTEEM Project:** Mathers, Pearsons  
**Excel Simulations and Tools for Exploratory, Experiential Mathematics**  
Rama Viswanathan, Beloit College and Anton Weisstein, Truman State University  
BioQUEST Staff:

10:00-10:30 AM **Visual Extensions to ESTEEM in Java**  
Noppadon Khiripet, NECTEC, Bangkok and Vince Streif, BioQUEST and Percipenz

10:30-12:00 Mini project work session

12:00-1:00 PM Lunch Commons

1:00-3:30 Mini project work session

3:30-5:45 PM **Mini project poster presentation: Exploring Complex Data Sets**

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 **Three Dimensional Visualization with Geo-Wall** Ruth Peterson Room  
Jeff Sale, San Diego Supercomputer Center



**Tuesday, June 13<sup>th</sup>**

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8:00 AM Breakfast Commons

9:00-10:00AM **SENCER: Science Education for New Civic Engagement and Social Responsibility**  
Representative: Marion Field Fass, Beloit College

11:00 AM-Noon **Image Analysis** Ruth Peterson Room  
Tom Hoogendyk, University of Massachusetts - Amherst  
John R. Jungck, Beloit College

<b>Noon-2:30 PM</b>	Lunch and free time	<b>Commons</b>
<b>2:30- 3:30 PM</b>	<b>Group 1:</b> BioQUEST Software Laboratory: Ethel Stanley (Evolve), Robin Greenler, (Heart Physiology), Sam Donovan (BIRDD) <b>Group 2:</b> Workshop Biometrics: Ken Yasukawa and Yaffa Grossman, Beloit College	<b>Ruth Peterson Room</b> <b>Chamberlin 202</b>
<b>3:30- 4:00 PM</b>	Break	
<b>4:00-5:30 PM</b>	<b>Group 1:</b> Workshop Biometrics: Ken Yasukawa and Yaffa Grossman, Beloit College <b>Group 2:</b> BioQUEST Software Laboratory: Ethel Stanley (Evolve), Robin Greenler, (Heart Physiology), Sam Donovan (BIRDD)	<b>Chamberlin 202</b> <b>Ruth Peterson Room</b>
<b>6:00 PM</b>	Dinner (We recommend that you arrive at Commons before 6:15.)	<b>Commons</b>
<b>7:00 – 8:30 PM</b>	<b>Biological Patterns through the Perspective of Artists, Biologists, and Mathematicians</b> John R. Jungck, Beloit College	<b>Mathers</b>



## Wednesday, June 14<sup>th</sup>

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<b>8:00 AM</b>	Breakfast	<b>Commons</b>
<b>9:00 AM-Noon</b>	<b>Overview of group project and materials development and expanded individual introductions</b>	<b>Mathers, Pearsons</b>
<b>12:00-1:30 PM</b>	Lunch	<b>Commons</b>
<b>2:00 – 5:30</b>	<b>Group formation and resource exploration</b> <b>Sign up to meet with Curriculum Project staff</b> Meet with Project Staff of the Curriculum Projects in Interinstitutional teams	
<b>5:30 PM</b>	Dinner (We recommend that you arrive at Commons before 6:15.)	<b>Commons</b>
<b>6:30-9:00 PM</b>	<b>Annual Learning Materials 4-H Show</b> Participants share curricular materials	<b>Mathers, Pearson</b>



## Thursday, June 15<sup>th</sup>

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<b>8:00 AM</b>	Breakfast	<b>Commons</b>
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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 website for access by our broader BioQUEST community.

**9:00-11:30 AM Group project work time**

<b>11:30-12:30 PM</b>	Lunch	<b>Commons</b>
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**12:30 – 2:00 PM Group project work time**

2:00-5:30 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, Judy Newland



## Friday, June 16<sup>th</sup>

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8:00 AM Breakfast Commons

9:00-10:30 AM **Phylogenetic Analysis of Complex Networks** Mathers, Pearsons  
**Due to Hybridization, Endosymbiosis, & Horizontal Gene Transfer**  
 Peter Lockhart, Allan Wilson Centre for Molecular Ecology and Evolution,  
 Massey University, New Zealand

10:30-10:45 PM Break

10:45- 12:00 Group project work time

12:00-2:00 PM Lunch and free time Commons

2:00-3:00 PM **Spatial Learning: My World GIS**  
 Danny Edelson, Northwestern University

3:00-4:30 PM Group project work time

4:30-5:30 PM **Exploring Complex Data Sets:** Mathers, Pearsons  
**Where Do We Go From Here?**  
 Ethel Stanley, Sam Donovan, Robin Greenler, and John R. Jungck,  
 BioQUEST Curriculum Consortium

5:45 PM Dinner Commons

7:00-9:00 PM Music at Harry's Place The Harry C. Moore Pavilion Riverside Park



## Saturday, June 17<sup>th</sup>

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8:00 AM Breakfast Commons

8:30-12:00 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

<b>3:30-5:00 PM</b>	<b>Group presentations, Session #2</b>	<b>Ruth Peterson Room</b>
<b>5:00 PM</b>	<b>Dinner</b>	<b>Commons</b>
<b>7:00 PM</b>	<b>Dessert at John Jungck's</b>	



**Sunday, June 18<sup>th</sup>**

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<b>8:00 AM</b>	<b>Breakfast</b>	<b>Commons</b>
<b>9:00-10:00 PM</b>	<b>Evaluation</b>	<b>Ruth Peterson Room</b>
<b>10:00-12:00</b>	<b>Group presentations, Session #3</b>	<b>Ruth Peterson Room</b>
<b>12:00-1:00 PM</b>	<b>Lunch</b>	<b>Commons</b>

Van Galder Shuttle buses depart for O'Hare Airport at 12:55 and 2:25 and 3:55 from the Ramada Inn in South Beloit. You may check <http://www.vangalderbus.com/vgschedule.html> to see when each bus arrives at O'Hare. We will begin running a shuttle van to the Ramada at 12:15 p.m. You should plan to arrive at the O'Hare airport at least 1.5 hours prior to departure.