

# MBL-ASU HISTORY OF BIOLOGY SEMINAR SCHEDULE

## May 19<sup>th</sup>-26<sup>th</sup>, 2010

(Updated 5/14/2010)

### WEDNESDAY, MAY 19<sup>TH</sup>: TRAVEL DAY

6:30 pm Welcome Reception/Dinner in the Small Dining Room

### THURSDAY, MAY 20<sup>TH</sup>: THE BEGINNINGS OF MODERN NATURAL HISTORY

#### *Morning Sessions: Introductions to 2010 Topic and the MBL*

9:00–9:30 Introduction to MBL and Woods Hole  
Jane Maienschein, Arizona State University

9:30–10:30 Introduction to the 2010 Topic, Session Leaders, and Participants; Sketch of schedule, content, and goals  
Jim Collins, Arizona State University  
Paul Farber, Oregon State University  
Andrew Hamilton, Arizona State University

10:30-11:00 Coffee Break

11:00–12:30 Finding Order in Nature, 1735–1840  
Paul Farber, Oregon State University

12:30-2:00 Lunch

#### *Afternoon Sessions: Natural History in the 18<sup>th</sup> Century*

2:00–3:00 How Botany and Natural History of the 1750s Might Be Divided Circa 1890–1920  
Peter Stevens, Missouri Botanical Garden and Washington University

3:00–4:00 Phytogeography: 175 Years of Negative Nativeness  
Matthew Chew, Arizona State University

This session explores early attempts to order nature (mostly plants) according to political boundaries as to assign such categories as ‘native’ ‘alien’ and ‘colonial’ to taxa, and then traces these categories as they become important in invasion biology in recent years.

4:00-4:30 Break

4:30–5:30 Darwin and 19th Century Systematics  
Gordon McOuat, University of King’s College

### FRIDAY, MAY 21<sup>ST</sup>: REINVENTING NATURAL HISTORY COLLECTIONS IN THE 19<sup>TH</sup> AND 20<sup>TH</sup> CENTURIES

#### *Morning Sessions: Collecting and Classifying*

9:00–10:30 Two Taxonomists’ Christmas List: 1890–1930  
Kristin Johnson, University of Puget Sound

This session addresses the role of collections in “making systematics scientific” and the challenges faced during the first half of the twentieth century

We will compare problems raised by Horn with challenges facing collections and the study of biodiversity today, and the factors behind these challenges at various times. This session will give us an in-depth look at taxonomists’ vision for how to make systematics scientific and relevant to evolutionary theory, including the study of long series of specimens, geographical variation, and problems associated with using museum collections for specific purposes.

10:30-11:00 Coffee Break

11:00–12:30 Systematics and the New Biology  
Lynn Nyhart, University of Wisconsin Madison

This session will explore the relationship between systematics and the new biology, with special focus on the constraints and opportunities of this relationship. We may also explore dual arrangement and the changing meanings and uses of collections as a consequence.

12:30-2:00 Lunch

***Afternoon Sessions: The New Biology and New Taxonomic Practices***

2:00-3:30 Creating and Using Collections in Practice: Concepts, Objects and Communication  
Kristin Johnson, University of Puget Sound  
Lynn Nyhart, University of Wisconsin Madison  
Bruno Strasser, Yale University

This session begins our look at 19<sup>th</sup> and 20<sup>th</sup> century collections with a pair of activities for two groups of participants followed by a general discussion of the results.

Activity #1: Survey of the Biological Bulletin for how systematics information features in its articles, with an emphasis on how collections are used (or not). How is systematics informing other questions? What role do collections play? What place do taxonomic studies have in the Biological Bulletin? Do any of these things change over time? What relationship between systematics and the new biology (or marine biology) do articles (and any change over time) suggest?

Activity #2: Classifying objects: character choice, weighting, the purpose of classification.

3:30-4:00 Break

4:00–5:30 Collecting Experiments: Morphology, Molecules, and the Pursuit of Objectivity  
Bruno Strasser, Yale University

This session addresses experimental taxonomy, especially serological taxonomy, at the MBL in the 1940s and elsewhere, with attention to the reactions of “traditional” systematists such as Ernst Mayr and G. G. Simpson.

## **SATURDAY, MAY 22<sup>ND</sup>: EVOLUTION AND SYSTEMS: THEORY AND COLLECTIONS**

### ***Morning Sessions: Toward Contemporary Views in Collections and Systematics***

9:00–10:30 How Systematics Became Phylogenetic: Willi Hennig and the Most Important Revolution You've Never Heard Of  
Andrew Hamilton, Arizona State University

This session explores the rise of cladistic approaches to systematics in the German context of the 1920s-1950s and then in the Anglo-American context post 1966. We will pay particular attention to Willi Hennig, the most important systematic theorist of the 20<sup>th</sup> century, asking why most historians and philosophers of biology have never heard of him. Part of this session will include the generation of simple cladograms using data provided by the session leader.

10:30-11:00 Coffee Break

11:00–12:00 The Museum of Vertebrate Zoology's First Century: Perspectives from History, Philosophy, and Social Science  
Elihu Gerson, Tremont Research Institute

This session focuses on Joseph Grinnell, the first Director of the MVZ, and his work on the evolution of environments as a driving force behind natural selection. We will explore the ways in which Grinnell's thinking about evolution informed his field work, collections organization, and his conduct of the MVZ as an organization.

12:00–12:30 Organization for student-led end-of-week summary

12:30–2:00 Lunch

### ***Afternoon Sessions: Taking Stock: Midweek Summary***

2:00–3:00 Midweek Summary  
Jim Collins, Arizona State University  
Paul Farber, Oregon State University  
Andrew Hamilton, Arizona State University

3:00–3:30 Break

3:30–5:30 3<sup>rd</sup> Annual Presentation Parade

## **SUNDAY, MAY 23<sup>RD</sup>: DAY OFF TO EXPLORE THE MBL AND ITS RESOURCES**

***MBL CAFETERIA IS CLOSED. DINING OPTIONS IN WOODS HOLE OR NEARBY FALMOUTH***

## MONDAY, MAY 24<sup>TH</sup>: LATE 20<sup>TH</sup> CENTURY FRAMINGS OF THE NATURAL WORLD

### ***Morning Sessions: Clades, Molecules, and Evolution***

9:00–10:30 From Metric to Movement: The Rise of Biodiversity  
David Steffes, Arizona State University  
Andrew Hamilton, Arizona State University

This session explores early uses of the terms ‘biological diversity’ ‘BioDiversity’ and ‘biodiversity’ with detailed attention to how and why biodiversity came to prominence in the 1980s as a way to frame our understanding of nature. We’ll discuss ways to index diversity, the ways in which the term has come to be used, and attend to some claims that ‘biodiversity’ doesn’t really mean anything at all. For a bit of historical perspective, we will also view part of *Biodiversity: The Videotape*, a release of the National Academy of Sciences that was made as a supplement to E.O. Wilson’s edited volume entitled *Biodiversity*.

10:30-11:00 Coffee Break

11:00–12:30 Collecting DNA and the Production of Genomic Diversity, Part 1  
Michael Dietrich, Dartmouth

In the last twenty years contributions to governmental sequence databases has grown exponentially. At the same time, private sequence databases have proliferated in connection to the promises of molecular genealogy. In this presentation I will review the rise of these DNA databases and pose the question of the impact of these collections on scientific and public attitudes toward human genetic diversity and the question of race. We will show how DNA databases function as boundary objects at the intersections of genomic science, governmental agencies, biotechnology businesses, and individual participants. We will consider Jenny Reardon’s arguments for the coproduction of genomic knowledge across these different contexts or social worlds. *This session continues after lunch.*

12:30–2:00 Lunch

### ***Afternoon Sessions: Molecules and Information: Toward the 21<sup>st</sup> Century***

2:00–3:30 Collecting DNA and the Production of Genomic Diversity, Part 2  
Michael Dietrich, Dartmouth

In order to get at how the process of DNA collection effects scientific inferences, we will focus on how patterns of sampling of DNA have inform inference regarding human diversity using the program Structure. We will break up into small groups and use Structure to analyze different DNA datasets. Participants will have instructions and question prompts for group discussion.

3:30–4:00 Break

4:00–5:30 21<sup>st</sup> Century Collections: Cybertaxonomy  
Quentin Wheeler, Arizona State University

This session describes several new efforts by taxonomists, informaticians, and others to build a new taxonomic infrastructure. It will address the questions ‘What is cybertaxonomy?’ and ‘How does this new approach signal a conceptual shift in 21<sup>st</sup> century attempts to track nature?’

## TUESDAY, MAY 25<sup>TH</sup>: 21<sup>ST</sup> CENTURY NATURAL HISTORY

### *Morning Sessions: Contemporary Projects in Natural History*

9:00–10:30 Taxonomy and Informatics: New Tools for a New Vision  
David Patterson, Encyclopedia of Life

Here we will explore contemporary efforts to re-make the practice of natural history through new technologies, including the Universal Biological Indexer and Organizer (uBio) and the Global Names Architecture (GNA).

10:30-11:00 Coffee Break

11:00–12:30 New Directions in Bioinformatics: Ontologies, Aging, and The Biodiversity Heritage Library  
Holly Miller, Marine Biological Laboratory

12:30-2:00 Lunch

### *Afternoon Sessions: Summary and Wrap Up*

2:00-3:30 Student-Run Summary Session

3:30-4:00 Break

4:00-5:30 Wrap Up  
Jim Collins, Arizona State University  
Paul Farber, Oregon State University  
Andrew Hamilton, Arizona State University

6:00-8:00 Seafood Dinner in the Meigs Dining Room, Swope Hall

## WEDNESDAY, MAY 26<sup>TH</sup>: TRAVEL DAY

*\*Meal Cards: You will be given a meal card and all meals are taken in the dining room (except for Sunday when the dining hall is closed except for brunch which is available but not included on your meal card).*