



**Genetic Approaches To
Complex Heart, Lung, and Blood Diseases
September 27– October 5, 2002
(Evening registration September 26th)**

**DRAFT
Course Schedule**

**Thursday, September 26
Evening Registration**

3:00 p.m. Arrival at The Highseas Conference Center any time after 3:00 pm or by TJL arranged transportation from Bar Harbor Airport.

4:00-7:00 Registration and Buffet Supper

7:00-7:30 Nierman Molecular Biology Tutorial- Understanding PCR

**Please note that all tutorials in the schedule are optional.*

An Honor Bar will be set up on the Sun Porch for evening gatherings

The course provides shuttle transportation to town on a scheduled basis during free time. See the Daily Schedule posted on the bulletin board in the lobby.

Friday, September 27
Establishing the Foundations

All Lectures and Workshops are on the 3rd Floor unless otherwise noted

| Time | Speaker | Title |
|-------------------|------------------------|--|
| 7:30-8:30 a.m. | Breakfast | |
| 8:30 - 8:50 | Nierman/ Paigen, B. | Welcome and Announcements |
| 8:50 - 9:15 | Hart | Course Evaluation |
| 9:15 - 10:30 | Meyers/ Bleeker | The Power and Limitations of Human Genetics |
| 10:30 - 10:45 | | Break (Dining Room) |
| 10:45 – 12:00 | Paigen, K. | The Power and Limitations of Mouse Genetics |
| 12:00 - 1:00 p.m. | Lunch | |
| 1:00 - 2:00 | Nierman | Human Genetics Review |
| 2:00 - 2:30 | Nierman | Typing DNA Polymorphisms (SSLP, SSCP, SNPs) |
| 2:30-3:00 | Nierman/ Paigen, B. | Workshop: Reading a gel, mapping a gene |
| 3:00 - 6:00 | Free Time | Hike: Witch Hole Pond Carriage Road (transportation and maps provided, bikes are reserved at the Bar Harbor Bike Shop nearby for those that registered ahead of time) |
| 6:00 - 7:00 | Dinner | |
| 7:00 - 7:30 | Nierman | Optional Tutorial: Reviewing today's unfamiliar terminology |
| 7:30-9:00 | Nierman | Introductions - Students and Faculty (Who am I, What disease I work on,) Held in Highseas Living Room |

Saturday, September 28
Genetic Epidemiology

| Time | Speaker | Title |
|-------------------|---|--|
| 7:30-8:30 a.m. | Breakfast | |
| 8:30 - 8:45 | Nierman | Review |
| 8:45 - 9:45 | Meyers | Concepts and approaches in Mendelian Genetics |
| 9:45 - 10:00 | Break | |
| 10:00 - 11:30 | Beaty | Assessing whether Disease is Genetic |
| 11:30 - 12:00 | Meyers | Linkage Analysis in Humans |
| 12:00 - 1:00 p.m. | Lunch | |
| 1:00 – 2:00 | Meyers | Linkage Analysis in Humans Continued Introduction to Problem Sets |
| 2:00 – 3:30 | Xu | Non Parametric Linkage Analysis Introduction to Problem Sets Continued |
| 3:30 - 6:00 | Free Time | |
| 6:00 -7:00 | Dinner | |
| 7:00-7:30 | Bleecker/ Meyers | Study Design Workshop |
| 7:30 - 9:00 | Optional Tutorials: (Concurrent, pick one): Nierman Beaty | Library- Genomic & cDNA Libraries Breakfast room- questions from today's lectures |

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| Sunday, September 29 Linkage Analysis in Humans |
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| Time | Speaker | Title |
|--------------------|------------------|---|
| 7:30-8:30 a.m. | Breakfast | |
| 8:30 - 8:45 | Nierman | Review |
| 8:45 – 9:45 | Beaty | Gene-environment Interactions |
| 9:45 – 10:00 | Break | |
| 10:00 - 11:00 | Austin | Twin Studies in Cardiovascular Research |
| 11:00 - 12:00 p.m. | Austin | Segregation Analysis and Genetic Models |
| 12:00 – 1:00 pm | Lunch | |
| 1:00-2:00 | Austin | Genetic Association Studies: Linkage Disequilibrium |
| 2:00 – 3:30 | Meyers/ Xu | Linkage Workshop Groups A & B: Problem sets by hand Groups C & D: Problem sets by computer (after 45 minutes, groups reverse problem sets) |
| 3:30 – 5:00/6:00 | | Free Time Optional boat trip from Northeast Harbor on the Sea Princess, shuttle transport and car pool to be arranged. If you did not sign up in advance, please add your name to the list posted in the lobby. |
| 6:00 - 7:00 | Dinner | |
| 7:00 - 9:00 | Maglott/ Shaw | Computer workshops |

Monday, September 30
Linkage Analysis in Humans

| Time | Speaker | Title |
|-------------------|------------------|--|
| 7:30-8:30 a.m. | Breakfast | |
| 8:30 - 8:45 | Nierman | Review |
| 8:45 – 9:45 | Meyers | Statistical Power and Study Design |
| 9:45 – 10:00 | Break | Group Photo, weather permitting |
| 10:00 - 11:00 | Xu | Linkage Analysis in Complex Traits |
| 11:00 – 12:00 | Bleecker | Asthma in Humans |
| 12:00 - 1:00 p.m. | Lunch | |
| 1:00-2:00 | Maglott | Introduction to Sequence Databases |
| 2:00 – 2:30 | Maglott | Maps and Map Resources |
| 2:30 – 4:15 | Maglott/ Shaw | Computer Workshop – Groups A & B: Hike Groups C & D: Computer Workshop |
| 4:45 – 6:30 | | Groups A & B: Computer Workshop at Highseas Groups C & D: Hike |
| 6:30 - 7:30 | Dinner | |
| 7:30-9:30 | Austin | Ethical Issues |

Tuesday, October 1
Linkage Analysis in Animal Models

| Time | Speaker | Title |
|-------------------|----------------|--|
| 7:30-8:30 a.m. | Breakfast | |
| 8:30 - 8:45 | Nierman | Review |
| 8:45 - 9:45 | Xu | Linkage Disequilibrium and Fine Mapping |
| 9:45 - 10:15 | Break | (back up day for group photo) |
| 10:15 – 10:45 | Bleecker | Pharmacogenomics |
| 10:45 – 12:00 | Pack | Sleep Disorders |
| 12:00 - 1:00 p.m. | Lunch | (Faculty Meeting/Luncheon) |
| 1:00-2:00 | Paigen | Mouse Genetics: The Basics |
| 2:00 - 6:00 | Free Time | |
| 2:30 - 5:00 | | Optional Bus Tour of Acadia National Park (Bus picks up at Highseas and returns to Highseas) |
| 2:15-3:00 | Lab Tour | Shuttle bus to TJL for tour. Shuttle will be provided back to Highseas or downtown after tour. (second chance for tour tomorrow) |
| 6:00 - 7:00 | Dinner | "On your own" in downtown Bar Harbor – Cook's night off! |

Wednesday, October 2
Complex Disease Gene Mapping – Animal models

| Time | Speaker | Title |
|-------------------|----------------------------------|---|
| 7:30-8:30 a.m. | Breakfast | |
| 8:30 - 8:45 | Paigen, B. | Review |
| 8:45 - 9:45 | Paigen | Mapping Complex Traits in Animal Models |
| 9:45 - 10:00 | Break | |
| 10:00 – 11:00 | Paigen, B. | Mapping Complex Traits: Conclusion |
| 11:00 - 12:00 | Churchill | Statistical Analysis of Complex Traits: Finding Gene Interactions |
| 12:00 - 1:00 p.m. | Lunch | |
| 1:00 – 2:00 | Churchill | Functional Genomics: chips and arrays |
| 2:00 – 3:30 | Quackenbush | Microarrays |
| 3:30 – 6:00 | Free Time | |
| 3:45-4:30 | Lab Tour | Shuttle bus to TJL for tour. Shuttle will provided back to Highseas or downtown after tour. |
| 6:00 - 7:00 | Dinner | |
| 7:00-9:00 | Students present Grant Proposals | |

Thursday, October 3
Finding, Cloning, and Characterizing the Gene

| Time | Speaker | Title |
|-----------------|----------------|---|
| 7:30-8:30 a.m. | Breakfast | |
| 8:30-8:45 | Paigen, B. | Review |
| 8:45-9:45 | Svenson | Chemical Mutagenesis – making new mutants |
| 9:45-10:00 | Break | |
| 10:00-11:00 | Phelan | Physical Mapping and Evaluating Candidate Genes |
| 11:00-12:00 | Phelan | Cloning Disease Genes |
| 12:00-1:00 p.m. | Lunch | |
| 1:00 – 2:30 | Phelan | Overview: Functional Characterization of the Gene |
| 2:30-7:00 | Free Time | |
| 6:30-7:00 | Herz | Optional: Molecular Biology Tutorial: Construction of transgenic mice- a primer |
| 7:00 | Banquet | "Down East Shore Dinner" |

**Friday, October 4
Gene Characterization**

| Time | Speaker | Title |
|--------------------|----------------|---|
| 7:30-8:30 a.m. | Breakfast | |
| 8:30 - 8:45 | Paigen | Review |
| 8:45 - 10:00 | Herz | Constructing Animal Models - Transgenics and Knockouts |
| 10:00 - 10:15 | Break | |
| 10:15 – 11:30 | Jacob | Hypertension in Rats |
| 11:30 - 12:30 p.m. | Lunch | |
| 12:30 – 1:45 | Herz | In vitro Analysis of Gene Function |
| 1:45 – 3:00 | Jacob | From QTL to Gene |
| 3:00 – 6:00 | Free Time | |
| 6:00 | Dinner | Please sign up on the message board so the cook gets a headcount. |

Saturday, October 5

7:30-8:30 Breakfast

Transportation to the Bar Harbor Airport will be scheduled according to participant/faculty needs. Please check the list in the lobby to be sure your needs have been met.