AACR Integrative Molecular Epidemiology Workshop:
Bridging Cancer Biology and Precision Medicine
July 9-13, 2018 (*arrival July 8)
Westin Copley Place, Boston • Boston, Massachusetts

*As of 6/29/18

Director:
Thomas A. Sellers, Moffitt Cancer Center, Tampa, Florida

Codirectors:
Peter Kraft, Harvard T.H. Chan School of Public Health, Boston, Massachusetts
Lorelei A. Mucci, Harvard T.H. Chan School of Public Health, Boston, Massachusetts

Faculty:
1. Paul L. Auer, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin
2. Kevin M. Brown, National Cancer Institute, Bethesda, Maryland
3. Clary B. Clish, Broad Institute, Cambridge, Massachusetts
4. Travis Gerke, Moffitt Cancer Center, Tampa, Florida
5. Bob T. Li, Memorial Sloan Kettering Cancer Center, New York, New York
6. Alvaro N. A. Monteiro, Moffitt Cancer Center, Tampa, Florida
7. Bogdan Pasaniuc, University of California, Los Angeles, California
8. Paul A. Scheet, The University of Texas MD Anderson Cancer Center, Houston, Texas
9. Shelley S. Tworoger, Moffitt Cancer Center, Tampa, Florida
10. Eliezer M. Van Allen, Dana-Farber Cancer Institute, Boston, Massachusetts

Lecturers:
1. Maria Teresa Landi, National Cancer Institute, Bethesda, Maryland
2. Brian M. Wolpin, Dana-Farber Cancer Institute, Boston, Massachusetts
3. Jun J. Yang, St. Jude Children’s Research Hospital, Memphis, Tennessee
4. Rick A. Kittles, City of Hope Comprehensive Cancer Center, Duarte, California

Junior Faculty:
1. Jiyeon Choi, National Cancer Institute, Bethesda, Maryland

Day 0 – Sunday, July 8: Arrivals

Faculty and Attendees arrive throughout the day

Day 1 – Monday, July 9: Introduction, Fundamentals, and Germline Variation

7:00 AM  AACR Registration Desk Open
          Staffordshire Foyer
8:00 AM  Continental Breakfast
          Gloucester/Newbury Rooms

8:45 AM  Faculty Meeting
          Seating area near AACR Registration Desk

9:00 AM  Welcome, Introductions, and Course Overview
          Staffordshire Room
          Thomas A. Sellers, Moffitt Cancer Center, Tampa, Florida

10:00 AM Overview and Dimensions
          Staffordshire Room
          Thomas A. Sellers, Moffitt Cancer Center, Tampa, Florida

10:30 AM  Break
          Staffordshire Foyer

10:45 AM  Biomarkers
          Staffordshire Room
          Shelley S. Tworoger, Moffitt Cancer Center, Tampa, Florida

12:15 PM  Lunch with Networking Roundtables
          Gloucester/Newbury Rooms

1:15 PM  Evaluating and Validating Biomarker Assays
          Staffordshire Room
          Shelley S. Tworoger, Moffitt Cancer Center, Tampa, Florida

2:15 PM  What Is Known about the Genetic Epidemiology of Cancer (and What Is Not) and
          Genome-Wide Association Studies and Imputation-Based Association Mapping
          Staffordshire Room
          Peter Kraft, Harvard T.H. Chan School of Public Health, Boston, Massachusetts
          Paul A. Scheet, The University of Texas MD Anderson Cancer Center, Houston, Texas

3:15 PM  Break
          Staffordshire Foyer

3:30 PM  Exome and Genome Sequencing
          Staffordshire Room
          Paul L. Auer, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin
          Paul A. Scheet, The University of Texas MD Anderson Cancer Center, Houston, Texas

4:15 PM  Exome and Genome Sequencing: “Designing your population sciences gene-mapping
          study on a budget!”
          Staffordshire Room
          Paul L. Auer, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin
          Paul A. Scheet, The University of Texas MD Anderson Cancer Center, Houston, Texas
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<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>5:00 PM</td>
<td>Discussion of Ioannidis and Rothman Articles</td>
<td>Staffordshire Room</td>
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<td>Peter Kraft, Harvard T.H. Chan School of Public Health, Boston, Massachusetts</td>
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<tr>
<td>6:00 PM</td>
<td>Opening Reception and Group Buffet Dinner</td>
<td>Gloucester/Newbury Rooms</td>
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<td>7:30 PM</td>
<td>End of Day</td>
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**Day 2 – Tuesday, July 10: Integrating Data on Germline Variation (Part 2)/Integration of Data on Biological Function (Part 1)**

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<th>Time</th>
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<tbody>
<tr>
<td>8:00 AM</td>
<td>Continental Breakfast</td>
<td>Gloucester/Newbury Rooms</td>
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<tr>
<td>8:45 AM</td>
<td>Faculty Meeting</td>
<td>Seating area near AACR Registration Desk</td>
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<tr>
<td>9:00 AM</td>
<td>Review and Questions</td>
<td>Staffordshire Room</td>
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<td>Discussion of questions from the previous day</td>
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<tr>
<td>9:15 AM</td>
<td>Publicly Available Online Genomics and ‘Omics Resources (Part 1)</td>
<td>Staffordshire Room</td>
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<td></td>
<td>Paul L. Auer, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin</td>
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<tr>
<td>10:30 AM</td>
<td>Break</td>
<td>Staffordshire Foyer</td>
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<tr>
<td>11:00 AM</td>
<td>Publicly Available Online Genomics and ‘Omics Resources (Part 2)</td>
<td>Staffordshire Room</td>
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<td>Travis Gerke, Moffitt Cancer Center, Tampa, Florida</td>
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<tr>
<td>12:30 PM</td>
<td>Group Photo Followed by Lunch with Networking Roundtables</td>
<td>Gloucester/Newbury Rooms</td>
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<tr>
<td>2:00 PM</td>
<td>Integrative Data Analysis Methods</td>
<td>Staffordshire Room</td>
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<td>Peter Kraft, Harvard T.H. Chan School of Public Health, Boston, Massachusetts</td>
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<td>Bogdan Pasaniuc, University of California, Los Angeles, California</td>
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<td>3:00 PM</td>
<td>Mendelian Randomization</td>
<td>Staffordshire Room</td>
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<td>Paul L. Auer, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin</td>
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<tr>
<td>4:00 PM</td>
<td>Break</td>
<td>Staffordshire Foyer</td>
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</table>
4:30 PM  Applied Research Seminar - Cancer Health Disparities  
*Staffordshire Room*  
Rick A. Kittles, City of Hope Comprehensive Cancer Center, Duarte, California

5:15 PM  Applied Research Seminar - Precision Medicine in Pediatric Oncology  
*Staffordshire Room*  
Jun J. Yang, St. Jude Children's Research Hospital, Memphis, Tennessee

6:00 PM  Group Buffet Dinner and Discussion on Survival Skills and Ethics  
*Gloucester/Newbury Rooms*  
Moderators:  
Peter Kraft, Harvard T.H. Chan School of Public Health, Boston, Massachusetts  
Paul A. Scheet, The University of Texas MD Anderson Cancer Center, Houston, Texas

7:30 PM  End of Day

Day 3 – Wednesday, July 11: Integration of Data on Biological Function (Part 2)

8:00 AM  Continental Breakfast  
*Gloucester/Newbury Rooms*

8:45 AM  Faculty Meeting  
*Seating area near AACR Registration Desk*

9:00 AM  Review and Questions  
*Staffordshire Room*  
*Discussion of questions from the previous day*

9:15 AM  Establishing the *Functional* Chain of Causation  
*Staffordshire Room*  
Alvaro N. A. Monteiro, Moffitt Cancer Center, Tampa, Florida

9:45 AM  Research Vignettes: GWAS Functional Annotation on a Large Scale: Integration of QTLs and Massively Parallel Reporter Assays  
*Staffordshire Room*  
Kevin M. Brown, National Cancer Institute, Bethesda, Maryland  
Jiyeon Choi, National Cancer Institute, Bethesda, Maryland

10:15 AM  Break  
*Staffordshire Foyer*

10:30 AM  Overview of Epigenetics and Practical Issues in Transcriptomics  
*Staffordshire Room*  
Paul L. Auer, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin  
Alvaro N. A. Monteiro, Moffitt Cancer Center, Tampa, Florida
11:30 AM ENCODE and the Epigenome Roadmap in a Nutshell
   Staffordshire Room
   Kevin M. Brown, National Cancer Institute, Bethesda, Maryland
   Alvaro N. A. Monteiro, Moffitt Cancer Center, Tampa, Florida

12:00 PM Lunch with Networking Roundtables
   Gloucester/Newbury Rooms

1:00 PM eQTL and mQTL
   Staffordshire Room
   Peter Kraft, Harvard T.H. Chan School of Public Health, Boston, Massachusetts
   Bogdan Pasaniuc, University of California, Los Angeles, California

2:00 PM Overview of Functional Genomic Characterization of GWAS Loci
   Staffordshire Room
   Kevin M. Brown, National Cancer Institute, Bethesda, Maryland

3:00 PM Bioinformatics Toolkit for Functional Analysis
   Staffordshire Room
   Jiyeon Choi, National Cancer Institute, Bethesda, Maryland
   Travis Gerke, Moffitt Cancer Center, Tampa, Florida

3:30 PM Break
   Staffordshire Foyer

3:45 PM Functional Analysis Lab
   Staffordshire
   Kevin M. Brown, National Cancer Institute, Bethesda, Maryland
   Jiyeon Choi, National Cancer Institute, Bethesda, Maryland
   Travis Gerke, Moffitt Cancer Center, Tampa, Florida
   Alvaro N. A. Monteiro, Moffitt Cancer Center, Tampa, Florida

6:00 PM End of Sessions

6:30 PM Workshop Social Event and Dinner
   Pick-up outside of hotel

Day 4 – Thursday, July 12: Biomarkers and Tumor Profiling

7:45 AM Continental Breakfast
   Gloucester/Newbury Rooms

8:30 AM Faculty Meeting
   Seating area near AACR Registration Desk

8:45 AM Review and Questions
   Staffordshire Room
   Discussion of questions from the previous day
9:00 AM  Overview of Tumor Profiling, Tools, and Their Limitations  
_Staffordshire Room_  
Lorelei A. Mucci, Harvard T.H. Chan School of Public Health, Boston, Massachusetts

10:15 AM  Metabolomics  
_Staffordshire Room_  
Clary B. Clish, Broad Institute, Cambridge, Massachusetts

11:30 AM  Lunch with Networking Roundtables  
_Gloucester/Newbury Rooms_

12:30 PM  Practical Study Design  
_Staffordshire Room_  
Lorelei A. Mucci, Harvard T.H. Chan School of Public Health, Boston, Massachusetts

2:30 PM  Offsite Laboratory Visits  
_Begin at Lobby of Hotel_

- **Tour A: Pathology Lab** – Massimo Loda/Ying Huang
- **Tour B: BWH/Harvard Cohorts Biorepository and Microbiome Analysis Core at the Harvard T.H. Chan School of Public Health** – Shelley S. Tworoger/ A. Heather Eliassen/Eric Rimm
- **Tour C: Broad Institute Metabolomics Platform** - Clary B. Clish
- **Tour D: Clinical Genetics** – Heidi Rehm/Lisa Marie Mahanta

6:00 PM  Back from Lab Visits/Evening Off

**Day 5 – Friday, July 13: Putting It All together**

8:00 AM  Continental Breakfast  
_Gloucester/Newbury Rooms_

8:45 AM  Faculty Meeting  
_Seating area near AACR Registration Desk_

9:00 AM  Review and Questions  
_Staffordshire Room_  
_Discussion of questions from the previous day_

9:15 AM  Precision Medicine - Predictive Modeling from High-Throughput Results: Available Tools and Issues to Consider  
_Staffordshire Room_  
Travis Gerke, Moffitt Cancer Center, Tampa, Florida

10:00 AM  Precision Medicine - From Technology to Decision: What Does It Take? (Part 1)  
_Staffordshire Room_  
Eliezer M. Van Allen, Dana-Farber Cancer Institute, Boston, Massachusetts
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<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
<th>Presenter/Institution</th>
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<tbody>
<tr>
<td>11:00 AM</td>
<td>Break</td>
<td>Staffordshire Foyer</td>
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<tr>
<td>11:15 AM</td>
<td>Precision Medicine - From Technology to Decision: What Does It Take? (Part 2)</td>
<td>Staffordshire Room</td>
<td>Bob T. Li, Memorial Sloan Kettering Cancer Center, New York, New York</td>
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<tr>
<td>12:15 PM</td>
<td>Lunch and Faculty Meeting</td>
<td>Attendee Lunch: Gloucester/Newbury Rooms</td>
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<td>Faculty Meeting: Courier Room (7th Floor)</td>
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<tr>
<td>1:30 PM</td>
<td>Applied Research Seminar – Personalized Medicine for the Diagnosis and Treatment for Pancreatic Cancer</td>
<td>Staffordshire Room</td>
<td>Brian M. Wolpin, Dana-Farber Cancer Institute, Boston, Massachusetts</td>
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<tr>
<td>2:30 PM</td>
<td>Applied Research Seminar – Integrative Analyses of Exposures, Genetic Susceptibility, and Somatic Changes in Lung Cancer</td>
<td>Staffordshire Room</td>
<td>Maria Teresa Landi, National Cancer Institute, Bethesda, Maryland</td>
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<td>3:30 PM</td>
<td>Closing Summary and Observations</td>
<td>Staffordshire Room</td>
<td>All faculty</td>
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<tr>
<td>3:35 PM</td>
<td>Post-test</td>
<td>Staffordshire Room</td>
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<tr>
<td>4:05 PM</td>
<td>End of Workshop</td>
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The AACR thanks the following organizations for their generous support of this workshop.

**Supporters**

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