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
5:00 PM  | Discussion of Ioannidis and Rothman Articles  
          | Staffordshire Room  
          | Peter Kraft, Harvard T.H. Chan School of Public Health, Boston, Massachusetts
6:00 PM  | Opening Reception and Group Buffet Dinner  
          | Gloucester/Newbury Rooms
7:30 PM  | End of Day

**Day 2 – Tuesday, July 10: Integrating Data on Germline Variation (Part 2)/Integration of Data on Biological Function (Part 1)**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</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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<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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<tr>
<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></td>
<td>Peter Kraft, Harvard T.H. Chan School of Public Health, Boston, Massachusetts 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></td>
<td>Paul L. Auer, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin</td>
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</tr>
<tr>
<td>4:00 PM</td>
<td>Break</td>
<td>Staffordshire Foyer</td>
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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

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**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
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<tr>
<td>9:00 AM</td>
<td>Overview of Tumor Profiling, Tools, and Their Limitations</td>
<td>Staffordshire Room</td>
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<td><em>Lorelei A. Mucci, Harvard T.H. Chan School of Public Health, Boston, Massachusetts</em></td>
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<tr>
<td>10:15 AM</td>
<td>Metabolomics</td>
<td>Staffordshire Room</td>
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<td><em>Clary B. Clish, Broad Institute, Cambridge, Massachusetts</em></td>
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<td>11:30 AM</td>
<td>Lunch with Networking Roundtables</td>
<td>Gloucester/Newbury Rooms</td>
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<td>12:30 PM</td>
<td>Practical Study Design</td>
<td>Staffordshire Room</td>
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<td><em>Lorelei A. Mucci, Harvard T.H. Chan School of Public Health, Boston, Massachusetts</em></td>
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<td>2:30 PM</td>
<td>Offsite Laboratory Visits</td>
<td>Begin at Lobby of Hotel</td>
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<td></td>
<td><strong>Tour A: Pathology Lab – Massimo Loda/Ying Huang</strong></td>
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<td><strong>Tour C: Broad Institute Metabolomics Platform - Clary B. Clish</strong></td>
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<td><strong>Tour D: Clinical Genetics – Heidi Rehm/Lisa Marie Mahanta</strong></td>
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<td>6:00 PM</td>
<td>Back from Lab Visits/Evening Off</td>
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**Day 5 – Friday, July 13: Putting It All together**

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<td><em>Discussion of questions from the previous day</em></td>
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<tr>
<td>9:15 AM</td>
<td>Precision Medicine - Predictive Modeling from High-Throughput Results: Available Tools and Issues to Consider</td>
<td>Staffordshire Room</td>
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<td><em>Travis Gerke, Moffitt Cancer Center, Tampa, Florida</em></td>
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<td>10:00 AM</td>
<td>Precision Medicine - From Technology to Decision: What Does It Take? (Part 1)</td>
<td>Staffordshire Room</td>
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<td></td>
<td><em>Eliezer M. Van Allen, Dana-Farber Cancer Institute, Boston, Massachusetts</em></td>
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11:00 AM  Break  
*Staffordshire Foyer*

11:15 AM  **Precision Medicine - From Technology to Decision: What Does It Take? (Part 2)**  
*Staffordshire Room*  
Bob T. Li, Memorial Sloan Kettering Cancer Center, New York, New York

12:15 PM  **Lunch and Faculty Meeting**  
*Attendee Lunch: Gloucester/Newbury Rooms*  
*Faculty Meeting: Courier Room (7th Floor)*

1:30 PM  **Applied Research Seminar – Personalized Medicine for the Diagnosis and Treatment for Pancreatic Cancer**  
*Staffordshire Room*  
Brian M. Wolpin, Dana-Farber Cancer Institute, Boston, Massachusetts

2:30 PM  **Applied Research Seminar – Integrative Analyses of Exposures, Genetic Susceptibility, and Somatic Changes in Lung Cancer**  
*Staffordshire Room*  
Maria Teresa Landi, National Cancer Institute, Bethesda, Maryland

3:30 PM  **Closing Summary and Observations**  
*Staffordshire Room*  
All faculty

3:35 PM  **Post-test**  
*Staffordshire Room*

4:05 PM  **End of Workshop**
The AACR thanks the following organizations for their generous support of this workshop.

Supporters

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