



Our Instructors

Lauren Ciotti is the communications associate for the Center for Computational Genomics and for the Next Generation Sequencing Center at the Sidney Kimmel Comprehensive Cancer Center (SKCCC) at Johns Hopkins.

Luigi Marchionni, MD, PhD, is an assistant professor in the Cancer Biology Program at the SKCCC at Johns Hopkins. He has extensive experience in the analysis and interpretation of genomic and genetic data and is co-founding member of the Center for Computational Genomics at Johns Hopkins.

Jonathan Pevsner, PhD, is a professor in the Department of Neurology at the Kennedy Krieger Institute and the Department of Psychiatry and Behavioral Sciences at Johns Hopkins. His research expertise is in the genetic basis of childhood disease, including chromosomal disorders. He has taught bioinformatics at Johns Hopkins School of Medicine since 2000 and has published a textbook, Bioinformatics and Functional Genomics. He is a co-founding member of the Center for Computational Genomics at Johns Hopkins.

Paul Schaughency, PhD, is a post-doctoral fellow in the Cancer Biology Program at the SKCCC at Johns Hopkins. His graduate training was through the Biochemistry, Cellular, and Molecular Biology program at Johns Hopkins. He is also the Genomics Coordinator for the Next Generation Sequencing Center at the SKCCC at Johns Hopkins.

Frederick Tan, PhD, is a member of the bioinformatics research faculty at the Carnegie Institution of Washington, Department of Embryology. Dr. Tan maintains the Carnegie bioinformatics core and teaches hands-on workshops on topics such as Unix, Perl, RNAseq, and data management.

Sarah Wheelan, MD, PhD, is an associate professor in the Cancer Biology Program at the SKCCC at Johns Hopkins. She has worked on sequence analysis algorithms and applications to human disease since training at Johns Hopkins and NCBI. She is a co-founding member of the Center for Computational Genomics at Johns Hopkins and is co-director of the Next Generation Sequencing Center at the SKCCC at Johns Hopkins.

Teaching Assistants

Bracha Avigdor

Michael Considine

Tyler Creamer

Katie Cox

Wikum Dinalankara

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Joshua Schwartz

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Practical GENOMICS



From Biology to Biostatistics

Workshop: August 15-18

Agenda

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Monday, August 15th

- 8:30 AM **Breakfast / Registration**
- 9:00 AM **Welcome & Introduction**
- 9:15 AM **Navigate and Organize Files**
- 9:45 AM **View, Filter, and Summarize files**
- 10:45AM **Break**
- 11:00 AM **Bash Scripting**
- 11:30 AM **Introduction to R**
- 12 Noon **Lunch**
- 1:00 PM **Introduction to RStudio**
- 1:30 PM **R: Load, Summarize, Subset, Save**
- 3:00 PM **Break**
- 3:15 PM ***apply**
- 3:45 PM **Mini Breakout Session**
- 4:15 PM **Statistical Concepts**
- 4:45 PM **Mini Breakout Session**
- 5:15 PM **Q & A**
- 5:30 PM **Happy Hour**

Tuesday, August 16th

- 8:30 AM **Breakfast**
- 9:00 AM **Welcome & Introduction Q&A**
- 9:15 AM **Journal Club**
- 9:45 AM **Get data, FastQC, Bowtie2**
- 10:30 AM **Break**
- 10:45AM **SAMtools and IGV**
- 11:15 AM **MACS2**
- 12 Noon **Lunch**
- 1:00 PM **Q&A**
- 1:15 PM **DeepTools**
- 1:45 PM **BEDTools**
- 2:15 PM **Statistics of Overlaps**

Aug. 16th

- 2:45 PM **GRanges**
- 3:15 PM **Breakout Session**
- 5:15 PM **Q & A**
- 5:30 PM **Happy Hour**

Wednesday, August 17th

- 8:30 AM **Breakfast**
- 9:00 AM **Q&A**
- 9:15 AM **RNA-seq Design and Analysis**
- 10:30 AM **Break**
- 10:45AM **Mini Breakout Session**
- 11:30 AM **Multiple Test Correction**
- 12 Noon **Lunch**
- 1:00 PM **Q&A**
- 1:15 PM **Principal Component Analysis**
- 1:45 PM **BioMart**
- 2:15 PM **Gene Set Analysis**
- 3:15 PM **Breakout Session**
- 5:15 PM **Q & A**
- 5:30 PM **Happy Hour**

Thursday, August 18th

- 8:30AM **Breakfast**
- 9:00 AM **Q&A**
- 9:15 AM **H3 Metagenes**
- 9:30 AM **Load narrowPeaks**
- 10:15 AM **Break**
- 10:30AM **Case Study: H3 mark vs. mRNA**
- 12 Noon **Lunch**
- 1:00 PM **Q&A**
- 1:15 PM **Breakout Session**
- 5:15 PM **Wrap-up**

