CIRC & URBEST Data Science

Center for Integrated Research Computing
Summer School 2015
July 8 – August 20
(Each session 1.5 hours)

CIRC hosts a seven-week training session on various operating systems, programming languages, computational programs and libraries, and data analytics tools for the research community. Known as the "CIRC Summer School," these workshops are broken down into eight individual topics and feature small, interactive, classroom-based instruction sessions. **Each session is 1.5 hours long.** Each week will feature 2 topics, and each topic will span 3 days of instruction, with the exception of Python and R, which will span two weeks of instruction. You can pick and chose which sessions you would like to register for.

Class	Dates	Times	Location
Linux	7/21/2015 - 7/23/2015	10a - 11:30a	VISTA Collaboratory
Bash	7/21/2015 - 7/23/2015	1:00p - 2:30p	VISTA Collaboratory
STATA	7/28/2015 - 7/30/2015	10a - 11:30a	VISTA Collaboratory
SAS	7/28/2015 - 7/30/2015	1:00p - 2:30p	VISTA Collaboratory
Python	8/4/2015 - 8/6/2015 and 8/11/2015 - 8/13/2015	10a - 11:30a	VISTA Collaboratory
Perl	8/4/2015 - 8/6/2015	1:00p - 2:30p	VISTA Collaboratory
R	8/11/2015 - 8/13/2015 and 8/18/2015 - 8/19/2015	1:00p - 2:30p	VISTA Collaboratory
MATLAB	8/18/2015 - 8/20/2015	10a - 11:30a	VISTA Collaboratory

The courses are designed for beginner and advanced users alike. The workshops require that you bring your own laptop and have a computing account on BlueHive. It is strongly recommended you attend one of the four Connectivity Clinics to set up your account and connect to BlueHive.

Class	Dates	Times	Location
Connectivity Clinic	7/8/2015	10:00a - Noon; 1:00p - 3:00p	VISTA Collaboratory
Connectivity Clinic	7/9/2015	10:00a - Noon; 1:00p - 3:00p	VISTA Collaboratory
Connectivity Clinic	7/14/2015	10:00a - Noon	VISTA Collaboratory
Connectivity Clinic	7/15/2015	10:00a - Noon; 1:00p - 3:00p	VISTA Collaboratory

For more CIRC classroom details and registration please visit
http://www.circ.rochester.edu/events_registration/public/summerschool

URBEST Data Science Mentor-Mentee Group
August 25 – September 24
(Limited to Ten CIRC Summer School Graduates. Two 2-hour consulting sessions)

CIRC and URBEST (**Broadening Experiences in Scientific Training**) will host a five-week Data Science Mentor-Mentee Group where CIRC Summer School "graduates" (those attending at least four of eight CIRC sessions) will interact with Data Science Mentors in small-group consulting sessions. The purpose of the program is to give participants guidance on integrating data science tools and topics into their own biomedical research project. Trainees will need to complete **a registration survey** by August 3 explaining how they want to incorporate CIRC data science tools and concepts into their research. Based on the survey, ten graduates will be selected for inclusion into the Data Science Mentor-Mentee Group, partnered with a Data Science Mentor, and assigned to two 2-hour consulting sessions.

A number of mentors with various research interests are participating in the Data Science Mentor-Mentee Group:

Dr. Timothy Dye: biomedical informatics; information systems supporting public, population, and global health; community-based technology innovation; big data analysis; biomedical data science; biospecimen repositories; registries

Dr. Sarah Kingan: identification of genomic regions experiencing introgression and natural selection, mRNA- and smallRNAseq, de novo genome assembly, polymorphism and divergence analysis, evolutionary analysis of whole-genome alignments, perl language programming, R language programming, data visualization.

Dr. Dongmei Li: Multiple testing procedures controlling family wise error rate (FWER) or false discovery rate (FDR) in high-throughput data analysis, statistical analysis for transcriptome data, SNP data, DNA methylation data, Chromatin Immunoprecipitation (CHIP)-chip and CHIP-seq data.

Dr. Matthew McCall: preprocess and analyze single genomic samples, estimate absolute gene expression, develop biomarkers accounting for within-subject or within-group heterogeneity, evaluate distribution of gene expression across tissues and cell-types, determine similarity of orthologous gene expression across species, integrate multi-omics data, identify gene regulatory networks crucial or specific to disease, assess effect of microRNA expression on cellular function, evaluate conserved network features across sample-types, determine batch effects and other issues with study design and elucidate effects of cellular composition on tissue-level genomic measurements.

Dr. Helene McMurray: identification and understanding of consequences of genetic interaction, gene expression analysis, gene regulatory network analysis, cancer genomics, functional genetics.

Dr. Brendan Mort: computational chemistry, biomolecular modeling, molecular dynamics simulations, statistical analysis of property calculations, parallel computing, high performance computing architectures, R programming language.

Dr. Scott Steele: Data science applications and impact on science policy issues- including regulatory science and translational science, personalized medicine, national security, and public health policy.

Dr. Harry Stern: computational chemistry, molecular simulation, bioinformatics, numerical methods, high-performance computing, programming languages such as C/C++, perl, and python.

Dr. Juilee Thakar: systems biology, gene expression analysis, network modeling, transcriptional factor prediction and modeling, statistical analysis, Boolean modeling, computational immunology and infectious diseases.

Data Science Mentor-Mentee consulting sessions will take place in the Vista Collaboratory at either 10-11:30a or 1:00-2:30p on two consecutive dates (8/25, 8/27, 9/1, 9/3, 9/8, 9/10, 9/15, 9/17, 9/22 or 9/24) as selected by the mentor and mentee.

 Please register for the Data Science Mentor-Mentee Group at https://goo.gl/7CaaNq