Computing Fundamentals

The CAMH Scientific Computing Workshop Series

Our research is increasingly more computationally-driven and training is often not part of the core curriculum for biomedical / medical science degrees.

The Scientific Computing Workshops at CAMH are focused on building computing skills and fundamentals to help organize study data, automate repeatable/reproducible analyses, and make use of CAMH computing resources to save time.

The workshops offer a range of topics and support different levels of experience.

We use a shared dataset - spanning demographic, cognitive, imaging, and genomic data - across all workshops, maintaining consistency across the series.

Given the current COVID-19 global pandemic, SCWG workshop instructors are posting workshop materials and relevant learning resources to this site to aid those learning from home.

If you have questions, send us an email at SCWG@camh.ca

- Introduction to Linux and Bash
- Introduction to Python
- Introduction to R
- Introduction to Git and GitLab
- Introduction to SQL
- Introduction to SPARQL
- Parallel Computing and Slurm
- 2021 Fall - SCWG Workshop Recordings
- 2022 Spring - SCWG Workshop Recordings:
- 2022 Fall - SCWG Workshop Recordings
- 2023 Spring - SCWG Workshop Recordings
- 2023 Fall - SCWG Workshop Recordings

Workshop Recordings from Fall 2023 series

- Introduction to Linux/Bash
- Introduction and Intermediate Python
- Introduction and Intermediate REDCap
- Introduction to R
- Introduction to SQL
- Introduction to Tableau
- Introduction to MRI with BIDS
- Introduction to dMRI
- Introduction to Git and Gitlab
- GWAS Quality Control
- Polygenic Risk Score Analysis
- mtDNA Sequencing Quality Control
- Working with MNE and EEG-BIDS
- Functional Neuroimaging Analysis
- Replication & Reproducible Research

Workshop Recordings from Spring 2023 series

- Introduction to Linux/Bash
- Introduction and Intermediate Python

- Network Analysis
- Non-linear Dynamical Analysis
- Introduction and Intermediate REDCap
- Introduction to R
- Introduction to SQL
- Introduction to Tableau
- Introduction to MRI with BIDS
- Introduction to dMRI
- GWAS Quality Control
- Polygenic Risk Score Analysis
- mtDNA Sequencing Quality Control
- Replication & Reproducible Research

Workshop Recordings from Fall 2022 series

- Introduction to Linux/Bash
- Intermediate Python
- Introduction to R (Parts 1-3)
- Introduction to SQL
- Introduction to Tableau
- Introduction to MRI with BIDS
- Introduction to dMRI
- GWAS Quality Control
- Polygenic Risk Score Analysis
- Good practices for working with data in Excel
- Replication & Reproducible Research
- Reproducible Research in SPSS
- Functional Neuroimaging Analysis
- Working with MNE and EEG-BIDS

Workshop recordings from April 2022 series

Includes:

- Introduction to Linux/Bash
- Introduction to Python
- Intermediate Python
- Introduction to Git and GitLab
- R Workshop Series - Week 1: R & RStudio Overview
- SPSS Workshop Series - Week 1: Intro to SPSS
- GWAS Quality Control
- Replication & Reproducible Research
- Polygenic Risk Score Analysis
- Introduction to SQL
- Introduction to Tableau

Workshop recordings from Nov 2021 series

Includes:

- Building a Relational Database in Microsoft Access
- Introduction to Linux/Bash
- Introduction to Python
- Introduction to Git and GitLab
- Advanced Excel: Reproducible Data Wrangling
- SPSS Workshop Series - Workshop 7 - Introduction to Linear Regression
- GWAS Quality Control
- Case Study: Using REDCap API to clean COVID vaccine data
- R Workshop Series - Workshop 7 - Introduction to Linear Regression
- Polygenic Risk Score Analysis
- Introduction to SQL
- Introduction to Tableau