

## Basics of Genetic Analysis

Friday, July 25, 2025 | 8:00 am – 12:00 pm  
Westin Harbour Castle -Pier 2 — Toronto, Canada  
All times are in Eastern Standard Time  
*In-person attendance only*

### Overview

The workshop will provide an immersive introduction to the fundamentals of genetic analysis within the framework of brain imaging genetics research. Tailored for participants interested in exploring the interplay between genetic data and imaging-based studies, the sessions will integrate theoretical concepts with hands-on practice to provide a comprehensive learning experience.

### Organizing Committee

- Tavia E Evans, PhD
- Natalia Vilor-Tejedor, PhD
- Junhao Wen, PhD
- David M Cash, PhD
- Tobey J. Betthausen, PhD

### Speakers

- Krishna Rani Kalari, PhD
- Yuetiva Robles, PhD
- Emma Luckett, PhD
- Karunya Kandimalla, PhD
- Natalia Vilor-Tejedor, PhD

### Teaching aids

- Luigi Lorenzini, PhD
- Armand Gonzalez-Escalante, MSc
- Blanca Rodriguez-Fernandez, MSc
- Patricia Genius, MSc

### Target Audience

This ISTAART immersive workshop is designed for individuals who are beginner-level in research and teaching.

## Learning Objectives

1. Perform basic genetic analyses, including single SNP analysis, genome-wide association studies (GWAS), and polygenic risk score (PRS) calculations, using large datasets.
2. Differentiate between various genetic analyses techniques and understand their appropriate applications in imaging genetics research.
3. Interpret outputs from genetic analyses, with a focus on understanding their relevance within imaging genetics studies.

## Registration

Educational workshops are offered for in-person attendance only. Workshops require a separate registration fee in addition to AAIC full conference registration, or they may be purchased as stand-alone events. Visit [alz.org/AAIC](http://alz.org/AAIC).

## Agenda, Day: Friday, July 25, 2025 | 8:00 am – 12:00 pm

Time	Session Details	Speakers and Moderator
7:00-8:00 am	Light Breakfast (Westin Metropolitan Ballroom)	
8:00 am	Welcome/Intro	Tavia Evans
8:10 am	How to design your genetics experiment	Natalia Vilor-Tejedor
8:20 am	How to get data, QC, and imputation	Natalia Vilor-Tejedor
9:00 am	Single nucleotide polymorphisms (SNP) analysis	Yuetiva Robles
9:40 am	Break	-
9:50 am	Genome Wide Association Studies (GWAS)	Yuetiva Robles

10:40 am	Polygenic risk score (PRS) calculation with PRSice	Emma Lockett
11:35 am	PostGWAS analysis. Understanding biological pathways	Krishna Rani Kalari & Karunya Kandimalla
11:55 am	End/Review	Tavia Evans/Natalia Vilor-Tejedor/Jun Hao Wen