ISFG 2024 Workshop:
Kinship Statistics and Pedigree Analysis (Basic & Advanced)

Instructors: Thore Egeland, Magnus Vigeland
Date: Tuesday 10th September 2024
Intended audience: Students, researchers, and case workers in forensic genetics

Tentative schedule:

09:00 – 13:00 Basic session
14:00 – 18:15 Advanced session

Description:

The study of pedigrees and genetic relatedness is central in forensic genetics. The aim of this course is to introduce the elegant statistical foundations of relatedness, as well as several forensic applications. In certain parts we use R for calculations and visualisations. In the basic session we will focus on pedigree coefficients and likelihood ratios for kinship analysis. In addition, we will demonstrate QuickPed, an online tool for creating pedigrees and computing relatedness (https://magnusdv.shinyapps.io/quickped).

In the advanced part we will explore recently developed methods and implementations for Disaster Victim Identification (DVI) and pedigree reconstruction.

The course material is based on the book *Pedigree Analysis in R* (Vigeland '21) and selected papers. Each session will alternate between lectures and hands-on exercises. Solutions for all exercises will be provided and discussed at the end of each session.

For some of the exercises we will be using R (https://cloud.r-project.org/), RStudio (https://posit.co/download/rstudio-desktop), and the *pedsuite* packages (https://magnusdv.github.io/pedsuite/). Some familiarity with R is recommended.

Attendance in the 'Basic session' is not required for the 'Advanced session' for participants who are familiar with R and the pedsuite.

Requirements:

Basic knowledge of genetics and probability is required. Attendants need to bring a laptop with a recent version of R installed, and with administrative privileges allowing the installation of new packages.