

FORENSIC GENETICS. (I&S/NW, QSR)

10 Cases Involving DNA Evidence

BIOST 302A / PHG 302 Winter 2016, MW 9:30–10:50, SOCC 303

This course uses actual cases to introduce the field of forensic genetics. Students develop the skills to interpret the evidence of matching genetic profiles; to perform calculations relevant for parentage determination; the identification of remains; and to consider the implications of familial searching of DNA databases.

Cases to be discussed in the Winter of 2016:

- 1988. R v Colin Pitchfork (“The Blooding”) Rape and murder. First conviction based on DNA evidence.
- 1989. People of the State of New York v. Joseph Castro. Double Murder. First serious challenge to DNA evidence in the US.
- 1993. People of the State of California v. Kelvin Johnson. Rape. The case considered the possible involvement of the defendant’s brothers.
- 1995. People of the State of California v. O.J. Simpson. Double Murder. Football star acquitted in trial that included DNA evidence.
- 1996. R v. Douglas Beamish. Murder. Conviction based on DNA from cat hair.
- 2008. People of the State of California v. Dennis Nelson. Murder. Conviction from cold hit in DNA database.
- 2009. McDaniel v. Troy Brown. Rape, Attempted Murder. Conviction set aside after defense shows “Prosecutor’s Fallacy” at trial. Conviction then upheld by US Supreme Court.
- 2009. Tsar Nicholas and Family. Multiple Murder. Second grave found in 2007 contained bones of Prince Alexei and Princess Anastasia.
- 2009-15. The Italian People v. Amanda Knox. Murder. Conviction, based in part on DNA evidence, then acquittal for UW student.
- 2015. People of the State of California v. Lonnie Franklin (“Grim Sleeper”). 10 Murders. Trial set to begin in December 2015.

Instructor: Bruce Weir, bsweir@uw.edu. Professor of Biostatistics, and Director of Institute of Public Health Genetics.

Teaching Assistant: Emily Youngblom

Preliminary Reading: “The Blooding: The True Story Of The Narborough Village Murders” by Joseph Wambaugh. “The Run of His Life: The People v. O.J. Simpson” by Jeffrey Toobin.

Schedule

Monday January 4	Lecture 1. Pitchfork Case.
Wednesday January 6	Lecture 2. Pitchfork Case. History of Identification.
Monday January 11	Lecture 3. Castro Case. Hardy-Weinberg equilibrium.
Wednesday January 13	Lecture 4. Castro Case. Database calculations.
Monday January 18	Holiday.
Wednesday January 20	Lecture 5. Johnson Case.
Monday January 25	Lecture 6. Johnson Case. Relatedness.
Wednesday January 27	Lecture 7. Relatedness Calculations.
Monday February 1	Lecture 8. Simpson Case.
Wednesday February 3	Lecture 9. Simpson Case. Mixtures.
Monday February 8	Lecture 10. Beamish Case.
Wednesday February 11	Lecture 11. Beamish Case. Non-human evidence.
Monday February 15	Holiday.
Wednesday February 17	Lecture 12. Nelson and Grim Sleeper Cases.
Monday February 22	Lecture 13. Nelson and Grim Sleeper Cases. Database searches.
Wednesday February 24	Lecture 14. Brown Case.
Monday February 29	Lecture 15. Brown Case. Errors and Fallacies.
Wednesday March 2	Lecture 16. Tsar Nicholas Case.
Monday March 7	Lecture 17. Tsar Nicholas Case. Identification of Remains.
Wednesday March 9	Lecture 18. Amanda Knox Case.
Monday March 14	Exam week.
Wednesday March 16	Exam week.

Grading Scheme

Starting on Monday January 11, one student will preview each case, and another student will review the case in the following class.

Grades will depend on the quality of the oral reports on one of the 10 cases and on a more detailed written report submitted during exam week on a different one of the 10 cases. There will not be a midterm or final exam.

Attendance will be required for at least 16 lectures.