Genetic Conflict and the Physiology of Pregnancy

Winter Semester 2016

Why are we here?

Course Goals: I hope and plan for you to:

- Increase your understanding of the physiology of pregnancy, while becoming aware that our current understanding is based largely on animal studies
- Become familiar with the idea that pregnancy is a negotiation, even sometimes a direct conflict, between the mother and fetus, and understand the genetic basis of this
- Increase your understanding of imprinting as an evolved signal of genetic conflict
How Will We Do All That in 3 Class Days?

Class will be more fun, and you will learn more, if you read the papers before class. During class, you will be assigned to a working team that discusses questions and ideas, and “votes” on answers to questions about this topic and scientific papers that investigate it. I’ll also talk, but less than you’re used to. If you come with an open and prepared mind, you will learn a lot about this fascinating topic.

Schedule:

1 November  Genetic Conflicts ➔ Maternal-Fetal Conflict ➔ The Placenta ➔ The Signs of Conflict

What to Read Before Class [all readings are or will be on Moodle]:
Genetic Conflict in Human Pregnancy, by David Haig

8 November  The Battle Over Glucose

What to Read Before Class:
Associations Between Paternally Transmitted Fetal IGF2 Variants and Maternal Circulating Glucose Concentrations in Pregnancy, by Petry et al.

15 November  Blood Pressure, Evolution and Epigenetics

What to Read Before Class:
Parent-offspring conflict and the persistence of pregnancy-induced hypertension in modern humans, by Hollegaard et al.

Requirements for credit:

1. Attend at least 2 of the 3 class days (the reason for missing doesn’t matter; it’s just that you can’t learn much if you aren’t there). But you should come to all 3 days of course!
2. Participate actively in class with your team. This should be easy and interesting.

3. Complete a survey/questionnaire at the end of class. The survey will be anonymous so that you are willing to be honest, but if you aren’t at the last class you have to complete the survey later-- for example, at my office hours.

**Details**

**Class meeting time:** Tuesday 16:30-17:45  
Room: Posluchárna Procháskův ústav  
**Instructor:** Sarah Leupen

**Office:** Histology department, Room 2 (you must go through Room 1 to get there! If the door is closed, simply knock, I’m probably there).

**Office hours:** Monday 13:00-15:00 and Thursday 9:00-11:00 (except November 17), or just email me for an appointment—I am happy to find a good time to meet with you.

**Email:** sarah.leupen@lfp.cuni.cz or leupen@umbc.edu

**Readings:** All readings will be posted on Moodle (the course is in the Fyziologie folder), at least one week in advance.