

# Learning objectives AGEM PhD candidate course

## **Overall learning objectives AGEM PhD candidate course:**

After the AGEM PhD candidate course, the PhD candidate should be able to...

- describe and summarize metabolism, endocrinology and the liver and gastrointestinal system in health and disease.
- recognize and describe current research issues and clinical issues in metabolism, endocrinology and gastroenterology.
- explain why and how basic and applied research can be used to solve issues in metabolism, endocrinology and gastroenterology.
- understand the (combined) use and value of epidemiology, cohorts, clinical trials, animal experiments and in vitro/ex vivo and computational approaches.
- describe current focus areas in metabolism, endocrinology and gastroenterology worldwide and within AGEM and the Amsterdam UMC.
- give an overview of (shared) infrastructure for and knowledge on metabolism, endocrinology and gastroenterology within AGEM and Amsterdam UMC.
- clearly present scientific data verbally and in writing, and explain background information to a scientific committee.

## **Learning objectives AGEM PhD candidate course assignment and pitch workshop:**

After the assignment and the pitch workshop, the PhD candidate should be able to...

- write a concise and convincing research proposal.
- write a proposal that fits within an indicated (limited) budget.
- think outside of their own area of expertise and work together with researchers from different disciplines.
- pitch a proposal in a clear and attractive manner to a scientific committee.

## **Thematic learning objectives AGEM PhD candidate course**

After the AGEM PhD candidate course, the PhD candidate should be able to...

### *Metabolism*

- give an overview of inborn errors of metabolism and their consequences for human health.
- explain what inborn errors of metabolism can teach us about the biology behind metabolic processes.
- explain the role of carbohydrate metabolism, lipid metabolism and protein metabolism in organism integrity.
- explain the role of carbohydrate metabolism, lipid metabolism and protein metabolism in energy homeostasis.

### *Endocrinology*

- explain the physiology and pathophysiology of endocrinology.
- explain how epidemiological studies can be used to answer scientific endocrinological questions.

- explain the difficulty of measuring hormones with respect to laboratory techniques as well as pre-analytical issues

*Gastroenterology and hepatology*

- explain the use of gene therapy in liver diseases.
- explain the use of organoid culture systems in studying intestinal disease and development.
- describe the metabolic processes in the intestine and the liver.
- give an overview of (common) liver pathology and (common) hepatobiliary pathology, and explain their biological mechanisms.
- describe IBD pathology from a clinical perspective.