**Postgraduate course: in-person**

**Interaction between host and diarrheagenic *Escherichia coli*: study models**

**Dates: 9-10 June, 2025**

**Coordinators: Marina Palermo, Cristina Ibarra, María Marta Amaral and Analía Trevani**

**About the course:**

This course will provide an overview of the different pathogenic mechanisms of *Escherichia coli* and explore the main aspects of host immune mechanisms involved in the defense against these pathogens. It will provide an overview of distinct *in vitro* and *in vivo* models for studying the virulence mechanisms of diarrheagenic *Escherichia coli*.

**Modality**

Theoretical modules: in-person

Practical modules: in-person.

**Target Audience:**

This course is aimed at master's, doctoral, and postdoctoral students from various disciplines, including Biological Sciences, Medical Sciences, Veterinary Medicine, Biotechnology, and related fields.

**Program**

**June 9, 2025**

**Theoretical modules I**

**9:00-9:40**. Main pathogenicity mechanisms of diarrheagenic *Escherichia coli pathotypes:* Enterotoxigenic *E. coli* (ETEC), Shiga toxin-producing *E. coli* (STEC), Enteropathogenic *E. coli* (EPEC), Enteroaggregative *E. coli* (EAEC), Enteroinvasive *E. coli* (EIEC). **Fernando Navarro García.**

**9:50-10:30**. Overview of intestinal pathophysiology and the mechanisms underlying diarrhea. **Roxana Toriano.**

**10:30-11:00.** Coffee break

**11:00-11:40.** Overview of innate and adaptive immune mechanisms. **Analía Trevani.**

**11:50-12:30.** The mucosal immune response. **Carolina Jancic.**

**12:30-14:00.** Lunchtime

**14:00-14:40.** Animal models for studying intestinal infections. **Marina Palermo.**

**14:50-15:30.** Renal pathophysiology associated with bacterial toxins. **Claudia Silberstein.**

**15:30-16:00.** Coffee break

**16:00-16:40.** Shiga toxin-associated endothelial damage: Relevance of the immune response and hemostasis. **María Marta Amaral.**

**16:50-17:30.** Deleterious effects of STEC in the CNS. **Jorge Goldstein.**

**June 10, 2025**

**Theoretical modules II**

**8:30-9:10**. Human microbiota: Composition, function and impact on human health. **Mauricio Farfán**.

**Practical modules**

**9:20-17:00.**

**Station 1**: Methodologies for the study of gastrointestinal infections. Mouse intragastric inoculation model. **Romina Fernández Brando. Marina Palermo.**

**Station 2:** Cellular models for the study of intestinal infections. **Analía Trevani. Carolina Jancic. Florencia Sabbione.**

**Station 3:** Cellular models for the study of renal pathology. Methodologies for the study of nephrotoxicity. **María Marta Amaral. Claudia Silberstein. Flavia Sacerdoti. Roxana Toriano.**

**Station 4**: Methodologies for the study of cerebral toxicity. **Jorge Goldstein. Leticia Bentancor. Ana Belen Ramos Aloi**.

**Teaching staff**

**Marina Palermo.** IMEX-CONICET-Academia Nacional de Medicina, Buenos Aires, Argentina.

**Analía Trevani.** IMEX-CONICET-Academia Nacional de Medicina, Buenos Aires, Argentina.

**María Marta Amaral.** Laboratorio de Fisiopatogenia, Departamento de Fisiología, IFIBIO Houssay-CONICET, Facultad de Medicina, Universidad de Buenos Aires, Buenos Aires, Argentina.

**Romina Fernández Brando.** IMEX-CONICET-Academia Nacional de Medicina, Buenos Aires, Argentina.

**Leticia Bentancor.** Universidad Nacional de José C. Paz. Buenos Aires, Argentina.

**Carolina Jancic.** IMEX-CONICET-Academia Nacional de Medicina, Buenos Aires, Argentina.

**Florencia Sabbione.** IMEX-CONICET-Academia Nacional de Medicina, Buenos Aires, Argentina.

**Flavia Sacerdoti.** Laboratorio de Fisiopatogenia, Departamento de Fisiología, IFIBIO Houssay-CONICET, Facultad de Medicina, Universidad de Buenos Aires, Buenos Aires Argentina.

**Claudia Silberstein**. Laboratorio de Investigaciones en Fisiología Renal, Facultad de Medicina, Departamento de Fisiología, IFIBIO-Houssay CONICET-UBA, Universidad de Buenos Aires, Buenos Aires, Argentina.

**Jorge Goldstein**. Laboratorio de Neurofisiopatología. Departamento de Fisiología, IFIBIO Houssay-CONICET, Facultad de Medicina, Universidad de Buenos Aires, Buenos Aires, Argentina.

**Roxana Toriano.** Laboratorio de Biomembranas.Departamento de Fisiología, IFIBIO Houssay-CONICET, Facultad de Medicina, Universidad de Buenos Aires, Buenos Aires, Argentina.

**Ana Belen Ramos Aloi.** Laboratorio de Neurofisiopatología. Departamento de Fisiología, IFIBIO Houssay-CONICET, Facultad de Medicina, Universidad de Buenos Aires, Buenos Aires, Argentina.
**Fernando Navarro García.** Centro de Investigación y de Estudios Avanzados del IPN (CINVESTAV-IPN), México DF, México.
**Mauricio Farfán.** Departamento de Pediatría y Cirugía Infantil Oriente. Facultad de Medicina, Universidad de Chile, Santiago de Chile, Chile.