**Life Cycles and Developmental Origins of Health and Disease (DOHaD)**

**Coordinators:**

Profa Fabíola Isabel Suano de Souza (UNIFESP)

Profa Cristiane Matté (UFRGS)

**Collaborating professors:**

Profa. Ana Elisa Toscano (UFPE)

Prof. Bernardo Krause (Universidad de O''Higgins, Chile)

Profa. Carla Dalmaz (UFRGS)

Profa. Carol Virgínia Gões Leandro (UFPE)

Profa. Cristiane Kochi (Faculdade Medicina da Santa Casa SP)

Profa. Elena Zambrano (Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán, Ciudad de México, México)

Profa. Elsa Giugliani (HCPA/UFRGS)

Profa Fabíola Isabel Suano de Souza (UNIFESP)

Profa. Gloria Barbosa-Sabanero (University of Guanajuato, Mexico)

Profa. Maria Cristina Caetano Kuschnir (UERJ)

Profa. Maria Luiza Lazo de la Vega Monroy (University of Guanajuato, Mexico)

Profa. Maria Wany Louzada Strufaldi (UNIFESP)

Profa. Michele Monroy-Valle (University of Saskatchewan, Canadá)

Profa. Luana Lopes de Souza (UERJ)

Prof. Luis Antonio Justulin Jr (UNESP – Botucatu)

Prof. Paola Casanello (PUC-Chile)

Profa. Patrícia Aline Boer (UNICAMP)

Prof. Rodrigo Mello Gomes (Universidade Federal de Goiás)

Profa Simone Brasil Iglesias (UNIFESP)

Prof. Thomas Ong (USP)

**Institutions involved:**

Universidade Federal de São Paulo

Universidade Federal do Rio Grande do Sul

**Credits:** 30 hours or 2 credits (18 synchronous activity and 12 asynchronous activity)

**Vacancy:** 60 (expandable to 100)

**Location:** virtual on Google Meet

**Language:** Portuguese, Spanish and English

**Access link: (will be sent to students subscribed)**

**Dates:** Thursday afternoon 3:00 pm – 6:00 pm (Brazilian time)

**Summary:** Developmental Origins of Health and Disease. Life cycles and development. Molecular mechanisms of phenotypic plasticity. Research on child, maternal and paternal health. Chronic noncommunicable diseases (CNCD). CNCD prevention. Growth and development. Breast-feeding. Diet and lifestyle.

**Target audience:** Graduate students enrolled in the Graduate Program in Pediatrics and Sciences Applied to Pediatrics, Biochemistry, Physiology, Obstetrics and in other programs at the institution or at other institutions.

**Methodology:**

• Google Meet Virtual Room

• Lectures taught by guests addressing the main aspects of the line of research

• Integrated discussion with students of the proposed content: themes, research methodology, results and applicability

• Previous reading of articles and material provided by teachers and coordinators in Google Classroom

**Assessment will consist of the following items:**

• Participation in discussions (30%)

• Critical analysis of articles corresponding to each theme (30%)

• Form to be completed after synchronous activities – reviews sent after the deadline will not be accepted (40%)

**PROGRAM CONTENT**

Topic 1. May 4th (Thursday 3:00 pm – 6:00 pm)

Opening, welcome and general guidelines

Concept, mechanisms and importance of the Developmental Origins of Health and Disease in Life Cycles

Coordination: Fabiola Suano de Souza, Cristiane Matté and Patrícia Aline Boer

Class 1. History of DOHaD in the world. Elena Zambrano

Class 2. Molecular mechanisms of phenotypic plasticity and their challenges in explaining the DOHaD concept. Bernardo Krause

Class 3. Importance of the DOHaD concept in life cycles. Fabiola Suano de Souza

Topic 2. May 11th (Thursday 3:00 pm – 6:00 pm)

DOHaD and intrauterine period

Coordination: Cristiane Matte and Gloria Barbosa-Sabanero

Class 1. Fetal programming of sexual development and reproductive function. Elena Zambrano

Class 2. Sensores de nutrientes placentarios como mecanismo DOHaD. Maria Luiza Lazo de la Vega Monroy

Class 3. Placenta y programación metabólica nutricional. Gloria Barbosa-Sabanero

Topic 3. May 18th (Thursday 3:00 pm – 6:00 pm)

DOHaD and breast-feeding

Coordination: Maria Wany Strufaldi and Luana Lopes de Souza

Class 1. Efeitos da amamentação em longo prazo para a saúde da criança. Elsa Regina Justo Giugliani

Class 2. Triple burden of malnutrition and prematurity: short- and long-term repercussions. Fabiola Suano de Souza

Class 3. Amamentação e disruptores endócrinos. Luana Lopes de Souza

Topic 4. May 25th (Thursday 3:00 pm – 6:00 pm)

DOHaD and preschool and school

Coordination: Cristiane Matté and Cristiane Kochi

Class 1. Estresse precoce e a programação do comportamento. Carla Dalmaz

Class 2. Bone health and body composition of children living in low resource settings. Michele Monroy-Valle

Class 3. Novos modelos de plasticidade fenotípica: custos do fenótipo e custos da plasticidade. Carol Virgínia Gões Leandro

Class 4. Maternal nutrition and body composition in the offspring: mechanisms and an opportunity for prevention. Paola Casanello

Topic 5. June 1st (Thursday 3:00 pm – 6:00 pm)

DOHaD and adolescence

Coordination: Maria Wany Louzada and Cristiane Matté

Class 1. Puberty as a programming window for cardiometabolic disease phenotypes. Rodrigo Mello Gomes

Class 2. Plasticidade Fenotípica, polifenóis e paralisia cerebral. Ana Elisa Toscano

Class 3. Cardiovascular risk in adolescents (ERICA). Maria Cristina Caetano Kuschnir

Topic 6. June 15th (Thursday 3:00 pm – 6:00 pm)

DOHaD and adulthood and senility

Coordination: Simone Brasil Iglesias and Luis Antonio Justulin Jr.

Class 1. Nutrition, development and prevention of breast cancer: the beginning of life as a window of opportunity. Thomas Ong

Class 2. Câncer de próstata como distúrbio do desenvolvimento. Luis Antonio Justulin Jr.

Class 3. Exercício materno como fator de programação metabólica na gestação. Cristiane Matté