



## **Research Program in Dentistry for Faculty Members**

### **PROGRAM**

#### **MODULE 1: INTRODUCTION TO RESEARCH**

##### **Instructors:**

- Dr. Cristina Cunha Villar (University of Sao Paulo)
- Dr. Fernanda Carrer (University of Sao Paulo)
- Dr. Juliano Cavagni (Federal University of Rio Grande do Sul)

**Time in the module:** between 5 and 7 hours

##### **1) Introduction to research: the scientific method** (Dr. Cristina Cunha Villar)

Part I: The scientific method: problem statement, the research question, the scientific method

##### **2) Integrity in scientific research** (Dr. Fernanda Carrer)

Part I: Research Integrity (part 1)

Part II: Research Integrity (part 2)

Part III: Research Integrity (part 3)

##### **3) Types of studies in dentistry** (Dr. Juliano Cavagni)

Part I: Levels of evidence

Part II: In vitro and animal studies

Part III: Cross-sectional studies

Part IV: Case Control Studies

Part V: Cohort Studies

Part VI: Randomized Clinical Trial

Part VII: Systematic reviews



## **MODULE 2: OBSERVATIONAL STUDIES**

### **Instructor:**

- Dr. Cassiano Kuchenbecker Rösing (Federal University of Rio Grande do Sul)

**Time in the module:** between 5 and 7 hours

### **1) Observational research design (Dr. Cassiano Kuchenbecker Rösing)**

Part I: Design and methodology of observational studies

Part II: Types of sampling

Part III: Prevalence studies / Health Surveys

Part IV: Examiner Training and Calibration

## **MODULE 3: INTERVENTIONAL STUDIES**

### **Instructors:**

- Dr. Claudio Mendes Pannuti (University of Sao Paulo)
- Dr. Belén Retamal-Valdes (University of Guarulhos)

**Time in the module:** between 5 and 7 hours

### **1) Design of interventional studies: section I (Dr. Belén Retamal- Valdes)**

Part I: Types of interventional studies (parallel, crossover, split-mouth), eligibility criteria, intervention and control

### **2) Design of interventional studies: section II (Dr. Cláudio Mendes Pannuti)**

Part II: Selection of outcome, Methods of randomization and allocation concealment, Blinding, Ethical issues



## MODULE 4: STATISTICS

### Instructors:

- Dr. Fausto Medeiros Mendes (University of Sao Paulo)
- Dr. Claudio Mendes Pannuti (University of Sao Paulo)
- Dr. Belén Retamal-Valdes (University of Guarulhos)

**Time in the module:** between 6 and 8 hours

**Note:** In this module we are going to use the open software Jamovi and G\* Power

### 1) Descriptive statistics

Part I: Population and sample, Types of variables, Measures of central tendency and dispersion, data presentation: tables and graphs

### 2) Inferential statistics

Part I: Inferential statistics part 1

Part II: Inferential statistics part 2

### 3) Calculation of sample size

Part I: Justification and steps for calculating the sample size

### References:

The jamovi project (2021). jamovi (Version 1.6) [Computer Software]. Retrieved from <https://www.jamovi.org>

G\*Power 3.1.9.7 for Windows XP, Vista, 7, 8, 10 and 11 (about 20 MB). Retrieved from <https://www.psychologie.hhu.de/arbeitsgruppen/allgemeine-psychologie-und-arbeitspsychologie/gpower>

## MODULE 5: DISSEMINATION

### Instructor:

- Dr. Cristina Cunha Villar (University of Sao Paulo)

**Time in the module:** between 3 and 5 hours

### 1) The scientific article

Part I: Scientific writing, journal selection

Part II: Parts of the scientific article, steps of scientific writing



## MODULE 06 (IN PRESENCE)

### Instructors:

- Dr. Cristina Cunha Villar (University of Sao Paulo)
- Dr. Claudio Mendes Pannuti (University of Sao Paulo)
- Dr. Cassiano Kuchenbecker Rösing (Federal University of Rio Grande do Sul)

### Description:

In this face-to-face module, the instructors will pose a problem (study to be developed) and the participants will work in groups to solve the problem together. Based on the study question, the participants will present the design and methodology of the study that will answer the question, in addition to the calculation of the sample size, statistical analysis and dissemination of the results.

### Day 1 - Oct/09/2023

#### Morning

- Review of the most important concepts (all)

#### Afternoon

- Exercise 1: observational studies (2 to 4 groups, depending on the number of participants)
- Formation of 2 to 4 groups: identification of the problem; formulation of the research question, hypothesis, study design appropriate to the question; type of sampling and sample size calculation; appropriate statistical analysis and dissemination of results.

### Day 2: Oct/10/2023

#### Morning

- Practical aspects in conducting an observational study (Dr. Cassiano Kuchenbecker Rösing)
- Practical aspects in conducting a clinical study (Dr. Cláudio Mendes Pannuti )
- Sponsored Studies (Dr. Cristina Cunha Villar)

#### Afternoon

- Exercise 2: randomized clinical trial (2 to 4 groups, depending on the number of participants)
- Formation of 2 to 4 groups: identification of the problem; formulation of the research question, hypothesis, study design appropriate to the question; Sample's size calculation; appropriate statistical analysis and dissemination of results.