

PRE-CONFERENCE WORKSHOP

In conjunction with

1ST INTERNATIONAL BIOMEDICAL CONFERENCE 2025

BRIDGING THE GAPS: TRANSLATING BIOMEDICAL
RESEARCH FROM LAB TO COMMUNITY



2nd September 2025



*Institute of Planetary Survival for
Sustainable Well-being (PLANETIUM),
International Islamic University
Malaysia (IIUM),
Kuantan, Pahang, Malaysia*

PRE-CONFERENCE WORKSHOP

IMPORTANT DATE:

Registration Deadline

31st July 2025



*For more details
please scan
the QR Code*



WORKSHOP HIGHLIGHTS

- ✓ GRAPHPAD PRISM
- ✓ STATISTICAL SOFTWARE
- ✓ MICROSURGICAL OVUM
- ✓ MANUSCRIPT AI
- ✓ PRIMER DESIGN
- ✓ SUSTAINABLE AGRICULTURE

WORKSHOP INSTRUCTION

Location of workshop: Institute of Planetary Survival for Sustainable Well-Being (PLANETIIUM) International Islamic University Malaysia Jalan Hospital, 25100 Kuantan, Pahang, Malaysia - <https://g.co/kgs/1Fsb7JD>



Workshop Duration and Fees:

- Duration for each workshop slot is 3 hours.
- A total of 6 slots are available.
- The fee for each slot is RM 150. Participants opting for two slots will be charged RM 250.
- Participants may choose a minimum of one slot and a maximum of two non-parallel slots (refer to the provided workshop schedule for details).

Registration and Selection:

- Registration is open on a first-come, first-served basis.
- Participants must register according to their preferences.
- Successful registrants will be notified via email by the secretariat.
- The registration deadline is 31 July 2025, or earlier if the maximum quota of participants is reached.

Minimum and Maximum Quota:

- Each workshop slot requires a minimum of 10 participants (refer to workshop activities).
- If the minimum quota is not reached by 31 July 2025, the respective slot will be cancelled.

Workshop schedule:

- Please refer to the tentative program schedule for detailed slot timings and topics.

Time	Room A	Room B	Room C
0830 – 0900	Morning Registration		
0900 – 1200	Slot 1: Univariate Statistical Analysis with Graphpad Prism	Slot 2: Mastering Statistics and Visualization	Slot 3: Microsurgical Ovum Pickup in Mice: Techniques for Reproductive Research
1200 – 1300	Lunch Break		
1330 – 1400	Afternoon Registration		
1400 – 1700	Slot 4: Transforming Scientific Publishing with AI - From manuscript to impact	Slot 5: From Theory to Practice - DIY Primer Design for Successful Molecular Experiment	Slot 6: Innovative Strategies in Sustainable Agriculture: Techniques for Soil, Crop, and Resource Management

WORKSHOP ACTIVITIES

Workshop 1: Univariate Statistical Analysis using Graphpad Prism

Overview

Graphpad Prism is a statistical programme that combines scientific graphing, comprehensive curve fitting (nonlinear regression), understandable statistics, and data organisation. It was initially designed for experimental biologists in medical schools and drug companies, especially those in pharmacology and physiology. It is the alternative for a day-to-day statistically test.

Minimum quota: **10 participants**

Maximum quota: **30 participants**

Objective:

- i. To expose the participant to Graphpad Prism program
- ii. To acknowledge and enhance the right techniques of univariate statistical analysis using Graphpad Prism.

Session 1 Data Entry and Normality test
(30 min)

Session 2 Parametric tests (60 min)

Session 3 Non-parametric tests (60 min)

Session 4 Data Entry and Normality test
(30 min)

Requirement:

- Basic knowledge of statistical concepts and data analysis.
- Familiarity with scientific data presentation and visualization.
- Personal laptop with the any version of Graphpad Prism (preferably latest version) installed (trial or licensed).
- Ability to import and manage data in spreadsheet format (e.g., Excel).
- Prior experience with data plotting and graph customization is beneficial but not mandatory.

Workshop 2: Mastering Statistics and Visualization with Interactive Statistical Software

Overview

This comprehensive workshop is designed to demystify statistical concepts and empower researchers with practical skills in data analysis and visualization through interactive statistical software. Participants will explore fundamental statistical principles, learn essential analytical tools, and create powerful visual representations of raw data using interactive platforms.

Minimum quota: **10 participants**

Maximum quota: **30 participants**

Objective:

To equip participants with robust statistical knowledge and advanced visualization skills, focusing on leveraging interactive statistical software to enhance data analysis, visualisation and interpretation for researchers in various disciplines.

Session 1

Statistical Foundations Made Simple (30 minutes)

- Understanding data types
- Statistical analysis approaches
- Data analysis planning
- Common challenges and solutions

Session 2

Essential Statistical Tools for Research with Interactive Software (1 1/2 hrs)

- An overview of interactive statistical software
- Detailed exploration and practical applications
- Hands-on Interactive Session

Session 3

Visualization Mastery in Data Analysis (1 hour)

- Principles of Effective Data Visualization
- Visualization Techniques for Different Data Types
- Interactive Visualization Techniques
- Practical Data Visualization

Requirement

- Basic knowledge of statistical concepts and data analysis.
- Familiarity with scientific data presentation and visualization.
- **Personal laptop** (statistical software will be given later by the secretariat)
- Ability to import and manage data in spreadsheet format (e.g., Excel).

Workshop 3: Microsurgical Ovum Pickup in Mice: Techniques for Reproductive Research

Overview

This hands-on training in ovum pickup (OPU) techniques in mice covers essential microsurgical methods, sample handling, and quality assessment for downstream applications like IVF, ICSI, and SCNT. Participants will learn animal preparation, including superovulation protocols, followed by ovarian and oviductal dissection to retrieve oocytes. Proper media preparation, temperature, and pH control will be emphasized to maintain oocyte viability. Quality assessment will include morphological evaluation, viability checks, and nuclear status analysis. The training equips researchers with practical skills to optimise fertilisation, cloning, and cryopreservation protocols, ensuring high-quality oocyte recovery for reproductive and developmental biology studies.

Minimum quota: **10 participants**

Maximum quota: **30 participants**

Objective:

To provide hands-on training in ovum pickup (OPU) techniques in mice, covering microsurgical methods, sample handling, and quality assessment for downstream applications.

Session 1

Introduction & Theoretical Background (35 min)

- Overview of assisted reproductive technologies (ART) in mice research
- Importance of ovum pickup in reproductive biology research
- Ethical considerations and animal welfare compliance

Session 2

Pre-Procedure Preparations (35 min)

- Selection and preparation of mice (hormonal priming, superovulation protocols)
- Anesthesia and analgesia protocols for minimising distress
- Sterile microsurgical setup and necessary instruments

Session 3

Hands-on Microsurgical Ovum Pickup (2 hours)

- Dissection and isolation of reproductive organs
- Microsurgical techniques for oocyte retrieval
- Sample collection, media selection, and oocyte handling under a stereomicroscope
- Oocyte Quality Assessment
- Morphological evaluation of retrieved oocytes

Workshop 4: Transforming Scientific Publishing with AI - From manuscript to impact

Overview

This interactive workshop introduced participants to the emerging role of artificial intelligence in academic research and scholarly writing. Emphasis was placed on ethical use, avoiding overreliance, and using AI as a collaborative tool rather than a replacement for critical thinking and authorship. Participants were trained on practical frameworks like the Collage Method for structuring complex documents and the 3R Method (Review, Refine, Reflect) for iterative writing improvement. Additionally, the session covered automation tools for generating literature review tables and formatting content according to academic standards. By the end of the workshop, attendees were equipped with practical skills to harness AI in a way that supports originality, enhances clarity, and accelerates the academic writing process.

Minimum quota: **10 participants**

Maximum quota: **30 participants**

Objective:

To provide participants with a comprehensive understanding of how to ethically and effectively incorporate AI tools such as ChatGPT, Ellicit, Consensus among others into academic writing, focusing on enhancing productivity, maintaining integrity, and improving the quality of theses, dissertations, and research manuscripts.

Session 1

Ethical and Effective Use of AI in Academic Writing (30 min)

- Introduction to AI tools in academia: capabilities and limitations
- Ethical considerations: plagiarism, authorship, and transparency
- Guidelines for responsible AI usage in academic institutions
- Case examples of ethical and unethical AI-assisted writing practices

Session 2

Structuring and Automating Academic Workflows (30 min)

- Introduction to the Collage Method for organizing ideas and literature
- How to use AI for developing outlines, headings, and structured content
- Automating repetitive writing tasks, such as table formatting and citations
- Techniques to maintain consistency in tone, style, and academic language

Session 3

Hands-on Practical Session (2 hours)

- Step-by-step application of the 3R Method (Review, Refine, Reflect) using ChatGPT
- Generating and refining sections of a research paper with AI support
- Creating literature review tables from raw sources using automated prompts
- Live troubleshooting and participant-driven examples for real-time feedback

Workshop 5: From Theory to Practice - DIY Primer Design for Successful Molecular Experiment

Overview

PCR serves as the cornerstone of molecular biology, powering breakthroughs in fields ranging from microbial research to the identification of disease-causing mutations in patients. At the heart of every successful PCR lies a meticulously designed primer, a seemingly simple yet indispensable tool that ensures precision, efficiency, and reproducibility. The significance of primer design cannot be overstated. It has been pivotal in the development of highly accurate COVID-19 qPCR tests, which have enabled the rapid detection of the virus. These tests have played a critical role in the swift diagnosis and effective management of one of the most defining global health crises of our time. In this workshop, we aim to equip you with the skills to create efficient, accurate, and target-specific primers.

Minimum quota: **10 participants**

Maximum quota: **30 participants**

Objective:

To provide both conceptual framework and practical skills in designing high-quality primers for PCR.

Session 1

Principles of primer design (45 min)

- Important concepts in primer design
- Characteristics of a good primer (length, melting temperature - T_m , GC content)
- Checking and avoiding secondary structures

Session 2

Designing your first PCR primer (60 min)

- Introduction of bioinformatic tools commonly used for primer design
- Designing a primer set to amplify a specific target (hands-on)
- Troubleshooting

Session 3

In silico validation of PCR primers (45 min)

- In silico tools commonly used for primer validation
- Validating a primer set designed during session 2 (hands-on)
- Validating primer sets from literature (hands-on)

Session 4

What if you need to design primers for a more complex PCR? (30 min)

- Tools for multiplex PCR
- Designing PCR primer for to amplify human genes
- PCR primer to amplify more than one target (degenerate primers)

Workshop 6: Innovative Strategies in Sustainable Agriculture: Techniques for Soil, Crop, and Resource Management

Overview

Innovative strategies in sustainable agriculture focus on optimizing soil health, crop productivity, and resource efficiency while minimizing environmental impact. Regenerative soil management techniques, such as cover cropping, crop rotation, and biofertilizers, enhance soil fertility and microbial diversity. Precision agriculture, integrating AI, IoT, and remote sensing, optimizes water use, fertilization, and pest control. Agroecological practices, including companion planting, intercropping, and integrated pest management (IPM), promote biodiversity and natural resilience. Additionally, water conservation technologies like drip irrigation, rainwater harvesting, and hydroponics improve sustainability in resource-scarce regions. These approaches collectively boost yield, reduce environmental degradation, and support climate resilience, ensuring a sustainable food system for future generations.

Minimum quota: **10 participants**

Maximum quota: **20 participants**

Objective:

To equip participants with practical techniques and innovations in sustainable agriculture, focusing on soil health, crop productivity, and environmental sustainability.

Session 1

Introduction to Sustainable Agriculture (35 min)

- Overview of global challenges in agriculture and sustainability
- Principles of regenerative agriculture, organic farming, and agroecology
- Climate change and its impact on food security

Session 2

Soil, Water, and Resource Management (35 min)

- Soil microbiome and its role in fertility
- Composting and organic matter management
- Cover cropping, crop rotation, and reduced tillage techniques
- Water & Resource Management

Session 3

Hands-on Practical Session (2 hours)

- Soil testing and nutrient analysis (pH, organic matter, microbial activity)
- Demonstration of biofertilizer preparation and application

For enquiries please contact:

Contact Information

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Venue Information

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