



**PRELIMINARY PROGRAM**

International Theoretical and Practical Course “Metabolomics applied to the study of human and plant diseases”

**Course Instructors:**

- Dr. David Wishart, Alberta University, Canada
- Dr. Sergio Encarnación Guevara, CCG, UNAM
- Dr. Yamile López Hernández, CONACyT-UAZ
- Dr. José Antonio Guerrero-Analco, INECOL
- Dr. Juan Luis Monribot, INECOL
- Dr. Jesús Adrián López, UAZ
- Dr. Julio Enrique Castañeda, CONACyT-IMSS
- Dr. Edgar Lara Ramírez, IMSS
- Dr. Carmen Vargas, CCG, UNAM

Day 1	
8.30 am -9.00 am	Welcome Ceremony. Dr. Rubén Ibarra, General Secretary, Universidad Autónoma de Zacatecas
9:00 am -9:30 am	Magisterial Conference. Dr. Sergio Encarnación Guevara, President, Mexican Society of Proteomics.
9:30 am -10:30 am	Introduction to metabolomics. General principles and application
10:30 am -11:00 am	Coffee Break
11:00 am -12:00	Analytical techniques employed in metabolomics studies Advantages and limitations.
12:00 -1:00 pm	Mass Spectrometry (Q-ToF) coupled to Liquid Chromatography. Overview.

1:00 pm -3:00 pm	Lunch
3:00 pm -6:00 pm	Practical Session. Preparation of Biological samples. Protein removal and metabolite extraction.
Day 2	
9:30 am -10:30 am	Targeted Metabolomics. General Principles
10:30 am -11:00 am	Coffee Break
11:00 am -12:00	Untargeted Metabolomics. General Principles
12:00 -1:00 pm	Experimental Design. Factors that can bias the results.
1:00 -3:00 pm	Lunch and Poster session
3:00 pm -6:00 pm	Practical Session. Processing biological samples by LC-MS QToF experiment MS <sup>E</sup>
Day 3	
9:30 am -10:30 am	MetaboAnalyst. Analysis of Data (Dr. Wishart)
10:30 am -11:00 am	Coffee Break
11:00 am -12:00	Statistical methods: Multivariate analysis
12:00 -1:00 pm	Public databases for metabolite identification: METLIN, LIPID MAPS, HMDB (Dr. Wishart)
1:00 pm -3:00 pm	Lunch and Poster session
3:00 pm -6:00 pm	Multivariate analysis and compound identification (personal computer is required).
Day 4	
9:30 am -10:30	Integration of data. Pathways research. Interpretation (Dr. Wishart)
10:30 am -11:00 am	Coffee Break
11:00 am -12:00	Plant-Host Interaction. Metabolomics approaches
12:00-1:00 pm	Metabolomics in the identification of tuberculosis and diabetes biomarkers. Newborn metabolome. Diabetes Mellitus gestational.
1:00 pm-3:00 pm	Lunch and poster sessions

3:00 pm-5:00 pm	XCMS online platform. Analysis of spectral information
5:00 pm-6:00 pm	Statistical methods: Univariate analysis.
8:00 pm	Closing Dinner
Day 5	
9:00 am-10:30 am	Practical Session. Processing of metabolomics data (personal computer is required)
10:30am -11:00 am	Coffee Break
11:00 am -12:00	Practical Session. Processing of metabolomics data (personal computer is required)
12:00 -2 pm	Lunch
3:00 pm-6:00 pm	Visit to Quantum (City of Knowledge in Zacatecas)
8:00 pm	"Callejoneada"

**How to apply:**

Please send a short CV and a letter of interest.

Application deadline: May 7, 2019

Results: May 15, 2019

10 participants will receive full scholarships (transportation, lodging and foods).

More information: ylopezher@conacyt.mx; yamilelopez@gmail.com (Course Coordinator)