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|  | **May 13** | **May 14** | **May 15** | **Description** |
| 09:00-10:30 | introduction to mitochondrial genetic methodologies | bench time - nucelic acid extraction / mtDNA PCR / Fluorescent PCR/mtDNA sequencing | data analysis (mtDNA mutation analysis including heteroplasmy evaluation) | The students will be acquainted with the molecular techniques for analysis of mtDNA variants. Upon completing the workshop, the attendees should be capable of mtDNA identification, quantification (heteroplasmy evaluation) and functional annotation of identified variants. |
| 10:45-12:45 | in silico assay design for mtDNA mutation identification/quantification |
| 13:00-14:00 | free LUNCH | free LUNCH | free LUNCH |  |
| 14:00-18:00 | Determination of ATP synthesis rate in mtDNA wild type and mutant cells (chemiluminescent assay) | Determination of mitochondrial membrane potential in mtDNA wild type and mutant cells (live imaging technique) | Data analysis (ATP synthesis rate, mitochondrial membrane potential) | The students will learn the biochemical techniques to determine the functional effects of mtDNA variants. Upon completing the workshop, the attendees will be able to measure ATP production from different respiratory complexes and to evaluate the contribution of respiratory complexes in the maintenace of mitochondrial membrane potential. |