The international virtual lab workshop: The Research Practicum: Conceiving, Testing, and Validating an idea.

September 27th, 2022: mregDC program identification	
13:30-14:00 DZ	Opening
Lectures	
14:00-14:55 DZ	Innate immunity. **Miriam Merad**
14:55-15:35 DZ	Introduction to Dendritic cells biology. **Raphael Mattiuz**
15:35-16:05 DZ	Regulatory module that dampens DC1 Driven tumor immunity. **Meriem Belabed**
16:05-16:15 DZ	Introduction to the workshop. **Meriem Belabed**
Hypothesis generation: Identifying additional molecular programs that may reduce dendritic cells functionality in vivo	
16:15-16:30 DZ	Break
Skills training	
16:30-16:45 DZ	Tumor cells culture; murine lung adenocarcinoma lesions that express the oncogene *KrasG12D* and lack the tumor suppressor *Tp53 (KP cells).* ***Meriem Belabed.***
16:45-16:55 DZ	Tumor cells IV injection to mice. **Fatima Arkam**
16:55-17:25 DZ	Sacrificing mice and harvesting tissues + tumors. **Fatima Arkam**
17:25-18:10 DZ	Process of obtaining H&E images of tumors. **Selma Chami, Raphael Merand & Leanna Troncoso**
18:10-18:40 DZ	Tumor quantification (QuPath). **Samarth Hegde**

September 28th, 2022: Uncoupling the mregDC program by looking at targets	
13:30-14:10 DZ	Tumor associated DC sequencing & mregDC program identification (of Previous Day's Results). **Matthew Park**
Takeaways (Conceptual): The mregDC transcriptional program is induced upon capture of apoptotic tumor cells	
Lectures	
14:10-14:50 DZ	Type II immunity and IL-4 signaling. ***Nelson Lamarche***
Hypothesis generation: Blocking IL-4 in vivo to test our research question: Does interfering with a component of the mregDC program enhance anti-tumor immunity?	
Skills training	
14:50-15:20 DZ	Tumor growth upon IL-4 blockade. ***Nelson Lamarche***
	Digesting and processing lung and tumor draining lymph nodes tissues. ***Nelson Lamarche***
15:20-15:35 DZ	Break
15:35-16:30 DZ	Staining cell suspensions for flow cytometric analysis. **Selma Chami *& Matthias Wilk***
	Acquiring recordings of cells based on flow cytometry. ***Matthias Wilk***
16:30-17:20 DZ	Analysis of flow cytometric data using FlowJo (cell proportions and MFI). ***Raphael Mattiuz***
17:20-17:35 DZ	Discussion: What next? What you propose as the next line of work, based on the findings we have illustrated through the technical steps outlined above?
Takeaways (Conceptual): IL-4 blockade modulates mregDC phenotype and has broader consequences for T cell immunity against lung tumors	

September 29th, 2022: A specific technique to learn	
14:00-14:35 DZ	Methods of blood collection from mice + Routes of mice treatments **Fatima Arkam**
Lectures	
14:35-15:35 DZ	Shedding the light on the principle, functioning and the relevance of recombinant-based strategies for designing potent targeted cancer immunotherapies. **Nour El Houda Chalal**
Hypothesis generation: Cloning can be used to study tumor-immune cells interactions.	
Skills training	
15:35-16:00 DZ	Obtaining the cDNA corresponding to the protein of interest. **Chang Moon**
	Amplification of this DNA by PCR (primers selection). **Chang Moon, Selma Chami**
	Cloning into an expression vector. **Emanuel & Jaime Mateus-Tique**
	Transformation/transfection in a host cell. **Chang Moon**
	Selection of recombinant cells carrying the gene of interest. **Chang Moon**
Takeaways (Conceptual): An early fundamental molecular biology technique such as molecular cloning is still relevant and widely used today to study tumor-immune cells interactions.	
Closing statements and remarks from the organizers	