MED YSP 2024 Module 3: Molecular Biology & Genetics

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Monday, July 22, 2024		Tuesday, July 23, 2024		Wednesday, July 24, 2024		Thursday, July 25, 2024		Friday, July 26, 2024	
Crime Scene Investigation		In a CSI Lab		CSI lab and Genetic Engineering		The World of Genetics		Solve Crime & Career Speakers	
Time	Activity	Time	Activity	Time	Activity	Time	Activity	Time	Activity
8:00 - 8:45	Check-in David Naylor lobby of Medical Sciences Building (aka Stone Lobby)	8:00 - 8:45	Attendance in Lecture room	8:00 - 8:45	Attendance in MSB, David Naylor lobby of Medical Sciences Building (aka Stone Lobby)	8:00 - 8:45	Attendance in MSB, David Naylor lobby of Medical Sciences Building (aka Stone Lobby)	8:00 - 8:45	Attendance in Lecture room
8:15 - 8:45	Rise & Shine Rama (SEG) & Josephine	8:15 - 8:45	Rise & Shine Lilian & Artemisa	8:15 - 9:00	Rise & Shine Anika & Eric	8:15 - 9:00	Rise & Shine Calvin & Josehine	8:15 - 9:00	Rise & Shine Ivy & Javid
8:45 - 9:00	Meet in lecture room MSB 3154		Meet in Lecture Room MSB 3154	8:55 - 9:00	Proceed to MSB lab rooms	8:55 - 9:00	Proceed to MSB lab rooms		Meet in Lecture Room MSB 3154
	Welcome Dr. Alex Palazzo		Lecture: Techniques Part 1, DNA isolation:	9:00 - 9:30	Lab #5: DNA Fingerprinting by PCR Part D: Load and run gels		Lab #8: Genetic Transformation, Part C2 - Extract protein		Gene Editing: the Future of Medicine?
	Associate Professor, Department of	9:00 - 9:40	Take Your DNA Home, PCR and DNA Fingerprinting / STR (Short Tandem Repeats)	9:30 - 9:50	Lab #5: Discuss STR (Short Tandem	9:50 - 11:40	Lab #8: Genetic Transformation,		
	Biochemistry, UofT				Repeats), during incubation		Part C3 - Run Gel		
9:00 - 9:15	Land Acknowledgement Erika Teeter	9:40 - 9:50	Dr. Alex Palazzo Transfer to individual lab rooms	9:50 9:50 - 10:00	Hard stop! Transfer to Lecture Room	11:40 - 11:45	Lab cleanup + Checklist Group photo		CRISPR talk
3.00 - 3.13	How to Maximize Your Experience	9:50 - 11:15	Lab #5: DNA Fingerprinting by PCR Part A: Setup PCR rxn	5.50 - 10.00	Meet in Lecture Room MSB 2158 (connected to MSB)	11:45 - 12:00	Rama (Student Experience Guru)	9:00 - 10:00	Dr. Landon Getz, Dept. of Biochemistry Postdoctoral Researcher. CIHR Fellow and Inaugural Recipient of the GSK EPIC Convergence Postdoctoral Fellowship in Antimicrobial Resistance Mentor to the
9:15 - 9:40	Artur Jakubowski, Program Coordinator Introduction to Molecular Biology and DNA Basics	11:15 - 11:45	Activity: PCR Dash Game	10:00 - 11:10	Forensics in the Real World	12 - 1 PM	Lunch		Youth Council of the Chief Science Advisor of Canada
	Dr. Alex Palazzo	11:45 - 11:50	Lab cleanup + Checklist			12:55 - 1:00	Transfer to lecture room MSB 3154	10:15 - 10:20	Transfer to lab rooms
					Dr. Tracy Rogers, Forensic Anthropologist and Director, Forensic Science Program,				
9:40 - 9:50	Meet Instructors & Transfer to lab rooms	11:50 - 12:00	Introduce Game Show	11:10 - 11:15	UofT Mississauga Transfer to lab rooms	1 - 2 PM	Meet in Lecture Room MSB 3154	10:20 - 11:00	Solve the crime scene (put all evidence together and reveal story line)
	Dr. Azmiri Sultana		Led by each Team	11.10-11.15	Sharing Equipment	1-2111	How do we know stuff? YES!!!		
	In your lab room				Red, Yellow: Start with Lab #5 imaging gels		Dr. Alexander Palazzo		Review Experiments and Study for Game
9:50 - 10:10	Meet and Greet	Wear closes	Reminders for Students	then do Lab #8	een, Oranage: Start with viewing Lab #8		Javid Guliyev & Lilian Zhai + ALL Instructors		Show Rotation Determination and Move to
	(Attendance, Ice breakers) Lab Safety	wear closed	toe shoes and long pants because you are performing wet labs.		rmations then do Lab #5	2:00 - 2:10	to help Proceed back to lab rooms	11:00 - 11:15	respective Roooms
10:10 - 10:30	(Fire, Medical, General Lab Safety, + lab			8	Lab #5: DNA Fingerprinting by PCR	2:10 - 4:30	Lab #8: Genetic Transformation,		
	coats)	12 to 1 PM	Lunch		Part E: Image Gels	2.10 - 4.30	Part C4 - View and Analyse Gel	Attend one of	the following sessions as determined by you
10:30 - 11:25	Lab #1: How to pipette like a champ	12:55 - 1:00	Transfer to lecture room MSB 3154		Part F: Identify Samples	3:40 - 4:00	Recap Genetic Transformation Experiment		and your Instructor University Admissions, MSB 3154
11:25 - 11:30	Lab cleanup + Checklist		Meet in Lecture Room MSB 3154	11:15 - 12:00	Lab #8: Genetic Transformation, Part B - Analyse Transformation	4:00 - 4:30	Lab #9: Genetic Transformation Computer Exercise	11:15 - 12:00	Connor Savery
11:30 - 11:40	Transfer to MSB 3154	1 - 1:30	Lecture: Techniques Part 2, Genetic	11:55 - 12:00	Lab cleanup + Checklist				or
44.40.40.00	Forensics Intro		Transformation			4:30 - 4:35	Move to Lecture room MSB 3154	11:15 - 12:00	Panel Discussions, MSB 2172
11:40 - 12:00	Med YSP Team		Sean Sung Jin Ihn, Dept. of Biochemistry	12 to 1 PM	Lunch	4:40 - 5:00	The Great Game Show Trial Run		Led by Instructors or
		1:30 - 1:35	Proceed back to lab rooms	12:55 - 1:00	Transfer to lecture room MSB 2158		Rama (Student Experiene Guru)		Anatomy Museum, MSB 2278
12 to 1 PM Lunch		1:35 - 2:45	Lab #6: Take Your DNA Home		Meet in Lecture Room MSB 2158 (connected			11:15 - 12:00	NO PHONE RULE
12:55 - 1:00	Transfer to lecture room MSB 3154		Lab #5: DNA Fingerprinting by PCR		to MSB) Lecture: Techniques Part 3, ELISA (Enzyme				Led by Instructors
12.00 1.00	FIS Lecture	2:45 - 3:35	Part B: Prepare PCR samples	1 - 1:30	Linked Immunosorbent Assay)			12 to 1 PM	Lunch
1 - 1:30	Wade Knaap, Forensic Identification	2.40 0.00	Lab #5: DNA Fingerprinting by PCR		Tina Qiu, Dept. of Biochemistry				1
	Instructor, UofT Instructors announce in lecture who is going		Part C: Pour Gels Lab #8: Genetic Transformation, Part A	1:30 - 1:35	Proceed back to lab rooms			1:00 - 1:10	Meet in your lab room Surveys (Lab rooms)
1:30 - 1:45	where for afternoon rotations.	3:35 - 4:35	Transform Bacteria		Lab #7: Drug analysis by ELISA			1:10 - 1:40	https://bit.ly/YSP24-survey-csi
7	Buffer + Proceed to Activities	4.50 5.5						1:40 - 1:50	Wrap up (pick up belongings and
	Blue & Green: Stay in lecture room	4:50 - 5 PM	Lab cleanup + Checklist	1:35 - 4:50	Lab #10: Ink Analysis By Paper Chromatography			1:50 - 1:55	certificates) Transfer to lecture room MSB 3153
Teams Orange,	Purple, Red, & Yellow: Proceed to lab rooms				Lab #8: Genetic Transformation, Part C1 -			1:55 - 3:20	Career Perspectives Panel
	Lab #3: Explore Crime Scene				Setup O/N cultures			1:55 - 2:20	Career speaker #1
	DC Simon Hubbar, FIS, Toronto Police on			4:30 - 4:50	Lab #8: Genetic Transformation, Part D			2:20 - 2:25	Sammy Cai
	site				(done by Instructors Landon and Ivy)				Career speaker #2
	Activity: Fingerprint handout			4:50 - 5 PM	Lab cleanup + Checklist			2:25 - 2:50	Chloe Mitchell, Gyros Protein Technologies
1:45 - 4:10				Med YSP Photos				2:50 - 2:55	Switch over
	Lab #4: Fingerprint Workshop with Ninhydrin				medysp.pixieset.com			2:55 - 3:20	Career speaker #3
	Lab #2: Blood patterns				Password: Medysp2024				Nevraj Keijou, Edesa Biotech, Inc.
					Deadline to download photos Fri. Aug. 16, 2024			3:20 - 3:30	Buffer and Break Land Acknowledgment
	Activity: Casting + Fingerprint powder								Landon See
4:10 - 4:15	Proceed back to lab rooms							3:30 - 4:30	The Great Game Show
4:15 - 4:25	Lab #5: DNA Fingerprinting by PCR: Crime Scene Discussion and selection of evidence								Rama (Student Experiene Guru)
	sample for analysis							4:30 - 4:35	CSI Team Crime Scene Overview
4:25 - 4:45	Look at casting samples from earlier								Christina, Erika, Eva, and Landon
4:45 - 5:00	Wrap-Up							4:35 - 4:40	Closing Remarks Dr. Alex Palazzo & Artur Jakubowski
Reminders for Students Wear closed toe shoes and long pants because you are performing wet labs.							4:40 - 5:15	Reception & Refreshments David Naylor tobby of Medical Sciences Building (aka Stone Lobby)	

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