

# Med YSP 2023 Module 2 - Molecular Biology and Genetics: Applications in Medicine and Forensics

Name: \_\_\_\_\_

Monday, July 17, 2023 Crime Scene Investigation		Tuesday, July 18, 2023 In a CSI Lab		Wednesday, July 19, 2023 CSI Lab and Genetic Engineering		Thursday, July 20, 2023 The World of Genetics		Friday, July 21, 2023 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 Lecture room	8:00 - 8:45	Attendance in Lecture room
8:15 - 8:45	Rise & Shine Lara	8:15 - 8:45	Rise & Shine Caitlin & Isobel	8:15 - 9:00	Rise & Shine Rishi & Christina	8:15 - 9:00	Rise & Shine Lara & Erika	8:15 - 9:00	Rise & Shine Rachelle & Landon
8:45 - 9:00	Meet in lecture room MSB 3153	9:00 - 9:40	<b>Meet in Lecture Room MSB 2170</b> Lecture: Techniques Part 1, DNA Isolation: Take Your DNA Home, PCR and DNA Fingerprinting / STR (Short Tandem Repeats), during incubation <i>Dr. Alex Palazzo</i>	9:00 - 9:30	Lab #6: DNA Fingerprinting by PCR Part D: Load and run gels	9:00 - 10:00	Meet in Lecture Room MSB 3153 Gene Editing: the Future of Medicine? <i>Dr. Johanna Carroll, Dept. of Biochemistry</i>	9:00 - 10:15	Meet in Lecture Room MSB 3153 Bioethics: Ethical issues associated with advances in genomics <i>Dr. Michael Szego, Clinical Ethicist, Department of Family and Community Medicine, UoFT</i>
9:00 - 9:15	Welcome <i>Dr. Alex Palazzo</i> Associate Professor, Department of Biochemistry, UoFT	9:40 - 10:10	CSI: Why Killers Go Free <i>Wilson Chung, PhD Candidate, UoFT Mississauga</i>	9:30 - 9:50	Lab #6: Discuss STR (Short Tandem Repeats), during incubation	10:00 - 10:10	Transfer to lab rooms	10:15 - 10:20	Transfer to lab rooms
	Land Acknowledgement <i>Caitlin Halleran</i>	10:10 - 10:20	Transfer to individual lab rooms	9:50 - 10:00	<b>Hard stop!</b> Transfer to Lecture Room	10:10 - 11:40	Genetic Transformation Lab Part C2 - Extract protein	10:20 - 11:00	Solve the crime scene (put all evidence together and reveal story line)
	How to Maximize Your Experience <i>Artur Jakubowski, Program Coordinator</i>	10:20 - 11:15	Lab #6: DNA Fingerprinting by PCR Part A: Setup PCR rxn	10:00 - 11:10	<b>Meet in Lecture Room MSB 3153</b> Forensics in the Real World <i>Dr. Tracy Rogers, Forensic Anthropologist and Director, Forensic Science Program, UoFT Mississauga</i>		Genetic Transformation Lab Part C3: Run Gel	11:00 - 11:15	Rotation Determination and Move to respective Rooms
9:15 - 9:40	Introduction to Molecular Biology and DNA Basics <i>Dr. Alex Palazzo</i>	11:15 - 11:45	Activity: PCR Dash Game	11:10 - 11:15	Transfer to lab rooms	11:40 - 11:45	Lab cleanup + Checklist	11:45 - 12:00	Group photo Lara (Student Experience Guru)
9:40 - 9:50	Meet Instructors & Transfer to lab rooms <i>Artur Jakubowski</i>	11:45 - 11:50	Lab cleanup + Checklist	11:15 - 12:00	Lab #6: DNA Fingerprinting by PCR Part E: Image Gels				
9:50 - 10:10	<b>In your lab room</b> Meet and Greet (Attendance, Ice breakers)	11:50 - 12:00	Introduce Game Show <b>Led by each Team</b>	11:55 - 12:00	Lab #9: Genetic Transformation Lab Part B : Analyse Transformation Lab cleanup + Checklist				
10:10 - 10:30	Lab Safety (Fire, Medical, General Lab Safety, + lab coats)								
10:30 - 11:25	Lab #1: How to pipette like a champ								
11:25 - 11:30	Lab cleanup + Checklist								
11:30 - 11:40	Transfer to MSB 3153								
11:40 - 12:00	Forensics Intro <i>Med YSP Team</i>								
		<b>Reminders for Students</b> Wear closed toe shoes and long pants because you are performing wet labs.							

12 to 1 PM	Lunch	12 to 1 PM	Lunch	12 to 1 PM	Lunch	12 - 1 PM	Lunch	12 to 1 PM	Lunch	
12:55 - 1 PM	Transfer to lab rooms	12:55 - 1:00	Transfer to lecture room MSB 3153	12:55 - 1:00	Transfer to lecture room MSB 3153	12:55 - 1:00	Transfer to lecture room MSB 3153	1:00 - 1:10	<b>Meet in your lab room</b>	
1 - 1:35	Lab #2: Blood patterns		<b>Meet in Lecture Room MSB 3153</b> Lecture: Techniques Part 2, Genetic Transformation <i>Sean Sung Jin Ihn, Dept. of Biochemistry</i>		<b>Meet in Lecture Room MSB 3153</b> Lecture: Techniques Part 3, ELISA (Enzyme Linked Immunosorbent Assay) <i>Tina Qiu, Dept. of Biochemistry</i>		<b>Meet in Lecture Room MSB 3153</b> How do we know stuff? <i>Dr. Alexander Palazzo</i>	1:10 - 1:40	Surveys (Lab rooms) bit.ly/YSP23-survey-csi	
1:35 - 1:45	Explain rotations for afternoon	1 - 1:30	Proceed back to lab rooms	1 - 1:30	Proceed back to lab rooms	1 - 2:10	Buffer	1:40 - 1:50	Wrap up (pick up belongings and certificates)	
1:45 - 1:50	Transfer to lecture room MSB 3153	1:30 - 1:35	Proceed back to lab rooms	1:30 - 1:35	Proceed back to lab rooms	2:10 - 2:30	Proceed back to lab rooms	1:50 - 1:55	Transfer to lecture room MSB 3153	
1:50 - 2:20	FIS Lecture <i>Wade Knaap, Forensic Identification Instructor, UoFT</i>	1:35 - 2:45	Lab #7: Take Your DNA Home	1:35 - 1:45	Genetic Transformation Lab Part C4: View and Analyse Gel	2:30 - 2:40	Proceed back to lab rooms	1:55 - 3:10	Career Perspectives Panel	
2:20 - 2:30	Instructors announce in lecture who is going where for afternoon rotations.	2:45 - 3:35	Lab #6: DNA Fingerprinting by PCR Part B: Prepare PCR samples	1:35 - 4:50	Lab #8: Drug analysis by ELISA	2:40 - 3:40	Genetic Transformation Lab Part C4: View and Analyse Gel	1:55 - 2:20	Career speaker #1 <i>April Pawluk</i>	
	<b>Instructors, view tab "Mon-2023"</b>	3:35 - 4:35	Lab #9: Genetic Transformation, Part A Transform Bacteria	4:50 - 5 PM	Lab #11: Ink Analysis By Paper Chromatography	3:40 - 4:00	Recap Genetic Transformation Experiment	2:20 - 2:25	Switch over	
2:30 - 2:50	Lab #3: Explore Crime Scene Led by Instructors	4:30 - 4:50	Lab #9: Genetic Transformation, Part D (done by Instructors Erika & Isobel)		Lab #9: Genetic Transformation, Part C1 - Setup O/N cultures	4:00 - 4:30	Lab #10: Genetic Transformation Computer Exercise	2:25 - 2:50	Career speaker #2 <i>Amy Cui, Medical Manager</i>	
2:50 - 3:10	Lab #4: Fingerprint Workshop with Ninhydrin Led by Instructors	4:50 - 5 PM	Lab cleanup + Checklist		Lab cleanup + Checklist	4:30 - 4:35	Move to Lecture room MSB 3153	2:50 - 2:55	Switch over	
3:10 - 3:30	Lab #5: UV Activity <i>Kathryn Kocemba &amp; Zara Bagha</i>					4:40 - 5:00	The Great Game Show Trial Run Lara (Student Experience Guru)	2:55 - 3:20	Career speaker #3 <i>Stephanie Buryk</i>	
3:30 - 3:45	Buffer and Switch							3:20 - 3:30	Buffer and Break	
3:45 - 4:45	FIS Hands-on Demos <i>Wade Knaap, Forensic Identification Instructor, UoFT</i>							3:30 - 4:30	Land Acknowledgement <i>Will Stager</i>	
4:45 - 4:50	Proceed back to lab rooms								The Great Game Show Lara (Student Experience Guru)	
4:50 - 5:00	Lab #6: DNA Fingerprinting by PCR: Crime Scene Discussion and selection of evidence sample for analysis								4:30 - 4:35	CSI Team Crime Scene Overview <i>Christina, Erika, Eva, and Landon</i>
									4:35 - 4:40	Closing Remarks <i>Dr. Alex Palazzo &amp; Artur Jakubowski</i>
									4:40 - 5:15	Reception & Refreshments MSB David Naylor Lobby

Med YSP Photos  
medysp.pixieset.com  
Password: Medysp2023  
Deadline to download photos  
**Fri. Aug. 18, 2023**