

Molecules to Medicine – Summer Camp Schedule

Students will progress from understanding biological molecules and cellular organization to measuring biological function and designing medical interventions that improve human health.

Sunday, July 19 – Arrival & Orientation

Time	Activity	Leader/Staff	Location
2:00 PM	Camper check-in	Staff	Residence Hall
4:00 PM	Welcome, Introductions & Camp Orientation	Staff	Residence Hall
4:30 PM	Room Settle-In Time	Evening staff	Residence Hall
6:00 PM	Dinner	Evening staff	Dining Hall
8:00 PM	Free time	Evening staff	Residence Hall
10:30 PM	Lights out	Evening staff	Residence Hall

Monday, July 20 – *From DNA to Proteins: The Molecular Basis of Life*

Time	Activity	Leader/Staff	Location
7:30 AM	Breakfast	Evening staff	Dining Hall
8:30 AM	Transport to department	Day Staff	—
9:00 AM	EHS Safety Training	Jonathan Parli	HSCN 3067
9:45 AM	Intro lecture: <i>How genetic information flows – the central dogma of molecular biology</i>	Dr. Robart	HSCN 3067
10:15 AM	Break	Day staff	Wirtz library
10:35 AM	Lab activity: <i>DNA extraction and amplification</i>	Dr. Robart, Sarah Starcovic, Jasmine Haprer, Holly Shlutz	HSCN 3096
12:00 PM	Lunch	Day staff	Wirtz library
1:00 PM	Lab activity: <i>DNA analysis</i>	Dr. Robart, Sarah Starcovic, Jasmine Haprer, Holly Shlutz	HSCN 3096
1:30 PM	Intro lecture: <i>How We Make and Isolate the Proteins We Study</i>	Dr. Robart	HSCN 3067

Time	Activity	Leader/Staff	Location
2:00 PM	Lab activity: <i>Protein Purification</i>	Dr. Robart, Sarah Starcovic, Jasmine Haprer, Holly Shlutz	HSCN 3096
3:30 PM	Break	Day staff	Wirtz library
4:00 PM	Workshop: <i>Know your strengths, part 1</i>	Nicole Beason	Wirtz library
5:00 PM	Transport to residence	Evening staff	—
6:00 PM	Dinner	Evening staff	Dining Hall
7:10 PM	Transport to Mountain Lair		
7:30 PM	Bowling	Evening staff	Mountain Lair
9:30 PM	Transport back to residence hall	Evening staff	
10:30 PM	Lights out	Evening staff	Residence Hall

Tuesday, July 21 – **Cells, Organelles, and Cellular Responses**

Time	Activity	Leader/Staff	Location
7:30 AM	Breakfast	Evening staff	Dining Hall
8:30 AM	Transport to department	Day Staff	—
9:00 AM	Welcome, introductions, overview of the day, and key learning goals	Dr. Robichaux/Dr. Deng	G201
9:15 AM	Intro lecture: <i>Principles of microscopy</i>	Kristen	G201
9:45 AM	Break and walk to Erma	Day staff	
10:05 AM	Lab activity: <i>How we Visualize Cells and Tissues, part 1</i>	Kristen – lead; Brooke + volunteers	Erma 270
12:00 PM	Lunch	Day staff	Department
1:00 PM	Intro lecture: <i>Sensory biology and vision</i>	Brooke	G201
1:30 PM	Walk to Erma		
1:45 PM	Lab activity: <i>ERG demonstration</i>	Brooke and Wentao	Erma 270

Time	Activity	Leader/Staff	Location
2:30 PM	Lab activity: <i>How we Visualize Cells and Tissues, part 2</i>	Brooke and Kristen	Erma
3:30 PM	Break	Day staff	Wirtz library
4:00 PM	Workshop: <i>Know your strengths, part 2</i>	Nicole Beason	Wirtz library
5:00 PM	Transport to residence hall	Evening staff	—
6:00 PM	Dinner	Evening staff	Dining Hall
7:00 PM	Movie screening/trivia night	Evening staff	Residence Hall
10:30 PM	Lights out	Evening staff	Residence Hall

Wednesday, July 22 – Energy & Metabolism

Time	Activity	Leader/Staff	Location
7:30 AM	Breakfast	Evening staff	Dining Hall
8:30 AM	Transport to department	Day Staff	—
9:00 AM	Intro lecture: <i>Protein and Carbs and Fats, oh my! The Science Behind Food and Metabolism</i>	Dr. Webb and Sruthi	HSCN 3067
9:30 AM	Intro to lab activity: <i>How do we measure carbohydrates? The science behind the Amylase test.</i>	Sruthi	HSCN 3067/3096
10:00 AM	Break	Day Staff	Wirtz library
10:20 AM	Lab activity: Amylase test	Sruthi	HSCN 3096
12:00 PM	Lunch	Day staff	Wirtz library
1:00 PM	Intro lecture to bioenergetics and lab activity: <i>Food to Fuel – how bioenergetics converts nutrients to energy</i>	Drs. Hansen and Webb	HSCN 3067/3096
1:30 PM	Lab activity: <i>Dynamics of cellular metabolism</i>	Dr. Hansen	HSCN 3096/3136

Time	Activity	Leader/Staff	Location
3:00 PM	Break	Day staff	Wirtz conference room
3:30 PM	Transport to WV Botanic Garden	Evening staff	—
4:00 PM	Botanic garden visit	Evening staff	WV Botanic Garden
5:30 PM	Transport back to residence hall	Evening staff	—
6:00 PM	Dinner	Evening staff	Dining Hall
7:30 PM	Tie dye activity	Evening staff	Residence Hall
10:30 PM	Lights out	Evening staff	Residence Hall

Thursday, July 23 – From Protein Function to Medicine: Drug Design and Testing

Time	Activity	Leader/Staff	Location
7:30 AM	Breakfast	Evening staff	Dining Hall
8:30 AM	Transport to department	Evening staff	—
9:00 AM	Intro lecture: <i>Proteins as Therapeutic Targets</i>	Dr. Smith	HSCN 3067
9:30 AM	Intro to lab activity: <i>Protein activity and inhibition</i>	Dr. Smith	HSCN 3067
10:00 AM	Break	Day staff	Wirtz library
10:20 AM	Lab activity: <i>Inhibition of Trypsin activity</i>	Dr. Smith and lab	HSCN 3111
12:00 PM	Lunch	Day staff	Wirtz library
1:00 PM	Lab activity: <i>Computational docking of drugs (3D modeling)</i>	Dr. Smith	LC-2 & LC-1 (2912 & 2913 North)
1:30 PM	Intro lecture: <i>Medical 3D Printing and Immersive Reality in practice.</i>	Drs. Tseytlin	LC-2 & LC-1 (2912 & 2913 North)
2:00 PM	Lab activity: <i>VR glasses demo + Activity: Find the missing bone</i>	Drs. Tseytlin	LC-2 & LC-1 (2912 & 2913 North)

Time	Activity	Leader/Staff	Location
3:00 PM	Lab activity: <i>Build your own 3D cast</i>	Drs. Tseytlin	HSCN 3100
3:30 PM	Break	Day staff	Wirtz library
4:00 PM	Presentation: <i>Finding Your Place in Science & Medicine: How to Get There</i>	Faculty/Admissions staff	Wirtz library
5:00 PM	Transport back to residence hall	Evening staff	—
6:00 PM	Dinner	Evening staff	Dining Hall
6:45 PM	Transport to Cryptid Mountain Mini Golf	Evening staff	—
7:00 PM	Minigolf	Evening staff	Cryptid Mountain Mini Golf
9:00 PM	Transport back to residence hall	Evening staff	—
10:30 PM	Lights out	Evening staff	Residence Hall

Friday, July 24 – Monitoring Health & Diagnostics

Time	Activity	Leader/Staff	Location
7:30 AM	Breakfast	Evening staff	Dining Hall
8:30 AM	Transport to department	Evening Staff	—
9:00 AM	Intro lecture: <i>Diagnostic tests</i>	Dr. Ivanov	HSCN 3067
10:00 AM	Break	Day staff	Wirtz library
10:20 AM	Lab activity: <i>Identifying different cell types, part 1</i>	Drs. Ivanov, Pugacheva, Gencheva	Lab CC2813
12:00 PM	Lunch	Day staff	Wirtz library
1:00 PM	Lab activity: <i>Cancer Diagnostics in a Clinical Pathology Lab</i>	Dr. Williams	HSC 2134

Time	Activity	Leader/Staff	Location
2:30 PM	Lab activity: <i>Identifying different cell types, part 2</i>	Drs. Ivanov, Pugacheva, Gencheva	HSCN 3096
3:15 PM	Camp Wrap-up and survey	Day staff/ Coordinators	Wirtz library
3:30 PM	Ice cream social	Day staff	Wirtz library
4:15 PM	Group picture	Day staff	TBD
4:30 PM	Transfer to Residence Hall	Evening Staff	—
6:00 PM	Dinner	Evening staff	Dining Hall
6:30 PM	Transfer to XSCAPE! Room	Evening Staff	—
7:00 PM	XSCAPE! Room	Evening Staff	XSCAPE! Room
8:30 PM	Transfer to residence Hall	Evening Staff	—
10:30 PM	Lights out	Evening Staff	Residence Hall

Saturday, July 25 – Departure

Time	Activity	Leader/Staff	Location
7:30 AM	Breakfast	Evening staff	Dining Hall
9:00 AM	Pack and free time	Staff	Residence Hall
10:00 AM- 10:30 AM	Check-out	Staff	Residence Hall