

# C<sup>2</sup> Pipeline Innovation & Curiosity Center Wayne State University



## Hours and Capacity

The *C<sup>2</sup> Pipeline Innovation and Curiosity Lab* is **limited to 24 students** per activity due to lab space. If your organization has more than 24 students, we can accommodate multiple activity sessions per day.

The *C<sup>2</sup> Pipeline Innovation and Curiosity Lab* has very flexible hours. We can also come to your site to facilitate activities — see next page.

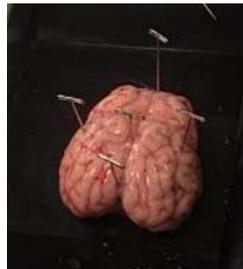
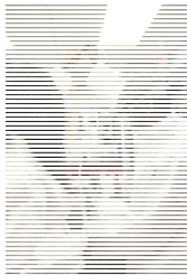
*Activity Descriptions and Pricing*

WAYNE STATE  
UNIVERSITY  
COLLEGE OF NURSING



### **IMPORTANT INFORMATION**

- **Fee Schedule:** Fees are noted with each activity and are based on groups of 24 students or less
- **Age ranges for activities:** Activities are coded for age appropriateness: EL=Elementary, MS=Middle School, and HS=High School.
- **On site (OS) facilitation:** For an additional fee of \$50.00 + round trip mileage from WSU, our staff can come to your site to facilitate many of the activities contained in this booklet. Those activities are labelled with code (OS).
- **Lab Use/Rental Package Options:** We have also included package options if you would like to utilize our lab to facilitate your own activities.



## **C<sup>2</sup> Pipeline Staff Facilitated Activities**

### **Drug Toxicology**



Students learn about forensic drug toxicology and detection of drugs. They also learn about forensic toxicologists and their role in forensic science. Students participate in a drug detection lab. (EL, MS, HS) (OS)

This lab takes approximately 1 hour.

Cost: \$ 175.00 per group @ WSU

### **Forensic Anthropology**



Students learn about forensic anthropology through examining bones found at a crime scene. They also perform a soil analysis in order to test for certain chemicals contained within a soil sample. Students will become familiar with the field of anthropology as it relates to forensic science. (MS, HS) (OS)

This lab takes approximately 2 hours.

Cost: \$ 175.00 per group @ WSU

### **Ballistics**



In this activity, students use spent slugs found at the scene of the crime to determine the guilt or innocence of a suspect. They will learn all about ammunition and conduct a ballistics forensic examination. (MS, HS) (OS)

This lab takes approximately 1.5 hours.

Cost: \$ 175.00 per group @ WSU

### **Fingerprinting**



Students learn about the history of fingerprinting and the methods that forensic scientists use to detect fingerprints. Students participate in a lab where they will analyze fingerprints and dust fingerprints. (EL, MS, HS) (OS)

This lab takes approximately 1 hour.

Cost: \$ 175.00 per group @ WSU

## C<sup>2</sup> Pipeline Staff Facilitated Activities

### Blood Spatter

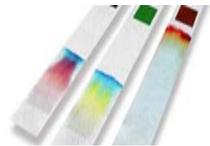


Students learn about the properties of blood and how it relates to blood spatter analysis. They will complete a lab that investigates several types of blood spatter patterns. (MS, HS)

This lab takes approximately 1.5 hours—Students should understand that the simulated blood may stain their clothing and should dress appropriately.

Cost: \$ 200.00 per group @ WSU

### Document Analysis



Students learn how forensic scientists use chromatography to analyze ink. They will participate in a lab to determine which pen was used to write a ransom note. (EL, MS, HS) (OS)

This lab takes approximately 1 hour.

Cost: \$ 125.00 per group @ WSU

### Forensics using Simulated Blood



Students learn about the properties of blood and how forensic scientists conduct field tests for blood. Students test blood samples to determine blood types of suspects, the crime scene and the victim. (MS, HS) (OS)

This activity takes approximately 1 hour.

Cost: \$ 175.00 per group @ WSU

### Sheep Brain Dissection



Students will examine the exterior and interior areas of a sheep's brain. They will dissect the brain to determine how the different parts of the brain are related to one another. (MS, HS) (OS)

This lab takes approximately 1 hour.

Cost: \$ 225.00 per group @ WSU

## C<sup>2</sup> Pipeline Staff Facilitated Activities

### Enzymology

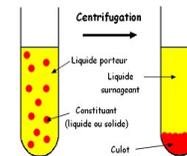


Students will study enzymes and understand how forensic scientists measure enzyme activity. They will participate in a lab to discover which suspect is responsible for causing a car accident. (MS, HS)

This lab takes approximately 1 hour.

Cost: \$ 200.00 per group @ WSU

### Centrifugation of Blood

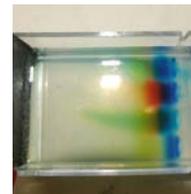


Students learn about the centrifuge and properties of blood. They will participate in a lab where they will create a mixture similar to blood and study it before and after centrifugation. (MS, HS)

This lab takes approximately 1 hour.

Cost: \$ 125.00 per group @ WSU

### Gel Electrophoresis



Students will learn how DNA can be fingerprinted by using restriction enzyme patterns. In this lab, students will learn how to use an electrophoresis apparatus to separate DNA and protein fragments based on size. (HS)

This lab takes approximately 2 hours.

Cost: \$ 200.00 per group @ WSU

### Physical Properties of Glass



Students will learn about the physical properties of glass: density, glass characteristics, refractive index, etc. They will participate in a lab to measure the density and refractive index of different types of glass. (MS, HS) (OS)

This lab takes approximately 1.5 hours.

Cost: \$ 150.00 per group @ WSU

## C<sup>2</sup> Pipeline Staff Facilitated Activities

### Students participating in a Lung Dissection lab



### Non-Newtonian Fluids

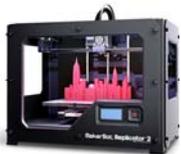
Students will learn about the properties of Non-Newtonian fluids. They will participate in a slime vs. Oobleck challenge. (EL, MS, HS) (OS)



This lab takes approximately 1 hour.

Cost: \$ 200.00 per group @ WSU

### 3D Printing



Students will learn about the components of a 3D printer and its applications. They will participate in a lab to create a printed/printable 3D object. (MS, HS)

This lab takes approximately 1.5 hours.

Cost: \$ 200.00 per group @ WSU

### Owl Pellet Dissection



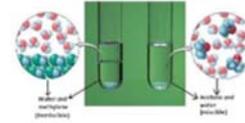
Students will learn about food chains, food webs, transfer of energy, and ecological pyramids and succession. They will participate in an owl dissection lab. (EL, MS, HS) (OS)

This lab takes approximately 1 hours.

Cost: \$ 175.00 per group @ WSU

## C<sup>2</sup> Pipeline Staff Facilitated Activities

### Liquids & Solutions



Students learn about the physical properties of liquids and how to prepare and describe solutions. They will participate in a lab to observe physical properties and create a solution. (MS, HS) (OS)

This lab takes approximately 1.5 hours.

Cost: \$ 175.00 per group @ WSU

### Effects of Alcohol



Students learn that alcohol is a depressant and can impair function of the body. They will participate in a lab to observe the heartbeat and behavior of Daphnia under normal conditions and in the presence of alcohol. (HS)

This lab takes approximately 1 hours.

Cost: \$ 200.00 per group @ WSU

### Hair Analysis



Students will learn about the structure of hair and how it is used for forensic analysis. They will participate in a lab to observe and identify different types of hair. (MS, HS)

This lab takes approximately 1 hour.

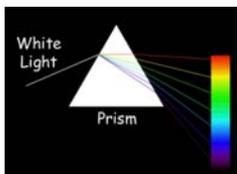
Cost: \$ 150.00 per group @ WSU

### Students participating in Fingerprinting lab



## C<sup>2</sup> Pipeline Staff Facilitated Activities

### Intro to Spectroscopy

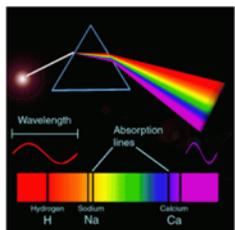


Students will learn about spectroscopy and light. They will take part in an activity to test how the absorbance wavelength value relates to the chemical substance. (MS, HS)

This lab takes approximately 1 hours.

Cost \$175.00 per group @ WSU

### Body in the Lab Spectroscopy



Student will determine whether the amount of aspirin ingested by the victim caused his death using spectroscopy. **NOTE:** Intro to Spectroscopy lab should be completed before this lab. (MS, HS)

This lab takes approximately 1 hour.

Cost \$175.00 per group @ WSU

### Eye Dissection

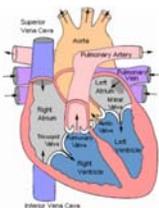


Students will examine the exterior and interior areas of a sheep's eye. They will dissect the eye to determine how the different parts of the eye are related to one another. (MS, HS) (OS)

This lab takes approximately 1 hour.

Cost: \$ 225.00 per group @ WSU

### Heart Dissection



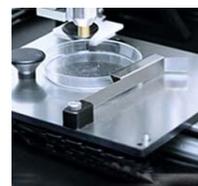
Students will examine the exterior and interior areas of a sheep's heart. They will dissect the heart to determine how the different parts of the heart are related to one another. (MS, HS) (OS)

This lab takes approximately 1.5 hours.

Cost: \$ 225.00 per group @ WSU

## C<sup>2</sup> Pipeline Staff Facilitated Activities

### 3D Bio-Printing Biotechnology



Students will learn about biotechnology with regard to enzyme functions. They will participate in an activity to determine the enzyme function using colorimetric assays. (HS)

This lab takes approximately 2 hours.

Cost: \$ 200.00 per group @ WSU

### 3D Bio-Printing Biotechnology



Students will learn about biotechnology with regard to enzyme function. They will participate in an activity to determine the effect of substrate concentration on enzyme activity. (HS)

This lab takes approximately 2 hours.

Cost: \$ 200.00 per group @ WSU

### 3D Bio-Printing Biotechnology



Students will learn about biotechnology with regard to bacteria growth. They will participate in an activity to determine E. coli growth. (HS)

This lab takes approximately 2 hours.

Cost: \$ 200.00 per group @ WSU

### 3D Bio-Printing Green Technology



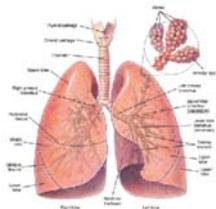
Students will learn about green technology using a 3D bioprinter. They will participate in an activity to determine the enzymatic degradation of biomass. (HS)

This lab takes approximately 2 hours.

Cost: \$ 200.00 per group @ WSU

## C<sup>2</sup> Pipeline Staff Facilitated Activities

### Lung Dissection

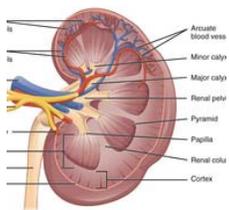


Students will examine the exterior and interior areas of a sheep's lungs. They will dissect the lungs to determine how the different parts of the lungs are related to one another. (MS, HS) (OS)

This lab takes approximately 1 hour.

Cost: \$ 225.00 per group @ WSU

### Kidney Dissection

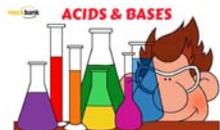


Students will examine the exterior and interior areas of a sheep's kidney. They will dissect the kidney to determine how the different parts of the kidney are related to one another. (MS, HS) (OS)

This lab takes approximately 1 hour.

Cost: \$ 225.00 per group @ WSU

### Acids and Bases



Students learn about acids and bases. They will participate in a lab to turn water into blood and experiment with invisible ink. (EL, MS, HS) (OS)

This lab takes approximately 1 hour.

Cost \$175.00 per group @ WSU

### Students participating in Blood Spatter lab



## Lab Use/Rental Package Options:

**Basic - \$200** This package includes 3 visits (approximately 2 hours/visit) to the Innovation & Curiosity Center at WSU. This does not include any expendable materials and only instruments such as microscopes, scales, hot plates, thermometers, etc. can be utilized in the lab. Activities for the 3 visits will be facilitated by you and your staff\*.

**Green - \$500** This packages includes 6 visits (approximately 2 hours/visit) to the Innovation & Curiosity Center at WSU. This will also include an activity on campus at a particular school or college designed around your class interest. Basic chemicals and supplies will be included. Activities for the 6 visits will be facilitated by you and your staff\*.

**Gold - \$900** This package includes 10 visits (approximately 2 hours/visit) to the Innovation & Curiosity Center at WSU facilitated by your staff.\* This will also include a (2 hour maximum) lab activity facilitated by C<sup>2</sup> Pipeline staff. Basic chemicals and supplies will be included.

**\*NOTE: The activities listed on the previous pages are not included in these packages.**



**WAYNE STATE  
UNIVERSITY**  
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**Certified to administer the following Merit Badges:**



- Chemistry
- Fingerprinting
- Environmental Science
- Inventing
- Geology
- Nuclear Science

***This is not an all-inclusive list  
additional Scouting activities offered per request***



C2 PIPELINE

We can also assist in the completion of requirements for STEM NOVA Awards!

For more information please contact us!  
You can sign up for activities on our website!!

Wayne State University  
Innovation & Curiosity Center

**STEM/Replicator Lab Manager**

Sandy Friedli

sandrafriedli@wayne.edu

**Website**

c2pipeline.wayne.edu

**General Email**

C2STEMLAB@wayne.edu

**Address**

5000 Gullen Mall, Room 133, Detroit, MI 48202

**Phone**

(313) 577- 3499

**Fax**

(313) 577- 1205



Shoot



Start Your Engines



Whoosh



Launch



Power Up



Hang On

*The C2 Pipeline program is a STEM Accredited 21st CCLC program funded by the Michigan Department of Education and sponsored by the Wayne State University College of Nursing*