



**GOLDEN BEAR COPHS
SUMMER CAMP**
• WESTERN NEW ENGLAND UNIVERSITY •

Location: Virtual
June 23-June 24, 2022

Zoom Link: <https://wne-edu.zoom.us/j/92170245847>

12:00 noon – 4:00pm

Thank You to Our Sponsors:

WNE Alumni Association
Walgreens

Welcome!

Welcome to the Western New England University College of Pharmacy and Health Sciences Virtual 2022 Golden Bear Pharmacy Summer Camp! I hope you are excited for all the experiences that this fun-filled two-day, half-day series has to offer. By the end of the camp, you will learn about different career paths in the field of pharmacy, and perform hands-on activities at home with our pharmacy practice and pharmaceutical and administrative sciences faculty. You will also spend time with our occupational therapy faculty learning about other healthcare careers. Throughout the camp, current pharmacy and occupational therapy students will be available for assistance and to discuss their experiences.

All packets of materials will be mailed to each camper one-week prior to camp. **We require the Pharmacy4Me Photo Release and WNE Photo Release forms to be completed and submitted prior to the start of camp. Please consider filling out the required forms well ahead of time** and email them to paula.geddis@wne.edu. The link to the camp website where the documents can be downloaded from is, www.wne.edu/pharmacycamp.

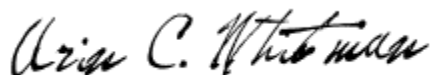
I ask that you arrive on time via zoom so we can start promptly every day. Many of the activities will require participation and engagement. Come excited to learn! The most important thing, besides safety of course, is to have fun. Faculty will provide instructions through lectures, discussions, and hands-on activities. If students should need any learning or physical accommodations, please contact me in advance.

In this manual, you will find safety guidelines that must be followed throughout the camp. No bullying or disrespect towards other students, faculty or staff will be tolerated. For all activities to run smoothly, all students in attendance will need to abide by the rules. The success of the activities can only be ensured if students follow directions and are actively engaged in the sessions.

If at any point you have questions during activities, please feel free to ask! We want you to have an enjoyable and safe experience.

Please do not hesitate to contact me with questions or concerns.

Looking forward to meeting all of you!



Arin C Whitman, PharmD, BCOP
arin.whitman@wne.edu
413-796-2452

Table of Contents

Welcome to WNE	4
Camp Schedule	5
General Policies and Procedures	6
Safety in the Laboratory	
Safety Guidelines	7
Safety Equipment	8
Laboratory Protocols	
Introduction to Compounding	9
○ Basic Lip Balm Recipe	10
○ Hand Sanitizer Recipe	10
Genetics and Pharmacy: What's the Connection	
○ Bitter Taste Test	11
○ Strawberry DNA Extraction	13
Chromatography of M&M Candies	15
Clinical Skills	18
Occupational Therapy Skills	
Additional Information	
Careers in Pharmacy	27
Admissions information	28
Contact Information	33
References	35



Welcome to Western New England University

With just 2,600 undergraduates, we could be the right size for you. Whether teaching on campus or online, our faculty and staff are always here for our students. Now more than ever, the work needs pharmacists, scientists, communicators, engineers, lawyers, social workers, law enforcement professionals, analysts, teachers, historians, economists, psychologists, and the best and brightest business minds to solve its challenges. This is your time to lead the future. Western New England is the right place to start.

We have the programs and internship opportunities that give you the in-demand skills and knowledge employers want now. Take a virtual tour of our campus at, <https://www1.wne.edu/become-a-student/visit/virtual-tour.cfm>, to see our picture-perfect New England setting where quaint brick architecture houses modern learning facilities.

Schedule

	Thursday 6/23/22	Friday 6/24/22
12:00-12:30pm	Orientation Admissions Lori J. Berg Paula Geddis	DNA Extraction Dr. Shannon Kinney
12:30-1:00pm	Admissions Q&A with current students Lori J. Berg Paula Geddis	DNA Extraction Dr. Shannon Kinney
1:00-2:00pm	Compounding Lab Hand sanitizer, Lip balm Dr. Gilzad-Kohan, Dr. Mulla Ms. Kat	Medicinal Chemistry Lab Chromatography experiment M&Ms, cups, chrom paper, tooth picks, pencil, rubber band, ruler) Dr. Ghoneim, Dr. Mizuno
2:00-2:30pm	Natural Medicines Dr. Anthony Zimmermann, Dr. Diptiman Bose	Occupational Therapy Dr. Erin Wells
2:30-3:30pm	Pharmacy Games Rx Fill process (skittles, dram) Pharmacy scavenger hunt Dr. Arin Whitman, Dr. Marissa Ostroff, Dr. Mary A. McCormick	Pharmacy and OT Career Paths Healthcare Careers Presentation

General Policies and Procedures

1. Exercise good judgement.
2. Follow the safety instructions provided by the group leader.
3. Be aware of where the exits, fire extinguisher, and first aid supplies are located in the your home.
4. Avoid leaving the work area when in the middle of an experiment.
5. Organize and clean after finishing the experiment.
6. NO eating or drinking while working on experiments.
7. Participants should be fully clothed and on camera for the entire program.
8. For experiments, closed toed footwear must be worn during laboratories; open-toed shoes and bare feet are not acceptable nor permitted.
9. Communicate positively and constructively.
10. Participate in team activities and do your share of the work.
11. Let an instructor or group leader know immediately if you are having difficulties or allergies to components of the experiment.
12. To ensure that an environment conducive to teaching and learning is established, the University expects that individuals within its walls will treat each other with courtesy and respect.
13. When differences arise, these should be resolved in a civil manner.
14. Disruptive behavior, such as talking or ringing cell phones, as well as disrespectful, hostile, abusive and/or threatening behavior or language will not be tolerated.
15. Learners are expected to be on time for class. If late, a learner shall enter from the the room on mute, without creating a distraction.

Safety Guidelines

1. Leave all personal items (coats, non-essential books, etc.) in an unused portion of your home.
2. Long hair, loose jewelry, and loose/baggy clothing should be secured.
3. **CLOSED TOED SHOES AND LONG PANTS** are required. Tank tops, shorts, and skirts are not allowed.
4. **Eating, drinking, or smoking is not allowed.** No food or beverages are allowed to be brought into the experiment area.
5. Be sure to wash hands when entering and leaving the experiment.
6. At the beginning and end of each laboratory session, wipe counter tops with a disinfectant solution.
7. Keep your workspace clean at all times.
8. Notify instructor, parent or guardian of broken glassware so they can talk you through proper disposal.
9. On completion of the laboratory session, place all materials in the designated disposal areas.
10. Always wear safety glasses with side shields in the laboratory when chemicals are present or actively being used. Safety glasses must be worn over prescription eyeglasses.
11. Contact an instructor before leaving the laboratory.
12. **ALL ACCIDENTS IN THE LABORATORY MUST BE IMMEDIATELY REPORTED TO THE INSTRUCTOR.**

The specific precautions outlined above **MUST** be observed at all times when in the laboratory.

By signing this document, I confirm I have read and understand the laboratory safety principles summarized on this page and I recognize my responsibility to abide by these principles while in the lab.

Date: _____

Printed Name: _____

Signature: _____

Laboratory Protocols

Introduction to Compounding

What is compounding?

The art and science of preparing individualized medications for patients that contain specific ingredients that are to be mixed together in the exact strength and dosage that is required and prescribed by a doctor.

Reading a Prescription

The image shows a sample prescription form with handwritten entries. Labels with lines pointing to specific fields are as follows:

- Prescriber information:** Jacquelyn Hyde, MD
123 Upendown Rd.
Nowhere, NC 27000
- Drug Enforcement Agency (DEA) registration number of prescriber:** DEA# AH0079411
- Name and address of patient:** NAME: Dan D. Lyon
ADDRESS: 123 Jackla Lane
- Date:** DATE: 2/18/08
- Inscription:** R_x
Acetaminophen 325 mg
Alcohol USP 15 ml
Cherry Syrup q.s. 90 ml
- Signa:** SIG: 1/2 tsp. q4-6h prn
- Refill instructions:** REFILLS: 1
- Signature of prescriber:** Jacquelyn Hyde
- DAW:** PRODUCT SELECTION PERMITTED
DISPENSE AS WRITTEN

Important Steps for Preparing a Compound

- Read over the prescription and make sure it makes sense.
- Calculate the amount of ingredients you need.
- Collect all of your ingredients and supplies.
- Determine the order of how you will make your compound.
- Make sure your final product looks like it should.
- Package the compound in an appropriate container.
- Put on appropriate labels with patient information as well as extra warnings for the patient (such as 'shake well' or 'keep refrigerated').

Basic Lip Balm

Ingredients:

- 5 g (1 teaspoon) Beeswax
- 10 g (2 teaspoons) Coconut Oil
- 5 drops Vitamin E Oil (30,000 IU)
- Two ½ ounce jars



Instructions:

1. Melt the beeswax and coconut oil in a 50 mL beaker
2. Once melted, add 5 drops of Vitamin E oil
3. Let it cool down to room temperature
4. Add a flavor such as cherry or peppermint oil
5. Place in two ½ ounce jars and let it cool further
6. Use on your lips several times a day!

Hand Sanitizer

Ingredients:

- 50 mL (1.5 ounces) Alcohol, Isopropyl 70%
- 2.5 mL (1/2 teaspoon) Glycerin
- 2.5 mL (1/2 teaspoon) Aloe Vera Juice
- 10 drops Orange Essential Oil
- 1 Spray Bottle (2 ounces)

Instructions:

Mix all the above ingredients and transfer the mixture to a spray bottle. Use to sanitize hands when needed.



Genetics and Pharmacy: What's the Connection?

A person's genes can affect how one responds to the use of drugs.

Bitter Taste Test



****PLEASE NOTE:** If you have a **concern** about a **possible allergic reaction** to one of the chemicals used in the test strips, please **contact the instructor** and do not perform the activity.**

Background:

In humans, and many other species, certain chemicals in food stimulate taste cells on our tongue, which in turn send messages to a specific region of our brain. Your brain then interprets what these messages mean and determines the appropriate response (continue chewing OR spit it out). Chemoreceptors are a type of protein found in taste cells that detect the specific chemicals in our food. In humans, there are five different classes of these chemoreceptors: sour, salty, sweet, umami, and bitter. All 5 categories of receptors are found somewhere on the tongue. It was proven that there is only one type of receptor for sweet, sour, and umami but at least 30 different receptors for bitter explaining why individuals perceive foods differently.

One such bitter receptor is encoded by the gene TAS2R38. There are several known alleles (different forms) for the TAS2R38 gene, but 2 of these are most frequent in the human population outside of Africa. Considering that each person has two copies of any given gene, there are three phenotypes that are generally expressed. These include those who perceive PTC as extremely bitter, those who perceive it as bitter, and those who do not find PTC bitter. Generally, students who find PTC paper very bitter are considered tasters, while students who don't taste anything are considered non-tasters.

One study found people who can taste PTC are more likely to be non-smokers and to not be in the habit of drinking coffee or tea. People who are super-tasters are more likely to find green vegetables bitter. You will now determine if you have at least one copy of the allele that codes for a receptor that perceives PTC as bitter.

Materials:

- PTC (phenylthiocarbamide) taste test paper

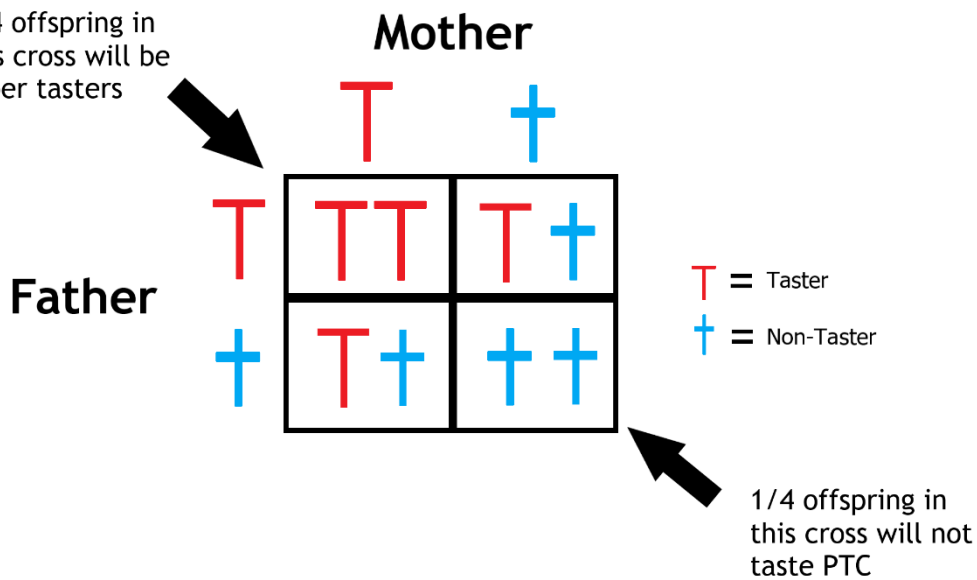
PTC taste test paper

Instructions:

- Remove a strip of PTC taste test paper from the vial
- Stick out your tongue, and place the strip on your tongue
- There are 2 basic results – taster or non-taster

Cross Between Heterozygous Parents

1/4 offspring in this cross will be super tasters





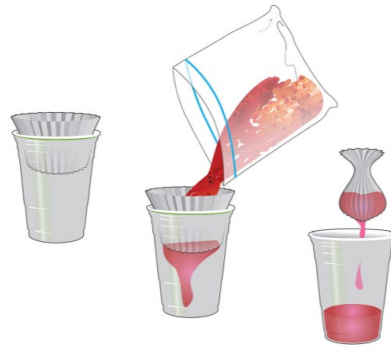
How to Extract DNA from a Strawberry

Supplies:

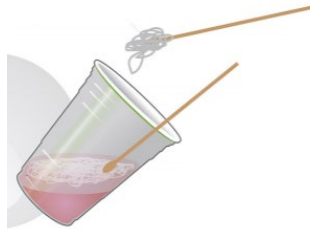
- 1 Re-sealable plastic bag
- 2 Strawberries (fresh or frozen)
- 2 teaspoons Dish detergent
- ½ cup Water
- 1 teaspoon salt
- 2 Plastic cups
- 1 Coffee filter
- ½ cup COLD Rubbing Alcohol
- 1 Coffee Stirrer

Procedure:

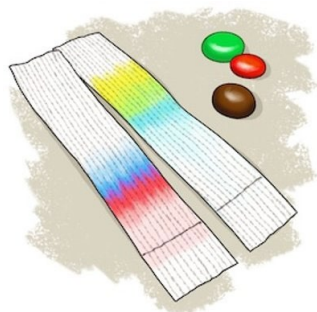
1. Pull off any green leaves on the strawberry that have not been removed yet
2. Put the strawberries into the plastic bag, seal it and gently smash it for about 2 minutes. Completely crush the strawberries. This starts to break open the cells and release the DNA.
3. In a plastic cup, make your DNA extraction liquid: mix together 2 teaspoons of detergent, 1 teaspoon of salt, and ½ cup of water.
4. Add 2 teaspoons of the DNA extraction liquid into the bag with the smashed strawberries. This will further break open the cells.
5. Reseal the bag and gently smash for another minute (avoid making too many soap bubbles).
6. Place the coffee filter inside the other plastic cup
7. Open the bag and pour the strawberry liquid into the filter. You can twist the filter just above the liquid and gently squeeze the remaining liquid into the cup.



8. Next, pour down the side of the cup an equal amount of cold rubbing alcohol, as there is strawberry liquid. Do not mix or stir. You have just isolated the DNA from the rest of the material contained in the cells of the strawberry.
9. Within a few seconds, watch for the development of a white cloudy substance (DNA) in the top layer above the strawberry extract layer.
10. Tilt the cup and pick up the DNA using a plastic coffee stirrer or wooden stick to visualize.



Chromatography of M&M Candies



BACKGROUND

What is chromatography? A stationary phase usually a solid, thick liquid, or bonded coating that stays fixed in one place, and a mobile phase or eluent (usually a liquid or gas) that moves through it or across it.

The chromatography technique that you will be using in this experiment is *paper chromatography*.

What is paper chromatography? A technique for separating dissolved chemical substances by taking advantage of their different rates of migration across sheets of paper.

You will be testing the colors of the M&Ms, referring to the FD&C Dyes.

What is FD&C Dyes? FD&C stands for Food, Drugs & Cosmetics, which represents the colors that are FDA approved for use in foods, drugs and cosmetics.

PURPOSE

Establish the chromatographic behavior of the red, blue, and yellow food dyes that are used to color M&M candies using paper chromatography. Then establish whether these dyes or others are used to create the other colored M&Ms candies such as orange, green, brown, etc.

INTRODUCTION

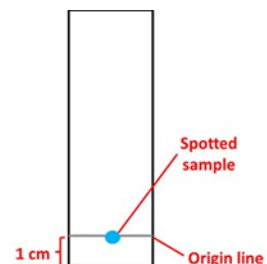
FD&C Dyes yellow #5, red #40, and blue #1 are approved by the FDA for use in a wide variety of food and medicine. These three dyes are used to color the yellow, red, and blue M&Ms.

However, M&Ms also come in other colors such as green, brown, and orange.

Chromatographic analysis of the dyes present in the various colored M&M candies will answer these questions.

PROCEDURE

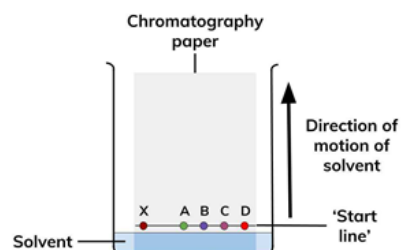
1. Obtain a piece of chromatography paper (7 x 11 cm) and measure 1 cm from the bottom of the 'short' side. Draw a straight line across using a ruler and a pencil.
2. Along your pencil line, make five small equally spaced pencil marks.



3. Add M&M candies to small test tubes (one per tube) – be sure to use a red, a blue, and a yellow M&M in addition to two other colored candies (5 tubes total). Add 1-2 drops of water to each tube.
4. Dip a toothpick into the first colored solution and apply a drop of the dye solution to one of the marks on your chromatography paper. Be sure to make a SMALL dot (as small as possible). Dip a clean toothpick into the second colored solution and repeat as indicated above applying this second sample to the second mark on the paper. Using a clean toothpick each time, repeat this procedure with the remaining three M&M dye solutions. When you have finished your first round of 'spotting' you should have 5 separate spots on your pencil line. Allow the spots to dry (wave the paper gently to speed up the drying) and then apply a second drop of each of the SAME solutions to their SAME spots on the paper. Dry the spots thoroughly and then repeat spotting the samples for a third time. Dry the spots thoroughly. When you have finished your spotting, you should have 5 small highly colored spots on your pencil line.
5. Prepare your chromatography development chamber by adding approximately 30 mL of water to an empty beaker.
6. Carefully clamp the chromatography paper strip onto a glass stirring rod using the provided clamp.

7. Place the paper into the chamber laying the attached stirring rod across the top of the beaker to support the paper.

NOTE: THE BOTTOM AND SIDES OF PAPER SHOULD NOT TOUCH THE BEAKER AND THE SAMPLE SPOTS MUST BE ABOVE THE LEVEL OF THE DEVELOPING SOLVENT.



8. Allow the chromatogram to develop until the solvent has traveled to about 2-3 cm from the top of the chromatography strip. Remove the paper and using a pencil, draw a line across the paper to mark the distance traveled by the solvent.
9. Outline all of the spots in pencil and record the observed spot colors. Note the position of yellow #1 (from the yellow M&M), red #40 (red M&M), and blue #1 (blue

M&M). Inspect the chromatogram lanes of the other M&Ms and note if the positions of any yellow, red, or blue spots correspond to those of the standards (red, yellow, and/or blue).

- Record your observations below. Indicate with a 'YES' or a 'NO' as to whether you could confirm the presence of yellow #5, red #40, and/or blue #1 in the candy samples. If other spots (other dyes) are present indicate their colors and in which colored candies they were detected.

M&M CANDY ANALYSIS DATA SHEET

M&M COLOR	YELLOW#1	RED #40	BLUE #1	OTHER DYES?
-----------	----------	---------	---------	-------------

ADDITIONAL COMMENTS / OBSERVATIONS:



Clinical Skills Instructions

GET A CLUE!

Gain confidence

Evaluate and assess

Try to be verbal

Apply knowledge

Clinical skills and thinking

Laboratory Value assessment

Utilize all resources

Exert yourself through participation

Addressing and Assessing your Patient!

Sometimes it may be hard to find out why your patient is experiencing discomfort and it may be difficult for them to explain everything that's going on so following these quick steps can help to paint a full picture of the patient's illness: QUEST SCHOLAR-MAC

Quickly and Accurately Assess the Patient

Establish that the patient is an appropriate self-care candidate

Suggest appropriate self-care strategies

Talk with the patient

Symptoms:

What are the main symptoms of the problem?

Characteristics

What are the symptoms of the problem like?

History

What have you done so far to treat the problem? Has this problem happened before?

Onset

When did this particular problem start?

Location

Where are you feeling this problem?

Aggravating factors:

What makes the problem worse?

Remitting factors:

What makes this problem better?

Medications:

Is the patient taking any prescription and non-prescription medications?

Allergies:

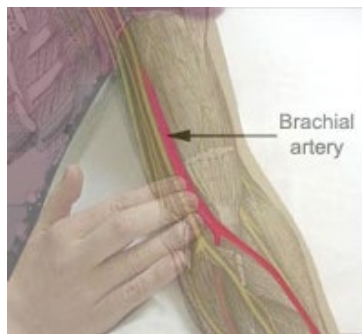
Is the patient allergic to any medications and if so what kind of reaction do they have when they take it?

Conditions: Does the patient have any other medical conditions?

Steps for Taking Blood Pressure in Adults

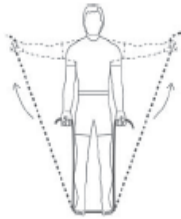


1. The patient should be seated with his/her arm bared, supported on a smooth surface and positioned at heart level. The patient should be relaxed and should not have smoked or ingested caffeine within 30 minutes prior to measurement. The measurement should begin after the patient has been at rest for 5 minutes.
2. Locate the brachial artery along the upper inner arm by feeling for the brachial pulse.



3. Measure the arm circumference and select the appropriate cuff size. Wrap the deflated cuff around the upper arm with the arrow on the cuff pointing to the area where the brachial pulse was felt.
4. Determine the level for maximal inflation by observing the pressure at which the radial pulse is no longer felt as the cuff is rapidly inflated and add 30 mm Hg. Then rapidly and steadily deflate the cuff. Wait at least 15 – 30 seconds before re-inflating.
5. Position the head of the stethoscope over the brachial artery below the cuff. The stethoscope should be applied with light pressure, ensuring skin contact at all points. Use of the bell head may enhance sound detection.
6. Rapidly and steadily inflate the cuff
7. Release the air in the cuff so that the pressure falls at a rate of 2 to 3 mm per second.

8. Listen and note the systolic pressure at the onset of at least two consecutive beats. Blood pressure levels should be recorded in even numbers and read to the nearest 2 mm Hg mark on the manometer.
9. Listen and note the diastolic pressure at the point you can no longer hear the sounds of beating. Listen for 10 to 20 mm Hg below the last sound heard to confirm disappearance. Then, deflate the cuff and remove it from the patients arm completely.
10. Announce/record the blood pressure reading.



Lateral Raise

- Stand on elastic.
- Hold elastic in both hands.
- Begin with arms at sides.
- Position palms forward.
- Keep elbows straight and lift arms to shoulder level.
- Slowly lower and repeat.

Front Raise*

- Secure elastic at waist level as shown.
- Grasp elastic and pull arm backwards keeping elbow straight.
- Slowly return to start position.



Overhead Press*

- Stand on elastic.
- Grasp elastic in hands, arms at side, elbows bent, as shown.
- Push arms up and overhead.
- Slowly return to start position and repeat.

Shoulder Diagonal D1 Flexion*

- Secure elastic to secure object at floor level.
- Sit or stand, arm at side.
- Grasp elastic in hand, palm forward.
- Lift arm upward and across body to opposite shoulder, bending elbow, ending with palm inward.
- Slowly return to start position and repeat.



**Caution: User must wear suitable eye protection such as safety goggles during this exercise to protect against possibility of eye injury as a result of the band or tube snapping towards the face if grip is lost or if the band or tube breaks.*

Shoulder Diagonal D2 Flexion*

- Attach elastic to secure object at floor level.
- Begin with arm crossed over trunk, holding elastic, palm inward, at opposite hip.
- Raise arm up and diagonally across, ending with palm facing forward.
- Slowly return to start position and repeat.



Shoulder Diagonal D1 Extension*

- Attach elastic to secure object as shown.
- Grasp elastic with hand at opposite shoulder, palm inward.
- Pull arm down and across body, ending in palm outward.
- Slowly return to start position and repeat.



Shoulder Diagonal D2 Extension*

- Attach elastic to secure object above head level.
- Begin with arm up and out from side as shown.
- Grasp elastic, palm forward and pull down and across.
- End with hand at opposite hip, palm inward.
- Slowly return to start position and repeat.



**Caution: User must wear suitable eye protection such as safety goggles during this exercise to protect against possibility of eye injury as a result of the band or tube snapping towards the face if grip is lost or if the band or tube breaks.*

Thera-Putty Exercises

Repeat these exercises _____ times for _____ times a day.

These exercises will strengthen the muscles of your fingers, hand and forearm.

Finger Hook

Make a hook with your fingers as you press into the putty.



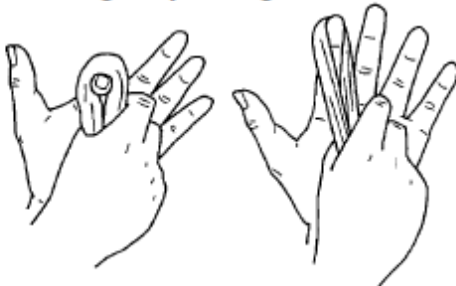
Full Grip

Squeeze your fingers into the putty like your are making a fist.



Finger Extension

Loop the putty over the end of the finger while it is bent. Try to straighten your finger.



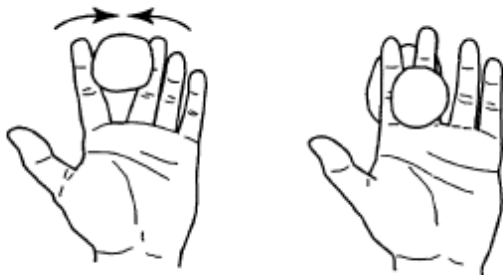
Finger Spread

Spread the putty like a pancake over your fingers and thumb. Try to spread them apart.



Finger Scissor

Place a 1 inch thick piece of putty between each pair of fingers and squeeze together.

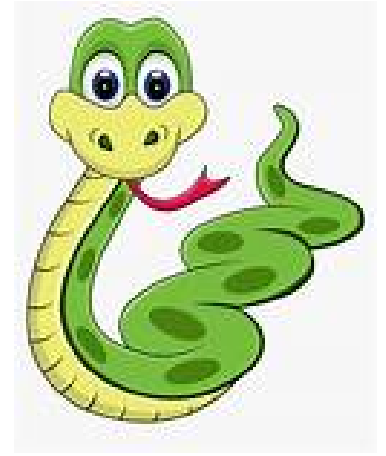


Finger Pinch

Pinch the putty between each finger and the thumb.

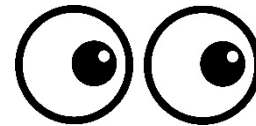


Let's Make A Snake!



Step 1: Roll your putty into a looooooong snake body

Step 2: Rip a small section off the back of the snake's body and roll in into small balls



Step 3: Place them on the snake's head for eyes

Step 4: Rip another small section off and roll it into a small, thin piece

Step 5: Place it near the snake's mouth for a tongue



Step 4: Pinch along the snake's body to add scales



You Did It!

Additional Information

Careers in Pharmacy

Career Pathway	Activities from Summer Camp
<p>Community Pharmacist</p>	<ul style="list-style-type: none"> • Fill prescriptions • Counsel patients about medications and proper use • Answer questions from patients and other healthcare providers
<p>Hospital Pharmacist</p>	<ul style="list-style-type: none"> • Can work to compound medications • Makes sure medication orders are verified • Can specialize in different areas- Emergency, Cancer, General Medicine, Pediatrics, etc.
<p>Ambulatory Care Pharmacist</p>	<ul style="list-style-type: none"> • Uses clinical skills needed to evaluate patients in a clinic setting • Takes blood pressure and evaluates results • Can also specialize in different areas- Diabetes, Asthma, Nutrition, etc.
<p>Pharmaceutics</p>	<ul style="list-style-type: none"> • Development of pharmaceutical products <ul style="list-style-type: none"> ○ basic creams ○ lip balms ○ syrups ○ tablets and capsules • Works for drug companies
<p>Pharmacogenomics and Pharmacogenetics</p>	<ul style="list-style-type: none"> • Perform DNA extractions on Strawberries • Bitter taste test • Studying genes and how drugs impact on the body <ul style="list-style-type: none"> ○ Dominant and recessive genes ○ Some genes can cause drugs to become ineffective

Admissions Information

WNE 0-6 Pharmacy Program (6 years)

Western New England University's Pharmacy program is an ideal place for future pharmacists to excel. Through our 0-6 Doctor of Pharmacy (PharmD) program model, qualifying high school seniors applying to the Pharmacy program are guaranteed a seat in our four-year PharmD program, provided they meet academic milestones during their first two years of preprofessional studies. Qualifying students are eligible to receive a [bachelor's degree in Pharmacy Studies](#) after four years of study and the PharmD degree after six years.



ADMISSIONS CRITERIA FOR THE O-6 PHARMACY PROGRAM

TO BE CONSIDERED FOR ADMISSIONS TO THE O-6 PHARM D PROGRAM, AN APPLICANT MUST;

- SAT: ≥ 1100 (MATH, CRITICAL READING)
- ACT: ≥ 24
- BIOLOGY, CHEMISTRY, US OR AMERICAN HISTORY, 4 YEARS OF MATH UP TO PRE-CALCULUS AND 4 YEARS ENGLISH, PHYSICS ALSO PREFERRED.
- AP CREDITS ACCEPTED DEPENDING ON SCORE AND CLASS. 3+ TEST SCORE ON INDIVIDUAL BASIS. 4 OR 5 NEEDED TO SATISFY ANY SCIENCE REQUIREMENTS WITHIN THE PROGRAM.

Pre-professional Course Requirements

All learners must complete the pre-professional course requirements, earning a grade of ‘C-’ or higher in each course, at an accredited college or university prior to matriculation into the professional PharmD program at the College of Pharmacy and Health Sciences.

Course	Credit Hours (semester)
Science requirements¹	
General biology with lab	8
Human anatomy and physiology with lab	8
General chemistry with lab	8
Organic chemistry with lab	8
Microbiology with lab	3
Physics with lab	4
Math requirements	
Calculus	3
Statistics	3
Social science requirements	
English composition	6
Economics	3
Psychology	3
Social science elective ² OR public/population-based health	3
Total	60

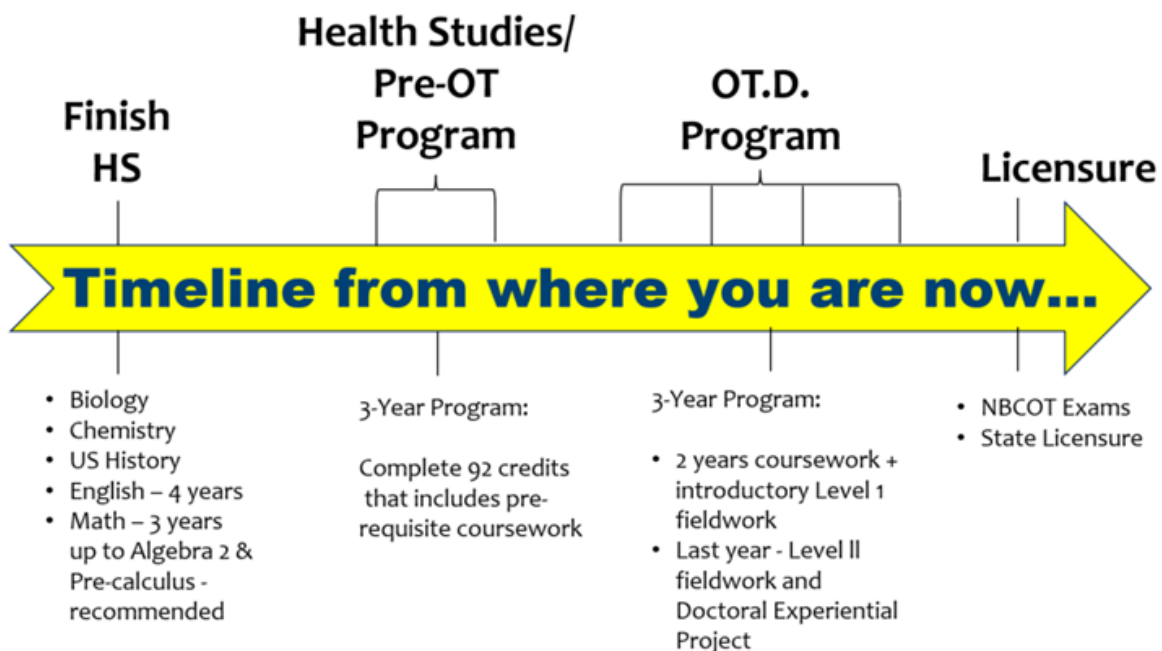
¹ Science Courses must be designated for science majors

² May be satisfied with a course in history, sociology, political science, or law and society

WNE, Occupational Therapy,

3+3 Pre-OT/Health Studies/OTD Program

Two degrees of preparation—in just six years, not seven. That’s the advantage of earning both a BS and an OTD degree jointly at Western New England. You will save time, tuition, and be positioned to command the salary afforded those with the highest practice degree in the field. When you commit as a first-year student to this early admissions program, you’ll spend your first three years in the Health Studies program focusing on prerequisite OT coursework. After successful completion of five semesters, you will apply to the OTD program during the spring of your junior year. Those accepted into the program will transition into the OTD program at the College of Pharmacy and Health Sciences for their fourth year, traditionally the senior year of study at WNE. After four years, you will join with your undergraduate classmates in receiving your Bachelor of Science degree. Then (with the option to continue to live on campus) it is on to the final two years of doctoral study in the OTD program (including summers) to prepare you for licensure and to work in practice, administration of a department, or academic work in higher education.



Admissions Criteria for the Health Studies/Pre-OT Program

To be considered for admissions to the Pre-OT program, an applicant must;

- SAT: ≥ 1100 (math, critical reading)
- ACT: ≥ 24
- Biology, Chemistry, US or American History, 3 years Math up to Algebra 2 (Pre-calculus is recommended) and 4 years English, Physics also preferred.
- AP credits accepted depending on score. 3+ test score on individual basis. 4 or 5 needed to satisfy any science requirements within the program.

Health Services

The Center for the Sciences and Pharmacy, Suite 235

413-782-1211

On WNE phones dial 1211

Public Safety on WNE Campus

For Emergencies: 413-782-1411 | For Non-Emergencies: 413-782-1300

On WNE phones dial 1207 or email: police@wne.edu

Brittany Adams

Interim Program Director and Chair

Clinical Assistant Professor of

Occupational Therapy

Blake Law Center Room 230G

413-782-1443

brittany.adams@wne.edu

David Baker

Professor of Pharmacy Administration

CSP 327

413-796-2412

dmbaker@wne.edu

Diptiman Bose

Associate Professor of Pharmacology

CSP 319

413-796-2442

Diptiman.bose@wne.edu

Kam Capoccia

Clinical Professor of Community Care Practice

CSP 424

413-796-2418

kcapoccia@wne.edu

Seth Housman

Clinical Associate Professor of

Infectious Diseases

CSP 428

413-796-2426

seth.housman@wne.edu

Daniel Kennedy

Chair and Professor of Pharmacology

CSP 320

413-796-2413

dkennedy@wne.edu

Shannon Kinney

Associate Professor of Pharmacology and

Genetics

CSP 322

413-796-2439

shannon.kinney@wne.edu

Hamed Gilzad Kohan

Associate Professor of Pharmaceutics

CSP 330

413-796-2455

hamed.gilzadkohan@wne.edu

Melissa Mattison

Clinical Associate Professor
Executive Director of Professional Affairs

CSP 418

413-796-2428

mmattison@wne.edu

Ronald Raschilla

Simulation Technology Manager

CSP 120

413-796-2423

ronaldraschilla@wne.edu

Raymond J. Ostendorf

Associate Professor of Education

Emerson 108

413-796-2040

Raymond.ostendorf@wne.edu

Marissa Ostroff

Clinical Associate Professor of
Ambulatory Care

CSP 421

413-796-2453

marissa.ostroff@wne.edu

Anthony Zimmermann

Clinical Professor of Therapeutics

CSP 429

413-796-2035

azimmermann@wne.edu

Erin Wells

Clinical Assistant Professor of Occupational
Therapy

BLC 230G

413-796-2110

erin.wells@wne.edu

Arin Whitman

Clinical Associate Professor of Oncology

CSP 423

413-796-2452

arin.whitman@wne.edu

References

1. Patel P. Lab Goggles [image on the internet]. RedNewswire; 2018 [cited 2018 April 9]. Available: <https://www.rednewswire.com/global-safety-goggles-market-2018-overview-consumption-supply-demand-insights/>.
2. Eye Wash [image on the internet]. Hype.newsh; 2018 [cited 2018 April 9]. Available: <https://hype.news/gmail/global-and-north-america-eye-wash-station-market-shares-trends-and-company-analysis-by-2018-2023/s-1746294331>.
3. First Aid Kit [image on the internet]. American Red Cross; 2018 [cited 2018 April 9]. Available: <https://www.redcross.org/store/deluxe-family-first-aid-kit/321275.html>.
4. Speakman Traditional Series Combination Emergency Shower & Eye/Face Wash [image on the internet]. Speakman Company; 2017 [cited 2018 April 9]. Available: <https://speakman.com/speakman-traditional-series-combination-emergency-shower-eye-face-wash-1>.
5. Fire Blanket Cabinet with Blanket [image on the internet]. Windy City Cabinet; 2017 [cited 2018 April 9]. Available: http://windycitycabinet.com/Products/safety-products/fire_blanket_cabinet.
6. Kiddie Carbon Dioxide (CO₂) Extinguisher [image on the internet]. Lowe's; 2018. [cited 2018 April 9]. Available: <https://www.lowes.com/pd/Kidde-Carbon-Dioxide-CO2-Extinguisher-5-Lb/1111591>.
7. SKS Bottle & Packaging. [Image on the Internet]. Watervliet: 2018 [2018 April 9]. Available from: https://www.sks-bottle.com/Lip_Balm/LipBalmJars4.html.
8. Template Monster [image on the internet]. [Figure], Strawberry. [cited 2018 April 9]. Available from: <https://www.templatemonster.com/demo/harvest-agriculture-farming-responsive-joomla-template-66783.html>
9. Uline [image on the internet]. [Figure], Hand sanitizer. [cited 2018 April 9]. Available from: https://www.uline.com/BL_544/Hand-Sanitizer
10. CanStock Photo [image on the internet]. [Figure], Face cream. [cited 2018 April 9]. Available from: <https://www.canstockphoto.com/cartoon-face-cream-34842311.html>