

Spring 2023 MakerFest Exhibitor Program

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TABLE #: AMST 1-1

The Climatopia Game: Learning How to Build Resilient Communities

Course: AMST 460H

Makers: Sydney Van Buren, Dr. Rachel Willis, Dashanese Carpio Ventura, Gabrielle Atkinson, Julia Barnett, Jason Chay, Tikiyah Davis, Shaurik Deshpande, Tiana Dinham, Christopher Harper, Julie Henthorn, Nathaniel Kimberly, Miles Lindstrom, Zizhou Lu, Daniel Nance

CLIMATOPIA: THE GAME is an innovative fabric game and resource backpack for people aged 10-100. Developed with BeAM and APPLES support, the goal of CLIMATOPIA is to share strategies and resources to help plan for, face, and recover from climate change-enhanced water disasters. These disasters include extreme heat, snowstorms, floods, hurricanes, disease, and wildfires. Students have iteratively designed the website, game rules and strategies, board and bag illustrations, and game pieces. Using BeAM training and facilities, they have collaboratively created all the game pieces, board, and curated resource links to produce the fifth iteration of the game for distribution to non-profit environmental centers in North Carolina.

TABLE #: AMST 1-1

CLIMATOPIA Website

Course: AMST 460H

Makers: Julie Henthorn, Daniel Nance, Miles Lindstrom, and Jason Chay

The website committee curated and designed webpages in WordPress that they later published on CLIMATOPIA's official website. Information on the website includes biographies of all individuals who have contributed to the game, up-to-date resource links about climate change impacts on vulnerable communities, DIY-templates for making the game at home, and the overall process of the game. Their main goal was to increase accessibility of the website and game to advocate for climate-resilient resources.

CLIMATOPIA Card Content, Game Design, and Textiles

Course: AMST 460H

Makers: print cards from the website

Using InDesign, Canva, and help from Richard Aillen Taylor, the Card Content committee designed all the playing cards, including the character, info-quiz, and resource cards. The character cards describe the powers held by the game pieces, which represent federal agencies and non-profit organizations that help with disaster recovery. The info-quiz cards contain easy and hard questions relating to climate disasters and recovery, which give players an opportunity to move along the board. Lastly, the resource cards provide tools and strategies to prepare and protect against climate disasters.

The Game Design committee coordinated all game design elements using Adobe Illustrator. They also assisted in ordering custom fabric designs for printing by Spoonflower. This source enables individuals to order one yard of the fabric, sew the game and resource bags, print cards from the website, and use recycled items for markers to create their own Climatopia game.

The textiles committee learned to sew with prototype material designs. Once comfortable with the machine, they later developed modifications to improve the functionality and efficiency of production. Materials sewn included a double-sided fabric board game, a backpack, and a small bag. The board game displays links and a website GRC code to get more recovery resources. The front side of the backpack displays the logo, details, and credits. The back side contains the game rules. Finally, the small bag displays a table of the game pieces, as well as the game's website. The small bag was designed to hold all game cards and parts and provide a safe way to transport the game.

CLIMATOPIA Community Liaisons and Social Media

Course: AMST 460H

Makers: Gabrielle Atkinson, Karina Samuels, Dashanese Carpio Ventura, and Tikiyah Davis

The Community Liaison and Social Media committee oversaw all communication to outside partners for playing and distributing the game. They also created an Instagram page with pictures and videos of the design process and community excursions. After attending the UNC Clean Tech Summit 2023, they reached out to all organizations and teachers who showed interest in the game. Additionally, under their leadership, Climatopia presented the game at Kidzu on the 13th-15th of April.

TABLE #: AMST 1-1

CLIMATOPIA Laser Wood and Biodegradable Plastic Piece Design

Course: AMST 460H

Makers: Christopher Harper, Nathaniel Kimberly, Pranav Pinapala

The Laser Wood and Biodegradable Plastics Committee worked on improving the previous design of game pieces, improving production efficiency, and finishing of parts. They produced an environmentally friendly wooden set of pieces on the laser cutter for playing the game. Additionally, they produced a set of biodegradable plastic pieces. Therefore, those playing the game can choose between wood and plastic. Both sets will be included in the game bag.

TABLE #: AMST 1-1

CLIMATOPIA executive committee

Course: AMST 460H

Makers: Sydney Van Buren, Dashanese Carpio Ventura, and Dr. Rachel Willis

The Spring 2023 cohort operated under the leadership of the Chief Executive Officer, Dr. Rachel Willis, the Chief Operating Officer, Sydney Van Buren, and the Chief Liaison Officer, Dashanese Carpio Ventura. Dr. Rachel Willis oversaw all operations and finalized all executive decisions. Sydney Van Buren worked on daily class emails and general class communication, organizational material, google drive, and other logistics. Dashanese acted as the spokesperson for all working members and met separately with committees to receive updates.

TABLE #: AMST 1-2

Changing Environments: Using BeAM Resources for Dynamic Project Designs

Course: AMST 460H

Makers: Rachel Willis

In 2020 just as the pandemic pivoted the world to remote and later hybrid learning, I became part of the MakerSpace Faculty Learning Community. Interested in developing a resilience climate science fabric game, I have led five cohorts of more than 60 students via two distinct classes and several independent studies to produce a successful children's game: CLIMATOPIA. MakerSpace tools and staff support will be documented along with exhibiting evolving prototypes using numerous BeAM tools (sewing, 3D printing, laser cutting, vinyl cutting, and BeAM design programs) to demonstrate the adaptability of projects to changing and challenging environments and a diversity of student skills, majors, and interests.

TABLE #: APPL 1-1

Light Up Can Crusher

Course: APPL 110

Makers: Chris Kaufman, Rishi Ranabothu, Yashu Singhai

This project is a mechanical can crusher, designed to minimize waste produced by types of aluminum cans and plastic bottles. This is achieved by reducing their size, hence the crusher title. We plan to use a variety of materials such as plywood, acrylic, 3D printer, reusing old material, and hardware. We hope to have a greater understanding of the design process by the end of this project along with collaboration and team planning.

TABLE #: APPL 1-2

Computer Vision Clock

Course: APPL 110

Makers: William Astilla, Andrew Lauer, Srikar Pasamarthy, Beckett Granelli

To construct our clock we will use a 3D printed frame, a raspberry pi, and a Camera. We hope to learn about utilizing computer vision to construct an interesting hardware device. As programmers we are hoping to translate our software skills into the world of hardware and making.

TABLE #: APPL 1-3

The Amazing LitCase: The light-up phone case

Course: APPL 110

Makers: Henry Farnham, Nick Almy, Nabeel Rahman

The LitCase is a design first iPhone case that contains an array of LED Lights and is perfect for a variety of needs: better lighting than traditional flash and better coverage than the average phone flashlight! LitCase is intended for young, trendy, iPhone users in the market for an amazing and fashionable case. This project will utilize electronics for the lighting system, 3D printing for the body of the phone case, and vinyl cutting the light cover, as well as additional design elements on the case. Coming to retailers near you!

TABLE #: APPL 1-4

Traffic Jam Elevator Car

Course: APPL 110

Makers: Edward Guo, Zhuohao Zeng, Hengyi Liu

Our Traffic Jam Elevator Car is an innovative solution designed to combat traffic congestion by allowing cars to safely elevate and pass over other vehicles. We chose this project to address the growing issue of traffic jams in urban areas. Utilizing materials such as wood board, gears, screws and nuts, we created a low fidelity prototype to test our concept. Through this project, we learned about mechanical stability, sensor integration, and the importance of aesthetics. In the next iteration, we will improve the lifting mechanism and streamline the car's design, making it a viable, user-friendly solution for congested roads.

TABLE #: APPL 1-5

CozyCorner Lap Desk

Course: APPL 110

Makers: Virginie Ruest, Graham Phillips, Jack Goldsmith

We wanted to create a device that could be easily stored and used by people working from home or on the go. Our device provides users with a flat, adjustable surface that they can use to complete their tasks from the comfort of their chair. We will be using hinges, nuts and bolts, wood glue, vinyl cut dry erase material, and 3D printed holding structures. I learned that it is easier to visualize things through elementary prototyping rather than sketching. Our next iteration would include additional padding and finished wood.

TABLE #: APPL 1-6

Shelfable (Convertible table to shelf)

Course: APPL 110

Makers: Cassandra Meitzler, Stefania Chiang, Harin Youn

This is a convertible shelf to table designed to be strong, compact, and aesthetic for small spaces. By simply rotating the shelves, this design easily converts to a table. The Shelfable

TABLE #: APPL 1-7

Office Focus Balance Beam

Course: APPL 110

Makers: Pengyun Zhang, Jiangshan Ni, Danny Wang

My make the project to help those people who can not focus on their job when they are working. In order to use the light for work they have to put the phone on the beam which the light can be raised up for lighting. We use 3d print for the phone holder , laser cut for the frame work and Vinyl for DIY. We use wood and 3d print material.

TABLE #: APPL 1-8

Cross the Ocean Board Game

Course: APPL 110

Makers: Manasa Tandri, Kelly Ong, Sarayu Yenumula

This project is a board game based off the children's game cross the ocean. We made this board game because we wanted to make something fun that would showcase many different design elements. The project utilizes a laser cut board, 3D printed game pieces, and vinyl cut design. The game is fairly simple to play, with a focus on getting from one side to the other of the board. There are various 3D printed obstacles, including sharks and seaweed. For future improvements, we would probably include some sort of laser cut wooden box for the game and game pieces to make it more functional to store.

TABLE #: APPL 1-9

3D-Printed Education Globe

Course: APPL 110

Makers: Aiqi Sun, Meagan Howell, Cecilia Rasco, Dena El Rantissi

This is an education globe intended for elementary-grade students between the ages of 5 and 10 to aid in learning global geography. The globe will be 3D printed with outlines of the seven continents printed on vinyl-cut stickers and stuck in their geographically correct location. What's more, it will be a 3D puzzle: each continent is a puzzle piece (that can be removed from the globe), and young students can learn the relative location of the continents by doing the puzzle. We put the globe on an axis/pedestal (also 3D printed) so the user can rotate it as desired. We also use laser cutting to make decorations. Finally, we're trying to design a circuit with a motor so the globe can spin on itself without human force.

TABLE #: APPL 1-10

Box Styled WASD Controller

Course: APPL 110

Makers: Daniel Islas, Ian Forlemu

We chose to make it to allow those used to a WASD format to use a box styled controller. It will be made with acrylic and cherry switches. We learned how to use solder and wire contacts together. The next iteration will be cleaner and have a more ergonomic design.

TABLE #: APPL 1-11

Table Arm Desk Organizer for Wheelchairs

Course: APPL 110

Makers: Alex Gertz, Andrew Lam, Dhruthi Yajaman

Our project is to create a wheelchair attachment desk that aims to organize the desk with different storage components. This desk will provide an efficient and accessible solution for wheelchair users to keep their belongings organized and within reach while they work or study. The desk will feature storage compartments for items such as phones, pencils, and beverages, and will be easy to install and remove from a standard wheelchair

TABLE #: APPL 1-12

Cosmetic Caddy

Course: APPL 110

Makers: Kylie Puett and Adolfo Alvarez

This product is intended to be for cosmetologists as an accessible tool to use when they travel to events such as weddings. It rotates and contains dividers that hold any materials the cosmetologist may need and includes a vanity mirror on the top to ensure good lighting for doing makeup.

TABLE #: APPL 1-13

Pillow Now!

Course: APPL 110

Makers: Shahd Elnoush, Hannah Cooper, Valeria Rico, Jingwen Wu

Our device allows you to flip this small desk into a pillow for a soft cushion immediately. Its ability to be compactable makes it that much for convient for college students who constantly take power naps. Although we are targeting students, people of all ages can use this anywhere they please!

TABLE #: APPL 1-14

The Luminova

Course: APPL 110

Makers: Daisy Azagba, Michael Cotton, Margaret Ambrose

The Luminova is a rotating night light made from a repurposed filament spool. It required us to use electronics, the laser cutter, and textiles.

TABLE #: APPL 1-15

Competitive Chess Board with Timer

Course: APPL 110

Makers: John Albright, Ashton Hernandez, Tate Smith, Evan Friday

We chose to make a chess board with a built-in timer for competitive chess. The board includes two timers that count down until one of the players runs out of time or wins. We used the laser cutter and plywood to form the box and basket that holds the chess pieces. The 3D printer was used to print both the latch on the board and the chess pieces. The vinyl cutter was used for the design and application of the chess tiles. Electronics/an Arduino board combined with an LED screen was used for timer display and functionality.

TABLE #: APPL 1-16

A.M Reveal Turntable Beauty Tray

Course: APPL 110

Makers: Munachukwumso Uyanwune

A.M REVEAL is cosmetic turntable tray is a revolving platform designed to hold various cosmetic items such as makeup, skincare, and other beauty products. The tray typically consists of a circular base that rotates on a central axis, allowing easy access to all the items stored on it.

The tray is made out of wood, acrylic, and flexible filaments that make organization much easier and accessible.

The A.M REVEAL's cosmetic turntable tray's intended users are makeup artists or beauty enthusiasts who want to keep their products neatly organized and easily accessible. They can be used on a vanity, countertop, or in a drawer, depending on the size and design of the tray.

TABLE #: APPL 1-17

Light-Up Penguin w/ Cupholder Attached for Bicycle

Course: APPL 110

Makers: Chinmay Singh, Bharat Raghavan, Amy Xu

We decided to go with a cupholder for bicycles, as many riders need a thirst-quenching bottle of water when riding their bikes, yet do not have a cupholder attachment. For aesthetic purposes, we added a cute penguin model that we 3-D printed and vinyl stickers to the design. We have also incorporated an electronics component into our project, with LEDs powered by a 9V battery and a switch to turn them on or off. By completing this project, we learned about the design process and how different steps are taken toward a functioning final product. Our next iteration might include a speaker as well as LEDs powered by an Arduino, and an app to pair to the speaker which a rider may connect their phone to.

TABLE #: APPL 1-18

Cat Study Buddy

Course: APPL 110

Makers: Siddharth Matada, Mac Czyzewski, Samantha Chang

'Intended user is for students who struggles to have motivation to study or complete tasks (procrastinator). We use 3D printer, vinyl cutter, and electronics. The doll cat can be placed on the computer, and the sensor on computer can detect typing movement. If the sensor detects writing movement, the cats eyes will start glowing (looks cute) or the cat will start moving. This way, you are motivated to do work, and people will not bother you if they see the lights glowing. To make the cat look cute, the user will have to write/study.

TABLE #: APPL 1-19

Laundry Folding Device

Course: APPL 110

Makers: Sama Hanafieh, Dan Tsuma, Grace Sosa, Mia Lam

Our product is a multi-functional device that folds clothes. It can be used as an ironing board when flipped around, as well as hung on a door to hang clothing, and can be folded up to be brought during travel. It is targeted for those who travel often or who have limited storage space. Our parts have been created using a 3D printer, laser cutter and a sewing machine.

TABLE #: APPL 1-20

Decorative Plant Holder

Course: APPL 110

Makers: Virginia Llewellyn, Jesse Williams, Daniela Martinez Leal

This is a decorative plant pot that can hold 6 smaller plant pots at its rim. Instead of turning the entire pot to get a look at your plants, the user can spin the pot using a lever. The spinning mechanism uses 3D printed gears and other parts, while the plant pots are laser-cut from acrylic. Decorative designs on the outside of the pots were made with vinyl cutting. Throughout this project, we learned how to coordinate the production of different pieces that will be assembled into a single product. Our next iteration might include a mechanism by which all of the plants can be watered at once!

TABLE #: APPL 1-21

Lock Box Basket for bikes

Course: APPL 110

Makers: Catie Chubb, Sam Hobbs, Charlie Hirsch

Instead of having to wear a backpack during their commute and risk losing their belongings during the journey, our intended user would be able to attach the Lock Box Basket to their bike and have all of their essentials secured during their commute. The basket will feature a padded area for laptops, a secure area for phones, a place for coffee/water bottles and a key hook. Additionally, there will be a hinged top with a lock to secure the top and all belongings inside the Lock Box Basket. The panels will be cut with a laser cutter and the hinges and key hook will be created with a 3D printer.

TABLE #: APPL 1-22

Travel Case for Makeup/Painters materials, mirror/canvas, brushes, etc.

Course: APPL 110

Makers: Anam Parveen, Max Marlow, Ariel Muse, Amber Grant

We chose to make a carry portable case for MUAs (makeup artists) as well as painters and/or drawers. With opening doors to store materials on the side, the center can house a mirror or a canvas for whichever you prefer. With stands on the back, it is adjustable for reaching different angles as you work. The secure walls holding the materials against the opening doors ensure stability and organization to keep everything in place.

TABLE #: APPL 1-23

Modular Herb Garden

Course: APPL 110

Makers: Nicholas Boyer, Kevin Cao, Scott Fleury, Sejun Park

Our project is a low-maintenance expandable modular herb garden that uses laser cutting, 3D printing, vinyl, and electronics in its construction. We enjoy gardening and wanted to bring a modular design to make it easier for those who want to start gardening but may not have the space. Our garden has an elevated base with holders for the herb modules for easy arrangement and seamless design.

TABLE #: APPL 1-24

DoseGuard

Course: APPL 110

Makers: Regan Roakes, Sarah Parker Harris, Kate Stephens, Maggie Rosenblum

We chose to make a spinning pill dispenser because one of our group members takes multiple medications every day and has trouble keeping up with them. So our product is a fun and easy way to remember to take your medication and have a place to store it. We used many products in the Beam Maker Space like laser-cut plywood, 3D Printers, and Vinyl for the Vinyl Cutter. Our group was able to learn about how to efficiently use the Maker Space tools and create prototypes. If we were to make another iteration of our product it would be more simple and more coherent.

TABLE #: APPL 1-25

Artistic Record Player

Course: APPL 110

Makers: Sydney Murray, Stephen Sopp, Molly Bebber

The Artistic Record Player aims to integrate visual art with music, giving the user a visually and auditorily stimulating experience when listening to music. With acrylic engraved art personalized to the user's music taste along with LED lights that follow the beat of the music, the Artistic Record Player is sure to give the user the best musical experience possible.

TABLE #: APPL 1-26

The Individual Study Room

Course: APPL 110

Makers: Muyiwa Folarin, Caleb Cook, Dylan Menante

A private study space made for the modern college student. All you could want in a study room is found here with our individual study room chair. This is a smaller prototype showing the features of a future, full-sized product.

TABLE #: APPL 1-27

Helpful Bed Buddy

Course: APPL 110

Makers: Dika Manne, Evan Flynn, Catharine Yoder

Our group agreed that we hate having to use our hands to hold our phones when we're trying to watch movies and tv shows in bed. To be able to view our entertainment in more comfortable positions, we created the Helpful Bed Buddy to hold the phone in place for us! We made it using a 3D printer, laser cutter, vinyl cutter, fabrics, and a stand mechanism. We learned how much thought and effort must go into creating and building a design!

TABLE #: APPL 1-28

Handheld Balance Maze

Course: APPL 110

Makers: Han Lim, Sylvie Li, Taylor Morris, Francine Wei

Our product is a handheld maze game designed for the purpose of portability and entertainment as a form of enrichment or brain practice. The project will be composed of a laser cut maze, 3D printed clear frame on top to house the LEDs, electrical componen

TABLE #: APPL 1-29

Office Organizer

Course: APPL 110

Makers: Luis Villa, Raymond Prati, Puneet Parameswaran, Gowtham Tharmar

A multifunctional dispenser but for school/office supplies. The different types of technologies that would be incorporated are the 3d Printer, Laser Cutter, and the Vinyl Cutter. With the laser cutter we would make a cylindrical box out of plywood and in there are different sections in it. It spins along a rotational axis. This axis mechanism composes one component. Any type of office desk material would fit inside, to reduce the clutter of what someone might have on their desk. We would use the vinyl cutter to make designs around the cylinder to make it appealing to the eye. We would 3d print a handle on top in order to open it from the top and perhaps carry it. This is our initial idea, we would hope to come up with a more efficient design.

TABLE #: APPL 1-30

Smart Candy Dispenser

Course: APPL 110

Makers: Arjun Pajni, Gabrian Chua, Eastern Zheng

The Rate Limited Candy Dispenser. It would limit your or a child's intake of candy or another small snack by requiring a configurable wait time before getting another, with a maximum of three at once (to be determined). This would be perfect for a parent who wants to limit intake and also have a way to give a reward to his/her child.

TABLE #: APPL 1-31

The Cup Holder Tree

Course: APPL 110

Makers: John Wood, Shaylen Atma, Michael Jones, Wilson Stringer

There's never enough space in your car to hold everything. We decided to use the laser cutter, 3D printer, and vinyl cutter to create a cup holder, phone holder and key holder. Overall, our group learned how to navigate the tools needed to complete the project. Our next iteration may include technology

TABLE #: APPL 1-32

Useless box: A compact entertainment box

Course: APPL 110

Makers: David Villavicencio, Ryder Klein, Dawson Brown, Ruperto Martinez

We decided to make this in order to provide desk users with a small, stylish, and easy-to-use way of entertainment. We used electronics, 3d printing, and vinyl to make the box. We learned different 3d printing techniques, electronic mechanics, and new methods within the product development process. Our next iteration will involve a screen that prints out different messages based on the time the switch is flipped.

TABLE #: APPL 1-33

A useless box that closes itself for entertainment

Course: APPL 110

Makers: Attalia Mcdowell

We decided to make a product that's own simplicity can bring entertainment through a small package. We decided on this idea for a self-closing box by finding that the hidden redundancy is entertaining and provides something to laugh at. We used the 3d printer, electronics, and vinyl cutter for the project. We learned different techniques and ways to utilize the technologies we used, such as how to fit the electronics into a small box. Our next iteration would add somewhat of emotion to the box by varying the way it moves the lever through a different program for the Arduino.

TABLE #: APPL 2-1

Pinball Machine with Sensors

Course: APPL 240

Makers: Claire Friesen & Whitney Roxy Lammers

For the Hidden Sensors Project in APPL 240, we created a table-top pinball machine which incorporates several sensors explored in this class. The pinball cabinet and playfield obstacles were constructed at BeAM using laser to cut plywood and a 3D printer to create plastic parts along with other various hardware. This machine requires several components which collect input signals from numerous sensors in order to gain points. We implemented force sensitive resistors to detect the presence of the ball as it travels through various obstacles and hits targets on the playfield. Additionally, an optical sensor consisting of a phototransistor and infrared LED was included to detect when the ball reaches the exit of the playfield, ending the game. In creating the LabVIEW VI, we incorporated score keeping mechanisms as well as a filter to eliminate excess noise from the impact of the ball which could affect scorekeeping accuracy. The data from the sensors is processed in LabVIEW producing a score which is then displayed on the outer panel in real time.

TABLE #: APPL 2-2

Mood - Wearable Health Tracker

Course: APPL 240

Makers: Alex Gertz, Michael Marenco, Eliam Mussie

Mood is meant to act as a tool to track your relative health at-a-glance. Instead of going through apps on your smartwatch or smart fitness band, Mood allows you to quickly be alerted to increases/decreases in your heart rate or breathing rate via intuitive LED lighting. Green means your levels are good, red mean your levels are elevated, and blue means that your levels are lowered.

TABLE #: APPL 2-3

Feedback Controlled Temperature of Heating Source

Course: APPL 240

Makers: Tien Phan, Sanjana Jha

The objective of this project is to design and build a circuit that incorporates a heating source, thermistor sensor, force sensor, and an LED indicator using the digital side of an Arduino. The circuit will be designed to measure and control temperature accurately while providing feedback through the LED indicator. The project also includes a stretch goal of adding a more powerful heating source. The proposed circuit will accurately measure and control the temperature of the heating source while providing feedback through the LED indicator. The force sensor will allow for additional functionality, such as detecting the presence of an object on it. The transistor will enable precise temperature control.

TABLE #: APPL 2-4

Automatic light switch flipper

Course: APPL 240

Makers: Stane Biju, Simran Kolagad

This is an automatic light switch that is meant to flip lights on depending on the level of light in the room and the presence of people in the room.

TABLE #: APPL 2-5

GripGuru: Grip Strength Training and Analysis Unit

Course: APPL 240

Makers: Jake Otte, Nick Thies

We chose to create GripGuru out of our mutual interest in rock climbing and the resistance training associated with it. When it comes to training in climbing, it can be difficult to quantitatively assess the development of your grip strength. Our analysis unit addresses this issue by providing useful numeric feedback on the level of exertion and quality of your grip movements. We used a wide variety of materials and methods to complete it - woodworking, 3D printing, as well as microprocessor and sensor electronics. Along the way, we learned how to create a product with a strong sense of functionality, as well as what it takes to provide a good user experience. Our next iteration would ideally expand to more forms of resistance training and prove to be more accessible.

TABLE #: APPL 2-6

Bop It!

Course: APPL 240

Makers: Hannah Cruz, Francesca Pupillo

We created a bop it game that includes three different sensors that corresponds to each of the actions. A force sensitive resistor detects when you bop it, an accelerometer detects when you twist it, and a strain gauge detects when you pull it. Test your bop it skills and race against the clock!

TABLE #: APPL 2-7

Fire-Safe Hair Straightener

Course: APPL 240

Makers: Fizza Fakhar, Rosa Aguilar

We chose to do this project because we wanted modify and enhance an existing product for ease and safety purposes. As women that use hair styling tools everyday and worry if we turned them off after leaving, we find it crucial to implement auto-off mechanisms within these tools. This is important because it can reduce the risk of causing a fire while maintaining the quality of the expensive styling tool if it is accidentally left on.

For this project, we hoped to create an automatically turning off hair straightener. We utilized an accelerometer, LDR and power circuit sensor to achieve our goal. We programmed the outputs of these sensors in LabView so that the straightener would turn off after 10 mins of lying still or being in the dark. We learned how to use the sensors together to create something useful. Additionally, we learned how to properly set-up the circuit board and program LabView to implement our vision. This project also allowed us to learn how to efficiently share ideas and work in a team to create something. We are hoping to create more products that will make everyday products safer. These include household appliances, candles, irons etc.

TABLE #: APPL 3-1**Frame with a laser etched image****Course: APPL 89**

Makers: Nat Moody

I decided to make a frame that holds a laser-etched image of the mountain that my family's cabin looks over. I'm giving it as a gift to my grandpa because he has made the house a place for my family to always feel comfortable in. I used a table saw, nail gun, miter saw, glue, and screws to complete it. I learned that there are many different ways to make a frame that has an inset piece that allows the frame to sit in the frame. In my next try, I would try to make dovetails or biscuit joints rather than nail and glue them.

TABLE #: APPL 3-2**A cutting board made by someone with no woodworking experiences.****Course: APPL 89**

Makers: Thomas Qualls

The reason for making this cutting board was for a gift project in my class. I wanted to make a cutting board because my mom loves to cook. She is also very good at cooking. I can remember some of my favorite times being us sitting around the dinner table sharing laughter. My mom is an amazing lady and I know she would love to get a new cutting board.

TABLE #: APPL 3-3**Sister Lumberjacks****Course: APPL 89**

Makers: Viktoria Gustafsson

In APPL 89 we were assigned a gift project, and this project is meant for my sister to tribute our shared woodworking hobby. The tools used to complete this project were the miter saw, band saw, palm sander, power wood carver and dremel. Although I had already used most of the tools to complete this project before, this was my first time using the power wood carver or dremel to make fine details in the wood. This was also my first time creating a moving piece, and since my sister has yet to do so either I think she will appreciate the project. Since this was my first time using the dremel, my details were not very complex. In future iterations I hope to go into more detail with the face and figures.

TABLE #: APPL 3-4

Toy trucks made of wood

Course: APPL 89

Makers: Maria Rojas, Emma Wieber

We chose to make toy trucks to deliver to the Children's Hospital. We collaborated with a representative from the hospital, who gave us guidelines on what kinds of toys are needed as well as safety guidelines, and decided trucks would be a good fit. We made the trucks out of cherry wood as well as scrap plywood to reduce waste, and used a drill press and band saw to construct the body. The wheels, axles, and barrels came pre-made. This was our first time woodworking, so next time, with a better understanding of tools and processes, we would like to make the trucks smoother and have a less blocky structure.

TABLE #: APPL 3-5

Wooden Box

Course: APPL 89

Makers: William Randlett

I choose to make a box for my final project. Woodworking is new to me so I wanted to do something relatively simple. I mainly used a band saw and a miter saw to cut the pieces from the board that I would need. I have mainly learned that woodworking is mainly a learn by doing process. The only way to improve is to continue working. My next iteration will include hinges to open and be made of more hardened wood.

TABLE #: APPL 3-6

Family Heirloom Box

Course: APPL 89

Makers: Nicole Binney

My project is a box with my family initial engraved in the side. The gift is for my father, he deserves the world and I knew I wanted to make this project for him. I learned a lot of patience from completing this project, from a lot of trial and error.

TABLE #: APPL 3-7

Jewelry Box for friend

Course: APPL 89

Makers: Logan Bunce

I chose to create a small jewelry box for a friend who recently lost her roommate. The box could hold the jewelry that she got from the roommate's family to remember her.

TABLE #: APPL 3-8

Designer Skim Board

Course: APPL 89

Makers: Idhant Khosla

I went off the idea of a surfboard but decided to change it to a skimboard because it is a smaller version that is easier to store and use. I got the plan by modeling it off a Louis Vuitton skimboard. The wood I chose was plywood and I used a bandsaw to cut the curved edges. I made this product for my brother, Ishan who is 23 years old and currently attending medical school at Rush Medical College in Chicago. The reason I made it for him is because I am extremely grateful to my brother. He has always been a role model and has been there for me whenever I have needed him.

TABLE #: APPL 3-9

Birdhouse

Course: APPL 89

Makers: Katelyn Carapezza

I wanted to make this birdhouse because my mom loves watching the birds in our backyard. I wanted to make this as a gift for her for Mother's Day. I enjoyed completing this project and hope that my mom really loves it. I thought it was a fun way to be creative and really tested me because I'm not very familiar with woodworking.

TABLE #: APPL 3-10

Abstract Wooden Box

Course: APPL 89

Makers: Sarah Smith

Unequivocally, I chose to make this abstract wooden box for my mother, using plywood as well as different biscuits. I used a shaper to engrave the topographic design on the top of the box and a miter saw to cut the plywood for the base. I learned how to couple a complex design with a simplistic base to make something beautiful. My next iteration would have an engraving on the sides.

TABLE #: APPL 3-11

Woodpecker Birdhouse

Course: APPL 89

Makers: Kate Christman

I chose to make a Woodpecker Birdhouse as a gift for my parents. In Beam Maker Space I used the Shaper Origin, Band Saw, and Miter Saw to make the birdhouse. When completing this project I learned more about Beam Maker Space and the accessible tools in the studio. The next project I want to start is a bigger and more complex birdhouse.

TABLE #: APPL 3-12

Birdhouse with ECU and UNC logo.

Course: APPL 89

Makers: Sarah Edwards

I decided to create a birdhouse as a gift for my dad, as part of a first-year seminar project where we had to make something for someone we appreciate. My dad and I used to enjoy watching birds together in the mornings when I was younger. To add a personal touch, I used the shaper origin tool to carve the logos of the universities my brother and I attend, ECU and UNC, onto the roof. This project taught me how to use tools like the miter saw and shaper origin, which I may not have learned otherwise, and overall it was a valuable experience.

TABLE #: APPL 3-13

Wooden Flower Crate

Course: APPL 89

Makers: Elizabeth Parker

I chose to create a wooden flower crate as a gift to my mother for Mother's Day. My mother loves planting flowers and watching them grow, so I figured that by building a crate for her to plant some of her favorite flowers in, she could enjoy them more than if they were in a box in the ground. To make my project, I used pine, oak, and poplar tree wood along with the tools in the Woodshops in the BeAM Makerspaces around campus. Through completing this project, I learned how to discover a plan for making something and apply it to tangible materials to create something new.

TABLE #: APPL 3-14

Date Board Game

Course: APPL 89

Makers: Joshua Bottitta

I chose to make a "board game" for my girlfriend because our anniversary is coming up. How it works, is you roll a pair of dice and there is a small booklet of number combinations. The dice combination corresponds to a certain date. It is formatted as a wooden box and a pair of wooden dice.

TABLE #: APPL 3-15

Oak Quadpod Floor Lamp with Shelving

Course: APPL 89

Makers: Jaidyn Schroeder

This is a floor lamp designed to sit in the corner of a room. It was made as a gift for my mom. It is made of oak, which I sanded and oiled to enhance the color and grain pattern. She picked out the lightbulb and the lampshade. I used a circular saw for most of the cuts and used a combination of screws and wood glue to put all of the pieces together. This is my first experience with woodworking.

2 Laser Cut Designs

Course: APPL 89

Makers: Robert Nachnani

For my project, I made 2 laser cut designs for my mom and dad. I decided I wanted to do this for their mother's and father's day gifts. The tools I used was the laser cutter at makerspace. I learned throughout this process that creating designs and ideas like this take a lot of trials and failures in order to get the right result. If I were to expand this, I would definitely want to expand to metal cutting.

Squirrel Picnic Table

Course: APPL 89

Makers: Kayce Arkinson

The project is composed of wood and wood glue, made with power saws, a mallet, a hand saw, and clamps. Completing this project taught me patience and allowed me to practice accepting defeat. I also learned the value of mentorship from my father. I'd like to make a human size picnic table next!

Dog Bowl Stand

Course: APPL 89

Makers: Alexander Lawson

My sister recently got married and got a dog named Murphy, a Saint Bernard. He is rapidly outgrowing all of his things, including his food and drink bowls. I decided to make my project a new custom dog bowl stand that matches the aesthetic of my sister's apartment. I used a variation of saws, glue, and paint to complete the project. I learned woodshop skills for the first time and that wood projects take much longer than expected.

TABLE #: APPL 3-19

Wooden pizza peel

Course: APPL 89

Makers: Eric Kelly

My project is a wooden pizza peel made of pine. I spent a couple weeks in the maker spaces working on it as a gift for my dad, who likes to make pizza. I sized it to our oven and pizza stone so we could make large pizzas to fit the whole stone (our current pizza peel is too small). I used various woodworking tools to make it. My next version would be made of white oak with a custom laser etched design.

TABLE #: APPL 3-20

Wooden Tool Box

Course: APPL 89

Makers: Alyssa Chen

I chose a wooden tool box to help my grandfather carry his tools from his shed to the garden. I used BeAM Wood Shop to create my project. I have never done woodworking before, so this was a nice way to get introduced to it! The project was a great way to stay creative because there isn't usually a lot of time for any other creative hobbies.

TABLE #: APPL 3-21

A sleek wine rack

Course: APPL 89

Makers: Ayanna Fuller

I chose what to make by thinking of who I wanted to gift and coming up with different things I think they would like. I used wood, the shaper origin, and a few screws. I learned how vigorous woodworking can be although, in the end it is beautiful!

TABLE #: APPL 4-1

Closet Shelf Organization Solution

Course: APPL 412

Makers: Anika Jibben, Savannah Pless, Jimmy Toole

The purpose of our device is to make the top shelves of closets more accessible, easier to organize, and safer. To do this we created a drawer that is easy to install. The individual will use the built in, non-intrusive clamps to secure the device. When a person would like to utilize the storage solution, all they have to do is pull it and the drawer will come forward on a drawer slide, then, using a hydraulic arm, it comes off the shelf and lowers to a position where they can access the drawer's contents. We used laser cutters, 3d printers, wood glue and hardware. Our next iteration will be built with sturdier material and potentially have a different clamping mechanism.

TABLE #: APPL 4-2

The E-Fish-Ent Feeder

Course: APPL 412

Makers: Brendan Merritt, Alex Gutierrez, Mohammed Alnasser

The E-Fish-Ent Feeder is automatic fish food feeder that stores and dispenses frozen fish food cubes. Many fish owners, like Alex, choose to feed their fish frozen food instead of flaked food for its nutritious benefits. Since current automatic feeders cannot dispense frozen fish food, we chose to create the E-Fish-Ent feeder to have all of the benefits and conveniences of a normal automatic feeder, but adapting it to store frozen fish food. The product is made from 3D printed parts, a thermoelectric peltier cooler, and a salvaged motor from an old automatic feeder.

TABLE #: APPL 4-3

Compact Portable Swimsuit Dryer

Course: APPL 412

Makers: Mia Brzakovic, Pavel Sherstyuk, Aiyana Woldu

We created this product to address the common problem of wet swimsuits and other items taking a long time to dry, which can be inconvenient and unhygienic. We used a combination of plastic and metal components to construct the device, along with a heating element and a small fan. Through the process of designing and building the Compact Portable Swimsuit Dryer, we learned about the importance of considering size and portability when creating a product for travel and convenience. In future iterations, we would explore the possibility of adding additional features such as UV-C sanitization for added hygiene benefits.

TABLE #: APPL 4-4

Back to the Past Shoes

Course: APPL 496

Makers: *Urael Mussie*

When wearing shoes with laces, people with disabilities may experience a number of possible problems. There are a variety of reasons why laceless shoes are beneficial for those with motor skill impairments. The goal of this independent project is to develop a shoe that contains automatic tying shoelaces.

TABLE #: CLAS 1-1

An Odyssey themed pinball machine

Course: CLAS 133H

Makers: *Amelia Paulsen*

Primarily using 3D printed and laser cut elements, this analog pinball machine uses springs, elastics and gravity to capture the narrative of Homer's Odyssey. All painted elements are hand painted with paint from the maker space.

TABLE #: DRAM 1-1

Embroidered western style suit jacket from the movie 'NOPE'

Course: DRAM 766

Makers: *Sally Rath*

This is a replica tailored suit jacket from the film 'NOPE' worn by Steven Yeun. The embroidered embellishments depict the various stages of UFO's in the film, all of which were done on the brother tabletop embroidery machine at BEAM. The western style jacket was made for a tailoring course in the Costume Production Graduate program.

TABLE #: DRAM 1-2

3D printing on fabric

Course: DRAM 766

Makers: Zachary Morrison

3D printing on fabric to use in the costume/ entertainment industry.

TABLE #: GEOG 1-1

Assessing Flood Risk in New Bern NC

Course: GEOG 115

Makers: Joshua Van Mater, Rebecca, Daniel, Sam

The project is an interactive flood risk assessment of New Bern NC. It will use a 3D model in a basin. The basin will be filled with water to illustrate different degrees of flooding.

TABLE #: GEOG 1-2

Melting Glaciers Progression Map Project

Course: GEOG 115

Makers: Haorong Xu, Shiqi Zhang, Alexander Sang

Our project aims to create a unique and interactive map showcasing the melting of glaciers and its impacts on sea levels. Using tools such as cardboard, a vinyl cutter, and a 3D printer, we will create 3D models of glaciers and water levels to visually highlight the shrinking of glaciers and rising sea levels. The map will raise awareness about the environmental consequences of glacier melting and serve as an illustration of the effects of climate change. In future iterations, we may explore incorporating additional data and visualizations to further emphasize the urgency of addressing climate change and its impacts on glaciers and sea levels.

TABLE #: GEOG 1-3

Innovative Material Map for UNC Food Gardens

Course: GEOG 115

Makers: Michael Su, Zach Hibbard, Kyle Firman, Seth Laney

Accessibility to fresh produce is something that many college students lack, often having to rely on what is prepared by Carolina Dining Services, or what they can buy at local stores. However, there are more options that many students realize, and often walk by unknowingly past produce gardens. Having all experienced this during our time at UNC, we sought out to create a material map that displays a selection of these edible gardens across campus. The need for an accessible and easy to understand map that displays the locations of these gardens became apparent. Furthermore, it is our group's hope that by spreading awareness of these public gardens, it may help reduce the level of food insecurity that is found at UNC. Although there is a food pantry located on campus that offers great help to students, having the ability to walk up and pick fresh produce gives much greater freedom in food choice and level of access students have. These maps will also display the different kinds of fruits and vegetables that are present in each garden. To ensure that we represent the different areas of campus well, we aimed to focus on gardens located in North Campus, Central Campus and South Campus, as to not leave any Tar Heels without access to fresh produce.

TABLE #: GEOG 1-4

South Campus Tactile Bus Map

Course: GEOG 115

Makers: Kirti Nimmala, Ziqi Lin, Andres Perez, Pingqiao Wang, Sizhe Li

Our team created a South Campus Bus System Map to simplify transportation for first-year UNC students and cater to visually impaired individuals. We utilized detailed campus maps, colored bus routes, 3D-printing, and companion brochures to provide an accessible and informative map. Our next iteration would involve a digital version of the map, incorporating datasets and algorithms to simulate bus routes, ultimately developing a UNC-specific "Google Maps" for seamless navigation and convenience for all students.

TABLE #: GEOG 1-5

Tactile Map of the Bus Routes in Chapel Hill

Course: GEOG 115

Makers: Katie Carwile, Akash Veeragandham, Michael Washington

We decided to make a tactile map of the Chapel Hill bus routes since there is currently not one. This map will allow the visually impaired, as well as others, to be able to feel the bus routes based on different textures.

TABLE #: GEOG 1-6

3d Trail Map of Battle Park

Course: GEOG 115

Makers: Edward Fowler, Sebastian Poulsen, Nicholas Palmer, Andrew Lewis

We saw a need to create a more easily readable, detailed, and accessible map of the Battle Park trail system, a valuable part of the UNC community. Our map is constructed of laser-cut individual pieces to create a three-dimensional representation of a traditional topographic map. The trail system is overlaid on the base.

TABLE #: GEOG 1-7

A topographic map of Jordan Lake

Course: GEOG 115

Makers: Mihir Kale, Luis Sanchez, Mason Farasy, Hyunmo Ryang

We chose to make a map of Jordan Lake and used both cardboard and wood. We also used the resources and the tools at the Maker Space to construct the project. We learned how to use mapping softwares like QGIS, as well as how to use and clean bathymetric data. Hopefully, future maps will use inspiration from our map to develop topographic maps of other lakes.

TABLE #: MUSC 1-1

Spanish Guitar

Course: MUSC 203

Makers: James Crescenzi

'I built this guitar under the supervision of Pavel Gavryushov, a luthier from Granada, Spain. It is made of German Spruce, East Indian Rosewood, Spanish Cedar, and a little bit Cypress and Maple. My next guitar, which was made with a slightly different bracing plan and flamed maple for the back and sides, is currently being finished.

The biggest thing I learned from this experience is the patience to do things the right way no matter how long it takes. For example, the finish alone took more than 40 hours over the course of two months. I could have done it in less, but it would have sounded and looked worse.

TABLE #: PSYC 1-1

Extra Storage Cutting Board

Course: PSYC 330

Makers: Shreyasri Sirlapu

This cutting board is a handy kitchen tool with a detachable surface for easy cleaning and storage and trash compartments to keep everything you need for meal prep in one place, making it ideal for cooks who want to streamline their process. Made from wood that was sanded and stained, it provides a flat surface for chopping and cutting. This cutting board is a versatile and convenient addition to any kitchen, making meal preparation more efficient and enjoyable.

TABLE #: PSYC 1-2

Insulating Koozie

Course: PSYC 330

Makers: Saakshi Navile

I chose to make this because of a pain point I have when I order cold drinks in the winter. For our class, we have had to interview potential users about our prototype in order to figure out how to improve our next iteration. I chose to use a towel and a blanket. My prototype is very basic, but I learned how to use a sewing machine to create my next iteration. I created a koozie that has a towel material on the inside to help with condensation and blanket material for the outside to keep my hand warm.

TABLE #: PSYC 1-3

User Centered Design for a Kitchen Tool

Course: PSYC 330

Makers: Madeline O'reilly

I created a tool for cutting and slicing mangos because of the pain point associated with it. I 3D printed the main structure of the tool, and I used aluminum and the metal shop to make the center of the tool. Mostly, I became more comfortable with Autodesk Fusion 360 and the 3D printers during this project. I think my next iteration would ideally be able to actually slice the mango which would require sharpening outside of the BeAM space.

TABLE #: PSYC 1-4

A two-piece indoor pooper scooper

Course: PSYC 330

Makers: Benjamin Deschamps

In class we were tasked with creating something in the MakerSpace to solve a pain point. At the time, I had a foster dog that was not potty trained and prone to leaving solid accidents on the floor. I needed a pooper scooper that was made for a hardwood floor and small enough to easily store away. I designed several prototypes using the 3D-printer until I got the the current prototype with the long handles and gentle tray slope.

TABLE #: PSYC 1-5

Spice Rack with a Twist

Course: PSYC 330

Makers: Stuti Chegoori

Too many spices in your cabinet? Not enough counter space? This spice rack was created with this specific user group in mind. It is made completely from wood and uses Lazy Susan hardware to allow for an easy spinning mechanism. The spice racks allows the user to easily view the spices without having to search around in the cabinet. The interlocking dowels allow for a dual spinning motion so one can seamlessly view all their spices in a swift motion.

TABLE #: PSYC 1-6

Book Page Holder

Course: PSYC 330

Makers: Benjamin Hasley

My project builds on previous iterations of book stand and page holders. It will be used to enhance the reading experience of those who use it. This idea was born from an in class-project focusing on the user experience.

TABLE #: PSYC 1-7

Desk Extender

Course: PSYC 330

Makers: Natalie Tuinstra

As college students, we're often stuck with desks that are too small to fit our laptops and other materials. But with this desk extender, students no longer have to choose which items to leave behind. I created this product to address this everyday problem, starting with a foam prototype and refining it using a 3D printer. Through this process, I learned the value of user feedback and the importance of paying attention to every detail in the design. With my desk extender, you can maximize your workspace and work more comfortably and efficiently. My next iteration would focus on how the extender could be transported easily, keeping the adjustable nature of the design in mind.

TABLE #: PSYC 1-8

Sauceless Saucer

Course: PSYC 330

Makers: William Dorgan

The Sauceless Saucer was designed to help decrease the amount of unwanted wetness present in sandwiches with wet ingredients. A common issue for sandwich lovers is that when eating a sandwich with moist ingredients, liquid pools on your concave plate, making it hard to avoid the sandwich getting even wetter when you put it down in that pool. The Sauceless Saucer elevates your sandwich above this pool, protecting it from absorbing unwanted wetness.

TABLE #: PSYC 1-9

A 3D printed cork for canned drinks

Course: PSYC 330

Makers: Fatma Ilter

It is a 3D-printed cork that will go into the opening gaps of a can after the removal of the tab to retain carbonation for a couple of days. People will not have to finish the whole can in one opening and can reserve it for a couple of days, saving money and avoiding waste. I learned that it works but is not leakproof, which inspired my next model to be made out of plastic.

TABLE #: PSYC 1-10

Acrylic Paint Water Disposal Box

Course: PSYC 330

Makers: Anna Doban

Acrylic paint water is toxic to the environment and bad for drains, but once the water evaporates, the solids are stable. This box is a prototype for an at-home solution for this issue. It's designed to help the water evaporate quicker. The box and lid were 3d printed and I also used the metal shop for the lid.

TABLE #: PSYC 1-11

New Design of TV Remote

Course: PSYC 330

Makers: Yuchen Bai

In my PSYC 330 class, my professor Dr.Chanon inspired us to find the pain point in our life. I chose the TV remote and think about its pain point because I use TV remote very often and they are barely changed in the last 10 years. I used laser cutter to make the shape of my prototype. From my psychology class and my makerspace experience, I realized the importance of thinking about the product from different sides and keep trying to make the product perfect. I think my next iteration will be upgrading the TV remote container.

TABLE #: SPAN 1-1

An interactive game for kids to learn the importance of oral care

Course: SPAN 321

Makers: Aislin Sanchez

I utilized a 3D printer to create a model of the oral cavity. I then turned the model into an interactive game by separating the pieces and color-coordinating them into a puzzle that kids can use to learn and get comfortable with the anatomy of their mouths. I was able to learn new tools like TinkerCAD and learned ways to combine teaching and games to optimize kid's abilities to learn.

TABLE #: SPAN 1-2

Neurological Influences of Marijuana Usage and Addiction on Adolescents

Course: SPAN 321

Makers: Jill Tora

I will be researching the neurological effects of Marijuana usage and addiction on adolescents and adults. This research will allow the chance to further understand the implications of using a drug that has become normalized within society. I believe that there are a lot of misconceptions surrounded by misinformation involving marijuana effects, influences, and usage. Through this research I will be given the chance to deepen my understanding of the detriments as well as the benefits of using marijuana recreationally and as a medical form of treatment; from my findings I will also be able to gain some insight on the places where misconceptions lie and ways to remedy these disconnects. In addition to the research that I conducted, I also utilized the BEAM lab to print a model that can be shown to patients or other individuals that are struggling with understanding the influences of marijuana usage.

TABLE #: INDIV-1

Wooden bowls, open vessels and platters turned on a lathe.

Makers: Stephan Moll

I love turning things out of wood on a lathe, such as bowls, platters, open vessels. Pieces can be utilitarian - salad bowls, fruit platters, wine bottle stoppers -, or decorative-artistic. I enjoy seeing where working on a piece of wood - initially bland and unexciting appearing - eventually leads me. I love getting to know various tree species and woods.

It is rewarding to discover and bring out the beauty of a wood, by choosing a certain shape of the piece one creates, paying attention to the orientation of the wood grain, incorporating the wood's 'imperfections' (bark inclusions, burls, fungal discolorations), and bringing out the wood's figures and colors. I collect wood from fallen or felled trees with my chainsaw. Many relationships and wood stories have come out of this wood collecting. Amongst other pieces, I will be showing pieces I turned out of UNC's Davie Poplar and wood from the Coker Arboretum.

TABLE #: INDIV-2

The Upcycling Initiative

Makers: Hiawatha Demby

The Upcycling Initiative is an effort to address the manufacturing production, supply, consumption, and disposal chain by creating usable and marketable products from materials that would otherwise have been recycled or discarded. The ultimate objective is to create a more sustainable and open-source element in the supply and consumption chain that could effectively reduce the amount of material waste that goes to landfills and into the environment.

TABLE #: INDIV-3

A Collection of Essays from My First Year in College

Makers: Mary Grace Wilkinson

Being a maker means to use your brain in the way it most likes to create to form a project. My brain likes to string together sentences that keep me entertained throughout the day. During my first year of college, I have compiled 100 short essays, most with a comedic undertone, of my day to day life.

TABLE #: INDIV-4

Simplest Laptop Holder

Makers: Hanqi Xiao

Without laptop holders many laptops become exceeding hot from the built in vents on the bottom. This heat is damaging and makes the computer unnecessarily hot. I use laptop stands for this reason. However, most laptop stands are multi part, difficult to clean, and cannot fit comfortably in a backpack. My two part laptop stand is lightweight, cleanable, has no moving joints, and the size of a pencil case.

TABLE #: INDIV-5

GreenStep: stylish heel with sustainable storage

Makers: Amy Madrigal

I wanted to create a project that was as sustainable as possible. I repurposed plywood from home projects and utilized thrifted ribbons. I used a laser cutter for the majority of the project and a drill to create holes on the side for the ribbon. The ribbon can be easily changed, allowing for a versatile style. Women's clothing lacks pockets that are well designed, making it difficult to store things, so I wanted to create something that would aid with that, and I made a shoe with secret storage. For future designs, I hope to create different types of heels.

TABLE #: INDIV-6

Microcontroller-based Accessibility Technology and Lighting

Makers: Evan R. Jones

Reading, writing, and crafting notes can often be overwhelming for people with different learning preferences and different abilities. Using microcontrollers and Circuitpython, I employed various sensors to create several reactive machines which activate macros, programs, and scripts to decrease distraction and increase learning efficiency. These small machines can allow users to read (and listen!) faster, take better notes, create citations, track resources, and do their work more efficiently while also causing less physical stress on their bodies. My intention with this project was to fuse together digital and organic systems. My next iteration will involve making "market-ready" versions.