

# CAPSTONE DESIGN EXPO

Spring 2022



**April 26, 2022**  
McCamish Pavilion  
Atlanta, Georgia

# CAPSTONE DESIGN TEAMS

## AEROSPACE ENGINEERING

### AE 4341: Senior Design Team 1

**UCAV** | Air Superiority UCAV, Y39

**AE 4343 Team 3** | eVTOL Air Taxi for Passengers with Reduced Mobility, B3

**Borgia** | eVTOL Air Taxi for Passengers with Reduced Mobility, Y30

**DREAD** | Detection, Reconnaissance, and Exploration Anchored on Deimos, G9

**F.A.S.T – Forerunning Aircraft for Supersonic Transport** | Preliminary Design for a Supersonic Transport Jet, B1

**Galactic Jackets** | Inspiration Mars Rover Mission, R48

**GT-404 Sting** | Supersonic Transport Jet, R14

**PICARD** | Phobos Internal Characteristics Analysis and Regolith Determination (PICARD), Y43

**Sturmfrei** | eVTOL AAM for Passengers with Reduced Mobility, Y11

**Supersonic Jet Design Crew** | Supersonic Transport Jet, R40

**Team AE 4343** | eVTOL Air Taxi for Passengers with Reduced Mobility, Y20

**The Morpheus Project** | Project Morpheus: Supersonic Transport Jet, B20

## ARCHITECTURE

**Ahmed & Hestad** | Uplifting Heavy Histories, B10

**Andres, Chelsea, Rachel** | New Holland brewing road trip, Y59

**Cambium Team** | Mass Timber Pavilion, Y8

**Dematerializing Identity Studio** | Constructing a Kinaes-ethics of Architectures, B8

**Dematerializing Identity Studio: Melnik + White** | Constructing a Kinaes-ethics of Architectures: Intergenerational Day Center, B26

**Dematerializing Identity Studio: Movement Study** | Constructing a Kinaes-ethics of Architecture: Choreography of space, R2

**Dematerializing Identity Studio: Remembering to Care** | Constructing a Kinaes-ethics of Architectures: Using Memory and Environments to Home the Elderly, R41

**Kaila and Begum** | The Idle and Movement Pavilion, B34

**Li & Waweru** | The House of Stone and Light, R15

**Poff + Woodham** | Rhythmic Liberation, R15

**Team Pith** | Through the Wooden Glass, R1

**The Knots** | Mass Impact, Y9

**Tim(ber) Mobile**, G12

**Verse** | Breath of Defiance, B25

## BIOMEDICAL ENGINEERING

**Ankle Avengers** | Restructuring Talus Trials, W15

**autoSThetics** | Technology for Diagnostics of Soil-Transmitted Helminth (STH), W34

**Balancing Act**, B28

**Breathe Easy** | Preventing burns from home oxygen therapy, B27

**cathSPANSION** | Internally Expandable Catheter, G4

**chondroLink** | Surgical tool to insert Nanochon's chondrograft implant, Y49

**DialAssist** | Assessment of Dialysis Catheter Flow at Time of Placement, B30

**Ecz-Factor** | Eczema Relief, B39

**EpithelialGals** | Skin in the Game, G18

**Feeding Forward** | Simplifying Nasogastric (NG) Tube Feed Positioning/Verification, R18

**HydroSense** | Wearable Hydration Monitoring Device, W35

**IceCap** | CPR Assistive Device, B38

**Keep It Clean** | Clean Catch Urine Collection, W11

**Loco Moco** | Locomotive Video Capsule Endoscopy, W22

**MAD Scientist** | Musculoskeletal Assessment Device - Joint Inflammation, W3

**Mask Hero** | Customizable NIV Masks for Pediatrics, W14

**MuskeTEARS** | Artificial Tear Ducts, B12

**NICU Noise** | Alert Staff Noise in NICU, Y56

**NICU Super hEARos** | Noise Protection for Preterm Infants in the Neonatal Intensive Care Unit (NICU), R36

**Nobody Nose** | Cartilage Graft Harvest for Rhinoplasty and Septoplasty, R19

**Parks & Wrecks** | Monitoring Device for Parkinson's Disease, G8

**PolyPops** | Complete polyp resection instrument, W12

**Pressure Police** | Convenient Auto PressurE StockINgs, W13

**REsTrAIN** | Medical Line Retainers for Restraint Prevention, W38

**SatisTraction** | At-Home Ankle Distraction Device, W33

**SubTunnelers** | Neurosurgical VP Shunt Tunneler, G16

**Team No MisTraches** | Tracheostomy Stabilizer, Y18

**Team Number One** | Automatic Urine Flow Monitor, R11

**TechMO** | Eliminating risks while connecting extracorporeal membrane oxygenation with continuous renal replace, B14

**The Rolling Kidney Stones** | Ureterscopy, Reimagined, R49

**Tonsil Consul** | Limiting the Spread of Droplet Disease during Oral Pharyngeal Exams, R24

**UCollect**, R50

## ELECTRICAL & COMPUTER ENGR.

**CIJMT** | Collision Detection Bucket Sensor, G19

**DropLock** | Free Fall Detection, W10

**ErgCon** | Ergonomic Controller, R9

**Eventr**, Y32

**FM Software Defined Radio**, R42

**Headphone Amplifier with Loudness Compensation** | Headphone Amplifier with Loudness Compensation, R23

**iValet**, B32

**Lead Lads** | Marine Heavy Metal Sensing Platform, R27

**MealPirates** | Meal Pirates Delivery, Y2

**ML for Leakage Detection**, G11

**Pedal to the Medal** | Customizable Digital Effect Pedal, R34

**Pegasus** | Pegasus Autonomous Mail Delivery Drone, G1

**Sixth Sense** | Haptic Feedback Navigation Vest, R51

**Smart Sight** | LCD-Enabled HUD for Facial Recognition and Shading, W36

**Smart Tennis Racquet Sensor**, G14

**Solar Powered Drone**, W29

**Sound Localization SensorNet** | Sound Localization with Wireless Embedded System Devices, B2

**spot** | Acoustic Multi-Source Localization, R26

**Sweet Dreams** | Nemi, W8

**Team #1** | Wearable Device/App, G23

**The Neatest ECE Team** | Makin' the Makeline – sensors, B17

**The Tracker**, Y50

**VHF Antenna**, R25

**Viasat AMEND Machine Learning**, Y44

**Viasat AMEND Satellite Tracking – Hardware Team**, Y3

**Voxel (3D Spinning LED Display)** | Voxel, B19

## INDUSTRIAL & SYSTEMS ENGR.

**24** | Interconnected Order Fulfillment Y25

**A Tray A Day Keeps The Delays Away**, Y12

**Atlanta Braves** | Chomp On!, R38

**Back of House PARTY** | Reordering Process Improvement, Y15

**Box Half Full?** | Penguin Random House Order Fulfillment, Y23

**Breeze into the Benz** | Mercedes Benz Stadium Ingress/Egress Optimization, Y48

**Give Us a PAT on the Back** | Reduce Cycle Time for Pre-Admission Testing Patients, R37

**Grady's Anatomy**, Y41

**Honey Jackets** | Making Honeywell's Money Swell, Y45

**ISyE 4106 Team 25 (GE Gas Power)** | GE Gas Power Part Inventory Design, R35

**ISyE Senior Design Team 28** | Carter's Order Completion Challenge, Y24

**ISyE Senior Design Team 3 NAPA Auto Parts** | Which NAPAThway?, Y40

**Line-Baulers** | Saia-zing Up, R17

**MARTA Bus Route Optimization**, R12

**OG(wreck)S** | Office of Graduate Studies Verification Process Improvement. Y21

**Put a Ring On It**, B23

**Quick Pick** | Stitch Fix Warehousing, B6

**Remediation Remediators** | Floor & Decor Remediation Process Improvements, R46

**ReMOOte Prep Kitchens** | Remote Preparation Kitchen Strategy, B4

**Rerouting**, B18

**Santa's Industrial Helpers** | Empty Stocking Fund: Warehousing and Distribution, Y27

**Sattel Up** | Stockroom Space Utilization and Picking Efficiency Improvement, R47

**Slice, Slice, Babies** | Slice Me Up Before You Go-Go, R8



**Team 16** | Weird FLEX... But Okay, Y28

**Team 22** | Evaluating sustainable shipping solutions, Y47

**The Inventory Laboratory** | Multi-Echelon Inventory Optimization, G20

**Tougher with Buffer** | Buffer Strategy to Amazon Robotics Supply Solution, Y26

**Truck Yeah** | Digital Freight Network Process Improvement, R31

## IND. DESIGN & MECH. ENGR.

**IKKAI**, B35

**32 Sounds** | Installation for GT Arts, B33

**In-Bed Mobility Team**, B37

**One For All Rideshare**, G2

## INTERDISCIPLINARY

**5MEs and 1 BME** | AKTIVE, R53

**AnLi French, Julia Leftwich, & Leah Huck**  
Bethel Heights Vineyard + Retreat, Y46

**Archetype Brewing EJS** | Archetype Brewing Proposal, B24

**Bio Inspired Tiny House Team**, G15

**BioSync**, Y1

**Brewery Design Team — Holland, Michigan** | New Holland Brewing Redesign, R43

**Brewing Buds** | Experiential Brewery, Y4

**Catch 22**, W6

**Cracking Capstone** | Design of a device to remove non-fibrous elements from textiles, W7

**Daisy, Karis, Mira** | Archetype Brewery Taproom Expansion, R10

**Dragon's DENN** | The Awakened Dragon, R44

**Flying Squirrels** | Capturing Equipment Nameplate Data, Y5

**Friend of a Friend** | Helping Hand, G5

**Group 94** | CryoSleepe, R53

**GymQ**, G21

**Illuminators** | F05-Blue Light Therapy Illuminators for Neonatal Jaundice in Ghana, B13

**Last-Mile Machines** | Last Mile Micromobility Cargo Solution, B31

**LiftAI**, Y58

**Location Possessors** | TranszVolt 2.0, W26

**Lunar Landscapers** | Testing Device for the NASA JPL Moon Plant Project, W24

**Match\_it**, Y29

**MERAAS** | Surgical Robotic Heart Catheter, B36

**NailNet**, R4

**Name Your Ballz** | Smart Table for Customizing Sports Balls, B7

**Octonauts** | Prince William Sound Underwater Profiling Vehicle, W17

**Phlex**, R29

**RoboSharks** | Development of Swarm Autonomous Underwater Vehicle (MicroFloats), B40

**Robotics Team** | Robotic Mower Mapping/Routing, Y55

**Roper Capstone Team 1** | Range Automatic back screw feed insertion, Y6

**SafetyNet**, W30

**Sarah Tyner, Zahra Hakani, Paz Rodriguez** | Bethel Heights Vineyard: Celebrate, Reflect, Retreat, Y7

**Schoold**, Y38

**Search and Rescue Robot**, W28

**SEB** | PivoTrailer, W19

**Second Eyes** | GPS wearable for children, R5

**Slumberpod** | Slumberpod, W37

**snap**, R33

**SoberEyes**, Y57

**Squirrels** | Automatic Hinge screw insertion, G26

**Team #** | Robotic Scrabble, W39

**Team Zero** | Solar Folder, G10

**TeleHELP** | Intuitive Robotic Arm Controller, B29

**The Good Guys** | Drywall Cart Re-design, Y53

**The Solar Sons** | Off-grid solar recharging station for electronic devices and small e-vehicles, W18

**Tired Techies** | REM Mask, W31

**Tracks-B-Gone** | Wheelchair Tire Cleaner, R30

**TranzVolt 2.0 ECE Team**, W1

**Vay-K**, B11

**WalkSteady** | Assistive Exoskeleton for Older Adults, Y60

## MATERIALS SCIENCE & ENGR.

**ON-Q Pump** | ON-Q Pump Indicator, W21

**Pick Your Poisson** | Standardized Poisson's Ratio Measurements of Molded Pulp, Y34

**Printpack Metal Adhesion** | Metal Adhesion Test for Sustainable Films, Y17

**Recreational Sleepers** | A Sustainable and Affordable Cooling Mattress, R13

**Seal Team Six** | Structure Property Model of Pressure Sensitive Adhesives, Y19

**Sealed Ions** | Hydrogen Embrittlement of Metal Seals, R7

**Sho3d** | Holistic Shoe Testing, G6

**Silpara Technologies** | Designing a continuous process to manufacture Silpara Molecular Composite, W5

**SuperBandage** | Bandigami of Tindalos, R39

**Under Armour Comfort Zone** | Under Armour Midsole Testing Protocol, Y31

## MECHANICAL ENGINEERING

**25 Years of Experience** | Portable Stream-Powered & Solar Generator, W16

**AllAroundTheWorld** | Grocery Transport Pushcart "PractiCart", R32

**BOUNCE** | Drone Airbag System, W23

**Cad Lads** | Makin' the Makeline — actuators, B9

**Chainsaw Sharp** | Automatic Chainsaw Sharpener, W27

**Counter Spice** | Automatic Spice Dispenser, R16

**Dryer Desire** | Solar Food Drying System, Y10

**EmergenSolar** | Off-grid solar recharging station for electronic devices and small e-vehicles, R22

**e-Valves** | Camless Engine, G7

**FemMEs** | Design of a device to remove non-fibrous elements from textiles, B15

**Helluva Team** | Drywall Cart Re-design, Y54

**Hydrogen Revolution** | Hydrogen Conversion for IC small engine, W9

**In(splitters)** | Chainsaw Powered Log Splitter, W25

**MALINE** | Making helicopters quieter for survivors, G24

**PAK** | PAK (Assisted Pedaling Bicycle Kit), W2

**Pumpco** | Chainsaw Powered Log Splitter, W4

**Revive** | Tennis-Ball Sharing System, Y42

**Six Guys** | Design a device to assist/force water evacuation for a sliding door, G28

**Sol Snacks** | Solar Food Drying System, Y52

**Sparkman (Attempt #2)**  
Electrician's Multitool, G3

**Stacks on Stacks** | Money Processing Device, G13

**Team Matilda** | Hybrid Motor Disengagement System, W40

**Team USA** | Tank Towing Device, B22

**The Bee's Knees** | Design of a garment tag scanner, Y51

## MUSIC TECHNOLOGY

**AcoustEQ**, W32

**Audio to Audio Alignment**, Y35

**Brain Blaster**, B5

**Duncan Hanson** | YouTube Transcriber, R6

**HeartBeats** | HeartBeats — a music dating app, R3

**Joe Hackman** | Architectural Acoustics Case Study of Small Multi-purpose Room, B21

**John Kasun** | Patch Matcher, Y36

**Joshua Chan** | Physical Modelling Synthesis, R21

**New Metronome**, R20

**Tempo Trainers**, G17

**Tucker and Will** | GUI for Optimized Audio Classification, G22

## NUCLEAR & RADIOLOGICAL ENGR.

**AROMA** | Analysis of Radionuclide Output in MSRs and the Applications, Y37

**DREAM** | Design of Reactor Enhanced by Additive Manufacturing, Y33

**SUMS** | The Small Uranium based Molten Salt Reactor, Y14

## PUBLIC POLICY

**AEMI's Angels** | Exploring Economic Mobility and the Racial Wealth Gap in Atlanta, Y13

**Secure Green Energy** | The Nature Conservancy — Energy, B16

**Sight & Sound** | A State by State Analysis of Hearing and Vision Care Providers, R28

**The Name's Bond, Social Impact Bonds** | An Evaluation of the Pay-for-Success Model, Y22

**TNC Coastal** | Comparing Coastal Infrastructure Projects Involving Nature-based Solutions in the United States, Y16

# AWARDS CEREMONY

**7:00 pm**

Seating in Section 104, 105, 106

**MONODISCIPLINARY AWARDS** distributed to the best projects of the following Schools:

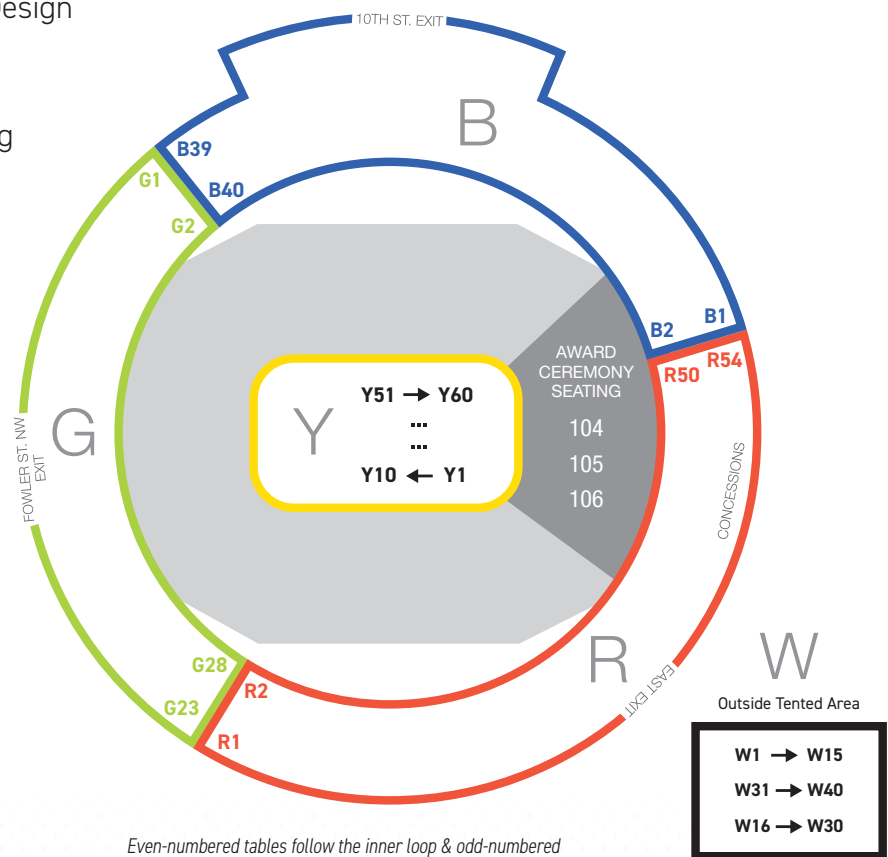
- Aerospace Engineering
- Architecture
- Biomedical Engineering
- Electrical and Computer Engineering
- Industrial and Systems Engineering
- Mechanical Engineering
- Mechanical Engineering/Industrial Design
- Materials Science and Engineering
- Music Technology
- Nuclear and Radiological Engineering
- Public Policy

**INTERDISCIPLINARY AWARD** distributed to the best project of a team comprised of members from multiple disciplines.

**OVERALL BEST PROJECT AWARD**

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