cornell animal health

hackathon

2023

college of veterinary medicine | ithaca, ny | feb 3-5

about the
hackathon

A hackathon celebrates the use of minimal resources and maximum brain power to create outside-the-box solutions ("hacks") in a constrained time frame.

HACK + MARATHON = HACKATHON

The 2023 Cornell Animal Health Hackathon is an interdisciplinary event which brought together students from across degrees, majors, and schools at Cornell University! Teams comprised of veterinary, business, engineering, and design students, formed and created to create solutions to needs in veterinary health care. On Saturday, mentors provided feedback and guidance to teams. On Sunday, the hackathon culminated in a project showcase to an audience of peers, mentors, and representatives.

This year was the return to the in-person event post-COVID!

A panel of judges selected and awarded $9,000 to winning teams.

the *challenges*
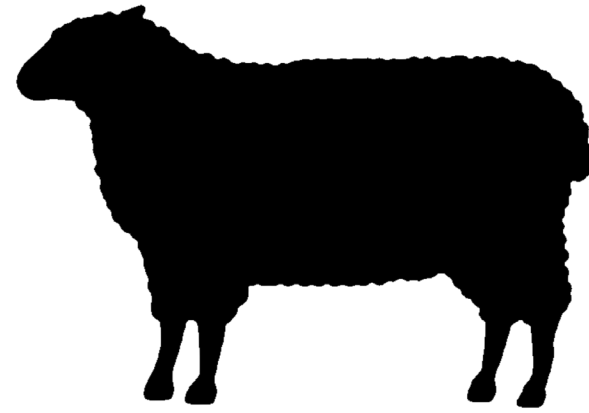
SPECIALTY CASE BACK LOG

SUBMITTED BY DR. MEG THOMPSON, ASSOCIATE DEAN AND DIRECTOR OF THE CORNELL UNIVERSITY HOSPITAL FOR ANIMALS

Increase in small animal specialty and emergency caseload has overwhelmed all systems. Solutions across the nation are the same, with the similar descriptions and unresolved backlog. What new service model could overcome the current challenge

SHORTAGES IN THE VETERINARY PROFESSION

CHALLENGE SUBMITTED BY DR. ROBIN MOYLE , VANE

The veterinary profession is currently facing an unprecedented shortage of doctors and support staff. Many communities have become veterinary deserts with the nearest veterinarian hundreds of miles away. How do we find new and unique ways to provide access to care?

KEEPING PETS OUT OF THE SHELTER

CHALLENGE SUBMITTED BY DR. ROBIN MOYLE , VANE

Increasingly, one of the top reasons that pet owners relinquish their pets to animal shelters is the inability to afford needed veterinary care. How can we keep these families together by keeping their animals out of the shelter?
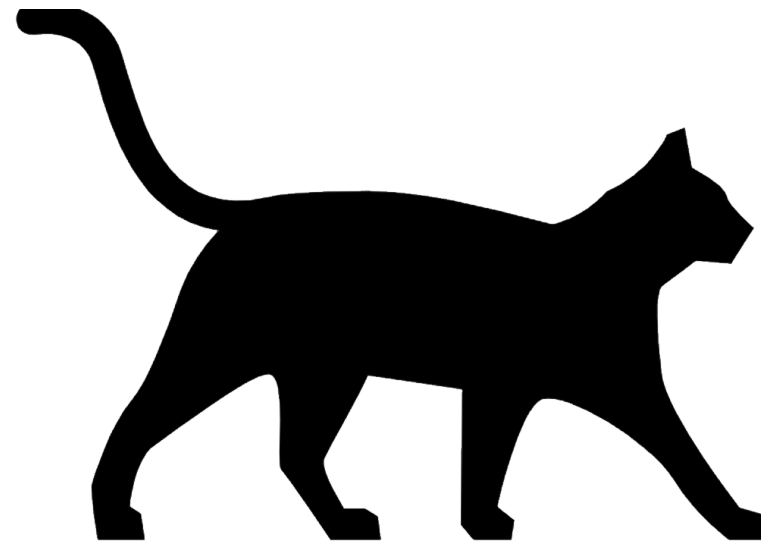
VETERINARY STAFF RECRUITMENT

CHALLENGE SUBMITTED BY DR. SHADI IREIFEJ, VETTRIAGE

Increasingly, one of the top reasons that pet owners relinquish their pets to animal shelters is the inability to afford needed veterinary care. How can we keep these families together by keeping their animals out of the shelter?
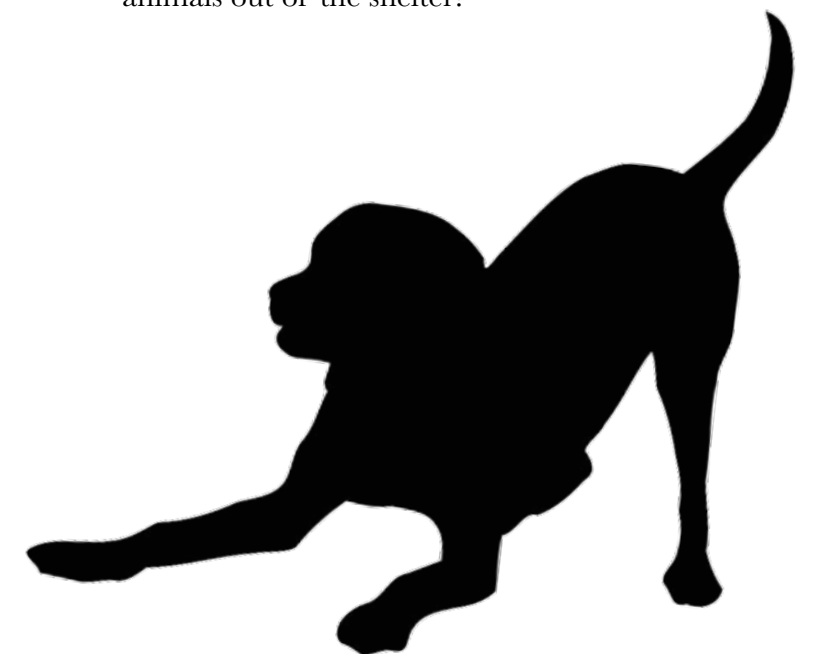
PIGMENTED ANIMALS

CHALLENGE SUBMITTED BY THE CORNELL UNIVERSITY HOSPITAL FOR ANIMALS DENTISTRY AND ORAL SURGERY SPECIALISTS

Pigmented Animals: Our machines have a difficult time reading SpO2 on animals with dark/black skin during sedation/anesthesia. I imagine this could also be an issue with human medicine as well. It is important to know oxygen saturation in our patients. Is there a way that we can read SpO2 on animals with dark/black skin?

Suture and Pigmented Skin: Our Monocryl and many other suture materials are dark colored. This makes it difficult to check if there are any defects in the incision site or if this suture needs to be removed from animals with pigmented skin
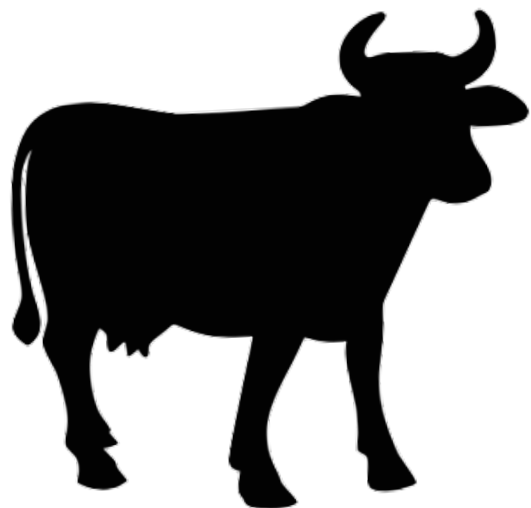
HIGH THROUGHPUT AUTOMATED MICROSCOPIC AGGLUTINATION TEST

SUBMITTED BY JOEE DENIS, POPULATION MEDICINE AND DIAGNOSTIC SCIENCES, CORNELL COLLEGE OF VETERINARY

Leptospirosis is a bacterial disease with a wide range of hosts including common companion animals, livestock, and humans. The effects of leptospirosis can vary. For example, infection in dairy cattle results in infertility and abortion; thus, frequent diagnostic testing is necessary to maintain dairy herd health. The diagnostic test used to diagnose Leptospirosis is a serological reference test known as the microscopic agglutination test (MAT). A MAT requires mixing dilutions of serum with live Leptospira serovars. The presence of antibodies is indicated by the agglutination of the Leptospires, which is assessed via microscopy. The titer is determined by the highest dilution of serum that results in 50% agglutination. The manual set-up and interpretation of the MAT is a laborious, low throughput procedure with long turnaround times and requires skilled personnel to perform the test. Can you develop a solution that would allow for rapid consistent high-volume testing of Leptospirosis?

Winning Teams + Finalists

BEST MARKET READY

GoVet!

An affordable solution to rural access to veterinary medicine.

Abigail Hentel- HUMEC MHA '23
Amanda Flanagan- VET DVM '24
Danielle Ferriola- VET DVM '24
Jing Wen Soh- SCJ CCB MPS AEM '23
Shruti Awale- ENGR MENG Engr Mgmt '23
William Roddy- SCJ CCB MPS Mgmt '23

MOST INNOVATIVE

BIGz

GHz ultrasonics enabled microscopic imaging for pathogenic disease detection.

Aditya Ravi- SCJ CCB MBA '23
Luis Amaro- ENGR PHD ECE '27
Rohan Sanghvi- ENGR PHD MechE '25
Sandhya Chinna Pillai- CIS MENG CS '23

BEST VET HEALTH SOLUTION

HerdIntel

HerdIntel is a predictive automated integrated diagnostic tool that uses AI to combat subclinical mastitis in cows.

Eric Leon- SCJ CCB MBA '23
Kara Styers- SCJ CCB MBA '24
Kimaya Bakhle- VET DVM '26
Nikola Danev- VET PHD '24
Samyukta Singh- HUMEC MHA '24
Vladimir Mazur- VET DVM '25

Mission Impawssible *FINALIST*

Monitor vital parameters (including TPR, BP and ECG) on a patient in a hospital kennel via a kennel smart mat.

Kylie Gillen- VET DVM '25
Lexie Haley- VET DVM '25
Mariajose Cervantes- VET DVM '26
Mason Thai- CALS BS Animal Science '26
Siddhant Mukherjee- ENGR MENG Biomedical '23
Taylor Schmeizer- VET DVM '25

Winning Teams + Finalists

DVMBAs *FINALIST*

Technology that prevents discomfort, bed sores, and repositioning injuries in mobility-impaired canines while reducing burden on vet staff.

Liv Halvorsen- VET DVM '25
Michelle Greenfield- VET DVM '23
Ben Hirschfeld- SCJ CCB MBA '23
Dennis Nabrinsky- SCJ CCB MBA '23
Maegan Reichling- SCJ CCB MBA '23

The Ruminators *FINALIST*

An early detection for laminitis.

Alyx Trulsen- VET DVM '25
Brea Hunlen- ENGR MENG Engr Mgmt '23
Kate Loonie- VET DVM '25
Levi Kafando- ENGR MENG Engr Mgmt '23
Maksym Tkachuk- ENGR MENG Engr Mgmt '23
Varun Rege- ENGR MENG Engr Mgmt '23
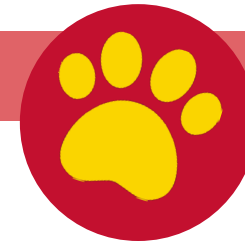
Cat Ties *FINALIST*

A partially digestible hair tie allowing for the disruption of the cat tie within the cat's stomach.

Caroline Murabito- CALS BS Animal Science '25
Emma Fralin- VET DVM '25
Jonathan Zirkiev- VET DVM '26
Kristina Ho- CALS MLA Landscape Architecture '23
Matthew Wear- A&S BA CS & Econ '23
Morgan Hulbert- VET DVM '24

Pigioneers *FINALIST*

A rapid leptospirosis testing kit that can be used easily at home. Using latex particles coated with antigen to visualize the concentration of Leptospira antibody.

Jessie Zhang- A&S BA Econ '25
Jiahe Tian- CALS BS Biological Sciences & IS '24
Jiarui Fang- CALS BS Biological Science + Biometry '24
Michelle Zhang- CALS BA Nutritional Sciences '25
Sicheng Ma- A&S BA Biological Sciences '25
Zixin Xu- A&S BA CS & Psychology '24
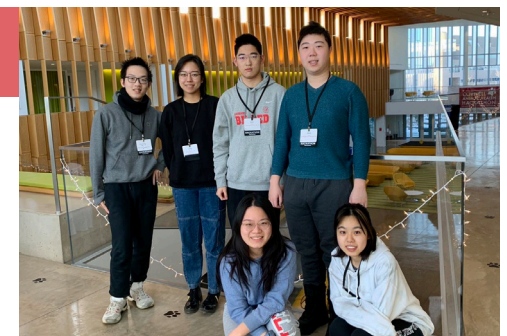
2023 Teams

A Better Pawspective

Collars for Pets to track health data over time & synchronize to EMRs in Vet Clinics.

Deevena Annavarjula
Evan Vera
Mohammed Khan
Pablo Raigoza
Shalini Diwakar
Shreya Mittal

Bone Appetit

Designing a breed specific nutritional app that allows pet owners to enter their pet's diet and provide recommendations.

Gisele de Mello Silva- SCJ CCB MBA '23
Jessica Tzu-Wan Kuo- VET DVM '26
Kenneth Trinh- ENGR BS ECE '23
Nikha Dublish- ENGR BS CS '23
Xiaomeng Li- SCJ CCB MBA '23
Yufei Zhang- VET DVM '24

Animal House

Product: Purrfect

Brett Taylor
Prem Kumar
Sadie Ray
Truc Vu
Tristan Baker

BarkDev

An app to make dog training more accessible for dog owners.

Gabriela Fite- ENGR BS CS '25
Gino Arevalo- SCJ CCB MBA '23
Ruizhe Sun- ENGR BS CS '25
Tessa Beiter- VET DVM -25
Ziyuan Pan- SCJ CCB MS Econ & Mgmt -23

2023 Teams

Cowrnell

Cow's artificial insemination success rate can be improved by accurately detecting estrus cycle.

Abdul Hannan Mohammed- ENGR MENG Engr Mgmt '23
Christine Nyaga- CALS PHD Plant Breeding and Genetics -26
Pradhuman Singh- ENGR MENG Engr Mgmt '23
Srikanth Kumar Karaikal- CALS PHD Plant Sciences '27

Pradhuman Singh
Abdul Hannan Mohammed
Christine Nyaga
Srikanth Kumar
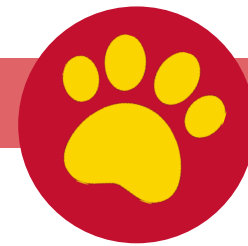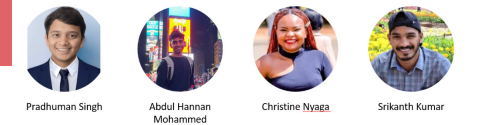
Feline Good

An automated wet food system that stores and opens wet canned food for your pet.

Aidan Ainslie- CALS BS Interdisciplinary Studies '25
Antonia Li- CALS BS Animal Science '24
Charlie Moser- CALS BS Ag Sciences '26
Elizabeth Tang- ENGR BS CS '25
Laura Marquez- CALS BS Animal Science '25
Sean Brynjolfsson- ENGR BS CS '25
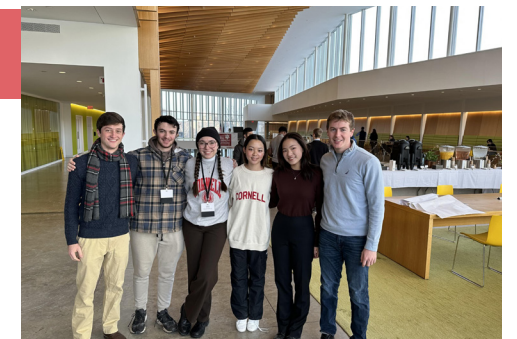
Fur-ever Innovators

Appointment scheduling, and ability to manage appointments from anywhere.

Amy Murro- SCJ CCB MBA/MILR '23
Anushka Roy- ENGR MENG Biomedical '23
Emma Kerr- VET DVM '25
Khizar Jaffry- Brooks MHA '24
Marta Bakaj- VET DVM '25
Rohan Shrivastava- ENGR MENG Engr Mgmt '23

Haccess

Real Time Monitoring of Early Detection of Colics Disease in Horses.

Abeer Alolyan- SCJ CCB MBA '23
Christine Angel Zhang -VET DVM '25
Hussain Ahmad Mohammad- CIS MENG CS '23
Jennifer Carbonel- HUMEC MHA '23
Sudeepa Kolli- ENGR MENG Engr Mgmt '23
Zelin Wang- SCJ CCB MPS Accting '23

2023 Teams

LAB

LABnet integrates genetic records and behavioural data using deep learning to predict and optimize assistance dog success.

Dominic Cannady-Lindner- CALS BS Animal Science '23
Emmy Luo- VET DVM '24
Maya Murry- ENGR BA CS '25
Shiang Chin- ENGR PHD Systems Engineering '24
Vaibhav Bisht- ENGR MS Robotics '23

Micro Chicks

An app to share essential medical information via QR code while promoting owner autonomy and ease of access for veterinarians.

Abhirami Beena Nayar- ENGR MENG Engr Mgmt '23
Julianna Nechin- VET DVM '25
Lyla Saxena- Brooks MHA '24
Mansi Zalavadia- ENGR MENG Engr Mgmt '23
Maryna Lytvynova Mullerman- VET DVM '25
Natalie Stopfer- Brooks MHA '24

Newtrix

Innovative training solutions to educate and empower veterinary support staff.

Ambika Patidar- ENGR MENG Engr Mgmt '23
Amy Stabell- CALS BS Animal Science '23
Ana Pantín DVM '22, MPH '23
Jasmine Cheema- SCJ CCB MBA '23
Nikhar Jain- ENGR MENG Engr Mgmt '23
Samantha Weintraub- SCJ CCB MILR/MBA '23

Happy Cows

Farm animal enrichment/sensor.

Catrina Murphy- CALS BS Animal Science '25
Iram Liu- ENGR BS CS '25
Jeffrey Xiang- ENGR BS CS '25
Kelly Yu- ENGR BS CS '25
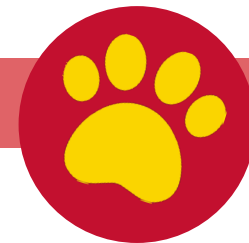Sydney Ho- ENGR BS CS '25
Wen Chen- ENGR BS CS '25

RJLN

A lifestyle management app for pets with a physical product that pairs with the app.

Jack Louden- A&S BA CS '23
Lauren Moroz- CALS BS Animal Science '23
Nicola Tysall- A&S BA Math & CS '23
Rochelle Kris- ENGR MENG CS '23

Sillycone Valley

A better e-collar that fosters comfort, versatility, and compliance. We brought the Elizabethan to the 21st century.

Emily Sine
Hunter Powell- VET DVM '26
Ivanka Juran- VET DVM '24
Jasmine Umrigar- CALS BS Global & Public Health '23
Lauren Steffann- VET DVM '24

Smart Pet Solutions

To provide automated/ digitalized pet training for dogs to improve their mental health and stop their abandonment.

Hishaan Mahtani- SCJ CCB BS Hotel '23
Jay Patel- ENGR BS CS '26
Shobhit Misra- SCJ CCB MBA '23
Shreemann Raghavan- A&S BA Econ '25

TAMPA

Client education and scheduling interface.

Aditya Ashtekar- ENGR MENG Engr Mgmt '23
Alison Parker- VET DVM '25
Maggie Whittington- VET DVM '25
Prasanna Punekar- ENGR MENG Engr Mgmt '23
Taiwo John- ENGR MENG Engr Mgmt '23

Winning Teams + Finalists

Urine Tracker Innovations (UTIs)

A new innovative plastic litterbox that allows owners to collect feline urine samples in the stress free environment of their home.

Briana Harper- VET DVM '26
Jessica Peri- VET DVM '26
Julia Meggitt- ENGR BS CS '25
Nina Morales- VET DVM '26
Stacy Okin- VET DVM '26

Yogi Pet Help

An app that provides pet behavioral resources to help pet parents with pet care and guides them on when to seek help, reducing the burden on vets.

Ayush Sahni- LAW JD/MBA '23
Brenna Lashbrook- VET DVM '26
Daniel Stateman- VET DVM '26
Maryann McCloskey- CALS BS Plant Science -24
Nitika Mehta- SCJ CCB MBA '23
Pranamika Balaji- ENGR MENG Engr Mgmt '23

JSWARM

Boost vet productivity by 50% with our AI assistant! Transcribes notes smartly & integrates into EMR for efficient organization.

Aaron Connolly- VET MPH Public Health '23
Joyce Gorospe- ILR MS OB '24
Maksym Ioffe- ENGR BS CS '26
Reginald Ezeh- ENGR MENG CS '23
Sai Vatsavai- ENGR MENG Engr Mgmt "23
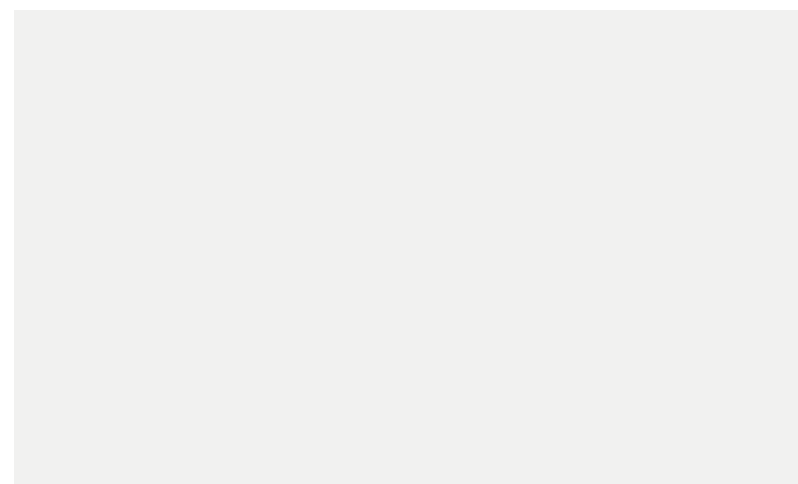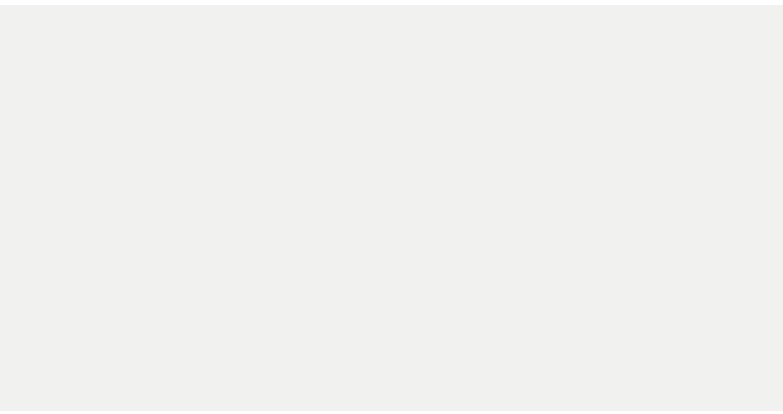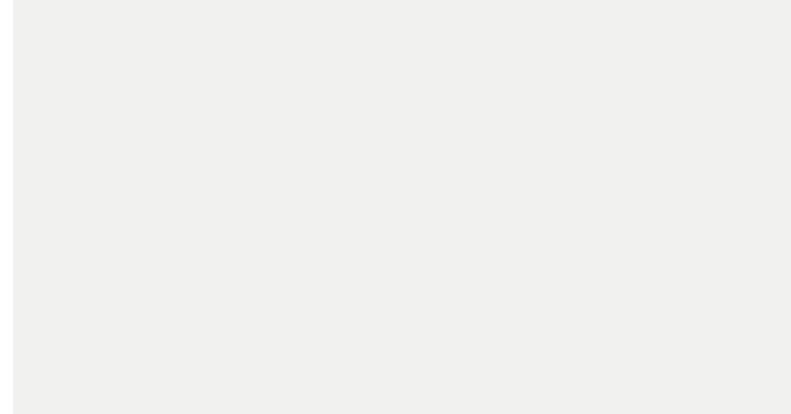Warren Billard- VET DVM '25
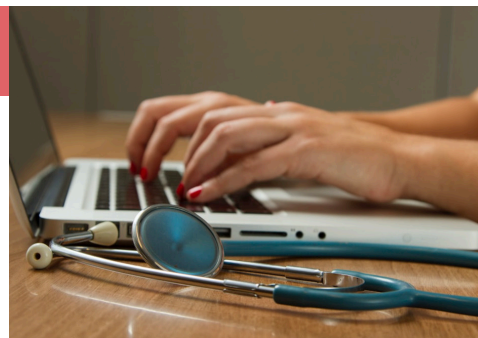
VETLINK

Our team aims to relieve emergency caseload in specialty hospitals through an online platform.

Michael Liang- ENGR BS ECE '24
Dora Weng- ENGR BS Computer Science '26
Brandon Li- A&S BA Computer Science & Math '26
Jason Mun- A&S BA Computer Science '26
Sean Zhang- ENGR BS ECE/CS '26
Justin Chung- A&S BA Computer Science '26

it's a
group effort

"LEARNED ABOUT MY STRENGTHS AND WEAKNESSES AS A TEAMMATE, GAINED CONNECTIONS, AND GAINED LOTS OF EXPOSURE TO ISSUES IN VET MED AND ANIMAL HEALTH.

I WAS ABLE TO NETWORK WITH SOME OF THE MENTORS PRESENT WHICH WAS A REALLY GREAT EXPERIENCE FOR ME. AND I NOW FEEL LIKE I HAVE A WAY TO CONTACT PEOPLE IN THE FUTURE. I ALSO ACQUIRED SOME NEW SKILLS IN LEARNING ABOUT BUSNESS MODELS AND HOW TO MAKE A PITCH!

"FANTASTIC EXPERIENCE."

GREAT EXPERIENCE, NETWORKING, AND TEAMWORK.

MY BUSINESS SKILLS GREATLY IMPROVED. I FEEL LIKE I UNDERSTAND THE GOAL OF STARTUPS AND ENTREPRENEURSHIP. I KNOW MANY PEOPLE'S NETWORKS EXPANDED GREATLY.

MENTOR ACCESS WAS WONDERFUL.

I THINK THAT THIS IS A REALLY VALUABLE LEARNING AND NETWORKING EXPERIENCE. IT IS ALSO GREAT FOR LEARNING HOW TO BUILD TEAMS WITH PEOPLE THAT YOU'VE NEVER MET BEFORE AND HAVE DIFFERENT SKILLS AND BACKGROUNDS!
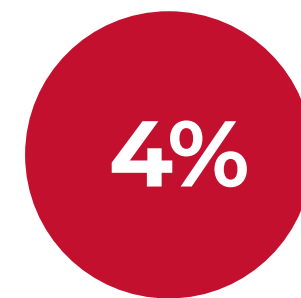
152 Participants, 28 Teams

A schedule packed with mentorship, networking, team updates, workshops and swag.

70%
GRADUATE

30%
UNDERGRADUATE

4%
PHD

Majors Included

Vet Met
Computer Science
Engineering Mgmt
MBA
Global, Public, Health Administration
Animal Science
CS (& Physics, Psychology, Econ, Math)
Elec & Comp Engineer
Accounting, Economics
Biological Sci (+ Info Sci, Biometry or CS
Plant Breeding, Science, and /or Genetics
Applied Economics & Management
Biomedical Engr
Plant Sciences

64% Women
36% Men

2023 Distribution

VETERINARY	27%
ENGINEERING	31%
JOHNSON MBA	12%
AGRICULTURE & LIFE SCIENCES	12%
ARTS & SCIENCES	7%
HUMAN ECOLOGY	5%
JOHNSON COLLEGE OF BUSINESS	2%
COMPUTING & INFORMATION SCIENCE	2%
ILR	1%
LAW	1%
HOTEL	1%

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