

# Invest in Pharm Robotics

We are automating the shot delivery process for dairy and beef cows with robots



f @ PHARMROBOTICS.NET SAN JACINTO CA

Food Hardware Technology Medical Device Engineering



ABOUT

UPDATES<sup>0</sup>

REVIEWS<sup>30</sup>

ASK A QUESTION<sup>0</sup>

## Why you may want to invest in us...

- 1 Co-Founders have 25+ years of combined experience in the dairy industry and are first-movers 🐄
- 2 Patent-pending technology will decrease labor costs and increase herd immunity and pregnancy rates 📈
- 3 ~\$12.3M potential revenue from 41 non-binding LOIs for purchase agreements across 4 countries 🌍
- 4 Investment partnership with Siemens Industry Inc. to help develop the prototype and brand marketing 🚀
- 5 Strategic partnership with a SaaS company who manages data for ~60% of the cows in the US 🖥️
- 6 Equipped with 4 advisory board members who mentor in dairy equipment, SaaS, and sustainability 🌱
- 7 Established relations with DFA, the largest cooperative in the US representing 8,500+ dairy farms 🤝
- 8 Teamed up with CSU, Chico to design our gate system through their Capstone Design Program 🏠

## Why investors ❤️ us

WE'VE RAISED \$150,400 SINCE OUR FOUNDING



*The team and technology are addressing a real need in the market for better management of farm dispensed valuable pharmacological resources, to improving animal health and productivity. Delivering the correct dosage at the right time to the correct animal. Reducing the errors and over and under dosing of a manual system. Less stress for animals and better use of skilled animal care attendants. The system is organically developed by real farmers solving their unique challenges for their environment. Well received by the industry facing an extreme shortage of affordable quality labor to care for their herd. Its an opportunity to solve the challenges economically. Saving time and waste of misapplication of valuable medicines. Documentation is improved for data collection and outcome analysis is more measurable and reliable. They have a solid smart management team that is committed to*

building world class solution deliverable at the farm level, one cow at a time. This system makes herd health compliance easier and more cost effective. Veterinary resources are benefiting from prescriptions being delivered as directed with 100% accuracy. Better herd health management benefits all the stakeholders. Very few assets on the expense side of the farm are as well positioned as this well managed. Labor costs are a motivation, herd health and better production outcomes are now highly documented and measurable against objectives. Thus targeted spending on pharmacological resource inputs is better correlated to salable output changes. The challenge is understood and the team brings to bear the best partners and suppliers.

[read less](#)

**Thomas M. Hintz** Managing Partner SeaHold

**LEAD INVESTOR** INVESTING \$20,000 THIS ROUND



I had the pleasure to meet Alexander and his co-founder Marinus Dijkstra as a Mentor in the Dairy Farmers of America Accelerator Program. I was impressed with their granular understanding of the problem they were solving for Dairy Farmers and the detailed, yet cost effective solution they were driving to develop. The first thing I appreciated was their willingness to accept coaching and their commitment to follow through and address any and all identified actions. We have stayed in touch and I have enjoyed introducing them to potential collaboration Partners and Investors.

**Mike McRoberts** ☆



Alexander is well organized and has consistently brought innovative ideas to reality

**Mike Oosten** ☆



Alexander Chuck is one of the most determined, and hardworking people that I know. He has an incredible ability to juggle numerous complex tasks at once which makes effective as the CFO of Pharm Robotics. Whenever he has a goal in mind, he does not stop and works relentlessly until his vision is realized. It is for these reasons that I believe Pharm Robotics will be extremely successful.

**Rupert Wilson II** ☆



I met Alexander Chuck 3 years ago in college at Chapman University in one of our Accounting courses. After a brief conversation with him, he immediately struck me as someone who is bright, hard-working, and extremely passionate towards his endeavors. During our years in college, I was astonished by his work ethic and his ability to provide exceptional results for everything in his life. I watched him pursue his studies at Chapman, responsibility as President in his fraternity, internship in commercial real estate, and his role as Operations Manager at Pharm Robotics. He gives 110% with everything in his life and his character is impeccable. Alexander wants nothing more than to provide the highest quality results for his investors, business partners, and fellow colleagues.

**Jonathan Bigi** ☆



Great to see technology advancement in the dairy industry 🍷

**Sonia Perez** ☆



I know Alike through Alpha Kappa Psi, a professional business fraternity we were both a part of. During the 3 years we shared together, I saw Alike emerge as one of the most hard-working, talented, and ambitious people in our chapter, and I have no doubt that he'll be successful in whatever he pursues. He was constantly juggling multiple responsibilities - whether it was interning at investment firms, working on his startup, managing his dairy farm, or eventually becoming President of the chapter - but he never complained about it once because I think he actually reveled the challenge. In a sea of overachievers, he stood out as someone who set an incredibly high bar for himself and was still able to exceed it. All told, if you believe that good people make the best investments, as I do, then rest assured because you have found one of the best.

**Ben G** ☆



He has a drive for innovation and is extremely hard working. Very impressed with the video put together for Pharm Robotics. This invention could save a dairy farmer alot of time and labor expenses.

**Art Oostdam** ☆

## Our team



### Marinus Dijkstra

CEO & Co-Founder

*Over 20 years of experience in the dairy industry, California Milk Advisory Board Member, California Dairy Inc. Producer*



### Alexander Chuck

CFO & Co-Founder

*Over 5 years of experience in the dairy industry, 2020 AgGrad 30 Under 30 Winner, 2021 Forbes 30 Under 30 Nominee, BS in Business Administration with Finance Emphasis, and BS in Accounting*



### Connor Broughton

Head of Business Development and Marketing

*MBA Graduate from Chapman University, national level athlete, BS in Business Administration with Finance Emphasis, and BS in Accounting*



## In the news



## Downloads

[Pharm Robotics Pitch Deck](#)

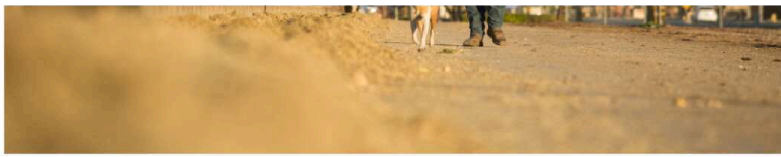
# Pharm Robotics - Improving Animal Health Standards for Dairy Cows

In 2017, Marinus was a dairy farmer overseeing multiple operations within the agriculture industry as well as serving as a mentor to Alexander. Alexander was an undergraduate student and manager for Marinus' compost operation. One day, Marinus approached Alexander with the idea of improving animal health standards for cows and creating a sustainable economic future for farmers by automating the shot delivery process carried out by thousands of dairy farmers around the world. Marinus and Alexander decided to accept this new challenge and created a patent for the invention entitled, "The Robotic Injection System for Domestic Herd Animals."

After the idea became intellectual property, the two decided to participate in an accelerator program sponsored by Dairy Farmers of America and Sprint. During the accelerator program, Marinus and Alexander learned through many industry experts on how to tackle the market they were about to enter. After the accelerator program ended, the team had an arsenal of knowledge to build a strategic business model. Pharm Robotics was then established in February of 2019.







Pharm Robotics is developing a robotic injection system that will help farmers with the shot delivery process for their cows. The robotic system will record when the cow was given a shot, what kind of shot she was given, the dose of shot given, and how much she weighs at that point in time. We then send this information to the cloud, where we will then provide farmers with real-time data to make better-informed decisions pertaining to herd protocols and labor usage. This leads to an increase in immunization and pregnancy rates, reduced labor and replacement costs, and better milk quality.

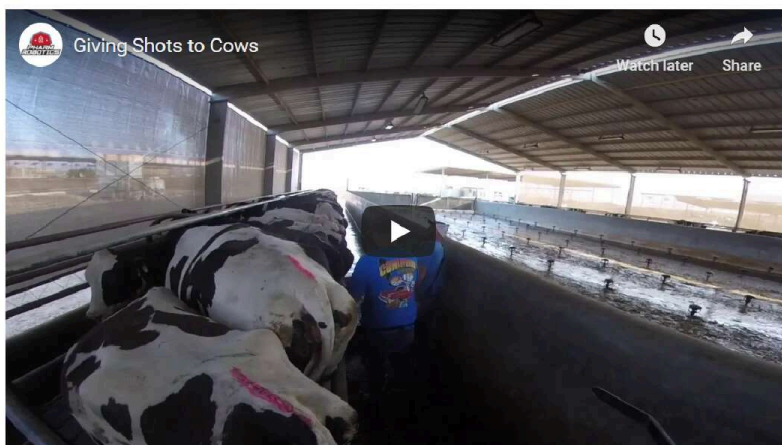


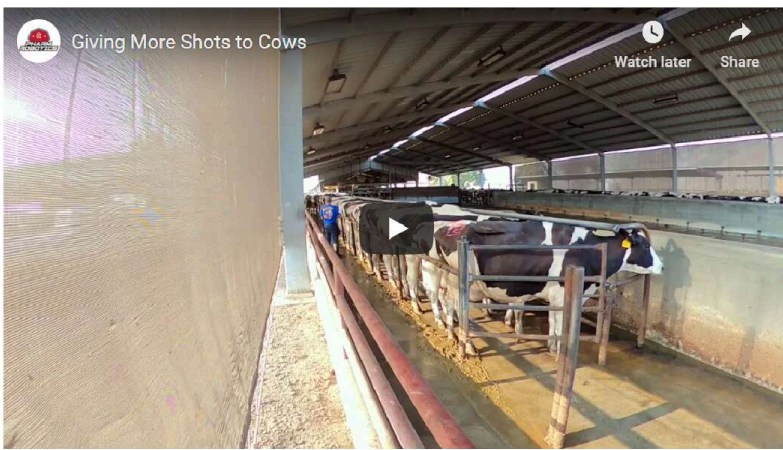
*This is a 3D animation and is used for demonstration purposes only. The actual design of the prototype may differ from the design shown in this demo video.*

Dairy farmers around the world have to give millions of vaccines, reproductive products, trace minerals, and liquid vitamins by hand. A shortage in labor also exists throughout the industry, which makes it challenging for farmers feed the world by 2050.

### The Problem

- **Issues with labor shortage of skilled workers**  
\*Labor cost or cost equivalent of \$62,000 (US avg.) can be saved per employee
- **Lack in shot accuracy for animal health standards**  
\*Avg. loss of \$75,000 per 1,000 cows per year due to inaccurate shots given
- **Dairy cows and farmers are missing out on increased health standards, significant revenue potential, and cost savings**  
\*Potential avg. gain of \$15 per cow per year for every 1% increase in preg rate





Now, this creates two problems: One, to administer these shots, it requires a lot of labor and training. Two, many of the cows in the industry do not achieve more than a 95% compliance rate, meaning they don't receive the full required schedule of the vaccines or reproductive products. Marinus has had over 20 years of experience with these problems.

### The Pharm Robotics Solution

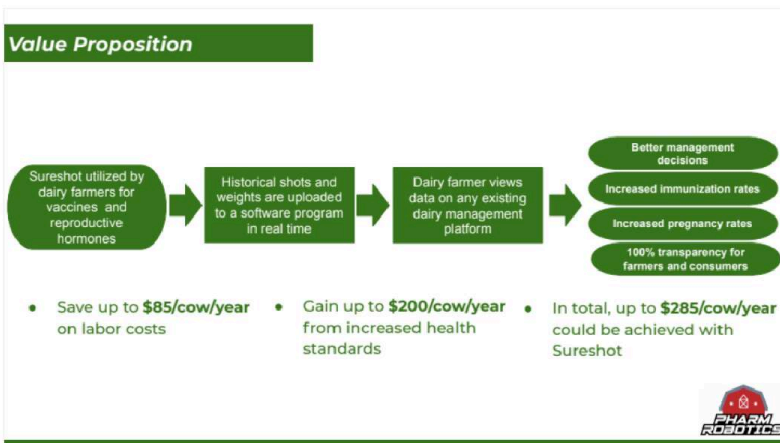
Sureshot automates the entire process by identifying and validating shot records, robotically giving shots, and recording health-related data important to the farmer to make better decisions for their farm.

**This is Sureshot,**  
The robotic injection system for dairy cows.

- Identifies individual cows
- 99.9% shot accuracy
- Real-time data management
- Automatic needle disposal
- Robot built for environment
- Keeps up with cow flow
- No labor required

Agriculture is a **\$2.4T** industry that will require precision based technologies to feed the world's population by 2050

Source: <https://croplife.org/news/agriculture-a-2-4-trillion-industry-worth-protecting/>



Missing these cows' reproduction schedules and the additional cost of labor, dairy farms potentially miss out on up to \$285/cow/year. \$85/cow/year could be saved on labor and up to \$200/cow/year could be gained from increased pregnancy rates and herd performance. Sureshot will be utilized, data will be uploaded in real-time, and the dairy farmer can then view the data and make better-informed decisions for their operation.



## We now have a 7 member team!

Our team has a lot of experience in the dairy business and have deep connections throughout the industry. Our unique skill sets and areas of specialization make us the perfect team to build this technology and take it to market. We also have four part-time business advisors who joined the Pharm Robotics team in which we will leverage their capabilities in the dairy equipment, software, and renewable energy space to transform the animal health side of the industry. We have two part-time employees and one full-time employee. Our plan is to pay the salaries for two full-time employees once we receive funding.



## Pharm Robotics Timeline



*Co-Founder and Chief Financial Officer Alexander Chuck presenting at the 2018 DFA/Sprint Accelerator Demo Day in Kansas City, MO.*

## Gaining interest from dairy farmers!

Now that we have been given the tools and resources to moo-ve to the next step, we began attending industry-specific events such as the World Agri-Tech Innovation Summit, Animal AgTech Innovation Summit, the Connect Summit by VAS, and the World Ag Expo. Here we networked with both producers and thought leaders within AgTech and the dairy industry while we continued to raise our seed round. At these tradeshows, we were able to gain significant interest from dairy farmers. We currently have 41 signed non-binding letters of interest to approach these dairy farmers at a later time to carry out discussions regarding early adoption and purchasing agreements.

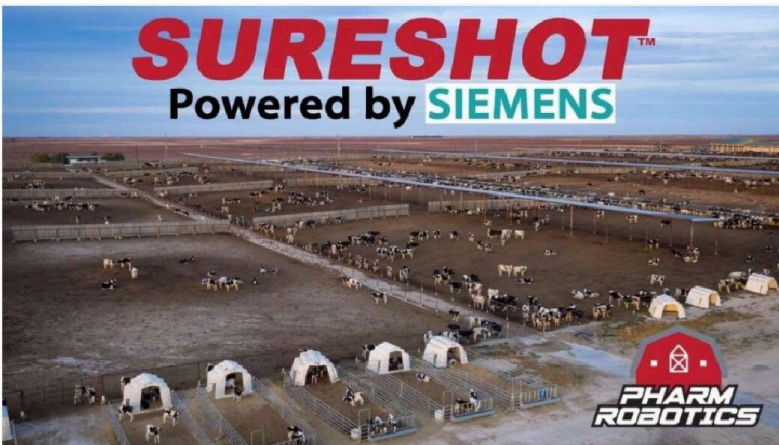




Co-Founders Marinus Dijkstra and Alexander Chuck attending the 2019 World AgriTech Innovation Summit in San Francisco, CA

### Investment partnership with Siemens

May of 2020 was a huge month for the team to say the least as we accepted our investment partnership with Siemens! Siemens is the largest industrial manufacturing company in Europe. We accepted this partnership to help develop our prototype and move from conceptual to production. We look forward to working with Siemens to advance our technology inside Sureshot and expand our global branding together.



### We will continue being a first-mover in animal health...

Future plans include entering the \$138.9B Global Big Data Market, offering our system to other animal types within the \$49.6B Global Animal Health Market, and eventually creating new opportunities within hospitals for the \$7.2B Global Medical Robots Market.

**ANIMALAGTECH**  
INNOVATION SUMMIT  
VIRTUAL SEPTEMBER 14, 2020

Building a Healthy, Sustainable and Secure Animal Agriculture Industry through Innovation and Collaboration



**START-UP SHOWCASE**  
PRESENTER

"At Pharm Robotics, we understand that the dairy industry is very challenging and therefore we are focused on increasing animal health standards and creating a sustainable economic future for the modern-day dairy farmer with Sureshot, our automated shot delivery system."

**Alikea Chuck, Co-Founder & CFO, PHARM ROBOTICS**

animalagtecheurope.com #AnimalAgTech

JOIN ME  
ONLINE

**PharmRobotics Pitch - Dairy Start-up Spotlight**  
from Lotus Media



♥  
🕒  
📍





Co-Founder and Chief Financial Officer Alexander Chuck presenting at the 2020 virtual Global Dairy Tech Start-up Spotlight Event endorsed by the World Dairy Expo

## Investor Q&A

### What does your company do? ▾

We sell robotic systems to deliver shots to dairy cows and ensure that all cows get shots correctly and on time. Once a shot has been given in the neck region of a cow, her medical records will be updated in real-time where the dairy farmer can then view and make better decisions based on accurate and current data. The dairy farmer will no longer need labor to administer shots and manually record data within this area of the business which will result in a healthier, more productive herd.

→ EXPAND ALL

### Where will your company be in 5 years? ▾

In 5 years, we aim to be a household name in the animal health space within Agriculture Technology. We plan to also offer our solution to the beef industry with an overall vision of expanding to other animal species globally. Our system will allow us to develop predictive modeling capabilities and optimize the shot delivery process for animals based on individual characteristics and historical events. These projections are not guaranteed.

### Why did you choose this idea? ▾

Marinus is a dairy farmer. At his 3,000-cow farms, he gives 54,000 shots annually. He has 3 full-time employees who have to locate these cows and give shots by hand. Unfortunately, these employees do not give shots correctly. By eliminating labor and compliance issues, his farm could be receiving an additional \$275,000/year, but is missing out.

### How far along are you? What's your biggest obstacle? ▾

We are currently working with system integrators on initial prototyping. With the \$125,000 we received from our investment partnership with Siemens, as of July 2020 we have begun initial prototyping of RFID and visualization technologies to achieve 99.9% accuracy for our system when scanning cows. We will then move into the robotic arm and custom end of arm tooling build-out. We are also working with VAS to develop an add-on to their existing herd management platform.

We haven't been able to scale down our prototype and achieve a more cost-effective approach because we need the proof-of-concept to work directly with cows. That being said, the cost of future units will be lowered significantly and will be more affordable for farmers.

### Who competes with you? What do you understand that they don't? ▾

Our solution is first to market. Indirect competitors are robotic milking companies. Sureshot automates the entire process from identifying and validating shot records, robotically giving shots, and recording health-related data important to the farmer to make better decisions for their farm. Most importantly, we provide a solution for the traceability of pharmaceuticals for the very first time in a global market that cares where their food came from. With the 99.9% accuracy our system will provide, we can accurately record health records to ensure top compliance is maintained. When shots are given to cows according to their reproductive and immunization schedules, dairy farmers can significantly increase their profit margins.

### How will you make money? ▾



Base price for Sureshot is \$300k, as this is competitive with other robotics companies. For larger dairies, the base price will increase as more lanes may be needed as well as a rail system where the robot will inject cows hanging upside down. The farmer will pay \$200k upfront on a 60/20/20 schedule based on completion and \$10k/mo. until the system is paid in full.

As an alumnus company of the 2018 DFA Accelerator Program, we plan to utilize our partnership with Dairy Farmers of America to provide financing for farmers around the US. Additional revenue streams will include installation fees, yearly licensing fees, yearly software subscriptions, and pharmaceutical sales. If no new systems are sold, we will generate roughly \$11k/unit/yr.

### **What are the biggest risks? If you fail, what would be the reason? What has to go right for you to succeed?** ▾

Our biggest risk for the project is developing a prototype that doesn't validate shot records or deliver pharmaceuticals properly with the custom end of arm tooling (EOAT) once deployed on a dairy.

Furthermore, the reason we would fail is due to not being able to align the timing of the system in the correct order of operations. The cow must first be scanned and validated before the gates close and the robotic arm gives a shot.

In order for us to succeed we need to continue working with the integrators in Hercules, CA and focus on validation between RFID scans and the herd management system to achieve high compliance ratings before moving on to the next portion of the integration.

### **What is the current solution for dairy farmers?** ▾

Employees within the dairy industry perform these tasks by hand. Employees have to search for cows throughout the dairy, sometimes involving over 10,000 cows. When an employee finds a cow, they will refer to a list of numbers on paper or tablet to find which cow needs a specific shot. Once the employee finds the correct cow and delivers the correct shot, they will then need to upload this list to the computer in the farmer's office.

Once the employee completes their round of giving shots to hundreds of cows, they will then manually input which cows received specific shots according to synchronization/immunization schedules. With this current process, even if the various steps throughout the shot delivery process are carried 100% correctly, there is still no way to prove a specific cow received a specific shot due to the information being derived from human input.

Automating this process is a huge time-saver for dairy farmers and provides the ability to attend to other important areas within their operation.

### **Who is your initial target market?** ▾

Our initial target market are the largest dairy farms in the US, representing 6 million of the 9 million cows (8,000 of 34,000 dairies in the US). Our initial addressable market includes dairy farmers who have large operations ranging from 600 to 15,000 cow dairies, who utilize artificial insemination programs, who spend significantly on labor costs in delivering injections, and those already utilizing robotics on their operation. After establishing our presence in the US, we will move to the large dairy farms in Asia and Europe who also experience the same compliance issues.

### **How does our system work?** ▾

As cows exit the milking barn they will be scanned by an RFID/camera reader to validate shot protocols in accordance with the herd management software. If a cow needs a shot, as she passes through the exit lane, the automated gates will close at the injection site and she will be restrained and weighed on a scale below. The robotic arm will position itself to deliver an injection in the cow's neck region with the end of arm tooling. The restraint will then release and the gates will open, allowing for the cow to continue down the exit lane towards her pen. Real-time data (Date, time, current body weight, shot given, dosage given) will then be uploaded to the herd management software. We want to allow farmers to make more informed decisions by providing accurate data in real-time while reducing labor costs and improving herd health and profitability.

### **How do you plan to optimize the shot delivery process?** ▾

To optimize the shot delivery process, our team would like to aggregate the health-related data and perform statistical analyses to identify ideal points in time and how much of a

shot to give to a cow based on individual characteristics. For instance, in a scenario with people, how do we know if we need the full cup of cough medicine based on body weight, age, and historical health events? Once optimized, farmers can expect to see an even healthier and stronger herd as well as more profitability for their farm. These are the ideas that excite our team for the future.

### How much do you need to raise to get to the next major milestone? ▾

Once our seed round has raised at least \$175,000 we can proceed to build the robotic arm and vision integration, which is the next significant milestone in the prototyping process. This will also cover some marketing expenses. Once additional capital is been raised to cover the remainder of the prototype, we can produce one fully-functioning unit which will take roughly 6 months to complete and will be placed on CEO Marinus Dijkstra's dairy. By the summer of 2021, we plan to deploy additional units to farmers interested in beta-testing. We have several large dairies interested in prototyping in the beta-stage. After successful beta-testing, we plan to scale further and begin producing in larger quantities heading into 2022.

### How do we justify our current valuation? ▾

We base our valuation on current prototyping of our minimum viable product (MVP), existing intellectual property, market traction and revenue potential, team expertise, partnerships, alliances, and a sponsorship.

We are working on initial prototyping for RFID and visualization technologies to scan cows as accurately as possible. Additionally, as a sponsor for CSU, Chico, we have a team developing the gate system and bumper restraint that will hold the cow in place when she receives a shot. Regarding our existing IP, we currently have a non-Provisional Utility Patent Application which is expected to be granted in early 2021. The patent is currently owned by Marinus Dijkstra and Alexander Chuck, though we are working on having the rights of the patent transferred over to Pharm Robotics LLC.

We have 41 non-binding Letters of interest (LOIs) from dairy farmers around the world (~\$12.3M potential revenue). Our system isn't constrained to the dairy industry. We have the opportunity to create future products for the beef industry as well as other animal types (pigs, goats, and sheep) and other industries where our technology can be deployed, such as a mobile system for hospitals. Since our establishment in 2019, we have brought on experts to join our advisory board in the areas of dairy equipment, SaaS, and sustainable solutions. We also brought on a MBA graduate to join as our Head of Business Development and Marketing.

Existing partnerships/alliances/sponsorship:

Specialized Dairy Services (SDS) - Partner for installation and sales

FarmTrace - Partner for SaaS, predictive modeling, and business development

Seahold - Partner for sustainable solutions and business development

Siemens - OEM pricing partnership, additional marketing, co-branding, and training facility

Valley Agriculture Software (VAS) - Strategic partnership for software development, integration, and revenue opportunities

Symation - Siemens distributor responsible for producing prototype and specs for future units

Dairy Farmers of America (DEA) - Access to market data and financing opportunities for member farms as 2018 DFA/Sprint Accelerator alumnus

CSU, Chico - Serving as a sponsor in the Mechanical Engineering and Mechatronic Capstone Design Program

