

CRESCENDOSM

FIRST ROBOTICS COMPETITION · ALBUQUERQUE, NM

ENIGMA

9080 2024 CRESCENDO · SECOND SEASON

Our second robot — the swerve-driven machine we named **Sweet Baby Shane**.

THE LEAP

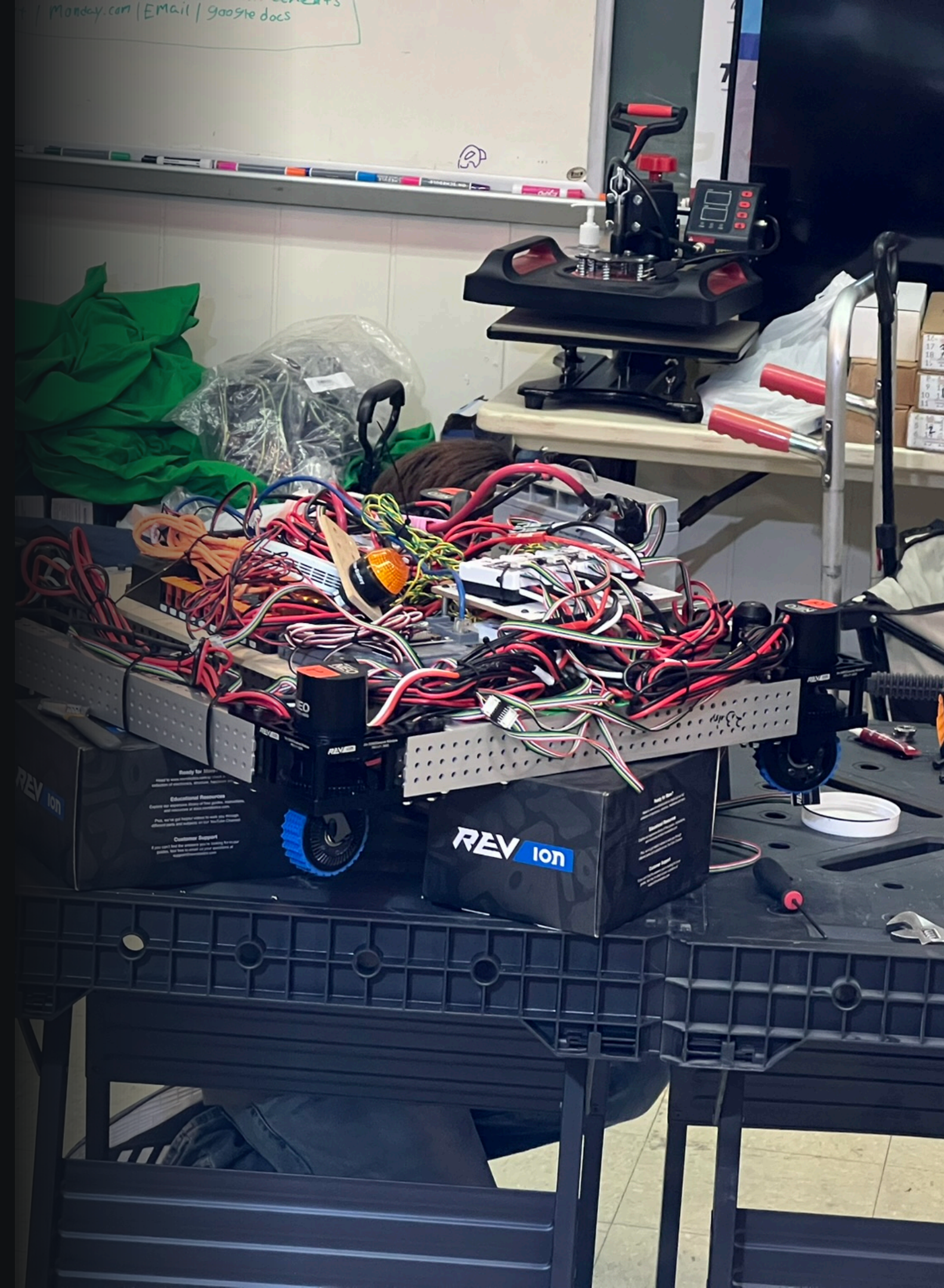
**Year one, we built
a robot that worked.
Year two, we designed
one on purpose.**

Our second CRESCENDO season was the jump from simply building a functioning FRC robot to intentionally engineering one around a strategy — starting with the hardest decision on the table.

THE HARD ROAD

They said a second-year team shouldn't attempt swerve drive.
We did it anyway.

Last year it was a wooden turret. This year, swerve.



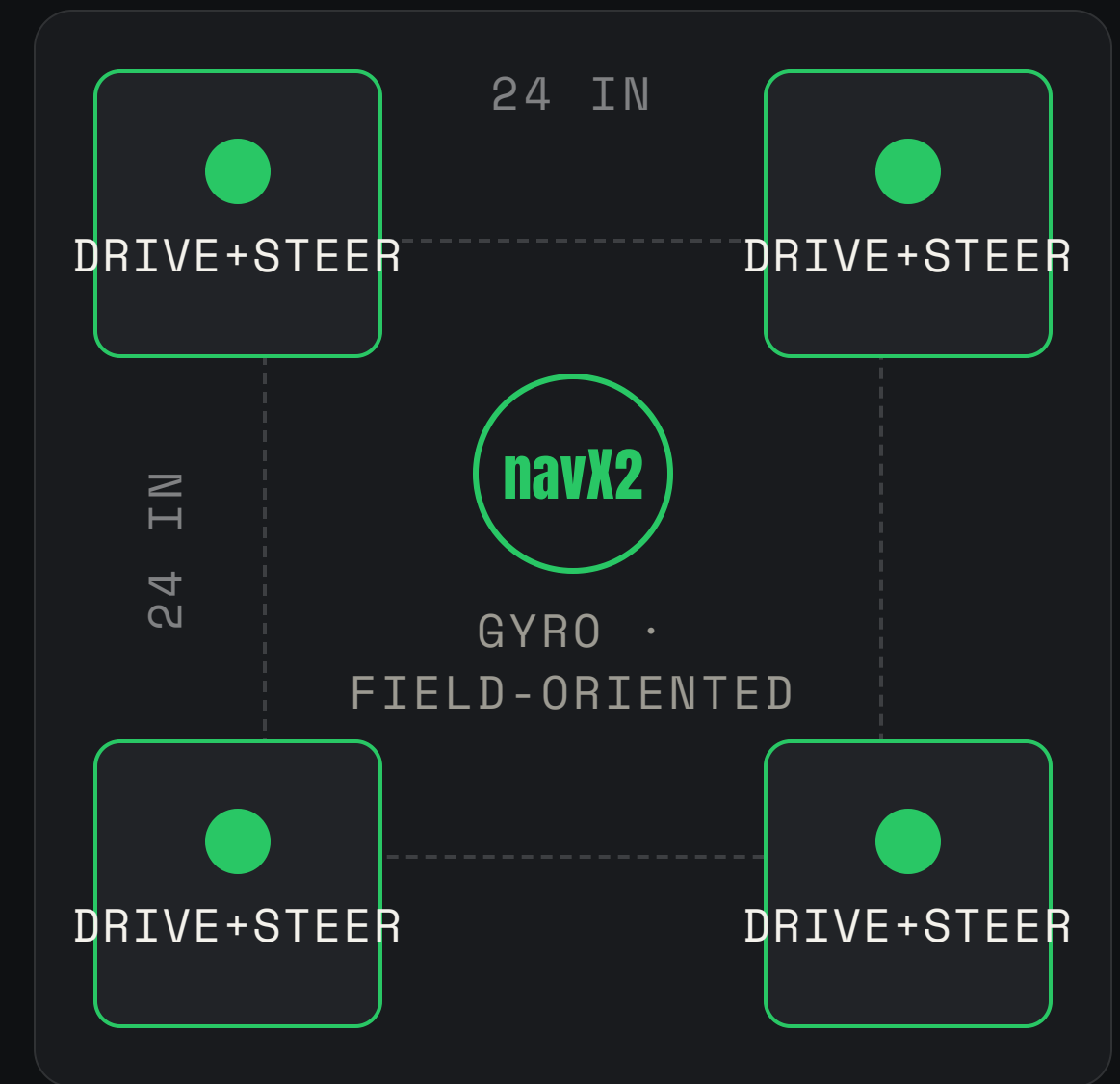
FOUR WHEELS, ONE MIND

SWERVE 101

REV MAXSWERVE

Each of four modules **drives and steers independently** — so the robot can move any direction while facing any way. Making that work meant learning an entirely new stack:

- Mechanical setup
- Encoder calibration
- Coordinate systems
- Motor configuration
- Steering control
- Drive software



FROM RESEARCH TO CAD

DESIGNED ON PURPOSE

9080 / CRESCENDO

01 Studied the best concepts

Ri3D concept robots and early CRESCENDO prototypes, broken down play by play.

02 Joined David's Design Discord

Trading CAD concepts and technical feedback with experienced FRC designers.

03 Full robot CAD by Gray & Peter

Turning research and strategy into a complete, build-ready design.



24*24

INCH FOOTPRINT

<27"

TALL, COMPACT

BY THE NUMBERS

2,120

HOURS INVESTED

12

STUDENTS

4

SWERVE MODULES

24*24

INCH CHASSIS

6

ROBOT SUBSYSTEMS

3

DISTRICT EVENTS

12 STUDENTS · 3 CO-CAPTAINS · A GROWING MENTOR CORPS

MEET THE TEAM

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Gray S.
CO-CAPTAIN · CAD



Iriana V.
CO-CAPTAIN ·
MEDIA



Luke C.
CO-CAPTAIN · FAB



Zacheriah J.
LEAD PROGRAMMER



Peter F.
DRIVE COACH



Hailey W.
BUILD ·
ELECTRICAL



Nora L.
BUILD ·
FABRICATION



Anirudh N.
BUILD · DRIVE
TEAM



Kaitlynn F.
MEDIA · OUTREACH



Cody S.
GRAPHIC DESIGN



Sammy G.
OUTREACH · CODE



Phillip M.
BUILD · MACHINING

COACHES &
MENTORS



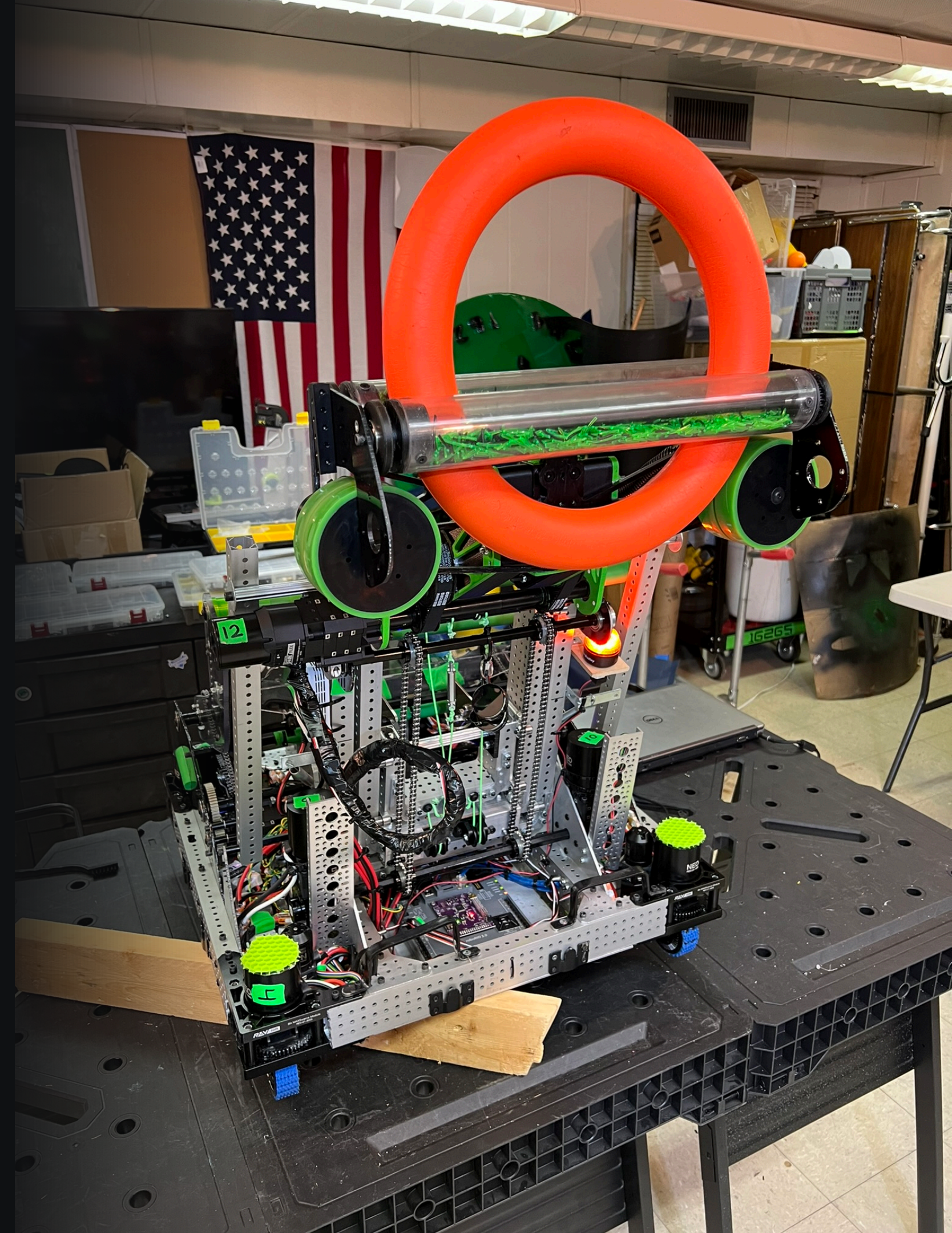
led by Head Coach Russell M. — and a corps that grew to **15+ industry mentors**

THE ROBOT



A compact 24×24 swerve robot — and a full personality. The name came from a sponsor who earned robot naming rights, and the team built an entire 1970s-style identity around it.

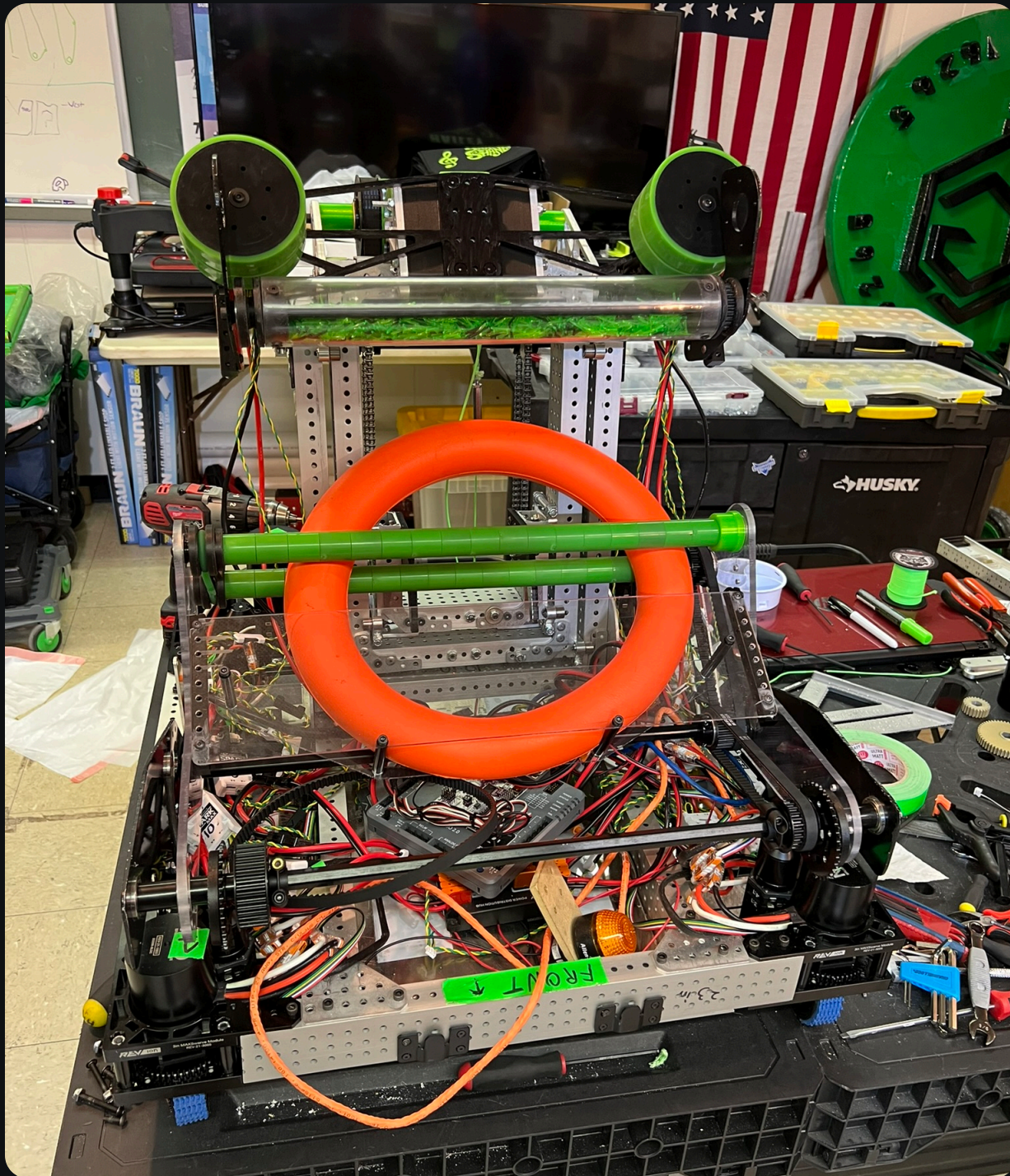
- Top hats, masks & bow ties included



SIX SYSTEMS, ONE COMPACT FRAME

INSIDE SWEET BABY SHANE

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01 / DRIVE

REV MAXSwerve

Four-module swerve on a 24×24 base.

02 / INTAKE

Over-the-bumper

Ground intake that scoops Notes on contact.

03 / SHOOTER

Adjustable shooter

Tunable angle for Speaker and Amp shots.

04 / ELEVATOR

Scoring elevator

Lifts the mechanism to reach higher targets.

05 / ENDGAME

Hanging system

Lifts the robot onto the Stage chain at the buzzer.

06 / REACH GOAL

Trap scoring

Attempted the game's toughest objective.



★ URANIUM LEVEL SPONSOR

A NEW TIER, NAMED FOR A SUPPORTER

A supporter named Shane funded the team at a level that came with naming rights to the season's robot. It inspired ENIGMA to formalize its highest sponsorship tier — the **Uranium Level**, a special ENIGMA-green designation.

Custom 1970s logo

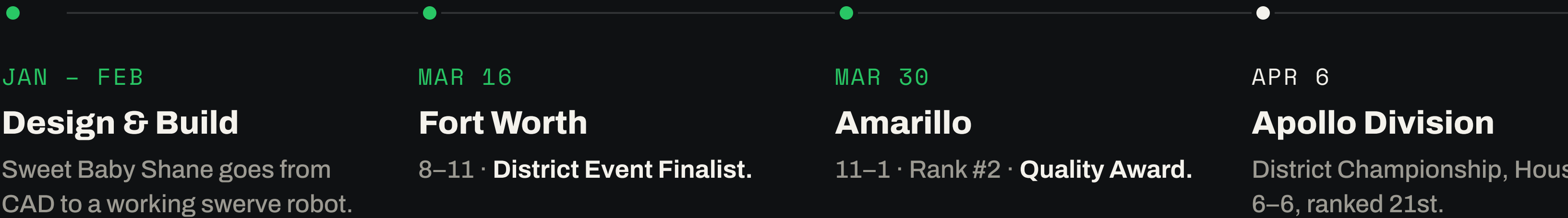
A retro Sweet Baby Shane identity, applied to the robot.

Laser-etched plaque

A lasting, personalized thank-you, fabricated in-house.

THE SEASON

FIRST IN TEXAS DISTRICT



ONE YEAR OF GROWTH

YEAR 1 → YEAR 2

'23 CHARGED UP

'24 CRESCENDO

DRIVETRAIN

Kit tank drive



REV MAXSwerve

HOURS INVESTED

1,800



2,120

SPONSORS

1 partner



9 across 3 tiers

BEST RESULT

Highest Rookie Seed



Finalist + Quality Award

BEST EVENT RECORD

Building from scratch



11–1 at Amarillo

FROM 1 PARTNER TO 9

OUR SPONSORS

501(c)(3) NONPROFIT

★ URANIUM LEVEL

SHANE

Special ENIGMA-green designation · robot naming rights.

PLATINUM

Leidos

NM Grant
Writers

Verus
Research

GOLD

505 IT

Blue Halo

DoD STEM

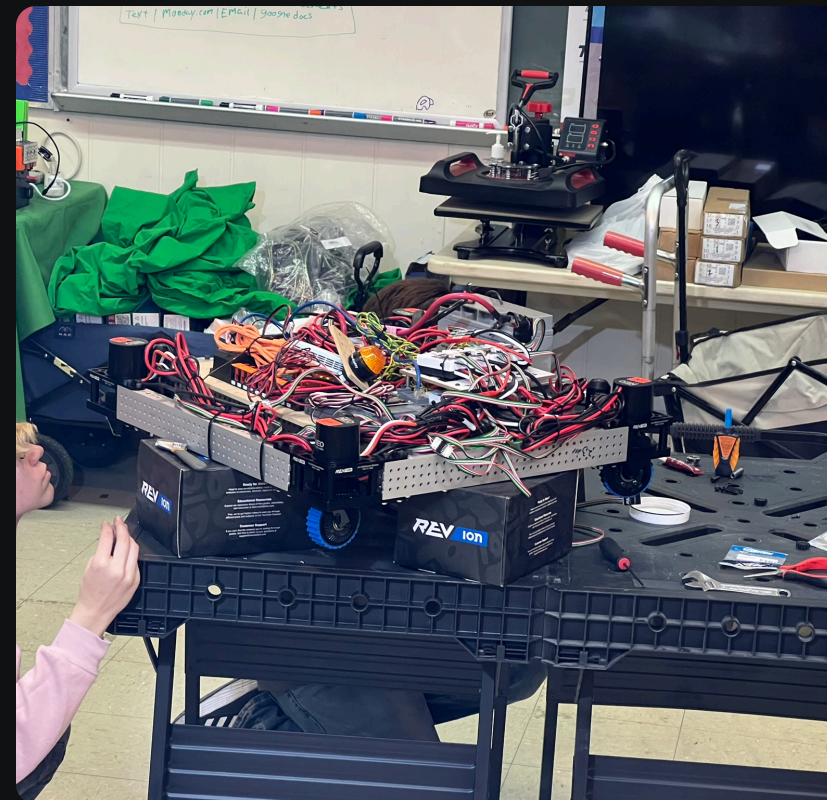
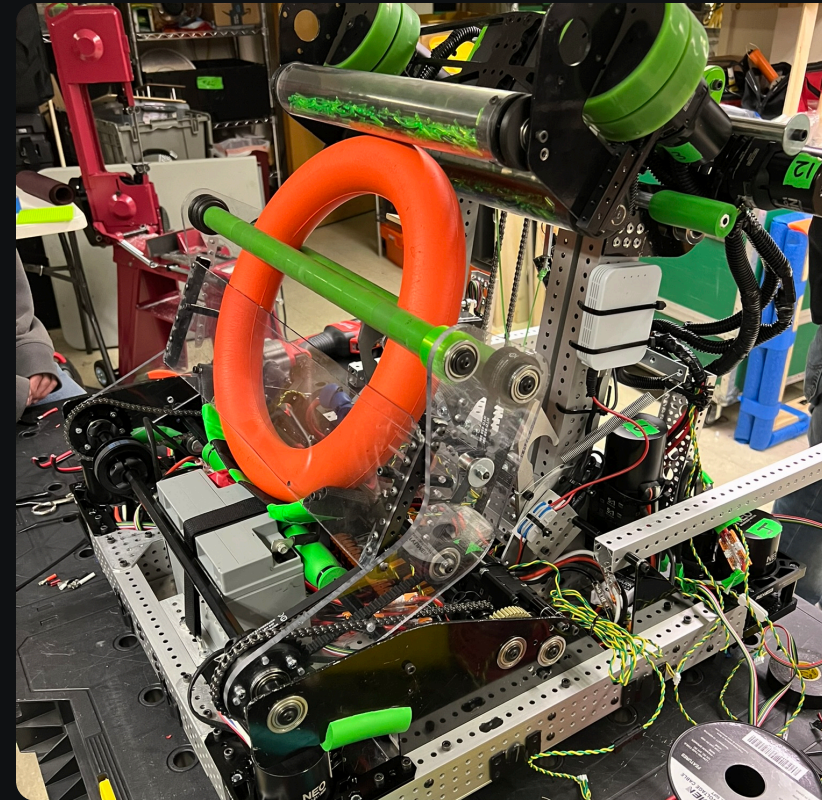
Gene Haas
Foundation

The Argosy
Foundation

FROM THE SHOP TO THE FIELD

THE SEASON IN PHOTOS

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CRESCENDO™

PRESENTED BY **HAA5**
Crescendo Foundation

KIDS BUILD ROBOTS, ROBOTS BUILD KIDS.

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