



# UMIGV

## Intelligent Ground Vehicle

The next chapter in student-led robotics at Michigan

“

*A unified, comprehensive robotics group at the Michigan that fields teams in various competitions, educates the broader community, and catalyzes entrepreneurial and social ventures*

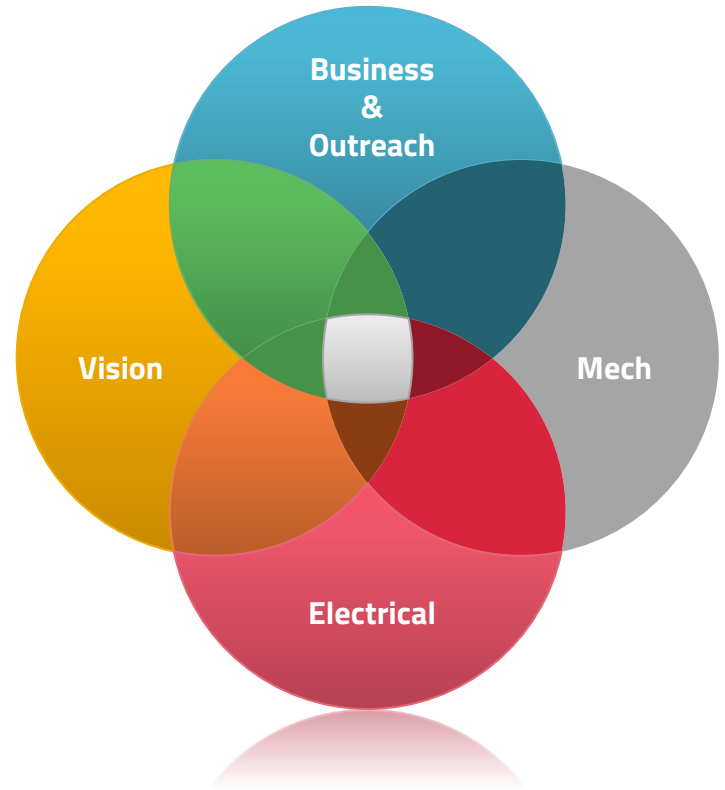
# What is IGV?



- Group of 30+ students who love robots
- Building a self-driving vehicle
  - Spec1: small scale robot
  - Spec2: autonomous golf car on the streets
- Trying to open up robotics to everyone

# Team Structure

- Dynamic & lean structure
- Lots of cross functional work
- Individual subteams led by a peer educator/lead
- Leadership supports team
- Advisors support leadership



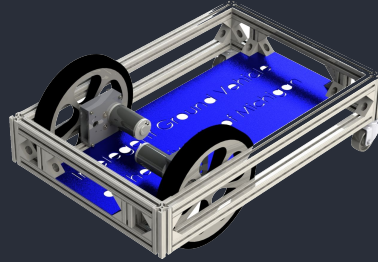
# Our Timeline

Team Formation  
Sept 2016

Today

Spec1 Vehicle  
July 2017

Spec2 Vehicle  
June 2018



# Challenges



- The technical challenge
  - Computer vision algorithms
  - Controls systems
- Logistical challenges
  - Building a team from scratch
  - Becoming a student-organization

# Impact

- A place for students to learn & grow
- Opportunity to share and educate community
- Getting a conversation started about DEI in robotics

# Lessons



- Technical lessons
  - CAD modelling
  - Writing software to teach machines to interpret data
  - The engineering design process
- Leadership development
- Business development
- Interpersonal relations



# Library Partnership



- Our first departmental partners!
- Workspace in Duderstadt Design Lab 1
- Multiple Resources
  - Meeting rooms
  - Paul Grohowski & research resources
  - GroundWorks media lab
- Shapiro Design Lab for Demo events

# Next Steps

Today



Spec1 Testing  
Summer 2017



Demo Days  
Summer 2017



Spec2 Design Phase  
Fall 2017



Demo Days  
Fall 2017



Spec2 Build  
Winter 2018

# Acknowledgements

- Ashleigh Bell  
*BLI Program Manager, Advisor*
- Prof. Matthew Johnson-Roberson  
*Faculty Advisor*
- Prof. Jessy Grizzle  
*Robotics Institute Director*
- Lance Freedman  
*Lockheed Martin, Advisor*
- Bradley Dice  
*UofM Physics, Advisor*
- School of Information Design Clinic



# Credits

Special thanks to all the people who made and released these awesome resources for free:

- Presentation template by [SlidesCarnival](#)
- Inkscape vector graphics editor (logo design)