

# Recruitment Fall 2010

WARG/UWMAV Recruitment Meeting



# Outline

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- ▶ About WARG
- ▶ Projects
- ▶ About UWMAV
- ▶ Projects
- ▶ Tasks Available
- ▶ Contacts

# WARG | Past

- ▶ 2009 Frosh Design Competition
  - ▶ Partnered with IEEE
  - ▶ First hosted competition
  - ▶ Involved 50 first year students
  - ▶ Design own wings
- ▶ International Aerial Robotics Competition
  - ▶ First Place for 2004
  - ▶ Most Innovative System Design (3x)
  - ▶ Most Innovative Vehicle Design (1x)
  - ▶ Best Journal Paper (4x)
  - ▶ Best Technical Presentation (1x)

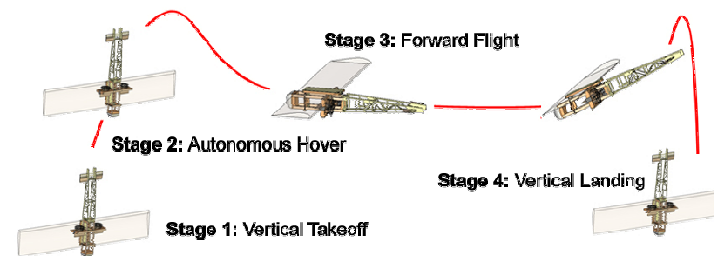


# WARG | Current and Upcoming Projects

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## ▶ 2010 Upper-Year UAV Design Competition

- ▶ Involves 30 upper year students
- ▶ Spread over three semesters
- ▶ Looking for organizers and participants!



## ▶ Fire Detection Quadrotor (4<sup>th</sup> year project)

- ▶ Early detection of fires
- ▶ Reduce fire hazards

## ▶ VTOL

- ▶ Experimental
- ▶ Platform available for other ideas



## WARG | Current and Upcoming Projects

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- ▶ 2011 Unmanned Vehicle Systems (UVS) Canada Competition
  - ▶ Forest Fires
  - ▶ Coordinate with Ground Fire Fighters
  - ▶ Phase I: Design Report due Oct 15, 2010
  - ▶ Phase II: Operational Demonstration May, 2011
  - ▶ Detect:
    - ▶ Group of people
    - ▶ Vehicles
    - ▶ Fire (strong IR generator)



## WARG | High Performance UAV

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- ▶ Aggressive trajectory tracking
- ▶ Research project
- ▶ Looking for experienced:
  - ▶ Programmers
  - ▶ RC Pilots
- ▶ Lots of work!



# WARG | High Performance UAV

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- ▶ The new forum:
  - ▶ <http://wavelab.uwaterloo.ca/wargforum/>
  - ▶ Post ideas, ask for help
  - ▶ Looking for administrators too!

# Other Ideas



# UWMAV | Past

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- ▶ Focus on Small Flying Platforms,
  - ▶ Fixed Wings, Flapping Wing and Rotor Systems



# Fixed Wing Team

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- ▶ **Fixed Wing Redesign**
  - ▶ Design Iterations Done
  - ▶ Team in Build phase!
  - ▶ Building fuselage, tail assembly servo control etc
- ▶ **Test Stand build**
  - ▶ Test stand for wind tunnel testing for forces and moments



# Flapping Wing Aircraft

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- ▶ **Flapping Wing Build**
  - ▶ Design fairly robust but needs more precise parts
  - ▶ Use better build techniques
  - ▶ Use 3D Printers! (Prof. Toyserkani)



# Small Autopilot

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- ▶ **Autopilot Redesign Team**
  - ▶ First design robust and components solid.
  - ▶ Need to make it smaller
  - ▶ Add features (vision systems, software)



# Coaxial Helicopter

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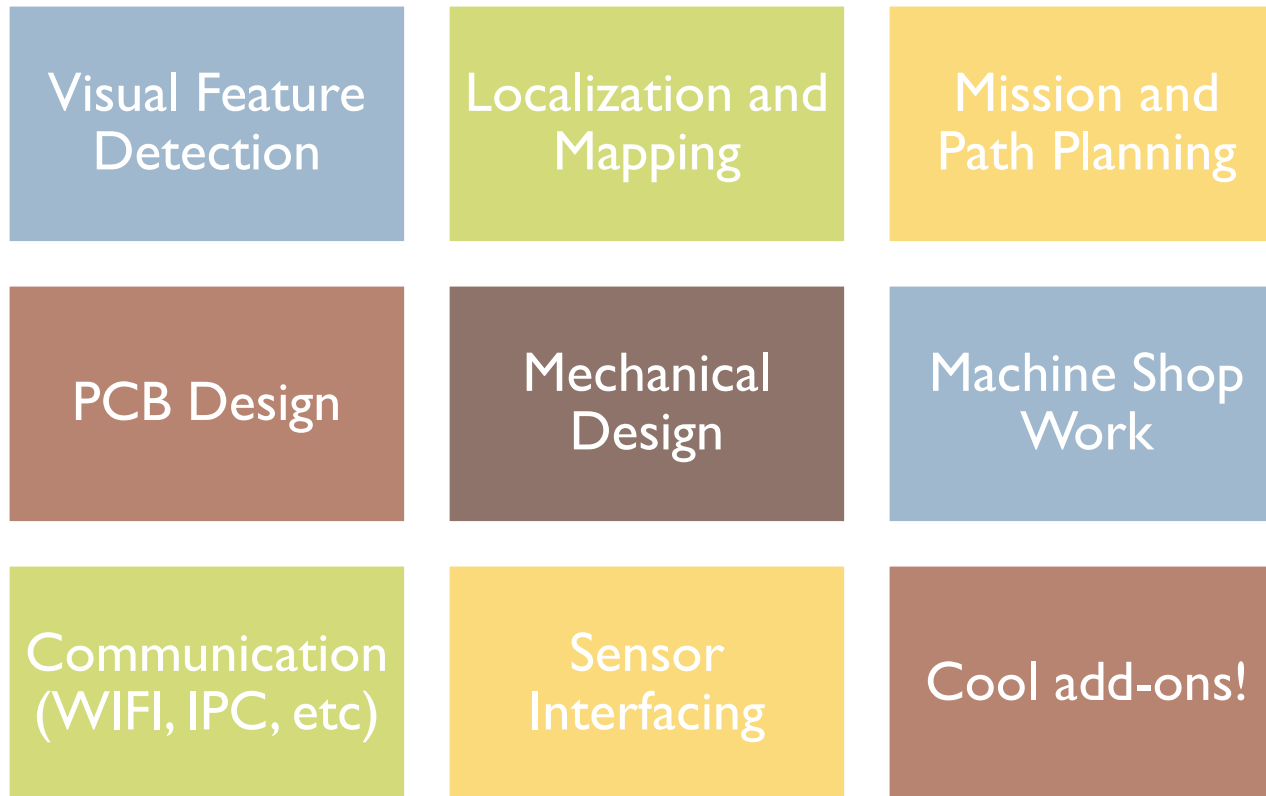
- ▶ **First version built and flying**
  - ▶ Software currently being developed
  - ▶ New autopilot will be mounted on a second coaxial helicopter
  - ▶ Preparing for IMAV 2011 Autonomous Flight Competition!



# WARG/UWMAV

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Lots of Tasks Available!



# WARG/UWMAV

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- ▶ UWMAV
  - ▶ Email : [uwaterloomav@gmail.com](mailto:uwaterloomav@gmail.com)