

# ROBOCUPRESCUE ROBOT LEAGUE RAPIDLY MANUFACTURED ROBOT CHALLENGE

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## Introduction:

- The Rapidly Manufactured Robot Challenge (RMRC) is a competition for low cost, rapidly manufacturable small (30 cm width) robots and robotic components that enable responders to more safely and effectively perform hazardous mission tasks.
- 3D printing, laser cutting and low cost, common sensors, computation and other electronics lower the barrier of entry.
- Students from high school through to graduate students and early career researchers compete against the same challenges.
- Competitions, teaching camps and workshops advance the state of the science in response robotics.

## Competition:

- Quantitative evaluation of capabilities using *DHS-NIST-ASTM International Standard Test Methods for Response Robots* provide repeatable, quantifiable evaluation of robot capabilities, reliability and operator proficiency.
- Tasks include mobility, manipulation, sensing and autonomy at differing scales and levels of difficulty for autonomous and/or teleoperated robots.
- Competitions are held annually on a domestic, regional and international basis.

## Robots:

- The Open Academic Robot Kit (OARKit) provides a starting point for teams.
- All mechanical parts are 3D printable or laser cut, components are common off-the-shelf and all designs, source code and instructions are open source.
- Open source designs encourage sharing and facilitate ad-hoc collaboration.

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