



## Project ACE: Accessible Computing Education for Visually Impaired Students

[www.se.rit.edu/~imagine-it](http://www.se.rit.edu/~imagine-it)

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Project ACE aims to address the gaps that exist in computing participation by students who are visually impaired and enrolled in grades 7 - 12. Increasing such participation will enable students to be prepared for post-secondary computing education and careers. By increasing participation at the beginning of the pipeline, more students will have the opportunity to succeed in computing careers. The goal of ACE is to encourage and to better prepare secondary school students who are visually impaired to succeed in computing at the post-secondary level. In order to address the preparation issue ACE has a student component and a teacher component. Both components are necessary in order to maximize student success and to maintain an atmosphere of encouragement over time.

The student component consists of an annual summer workshop and year-round activities to provide middle and high school-aged students with the opportunity to explore computing in a multi-modal, hands-on environment with their parents. The workshop will utilize learning modules in robotics, programming, and PC hardware to demonstrate the interdisciplinary, team-based perspectives that comprise computing careers.

The educator component consists of workshops to train special education and computing educators in secondary schools. The three-day workshop will consist of a tutorial on the use of the learning modules, techniques to make pre-existing lesson plans more accessible to students who are visually impaired, and community building to support students interested in pursuing computing careers.

In addition, a conference (through the National Federation of the Blind) will explore the issues, opportunities and success regarding participation in computing by the visually impaired community. The event will include industry, in addition to practitioners who are visually impaired, students and their families, to foster communication, collaboration, and understanding.

Workshops in 2007 and 2009 have been attended by 35 students from around the US, working in teams to program Lego Mindstorms robots to meet challenges such as to navigate a maze (as shown at right). Student and parent feedback showed not only the value of the workshop but also the need for such a workshop, as many students have felt isolated at their schools. The initial results are the foundation for the expanded year-round student workshops and other project components.



### How to Get Involved

- Work with us to make your robotics materials and activity accessible to students with visual impairments.
- If you have students in the San Diego or Rochester, NY area who are interested in mentoring student teams during a workshop, please contact us.
- If you have students or alumni with a visual impairment, contact us to potentially be featured on our upcoming website in a role model featurette.