Introduction
Service Learning
IRIS
ISL
Assessment
Summary, Conclusions, Recommendations
Q & A

Integrating Service Learning with Undergraduate Robotics Research

R.S. Renner & B.A. Juliano

Institute for Research in Intelligent Systems
California State University, Chico
400 West First Street
Chico, CA 95929–0410

`[Renner,Juliano]@csuChico.edu`

March 27, 2007

got bots?
www.gotbots.org

Introduction
Service Learning
IRIS
ISL
Assessment
Summary, Conclusions, Recommendations
Q & A

Introduction

- ABET and others:
  - need for
    - greater interpersonal skills
    - communication skills
    - interdisciplinary teamwork
    - social and ethical responsibility
    - life–long learning
    - educational experiences
  - significant increase in emphasis on experiential education and on the "soft skills"

Introduction
Service Learning
IRIS
ISL
Assessment
Summary, Conclusions, Recommendations
Q & A

Introduction

- EC2000 and proposed 2006–2007 ABET criteria:
    1. teamwork and communication
    2. an understanding of professional, ethical, and social responsibilities
    3. ability to analyze the impact of computing on individuals, organizations, and society

got bots?
www.gotbots.org

Introduction
Service Learning
IRIS
ISL
Assessment
Summary, Conclusions, Recommendations
Q & A

Service Learning

- Promotes learning through active participation in service experiences

- Provides structured time for students to reflect by thinking, discussing and/or writing about their service experience

- Provides an opportunity for students to use skills and knowledge in real-life situations

- Extends learning beyond the classroom and into the community

- Fosters a sense of caring for others

got bots?
www.gotbots.org

Introduction
Service Learning
IRIS
ISL
Assessment
Summary, Conclusions, Recommendations
Q & A

Service Learning

- 91 percent of college campuses have included civic engagement and community service in their mission statements

- service learning has become a major national movement, especially in undergraduate education

Introduction
Service Learning
IRIS
ISL
Assessment
Summary, Conclusions, Recommendations
Q & A

IRIS — The Institute for Research in Intelligent Systems

iris.ecst.csuchico.edu

- collaborative research
- outreach to the community
- oversight of camps, seminars, workshops

Introduction
Service Learning
IRIS
ISL
Assessment
Summary, Conclusions, Recommendations
Q & A

Research Projects
Curriculum
Outreach

ISL — The Intelligent Systems Lab

www.gotbots.org

- has supported 4–6 students/semester, over the past three years
- participate in campus and community outreach activities

By tying outreach activities to lab assistant responsibilities, the authors have been able to provide significant service learning experiences for ISL Team members.

Introduction
Service Learning
IRIS
ISL
Assessment
Summary, Conclusions, Recommendations
Q & A

Research Projects
Curriculum
Outreach

(Sample) Research Projects

Ant Algorithms for Swarm
Intelligence

The OCNL Hallway
Gumstix/Hummer

Soccer Bots: The Chico
State Robocup 4-Legged
League Team

got bots?
www.gotbots.org

Introduction
Service Learning
IRIS
ISL
Assessment
Summary, Conclusions, Recommendations
Q & A

Research Projects
Curriculum
Outreach

Curriculum

- CSCI 585 *Color Sensor Workshop*, Sep 2004

Introduction
Service Learning
IRIS
ISL
Assessment
Summary, Conclusions, Recommendations
Q & A

Research Projects
Curriculum
Outreach

Workshops

- SWE *Girl Scouts' Day*, Apr 2005

Introduction
Service Learning
IRIS
ISL
Assessment
Summary, Conclusions, Recommendations
Q & A

Research Projects
Curriculum
Outreach

Demonstrations & Exhibitions

- Chico State's *Getting Connected* event, Aug 2005

Introduction
Service Learning
IRIS
ISL
Assessment
Summary, Conclusions, Recommendations
Q & A

Research Projects
Curriculum
Outreach

Demonstrations & Exhibitions

- Kindergartners at Chico Country Day School, Feb 2005

Introduction
Service Learning
IRIS
ISL
Assessment
Summary, Conclusions, Recommendations
Q & A

Research Projects
Curriculum
Outreach

Demonstrations & Exhibitions

- *Minds in Motion*, April 2005

Introduction
Service Learning
IRIS
ISL
Assessment
Summary, Conclusions, Recommendations
Q & A

Research Projects
Curriculum
Outreach

Summer Robotics Camp

- open to junior high girls

Introduction
Service Learning
IRIS
ISL
Assessment
Summary, Conclusions, Recommendations
Q & A

Research Projects
Curriculum
Outreach

Summer Robotics Camp

Introduction
Service Learning
IRIS
ISL
Assessment
Summary, Conclusions, Recommendations
Q & A

Research Projects
Curriculum
Outreach

Summer Robotics Camp

- managed by the ISL Research Team

Introduction
Service Learning
IRIS
ISL
Assessment
Summary, Conclusions, Recommendations
Q & A

Assessment

- Participant satisfaction
  - anonymous surveys
  - informal letters and thank you notes
- ISL Team Member experience
  - regular meetings
  - progress reports and logs
- On–going demand for outreach activities

Summary, Conclusions, Recommendations

ISL student RAs gain valuable service learning experience
through community outreach and
campus inreach activities.

Introduction
Service Learning
IRIS
ISL
Assessment
Summary, Conclusions, Recommendations
Q & A

Summary, Conclusions, Recommendations

Experiences in lesson planning, preparation, presentation and demonstration afford opportunities to develop technical skills, as well as public speaking and interpersonal skills.

Introduction
Service Learning
IRIS
ISL
Assessment
Summary, Conclusions, Recommendations
Q & A

Summary, Conclusions, Recommendations

ISL outreach activities serve to refine communication
and team building skills, foster patience, tolerance,
and leadership, while learning social responsibility
and contributing something of value to the community.

Introduction
Service Learning
IRIS
ISL
Assessment
Summary, Conclusions, Recommendations
Q & A

Summary, Conclusions, Recommendations

Self–reflection and program evaluation surveys
for assessment and analysis are needed to gather
ISL Team Member perceptions from
service learning experiences.

Introduction
Service Learning
IRIS
ISL
Assessment
Summary, Conclusions, Recommendations
Q & A

Questions?