Final Report for Period: 09/2010 - 08/2011   **Submitted on:** 08/23/2011

Principal Investigator: Wolf, Marilyn C.   **Award ID:** 0951657

Organization: Georgia Tech Research Corp

Submitted By:

Wolf, Marilyn - Principal Investigator

Title:

Summer School on Cyber-Physical Systems

Project Participants

Senior Personnel

> **Name:** Wolf, Marilyn
>
> **Worked for more than 160 Hours:**   No
>
> **Contribution to Project:**
>
> Co-director of CPS Summer School.
>
> **Name:** Egerstedt, Magnus
>
> **Worked for more than 160 Hours:**   No
>
> **Contribution to Project:**
>
> Co-director of CPS Summer School.

Post-doc

Graduate Student

Undergraduate Student

Technician, Programmer

Other Participant

Research Experience for Undergraduates

Organizational Partners

Georgia Institute of Technology

Other Collaborators or Contacts

The 2009 CPS Summer School featured these speakers: Rajeev Alur (U Penn), Nik Dutt
(UCI), Magnus Egerstedt (GT), Eric Feron (GT), Bonnie Ferri (GT), Phil Koopman (CMU), Bruce
Krogh (CMU), Insup Lee (U Penn), Raj Rajkumar (CMU), George Pappas (UPenn), Jack
Stankovic (UVa), Paulo Tabulada (UCLA), Fumin Zhang (GT).

The 2010 CPS Summer School featured speakers from a number of institutions: Scott
Midkiff (VT), Frank Mueller (NCSU), Michael Branicky (NSF), Jorge Cortes (UCSD), Chris Gill
(Wash U), Prabir Barooah (UFl), Sudha Yalamanchili (GT), Rajesh Gupta (UCSD), Xiaoli Ma
(GT), Magnus Egerstedt (GT)

The 2011 CPS Summer School featured these speakers: Janos Sztipanovits (Vanderbilt),
Magnus Egerstedt (GT), Samarjit Chakraborty (TU Munich), Pulkot Grover (UCB), Christoph
Kirsch (U Salzburg), Fumin Zhang (GT), Marilyn Wolf (GT), Eric Feron (GT).

Activities and Findings

Research and Education Activities:

We organized and hosted the Second Georgia Tech Summer School on Cyber-Physical Systems, which was held on June 23-25 2010.

Findings:

The 2010 Summer School attracted 88 participants (in addition to speakers). These speakers came from a wide range of universities in the US as well as some from abroad. Most participants were graduate students although a few were faculty. A few participants were repeat visitors, primarily faculty, but almost all were new to the summer school.

Training and Development:

The Summer School presented lectures on a broad range of topics in cyber-physical systems, ranging from more general discussions of the field to specific technical problems. These lectures came from a variety of angles, including both computational and control theoretic approaches.

The only repeat speaker from last year to this year was Magnus Egerstedt.

Outreach Activities:

The workshop was open to all. NSF funds paid for lunch and housing. Students were responsible for their own transportation. We are publishing the slides from the presentations on the Web for general use.

Journal Publications

Books or Other One-time Publications

Web/Internet Site

URL(s):

http://users.ece.gatech.edu/magnus/CPSschool.html#intro
http://www.ece.gatech.edu/research/labs/esl/Activities/CPS-2011/index.html

Description:

Summer School presentation materials. We are still working on an improved Web site that unifies all the presentations from all three years.

Other Specific Products

Contributions

Contributions within Discipline:

We discussed a variety of new results in topics such as distributed otoion coordination, processor scheduling, building energy efficiency, processor networks, wireless networking, power aware sensor networks, and control theory.

Contributions to Other Disciplines:

The summer school has reached out to the traditional disciplines of embedded computing

and control theory to help build an improved understanding of the interactions between these fields.

Contributions to Human Resource Development:

The school not only exposed students and faculty to new concepts, it also provided an important networking opportunity, though both formal (poster session) and informal (lunch) mechanisms. NSF funding lasted for three years even though it was originally scheduled for only one year.

Contributions to Resources for Research and Education:

We have presentations on the Web and continue to improve that Web site.

Contributions Beyond Science and Engineering:

Cyber-physical systems is a research topic with a broad reach. Our two talks on building energy efficiency are examples of applications directly related to the public welfare.

<u>**Conference Proceedings**</u>

<u>**Categories for which nothing is reported:**</u>

Any Journal

Any Book

Any Product

Any Conference