# Institute for Computing Ed (ICE)

## Overview

| About: | 3 weeks of teacher workshops this summer: CS Principles – Big Ideas (non-programming), CS Principles – Programming, Intro to Programming in Java |
| Institution | Georgia Tech |
| PI/Leader: | Barbara Ericson |
| Location: | Georgia Tech |
| Data for: | 2013/2014 |
| Age of Program: | Since 2004 |
| School Districts: | Any that register and teach it Mostly local to Atlanta |

### Teachers Served

| Served: | Max of 30 teachers in each week |
| Dosage: | 30 hours per workshop |
| Grade(s): | High School |
| Characteristics | In Service |

### Program Budget

| Sources: | ECEP – NSF |
| Budget: | $30,000 |
Learning Goals

• CS Principles – Big Ideas
  – How to do hands-on activities for the big ideas
  – Get started with the community of practice website
  – How to use online tools
  – Learn how to prepare and grade a portfolio

• CS Principles – Programming
  – Programming basics in App Inventor and Python
  – How to teach programming (pedagogy)

• Getting started with Java
  – Introduce teachers to Java, Alice, & Greenfoot
  – How to teach Java (pedagogy)
PD Structure

• PD Leaders for summer 2013
  – Rebecca Dovi, Patrick Henry HS - CSP Big Ideas
  – Barbara Ericson, Georgia Tech – CSP Programming
  – Crystal Furman, Brookwood HS – Intro Java

• Attendees
  – High School Teachers who want to teach CS Principles
  – High School Teachers who want to teach AP CS A and/or Beginning Programming
Successes and Challenges

• The number of students who took AP CS A increased to over 1,000 in 2012
  – Up from 422 in 2007
• The number of schools offering AP CS A has increased the last 2 years
  – After dropping for 3 years (since 2008)
  – 83 in 2011-2012 vs 44 in 2004
• AP CS A counts as a science in Georgia

• Many teachers who teach introductory computing don’t know much about computing
  – Not comfortable with programming
  – Hard to get them to spend enough time to be comfortable
  – Tend to teach applications
• Stereotypes about who will succeed in computing
• DOE pushing low-level IT skills, industry certification, and gaming
Measures of Success

• Post surveys at teacher workshops
• Follow-up interviews to see what teachers actually use
• Attendance at follow-up workshops, webinars, competitions
• Community of practice site
  – Measure participation
  – Develop, test, and post materials
Tips from our PD

• Give the teachers time to share materials, resources, classroom practices, etc
  – Also time to reflect (meta-level)

• Use lots of hands-on activities
  – Don’t lecture for more than 15 minutes!

• Teacher appreciate lots of resources: lesson plans, worksheets, answer keys, videos, rubrics, etc

• Make teachers pay a deposit to reserve a hotel room and reimburse at the end

• Teachers need to be excited about the material