Class inheritance” and “Inspiring kids to love Computer Science

This talk will comprise two parts, each intended to provide an introduction to Dr. Strange’s experience, teaching style, and personal and professional motivation.

First, Dr. Strange will give a short demo lecture on the topic of Class Inheritance. This lecture is based on materials from CS214, aimed toward an audience of sophomore-level students who are experienced with imperative programming and in the midst of learning Object-Oriented Design.

The demo lecture will introduce and contextualize the topic of class inheritance. Inheritance -- along with other language features such as subtype polymorphism -- supports code reuse. It also promotes flexibility and code organization, which will shape our motivation for learning this topic. We will discuss the role of inheritance in object-oriented languages in general, as well as in Java specifically.

Learning goals for students include the following:

- Explain the need for and challenges of design for reuse.
- Understand how to apply inheritance and delegation appropriately and understand their tradeoffs.

Second, Dr. Strange will share the various ways in which she has personally taught, mentored, celebrated, and organized her way to reaching over 300 kids to (hopefully) love Computer Science, primarily girls and African-Americans. A variety of opportunities -- including immersive teaching, mentoring, introductory workshops, and achievement recognition -- are needed to increase participation in our field. She will also discuss her plans for continuing and extending these kinds of outreach at CMU and in the city of Pittsburgh.

Bio:
Dr. Elena (Laney) Strange is a Visiting Assistant Professor at Rhodes College in Memphis, TN. She holds a B.S. from Simmons College and a Ph.D from Dartmouth College. Laney’s research interests include parallel and distributed computing, out-of-core algorithms, data mining, and search. Her dissertation project was a programming framework to make parallel programs both easier to write and faster to execute.

Laney began her career as a software engineer for Amazon.com, where she worked on data-mining and search projects that you have probably interacted with. After a leadership role at technology nonprofit TechSoup Global, she left Silicon Valley for Memphis, where she launched a start-up that failed almost immediately. Lucky for her, that means more time to teach. In addition to her position at Rhodes, Laney is a passionate advocate for underrepresented groups in computer science, and a typical Saturday morning will find her leading coding workshops for African-American kids, girls, and women.

Wednesday, February 17
3:00 p.m. NSH 3305

Host: Dave Eckhardt and Charlie Garrod