



# Instructor Training

University of Southampton

December 5-6 2017

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# Welcome



- Google doc for taking/sharing notes and questions:
  - <http://bit.ly/2BnFDUr>
  - Add your name, email, GitHub, Twitter to the list

# Code of Conduct

- <http://software-carpentry.org/conduct/>

## Code of Conduct

Software Carpentry workshops are community events intended for networking and collaboration as well as learning. We value the participation of every member of the scientific community and want all attendees to have an enjoyable and fulfilling experience. Accordingly, all attendees are expected to show respect and courtesy to other attendees throughout the workshop. The same standards of behaviour are expected in Software Carpentry spaces online.

To make clear what is expected, everyone taking part in Software Carpentry events and discussions—instructors, helpers, organizers, and learners—is required to conform to the following Code of Conduct. Organizers will enforce this code throughout events, but you may also contact us directly by email at [admin@software-carpentry.org](mailto:admin@software-carpentry.org). All communication will be treated as confidential.

### *Code of Conduct*

Software Carpentry is dedicated to providing a harassment-free experience for everyone, regardless of gender, sexual orientation, disability, physical appearance, body size, race, nationality, religion, or choice of text editor. We do not tolerate harassment of participants in any form.

1. Harassment includes offensive verbal or written comments related to gender, sexual orientation, disability, physical appearance, body size, race, or religion, sexual images in public spaces, deliberate intimidation, stalking, following, harassing photography or recording, sustained disruption of talks or other events, inappropriate physical contact, and unwelcome sexual attention.
2. All communication should be appropriate for a professional audience including people of many different backgrounds. Sexual language and imagery is not appropriate for any event.
3. Be kind to others. Do not insult or put down other participants.
4. Behave professionally. Remember that harassment and sexist, racist, or exclusionary jokes are not appropriate.

Participants asked to stop any harassing behavior are expected to comply immediately. People violating these rules may be asked to leave the event or be excluded from the online venue at the sole discretion of the organizers, without a refund of any charge that may have been levied.

Thank you for helping make this a welcoming, friendly event for all.

*This code of conduct is a modified version of that used by [PyCon](#), which in turn is forked from a template written by the Ada Initiative and hosted on the [Geek Feminism Wiki](#).*

# Background



- Software & Data Carpentry
  - A **community** of volunteer researchers, trainers, mentors, lesson contributors and maintainers...
  - Basic computing and data skills for researchers
  - Emphasising the **best practices**
- What will we do here?
  - Skills for **teaching** - applicable and broadly useful across **any** teaching you deliver!
  - Show evidence from **pedagogy and knowledge psychology** & how it fits the SWC/DC philosophy

# What Happens Afterwards?

- You have done the first step towards becoming a certified Carpentry instructor
- <https://carpentries.github.io/instructor-training/checkout/>
  - a. Submit a small contribution to one of our lessons - submit a change request to fix issue or suggest improvement, provide feedback on issue or pull request
  - b. Participate in hour-long online discussion session
  - c. Demonstrate live coding in an online group session

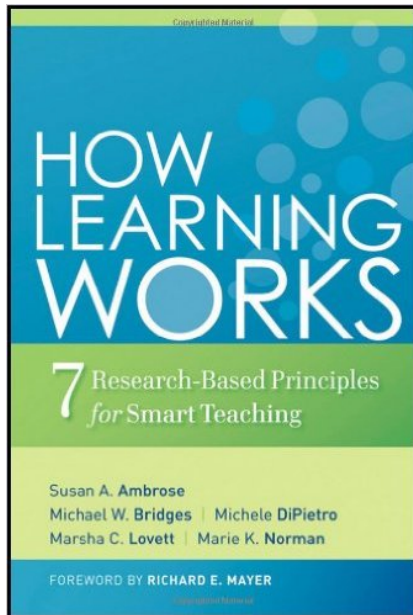
# Format of This Workshop

- Each lesson:
  - Some **theory** of learning (from **educational psychology**) or **tool** for teaching
  - Hands-on exercises and discussion
  - Sticky notes for feedback
- If you would prefer not to be photographed, please let us know

# Agenda

- Day 1
  - Theory: how learning works and how to help people learn better and faster
  - Building teaching skills
  - Creating positive learning environment
- Day 2
  - How we apply some of the theory in Carpentry workshops
  - Carpentries' history and culture

# Books & References

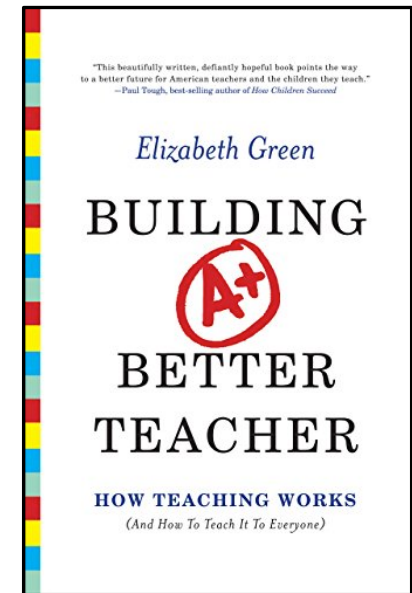


## How learning Works: 7 Research-Based Principles for Smart Teaching

- Ambrose, Bridges, DiPietro, Lovett, Norman

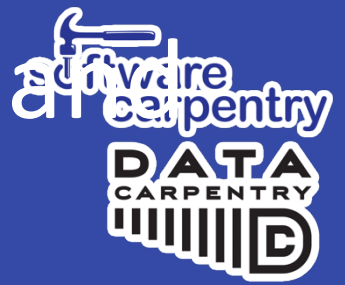
## Building a Better Teacher: How Teaching Works (And how to teach it to everyone)

- Elizabeth Green





# Assessing Trainee Motivation and Prior Knowledge



- Have you ever participated in a Software Carpentry or Data Carpentry Workshop?
  - a. Yes, I have taken a workshop.
  - b. Yes, I have been a workshop helper.
  - c. Yes, I organized a workshop.
  - d. No, but I am familiar with what is taught at a workshop.
  - e. No, and I am not familiar with what is taught at a workshop.

# Assessing Trainee Motivation and Prior Knowledge



- Which of these most accurately describes your teaching experience?
  - a. I have been a graduate or undergraduate teaching assistant for a university/college course.
  - b. I have not had any teaching experience in the past.
  - c. I have taught a seminar, workshop, or other short or informal course.
  - d. I have been the instructor-of-record for my own university/college course.
  - e. I have taught at the primary or secondary education level.
  - f. I have taught informally through outreach programs, hackathons, laboratory demonstrations, and similar activities.

# Assessing Trainee Motivation and Prior Knowledge



Which of these questions assesses flaws in a student's mental model of a domain?

1. I'm not sure what a mental model is.
2. "In Python, what is the expected output for the following statement: `1 + '2'`"  
(a) '12' (b) TypeError (c) '3' (d) 3
3. "Rate your experience with the R programming language."  
(a) never used it (b) beginner (c) intermediate (d) expert
4. "What does the Unix command 'cut' do?"  
(a) Extracts sections from each line of input.  
(b) Sorts fields of a line  
(c) Searches the input file for lines containing a match to a pattern  
(d) Removes a given input from a line