Software Engineering Practices Three basics & One future wish

Catherine Jones

Software Engineering Group Leader

Scientific Computing Department
STFC Rutherford Appleton Laboratory

Three basic things

1. Researchers who write code need to **know** that software engineering best practices exist

   – Training & good research practice expectations

   – Don't have to do *everything* as if it had never been done before…

2. First step to better practice: **Code in a code repository**

   – Not USB sticks, not emailed to collaborators, not multiple versions on personal laptops

   – Preferably Git, but any is better than none….

3. Testing is good, automated testing is better

   – How do you know the output is right? Fixing bugs closer to the error is more efficient

One future wish

- Reproducibility means being **clear** about the precise version of software used:

  - Persistently identifying versions

  - Citing your own software when used (Force 11 Guidelines)

  - Citing other people's software

- Needs to become part of the routine research output culture