Community Driven Informal & Semiformal Education
The Hacker Within & The Carpentries

NERG
Computational Nuclear Engineering Research Group
Motivation

- Develop a community and culture around compute-based scholarship that supports:
  - Quality
  - Reproducibility
- Respond to immediate interests and needs of community members
- Establish a baseline competency among a broad community of scholars
The Hacker Within

- Student organization
- Regular meetings to share skills and best practices in scientific computing
- Peers at all levels share topics of their choice
- Began at UW-Madison
The Carpentries

Teaching Basic Lab Skills for Research Computing

Building Communities Teaching Universal Data Literacy
The Carpentries (global)

- Coordination of two-day workshops
  - SWC: Over 500 workshops & 16,000 learners since 11/11

- Collaborative lesson development
  - 10 SWC lessons and 13 DC lessons

- Instructor training
  - combines literature in education with topical content

- Over 450 instructors
The Carpentries (local)

● History of leadership in Software Carpentry
  ○ First “modern” workshop organized by UW Hacker Within
  ○ First lessons based on that content (for many years)
  ○ Platinum partner
  ○ UW staff (Koch) currently serves on steering committee

● Up to 3 workshops in each Carpentry per year
  ○ SWC since 2013, DC since 2016

● Vibrant community of instructors
  ○ 9 ± 1 certified instructors, 29 community members
  ○ Self-organized
  ○ Succession: learners -> helpers -> instructors
Other Communities

● Opportunities exist to foster communities around specific topics
  ○ Individual software packages
  ○ Specific modes of analysis or computation

● Must be self-perpetuating but may require assistance in forming
DSHub can be a home for these communities:

- Fostering their formation & growth
- Coordinating activities among them