Best Practices for Research Software Engineers
- The Xpert Network -

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4 Main Points of Today

1. The Xpert Network
2. The driving motivation (and ECSS’ role)
3. Initial results (best practices)
4. What’s next (and what’s in it for you)
1. The Xpert Network

- **Activities:** Monthly webinars on
  - Best practices for computational experts (Xpants)
  - Tools/environments to enhance Xpert productivity

In-person meetings (currently on hold)

- **Website** [sites.udel.edu/xpert-cdi](sites.udel.edu/xpert-cdi)
- **Who is invited:**
  - Xpants from large sponsored projects (ECSS, CyVerse, NSF Software Institutes, OSG,...)
  - National organizations (US-RSE, CarCC, ...)
  - Campus RSE teams
  - Individual Xpants on computational science teams
  - Computational (and data) researchers

What are Xpants?
- Support computational and data-intensive research
- Research Software Engineers
- Research Facilitators
- Computational experts
- Research programmers

Bring together, Create synergy!
2. The Driving Motivation

HPC&D is Pushing the Forefront of Science – Is there evidence?

CDS&E is higher-impact science

Investment in HPC infrastructure means higher impact

“Appearance on the Top 500 list is associated with a contemporaneous increase in NSF funding levels as well as a contemporaneous increase in the number of publications”

2. The Driving Motivation

Where is ECSS’ Role in All This?

• XSEDE’s Extended Collaborative Support Service has highest “Return on Investment.”

• Many projects have similar teams that support computational and data-intensive science. There wasn’t a mechanism for exchange of experiences.
2. The Driving Motivation

What Kind of Synergy?

• Best Practices for Xperts/RSEs
• Tools and environments that enhance Xpert productivity
• Coordination

Not our focus: professionalization of RSEs
3. Best Practices

Parinaz Barakhshan, Rudolf Eigenmann
arxiv.org/abs/2102.09373
4. What’s next (and what’s in it for you)

• Webinar series
  – Share your experiences, learn from others

• In-person events
  – In-depth discussions

• Extended Best-Practices Report
  – Looking for co-authors

• NSF Cyberinfrastructure Center of Excellence
  – Join us to create a Xpert/RSE Collaboratorium
Thanks for listening!

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Discussion Time