

CLUSDUR GOES INDYSCC 2025

WE ARE CLUSDUR!



Pavel Lipskiy

- **Department:** Computer Science
- **Year:** 2
- **SCC Strengths:** GPU Programming, Compilers
- **Cultural Background:** Russian



Abbey Noble

- **Department:** Computer Science
- **Year:** 2
- **SCC Strengths:** Parallel Programming, Performance Analysis and Benchmarking
- **Cultural Background:** American



Jan Scheres Monesma

- **Department:** Mathematics
- **Year:** 2
- **SCC Strengths:** Python, GoLang, Systems Administration
- **Cultural Background:** Spanish and Dutch



Ed Jackson

- **Department:** Computer Science
- **Year:** 3
- **SCC Strengths:** C++, Systems Administration
- **Cultural Background:** British and South African



Michal Pluta

- **Department:** Computer Science
- **Year:** 4
- **SCC Strengths:** C++, Bash Automation
- **Cultural Background:** Polish



Jeremy Mariani

- **Department:** Computer Science
- **Year:** 4
- **SCC Strengths:** CUDA, Networks
- **Cultural Background:** Italian and French

Members: Pavel Lipskiy, Abbey Noble, Jan Scheres Monesma, Ed Jackson, Michal Pluta, Jeremy Mariani. **Advisor:** Tobias Weinzierl

TEAM STRATEGY

- Each application, benchmark and system administration task is assigned to two team members who tackle it together.
- Everyone specialises in what they have a keen interest in and share their knowledge with the rest of them during the competition.

PREPARATION & TRAINING

- **Students teach Students approach:** Experienced members guide newer participants, and encourage learning through intra-team mini challenges to practice for competitions.
- Use **Software Capentry workshops** and **DIRAC's collection of teaching materials** for self-paced learning.
- Group skills building sessions in parallel programming with OpenMP, MPI, CUDA, and oneAPI; shell scripting, git, system administration and HPC environment skills.
- **Weekly Meetings** to practice Mock hero runs, time-boxed sprints, and profiling sessions to build speed, reliability, and reproducibility.

TEAM DIVERSITY

- Team members represent Europe, the United States, and South Africa, bringing a wide range of **cultural perspectives**.
 - Three **first-time HPC competitors** contribute new skills, motivation, and insight.
 - We actively support **underrepresented groups in HPC**:
 - Women on both the team and advisory board
 - Three LGBTQ+ members
 - Neurodiverse teammates
- Our diversity of backgrounds and thinking styles drives strong collaboration, creative problem-solving, and better team performance.**



**Durham
University**

SYSTEM AND RESOURCES

- **Image:** Rocky Linux 9
- **Cluster Setup:** 1 login node with public IP, 3 compute nodes 1 GPU node, shared via NFS volumes.
- **Resource Manager:** SLURM for job queuing and coordinated node allocation with multiple users.
- **Compilers:** GCC, Clang, and Intel ICX compared for best CPU performance; NVCC for GPU kernels.
- **Allocation Usage:** Shelve idle nodes to preserve service units, track core/GPU hours with Slurm accounting.
- **Provisioning:** Automated with Ansible playbooks and roles.
- **File System:** Centralized NFS storage mounted across nodes using JS2 volumes for shared I/O.

SUPPORTERS

