nanoHUB Resources and Functions for SCALE Onboarding - April 2024 v 2
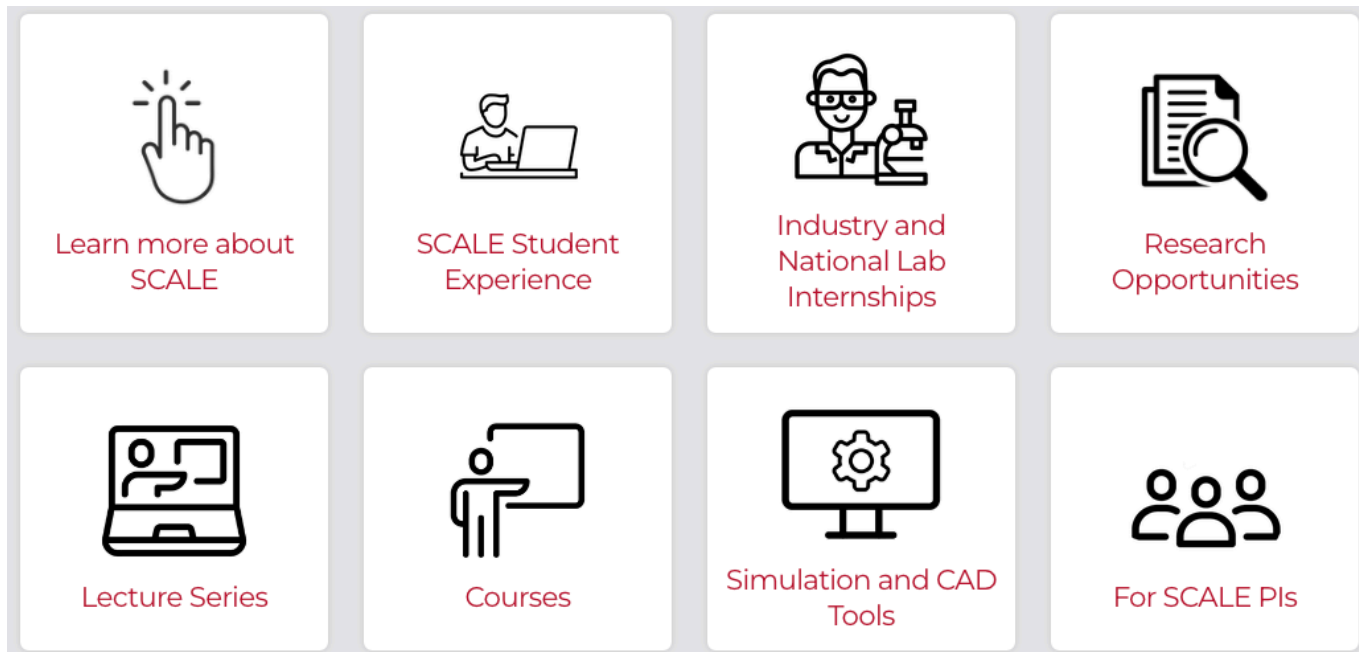
Welcome to nanoHUB! Here you will find valuable resources including:
- Thousands of educational resources
- Hundreds of simulation tools
- A publishing platform for your research, presentations and simulation tools.
- Chipshub
- A large worldwide community of over 1M users.
- Courses and Tutorials, including a hands-on series for learning machine learning and data science techniques: https://nanohub.org/groups/ml/handsontraining
- Browse nanoHUB-U style courses here: https://nanohub.org/groups/u
- MEST has courses related to circuits and semiconductors: https://nanohub.org/tags/mestcourse

Useful features in nanoHUB
- Click on the nanoHUB logo to get to the main nanoHUB site from the SCALE Group.
- Tag search may give you better results than the regular search (try both)
- Get Help
  - Submit a ticket with details about your problem or question. Screenshots help.
  - Submit suggestions for how to make nanoHUB or the SCALE group better.
  - Feel free to contact Tanya Faltens (tfaltens@purdue.edu) with questions you may have.

SCALE group in nanoHUB

The SCALE group is your starting place for finding resources relevant to SCALE, created by SCALE partners. Additionally, membership in the SCALE group is required to access many SCALE resources, the SCALE Job board and the SCALE Web App.

This document is published here: https://nanohub.org/resources/38646

SCALE Student Experience Page

The Student Experience Page has tiles that directly link to the areas that SCALE students may want to find:

- Onboarding video and Welcome packet

- Research Opportunities
  - **SCALE Student Research Presentations**
    Browse through these presentations by SCALE student researchers from universities across the SCALE network to learn about the type of work other students have done and see examples of excellent student presentations.

- Industry and National Lab Internships
  - Job board
  - Professional Development Resources
    Resume and Interview prep
  - SCALE Student Presentations on their internships
    Browse through these presentations on SCALE internships. SCALE students who have participated in internships at defence agencies, companies and small businesses talk about their internship experience and the work they did during the internships. Also in this series, representatives from companies, national labs and government agencies provide insight on what they are looking for and opportunities that are available for SCALE students.

- Announcements, Newsletters and information about special programs

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Selected SCALE Resources of Interest

Learn more about SCALE by watching these videos:

- SCALE Overview
- SCALE Introduction & Opportunities (Presented at Purdue-SWE Meeting
- Defense Microelectronics Research Overview

Heterogeneous Integration/ Advanced Packaging (HIAP)

- SCALE Heterogeneous Integration & Advanced Packaging
- The Art of Microelectronics Packaging

Radiation Hardened Electronics (RH)

- Introduction to Radiation Testing
- Introduction to Radiation Effects in Microelectronics: What are Radiation Effects, Where are Radiation Effects, Terminology
- Course: Introduction to Radiation-Effects Engineering
- SCALE Vanderbilt Weekly Seminar Series

Presentations on topics of General Interest

- Moore's Law and Radiation Effects on Microelectronics
- NASA's Mars Helicopters - Past, Present and Future

Academic and Career Pathways

- SCALE Internships (Radiation Hardening)
- Learn about the graduate school experience
- SCALE Career Paths: Observations & Lessons Learned

Online tools for Computation and Simulation

Search a list of all tools: https://nanohub.org/usage/tools

- Jupyter notebooks and hundreds of other simulation tools are available in nanoHUB
- Matlab
- SCALE Web app
  - You need a nanoHUB account and SCALE group membership to use the web app.

Simulation and CAD Tools

- Schrodinger
- Silvaco
- Thermo-Calc
- Padre
- Prophet
- Coming soon: Cadence

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