Implementing a Successful Undergraduate Research Program
USCOTS 2017
Breakout Session 3G

Stages	Tips
Formulating Projects	• Consider projects that align with your own research. • Pilot new projects. • Reach out to other faculty on-campus or local organizations for project ideas. • Develop partnerships with faculty at other institutions.
Selecting Students	• Advertise early. • Give a departmental seminar about your research. • Consider factors beyond GPA, e.g., motivation, writing skills, and interpersonal skills. • Recruiting underclassmen allows for a longer-term research project.

Finding Funding	• Internal sources
	  ○ Department or college funds
	• External sources
	  ○ National grants (e.g., NSF-REU; ASA-REU; NSF-RUI, NIH-R15)
	  ○ Local businesses
	  ○ Small government contracts
	  ○ Preparation for Industrial Careers in Mathematical Sciences Program (www.maa.org/pic-math)
	• For summer research, consider the whole package: stipend, housing and meal plan.

Budgeting Time	• Insert research projects into courses (e.g., capstone course). • Conduct projects over the summer. • Involve students in consulting projects. • Develop a research group in which seniors help to train underclassmen. • Be willing to donate a bit of time when other avenues aren't available.

Mentoring the research project	• Provide a structured research plan and assign weekly tasks.
	  ○ Have students keep an activity log.
	  ○ As the project progresses, give the student more control over assigning themselves tasks.
	• Hold frequent meetings.
	• Consider using a version control system like git/github.
	• Be encouraging.

Mentoring the research project	• Allow room for student creativity. Don't just give the student routine, menial tasks. • At the end of the project, give students the opportunity to evaluate the experience.

Disseminating the work	• Presentations
	  ○ On-campus venues
	  ○ Local, undergraduate conferences
	  ○ Electronic Undergraduate Statistics Research Conference
	  ○ National Conferences on Undergraduate Research (www.cur.org)
	  ○ Nebraska Conference for Women in Mathematics
	• Awards
	  ○ Undergraduate Statistics Project Competition (USPROC)
	  ○ Undergraduate research awards (e.g., Goldwater; NSF GRFP)
	• Journals
	  ○ Subject-matter journals
	  ○ *Journal of Statistics Education: Datasets and Stories*
	  ○ Undergraduate journals
	  ▪ *American Journal of Undergraduate Research* (www.ajuronline.org/)
	  ▪ *Involve, a Journal of Mathematics* (msp.org/involve/)
	  ▪ *SIAM Undergraduate Research Online* (www.siam.org/students/siuro)
	  ▪ *The Rose-Hulman Undergraduate Math Journal* (www.rose-hulman.edu/mathjournal/)

Cultivating a supportive campus climate	• Push institution to develop fair, appropriate ways of valuing undergraduate research mentorship in the tenure and promotion process • Talk to department about how undergraduate research addresses departmental goals ○ Consider adding a research course to the curriculum • Partner with other institutions • Highlight student work with peers and students

Contact Information:
Joseph Nolan: nolanj1@nku.edu
Vittorio Addona: addona@macalester.edu
Kelly McConville: kmcconv1@swarthmore.edu
Dennis Pearl: dkp13@psu.edu
Nathan Tintle: nathan.tintle@dordt.edu