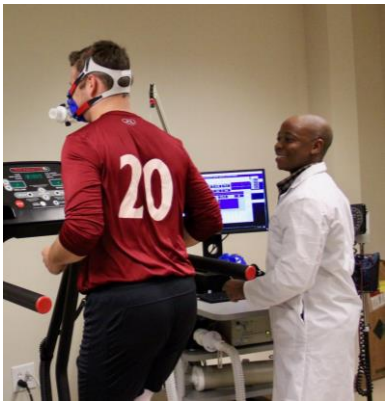
Mentoring UG Research in a Global Context:

International interdisciplinary mentoring constellation model

Institutional Description:

Elon University is a selective, mid-sized private university renowned as a national model for engaged and experiential learning. Students work closely with faculty who are dedicated to excellent teaching and scholarship.



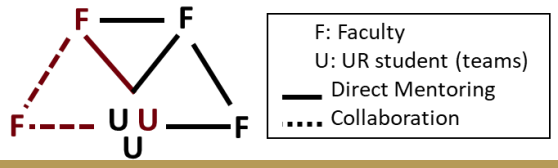
The Department of Exercise Science is dedicated to developing a student's critical thinking skills, capacity to solve problems and the ability to apply theoretical concepts and contribute to the existing body of knowledge. We have a significant record of engagement and scholarly products through mentored undergraduate research; recently expanded to include international partners. Our departmental UR mentoring is based on the Ten Salient Practices.[1, 2] www.centerforengagedlearning.org/salientpractices

Mentoring Model:

MENTORING CONSTELATION MODEL

Multiple faculty (and community partners) collaborate in a way that fosters mentoring across all layers. Including student(s) into this model creates a constellation where all members have something to give and something to gain to the collective work.

Colors represent the different institutional contexts.



Activities of Mentoring Constellation @ Elon:

JOURNAL CLUB
Students identify articles to discuss with team

WRITING SUPPORT
Faculty support student writing sessions and model collaborative writing structures

BOOK CLUB
Books are chosen to engage students and faculty in robust discussions about current events or research related topics

PROFESSIONAL DEVELOPMENT
Faculty lead professional development sessions for students including: value of research skills for career; poster development; recruiting diverse participant pools and impact on research generalizability

FACULTY PROFESSIONAL DEVELOPMENT
Faculty meet without students to collaborate on writing support, development of projects and professional development for students

How does the Mentoring Constellation Work?

- Faculty teams at partner institutions identify potential project topics and feasible timelines.
- Faculty teams identify interested student(s) at the home institution and begin to identify and explore research questions.
- International partner teams meet virtually to design project and train on cultural integration and coordinate logistics of travel and research abroad.
- Student travels to international partner institution and conducts research with the local mentoring team leading project goals with mentoring constellation meeting virtually as appropriate.
- Student returns to home institution and their home institution mentoring teams take lead progressing project from data collection to project presentation and publication.
- Mentoring teams at partner institutions identify next set of students and project opportunities.

[1] Shanahan JO, Ackley-Holbrook E, Hall E, Stewart K, Walkington H (2015) Ten salient practices of undergraduate research mentors: a review of the literature. *Mentoring and Tutoring: Partnership in Learning, 5,* 359-376. http://dx.doi.org/10.1080/13611267.2015.1126162;

[2] Hall EE, Bailey E, Higgins S, Ketcham CJ, Nepocatych S, & Wittstein M (2021) Application of the Salient Practices Framework for Undergraduate Research Mentoring in Virtual Environments. *Journal of Microbiology and Biology Education*

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Statistics and Examples:

TOTAL TEAMS: 5 and counting

TOTAL PARTICIPANTS: 20+

MEMBERS PER TEAM: 5-15 including faculty/students

SAMPLE PROJECTS

Bournemouth – Elon Partnership:

- Concussion management in UK youth futbol programs: Perspectives of clinicians, coaches and parents.
- Good Food Good Mood: Nutrition and mental health in professional futbol programs
- Injury prevention in collegiate US Division I athletes
- Mental health and body image in US Division I athletes and general college population

VUB: Brussels – Elon Partnership

- Body asymmetries in US Division I collegiate athletes: Injury risk and prevention

Innovation/Benefits

- Started with a departmental model that can expand to programs across each campus (MOUs in place)
- Stacking of High-Impact Practices has meaningful impacts on student outcomes
- Networking and collaborative teams lead to asking more global questions
- Creating potential pathways for faculty exchange
- Providing student agency of project and skills related to traveling abroad and navigating a new cultural
- Modeling the international context of scientific research

Challenges/Limitations

- The timeline is challenging to disseminate completed project outcomes
- Funding, housing, and transportation challenges when catering to single or small group of students
- Challenges of differing institutional calendars have to be navigated
- Creating coherence and maintaining engagement throughout the project across the team
- Restrictions on travel and health concerns halt opportunities completely
- It takes buy-in from multiple stakeholders to support these programs

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