



Exploration Medical Capability (ExMC) Element Research Rotation

Description:

Research Rotation Goal: To gain a greater understanding of exploration space flight medical system design and the tools used to characterize risk through a mentored, academic experience.

Mentorship: Rotation candidates are assigned a mentor—prospectively a member of the Clinical and Science Team in ExMC, an element within NASA’s Human Research Program.

Deliverables: Dependent upon project, deliverables will be defined by the project mentor. Typical rotations will conclude with an oral presentation to the members of the ExMC Clinical and Science Team. This presentation may be delivered virtually, and can be completed after the formal end of the rotation dependent upon student, mentor, and team schedule.

Evaluation: Formal evaluation forms (as required) should be presented to the mentor by the student at the beginning of the rotation. The mentor, ExMC Element Scientist, and/or Deputy Element Scientist will complete the form and return to the home institution.

Learning Objective(s):

1. Using prescribed search methodology, locate and critically appraise evidence relevant to research/academic project
2. Leverage knowledge of terrestrial medical practice and supporting clinical evidence to define solutions for medical system design challenges in exploration space flight domain
3. Increase familiarity with tools and processes used to characterize medical systems, human operators, and associated risk to inform exploration medical system design
4. Explain the importance of integrating the clinical and engineering domains for medical system design in human spaceflight
5. Produce effective written and oral scientific communication using common communication methods (e.g., abstract, slides, manuscript, verbal presentations, etc.)
6. Demonstrate personal responsibility for setting and achieving research/academic project goals in partnership with mentor; and
7. Work cooperatively within multidisciplinary teams.

Logistics:

Location: Project, student and mentor location, and date of rotation will be used to determine the research site. Virtual rotations are common, and encouraged for those projects not requiring the use of sensitive NASA data (due to challenges with badging visitors to the JSC campus). If sensitive NASA data is required to support the project, the rotation will require student presence at NASA Johnson Space Center (Houston, Texas).

Scheduling/Duration: Each year there are a limited number of rotations, dependent upon availability of research projects, mentors and element priorities. A date should be secured in advance that coordinates with the student's academic schedule.

"In-person" rotations are typically of three to four week duration, about 40 hours per week. However, alternative schedules and virtual rotations may also be accommodated. Rotators should confirm with their proposed mentor that the schedule aligns with the mentor's and the project's needs. Final approval of all projects and rotations is at the discretion of the Element Scientist.

Clinical Responsibilities: There are no clinical responsibilities or direct patient care as part of this rotation.

Attendance: Dependent upon project; to be defined by project mentor

Faculty: ExMC Element Scientist Kris Lehnhardt kris.lehnhardt@nasa.gov;
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