Arctic Geophysics Field Research Application Information

PHYS 324 – Geophysical Field Research Preparatory Seminar (1 credit hour), Fall 2021
and
PHYS 325 – Geophysical Field Research: Arctic Geophysics (4 credit hours), Spring 2022

PHYS 324

- 1 credit hour, meets weekly throughout 2021 fall semester. Meeting day/time TBD after participants chosen.
- Students conceive of their own research question based on their interests. Students design and start building a sensor-based project to address that research question with mentoring from Dr. Herman.

PHYS 325

- 4 credit hours, meets for 5 Saturdays at the start of the 2022 spring semester to finish, test, and refine their research sensor projects.
- One (or two) weeks in Utqiagvik, Alaska deploying their sensors on the sea ice. These are either the week before, or the week of the 2022 spring break (Feb. 26-March 5, or March 5-March 12).
- After the trip, students will work individually with Dr. Herman to analyze their data and prepare their presentations for the 2022 Student Engagement Forum held in mid-April. From this will come the final write-up about their overall research experience.

This 2-class sequence (you must enroll in both) is designed to get students involved in a full research experience whatever their background. This includes students whose primary ability is their motivation to learn even if they have ***NO PRIOR TECHNICAL OR RESEARCH EXPERIENCE***. Each of you accepted into this program will be mentored as you design your own research project. This starts when you conceive of your research question and continues through the construction of your own sensor to address that question.

Please create a document (MSWord or pdf) for your application for the 2-class Arctic Geophysics program. Email this to Dr. Rhett Herman (rherman@radford.edu) by 5:00pm on ***Friday, April 2, 2021***. Early submissions are encouraged but no late submissions will be accepted. You ***must*** name your document FirstnameLastname_PHYS325s22.docx (or .pdf). Have the 3 sections in highlight below in your document.

Contact Information Name: Radford email:

Preferred Week of Travel

Travel will be either the week before, or the week of the 2022 spring break. Indicate if you can travel either week, or if you have a preference for one of the weeks. Nothing is guaranteed, but I work to match people with their preferences. The spring 2022 dates are February 26-March 5, or March 5-March 12 (both Saturday to Saturday in Alaska).

There will be a limited number of spots for people to stay for 2 weeks. If you are interested in 2 weeks, indicate that in this application. Indicating interest does not guarantee acceptance for the 2-week positions.

Essay

Explain why you are interested in this class (yes, I know this is a very broad question – I would be glad to answer your questions about this essay). This should be between 200-500 words, although they may be

longer if you truly have more to say (without being repetitive). Note any experience you have working in groups. Teamwork is crucial, and being part of a well-functioning and cooperating team is paramount.

Some questions to think about that may get you started:

- *What do you hope to get out of this experience that will benefit you professionally in the future?*
- *What do you hope to get out of this experience that will benefit you personally in the future?*
- *What will you do in this program that you can't do in your other classes?*
- *Why do you want to do research and not just take a "traditional" class?*
- *Is there some particular measurement or experiment that you would like to perform? Maybe you have wondered, "Why don't they try [this thing] in the arctic?"*
- *What types of creative-solution/problem-solving experiences have you previously had (in any context)?*
- *If you want to highlight your academic record so far, do so in a concise list (class, grade in that class, etc.). Note that this includes both college as well as high school classes that highlight your ability to bring something useful to this research project.*
- *I do not expect anyone in this program to go on to a permanent career in either geophysics or sea ice work. This class simply involves you in a research experience into a subject that affects us all – the global planetary environment.*

Cost estimate

~$1,400	Plane ticket
$1,890	PHYS 325 fee for lodging/fees/meals/etc. for one week ($3,140 if 2 weeks)
(tuition)	The usual tuition payment for 4 credit hours in the spring semester. *There will be scholarship opportunities! Please see Dr. Herman for more information.*

- **Plane ticket:** These will vary due to fuel prices, etc., along with the airport from which travelers fly from to get to Utqiagvik (ne' Barrow), Alaska. You will purchase your own plane ticket to/from Utqiagvik for simplicity and cost efficiency. Your itinerary will be given to the Center for Global Education at least 45 days prior to departure.
- **PHYS 325 fee:**
  - The exact costs cannot be determined yet, thus this number in an upper limit.
  - We will stay in a nice warm "Scientists Hotel" building on the grounds of the former Naval Arctic Research Laboratory (NARL). NARL is used as a base of operations for numerous scientific projects.
  - The ~$1,890 (or ~$3,140) PHYS 325 course fee is an *upper* limit that covers lodging, food, equipment costs, and local logistics costs (e.g. permits, etc.). There will be scholarship opportunities for this class.
- **Cold-weather clothing:** I have a number of outfits from previous trips that current students may borrow. If I have one that fits you—either all or in part—then this will save you some $$. However, many people buy their own gloves since it is crucial to keep your fingers warm. Remember, it can be 40F below zero there, and you do not want to take any chances in that extreme environment.

Note that there will be some public relations activities that will be required of the group since we will be representing Radford University while on this trip.