

**NORTH HENNEPIN COMMUNITY COLLEGE  
INSTITUTIONAL REVIEW BOARD  
List of Required Application Materials**

**Project Title** (use same title as grant title/application, if applicable):

<b>Collaborative Research: GARNET (Geoscience Affective Research Network)</b>
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**Applicant: Megan H. Jones, Geology Department**

- Cover page
- Summary of proposed research
- Participant population
- Recruitment of participants
- Informed consent process
- Confidentiality of data
- Risks and benefits
- Consent form
- Supplementary form for student researchers (if applicable)

**Instructions**

North Hennepin Community College policies and federal regulations require that each project involving research with human participants be reviewed to consider whether:

- Risks to participants are minimized,
- Risks to participants are reasonable in relation to anticipated benefits,
- Informed consent is sought from each prospective participant or legally authorized representative,
- Adequate preparation is taken to protect the anonymity and confidentiality of participants,
- Participants are debriefed on their involvement, and
- Adequate safeguards are included if participants are in some way vulnerable.

It is important to note that the term “research” here refers to systematic data collection done with the intent to communicate findings to the community in some fashion (for example, in a publication or conference presentation).

In general, the Institutional Review Board (IRB) aims to accomplish these goals by assisting researchers in anticipating circumstances that may put research participants at risk and helping them to remedy such problems. However, the ultimate responsibility for treatment of research participants rests with the researchers involved.

**APPLICATION FORM  
INSTITUTIONAL REVIEW BOARD  
NORTH HENNEPIN COMMUNITY COLLEGE**

**I. General Information**

1. **Project Title** (use same title as grant title/application, if applicable):

*(Evaluation of)* **Collaborative Research: GARNET (Geoscience Affective Research Network)**

2. **Faculty Contact Information** (student researchers should submit the supplementary form provided in Appendix B; in this case, the supervising faculty member should provide their contact information here:

- a. Name: **Megan H. Jones**
- b. Department: **Geology**
- c. Mailing address: **Science 126-D**
- d. Phone number: **X-0869**
- e. E-mail address: [megan.jones@nhcc.edu](mailto:megan.jones@nhcc.edu)

3. **Inclusive Dates of Project:** From: 08-10-08 to 08-10-10

4. **Institutional Oversight:**

- a. Is this research subject to review by another internal committee at North Hennepin Community College?

No       Yes

- b. Is this research being conducted at another location or with a cooperating organization (for example: schools, clinics, community agencies, etc)?

**NO**

- c. If you answered “yes” to either 4a or 4b, please provide more details (as well as written documentation of approval from the relevant committee and/or organization):

**II. Summary of Proposed Research**

*Please use lay language to answer the following questions.*

1. **Describe your rationale and hypotheses for this proposed research.** Include enough background information to understand your rationale and hypotheses at a basic level.

**Purpose & Significance of Research:**

The project will examine the connection between student motivation and learning outcomes in introductory general education classes in geology. The key hypotheses are that: 1) The affective domain is a major control on student learning; and, 2) How we teach can significantly change students’ affective behavior.

2. **Describe the methods you propose to use in this research** (including the frequency and duration of procedures, tests, and experiments). As a part of this, clearly describe the tasks participants will be asked to perform. Make sure to attach all surveys, instruments, interview questions, focus group questions, etc. that you intend to use. These must be in final form as you intend to use the.

### **Procedures/Research Design/Methodology/Timeframe:**

*This application would normally fall under “exempt” review guidelines, as (a) the instruments are achievement and diagnostic tests (46.101b 2) that are (b) administered in established educational settings (46.101b 1.i), in which (c) the efficacy of various instructional materials or practices are to be determined (46.101b 1.ii), and (d) for the purposes of the evaluation/research, data are anonymous (46.101b 2, 4) and externally reported in the aggregate only. It is important to note that these same data would be collected and analyzed by individual instructors for use in course improvement and student learning measures, whether external funding was provided or not.*

### **Research Design**

This is a quasi-experiment involving students in Geology 1110 Physical Geology classes at NHCC and in similar classes at other institutions. We will compare various aspects of their motivation to learn using a common survey tool, the Motivated Strategies for Learning Questionnaire (MSLQ). Variables will include teaching methods and student experiences.

### **Procedure**

Students will complete an online survey twice during the semester. The instructors teaching the classes will complete some surveys about their teaching and may be observed during no more than four classes per semester.

### **Instruments**

Students will complete an on-line version of the 81-question Motivated Strategies for Learning Questionnaire (MSLQ), a tool that has been used previously in studies of general education students at the University of Akron. Students will also complete a demographic survey. Faculty observers will make use of the Reformed Teaching Observation Protocol (RTOP).

### **Data Collection:**

Data will be collected using an online version of the MSLQ hosted by the University of North Dakota. To administer the surveys and report the results efficiently, a web-based computer application will be written and hosted at the University of North Dakota Department of Geology and Geological Engineering by Dr. Ronald Matheney for use by all participants on all campuses. Participating students will take the surveys (the demographic survey and the MSLQ surveys) through a web browser over a secure connection with the Apache-SSL server; responses will be stored in a database along with appropriate flags indicating the student's campus, class number, instructor, and term, together with a unique, randomly generated student code. At first login, students will be shown any notifications required by their campus' Institutional Review Board, and will have to signify informed consent before being presented with a survey. Upon completing an MSLQ survey, students will be redirected to a summary web page reporting their personal results for each subscale and offering advice on improving their scores. Instructors will get summary MSLQ scores for each of their classes, plus detailed access to individual student scores. The student-specific data may be helpful to instructors for planning intervention strategies, and will be needed when we attempt to correlate survey results with student success in each class. Prior to publication of results, or at such time as required by IRB policies, student identifiers will be purged from the database.

## **II. Summary of Proposed Research (cont.)**

### **Reporting Procedures:**

The primary venue for reporting results of this evaluation is internal to the project only, reported to the project management team, and to the funding agency (NSF) as required. Data may be used in the development of a Phase II CCLI proposal, which would be for national dissemination of the instructional materials. It is conceivable, but not necessary to this project, that results of this phase of the project would be presented at professional meetings by the project evaluator, or included in presentations by project leadership. These results will be in the aggregate only, with no personally identifiable information included. Aggregate data will be made available to students on request.

## **III. Participant Population**

1. **Expected Number of Participants:** 50 - 100
2. **Expected Age Range** (check all that apply)
  - a. \_\_\_ 0-17 years (include parental consent form)
  - b. X 18 years and older
3. **Describe the location(s) from which you will be recruiting participants.** As a part of this, describe any criteria that you have for participants to be included or excluded.

We will be targeting students in introductory level geology taught by participating faculty. We will compare how responses vary with class performance and various demographic factors (e.g., age, academic rank). A large sample size is critical to ensure that results will be representative. At NHCC, Geology 1110 - Physical Geology is the targeted course.

## **IV. Recruitment of Participants**

1. **Describe how participants will be identified and recruited.** As a part of this, describe any incentives that will be used to motivate participation and how you will handle those who decline to participate. Attach a copy of all recruitment materials to be used (such as advertisements, bulletin board notices, e-mails, scripts, and URLs).

No recruitment. This type of assessment has been, and is currently being, done as part of normal course procedure to gauge student progress and areas of the course that may need improvement.

Student participants will be enrolled in participating introductory geology classes (Geology 1110, NHCC) using the attached informed consent request. This informed consent form will be made available when the student first logs in to the online MSLQ survey. We will only use data from students who have indicated that they have provided the necessary consent. Note, that even though the student is indicating their consent via the online survey, we will ask them to sign a paper form during class.

2. **Describe who will approach potential participants to take part in the proposed research and their position** (for example, principal investigator, student research assistant, instructor in the course):

Not Applicable.

3. **Use of Records:**

a. Will participants be identified from records of some kind?

\_\_\_ No \_\_\_ **X** Yes

b. If “yes”, are records “private” medical or student records?

\_\_\_ No \_\_\_ **X** Yes, **student records**

*If your answer to 3a is “yes”, make sure to include written approval for the use of records in this research. If your answer to 3B is “yes,” provide the protocol, consent forms, letters, etc. for securing consent from the record holders.*

## **V. Informed Consent Process**

1. **In relation to the actual data gathering, when will consent be discussed and obtained?** Be specific. How will this process be modified if you are involving individuals under the age of 17 to obtain the consent of parents?

Consent will be discussed at the beginning of the semester. During the first week of class students will be given the letter, the research will be discussed and then they will be asked to consent or deny consent by returning the signed letter within the week prior and up to time of MSLQ administration.

2. **Who will be securing informed consent?** Name all of the individuals and their positions (for example, primary investigator, student research assistant, instructor in the course).

Megan H. Jones, PI and instructor for Geology 1110, Physical Geology

3. **Describe what specifically will be said to potential participants to explain the research.**

See attached letter of consent.

4. **What specific questions will be asked to assess participants’ understanding of the risks and benefits of participation?**

What, if any, are the risks to you should you agree to participate in this research evaluation project?

What, if any, are the benefits to you should you agree to participate in this research evaluation project?

## VI. Confidentiality of Data

1. Will you record any direct identifiers, names, social security numbers, addresses, telephone numbers, etc. with the data?  
 No                       Yes
2. Will you retain a link between study code numbers and direct identifiers after the data collection is complete?  
 No                       Yes
3. Will you provide identifiers or links to anyone outside the research team?  
 No                       Yes
4. If you answered “yes” to any of the above three questions, please explain why this is necessary and what you will do to ensure the confidentiality of your participants.
5. **Describe where, how long, and in what format you intend to keep the data** (such as paper, digital or electronic media, video, audio, etc). Also, describe what security provisions will be taken to protect this data (for example, password protection, encryption, etc.).

All data will be stored in digital format on password protected computers.

Participating students will take the surveys (the demographic survey and the MSLQ surveys) through a web browser over a secure connection with the Apache-SSL server; responses will be stored in a database along with appropriate flags indicating the student's campus, class number, instructor, and term, together with a *unique, randomly generated student code*. At first login, students will be shown any notifications required by their campus' Institutional Review Board, and will have to signify informed consent before being presented with a survey. Upon completing an MSLQ survey, students will be redirected to a summary web page reporting their personal results for each subscale and offering advice on improving their scores.

## VII. Risks and Benefits

1. **Does this research involve any of the following possible risks or harms to participants?**  
(Check all that apply)
  - a.  Use of deception
  - b.  Use of private records (agency, **educational**, or medical)
  - c.  Manipulation of psychological or social variables such as sensory deprivation, social isolation, or psychological stress
  - d.  Any probing for personal or sensitive information in surveys or interviews
  - e.  Presentation of materials that participants might consider sensitive, offensive, threatening, or degrading

- f. \_\_\_\_\_ Possible invasion of privacy for participants or their families
- g. \_\_\_\_\_ Social or economic risk
- h. \_\_\_\_\_ Physically intrusive procedures
- i. \_\_\_\_\_ Other, please specify \_\_\_\_\_

2. **Describe the nature and the extent of the risk or harm check above.** The described risks/harms must be disclosed in the consent form.

N/A

3. **Explain what steps will be taken to minimize risks or harms and to protect participants' welfare.**

N/A

4. **Describe how participation in this research may benefit participants directly** (for example, course credit of some kind) **or indirectly** (for example, contribution to knowledge in the field, improved self-knowledge).

We anticipate that the students will become more aware of some of the factors that affect their learning. Otherwise there are no anticipated benefits. Potential *indirect benefits* from student participation in this study include the satisfaction that may be derived from contributing to a better understanding of how student motivation influences student learning in STEM courses.

5. **Describe how this research may benefit society and how these benefits outweigh the risk for the participants.**

See answer to # 4 above.



North Hennepin  
Community College

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## **Informed Consent Form for GARNET (Geoscience Affective Research Network) Research Project**

You are being invited to participate in a study titled GARNET (Geoscience Affective Research Network) being conducted by faculty from six institutions across the country. This topic is being investigated to examine the connection between student motivation and learning outcomes in introductory general education classes in geology. **Your participation in the research study is voluntary.** Please read the following information carefully before agreeing to be part of this study. Feel free to ask questions if you do not understand something.

As part of this course, you will be asked to complete an online survey and a demographic questionnaire twice over the course of this semester. **You will not be identified by name as part of the evaluation, and your participation will have no bearing on your grade in the course. Your ACT scores and/or high school and college GPA may be compared to the survey and demographic data collected.** Confidentiality of you as the student and your responses will be protected throughout the study and publication. As a direct benefit from your participation in this study, you may become more aware of some of the factors that affect your learning. In addition, your participation may help us better understand how to help improve student learning in introductory classes like this one.

**Your participation in this research is voluntary and you may refuse to participate, or may discontinue participation at any time, without penalty or loss of benefits to which you are otherwise entitled.** Any identifying information collected will be kept in a secure location and only the researchers will have access to the data. Participants will not be individually identified in any publication or presentation of the research results. Only aggregate data will be used. Your signed consent form will be kept separate from your data, and nobody will be able to link your responses to you.

You may direct questions about this study to Megan H. Jones, Department of Geology, North Hennepin Community College, 7411 85<sup>th</sup> Ave. No., Brooklyn Park, MN 55445, 763-424-0869 or via email at [megan.jones@nhcc.edu](mailto:megan.jones@nhcc.edu). The Institutional Review Board for the Protection of Human Subjects at North Community College has approved this research. Questions or comments can also be directed at to the Institutional Review Board via Attention: Lisa Schlotterhausen

(Chair), Dean of Institutional Effectiveness, North Hennepin Community College,  
763-424-0853 or via email at [lschlotterhausen@nhcc.edu](mailto:lschlotterhausen@nhcc.edu).

Thank you for your assistance.

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I have read the information provided above and all of my questions have been  
answered. I voluntarily agree to participate in this study. I have received a copy of  
this consent form for my information.

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Signature

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Date

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Printed Name