Program Outcomes Assessment

PHD in Spatial and Earth Sciences

Created on: 04/14/2010 07:40:00 AM CST
Last Modified: 11/04/2015 10:14:41 AM CST
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General Information (Program Outcomes Assessment)
Standing Requirements

**Mission Statement**

The doctoral program in Spatial and Earth Sciences is designed to provide advanced study in geography and earth sciences.

**Outcomes Library**

**PHD in Spatial and Earth Sciences Outcome Set**

<table>
<thead>
<tr>
<th>Professional Communication</th>
<th>Mapping</th>
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</thead>
<tbody>
<tr>
<td>Aquire professional communication proficiencies.</td>
<td></td>
</tr>
<tr>
<td>Outcome</td>
<td>Mapping</td>
</tr>
<tr>
<td>Professional Communication</td>
<td>No Mapping</td>
</tr>
<tr>
<td>demonstrate professional communication proficiencies in cores courses, thesis proposal defense, public thesis defense and presentations at professional meetings.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Professional Communities</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engage in and meaningfully contribute to diverse communities and professional environments.</td>
<td></td>
</tr>
<tr>
<td>Outcome</td>
<td>Mapping</td>
</tr>
<tr>
<td>Professional Communities</td>
<td>No Mapping</td>
</tr>
<tr>
<td>Engage in and contribute to diverse professional environments including team oriented lab and field work and interaction with visiting scholars.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Professional Ethics</th>
<th>Mapping</th>
</tr>
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<tbody>
<tr>
<td>recognize and act on professional and ethical challenges that arise in the field or discipline.</td>
<td></td>
</tr>
<tr>
<td>Outcome</td>
<td>Mapping</td>
</tr>
<tr>
<td>Ethics</td>
<td>No Mapping</td>
</tr>
<tr>
<td>recognize and act on professional and ethical challenges by completing either IRB or CITI training and ENVI 611.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Discipline Knowledge</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastery of the knowledge required in their concentration.</td>
<td></td>
</tr>
<tr>
<td>Outcome</td>
<td>Mapping</td>
</tr>
<tr>
<td>Discipline Knowledge</td>
<td>No Mapping</td>
</tr>
<tr>
<td>Achieve mastery of knowledge required in their concentration or profession through program core and electives by completing papers, exams, and a dissertation project.</td>
<td></td>
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<table>
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<tr>
<th>Discipline Skills</th>
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</table>
Mastery of skills/tools required in discipline/concentration.

<table>
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<tr>
<th>Outcome</th>
<th>Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discipline Skills</td>
<td>No Mapping</td>
</tr>
</tbody>
</table>

Achieve mastery of skills/tools required in discipline/concentration in quantitative methods or hands-on lab and field work.

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**Curriculum Map**

**Active Curriculum Maps**

- PhD Mapping (See appendix)
  - Alignment Set: PHD in Spatial and Earth Sciences Outcome Set
  - Created: 05/07/2012 11:08:21 am CST
  - Last Modified: 05/07/2012 11:58:35 am CST

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**Communication of Outcomes**

Learning outcomes for doctoral program will be posted on EES web site.
Archive (This area is to be used for archiving pre-TaskStream assessment data and for current documents.)
## Assessment Plan

### Outcomes and Measures

### PHD in Spatial and Earth Sciences Outcome Set

#### Professional Communication

*Acquire professional communication proficiencies.*

- **Measure:** Professional presentation
  - Direct - Other

---

#### Details/Description:

- Presentation at regional or national professional meeting.

#### Target:

- 60 % of doctoral students present at professional meeting

#### Implementation Plan (timeline):

- August 2012

#### Responsible Individual(s):

- C. R. Stafford

---

### Assessment Findings

#### Finding per Measure

### PHD in Spatial and Earth Sciences Outcome Set

#### Professional Communication

*Acquire professional communication proficiencies.*

---

#### Details/Description:

- Presentation at regional or national professional meeting.

#### Target:

- 60 % of doctoral students present at professional meeting

#### Implementation Plan (timeline):

- August 2012

#### Responsible Individual(s):

- C. R. Stafford

---

#### Findings for Professional presentation

#### Summary of Findings:

Four of eight doctoral students presented at professional meetings from 2010 - 2012. Five total presentations were made.

#### Results:

- Target Achievement: Not Met

#### Recommendations:

- Advisors should encourage students to make at least one presentation at a professional meeting.

#### Reflections/Notes:

- Substantiating Evidence:
  - PhD presentations (Adobe Acrobat Document) (See appendix)
These Findings are associated with the following Actions:

**Professional Presentations**
(Action Plan; 2011-2012 Assessment Cycle)

---

## Overall Recommendations

Percentage of doctoral students presenting at professional meetings falsl short of 60% goal set for this measure. A concerted effort needs to be made by advisors to encourage more doctoral students to make presentations of their research at meeting.

## Overall Reflection

Advisors and students need to be made aware of funding opportunities in the department and graduate college for travel to give presentations at professional meetings.

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## Action Plan

### Actions

**PHD in Spatial and Earth Sciences Outcome Set**

**Professional Communication**

Aquire professional communication proficiencies.

**Professional Communication**

demonstrate professional communication proficiencies in cores courses, thesis proposal defense, public thesis defense and presentations at professional meetings.

### Action: Professional Presentations

This Action is associated with the following Findings

**Findings for Professional presentation**
(Assessment Plan and Assessment Findings; 2011-2012 Assessment Cycle)

**Summary of Findings:** four of eight doctoral students presented at professional meetings from 2010 - 2012. Five total presentations were made.

**Action Details:** inform doctoral students and their advisors that presentations at national/regional meetings is an essential part of scholarly research and professional development.

**Implementation Plan (timeline):** by Spring 2014

**Key/Responsible Personnel:** T. Rathburn

**Measures:** percent of students that present at national/regional meetings should be greater than 60%.

**Resource Allocations:**

**Priority:** High

---

## Status Report

### Action Statuses

**PHD in Spatial and Earth Sciences Outcome Set**
**Professional Communication**

Aquire professional communication proficiencies.

**Professional Communication**

demonstrate professional communication proficiencies in cores courses, thesis proposal defense, public thesis defense and presentations at professional meetings.

<table>
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<th>Action: Professional Presentations</th>
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**Action Details:** inform doctoral students and their advisors that presentations at national/regional meetings is an essential part of scholarly research and professional development.

**Implementation Plan (timeline):** by Spring 2014

**Key/Responsible Personnel:** T. Rathburn

**Measures:** percent of students that present at national/regional meetings should be greater than 60%.

**Resource Allocations:**

**Priority:** High

---

**Status for Professional Presentations**

**Current Status:** Completed

**Resource Allocation(s) Status:**

**Next Steps/Additional Information:**

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**Status Summary**

No new data available at this time. We will collected data on presentations in Spring 2014

**Summary of Next Steps**

Outcome associated with ethics will be evaluated in the 2012-13 cycle.
2012-2013 Assessment Cycle

Assessment Plan

Outcomes and Measures

PHD in Spatial and Earth Sciences Outcome Set

Professional Communication
Aquire professional communication proficiencies.

Professional Communication
demonstrate professional communication proficiencies in cores courses, thesis proposal defense, public thesis defense and presentations at professional meetings.

No measures specified

Professional Ethics
recognize and act on professional and ethical challenges that arise in the field or discipline.

Ethics
recognize and act on professional and ethical challenges by completing either IRB or CITI training and ENVI 611.

Measure: Professional Ethics  
Indirect - Survey

Details/Description: Complete CITI program in ethics for either laboratory research or human subject research.

Target: 90 percent of doctoral students should complete this ethics training.

Implementation Plan (timeline): by May 2013

Responsible Individual(s): T. Rathburn

Assessment Findings

Finding per Measure

PHD in Spatial and Earth Sciences Outcome Set

Professional Communication
Aquire professional communication proficiencies.

Professional Communication
No measures specified

demonstrate professional communication proficiencies in cores courses, thesis proposal defense, public thesis defense and presentations at professional meetings.

Professional Ethics
recognize and act on professional and ethical challenges that arise in the field or discipline.

**Ethics**
recognize and act on professional and ethical challenges by completing either IRB or CITI training and ENVI 611.

**Measure:** Professional Ethics
Indirect - Survey

**Details/Description:** Complete CITI program in ethics for either laboratory research or human subject research.

**Target:** 90 percent of doctoral students should complete this ethics training.

**Implementation Plan (timeline):** by May 2013

**Responsible Individual(s):** T. Rathburn

**Findings for Professional Ethics**

**Summary of Findings:** CITI ethics training completed by 4 of 4 doctoral students enrolled in ENVI 733 seminar spring 2013. ENVI 733 is a required core class in the new PhD program. CITI completion reports on file in department. Climate and Environmental ethics were also a topic in ENVI 733. Students completed paper assignment.

**Results:** Target Achievement: Exceeded

**Recommendations:** On-line CITI training is an effective way to insure that doctoral students are exposed to ethical issues in the conduct of research or human subject research.

**Reflections/Notes:**

These Findings are associated with the following Actions:

**Professional Ethics**
(Action Plan; 2012-2013 Assessment Cycle)

**Overall Recommendations**

No text specified

**Overall Reflection**

No text specified

**Action Plan**

**Actions**

**PHD in Spatial and Earth Sciences Outcome Set**

**Professional Ethics**
recognize and act on professional and ethical challenges that arise in the field or discipline.

**Ethics**
recognize and act on professional and ethical challenges by completing either IRB or CITI training and ENVI 611.

**Action:** Professional Ethics

**This Action is associated with the following Findings**

**Findings for Professional Ethics**
(assessment plan and assessment findings; 2012-2013 assessment cycle)

**Summary of Findings:** CITI ethics training completed by 4 of 4 doctoral students enrolled in ENVI 733 seminar spring 2013. ENVI 733 is a required core class in the new PhD program. CITI completion reports on file in department. Climate and Environmental ethics were also a topic in ENVI 733. Students completed paper assignment.
**Action Details:** continue to have doctoral students take CITI on-line training as a part of ENVI 733.

**Implementation Plan (timeline):** ENVI 733 will be offered again spring 2015.

**Key/Responsible Personnel:** T. Rathburn

**Measures:** continue to collect CITI completion reports and place on file in dept.

**Resource Allocations:**

**Priority:** Medium

---

**Status Report**

**Action Statuses**

**PHD in Spatial and Earth Sciences Outcome Set**

**Professional Ethics**

recognize and act on professional and ethical challenges that arise in the field or discipline.

**Ethics**

recognize and act on professional and ethical challenges by completing either IRB or CITI training and ENVI 611.

**Action:** Professional Ethics

**Action Details:** continue to have doctoral students take CITI on-line training as a part of ENVI 733.

**Implementation Plan (timeline):** ENVI 733 will be offered again spring 2015.

**Key/Responsible Personnel:** T. Rathburn

**Measures:** continue to collect CITI completion reports and place on file in dept.

**Resource Allocations:**

**Priority:** Medium

**Status** for Professional Ethics

**Current Status:** Completed

**Resource Allocation(s) Status:**

**Next Steps/Additional Information:**

---

**Status Summary**

*No text specified*

**Summary of Next Steps**

*No text specified*
2013-2014 Assessment Cycle

Assessment Plan

Outcomes and Measures

PHD in Spatial and Earth Sciences Outcome Set

Discipline Knowledge
Mastery of the knowledge required in their concentration.

<table>
<thead>
<tr>
<th>Discipline Knowledge</th>
<th>Measure: Graduate Survey</th>
</tr>
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<tbody>
<tr>
<td>Achieve mastery of knowledge required in their concentration or profession through program core and electives by completing papers, exams, and a dissertation project.</td>
<td>Indirect - Survey</td>
</tr>
</tbody>
</table>

Details/Description: Survey of students that graduated from program (questions that targeted knowledge acquired).

Target: respondents indicate that discipline knowledge was mastered and prepared them for their career

Implementation Plan (timeline): Fall 2013

Responsible Individual(s): T. Rathburn, C. Stafford

Supporting Attachments:

Fall 2013 Graduate Survey SkillsQuestions.pdf (Adobe Acrobat Document) (See appendix)

Assessment Findings

Finding per Measure

PHD in Spatial and Earth Sciences Outcome Set

Discipline Knowledge
Mastery of the knowledge required in their concentration.

<table>
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Details/Description: Survey of students that graduated from program (questions that targeted knowledge acquired).

Target: respondents indicate that discipline knowledge was mastered and prepared them for their career

Implementation Plan (timeline): Fall 2013

Responsible Individual(s): T. Rathburn, C. Stafford

Supporting Attachments:

Fall 2013 Graduate Survey SkillsQuestions.pdf (Adobe Acrobat Document) (See appendix)

Findings for Graduate Survey
**Summary of Findings:**  survey found that student self-assessment indicated that they had attained mastery of discipline based knowledge.

**Results:** Target Achievement: Met

**Recommendations:** maintain core curriculum as currently configured.

**Reflections/Notes:**

**Substantiating Evidence:**

Fall 2013 Graduate Survey SkillsQuestions.pdf (Adobe Acrobat Document) (See appendix)

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**Overall Recommendations**

Core PhD courses provide mastery of discipline base knowledge and therefore should be maintained as currently configured.

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**Overall Reflection**

Survey provided some insight into adequacy of core curriculum.

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**Action Plan**

**Actions**

**PHD in Spatial and Earth Sciences Outcome Set**

**Discipline Skills**
Mastery of skills/tools required in discipline/concentration.

**Action:** Skills

- **This Action is associated with the following Findings**
  No supporting Findings have been linked to this Action.

- **Action Details:** assess quantitative based skills of students

- **Implementation Plan (timeline):** beginning Fall 2014

- **Key/Responsible Personnel:** T. Rathburn, C. Stafford

- **Measures:** outcomes of statistics, GIS, and other skill courses taken by students

- **Resource Allocations:**

- **Priority:** Medium

---

**Status Report**

**Action Statuses**

**PHD in Spatial and Earth Sciences Outcome Set**
Discipline Skills
Mastery of skills/tools required in discipline/concentration.

Discipline Skills
Achieve mastery of skills/tools required in discipline/concentration in quantitative methods or hands-on lab and field work.

Action: Skills

Action Details: assess quantitative based skills of students

Implementation Plan (timeline): beginning Fall 2014

Key/Responsible Personnel: T. Rathburn, C. Stafford

Measures: outcomes of statistics, GIS, and other skill courses taken by students

Resource Allocations:

Priority: Medium

Status for Skills

Current Status: Not started

Resource Allocation(s) Status:

Next Steps/Additional Information: collect data

Status Summary

collect data in fall 2014

Summary of Next Steps

collect data
2014-2015 Assessment Cycle

Assessment Plan

Outcomes and Measures

PHD in Spatial and Earth Sciences Outcome Set

Professional Communication

Aquire professional communication proficiencies.

Professional Communication

demonstrate professional communication proficiencies in cores courses, thesis proposal defense, public thesis defense and presentations at professional meetings.

- **Measure:** Professional presentation
  - Direct - Other

  **Details/Description:** presentation at regional or national professional meeting.
  **Target:** 60 % of doctoral students present at professional meeting
  **Implementation Plan (timeline):** August 2015
  **Responsible Individual(s):** T. Rathburn

Assessment Findings

Finding per Measure

PHD in Spatial and Earth Sciences Outcome Set

Professional Communication

Aquire professional communication proficiencies.

Professional Communication

demonstrate professional communication proficiencies in cores courses, thesis proposal defense, public thesis defense and presentations at professional meetings.

- **Measure:** Professional presentation
  - Direct - Other

  **Details/Description:** presentation at regional or national professional meeting.
  **Target:** 60 % of doctoral students present at professional meeting
  **Implementation Plan (timeline):** August 2015
  **Responsible Individual(s):** T. Rathburn

**Findings for Professional presentation**

**Summary of Findings:** 66% of doctoral students over the past two years have made presentations at national or regional meetings (GSA, AAG)
**Results:** Target Achievement: Met
**Recommendations:** advisers should continue to encourage doctoral students to present their research findings at national and/or regional professional meetings.
**Reflections/Notes:**
advisers should continue to encourage doctoral students to present their research findings at national and/or regional professional meetings. And the department should continue to provide travel funding to doctoral students so that they can present their research findings and enhance their professional communication skills.

**Overall Reflection**

No text specified

### Action Plan

#### Actions

**PHD in Spatial and Earth Sciences Outcome Set**

**Discipline Skills**

Mastery of skills/tools required in discipline/concentration.

| Discipline Skills
| Achieve mastery of skills/tools required in discipline/concentration in quantitative methods or hands-on lab and field work.

**Action: Skills**

This Action is associated with the following Findings

No supporting Findings have been linked to this Action.

**Action Details:** assess discipline based skills of students

**Implementation Plan (timeline):** beginning Fall 2014

**Key/Responsible Personnel:** T. Rathburn, C. Stafford

**Measures:** to be determined

**Resource Allocations:**

**Priority:** Medium

### Status Report

#### Action Statuses

**PHD in Spatial and Earth Sciences Outcome Set**

**Discipline Skills**

Mastery of skills/tools required in discipline/concentration.

| Discipline Skills
| Achieve mastery of skills/tools required in discipline/concentration in quantitative methods or hands-on lab and field work.

**Action: Skills**

**Action Details:** assess discipline based skills of students

**Implementation Plan (timeline):** beginning Fall 2014

**Key/Responsible Personnel:** T. Rathburn, C. Stafford
### Measures
- to be determined

### Resource Allocations:

#### Priority
- Medium

### Status for Skills

*No Status Added*

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### Status Summary

*No text specified*

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### Summary of Next Steps

*No text specified*
Assessment Plan

Outcomes and Measures

PHD in Spatial and Earth Sciences Outcome Set

**Discipline Skills**
Mastery of skills/tools required in discipline/concentration.

**Measure: Field/Lab Skills**
Direct - Portfolio

**Details/Description:** Acquire field and lab experience as a part of doctoral research project or through a field course.

**Target:** 100% of doctoral students should acquire skills associated with their discipline specialization.

**Implementation Plan (timeline):** collect and analyze data by May 2016.

**Responsible Individual(s):** EES Graduate Affairs Committee Chair

**Measure: Quantitative Skills**
Direct - Student Artifact

**Details/Description:** Successful completion of quantitative course work (e.g., ENVI 645) and/or GIS and Remote Sensing graduate courses

**Target:** satisfactory completion of courses by 90% of doctoral students.

**Implementation Plan (timeline):** collect data by May 2016

**Responsible Individual(s):** EES Graduate Affairs Committee Chair

Assessment Findings

Finding per Measure

PHD in Spatial and Earth Sciences Outcome Set

**Discipline Skills**
Mastery of skills/tools required in discipline/concentration.

**Measure: Field/Lab Skills**
Direct - Portfolio

**Details/Description:** Acquire field and lab experience as a part of doctoral research project or through a field course.

**Target:** 100% of doctoral students should acquire skills associated with their discipline specialization.

**Implementation Plan (timeline):** collect and analyze data by May 2016.

**Responsible Individual(s):** EES Graduate Affairs Committee Chair
Findings for Field/Lab Skills

No Findings Added

Measure: Quantitative Skills
Direct - Student Artifact

Details/Description: Successful completion of quantitative course work (e.g., ENVI 645) and/or GIS and Remote Sensing graduate courses

Target: satisfactory completion of courses by 90% of doctoral students.

Implementation Plan (timeline): collect data by May 2016

Responsible Individual(s): EES Graduate Affairs Committee Chair

Findings for Quantitative Skills

No Findings Added

Overall Recommendations

No text specified

Overall Reflection

No text specified

Action Plan

Status Report
2016-2017 Assessment Cycle

- Assessment Plan
- Assessment Findings
- Action Plan
- Status Report
2017-2018 Assessment Cycle

- Assessment Plan
- Assessment Findings
- Action Plan
- Status Report
2018-2019 Assessment Cycle

- Assessment Plan
- Assessment Findings
- Action Plan
- Status Report
2019-2020 Assessment Cycle

- Assessment Plan
- Assessment Findings
- Action Plan
- Status Report
Appendix

A. PhD Mapping (Curriculum Map)
B. PhD presentations (Adobe Acrobat Document)
C. Fall 2013 Graduate Survey SkillsQuestions.pdf (Adobe Acrobat Document)
D. Fall 2013 Graduate Survey SkillsQuestions.pdf (Adobe Acrobat Document)