1. Assessment information collected

The assessment data collected on the graduating PhD students for the reporting period are targeted to the three outcomes from the PhD Program Plan and include:

a. Pass rates and dates of the oral and written comprehensive exams:

   For this reporting period, all of these students passed the written and oral comprehensive exams on the first attempt.

b. An assessment of student’s abilities in four categories:

   The graduating student’s committees were surveyed to assess (on a scale from 1 to 5) the student’s ability to:
   - **Apply** knowledge of math, science, and engineering
   - **Communicate** effectively
   - Effectively use engineering techniques, skills, and tools
   - Perform **independent research**

   Below are the averages in each category for the graduating students:
Scores ranged from 4 to 5 for this set of students. Committee comments were very favorable for this group of students. Communication scored slightly lower than the other three categories.

**c. The initial employment placement of graduates:**

Of the eight graduating students, all have taken or have been offered positions. Four have taken positions in industry or government, three were offered positions at UAF or UAA, and one is self-employed.

**General information on the program:**

The Engineering Ph.D. is a diverse program with 8 approved concentration areas within the 6 CEM engineering departments.

The end of the current reporting period represents the 14th year since this program enrolled its first student in 2002. Seventy-three students have entered the program during that period, including:

- 33 students that graduated (45.2%),
- 18 students that are currently active (24.7%), and
- 22 students that left the program (30.1%)
The average time to complete the degree over this 14-year period is 4.4 years and the average graduation rate is 2.4 students per year.

During the current 2-year reporting period (Fall 2014 to Spring 2016):

6 new students entered the program
(1 CivE, 1 EnvE, 1 MechE, 3 MinE)

8 students graduated during the current reporting period:
(1 ArcticE, 2 CivE, 1 ElecE, 3 MechE, 1 MinE)

2. Conclusions drawn from the information summarized above

In most years, many of the graduates have pursued non-academic careers in industry or government agencies, although some have went into academia. In this reporting period, 4 students took positions in industry or government, three students were offered academic positions (such as postdoc research) at UAF or UAA, and one was continuing to be self-employed after graduation.

The 100% placement rate of our graduates for this reporting period shows that our students have important skills and are sought after to fill positions in their field. The committee assessment numbers also indicate that the faculty have witnessed good results in our PhD students. The communication category is slightly lower than the others, but still above 4, and is probably due to the large percentage of non-native English speakers in the program.

The Engineering PhD program continues to provide an important capability for providing students with research opportunities and training within CEM, and is helping to grow the infrastructure at UAF that may warrant dedicated doctoral programs within select CEM departments in the future.

3. Curricular changes resulting from conclusions drawn above

Due to the diversified nature of this program (8 distinct concentration areas, with many sub-disciplines within those areas) and the small number of students, there is no curriculum that is common to a majority of students in this program. There are also no courses within CEM that are specifically offered to only doctoral students, except for the necessity of offering individual study courses as needed to provide the training in specific areas required by each student on a case-by-case basis. No curricular changes were made based on the conclusions drawn above.
4. Identify the faculty members involved in reaching the conclusions drawn above and agreeing upon the curricular changes resulting

Sukumar Bandopadhyay, CEM Engineering PhD Admissions Committee
Charles Mayer, CEM Associate Dean of Academics
Jason McNeely, Chair, CEM Engineering PhD Admissions Committee
Rorik Peterson, CEM Engineering PhD Admissions Committee