Meeting called to order

I. Approval of the draft minutes for the February 6, 2019 faculty meeting. *(Sent with this agenda.)*

II. Reports

A. President
 *(The report will be distributed via email from the President’s Office.)*

B. Provost
 *(The Provost will be available to answer questions.)*

C. Principal Policy Making Committees
 *(Committee reports from Academic Affairs, Academic Technology and Online Education, Curriculum Committee, Faculty Welfare, General Education, and Graduate Council follow this agenda as Appendices A-F. Committee chairs will be available to speak to the reports and answer questions during the meeting.)*

D. Other reports:
   1. General Education Coordinator Report. **See Appendix G.** Cathie LeBlanc will be available to answer questions.
   2. General Education Task Force Report. **See Appendix H.** Megan Birch, Chair, will be available to answer questions.

III. Old Business
 None

IV. New Business

A. Resolutions of Standing Committees
 None

B. **MOTION B:** To approve an update to the “Academic Standing” policy, by making the proposed following changes. *(Submitted and presented by Jay Cordeira, Chair of the Academic Affairs Committee with MaryAnne Turner, Center for Student Success)*
 *(The proposed language is attached as Appendix I.)*
C. **MOTION C:** To approve the BS in Computational and Applied Mathematical Sciences with options in Biology, Chemistry, Criminal Justice, Weather Analysis, Physical Meteorology and Psychology. (Submitted by Emma Wright, Mathematics)

*(The proposed BS in Computational and Applied Mathematical Sciences may be found in Appendix J.)*

*Vote will be by paper ballot.*

D. **MOTION D:** To approve the PDS Postbac Program (Submitted by Mary Earick, ELLC)

*(The proposed PDS Postbac degree may be found in Appendix K.)*

*Vote will be by paper ballot.*

E. **MOTION E:** To approve the BS in Public Health. (Submitted by Suzanne M. Gaulocher)

*(The proposed BS in Public Health degree may be found in Appendix L.)*

*Vote will be by paper ballot.*

V. **Adjournment**

**Announcements:** Note: Please limit announcements to matters that are urgent, timely (happening within the next few days to a week), and have not been/will not be disseminated through multiple other means. In other words, let’s keep the announcements short and sweet.
APPENDIX A:

Academic Affairs Committee Report
Chair, Jay Cordeira
March 2019

The Academic Affairs Committee (AAC) met on Monday 18 February 2019 and again on Friday 22 February 2019.

The Monday meeting primarily focused on a discussion around submitted faculty concerns regarding accessing dates of student registrations, grade submission/release dates between Early Spring and Spring semesters, and discussion of the academic calendar with the Provost.

The Friday meeting contained two items of new business:

- The committee reviewed and approved proposed changes to the “Warning, Probation, & Severance” policy that seeks to change (1) warning GPA criteria for all students, (2) first-semester separation GPA criteria, (3) first-semester transfer separation GPA criteria, and (4) the names we give to letters sent to students. Details are contained in the Faculty Meeting Agenda as a motion and appendix for full faculty vote at the 6 March 2019 Faculty Meeting.

- The committee discussed a recommendation to the cabinet regarding delayed openings and class meeting times. The recommendation is as follows, “It is the recommendation of the Academic Affairs Committee that delayed openings take into consideration the block schedule, minimize the potential for bisected class meeting times, and allow courses to meet that are minimally impacted by a delayed opening that could still meet for at least 50% of their allotted time. We recommend this be instituted as an update to existing policy.” This recommendation has yet to be formally submitted to the cabinet as of 3 March 2019.

AAC Chair: Jay Cordeira
APPENDIX B:

Academic Technology Committee Report
Chair, Lynn Johnson
March 2019

Submitted: February 28, 2019
Submitted By: Lynn V. Johnson, ATC Chair
ATC Meeting Date: February 12, 2019

Discussion Items:
1. Cluster representation:
   a. There is still one cluster not represented: Exploration and Discovery Cluster Representative (non-voting).
   b. With the change in Cluster function, a question was raised about the need for Cluster representation. It was suggested that we continue with representatives for the remainder of this academic year and re-assess at that point.

Working Group Planning Time: Time was provided for three of the working groups (established at the November 2018 meeting) to work to set tentative timelines and working perimeters.
   a. Survey development:
      a. Faculty Survey
      b. Student Survey
      c. Goals (dates subject to change)
         i. Survey drafts submitted to ATC in March/April
         ii. Surveys to go out prior to end of 2018-2019 academic year
         iii. Analysis of data – Summer 2019
         iv. Report to faculty and students – Fall 2019
   b. Revision of Online Education Policy
      a. Policy is extremely outdated and does not reflect current practices
      b. Goals (dates subject to change)
         i. Submit first draft to committee at March meeting
         ii. Final draft – submitted to ATC by May 2019
         iii. Submitted to faculty for vote early Fall 2019
   c. Revision of Technology Innovation Project (TIP) and Technology Enhance Spaces Proposals
      a. Policies need revisions to better represent University Mission
      b. Goals (dates subject to change)
         i. Submit first draft to committee at March meeting
         ii. Final draft – submitted to ATC by May 2019
         iii. Shared with faculty early Fall 2019

Next Meeting: March (online meeting as meeting occurs during Spring Break)

*********

A reminder to all faculty of the Technology Innovation Project funding opportunity that is available:
Technology Innovation Project: ATOEC is inviting proposals to support innovative projects that advance how we think about and use technology to enhance student learning and the student experience. Applications for Technology Innovation Projects are reviewed monthly during the Fall and Spring Semesters. Projects applications are due on the 15th of the month for review by the committee at its next monthly meeting. Additional information regarding this funding opportunity can be found at: https://www.plymouth.edu/committee/faculty/faculty-committees-and-appointed-groups/academic-technology-and-online-education-committee/proposals-to-atoec/proposals-for-technology-innovation-projects/
APPENDIX C:

Curriculum Committee Report
Chair, Scott Coykendall
March 2019

At our February 15 marathon-meeting, the Curriculum Committee considered 119 proposals (and accepted four more as follow-ups). Among those proposals were the three new programs on today's agenda. We will not be accepting any more catalog-change proposals for the 2019-2020 catalog.

Because of Spring Break, the Curriculum Committee will not meet in March.

We sent out a list of courses to be inactivated in February and asked for departments to respond if there were classes on that list that should be kept active. We are compiling those responses and will review them at our April meeting.

The Curriculum Committee would like to remind you that the faculty voted in September to amend the faculty bylaws concerning membership on the committee. Faculty are now permitted to self-nominate for open positions on the Curriculum Committee without regard to department, cluster, or program. We have four open positions for 2019.

Respectfully submitted,
Scott Coykendall, 2018-2019 Chair
psu-curriculum-chair@plymouth.edu
The Faculty Welfare Committee met during February and are interpreting the results of the two surveys sent to faculty. One anonymous, online survey was sent to all faculty, including tenure-track, tenured, contract, research, clinical, and teaching lecturers. A second survey was aimed particularly at non-union eligible, non-tenure track faculty. This included an anonymous online survey, and opportunity for face-to-face discussion in a forum.

As a reminder, anyone who wishes to contact Faculty Welfare can send an email to: 
psu-facultywelfarechair@plymouth.edu

Respectfully,
Lisa Doner, Chair, Faculty Welfare Committee
APPENDIX E:

General Education Committee Report
Co-Chairs, Brandon Haas and Kate Elvey
March 2019

The General Education committee met in February and focused on Sunset Renewals and new proposals to meet the catalog deadline.

We recognized that Gen Ed proposal forms need updating and began thinking about how to update the forms to reflect the new Academic Units. We will also be updating and clarifying the submission process for gen ed proposals and sunset renewals. We plan to vote on the process at our March meeting and hope to share it with faculty at the April faculty meeting.

Instead of contacting the co-chairs directly, please send all proposals and other inquiries to our new "Gen Ed Committee Chair" email address: Psu-general-ed-chair@plymouth.edu

Gen Ed Committee Co-Chairs: Brandon Haas; Kate Elvey
APPENDIX F:

Graduate Council
Chair, Clarissa Uttley
March 2019

The Grad Council did not meet in February to allow for an additional meeting with the Provost’s Office. That meeting will take place on Friday March 8th.

Clarissa M. Uttley, Chair Graduate Council
1. There is still time to sign up to teach Tackling a Wicked Problem in Fall 2019. Teaching the class means you will be part of the Cluster Pedagogy Learning Community funded by the Davis Educational Foundation grant with events hosted by the Open Learning and Teaching Collaborative. Contact me with your interest and I can share additional details.

2. I will once again maintain a web page listing “cluster experiences” that students can engage in during the Fall 2019. To see examples of the kind of stuff we’re talking about, here’s the page for the Spring 2019 semester: https://campus.plymouth.edu/general-education/general-education/available-integrated-cluster-experiences/ Please send me the experiences you and your colleagues are offering in the Fall so that students (and their advisors) can find them.

Please let me know if there’s anything related to General Education that I can help you with.

Thanks!
Cathie LeBlanc
cleblanc@plymouth.edu
APPENDIX H:

General Education Outcomes Assessment Task Force

Final Report

Purpose

The General Education Outcomes Assessment Task Force (GEOATF) was created as a means of extending the work of the General Education Outcomes Task Force (GEOTF), which completed its charge in October of 2017. As mentioned in the GEOTF report, “The need to establish an [assessment plan] for Plymouth State University’s (PSU) General Education program was identified as a priority since the current General Education program was first introduced in 2005. Despite repeated and varied efforts by the General Education Committee, this goal has not yet been achieved. PSU’s accrediting body, the New England Association of Schools and Colleges (NEASC) has made it clear that PSU must make it an institutional priority to design and implement a plan to assess General Education.”

Though there were many possible pathways to assessing PSU’s General Education program, the charge given to this task force was to focus specifically on assessing student achievement related to the Habits of Mind outcomes that were generated by the previous task force and brought before the full faculty. To ensure seamless continuity of the work done by the GEOTF, 2 members (Holly Oliver and Joey Rino) from that task force were included in this task force. The charge we were given reads,

1. The Outcomes Assessment Task Force will look at the work of the General Education Outcomes Task Force creating the four outcomes and consider how to assess them, looking at the kinds of assessments done on similar material at other institutions (probably involving attendance at conferences devoted to these new approaches to General Education; such a conference is happening in Feb. 2018, and members of the task force will be invited to attend).

2. The Outcomes Assessment Task Force will then seek sections of current General Education courses to volunteer to work as pilots, revising their courses to better incorporate the new outcomes, and then assess them using the assessment tools designed by the Task Force, during the Fall 2018 semester.

3. These results will then be evaluated and reported to the General Education Committee and then the faculty no later than February, 2019.

Overview of Process/Timeline

This task force first met in December of 2017. We decided that our best course of action in choosing an assessment model would be to research what other institutions are doing, paying particular attention to institutions that use the AAC&U Value Rubrics, as the Habits of Mind outcomes were modeled after those rubrics. Many members of the task force had taught in programs with professional accreditation requirements, and so had personal experience in
program assessment. All members of the task force performed individual research and two members of the task force attended the AAC&U General Education and Assessment Conference in February of 2018. Appendix A contains a helpful summary of common assessment approaches that was obtained at the AAC&U conference.

Once the members of the task force had the chance to gather information and consider the contributions from other task force members, we held multiple meetings in which we discussed the different assessment models and what we believed would best serve PSU. One of the challenges we identified was that we were trying to implement an assessment plan within a general education program that had been in operation for over a decade. We wanted to identify a model that could provide trustworthy data and minimally disrupt the program. The model we chose to pilot was the Course-Based Assessments- Collaboratively Scored (CBA-CS) model (See Appendix A).

Though we recognized strengths of other models, we chose the CBA-CS because of the balance between the ease of implementation and the quality of the data it could provide. We discussed how a standardized assessment could provide more reliable data, but that the costs associated with it and the lack of any large-scale normed assessments to match our Habits of Mind outcomes constituted significant barriers to implementation. We also discussed how a Course-Based Assessments- Individually Scored model would be easier to implement, as it did not require the collaborative scoring, but recognized that such an approach often leads to inflated scores and unreliable data. While we see merit to a Collaborative Institution Assessment model, we found that such an approach was difficult to implement into an existing general education program.

In short, the CBA-CS model will allow for timely implementation and should produce trustworthy and actionable data. In fact, one of the benefits that other universities mentioned regarding this model was that the act of collaboratively scoring student work elicited powerful conversations about pedagogy and assessment among participating faculty. We decided that a model that could provide overarching insights about the general education program as well as meaningful opportunity for professional development for faculty was a model worth piloting.

In May 2018 the task force solicited volunteers from across campus to participate in a pilot of this model. We allowed volunteers to choose from two different approaches to selecting the course-based assessments. In Pilot A the instructors chose 1-3 assignments in which they believed students provided evidence of one or more of the Habits of Mind. We asked for student work, free from student identifiers, and a brief description as to why the instructor chose the assignments. In Pilot B the students chose 3 assignments in which they felt they demonstrated one or more of the Habits of Mind. Once again, we asked for the student work and a description as to why they chose these assignments. 8 instructors agreed to participate: 4 chose Pilot A and 4 chose Pilot B. There was an even mix of First Year Seminar (FYS) instructors and instructors of Directions or Connections courses.

The pilot ran during the Fall 2018 semester. At the close of the pilot, 4 of the volunteer participants were unable to provide student work. The student work from the remaining 4 participants was reviewed by the task force to determine the types of assignments that yield useful evidence related to the Habits of Mind. Though the size of the pilot precludes us from
making firm, fine-grained conclusions, the experience provided some useful insights. In seeking to scale this model, our experience from the pilot suggests the following:

- A common, intuitive collection system is invaluable. For any assessment model to scale, the ability to collect anonymous student data that can be easily accessed by reviewers is imperative. While TaskStream can likely serve that purpose, student and instructor support will be necessary.
- Student reflections, or projects that had a reflective component, were the easiest for a mixed group of reviewers to evaluate using the Habits of Mind benchmarks. We recognize that students could demonstrate proficiency of a particular Habit of Mind in varied and creative ways. However, assessing those Habits of Mind at a program level can be done in a more consistent and reliable manner when assignments share a common feature. We found individual reflection to be a particularly powerful attribute.
  - This finding raised a question regarding opportunities for professional development. Work could be done in developing a shared understanding of alternative methods of expressing proficiency in the Habits of Mind, allowing assessments to be less dependent on writing skills and still useful for program assessment.
- Though we found the Habits of Mind benchmarks to be clearly written, we found that our ability to use them while considering student work would have benefited from supporting materials or examples of student work that could provide further meaning for each of the levels (basecamp, climbing, and summit).
- The low participation in the pilot highlights how daunting some people may find program assessment. Participation in the evaluation of student work should be incentivized, or faculty participation and the quantity of usable data will be compromised.
- As we read through student work, we routinely caught ourselves using the work to make assessments about students and about courses. We regularly refocused our attention on what the student work informed us about the general education program. This experience served to emphasize the importance of campus-wide clarity regarding the similarities and differences between course-level and program-level assessment. It also emphasized the importance of having clear guidelines during the evaluation of student work to ensure the focus remains on program-level assessment.

Suggested Model for On-going Assessment

The findings from the pilot not only provide insight about the kind of student work we assess and the Habits of Mind as a tool for assessment, the finding also lead us to a plan for implementing and sustaining an institutional practice of assessment. The model proposes sampling student work from Tackling the Wicked Problem and INCAP courses; sampling sets of student work from sections of Directions and Connections courses; analyzing and interpreting student work at an annual assessment retreat facilitated by an Advisory Council; and supporting professional
development and reflective practice.

“Tackling the Wicked Problem” and INCAP

We propose an assessment model which randomly samples student work from First-Year Seminar/Tackling the Wicked Problem and INCAP courses. Currently, the First-Year Seminar employs a common assessment, wherein students reflect on their thinking and understandings of the Habits of Mind. INCAP Fellows are designing a similar assessment for INCAP. These comprehensive and commonly used assessments will provide data the university could use to track student growth. Also, random sampling affords equal representation of students and instructors.

Directions and Connections Courses

We propose an assessment model which samples entire sections of Directions and Connections courses. Directions and Connections courses do not share a common assessment, though each instructor could develop a key assessment capable of demonstrating students’ understanding of the Habits of Mind.

Collecting course sets of student work from multiple and varied Directions and Connections courses will provide a consistent data set, from which we can analyze student performance. It is not clear from the findings of the pilot if assessment from Directions and Connections courses must address all Habits of Mind. If not, we would have to account for this and use a more systematic sampling method.

Summer Assessment Retreat: Accreditation and a “Culture of Inquiry”

The pilot indicates a need for an organized and regularly scheduled day for assessment, such as an annual summer retreat. We envision this retreat to be an event open to all faculty, with special invitation to FYS and INCAP instructors, and facilitated by an Assessment Advisory Council (see description below). We recommend stipends or other incentives to attract participation. A summer retreat would serve a dual purpose. The first and most urgent purpose for an organized assessment day for the general education program is for accreditation and accountability. The second purpose is to incite renewed emphasis on faculty conversations using reflective practice or inquiry, investigating our teaching and learning through the vehicle of general education assessment. Thus, participants at the retreat would norm and use anchor papers, gather data, and report findings to the General Education Committee, First Year Fellows, and INCAP Fellows. Also, towards the goal of building a “culture of inquiry” among faculty, a portion of the summer retreat would allow for instructors to explore teaching practices and learn from one another.

Professional Development and Reflective Practice

We propose establishing and strengthening the Open Teaching and Learning Collaborative, part of which would allow for an inquiry approach to assessment of general education. This might include but not be limited to teaching explorations, analysis of student work, and other forms of reflective practice. It will be important for this Collaborative to not only focus on content but faculty-driven processes for professional development and reflective practice
Assessment Advisory Council

We recommend establishing an Assessment Advisory Council for General Education (AAC) in lieu of future task forces or committees. The AAC would allow for more stability and consistency for assessment of general education. The AAC would implement further pilot studies and facilitate on-going assessment, including but not limited to the summer retreats. Further, the AAC could address campus questions regarding assessment and data. We propose the AAC consist of the General Education coordinator, a member of General Education Committee, Director of Academic Assessment and Accreditation, and 3-5 additional faculty members.

Phased Implementation Suggestion

We propose the following schedule for future assessment.

- **Summer 2019**
  - **Phase 1**: Hold first summer retreat to assess FYS and INCAP sections, approximately 100-150 students 2019-2020
  - **Phase 2**: Conduct a pilot assessment of Directions and Connections courses; pilot a common assessment for INCAP
  - **Phase 3**: Directions and Connections courses to be included by 2020-2021.

Next Steps/Outstanding Questions

Upon completion of the pilot study, the task force has the following lingering questions and recommendations for future iterations of the assessment process.

- We found the most useful evidence from which to assess Habits of Mind in students’ written reflections. This does not mean students who did not reflect in writing failed to use critical or creative thinking, but it was not transparent to the Task Force. Future work related to assessment will want to address the role of writing in the assessment of General Education, as well as if/ how students might demonstrate thinking in ways other than writing.

- As students complete the various course-based assessments and faculty participate in the Summer Assessment Retreat, the Advisory Council should gather examples of student work that could serve as anchor examples. These anchor examples could be used in professional development and future retreats to provide a shared vision of what student performance at each level of each Habit of Mind looks like.

- What role should the Habits of Mind have in instruction and in course assignments? While the FYS portfolios require students to reflect directly on the Habits of Mind, other assignments demonstrated critical and creative thinking but did not explicitly use the language of the Habits of Mind rubric. The Habits of Mind provides common language for students and faculty, but it might also pose a risk.

- Assessment of this scope and importance requires institutional support, including but not limited to someone with expertise in Task Stream who can manage data collection and support the director of assessment, the faculty who teach general
education courses, and the coordinator of general education. We believe implementing managing data within Task Stream is separate and complementary position from the Director of Assessment.

- What happens if INCAP designation is not approved by the faculty? In this case, INCO courses would need to be assessed along with all other Connections courses. Although we would lose a common capstone assessment, we could still need to assess across student growth over time.
- We must not only assess the general education programs, but also the current assessment model, itself. We suggest implementing the Moodle for period of 4 years, using summer retreat as a way to make minor revisions in the process. Assessing the model for a 4-year period affords the pilot study to run for a full implementation; allowing for evaluation from first year student through senior year.
Appendix A

GE Outcomes Assessment: Choosing the Right Model
Joan Hawthorne, Director of Assessment and Accreditation, johawthorne@und.edu
Anne Kelsch, Director of Faculty & Staff Development & Professor of History, anne.kelsch@und.edu Ryan Zerr, Director of Essential Studies & Professor of Mathematics, ryan.zerr@und.edu
University of North Dakota

Indirect Assessments (student perceptions of their learning and/or behaviors linked to learning)

Indirect assessments have gone from being the only tool used on most campuses to being an often undervalued tool. Whether using nationally normed tools (like the NSSE) to examine students' self-reported behaviors that research shows to be linked to learning or locally developed surveys of perceived learning in relation to institutionally-defined outcomes, student perceptions help us understand learning from the perspective of the learners. Student perceptions are more valuable if questions about their learning are paired with questions about the value of the learning (as they understand it - i.e., "how important is this goal for you?"). Asking for explanations of responses is also useful (e.g., asking students to identify a course activity or assignment that they felt helped them make progress in an identified learning goal area).

Standardized Assessments of GE Outcomes

The CLA and the ETS both offer value-added estimates (i.e., measures of first-year student performance paired with measures of senior student performance) on selected GE outcomes. These tools are expensive and may not be closely aligned with your GE goals, but they are nationally normed - a critical factor for some purposes and audiences.

Course-Based Assessments - Individually Scored
Assuming faculty in GE courses are already expected to be teaching to GE goals, it should be possible to collect data from them that speaks to what they've seen (or not seen) in relation to a rubric that defines their targeted GE goal(s). This can be implemented in a more or less burdensome way, such as by having instructors for every GE course provide data every semester regarding relevant goals vs. instructors for GE courses (every course?) providing data on a cyclical basis. A process for ensuring compliance must be considered.

Course-Based Assessments - Collaboratively Scored

Many of your GE goals are probably already reinforced in capstones (or capstone-like) classes taught to senior students. Or your institution may have created a GE capstone. In either case, it is possible to collect work products from those classes and use a campus-wide scoring process to determine the level of proficiency that students demonstrate. This works especially well for outcomes like critical thinking, written communication, and information literacy, all of which are frequently emphasized in many disciplines. Work products are intrinsic to the course, so motivation is built in. Cross-campus scoring provides the opportunity for interdisciplinary conversations about the work and the rubric, as well as allowing norming for reliability.

Collaborative Institutional Assessments

An assessment can be developed by a cross-disciplinary group of faculty and administered to senior students. The assessment can either be used in class (faculty may have a choice on whether they'll read and "count" the work in their class, or whether they'll simply submit the work products for institution-wide scoring) or in out-of-class testing sessions (some kind of persuasion or incentive to participate needs to be considered, much like with a standardized test). A cross-campus scoring session should conclude with a debriefing that allows faculty to reach consensus on the meaning and implications of the assessment
results, thus building analysis and potential loop-closing discussions into the assessment process.
APPENDIX I:
Academic Affairs Committee Motion

MOTION: To approve an update to the “Academic Standing” policy, by making the proposed following changes.

RATIONALE: Please see below.

CURRENT: The current policy is found beginning on page 59 of the 2018–2019 catalog and is not included below.

Proposed changes to Academic Standing
- The changes listed below will be in the catalog next academic year, if approved.
- They will be located in the Academic Standing section of the next catalog

   Rational – Changing the naming convention accurately reflects what actually occurs. Note that “separation” is chosen in lieu of “suspension” as the latter is used in other judicial activities (e.g., conduct issues) and to avoid confusion it won’t be used in this instance.

2. Change Academic Warning to cumulative GPA between 2.00 – 2.33 (C+) for all students.
   Rational – Currently, only first-semester students or students who have 30 or fewer credits receive an Academic Warning. Make an Academic Warning a true warning – have it occur prior to students getting into academic difficulty that is falling below a cumulative GPA of 2.00. Help for students to understand, if they fall below a 2.00, they are in academic difficulty. This change would allow for all students to have a wakeup call prior to being in academic difficulty. This change will also help with retention through students potentially being more aware of their academic standing.

3. Change First-Semester First Academic Separation cumulative GPA criteria from “0.00–0.49” to “0.00–0.99” with the ability to appeal.
   Rational – Many students are at a disadvantage trying to recover from a 0.49 their first semester. We want students to be successful. By raising the standard but also providing them the opportunity to appeal if they have a poor semester, students are able to have another chance, and this does not shut the door on them. Many students put pressure on senior Administration for a second chance. This will alleviate that need and bring the appeals to the committee.
4. First semester transfer students have to reach a cumulative GPA of 1.50 to avoid Academic Separation.

*Rational* – The present policy is unfair to transfer students who may be bringing in many credits. Some transfer students may need some time to adjust to PSU. This helps to promote retention of transfer students. They will also be able to appeal if they are separated during the first semester.
APPENDIX J: New Program Proposal

Computational and Applied Mathematical Sciences Program Proposal

I. Executive Summary

1. Design: Computational and Applied Mathematical Sciences (CAMS) is a 21st century model for technical education that takes advantage of Plymouth State University’s Integrated Cluster Model. At its core, CAMS is an interdisciplinary mathematics program that emphasizes computer science, experimentation, and data collection. Mathematics provides students with methods and theory that live at the heart of problem solving and data analysis in the physical sciences, engineering, and innovative industries. Combining mathematics with computer science gives students the practical skills necessary to employ their theoretical mathematics knowledge and develop algorithms to address problems in the real world. Students in CAMS will also complete 16 to 23 credits in an enrichment option of their choice so that they have experience with experiment design and data gathering, which are often lacking in a traditional mathematics major. The enrichment option also gives students experience in a particular field where mathematics and computer science can be applied, and the background to properly implement their skills.

The CAMS program will consist entirely of existing courses at PSU. These courses are provided by Mathematics, Computer Science, and a third discipline dependent on a student’s selected enrichment option. The enrichment options in this proposal are Biology, Chemistry, Criminal Justice, Meteorology, and Psychology. We hope to add more enrichment options in the future.

2. Objectives: The goal of the CAMS program is to produce graduates that can immediately begin working in government and industry jobs or pursue a graduate degree. These graduates will be ideally suited for an analyst position in any industry, and be particularly strong candidates for positions related to their enrichment option. Students at other institutions in similar programs have gone on to work for companies like Microsoft, Raytheon, Amazon, Disney, Apple, and Oracle along with
government agencies like the NSA and IRS. Further, the median income for students graduating with a similar degree from BYU is often above $90k, though $50k may be more consistent with nationwide statistics. [http://www.acme.byu.edu/outcomes/]

There is an ongoing shift in the necessary skills for individuals working in industry. Employees are increasingly expected to have knowledge of advanced mathematical and statistical theory as well as practice with database management and coding. Further, employers are increasingly looking for analysts and mathematicians to have practical experience with data gathering. Additionally, discussions with industry members have highlighted the usefulness and importance of high-level mathematical thinking in the success of employees. [TPSE Math Upper-Division Pathways, Worcester Polytechnic Institute, 7/11/2018-7/12/2018.]

Further, the CAMS program is, in a sense, a Cluster major, as it focuses on the intersection of the Cluster programs. Thus provides an interdisciplinary major to students with Cluster-related interests. CAMS students will be required to take common first-year courses sequences in mathematics, computer sciences, and a data-gathering discipline. Students with a major and minor in Math, CS, and/or an Enrichment option will be primed to switch into this major, should their interests shift. Thus, the CAMS major serves as a Cluster hub.

3. Student Learning Outcomes:

(a) Demonstrate an understanding of the philosophies of mathematics, computer science, and the enrichment option.

(b) Design and implement experiments and collect data. Analyze data and account for limitations.

(c) Identify and employ appropriate mathematical techniques and technologies to model data.

(d) Employ appropriate programming languages, techniques, and technologies to organize data and refine models.

(e) Design and implement computer and numerical algorithms. Analyze correctness, time requirements, and space requirements of algorithms.
<table>
<thead>
<tr>
<th>Job Title</th>
<th>Median Income</th>
<th>Job Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematician and Statistician</td>
<td>$84,760</td>
<td>33%</td>
</tr>
<tr>
<td>Database Administrator</td>
<td>$87,020</td>
<td>11%</td>
</tr>
<tr>
<td>Software Developer</td>
<td>$103,560</td>
<td>24%</td>
</tr>
<tr>
<td>Operations Research Analyst</td>
<td>$81,390</td>
<td>27%</td>
</tr>
</tbody>
</table>

Table 1: Data for related fields from Bureau of Labor Statistics. A growth rate of 7% is considered average.

(f) Communicate effectively in mathematics, computer science, and the enrichment field.

4. Supporting Data: See Table 1

5. Available Resources: No new resources are required. The CAMS program will consist entirely of existing courses at PSU. Courses that teach the necessary content already exist in the PSU curriculum and have enrollments that will allow for more students without necessarily needing more sections.

6. Evaluation: The assessment and evaluation scheme being implemented by the Mathematics department in Task stream will also be used for CAMS students.

7. Long-term Implications: It is hoped that CAMS will increase enrollment in upper-level courses in Mathematics, Computer Science courses, and the enrichment courses. Further, it is hoped that CAMS will increase retention by providing students majoring in a program in Exploration & Discovery (The Sciences) with another major option that requires courses that they’ve completed or by allowing students wishing to double major with a more feasible option. Additionally, it is hoped that CAMS increases recruitment to Exploration & Discovery.
APPENDIX K:
New Program Proposal

Plymouth State University
Professional Development School (PDS) Post baccalaureate Teaching Licensure

I. Executive Summary (Attached)

II. General Information
- Plymouth State University
- February 12, 2019

<table>
<thead>
<tr>
<th>Program Endorsement Titles</th>
<th>NH Administrative Rule #</th>
<th>Degree</th>
<th>CIP Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life Science 7-12</td>
<td>ED 507.32</td>
<td>Post baccalaureate</td>
<td>13.1322</td>
</tr>
<tr>
<td>Earth and Space Science 7-12</td>
<td>ED 507.31</td>
<td>Post baccalaureate</td>
<td>13.1337</td>
</tr>
<tr>
<td>Physics 7-12</td>
<td>ED 507.53</td>
<td>Post baccalaureate</td>
<td>13.1329</td>
</tr>
<tr>
<td>Science 5-8</td>
<td>ED 507.29</td>
<td>Post baccalaureate</td>
<td>13.1316</td>
</tr>
<tr>
<td>Chemistry 7-12</td>
<td>ED 507.33</td>
<td>Post baccalaureate</td>
<td>13.1323</td>
</tr>
</tbody>
</table>

- Academic Unit: Education, Leadership, Learning and Curriculum
- Proposed Start Date: Fall 2019
- Contact: Mary E. Earick, PhD
  Holmes Center for School Partnerships and Educator Preparation
  Center Director and Associate Research Professor
  Plymouth State
  University Plymouth,
  NH, 03264
  603-535-2220

III. Program Demand / Current Offerings
- Provide a summary addressing the following issues of student and community demand: A request has been made to the USNH shared service office to perform a state-wide survey. This request has not been completed due to staff attrition and balancing all other PSU projects, Keene projects, Granite State projects, and UNH projects that had been put in front of this. Jason Moran will continue to monitor progress of the state-wide survey. We can report the following to date:
  - Evidence of indicators of student demand, employer or community-based demand When looking at lead sources, regional demand appears to indicate that at the moment 14 names of potential students seeking to teach in a STEM field through the route of pursuing a post-grad route. A caveat - With our lead source is that the names of students we capture took the GRE in effort to potentially pursue a grad program and therefore I’m sure the count of 14 is larger.
  - Detailed explanation of other reasons or circumstances indicating demand When looking at lead sources, regional demand appears to indicate that at the moment 14 names of potential students seeking to teach in a STEM field through the route of pursuing a post-grad route. A caveat - With our lead source is that the names of students we capture took
the GRE in effort to potentially pursue a grad program and therefore I’m sure the count of 14 is larger.

- PSU PDS Advisory review with letters of need and support- Appendix A

Comment on the comparability of the new program curriculum with other programs: The PDS Postbac program is in direct response to the PSU URSA process and URI finding that the required course work in science content (as well as mathematics) and required supervised practicum and internships in schools, prohibited many students from a 4-year time to degree progressions. The. Unintended consequence was one to two additional semesters to complete their teacher certification requirements, without a clear economic benefit to the students. The PDS postbac provides a 10-month intensive experience which allows graduates to apply for positions at a UG + 30 entry pay level.

I. Program Characteristics

- Appropriateness of the program to the institution’s mission and goals

In response to the URSA process and URI recommendations Drs. Jeremiah Duncan and Lisa Doner convened meetings with PSU STEM faculty to address the critical need in New Hampshire and New England for highly qualified STEM teachers both at the middle and high school levels. Parallel to this process, Dr. Mary Earick, Holmes Center Director and Chair of the Council for Educator Preparation was reviewing options to align contributions across Clusters and develop a structure for a professional teaching certification within a Problems of Practice Professional Development Schools (PDS) Model. Meetings between the STEM Consortia and the Holmes Center resulted in a vision for a one-year intensive program leading to a professional teacher certification that applies an Integrated Cluster approach. The program provides an intense 10-month program targeted to prepare highly qualified educators in STEM high needs certification areas and support an alternative to small programs with candidates seeking professional teacher certification.
**2020 NSTA/ASTE Standards for Science Teacher Preparation**

<table>
<thead>
<tr>
<th>Standard 1: Content Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective teachers of science understand and articulate the knowledge and practices of contemporary science and engineering. They connect important disciplinary core ideas, crosscutting concepts, and science and engineering practices for their fields of licensure.</td>
</tr>
<tr>
<td>1a) Use and apply the major concepts, principles, theories, laws, and interrelationships of their fields of licensure and supporting fields. Explain the nature of science and the cultural norms and values inherent to the current and historical development of scientific knowledge.</td>
</tr>
<tr>
<td>1b) Demonstrate knowledge of crosscutting concepts, disciplinary core ideas, practices of science and engineering, the supporting role of science-specific technologies, and contributions of diverse populations to science.</td>
</tr>
<tr>
<td>1c) Demonstrate knowledge of how to implement science standards, learning progressions, and sequencing of science content for teaching their licensure level PK-12 students.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard 2: Content Pedagogy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective teachers of science plan learning units of study and equitable, culturally-responsive opportunities for all students based upon their understandings of how students learn and develop science knowledge, skills, and habits of mind. Effective teachers also include appropriate connections to science and engineering practices and crosscutting concepts in their instructional planning.</td>
</tr>
<tr>
<td>2a) Using science standards and a variety of appropriate, student-centered, and culturally-relevant science disciplinary-based instructional approaches that follow safety procedures and incorporate science and engineering practices, disciplinary core ideas, and crosscutting concepts.</td>
</tr>
<tr>
<td>2b) Incorporating appropriate differentiation strategies, wherein all students develop conceptual knowledge and an understanding of the nature of science. Lessons should engage students in applying science practices, clarifying relationships, and identifying natural patterns from empirical experiences.</td>
</tr>
<tr>
<td>2c) Using engineering practices in support of science learning wherein all students design, construct, test and optimize possible solutions to a problem.</td>
</tr>
<tr>
<td>2d) Aligning instruction and assessment strategies to support instructional decision making that identifies and addresses student misunderstandings, prior knowledge, and naïve conceptions.</td>
</tr>
<tr>
<td>2e) Integrating science-specific technologies to support all students' conceptual understanding of science and engineering.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard 3: Learning Environments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective teachers of science are able to plan for engaging all students in science learning by identifying appropriate learning goals that are consistent with knowledge of how students learn science and are aligned with standards. Plans reflect the selection of phenomena appropriate to the social context of the classroom and community, and safety considerations, to engage students in the nature of science and science and engineering practices. Effective teachers create an anti-bias, multicultural, and social justice learning environment to achieve these goals.</td>
</tr>
<tr>
<td>3a) Plan a variety of lesson plans based on science standards that employ strategies that demonstrate their knowledge and understanding of how to select appropriate teaching and motivating learning activities that foster an inclusive, equitable, and anti-bias environment.</td>
</tr>
<tr>
<td>3b) Plan learning experiences for all students in a variety of environments (e.g., the laboratory, field, and community) within their fields of licensure.</td>
</tr>
<tr>
<td>3c) Plan lessons in which all students have a variety of opportunities to investigate, collaborate, communicate, evaluate, learn from mistakes, and defend their own explanations of: scientific phenomena, observations, and data.</td>
</tr>
</tbody>
</table>
**Standard 4: Safety**
Effective teachers of science demonstrate biological, chemical, and physical safety protocols in their classrooms and workspace. They also implement ethical treatment of living organisms and maintain equipment and chemicals as relevant to their fields of licensure.

| 4a | Design activities in a P-12 classroom that demonstrate the safe and proper techniques for the preparation, storage, dispensing, supervision, and disposal of all materials used within their subject area science instruction. |
| 4b | Design and demonstrate activities in a P-12 classroom that demonstrate an ability to implement emergency procedures and the maintenance of safety equipment, policies and procedures that comply with established state and/or national guidelines. Candidates ensure safe science activities appropriate for the abilities of all students. |
| 4c | Design and demonstrate activities in a P-12 classroom that demonstrate ethical decision-making with respect to the treatment of all living organisms in and out of the classroom. They emphasize safe, humane, and ethical treatment of animals and comply with the legal restrictions on the collection, keeping, and use of living organisms. |

**Standard 5: Impact on Student Learning**
Effective teachers of science provide evidence that students have learned and can apply disciplinary core ideas, crosscutting concepts, and science and engineering practices as a result of instruction. Effective teachers analyze learning gains for individual students, the class as a whole, and subgroups of students disaggregated by demographic categories, and use these to inform planning and teaching.

| 5a | Implement assessments that show all students have learned and can apply disciplinary knowledge, nature of science, science and engineering practices, and crosscutting concepts in practical, authentic, and real-world situations. |
| 5b | Collect, organize, analyze, and reflect on formative and summative evidence and use those data to inform future planning and teaching. |
| 5c | Analyze science-specific assessment data based upon student demographics, categorizing the levels of learner knowledge, and reflect on results for subsequent lesson plans. |

**Standard 6: Professional Knowledge and Skills**
Effective teachers of science strive to continuously improve their knowledge of both science content and pedagogy, including approaches for addressing inequities and inclusion for all students in science. They identify with and conduct themselves as part of the science education community.

| 6a | Engage in critical reflection on their own science teaching to continually improve their instructional effectiveness. |
| 6b | Participate in professional development opportunities to deepen their science content knowledge and practice. |
| 6c | Participate in professional development opportunities to expand their science-specific pedagogical knowledge. |

- Anticipated/planned transfer and articulation agreements or arrangements
  - N/A
- Certification, licensing, or accreditation requirements associated with program
  - State Approval
Program Design

- Admission standards and criteria if any beyond regular PSU Admissions criteria
  - Passing Scores Praxis Core and Praxis II
  - UG Transcript Audit and Alignment to NSTA Content Analysis Forms - Appendix B
- Interdisciplinary program collaborations (if applicable) – N/A
- Degree requirements (list of required and elective courses) and sequential outline of the new program

<table>
<thead>
<tr>
<th>COURSE BY SEQUENCE</th>
<th>FALL Co-Requisites</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ED 571a, Creating Professional, Organizational and Educational Communities of Learning*</td>
</tr>
<tr>
<td></td>
<td>ED571b, Co-Teaching, Collaboration and Differentiation for Exceptional and ELL Learners*</td>
</tr>
<tr>
<td></td>
<td>ED 571c, Co-Teaching and Collaboration: Problem based Curriculum and</td>
</tr>
<tr>
<td></td>
<td>PDS Postbac Degree Requirements (Sequenced and Aligned to Key Assessments by Course)</td>
</tr>
<tr>
<td></td>
<td>KEY ASSESSMENT</td>
</tr>
<tr>
<td></td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>ED 571a</td>
<td>P P X X</td>
</tr>
<tr>
<td>ED571b</td>
<td>X X X X</td>
</tr>
<tr>
<td>ED 571c</td>
<td>X X X X</td>
</tr>
</tbody>
</table>
Procedures and criteria for assessing student learning outcomes beyond grading in courses, 2020 NSTA/ASTE Standards for Science Teacher Preparation

<table>
<thead>
<tr>
<th>Standard 1: Content Knowledge</th>
<th>Key Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective teachers of science understand and articulate the knowledge and practices of contemporary science and engineering. They connect important disciplinary core ideas, crosscutting concepts, and science and engineering practices for their fields of licensure.</td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>1a) Use and apply the major concepts, principles, theories, laws, and interrelationships of their fields of licensure and supporting fields. Explain the nature of science and the cultural norms and values inherent to the current and historical development of scientific knowledge.</td>
<td>X X X</td>
</tr>
<tr>
<td>1b) Demonstrate knowledge of crosscutting concepts, disciplinary core ideas, practices of science and engineering, the supporting role of science-specific technologies, and contributions of diverse populations to science.</td>
<td>X X X</td>
</tr>
<tr>
<td>1c) Demonstrate knowledge of how to implement science standards, learning progressions, and sequencing of science content for teaching their licensure level PK-12 students.</td>
<td>X X X</td>
</tr>
</tbody>
</table>

**Assessment:** This Standard is met using Assessment 1 – Degree Audit and GPA, Assessment 2 – Praxis Core and Praxis II, Assessment 3 – Project Based Engineering Unit Plan

<table>
<thead>
<tr>
<th>Standard 2: Content Pedagogy</th>
<th>Key Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective teachers of science plan learning units of study and equitable, culturally-responsive opportunities for all students based upon their understandings of how students learn and develop science knowledge, skills, and habits of mind. Effective teachers also include appropriate connections to science and engineering practices and crosscutting concepts in their instructional planning.</td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>2a) Using science standards and a variety of appropriate, student-centered, and culturally-relevant science disciplinary-based instructional approaches that follow safety procedures and incorporate science and engineering practices, disciplinary core ideas, and crosscutting concepts.</td>
<td>X X</td>
</tr>
<tr>
<td>2b) Incorporating appropriate differentiation strategies, wherein all students develop conceptual knowledge and an understanding of the nature of science. Lessons should engage students in applying science practices, clarifying relationships, and identifying natural patterns from empirical experiences.</td>
<td>X X</td>
</tr>
<tr>
<td>2c) Using engineering practices in support of science learning wherein all students design, construct, test and optimize possible solutions to a problem.</td>
<td>X X</td>
</tr>
<tr>
<td>2d) Aligning instruction and assessment strategies to support instructional decision making that identifies and addresses student misunderstandings, prior knowledge, and naïve conceptions.</td>
<td>X X</td>
</tr>
<tr>
<td>2e) Integrating science-specific technologies to support all students’ conceptual understanding of science and engineering</td>
<td>X X</td>
</tr>
</tbody>
</table>

**Assessment:** This Standard is met using Assessment 3 – Project Based Engineering Unit Plan
**Standard 3: Learning Environments**

Effective teachers of science are able to plan for engaging *all* students in science learning by identifying appropriate learning goals that are consistent with knowledge of how students learn science and are aligned with standards. Plans reflect the selection of phenomena appropriate to the social context of the classroom and community, and safety considerations, to engage students in the nature of science and science and engineering practices. Effective teachers create an anti-bias, multicultural, and social justice learning environment to achieve these goals.

| 3a) Plan a variety of lesson plans based on science standards that employ strategies that demonstrate their knowledge and understanding of how to select appropriate teaching and motivating learning activities that foster an inclusive, equitable, and anti-bias environment. | X | X | X |
3b) Plan learning experiences for all students in a variety of environments (e.g., the laboratory, field, and community) within their fields of licensure.  

3c) Plan lessons in which all students have a variety of opportunities to investigate, collaborate, communicate, evaluate, learn from mistakes, and defend their own explanations of: scientific phenomena, observations, and data.  

**Assessment:** This Standard is met using Assessment 3 – Project Based Engineering Unit Plan.

### Standard 4: Safety

Effective teachers of science demonstrate biological, chemical, and physical safety protocols in their classrooms and workspace. They also implement ethical treatment of living organisms and maintain equipment and chemicals as relevant to their fields of licensure.

4a) Design activities in a P-12 classroom that demonstrate the safe and proper techniques for the preparation, storage, dispensing, supervision, and disposal of all materials used within their subject area science instruction.  

4b) Design and demonstrate activities in a P-12 classroom that demonstrate an ability to implement emergency procedures and the maintenance of safety equipment, policies and procedures that comply with established state and/or national guidelines. Candidates ensure safe science activities appropriate for the abilities of all students.  

4c) Design and demonstrate activities in a P-12 classroom that demonstrate ethical decision-making with respect to the treatment of all living organisms in and out of the classroom. They emphasize safe, humane, and ethical treatment of animals and comply with the legal restrictions on the collection, keeping, and use of living organisms.  

**Assessment:** This Standard is met using Assessment 4 – Student Teaching Observation Form with EDA.

### Standard 5: Impact on Student Learning

Effective teachers of science provide evidence that students have learned and can apply disciplinary core ideas, crosscutting concepts, and science and engineering practices as a result of instruction. Effective teachers analyze learning gains for individual students, the class as a whole, and subgroups of students disaggregated by demographic categories, and use these to inform planning and teaching.

5a) Implement assessments that show all students have learned and can apply disciplinary knowledge, nature of science, science and engineering practices, and crosscutting concepts in practical, authentic, and real-world situations.  

5b) Collect, organize, analyze, and reflect on formative and summative evidence and use those data to inform future planning and teaching.  

5c) Analyze science-specific assessment data based upon student demographics, categorizing the levels of learner knowledge, and reflect on results for subsequent lesson plans.  

**Assessment:** This Standard is met using Assessment 5 – Impact on Student Learning.

### Standard 6: Professional Knowledge and Skills

Effective teachers of science strive to continuously improve their knowledge of both science content and pedagogy, including approaches for addressing inequities and inclusion for all students in science. They identify with and conduct themselves as part of the science education community.

6a) Engage in critical reflection on their own science teaching to continually improve their instructional effectiveness.  

6b) Participate in professional development opportunities to deepen their science content knowledge and practice.  

6c) Participate in professional development opportunities to expand their science-specific pedagogical knowledge.  

**Assessment:** This Standard is met through Assessment 6 - using different means, Assessment 7- Professional Communities Portfolio

- Sub-criteria by Endorsement Areas – Appendix D
**IV. Program Delivery System**

Plymouth State University Professional Development School (PDS) Districts

- Full-time 10-month program leading to initial teacher licensure
- 90% on-site Public Schools Grades 5-12
- 10% on-site at PSU

**V. Enrollment Impact**

Project number of sections, expected enrollments and terms the course is to be offered for the next four years:

<table>
<thead>
<tr>
<th>Year (Academic)</th>
<th>2019-2020</th>
<th>2020-2021</th>
<th>2021-2022</th>
<th>2022-2023</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summer Enrollment:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall Enrollment:</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>Winter Enrollment:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring Enrollment:</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>UG Winterim Enrollment:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**VIII. Institutional Resource**

- **Staffing**: Will adding this course require additional teaching resources (e.g., overload, teaching lecturer)?  Yes ☐ No ☐ Please explain: Assistant Professor Clinical Faculty: 9 months

- **Provost Comments/Justification regarding change, especially if change requires additional teaching resources:**

  In addition to coordinating the PDS Posbac, the faculty member will coordinate the current Elementary Education North Country Program. This alignment of contributions offers sustainability to the NC program and fiscal resources for the PDS Posbac program.
APPENDIX L:
New Program Proposal

Plymouth State University
Curriculum Committee - Proposal for B.S. in Public Health

I Executive Summary

Plymouth State University’s Health and Human Performance Unit is pleased to present this new Bachelor of Science program in Public Health. The overarching goal of public health is to prevent disease and promote health. This includes access to clean air and water, nutritious foods to eat, access to resources and safe places to work, play and study. Major areas of public health employment include: community health, public policy, environmental health, public health education, biostatistics and informatics, communication, global health and social mental health and behavioral sciences to name just a few. The objective of this program is to expose students to these and other sub disciplines within the overarching field of public health. The program was designed to provide an interdisciplinary program so that our students have less prescriptive and more broad choices of study.

Health and health care are complimentary, though different. Health care is one-on-one care that includes doctors, nurses, hospitals and clinics that offer preventative care to individuals, whereas public health focuses on prevention by improving health policies and interventions that benefit large groups of people. There is a growing need for bachelors prepared public health professionals in our country and worldwide. In a recent article on US Undergraduate Education in Public Health, authors Tarasenko and Lee state that though there is national attention on and increased demand for bachelor’s prepared public health professionals, there is a shortage of credible programs to offer this education to students. Our program, modeled after stellar standalone undergraduate programs in public health in the US and abroad, used the Council on Education in Public Health’s newly revised (July 2018) accreditation guidelines in building this degree. This program is based in innovative teaching, applied research and community engaged learning and will provide students with knowledge, skills and abilities to work in the field of public health in a multitude of ways; careers in public health are as diverse as the field itself.

Public health is so universal, practitioners are hired into government, research, institutions of higher education, private & not-for-profit, and health care sectors of society. Those with a degree in public health work at different levels of society, from community, region, state, nation or world, to prevent disease and build the capacity of communities to address social change such as address disaster preparedness, build policy to ensure clean air and water as well as improved access to health care services.

II Program Demand / Current Offerings:
The Health Education and Health Promotion (HEP) major has been a successful program for Plymouth State University for many years (current enrollment ~ 70). The program is based on a framework of Competencies for the Certified Health Education Specialist. HEP majors are qualified to take a certification exam with the National Commission for Health Education Credentialing. Some of the alumni from PSU have become Certified Health Education Specialists and work in non-profit health promotion agencies, hospitals, insurance
companies, etc. Alumni have occupations in widely divergent areas, which is a testimony to the transferrable skills they have gained from the HEP major and the PSU general education. While this degree has filled a niche for many years, there have been fewer graduates choosing to follow the CHES route and most are finding jobs and careers in broader areas that are often connected to public/population health efforts and agencies. Many of the traditional health education and promotion jobs (outside of schools) are also now being filled by nurses and other primary health care providers. The context external to the institution has changed, and continues to evolve, and so should the curriculum being provided.

A new Public Health major is proposed to address the growing need for Bachelor-level trained public health professionals and to meet the changing context of the health/public health arena. The goal is to provide our PSU graduates with greater potential for career success. “Public Health” encompasses anything and everything that improves and/or safeguards the health of the public. It is rooted in sociology/anthropology, health science/medicine, behavioral/social psychology, philosophy, and epidemiology. It is informed by robust research in all these and other areas.

A current market viability study for a Bachelor’s level degree in Public Health was requested and completed by the Educational Advisory Board (EAB) as a component of a 2018 University Reinvention Initiative completed by Drs. McCahan and Gaulocher in collaboration with Jason Moran, Director of Admissions and Student Enrollment. [See attached report.]. This research examined a proposed curriculum relative to both student interest for the field of Public Health and employer demand. The research results give strong support for shifting focus from individual level behavior change [current health education and promotion] to a focus on population/policy level strategies in public health. The data indicated strong growth projections in employer demand for students with this major. This proposed curriculum is also designed to allow for a direct route into several different PSU (or other) graduate programs (e.g. Counseling, Health Education, Business Management, Human Relations). It will also prepare students for graduate study in public health/allied health disciplines (clinical practices, e.g. medicine) or for graduate study leading to becoming a certified health educator/specialist (CHES).

The Bureau of Labor Statistics projects an increase of about 20% in the public health workforce and in the demand for skilled professionals. An external Advisory Group of for the PSU Center for Healthy Communities enthusiastically endorses the development of this curriculum to help address the workforce needs locally and statewide. The curriculum was designed to meet the accreditation standards Council on Education for Public Health 2018 Competencies for Undergraduate Education.

**III Program Characteristics**

This Public Health major aligns well with the mission of PSU in that it prepares graduates who will be problem solvers who are “connected world and inspired through transdisciplinary learning experiences and perspectives. The Public Health major is rich with opportunities for experiential learning, partnerships and entrepreneurial activities as students work to become leaders in population health efforts.

a) **Catalogue Description - Bachelor of Science in Public Health – 120 Credits**
Public health promotes and protects the health of people and the communities where they live, learn, work and play. It is the science and art of preventing disease, prolonging life and promoting health through organized efforts and policy development among organizations (public and private), communities, and individuals. The opportunities for careers in the fields within public health are growing. The Centers for Disease Control and Prevention (CDC) and the Association of Schools and Programs of Public Health (ASPH) have determined that more public health workers will be needed in the future to meet the growing workforce needs. This degree presents students with broad perspectives and engagement in transdisciplinary collaboration, partnerships and research. Coursework is grounded in a social-ecological framework that examines the cross-cutting strategies and determinants of health from individual to community and public policy levels of influence. Graduates will develop professional skills, knowledge and competency for a variety of entry-level positions in the public health world or as a basis for advanced degrees in public health, management and/or the clinical health sciences (e.g., medicine, nursing, veterinary medicine, dentistry).

IV Program Design

a) Interdisciplinary collaboration has been established with faculty members from Sociology/Anthropology, Philosophy, Health, Business, Math and Environmental Science. Courses from these programs are woven into choices for students to fulfill the degree. Plans are formulating for transdisciplinary teaching and future courses.

b) Degree requirements (list of required and elective courses) and sequential outline of the new program follows:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>low cr.</th>
<th>high cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBH 2000</td>
<td>Foundations of Public Health</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>PBH 2200</td>
<td>Assessment and Communication in Public Health (TECO)</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>PBH 3000</td>
<td>Epidemiology and Biostatistics</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>PBH 3200</td>
<td>Social and Behavioral Health Psychology (INCO)</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>PBH 3400</td>
<td>Program Planning for Public Health (WRCO)</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>PBH 4000</td>
<td>Ethics, Social Justice and Policy in Public Health</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>PBH 4200</td>
<td>Guided Practice in Public Health (4 cr.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PBH 4400</td>
<td>Internship (minimum Major 2.7 GPA to enroll) (4-12 cr.)</td>
<td>4.0</td>
<td>12.0</td>
</tr>
<tr>
<td></td>
<td><strong>Statistics Group - Choose one: (3-4 credits QRCO)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MA 2300</td>
<td>Statistics I (QRCO)</td>
<td>3.0</td>
<td>4.0</td>
</tr>
<tr>
<td>PE 3565</td>
<td>Measurement and Assessment in PE (QRCO) (WRCO)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SS 3705</td>
<td>Social Statistics (QRCO)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Diversity Enrichment - choose one</strong></td>
<td>3.0</td>
<td>4.0</td>
</tr>
<tr>
<td>SO 2225</td>
<td>Foundations of Sociology (DICO)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BU 3420</td>
<td>Organizational Behavior (DICO)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IS 4360</td>
<td>Cultural Diversity in American Society (DICO)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PO 2025</td>
<td>Public Administration (DICO)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PY 3155</td>
<td>Society, Ethics and the Law (DICO)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PY 3370</td>
<td>Ethics and Communication (DICO, INCO)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sequential Outline – 8 semesters</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fall 1</strong></td>
<td><strong>Cr</strong></td>
<td><strong>Spring 1</strong></td>
<td><strong>Cr</strong></td>
</tr>
<tr>
<td>IN 1111 First Year Seminar</td>
<td>4</td>
<td>Math Foundations</td>
<td>4</td>
</tr>
<tr>
<td>EN 1300 English Composition</td>
<td>4</td>
<td>CTDI</td>
<td>4</td>
</tr>
<tr>
<td>PPDI</td>
<td>4</td>
<td>Elective</td>
<td>3-4</td>
</tr>
<tr>
<td>SSDI</td>
<td>4</td>
<td>Elective</td>
<td>3-4</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td></td>
<td>14-16</td>
</tr>
<tr>
<td><strong>Fall 2</strong></td>
<td><strong>Spring 2</strong></td>
<td><strong>59-63</strong></td>
<td></td>
</tr>
<tr>
<td>SIDI</td>
<td>4</td>
<td>SIDI</td>
<td>4</td>
</tr>
<tr>
<td>PBH 2000 Foundations of Public Health</td>
<td>4</td>
<td>PBH 2200 Assmt. &amp; Comm. in PH (TECO)</td>
<td>4</td>
</tr>
<tr>
<td>Enrichment Choice (HE) (WECO)</td>
<td>3</td>
<td>Statistics Choice (GRCO)</td>
<td>3-4</td>
</tr>
<tr>
<td>Enrichment Choice (So/Env)</td>
<td>3-4</td>
<td>Enrichment Choice (HE)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>15-16</td>
<td></td>
<td>14-15</td>
</tr>
<tr>
<td><strong>Fall 3</strong></td>
<td><strong>Spring 3</strong></td>
<td><strong>89-91</strong></td>
<td></td>
</tr>
<tr>
<td>PBH 3000 Epi 7 Biostatistics</td>
<td>4</td>
<td>PBH 3400 Program Planning for PH (WRCO)</td>
<td>4</td>
</tr>
<tr>
<td>PBH 3200 Soc. &amp; Beh. Psychology (INCO)</td>
<td>4</td>
<td>Enrichment Choice (HE)</td>
<td>3</td>
</tr>
<tr>
<td>Enrichment Choice (So/Env)</td>
<td>3-4</td>
<td>Enrichment Choice (DICO)</td>
<td>4</td>
</tr>
<tr>
<td>Elective or Minor</td>
<td>4</td>
<td>Elective or Minor</td>
<td>4-5</td>
</tr>
<tr>
<td></td>
<td>15-16</td>
<td></td>
<td>15-16</td>
</tr>
<tr>
<td><strong>Fall 4</strong></td>
<td><strong>Spring 4</strong></td>
<td><strong>120</strong></td>
<td></td>
</tr>
<tr>
<td>PBH 4000 Ethics, Soc. Jus. &amp; Policy in PH</td>
<td>4</td>
<td>PBH 4200 GP or PBH 4400 Internship</td>
<td>4-12</td>
</tr>
<tr>
<td>Enrichment Choice (HE)</td>
<td>3</td>
<td>Electives or Minor courses</td>
<td>1-9</td>
</tr>
<tr>
<td>Electives or Minor Courses</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

**Social/Environmental - choose two**

| **SO 3375 Sociology of Race and Ethnicity (DICO)** |
| **AN 2100 Foundations of Anthropology (GACO)** |
| **AN/SO 3130 Wealth and Poverty** |
| **ESP 3550 Environment and Health (WECO)** |
| **SO 3065 Social Problems** |
| **SO 3385 Drugs and Society (INCO)** |
| **SO 3535 Illness, Wellness and Healing (INCO)(WECO)** |
| **SO 3605 Sustainability in Practice (WECO)** |
| **SW 3300 Mental Health and Society (GACO)** |
| **SW 3500 Health and Society (GACO)(WECO)** |

**Health Enrichment- Select courses as follows:**

- At least 2 HE courses and
- Any courses from NR, EX, or AHS (up to 8 cr.)

**Major Total**

| **52.0** | **64.0** |

**General Education**

| **EN 1200 Composition** |
| **3.0** | **4.0** |
| **IS 1111 First Year Seminar** |
| **Math Fnd. MA 1500 or higher** |
| **Directions (CTDI, PPDI, SIDI, SSDI) Choose 1 from each category then repeat 1 additional DI course. Min 20 credits** |
| **Connections 0-6 for WECO and GACO (if not taken in PH major choices)** |
| **Electives 38** | **33** |


