NCATE approved the 2012 NSTA Standards in 2012. Beginning in Fall 2014, programs submitting reports must use the 2012 standards.

COVER SHEET

1. **Institution Name**
   Clarion University

2. **State**
   Pennsylvania

3. **Date submitted**
   03/15/2018

4. **Report Preparer’s Information:**
   - **Name of Preparer:** Gwen Price
   - **Phone:** Ext.
     - (814) 393-2298
   - **E-mail:** gprice@clarion.edu

5. **CAEP Coordinator’s Information:**
   - **Name:** Jesse Haight
   - **Phone:** Ext.
     - (814) 393-2385
   - **E-mail:** jhaight@clarion.edu

6. **Name of institution’s program**
   Secondary Science

7. **CAEP Category**
   Science Education (multiple fields)

8. **Grade levels (1) for which candidates are being prepared**
   7-12
9. **Program Type**
   - First Teaching License
   - Unspecified

10. **Degree or award level**
    - Baccalaureate
    - Post Baccalaureate
    - Master's
    - Post Master's
    - Endorsement only

11. **Is this program offered at more than one site?**
    - Yes
    - No

12. **If your answer is "yes" to above question, list the sites at which the program is offered**

13. **Title of the state license for which candidates are prepared, including science areas licensed to teach (i.e., Single Field - Biology; Dual Field - Biology and Chemistry; Broad Field; Integrated Science, etc.)**
    - Secondary Biology, Secondary Chemistry, Secondary Earth and Space Science, Secondary Physics, Secondary General Science

14. **Program report status:**
    - Initial Review
    - Response to One of the Following Decisions: Further Development Required or Recognition with Probation
    - Response to National Recognition With Conditions

15. **Is your Educator Preparation Provider (EPP) seeking**
    - CAEP accreditation for the first time (initial accreditation)
    - Continuing CAEP accreditation

16. **State Licensure data requirement on program completers disaggregated by specialty area with sub-area scores:**
    CAEP requires programs to provide completer performance data on state licensure examinations for completers who take the examination for the content field, if the state has a licensure testing requirement. Test information and data must be reported in Section IV. Does your state require such a test?
    - Yes
    - No
SECTION I - CONTEXT

1. Provide the following contextual information:

Description of any state or institutional policies that may influence the application of NSTA standards. (Response limited to 4,000 characters.)

2. Description of the field and clinical experiences required for the program, including the number of hours for early field experiences and the number of hours/weeks for student teaching or internships. Describe setting of student teaching (i.e., student teaching occurs in a science classroom). (Response limited to 8,000 characters.)

3. A program of study that outlines the courses and experiences required for candidates to complete the program. The program of study must include course titles and numbers. (This information may be provided as an attachment from the college catalog or as a student advisement sheet.) Include forms showing requirements for science content courses for post degree or master’s programs. Syllabi and course descriptions are not generally necessary. Please include directions for each level of candidate (e.g., undergraduate advising sheet and post degree or graduate advising sheet.) A course of study for post baccalaureate or master’s programs should include required science content.

4. This system will not permit you to include tables or graphics in text fields. Therefore any tables or charts must be attached as files here. The title of the file should clearly indicate the content of the file. Word documents, pdf files, and other commonly used file formats are acceptable.

5. Candidate Information

Directions: Provide three years of data on candidates enrolled in the program and completing the program, beginning with the most recent academic year for which numbers have been tabulated. Report the data separately for the levels/tracks (e.g., baccalaureate, post-baccalaureate, alternate routes, master’s, doctorate) being addressed in this report. Report the data separately for each licensure area (e.g., chemistry, biology, broad field science, middle level). Data must also be reported separately for programs offered at multiple sites. Update academic years (column 1) as appropriate for your data span. Create additional tables as necessary.

<table>
<thead>
<tr>
<th>Academic Year</th>
<th># of Candidates Enrolled in the Program</th>
<th># of Program Completers</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-2014</td>
<td>34</td>
<td>7</td>
</tr>
<tr>
<td>2014-2015</td>
<td>27</td>
<td>3</td>
</tr>
<tr>
<td>2015-2016</td>
<td>23</td>
<td>4</td>
</tr>
</tbody>
</table>

(2) CAEP uses the Title II definition for program completers. Program completers are persons who have met all the requirements of a state-approved teacher preparation program. Program completers include all those who are documented as having met such requirements. Documentation may take the form of a degree, institutional certificate, program credential, transcript, or other written proof of having met the program's requirements.

6. Faculty Information

Directions: Complete the following information for each faculty member responsible for science education professional coursework, clinical supervision, or administration in this program. This may be the science educator(s) or others directly involved in teaching science education portion of the licensure program.

<table>
<thead>
<tr>
<th>Faculty Member Name</th>
<th>Highest Degree, Field, &amp; University³</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Assignment: Indicate the role of the faculty member⁴</td>
</tr>
<tr>
<td></td>
<td>Faculty Rank⁵</td>
</tr>
<tr>
<td></td>
<td>Tenure Track</td>
</tr>
<tr>
<td></td>
<td>Scholarship⁶, Leadership in Professional Associations,</td>
</tr>
</tbody>
</table>

   YES
(3) For example, PhD in Curriculum & Instruction, University of Nebraska.
(4) For example, faculty, clinical supervisor, department chair, administrator
(5) For example, professor, associate professor, assistant professor, adjunct professor, instructor
(6) Scholarship is defined by CAEP as a systematic inquiry into the areas related to teaching, learning, and the education of teachers and other school personnel.

Scholarship includes traditional research and publication as well as the rigorous and systematic study of pedagogy, and the application of current research findings in new settings. Scholarship further presupposes submission of one's work for professional review and evaluation.

(7) Service includes faculty contributions to college or university activities, schools, communities, and professional associations in ways that are consistent with the institution and unit's mission.

(8) For example, officer of a state or national association, article published in a specific journal, and an evaluation of a local school program.

(9) Briefly describe the nature of recent experience in P-12 schools (e.g. clinical supervision, in-service training, teaching in a PDS) indicating the discipline and grade level of the assignment(s). List current P-12 licensure or certification(s) held, if any.
1. In this section, list the 6-8 assessments that are being submitted as evidence for meeting the NSTA standards. All programs must provide all six assessments. If your state does not require a state licensure test in the content area, you must substitute an assessment that documents candidate attainment of content knowledge in #1 below. For each assessment, indicate the type or form of the assessment and when it is administered in the program.

<table>
<thead>
<tr>
<th>Type and Number of Assessment</th>
<th>Name of Assessment</th>
<th>Type or Form of Assessment</th>
<th>When the Assessment Is Administered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment #1: Content Knowledge - Licensure Tests <em>(required)</em></td>
<td>Praxis II Content Knowledge Exam</td>
<td>State Licensure Test</td>
<td>Program Completion</td>
</tr>
<tr>
<td>Assessment #2: Content Knowledge - an assessment of general content knowledge in discipline to be taught, GPA and Content Analysis Form (required)</td>
<td>Content GPA</td>
<td>Major Content Area Grades</td>
<td>Admission to Program and Program Completion</td>
</tr>
<tr>
<td>Assessment #3: Pedagogical and Professional Knowledge and Skills - Planning instruction and assessment (required)</td>
<td>Unit Plan</td>
<td>Project</td>
<td>ED 332</td>
</tr>
<tr>
<td>Assessment #4: Pedagogical and Professional Knowledge and Skills - Student Teaching Assessment with Legal/Safety/Ethical Issues (required)</td>
<td>Student Teaching Performance Profile</td>
<td>Evaluation Form / Rubric</td>
<td>Student Teaching</td>
</tr>
<tr>
<td>Assessment #5: Effects on Student Learning (required)</td>
<td>Assessment of Student Learning</td>
<td>Student Learning Portfolio</td>
<td>Student Teaching</td>
</tr>
<tr>
<td>Assessment #6: Pedagogical and Professional Knowledge and Skills (required)</td>
<td>Safety Observation Form</td>
<td>Evaluation form</td>
<td>Student Teaching</td>
</tr>
<tr>
<td>Assessment #7: Optional</td>
<td>CPAST</td>
<td>Performance Evaluation</td>
<td>Student Teaching</td>
</tr>
<tr>
<td>Assessment #8: Optional</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(10) Identify assessment by title used in the program; refer to Section IV for further information on appropriate assessment to include.
(11) Identify the type of assessment (e.g., essay, case study, project, comprehensive exam, reflection, state licensure test, portfolio).
(12) Indicate the point in the program when the assessment is administered (e.g., admission to the program,
admission to student teaching/internship, required courses [specify course title and numbers], or completion of the program).

(13) If licensure test data are submitted as Assessment #1, the assessment and scoring guide attachments are not required. If the state does not require a licensure test, another content based assessment must be submitted (including the assessment and scoring guide).
SECTION III - RELATIONSHIP OF ASSESSMENT TO STANDARDS

For each NSTA standard on the chart below, identify the assessment(s) in Section II that address the standard. One assessment may apply to multiple NSTA standards.

1. NSTA Standard 1
   Effective teachers of science understand and articulate the knowledge and practices of contemporary science. They interrelate and interpret important concepts, ideas, and applications in their fields of licensure.

   **Preservice teachers will:**
   1a) Understand the major concepts, principles, theories, laws, and interrelationships of their fields of licensure and supporting fields as recommended by the National Science Teachers Association.
   1b) Understand the central concepts of the supporting disciplines and the supporting role of science-specific technology.
   1c) Show an understanding of state and national curriculum standards and their impact on the content knowledge necessary for teaching P-12 students.

2. NSTA Standard 2
   Effective teachers of science understand how students learn and develop scientific knowledge. Preservice teachers use scientific inquiry to develop this knowledge for all students.

   **Preservice teachers will:**
   2a) Plan multiple lessons using a variety of inquiry approaches that demonstrate their knowledge and understanding of how all students learn science.
   2b) Include active inquiry lessons where students collect and interpret data in order to develop and communicate concepts and understand scientific processes, relationships and natural patterns from empirical experiences. Applications of science-specific technology are included in the lessons when appropriate.
   2c) Design instruction and assessment strategies that confront and address naïve concepts/preconceptions.

3. NSTA Standard 3
   Effective teachers of science are able to plan for engaging all students in science learning by setting appropriate goals that are consistent with knowledge of how students learn science and are aligned with state and national standards. The plans reflect the nature and social context of science, inquiry, and appropriate safety considerations. Candidates design and select learning activities, instructional settings, and resources--including science-specific technology, to achieve those goals; and they plan fair and equitable assessment strategies to evaluate if the learning goals are met.
Preservice teachers will design a Unit of Study that:

3a) Use a variety of strategies that demonstrate the candidates’ knowledge and understanding of how to select the appropriate teaching and learning activities – including laboratory or field settings and applicable instruments and/or technology - to allow access so that all students learn. These strategies are inclusive and motivating for all students.

3b) Develop lesson plans that include active inquiry lessons where students collect and interpret data using applicable science-specific technology in order to develop concepts, understand scientific processes, relationships and natural patterns from empirical experiences. These plans provide for equitable achievement of science literacy for all students.

3c) Plan fair and equitable assessment strategies to analyze student learning and to evaluate if the learning goals are met. Assessment strategies are designed to continuously evaluate preconceptions and ideas that students hold and the understandings that students have formulated.

3d) Plan a learning environment and learning experiences for all students that demonstrate chemical safety, safety procedures, and the ethical treatment of living organisms within their licensure area.

4. **NSTA Standard 4**

Effective teachers of science can, in a P-12 classroom setting, demonstrate and maintain chemical safety, safety procedures, and the ethical treatment of living organisms needed in the P-12 science classroom appropriate to their area of licensure.

Preservice teachers will:

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.

5. **NSTA Standard 5**

Effective teachers of science provide evidence to show that P-12 students’ understanding of major science concepts, principles, theories, and laws have changed as a result of instruction by the candidate and that student knowledge is at a level of understanding beyond memorization. Candidates provide evidence for the diversity of students they teach.

<table>
<thead>
<tr>
<th>Preservice teachers will:</th>
<th>#1</th>
<th>#2</th>
<th>#3</th>
<th>#4</th>
<th>#5</th>
<th>#6</th>
<th>#7</th>
<th>#8</th>
</tr>
</thead>
<tbody>
<tr>
<td>5a) Collect, organize, analyze, and reflect on diagnostic, formative and summative evidence of a change in mental functioning demonstrating that scientific knowledge is gained and/or corrected.</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td></td>
</tr>
<tr>
<td>5b) Provide data to show that P-12 students are able to distinguish science from nonscience, understand the evolution and practice of science as a human endeavor, and critically analyze assertions made in the name of science.</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5c) Engage students in developmentally appropriate inquiries that require them to develop concepts and relationships from their observations, data, and inferences in a scientific manner.</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. **NSTA Standard 6**

Effective teachers of science strive continuously to improve their knowledge and understanding of the ever changing knowledge base of both content, and science 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.

<table>
<thead>
<tr>
<th>Preservice teachers will:</th>
<th>#1</th>
<th>#2</th>
<th>#3</th>
<th>#4</th>
<th>#5</th>
<th>#6</th>
<th>#7</th>
<th>#8</th>
</tr>
</thead>
<tbody>
<tr>
<td>6a) Engage in professional development opportunities in their content field such as talks, symposiums, research opportunities, or projects within their community.</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6b) Engage in professional development opportunities such as conferences, research opportunities, or projects within their community.</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td>![ ]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SECTION IV - EVIDENCE FOR MEETING STANDARDS

DIRECTIONS: The 6-8 key assessments listed in Section II must be documented and discussed in Section IV. Taken as a whole, the assessments must demonstrate candidate mastery of the SPA standards. The key assessments and data reported should be required of all candidates. Assessments, scoring guides/rubrics and data charts should be aligned with the SPA standards. This means that the concepts in the SPA standards should be apparent in the assessments and in the scoring guides to the same depth, breadth, and specificity as in the SPA standards. Data tables should also be aligned with the SPA standards. The data should be presented as they are collected. For example, if a rubric collects data on 10 elements [each relating to specific SPA standard(s)], then the data chart should report the data on each of the elements and NSTA standards.

In the description of each assessment below, the SPA has identified potential assessments that would be appropriate. Assessments have been organized into the following three areas to be aligned with the elements in CAEP Standard 1:

- **Content knowledge (Assessments 1 and 2)**
- **Pedagogical and professional knowledge and skills (Assessments 3, 4, and 6)**
- **Focus on student learning (Assessment 5)**

Note that in some disciplines, content knowledge may include or be inextricable from professional knowledge. If this is the case, assessments that combine content and professional knowledge may be considered “content knowledge” assessments for the purpose of this report.

For each assessment, the compiler should prepare one document that includes the following items:

1. A two-page narrative that includes the following:
   a. A brief description of the assessment and its use in the program (one sentence may be sufficient);
   b. A description of how this assessment specifically aligns with the elements and standards it is cited for in Section III. Cite SPA standards by number, title, and/or standard wording.
   c. A brief analysis of the data findings;
   d. An interpretation of how that data provides evidence for meeting standards, indicating the specific SPA standards by number, title, and/or standard wording;
   and

2. Assessment Documentation
   e. The assessment tool itself or a rich description of the assessment (often the directions given to candidates);
   f. The scoring guide/rubrics for the assessment; and
   g. Charts that provide candidate data derived from the assessment.

The responses for e, f, and g (above) should be limited to the equivalent of five text pages each, however in some cases assessment instruments or scoring guides/rubrics may go beyond five pages.

Note: As much as possible, combine all of the files for one assessment into a single file. That is, create one file for Assessment 4 that includes the two-page narrative (items a – d above), the assessment itself (item e above), the scoring guide (item f above), and the data chart (item g above). Each attachment should be no larger than 2 mb. Do not include candidate work or syllabi. There is a limit of 20 attachments for the entire report so it is crucial that you combine files as much as possible.

1. **CONTENT KNOWLEDGE:** Data from licensure tests of content knowledge in science education. If your state does not require licensure tests in the content area, data from another assessment must be presented to document candidate attainment of content knowledge. The NSTA standard that must be addressed by this assessment includes, but is not limited to, Standard 1a.

   **Provide assessment information as outlined in the directions for Section IV**
   1. The names of all licensure tests or professional examinations required by the state for content and pedagogical or professional knowledge.
   2. Description of the alignment between licensure test data and applicable NSTA standards. However, if the test is a science content Praxis II test, the alignment is not required (e.g., Praxis II 20235: Biology Content).
   3. Aggregated pass rates for each year over the past 3 years, including the most recent academic year. Data must be presented on all completers, even if there were fewer than 10 test takers during a single year. Eighty percent of program completers who have taken the content test must pass the applicable state licensure test if the state has such a test.
   4. The mean and range of sub-scores for the most recent academic year.
   5. A single attachment of assessment documentation, including:
      a. the assessment tool or description of the assignment;
      b. the scoring guide for the assessment; and
      c. candidate data derived from the assessment.

   Data should be in aggregate form (not scores for each candidate) and disaggregated by licensure area (biology, chemistry, middle school, etc) and by program (undergraduate, post degree, masters of teaching). (d) reflections on any rubric changes and why those changes occurred may be included here.

   The narrative section for each assessment (1-5 above) is limited to two text pages. If the attachment exceeds the
2mg file size limit by CAEP, break the attachment into logical parts.

(15) For example, Praxis II Biology: Content Knowledge.
(16) CAEP uses the Title II definition for program completers. Program completers are persons who have met all the requirements of a state-approved teacher preparation program. Program completers include all those who are documented as having met such requirements. Documentation may take the form of a degree, institutional certificate, program credential, transcript, or other written proof of having met the program’s requirements.

2. **CONTENT KNOWLEDGE:** An assessment that demonstrates candidate knowledge of the conceptual science to be taught and related fields. An assessment that demonstrates that candidates are well prepared in the breadth of knowledge needed to teach in their fields of licensure. The NSTA standard that must be addressed by this assessment includes, but is not limited to, Standard 1.

   Assessments could include content grade point averages and minimum grade requirements, portfolio requirements, or comprehensive examinations suitable for preparing teachers of a curriculum based on the content recommendations in the 2012 NSTA Standards 1a-b.

   **Provide assessment information as outlined in the directions for Section IV in a single attachment**

   **NOTE:** In addition to the above all programs must submit the appropriate NSTA Content Analysis Form. These are available at the following URL: http://caepnet.org/accreditation/caep-accreditation/spa-standards-and-report-forms/nsta. Download the appropriate form, fill it out, and attach it here.

3. **PEDAGOGICAL AND PROFESSIONAL KNOWLEDGE AND SKILLS:** An assessment that demonstrates candidates can plan effective classroom-based instruction, and design assessments, consistent with goals of the National Science Education Standards. NSTA standards that must be addressed by this assessment include, but are not limited to, Standard 1.

   A minimum indicator should include performance in the design of at least one major demonstration teaching unit (not a single lesson plan) aligned with goals as reflected in breadth of 2012 NSTA Standards 1c, 2a-c, and 3a-d (with lesson plans and varied assessments).

   **Provide assessment information as outlined in the directions for Section IV in a single attachment**

4. **PEDAGOGICAL AND PROFESSIONAL KNOWLEDGE AND SKILLS:** Assessment that demonstrates candidates' knowledge and skills are applied effectively in practice. NSTA standards that must be addressed by this assessment include, but are not limited to, Standard 4. The assessment instrument used in student teaching and the internship should be submitted.

   An indicator could include performances on a subset of items from a student teaching observation form with each area of safety addressed explicitly: 4a- Chemical use and storage, 4b – Safety procedures, 4c –Use and care of animals.

   An indicator could include performance in an internship that is evaluated using an observation form filled out by the cooperating teacher and supervisor.

   **Provide assessment information as outlined in the directions for Section IV in a single attachment**
5. **EFFECTS ON STUDENT LEARNING:** An assessment that demonstrates candidate effects on student learning using evidence collected from the instruction and assessment of students; the nature of science; the practice of inquiry (including student engagement in inquiry). NSTA standard that must be addressed by this assessment include, but is not limited to, Standard 5.

A minimum indicator should include an assessment of candidate work aligned with NSTA Standard 5. Work samples may include pre and post test data with analysis and reflections.

**Provide assessment information as outlined in the directions for Section IV in a single attachment**

<table>
<thead>
<tr>
<th>Assessment 5 Impact Work Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>See the Attachment panel.</td>
</tr>
</tbody>
</table>

6. **PEDAGOGICAL AND PROFESSIONAL KNOWLEDGE AND SKILLS:** An assessment that demonstrates candidates are prepared to be active members in their profession. The NSTA standard addressed by this assessment includes, but is not limited to, Standard 6.

**Provide assessment information as outlined in the directions for Section IV**

<table>
<thead>
<tr>
<th>Assessment 6 Safety Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>See the Attachment panel.</td>
</tr>
</tbody>
</table>

7. **Additional assessment that addresses NSTA standards.**

**Provide assessment information as outlined in the directions for Section IV**

<table>
<thead>
<tr>
<th>Assessment 7 Professional Development CPAST</th>
<th>CPAST</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPAST Alignment</td>
<td></td>
</tr>
<tr>
<td>See the Attachment panel.</td>
<td></td>
</tr>
</tbody>
</table>

8. **Additional assessment that addresses NSTA standards.**

**Provide assessment information as outlined in the directions for Section IV**
1. Evidence must be presented in this section that assessment results have been analyzed and have been or will be used to improve candidate performance and strengthen the program. This description should not link improvements to individual assessments but, rather, it should summarize principal findings from the evidence, the faculty's interpretation of those findings, and changes made in (or planned for) the program as a result. Describe the steps program faculty has taken to use information from assessments for improvement of both candidate performance and the program. This information should be organized around (1) science content knowledge, (2) professional and pedagogical knowledge and skill, and (3) student learning.

(Response limited to 12,000 characters)

Science Content Knowledge:
Content knowledge standards continue to be met by the program. Results of licensure exams and GPA analysis demonstrated and continue to demonstrate that the candidates have the content knowledge they need to be successful. Other support for this comes from data resulting from Assessment 3 and Assessment 7. Though data from 1 completer is available, that candidate was successful in demonstrating content knowledge in those performance evaluations.

Pedagogical Knowledge:
The limited data available since revisions makes it difficult to comment on candidates abilities to meet the standards in general. The new revised rubrics will continue to be used throughout the Spring and Fall 2018 semesters, data analyzed, and results interpreted to make more definite conclusions about the program and the assessments themselves. It is believe that the revised assessments will be much more effective in measuring the NSTA standards.

Data from the CPAST is already being used by faculty to find weaknesses in the program. One weakness that was determined was in the area of Professional Development - an area where scores are consistently low across content areas. Faculty are currently in discussion about to best solve this issue. (Further details in Section VI)

Impact on Student Learning:
Since there is limited data since the revision of assessments, it is difficult to determine impact. However, data from past semesters as well as from this one candidate indicates a positive impact on student learning.

The program continues to monitor and analyze data yearly. This data is shared with relevant faculty as well as with the Unit at a yearly School of Education meeting. It is also shared with the University through the required Student Learning Outcomes reports. This need to review and analyze data has been supported through the addition of a Unit level Assessment Committee.

One trend that has become clear across all assessments in all content areas is the need for early field experiences. Data is stronger for those who have more experience in the field. Therefore, new partnership activities with local school districts are being developed in all content areas at all grade levels to try to
provide those experiences.

Please see Section VI for more details on how changes directly related to SPA requirements have impacted the program.
Science Content Knowledge:
Content knowledge standards continue to be met by the program. Though Section C of the Recognition Report indicates that "the program did not provide sufficient evidence that candidates know the subject matter they will teach", the content knowledge standard was met and the results of Assessment 1 and 2 were praised. Results of licensure exams and GPA analysis demonstrated and continue to demonstrate that the candidates have the content knowledge they need to be successful. Other support for this comes from data resulting from the revised Assessment 3 and Assessment 7. Though data from 1 completer is available, that candidate was successful in demonstrating content knowledge in those performance evaluations.

Pedagogical Knowledge:
The limited data available since revisions makes it difficult to comment on candidates abilities to meet the standards in general. The new revised rubrics will continue to be used throughout the Spring and Fall 2018 semesters, data analyzed, and results interpreted to make more definite conclusions about the program and the assessments themselves. It is believe that the revised assessments will be much more effective in measuring the NSTA standards. Major changes that are have the most potential for informing the program include
(1) the use of the Safety Observation which requires the University Supervisor to directly observe a candidate in a laboratory setting and evaluate the candidate on Standard 4
(2) the completion of the revised Unit Plan which now includes requirements directly related to addressing naive conceptions and misconceptions, how students learn science, and science specific technology
(3) the use of the CPAST. This instrument which has been determined to be reliable and valid through studies at Ohio State gives a very specific picture of candidates' pedagogical abilities and includes discrete information on professional development engagement - speaking directly to Standard 6.

Data on Standard 4 and 6 were previously obtained through a combination of activities and were not measured directly. We now believe that the program
more directly addresses these two standards and will benefit from having this data. There are already conversations under way about the connection between "professional development and the candidate." We are having discussions about how to provide opportunities for our candidates that go beyond their student teaching classroom but do not take too much time away from their experiences there. It is a difficult yet important balance that we must strike, and to make these opportunities available, financially viable, and content specific is an excellent issue to be solved. CPAST scores across content areas on this criteria have been low and the programs, including the science program, are actively seeking ways to improve in that area.

Impact on Student Learning:
Though we have long been implementing a Work Sample project that focuses on Impact on Student Learning, there have been a couple changes to that assessment. First, the rubric was revised to include a section specifically aligned to NSTA Standard 5. In this way we will directly measure candidates' abilities to meet that particular standard. The overall project includes a content specific preassessment - postassessment design which requires candidates to analyze the data and reflect on implications for future teaching. The Work Sample will now be evaluated by the content specific University Supervisor. Previously the Work Sample was evaluated by a content specific professor - but not necessarily the Supervisor. This switch will allow the evaluator better context for assessment, and will allow for more meaningful feedback to the candidate. Data collected in the past and the data collected on the 1 completer since revision demonstrates positive impact on student learning. We will continue to monitor the results of the revised rubric and with the more specific results we will be able to determine if changes to the program are necessary.

In the final Recognition Report Part E, review comments focused on the fact that rubrics were not aligned to the proper standards and multiple standards were assessed in a single row. Assessments 3, 4, and 5 have been revised to ensure that the proper standards are being measured. Additionally, each assessment has been revised so that each criteria is aligned to one and only one standard element. This will ensure that as these assessments are used in the future, data will not be intermingled and it will be clear what standard elements are being met. Also, Assessment 6 was revised and Assessment 7 was added to more clearly address Standard 4 and Standard 6.

Finally, in addition to the processes described in the original SPA submission which support the continuous improvement and ensure a high quality program for candidates, the following changes have been made: (1) a standing committee on Assessment has been developed. This committee has the charge of monitoring and addressing issues within the Unit Assessment System including SPA related assessments. (2) a new Director of the School of Education began employment on June 1, 2017. This individual was hired with the expectation that her knowledge and
expertise in the area of accreditation would serve as perspective for analyzing and improving programs.

(3) New partnership initiatives are developing with regional schools that will provide additional and expanded field experience opportunities for all candidates.

(4) New enrollment initiatives - both University wide and in the School of Education - are focusing on high need areas which include STEM and Special Education. It is expected that these initiatives will increase numbers in the science education fields, and therefore more meaningful data will be available in future semesters.
This is the end of the report. Please click "Next" to proceed.