

Application Form

Personal

Details

***Submitter First Name:** Donna
***Submitter Last Name:** Governor
***Submitter Title:** Assistant Professor of Science Education
***Submitter Email Address:** donna.governor@ung.edu
***Submitter Phone Number:** 678-936-6931
***Submitter Campus Role:** Proposal Investigator (Primary or additional)
***Applicant First Name:** Donna
***Applicant Last Name:** Governor
***Applicant Email Address:** donna.governor@ung.edu
***Applicant Phone Number:** 678-936-6931
***Primary Appointment Title:** Assistant Professor, Teacher Education
***Institution Name(s):** University of North Georgia

Co-Applicant Name

***Co-Applicant Name:** David Osmond, Ph.D., Assistant Professor,
Teacher Education, University of North
Georgia

Application Details

Application ID: #001747

***Proposal Title:** 317

***Final Semester of Instruction:** Spring 2018

***Team Members (Name, Title, Department, Institutions if different, and email address for each):**

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***Sponsor, (Name, Title, Department, Institution):**

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***Course Names, Course Numbers and Semesters Offered:**

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***Average Number of Students per Course Section:** 30

***Number of Course Sections Affected by Implementation in Academic Year:** 7

***Total Number of Students Affected by Implementation in Academic Year:** 210

***List the original course materials for students (including title, whether optional or required, & cost for each item):** --

***Proposal Categories:** No-Cost-to-Students Learning Materials

***Requested Amount of Funding:** \$12,800

***Original per Student Cost:** \$60 - \$160

***Post-Proposal Projected Student Cost:** Free

***Projected Per Student Savings:** \$60 - \$160

***Projected Total Annual Student Savings:** \$12,600 - \$33,600

***Creation and Hosting Platforms Used ("n/a" if none):**

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***Project Goals:**

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***Statement of Transformation:**

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***Transformation Action Plan:**

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***Quantitative & Qualitative --
Measures:**

***Timeline:**

--

***Budget:**

--

***Sustainability Plan:**

--

Add Other Email Addresses for Notifications

**Enter recipient(s) email --
address(es):**

A. References & Attachments

Bransford, J. D., Brown, A. L., & Cocking, R. R. (1999). *How people learn: Brain, mind, experience, and school*. National Academy Press.

Duschl, R. A., Schweingruber, H. A., & Shouse, A. W. (Eds.). (2007). *Taking science to school: Learning and teaching science in grades K-8*. National Academies Press.

Quinn, H., Schweingruber, H., & Keller, T. (Eds.). (2012). *A framework for K-12 science education: Practices, crosscutting concepts, and core ideas*. National Academies Press.

Riggs, I. M., & Enochs, L. G. (1990). Toward the development of an elementary teacher's science teaching efficacy belief instrument. *Science Education*, 74(6), 625-637.

Snow, C.E. & Dibner K.A. (Eds.). (2016). *Science Literacy: Concepts, Contexts, and Consequences*. National Academies Press.

Thomas, J. A., Pedersen, J. E., & Finson K. (2001). Validating the Draw-A-Science-Teacher-Test Checklist (DASTT-C): Exploring Mental Models and Teaching Beliefs. *Faculty Publications: Department of Teaching, Learning, and Teacher Education*. Paper 94.

[HTTPS://WWW.NAP.EDU/CONTENT/ABOUT-PDFS](https://www.nap.edu/content/about-pdfs)

[HTTPS://WWW.NAP.EDU/CONTENT/ABOUT-THE-NATIONAL-ACADEMIES-PRESS](https://www.nap.edu/content/about-the-national-academies-press)

[HTTP://WWW.NATIONALACADEMIES.ORG/LEGAL/](http://www.nationalacademies.org/legal/)

[HTTPS://NOTES.NAP.EDU/2015/09/18/THE-NEW-OPENBOOK-READ-ANY-ACADEMIES-REPORT-ONLINE-FOR-FREE/](https://notes.nap.edu/2015/09/18/the-new-openbook-read-any-academies-report-online-for-free/)



March 28, 2017

Mr. Jeff Gallant
Program Manager
Affordable Learning Georgia
Board of Regents Academic Affairs
Athens, GA 30606

Re: Affordable Learning Georgia Textbook Transportation Grant Proposal
Proposal Title: Authoritative Science Publications for Education Majors (ASPEM)
Applicant Name: Donna Governor, Ph.D., Assistant Professor, Department of Teacher Education
Co-Applicant: David Ormond, Ph.D., Assistant Professor, Department of Teacher Education

Dear Mr. Gallant:

Please accept this letter as a letter of support from the College of Education (sponsoring area) for the above referenced project. It is a pleasure to pledge my strong support for this innovative textbook transformation project, which will develop no-cost-to-students learning materials while enhancing the preparation of pre-service elementary teachers in applying best practices in science education in their classrooms.

The project will provide significant financial savings to students and strengthen the curriculum for the Science Methods for Elementary School Teachers course (SIED 4184). This course is provided for future teachers primarily from expert, free, online publications of the National Academies of Sciences (NAS) through the National Academies Press (NAP). This vision will be attained by achieving three strategic goals: **1)** Create an extensive list of hyperlinked source texts that includes readings from the most current research on effective science teaching from free, expert resources, with an emphasis on reports from the NAP; **2)** Align the course readings to the Next Generation Science Standards (NGSS), Georgia Standards of Excellence (GSE) and National Science Teachers Association's (NSTA) Position Statement on Science Teacher Preparation, and **3)** Expose pre-service teachers to NAP documents early in their careers to enable effective teaching by current, research-based literature.

I am especially pleased that the project will be led by an outstanding team composed of Dr. Donna Governor, Dr. David Osmond, Dr. Sanghee Choi and Dr. April Nelms. These faculty members have significant experience teaching the course targeted in the proposal. They have the experience, expertise, passion and resources needed to achieve the project goals. You are cordially invited to visit our institution to examine the capabilities and strong commitment that we will provide to help this ALG project attain its goals. Please contact me at (706) 864-1998 or susan.ayres@ung.edu if you desire further information.

Sincerely,

A handwritten signature in black ink, appearing to read 'Susan Brandenburg-Ayres Ed.D.', written over a light blue horizontal line.

Susan Brandenburg- Ayres, Ed.D. Dean
College of Education

Blue Ridge Cumming Dahlonega Gainesville Oconee

The University of North Georgia is designated as The Military College of Georgia and a State Leadership Institution.



April 28, 2017

Mr. Jeff Gallant
Program Manager
Affordable Learning Georgia
Board of Regents Academic Affairs
2500 Daniells Bridge Road, Building 300
Athens, GA 30606

Re: Affordable Learning Georgia Textbook Transportation Grant Proposal
Proposal Title: Authoritative Science Publications for Education Majors (ASPEM)
Principal Investigator (PI): Donna Governor, Ph.D., Assistant Professor, Department of Teacher Education

Dear Mr. Gallant:

Please consider this to be an official letter of commitment for the above referenced project. If awarded, the University of North Georgia (UNG) will be supportive of Dr. Governor's efforts to achieve the goals of this project and UNG agrees to provide the services defined in Dr. Governor's scope of work on a reasonable best effort basis. The estimated budget is \$12,800 for the one-year project period.

Agreements required in conjunction with this project should reflect The Board of Regents of the University System of Georgia by and on behalf of the University of North Georgia as the contracting party. The award and any administrative correspondence should be sent to the address below:

Ms. Lourdes Bastas
Associate Director for Post-Award Services, Grants and Contracts Administration
University of North Georgia
82 College Circle
Dahlonega, GA 30597-0001
Phone: [\(706\) 867-3280](tel:(706)867-3280) Email: lourdes.bastas@ung.edu

If additional information is needed, please contact me at the UNG Grants and Contracts Administration Office at (706) 867-2139 or charles.wood@ung.edu. Thank you for your assistance.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Charles P. Wood', is written over a light blue horizontal line.

Charles P. Wood, Associate Director
Grants and Contracts Administration

Affordable Learning Georgia Textbook Transformation Grants

Round Nine

For Implementations beginning Summer Semester 2017

Running Through Spring Semester 2018

Proposal Form and Narrative

- *The proposal form and narrative .docx file is for offline drafting and review. Submitters must use the InfoReady Review online form for proposal submission.*
- **Note: The only way to submit the proposal is through the online form in Georgia Tech’s InfoReady Review at:**
<https://gatech.infoready4.com/#competitionDetail/1757803> _
- *If you are copying and pasting into InfoReady Review from this form, first convert the file to **plain text** and copy/paste from the plain text file.*
 - o *In Word, go to File > Save As... > and change the file format to “Plain Text (.txt).”*
 - o *Copy and paste from the .txt file.*
 - o *Be sure to save both copies in case you are asked to resubmit.*
- *Microsoft Word Document formatting pasted into InfoReady Review will render the reviewer copy unreadable. **If you paste Word-formatted tables into InfoReady Review, you may be asked to resubmit your application if time permits.***
- *Italicized text is provided for your assistance; please do not keep the italicized text in your submitted proposal. Proposals that do not follow the instructions may be returned.*

Submitter Name	Donna Governor, Ph.D.
Submitter Title	Assistant Professor of Science Education, University of North Georgia
Submitter Email	donna.governor@ung.edu

Submitter Phone Number	678-936-6931
Submitter Campus Role	<i>Select: Proposal Investigator (Primary or Additional)</i>
Applicant Name	Donna Governor, Ph.D.
Applicant Email	donna.governor@ung.edu
Applicant Phone Number	678-936-6931
Primary Appointment Title	Assistant Professor, Department of Teacher Education
Institution Name(s)	University of North Georgia
Team Members	Donna Governor, Ph.D., Assistant Professor Teacher Education, University of North Georgia (UNG); David Osmond, Ph.D., Assistant Professor, Teacher Education, UNG, david.osmond@ung.edu ; Sanghee Choi, Ph.D., Associate Professor, Teacher Education, UNG, sanghee.choi@ung.edu ; April Nelms, Ph.D., Associate Professor and Department Head, Teacher Education, UNG, april.nelms@ung.edu
Sponsor, Title, Department, Institution	Susan Ayres, Ed.D., Dean, College of Education, University of North Georgia
Proposal Title	Authoritative Science Publications for Education Majors (ASPEM)

Course Names, Course Numbers and Semesters Offered	Science Methods for Elementary School Teachers SIED 4184, Fall semester Science Methods for Teachers (6-12) SIED 4500, Fall semester				
Final Semester of Instruction	Fall 2017				
Average Number of Students Per Course Section	30	Number of Course Sections Affected by Implementation in Academic Year	7	Total Number of Students Affected by Implementation in Academic Year	210
Award Category (pick one)	<input checked="" type="checkbox"/> No-or-Low-Cost-to-Students Learning Materials <input type="checkbox"/> OpenStax Textbooks <input type="checkbox"/> Interactive Course-Authoring Tools and Software <input type="checkbox"/> Specific Top 100 Undergraduate Courses				
List the original course materials for students (including title, whether optional or required, & cost for each item)	Required Text: Settlage, J., & Southerland, S. A. (2012). <i>Teaching science to every child: Using culture as a starting point</i> . Second edition. Taylor & Francis. ISBN-13: 978-0415892582 Cost: \$60.00 paperback; \$160.00 hardback				
Requested Amount of Funding	\$12,800				
Original Per Student Cost	\$60 - \$160				

Post-Proposal Projected Per Student Cost	Free
Projected Per Student Savings	\$60 - \$160
Projected Total Annual Student Savings	\$12,600 - \$33,600
Creation and Hosting Platforms Used	Original faculty content contributions will be the creation of reflective and guided reading questions. Source reading materials will not be created under the grant, but rather compiled and made accessible through an interactive, link-based online resource (such as the University's online platform) and through a digital commons repository. Other instructional materials such as guided discussion questions to be used in conjunction with the online readings will be compiled into documents and added to both the repository and online learning platform.

NARRATIVE

1.1 PROJECT GOALS

List the goals you are trying to achieve with the transformation, including goals for student savings, student success, materials creation, and pedagogical transformation.

The Authoritative Science Publications for Education Majors (ASPEM) project is a textbook transformation program for elementary and secondary science education majors at the University of North Georgia (UNG). The primary goal is to build a curriculum for the science methods course for future teachers primarily from expert, free, online publications of the National Academies of Sciences through the National Academies Press (NAP) to completely replace the current textbook.

The National Academies Press (NAP) is the government publisher of reports from the National Academies of Sciences (NAS). The education-related documents published here are considered the primary sources from which educational policy is developed. These documents are published in several formats, including traditional print and digital formats. The primary texts accessed for this project are NAP documents that can be freely accessed through NAP's Digital Content website <https://www.nap.edu>. The entire text may be freely read on the website, but may only be downloaded by registered users or signed in guests. After creating a free account, the majority of the materials for this course can be downloaded in their entirety from the open and downloadable section of the NAP website after creating a free account.

The NAP publications selected for ASPEM provide a summary of current research that utilizes leading experts in the fields of science, math, engineering and education documents such as "Taking Science to School" (Dusch et.al., 2007), "A Framework for K-12 Science Education" (Quinn, et.al., 2012) and "How People Learn" (Bransford, et.al., 1999) that have been the driving force in science education reforms in the current century. New documents are being released annually such as the 2016 report entitled "Science Literacy: Concepts, Contexts, and Consequences" (Snow & Dibner, 2016) which builds a case for improved science instruction in K-12 education. The documents produced by the National Academies of Science are foundation reports that every prospective and practicing teacher should be familiar with as these documents shape current and new educational policies.

Our current textbook for both elementary and middle/secondary science education majors (Settlage & Southerland, 2007) is a well written text that includes a variety of topics that future elementary teachers need to explore in order to be effective teachers. However, this textbook, with a cost of up to \$160, is not current with recent research-based practices in teaching science.

All of the contemporary textbooks used for science methods courses that we have examined fail to provide a comprehensive framework for future educators. The variety of textbooks generally do not align to new research in science education, as proposed by the national science education standards, Next Generation Science Standards (NGSS), and the state standards, Georgia Standards for Excellence (GSE). Content included in contemporary textbooks cover instructional ideals like "Science Process Skills" and "Habits of Mind," which, under newly accepted national and state standards, have been

replaced with a focus on “Science & Engineering Practices” and “Cross Cutting Concepts.” Additionally, the currently accepted practical applications of classroom instruction have shifted from teaching “science” to a STEM (Science, Technology, Engineering, and Mathematics)-based instructional approach. Science Methods textbooks have been unable to keep up with the research-based practices presented in NAP reports. These NAP reports, which are at the forefront of instructional innovation, are a free resource to students. However, the variety of NAP reports are extensively broad and detailed on the variety of instructional topics, which prepare and improve knowledge and skills for high quality science teaching. Accepting just one resource as a textbook would result in substantial gaps in knowledge for the pre-service teacher and not allow us to keep pace with ever evolving research-based reports from multiple resources. Therefore, a textbook transformation, which makes use of the most current and relevant research in science education, is needed for preparing pre-service teachers of science.

Three specific goals are proposed to develop Authoritative Science Publications for Education Majors (ASPEM) that we believe to be the most effective content-rich science teaching curriculum for pre-service teachers available at no-cost:

- **Goal One:** Create an extensive list of hyperlinked source texts that includes readings from the most current research on effective science teaching from free, expert resources with an emphasis on reports from the National Academies Press (NAP);
- **Goal Two:** Align the course readings to the NGSS, GSE, and NSTA’s Position Statement on Science Teacher Preparation, and
- **Goal Three:** Expose pre-service teachers to NAP documents early in their careers to enable effective teaching by current, research-based literature.

1.2 STATEMENT OF TRANSFORMATION

- *Describe the transformation.*
- *Identify stakeholders affected by the transformation.*
- *Describe the impact of this transformation on stakeholders and course success.*
- *Describe the transformative impact on the course, program, department, institutions, access institution, and/or multiple courses.*

The ASPEM textbook transformation process will begin with identifying the methods and pedagogical content knowledge that pre-service teachers need for effective research-based teaching of science at the elementary and secondary levels. To ensure buy-in, all experienced faculty from the science education workgroup at UNG that share the duties of teaching these methods courses will fully participate in this ALG-supported project. The transformation will begin with the process of brainstorming, compiling and then finalizing the list of concepts to be covered during instruction. Course concepts will be matched with relevant readings from NAP reports, major education resources (such as the Carnegie Foundation where applicable), and key documents (such as the Georgia Standards for Excellence) to ensure that we are adhering to the most recent, research-based practices to guide course learning.

Stakeholders include university instructors who are charged with preparing pre-service teachers in science methods courses for the challenges of applying best-practices in science education in their classroom, the future teachers enrolled in the program, their mentor teachers, and the hundreds of young students that will eventually pass through their classrooms. University instructors will be aided by having a comprehensive, up-to-date, research-based curriculum that will transform their instructional practices. Pre-service teachers enrolled in the program will be better prepared as well as they may transfer research-based teaching practices to their mentor teachers. These mentor teachers were trained under the guiding principles of the 1996 National Science Standards (NSS) paradigm, or possibly even older instructional practices. Our young students will benefit by a better educated teacher, with updated content knowledge and best pedagogical skills based on 21st century research.

Below, we describe the ASPEM transformation in more detail, within the context of our three goals:

1. **Goal One: Create a composite reference list that includes readings from the most current research on effective science teaching from open, expert resources with emphasis on reports from the National Academies Press.** Reading assignments will be selected based on relevance, research, and best-practices from the most current publications. These publications will then be assimilated into a cohesive hyperlinked reading list with guided question using a modular structure. One to two readings will be selected from various chapters, articles and resources for each topic. Because the readings will not rely on a single source, future research-based publications will easily be integrated into the course to replace outdated selections. This approach will allow ASPEM to remain

a current, research-based text.

2. **Goal Two: Align the course readings to the NGSS, GSE, and NSTA's Position Statement on Science Teacher Preparation.** The topics used for the ASPEM transformation project will be selected using the research-based documents that are driving the current shift in science educational practices. The 2014 NGSS and 2016 GSE are based on research which will be reflected in the preparation of future teachers. The core documents and their supporting resources will illuminate the content that pre-service teachers need in an effective methods course. The process of creating the list of core documents will start with a research-based approach. Through a collaborative process, course professors will prioritize the topics and targeted readings required for STEM teaching.
3. **Goal Three: Familiarize pre-service teachers with NAP documents early in their careers to enable effective teaching by current, research-based literature.** The documents published by the NAP are at the forefront of innovation and research in science and technology education. Each year new reports are published on matters related to STEM fields and effective teaching. Teachers who are familiar with the NAP will be better able to align their teaching practices with current trends and issues in science education. Further, teachers exposed to these documents early in their career will be better prepared to keep abreast of future shifts in educational practices as new reports are published.

Secondary transformation will occur by providing potential discussion questions and related resources for each ASPEM reading to provide a richer, more meaningful learning experience. As pre-service teachers develop research-based high quality teaching and learning practices through the self-paced ASPEM reading, they will model this self-directed learning to their future students.

The current textbooks, which can cost up to \$160 per student, place an economic strain on students who are frequently required to spend additional monies on certification exams, licensure insurance, instructional supplies, and travel expenses for student teaching. The impact of this ASPEM transformation will be a widespread improvement in students understanding of methods for teaching elementary and middle/secondary science and a reduction in the total cost required for students to earn an education degree.

1.3 TRANSFORMATION ACTION PLAN

Action plans must address:

- *The identification, review, selection, and adoption/adaptation/creation of the new course materials.*
- *The course and syllabus instructional design/redesign necessary for the transformation.*
- *The activities expected from each team member and their role(s): subject matter experts, instructional designer, librarian, instructor of record, et al.*
- *The plan for providing open access to the new materials.*

The action plan will be to review course objectives and identify the most pertinent readings and current research available, primarily through NAP documents. Secondary resources will include publications from other research-based organizations (i.e., Carnegie Foundation, NSTA, AAAS where appropriate).

Our ASPEM team, which includes all those in the science education workgroup that has had responsibility for teaching the elementary and secondary science methods courses at UNG, will collaboratively share in the work for this grant (see timeline). While Dr. Osmond and Dr. Governor will lead the project, other key personnel will take important roles in the project. The timeline provides additional information related to specific tasks assigned to each member of the team.

The first step will be to identify course objectives and compile a list of topics necessary to develop a curriculum map for this course. The subsequent step will be to select a variety of content-rich readings from NAP and other research-based organizational resources and to obtain permissions for text use. Guided reading questions will be created (see timeline) to assist pre-service teachers in the formation of an in-depth knowledge of teaching methods and effective pedagogical skills. ASPEM reading selections will be shared with departmental faculty to discuss merits and limitations, before developing the course materials. The syllabus, activities and key assessments will be restructured to align with a scope and sequence that reflects the revised ASPEM readings. All course materials will be made available to University of North Georgia students via a digital commons repository and the University's online instructional platform. Additionally, course materials will be made available to other USG institutions that wish to adapt all or part of the ASPEM approach that utilize NAP documents as instructional materials for science methods courses.

1.4 QUANTITATIVE AND QUALITATIVE MEASURES

- *The quantitative and qualitative measures of impact on student success and experience. The quantitative and qualitative data collected will be utilized in your final report as well as within ALG program communications.*
- *It is important to identify how the data is to be analyzed for each data source. In specific, the action plan must address the project's quantitative impact on student success (items such as Learning Objective success, Drop, Fail, Withdraw (DFW) delta rate, and any other critical factors) to measure impact on student experience.*
- *Qualitative measures can include student feedback through surveys, interviews, focus groups, or other means.*

Measuring development of student concepts in science education is structured around two quantitative and qualitative measures, the first being the Science Teaching Efficacy Belief Instrument, “STEBI-B” (Riggs & Enoch, 1990), which is a 25-item instrument that is designed to measure science teaching self-efficacy in preservice teachers. This instrument will be administered in a pre- and post-test design to measure changes in students’ perceptions of their ability to teach science in the elementary and middle/secondary classroom.

The second quantitative measure is the Draw-A-Science –Teacher Test (DASTT) (Thomas, Pedersen 2001). This instrument will be used to identify students’ teaching style and any supporting details of their ideas of teaching and learning science. Both of the assessments are currently utilized as part of an IRB-approved research program looking at UNG’s professional school models and will provide data to inform the grant.

Student-teaching performance will be evaluated using the Georgia Intern Keys assessment currently used in UNG field evaluation. The Intern Keys assessment contains 10 teaching performance standards and rubrics sourced from the Teacher Candidate Assessment on Performance Standards (TAPS) as a component of the official teacher candidate evaluation system in Georgia. These rubrics will assess students’ ability to plan and implement high quality science lessons as suggested by current research-based practices. Rubric domains are currently structured to assess students’ abilities to apply research-based teaching and learning practices, align lessons to the Science and Engineering Practices, Cross Cutting Concepts, and GSE science standards.

Qualitative analyses of students’ research-based methods in science teaching will additionally occur through students constructing and presenting two lessons during the semester and submitting reflections on those lessons that integrate a discussion of research-based methods. Analysis and comparison to previous year’s student reflections will highlight qualitative changes.

In addition, select students will participate in focus group interviews that will allow faculty to have in-depth conversations with students to unpack students’ experiences with using ASPeM in a digital commons repository and the University’s online

instructional platform environment. Additional impacts of transformed materials will be examined through student responses to reading assignments and discussion prompts to gain valuable insights for developing effective science curriculum for college students.

1.5 TIMELINE

This is a timeline of milestone dates for your transformation project through the end of the first semester the transformed course(s) is/are offered to students. Your interim reports will utilize this timeline to indicate if the project is on schedule.

When submitting this timeline in InfoReady Review, do not copy and paste tables, as this will render the proposal unreadable.

Table 1. Project Timeline

*NOTE: All tasks indicated “led by” are collaborative; however, each task has an assigned leader to facilitate and guide participation.

When	What	Who
May, 2017	<p>(1) Review course objectives and relevant NAP and other documents with faculty work group.</p> <p>(2) Develop a list of topics, including scope and sequence, to be covered during each course.</p>	<p>(1) Led by Dr. Sanghee Choi</p> <p>(2) Led by Dr. Donna Governor</p>
June, 2017	<p>(1) Develop list of suggested readings from relevant NAP reports and similar documents to address those topics listed in scope and sequence.</p> <p>(2) Present those selections to the workgroup and select those that are most closely aligned to the stated objectives to be included in course readings.</p> <p>(3) Seek publisher permissions for approved content.</p>	<p>(1) & (2) Shared responsibility, led by Dr. April Nelms. Topics will be assigned to different workgroup members to identify resources based on areas of interest. (3) Dr. David Osmond will lead the permissions process.</p>
July, 2017	<p>(1) Revise list and establish big idea questions to guide reading and discussion questions. Brainstorm and create a list of potential guiding questions for use with reading materials.</p> <p>(2) Make changes to reading</p>	<p>(1) Led by Dr. David Osmond, with all workgroup members contributing input.</p> <p>(2) Led by Dr. April Nelms</p>

	<p>resources and a list of finalized course materials for each course.</p> <p>(3) Revise rubrics for use with lesson plans and reflections to align with current research and reading materials.</p>	
August, 2017	<p>(1) Review course objectives and relevant NGSS standards with faculty.</p> <p>(2) Have course reading materials uploaded to digital commons repository.</p> <p>(3) Submit ALG status report by August 30, 2017</p> <p>(4) Have rubrics for lesson plans and reflections submitted for uploading to LiveText.</p> <p>(5) Administer STEBI pre-evaluation to preservice teachers at beginning of semester.</p>	<p>(1) Led by Dr. Sanghee Choi</p> <p>(2) Led by Dr. David Osmond</p> <p>(3) Task assigned to Dr. Donna Governor</p> <p>(4) Task assigned to Dr. Sanghee Choi</p> <p>(5) Shared by all methods instructors</p>
September – November 2017	<p>(1) Monitor course implementation and make necessary adjustments to discussion questions.</p> <p>(2) Monitor course discussion and reading responses to NAP and related readings.</p> <p>(3) Assemble focus groups to discuss students' experiences with using NAP readings in the D2L learning environment.</p>	<p>(1) & (2) Shared by all methods instructors</p> <p>(3) Shared responsibility of Dr. Donna Governor (UNG Dahlonoga Campus), Dr. David Osmond (UNG Gainesville Campus) and Dr. Sanghee Choi (UNG (Cumming Campus))</p>
December 2017	<ol style="list-style-type: none"> 1. Administer STEBI post-evaluation 2. At the completion of the fall semester, transformed course and 	<p>(1) Shared by all methods instructors</p> <p>(2) Shared responsibility, led by Dr. Donna Governor</p>

	materials will be assessed for qualitative and quantitative successes.	and Dr. David Osmond
January - March 2018	<ol style="list-style-type: none"> 1. Faculty will meet to reflect on the use of NAP and other public documents for use in teaching science methods for preservice teachers. 2. Faculty will make a list of suggested revisions for the 2018-19 year. 	<ol style="list-style-type: none"> 1. Led by Dr. April Nelms 2. Led by Dr. Sanghee Choi
April 2018	<ol style="list-style-type: none"> 1. Final Report Submitted to ALG. 	<ol style="list-style-type: none"> 1. Task assigned to Dr. Donna Governor

1.6 BUDGET

Include Personnel & Projected Expenses as appropriate for the category.

Proposals must involve teams of at least teams of 2 or more of any of the following: faculty, faculty librarians, instructional designers, subject matter experts, editors, graphic designers, or others as needed. It is required to include the \$800 for overall project expenses and travel in this section.

Two levels of funding are available based on the scale of the project proposed:

Standard-Scale Transformation: Textbook transformation projects within one or more courses or sections with under 500 students enrolled on average per academic year total.

*\$10,800 maximum award
\$5,000 maximum per team member
\$800 for travel and expenses*

Large-Scale Transformation: Textbook transformation projects within one or more courses or sections or department-wide adoptions with 500 or more students enrolled on average per academic year total.

*\$30,000 maximum award
\$5,000 maximum per team member
\$800 for travel and expenses*

Funding is not a direct stipend to the team members, but rather goes to the institution to cover the team member's time (salary/release time/overload/replacement coverage), project expenses including related department needs, and travel expenses (up to \$800 is specifically designated for at least two team members to attend the required in-person kickoff meeting). The proposing team must coordinate as necessary with their departments and institutional sponsors to determine how to handle the distribution, including amounts, release time/overload/salary/replacement as well as semester(s). This provides the maximum flexibility to the institution and the team in terms of how many people and what types of skills are needed, amount of compensation vs. replacement of teaching load, and timing in terms of semesters of preparatory work vs. semesters of adoption.

When submitting the budget in InfoReady Review, do not copy and paste tables, as this will render the proposal unreadable.

The budget is proposed as follows: \$12,000 for four (4) faculty members release or overload time (4 @ \$3,000/each = \$12,000) and \$800 for travel for faculty to attend the ALG kick-off meeting on June 5 and for additional related expenses. The majority of the work will be conducted during the spring semester; however, because of departmental

course load requirements, the salary will not be requested until the summer semester. The allocation of budget is shown in Table 2.

Table 2. Budget Details

Timeline	Budget details
June 2017	\$800 for travel expenses
Summer – Fall, 2017	\$12,000 - \$3,000 each for release time/overload/salary/replacement for Dr. Sanghee Choi, Dr. Donna Governor, Dr. David Osmond, and Dr. April Nelms to manage course transformation
Total	\$12,800

1.7 SUSTAINABILITY PLAN

What is plan for offering the course in the future, including maintenance of course materials?

The workgroup will set up bi-monthly meetings for collaborative and cooperative effort to develop the ASPEM materials. Science education faculty will be trained in the use of ASPEM materials and be given curriculum support, ensuring a campus-wide adoption and long-term education culture changes. As a workgroup, we will continuously assess data, make changes and update course materials. Once the initial transformation takes place, NAP publications will be monitored and ASPEM materials will be updated due to the modular course design. We are dedicated to ensure our combined efforts meet the development and maintenance of no-cost and most effective course materials for our students. We believe that the steady stream of research-based documents from the National Academy of Sciences (NAS) as released in NAP documents will contain more recent and relevant resources than textbooks which often take years to incorporate the suggested innovations presented in these publications.

1.8 REFERENCES & ATTACHMENTS

This could include any citations, references, your administrative letter(s) of support, etc. Letters of support must be provided from the sponsoring area (unit, office, department, school, library, campus office of the Vice President for Academic Affairs, etc.) that will be responsible for receipt and distribution of funding. Letters must reference sustainability. In the case of multi-institutional affiliations, all participants' institutions/departments must provide a letter of support.

1.9 REFERENCES & ATTACHMENTS

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