



**EXECUTIVE SUMMARY**

**Pursuant to Broward College Policy 6Hx2-1.14 and Procedure A6Hx2-1.14, Dr. Donald Astrab exercised the authority delegated by the Board to execute the standard articulation agreement with Digital Promise Global to provide student research and data. Fiscal Impact: (revenue generating \$10,000.00)**

**Presenter(s):** Jamonica Rolle, College Provost and Senior Vice President

**What is the purpose of this contract and why is it needed?** Collaboration with Digital Promise Global to study teaching and learning in general chemistry using course work develop by Arizona State University and Carnegie Mellon University, called REAL Chemistry I. This research study collaboration will examine whether the digital learning course ware REAL Chemistry archives its goal of enhancing course engagement and positive outcomes for students.

**What procurement process or bid waiver was used and why?** Not applicable

**Is this a budgeted expenditure from the budget established at the last June Board of Trustees meeting?** Not applicable.

**What fund, cost center and line item(s) were used?** Not applicable.

**Has Broward College used this vendor before for these products or services?** Yes.

**Was the product or service acceptable in the past?** Yes.

**Was there a return on investment anticipated when entering this contract?** Not applicable.

**Was that return on investment not met, met, or exceeded and how?** Not applicable.

**Does this directly or indirectly feed one of the Social Enterprise tactics and how?** This directly impacts Empower Student Development as these skills reinforce concepts and theory taught in lecture and lab course. Students learn valuable lessons in problem solving and critical thinking through experimentation.

**Did the vendor amend Broward College’s legal terms and conditions [to be answered by the Legal Office] if the College’s standar contract was used and was this acceptable to the Legal Office?**

The General Counsel's office has reviewed the agreement and any deviation to the College's standard terms has been deemed acceptable.

**FISCAL IMPACT:**

Description: Approximately \$5,000.00 for FY2024-2025 and \$5,000.00 for FY2025-2026 (Revenue)

<b>06/25/24</b>	<b>CC0031 · Biological Science</b>	<b>\$0.00</b>
	South Campus	
<b>06/25/24</b>	<b>CC0031 · Biological Science</b>	<b>\$0.00</b>
	Miramar Campus	
<b>06/25/24</b>	<b>CC0031 · Biological Science</b>	<b>\$0.00</b>

<b>TOTAL:</b>	<b>\$0.00</b>
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# Jamonica Rolle

Jamonica Rolle, Vice Provost, Academic Affairs

8/28/2024

APPROVAL PATH: 12416 Digital Promise Global- FY2024-2026 - Research Study

 **Workflow**

 Synchronize Routing

 Edit View

 Add Work Item

Stage	Reviewer	Description	Due Date	Status	
1	Nichole Vaughan	Dean Review		 Completed	
2	Steven Tinsley	Review		 Completed	
3	Jamonica Rolle	Vice Provost Review		 Completed	
4	Jeffrey Nasse	Provost and SVP of Academic Affair		 Completed	
5	Alina Gonzalez	Review		 Completed	
6	Raj Mettai	Review		 Completed	
7	Natalia Triana-Aristizabal	Contracts Coordinator		 Completed	
8	<b>Legal Services Review Group</b>	Review and Approval for Form and		 Completed	
9	<b>Electronic Signature(s)</b>	Signatures obtained via DocuSig 		 Completed	
10	Board Clerk	Agenda Preparation		 Pending	
11	District Board of Trustees	Meeting	01/14/25 11:00 AM	 Pending	

## Statement of Work and Data Sharing Agreement For General Chemistry I Courseware Study

This Statement of Work and Data Sharing Agreement (hereafter “Agreement”) establishes expectations for collaboration and data sharing between Broward College (“Institution”) and Digital Promise Global (“Digital Promise”) for purposes of collaborating to study teaching and learning in General Chemistry I classes in relation to the implementation of exemplary courseware developed by Arizona State University and Carnegie Mellon University, called REAL Chemistry I. This collaboration shall commence on August 1, 2024 and continue through August 31, 2026.

### Institution Responsibilities

Institution agrees to make all reasonable efforts to conduct the activities described in Attachment 1. These include, but are not limited to the following.

- Identify and support research participation of the instructor(s) listed in Attachment 2, who are expected to teach one or more face-to-face, blended, or hybrid sections of General Chemistry I during the following terms: Fall 2024, Spring 2025, Fall 2025, Spring 2026.
- Support research on the implementation of REAL Chemistry I at the institution by:
  - Designating a point of contact for the Digital Promise research team.
  - Notifying Digital Promise within 90 days if an instructor designated for research participation will not be teaching, or ceases teaching, General Chemistry I section(s) during the terms agreed to and listed in Attachment 2.
  - Making all reasonable efforts to replace any instructor who attrits from the research cohort during the terms agreed to and listed in Attachment 2, with a comparable instructor, thereby maintaining the same number of participating instructors at the institution.
  - Working with representatives from the REAL Chemistry I courseware developer team as necessary to integrate REAL Chemistry I into the institution’s Learning Management System (“LMS”) for use in the section(s) taught by participating instructor(s) at least 2 months in advance of the initial term during which instructor(s) will use the courseware to teach their General Chemistry I course, should the participating instructor(s) choose the LMS integration option of using REAL Chemistry I, rather than the Direct Delivery option, which does not require LMS integration.
- Transmit student-level characteristics and course outcome data (as described in Attachment 4) for students in the section(s) of General Chemistry I taught by participating instructor(s).

### Digital Promise Responsibilities

Digital Promise agrees to make all reasonable efforts to provide the benefits and conduct the research activities described in Attachment 1. These include, but are not limited to the following.

- Payment to the institution to defray costs of pulling institutional records according to the following schedule:
  - \$3,000 upon receipt of student-level characteristics and course outcome data (as described in Attachment 4) for students in the section(s) of General Chemistry I taught by participating instructor(s) during Academic Year 2024-2025.
  - An additional \$3,000 upon receipt of student-level characteristics and course outcome data (as described in Attachment 4) for students in the section(s) of General Chemistry I taught by instructor(s) participating in the research during Academic Year 2025-2026.



- Payment directly to participating instructors. Payment amount will vary based on whether the instructor is implementing REAL Chemistry I (see Attachment 2).
  - If the instructor is implementing REAL Chemistry I for the first time in their teaching of General Chemistry I:
    - \$1,250 for the initial term of implementation,
    - \$1,000 for the second term of implementation.
  - If the instructor has implemented REAL Chemistry I under a previous Statement of Work and Data Sharing Agreement executed with Digital Promise: \$1000/term for any subsequent term of implementation.
  - If the instructor is not implementing REAL Chemistry I: \$750/term.
  - In all instances, regardless of whether an instructor is implementing REAL Chemistry I, payment is conditional on the completion of all required data collections as described in Attachment 1.
- Maintain regular communication with participating instructor(s) to provide research support and connections to courseware support.

#### Data Transfer and Use Agreement

1. Institution shall provide the data set described in Attachment 4 (the “Data”) to Digital Promise for the research purpose set forth in Attachment 1 (the “Project”). Institution shall retain ownership of any rights it may have in the Data, and Digital Promise does not obtain any rights in the Data other than as set forth herein.
2. Student-level data from General Chemistry I course sections participating in the research will be provided by Institution using secure file transfer to Digital Promise’s password-controlled cloud-based Enterprise Box environment. Student-level data will not include any personally identifying information (PII). Upon execution of this Agreement, Digital Promise shall send any specific instructions necessary to complete the transfer of the Data to the Institution’s Institutional Research Office Contact listed in Attachment 2.
3. Institution will assist Digital Promise in resolving any questions about the structure of its course data (e.g., variables, code lists, etc.). Data files will be revised and resent if errors are found by Digital Promise.
4. Digital Promise shall not use the Data transmitted by Institution except for purposes of the research authorized under this Agreement. The Data will be used solely by Digital Promise researchers and agents (“Recipient Personnel”), which may include consultants working under contract to Digital Promise.
5. Except as authorized under this Agreement or otherwise required by law, Digital Promise agrees to retain control over the Data and shall not disclose, release, sell, rent, lease, loan, or otherwise grant access to the Data to any third party without the prior written consent of Institution.
6. Digital Promise agrees to use the Data in compliance with all applicable laws, rules, and regulations, as well as all professional standards applicable to such research.
7. Digital Promise will not use student Data, either alone or in concert with any other information, to make any effort to identify or contact individual students who are or may be the sources of Data without specific written approval from Institution and appropriate Institutional Review Board (IRB) approval, if required pursuant to 45 CFR 46. Should Digital Promise inadvertently receive



identifiable information or otherwise identify a subject, Digital Promise shall promptly notify Institution and follow Institution's reasonable written instructions, which may include return or destruction of the identifiable information.

8. Digital Promise agrees to give Institution the option to be recognized as the source of the Data in all written, visual, or oral public disclosures using the Data, as appropriate in accordance with scholarly standards.
9. Digital Promise shall promptly report to Institution any use or disclosure of the Data not provided for by this Agreement of which it becomes aware.
10. Upon expiration or early termination of this Agreement, Digital Promise may retain one (1) copy of the Data for up to 5 years to the extent necessary to comply with records retention requirements under its grant with the Bill & Melinda Gates Foundation and for purposes of research integrity and verification.

**Data Sharing Permissions.** Institution will share data with Digital Promise in accordance with the following permissions.<sup>1</sup> **No personally identifiable, student-level information will ever be collected or shared under this agreement at any level.**

1. *Institution and Course-Level disaggregated data* – Data shared will include disaggregated institution-level data (e.g., acceptance rate, Pell-eligibility rate, region), and section-level data (e.g., number of instructors participating in the study, pre-requisite requirements) to characterize the types of institutions participating in the study.
2. *Disaggregated, deidentified data* – Data shared will include deidentified student-level data (e.g., pass rates, withdrawal rates), disaggregated by student identities of interest to the research (e.g., race/ethnicity, Pell-eligibility). The Institution agrees that Digital Promise may share this data with the project's board of chemistry education advisors and with personnel within the Bill & Melinda Gates Foundation who are directly responsible for the creation and implementation of its Postsecondary Success Strategy.
3. *Aggregated, deidentified data* – For public reports, data will be aggregated by institution and/or student demographic cohort. It will be anonymized at all levels (i.e., the Institution's name will not appear). The Institution agrees to allow this level of data to be shared in public relations and service marketing materials.
4. *Aggregated or disaggregated, identifiable data* – The Bill & Melinda Gates Foundation Postsecondary Success Strategy may wish to share "best practices" and outcomes that identify institutions, departments/courses, and student demographic cohorts. Data shared at this level will not include individual student-level data and institution, department, and course identities will be disclosed only with their permission, which will be solicited on a case-by-case basis.
5. *Disaggregated, identifiable engagement data* – A list of institutions engaging in the research on the exemplary chemistry courseware will be publicly available. Information about institutions' engagement with project activities and metrics on instructor participation by academic term may be shared publicly. This level includes only engagement data; no outcomes data will be shared at this level.

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<sup>1</sup> Except as prohibited by state law.



**Copyright and Publication.** Participation in this project does not affect ownership of Background Intellectual Property of either Digital Promise or Institution.

Any products, services, processes, data presentations, or other innovations and intellectual property jointly created by Institution and Digital Promise (including modifications, improvements, and further developments to Background Technology) will be promptly and widely disseminated in keeping with the Global Access Agreement of the Bill & Melinda Gates Foundation. A Creative Commons CC By license will enable Institution to use such intellectual property for its own purposes.

Either Digital Promise or Institution may seek publication of data collected under this project in a peer-reviewed journal, conference, or other venue. Any such publications shall be (1) consistent with the Data Sharing Permission levels listed above and (2) adhere to “open access” terms and conditions consistent with the Open Access Policy available at: [www.gatesfoundation.org/How-We-Work/General-Information/Open-Access-Policy](http://www.gatesfoundation.org/How-We-Work/General-Information/Open-Access-Policy), which may be modified from time to time. The Institution shall inform Digital Promise if it submits for publication any data collected under this project.

#### Additional Terms and Conditions

1. **Confidentiality.** The parties agree that each party may disclose factual information regarding the existence and purpose of the relationship that is the subject of this Agreement for other purposes without written permission from the other party provided that any such statement shall accurately and appropriately describe the relationship of the parties and shall not in any manner imply endorsement by the other party whose name is being used. The parties further agree to keep all Confidential Information provided by the other party confidential and not to disclose any such information without the express permission of the other party throughout the term of this Agreement and five years thereafter. “Confidential Information” means all non-public, confidential, or proprietary information, in any form, furnished or made available directly or indirectly by one party to the other party, whether or not designated as “Confidential Information.”
2. **Modifications.** Terms of this Agreement may be modified with mutual consent of both parties. No modification or waiver of this Agreement shall be valid unless in writing and executed by duly-authorized representatives of both parties.
3. **Duration.** Unless terminated earlier or extended via a mutually agreed-upon modification, this Agreement shall expire as of the End Date set forth above. Either party may terminate this Agreement, with or without cause, upon thirty (30) days written notice to the other party’s Authorized Official.
4. **Independent Contractor.** In performing the Services pursuant to this Agreement, each party is an independent contractor, is not an agent or employee of the other, and is not authorized to act on behalf of the other. In no event shall Institution or its employees or agents, be eligible for any fringe benefits or insurance provided to employees of Digital Promise.
5. **Taxes.** In making payments to Institution of the compensation set forth in “Payment Terms” below, Digital Promise will not withhold taxes of any kind, including income taxes, FICA, FUTA, or other statutory withholding or employment taxes applicable to employees. Institution agrees to collect and timely remit to the appropriate taxing authority all taxes due under this Agreement for Institution’s Services and to hold Digital Promise harmless from and against any penalty, interest, tax or charge that may be levied or assessed as a result of Institution’s delay or failure to collect or remit any tax or file any return or information required by law, rule, regulation or this Agreement.





6. **Conflict.** The attached Schedule[s] shall be subject to the terms and conditions of this Agreement. In the event of any conflict between the terms of this Agreement and a Schedule, the terms of this Agreement shall govern, unless the Schedule expressly references the conflicting provision in this Agreement and provides that the provision in the Schedule shall govern.
7. **Governing Law.** This agreement and the rights of the parties hereunder shall be governed by and construed in accordance with the laws of the State of Florida, exclusive of conflict or choice of law rules. The venue for any claim shall be in the State of Florida in accordance with the laws of the State of Florida.
8. **Compliance with Applicable Laws.** Institution warrants, represents and covenants to Digital Promise that it (a) will comply with all federal, state, and local laws, rules and regulations applicable to its performance of the Services under this Agreement, including, but not limited to, any confidentiality and privacy laws, rules and regulations applicable to school and student records, and (b) are legally entitled to work in the United States and, if required, have all necessary visas and work permits.
9. **Publicity and Use of Trademarks.** By signing this Agreement, Institution agrees to allow its name, trademarks and other logos to be used whenever and wherever Digital Promise General Chemistry I Courseware Study participants are listed, including but not limited to the Digital Promise General Chemistry I Courseware Study project website. The use of Institution's name, trademarks and other logos will be limited in scope to listing the Institution's participation in the project. Use of Institution's name, trademarks and other logos on the Digital Promise General Chemistry I Courseware Study project website will terminate on December 31, 2026, unless otherwise agreed to by the parties to extend further. In no other circumstance, shall Digital Promise nor Institution, use the other party's name, trademarks, or other logos in any publicity, advertising, or news release without the prior written approval of an authorized representative of that party.

#### Payment Terms

Institution will be paid \$3,000 for the initial year and an additional \$3,000 for the second year (if applicable) upon successful completion of their responsibilities under this Agreement including, but not limited to, the sharing of de-identified student-level administrative data with Digital Promise at the end of each academic year for the duration of this Agreement. To receive payment, the Institution must submit a completed W9 via this [secure link](#) and an invoice. Invoice should reference the Contract Number 00003717 and be submitted to [payables@digitalpromise.org](mailto:payables@digitalpromise.org) with Jonathan Pittman at [jpittman@digitalpromise.org](mailto:jpittman@digitalpromise.org) cc'd. No invoices will be paid until a completed W9 is received.

Instructor(s) listed in Attachment 2 will be paid according to the agreed-upon level of involvement in the research each term and upon successful completion of their responsibilities under this Agreement, including participating in check-in calls with Digital Promise staff, completing the weekly time log, completing the online instructor questionnaire, accommodating a researcher observation (if requested), encouraging students to participate in electronic focus groups, incorporating the student assessment and survey as assignments in their course sections, and implementing the REAL Chemistry I courseware into their General Chemistry I course section(s) during applicable terms. To receive payment, instructor(s) must submit a completed W9 via this [secure link](#) and an invoice. Invoice should reference the Contract number 00003717 and be submitted to [payables@digitalpromise.org](mailto:payables@digitalpromise.org) with Jonathan Pittman at [jpittman@digitalpromise.org](mailto:jpittman@digitalpromise.org) cc'd. No invoices will be paid until a completed W9 is received.

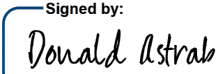
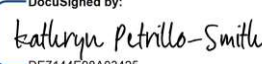




Signatures

The undersigned Authorized Officials of Institution and Digital Promise expressly represent and affirm that the contents of any statements made herein are truthful and accurate and that they are duly authorized to sign this Agreement on behalf of their organizations.

IN WITNESS WHEREOF, the Parties have executed this Agreement effective as of the date first set forth above.

For INSTITUTION	For <b>DIGITAL PROMISE GLOBAL</b>
Signature: <small>Signed by:</small>  <small>6DD41D98CFDA4F4...</small>	<small>DocuSigned by:</small>  <small>DE7144598A03438...</small>
Name: Donald Astrab	Kathryn Petrillo-Smith
Title: Interim President	Vice President & Chief Operating Officer
Date: 12/19/2024	9/19/2024   12:42 PM EDT



## ATTACHMENTS

1. Project Description and Activities
2. Key Institution Staff Participating in the Research and Courseware Implementation Schedule for Each Participating Instructor
3. Description of Elements Related to Implementing REAL Chemistry I Courseware with Fidelity
4. Description of Data Requested from Institutional Research Office
5. Description of Submission to a Data Archive / Restricted Access File (RAF)



## ATTACHMENT 1

### The General Chemistry I Exemplar Courseware Research Project

Recognizing that both the field of chemistry and the needs of students taking General Chemistry I have changed dramatically over the last decade, the Bill & Melinda Gates Foundation has provided R&D funding for both a new General Chemistry I curriculum embodied in digital learning courseware and for research to understand how chemistry instructors can integrate that courseware into their practice to maximize learning for more students, particularly students of color and those impacted by poverty.

Arizona State University (ASU) and Carnegie Mellon University (CMU) are jointly developing the courseware for blended implementation of a chemistry curriculum designed for students taking General Chemistry I. The courseware, called REAL Chemistry I includes all the instructional materials students need to achieve the curriculum's learning outcomes, removing the need for students to purchase an expensive textbook. The courseware includes engaging videos, interactive learning activities, and embedded practice, giving students opportunities to self-assess and reflect on their chemistry understanding.

The nonprofit organization Digital Promise is conducting field research to inform refinements of initial versions of the courseware and devise a model for implementation to inform courseware-related training and adoption materials. Digital Promise is conducting this research with the support of a distinguished board of chemistry education advisors.

#### The Courseware Research

To ground this work in the needs and lived experiences of today's instructors and students, Digital Promise has developed a battery of instruments to probe students' experiences in General Chemistry I courses and learning expectations as well as gauge instructors' engagement in teaching practices shown to promote learning in prior research ("evidence-based teaching practices"). Instructors will implement the REAL Chemistry I courseware developed by the ASU-CMU team as a part of one of two research cohorts:

- Immediate Implementation Cohort (IIC): Instructors in this cohort will participate in the research for the Academic Year 2024-2025. Participating instructors will implement REAL Chemistry I into their General Chemistry I sections and engage in all data collection activities set forth below during Academic Year 2024-2025.
- Delayed Implementation Cohort (DIC): Instructors in this cohort will participate in the research for the Academic Year 2024-2025 and the Academic Year 2025-2026. Participating instructors will engage in all data collection activities set forth below while teaching their General Chemistry I sections as usual during the Academic Year 2024-2025. Delayed Implementation instructors will implement REAL Chemistry I into their General Chemistry I sections during Academic Year 2025-2026 and continue engaging in all data collection activities set forth below.

Through this research, Digital Promise will investigate implementation strategies associated with instructor use of evidence-based teaching practices and enhanced student learning outcomes, while comparing the outcomes and experiences of instructors and students across the Immediate and Delayed Implementation Cohorts, as well as within the Delayed Implementation Cohort over two academic years. Data will be combined with analyses of historical course outcome data, disaggregated by race/ethnicity and Pell eligibility, to provide participating institutions with insights about their teaching and learning environment and outcomes for digital learning implementations in their specific context.



## Institution Responsibilities

With support from Digital Promise, institutional partners will:

- Identify and support research participation of the instructor(s) listed in Attachment 2, who are expected to teach one or more face-to-face, blended, or hybrid sections of General Chemistry I during the following terms: Fall 2024, Spring 2025, Fall 2025, Spring 2026
- Support research on the implementation of REAL Chemistry I at the institution by:
  - Designating a point of contact for the Digital Promise research team.
  - Notifying Digital Promise within 90 days if an instructor designated for research participation will not be teaching, or ceases teaching, General Chemistry I section(s) during the terms agreed to and listed in Attachment 2.
  - Making all reasonable efforts to replace any instructor who attrits from the research cohort during the terms agreed to and listed in Attachment 2, with a comparable instructor, thereby maintaining the same number of participating instructors at the institution.
  - Working with representatives from the REAL Chemistry I courseware developer team as necessary to integrate REAL Chemistry I into the institution's Learning Management System ("LMS") for use in the section(s) taught by participating instructor(s) at least 2 months in advance of the initial term during which instructor(s) will use the courseware to teach their General Chemistry I course, should the participating instructor(s) choose the LMS integration option of using REAL Chemistry I, rather than the Direct Delivery option, which does not require LMS integration.
- Transmit student-level characteristics and course outcome data (as described in Attachment 4) for students in the section(s) of General Chemistry I taught by participating instructor(s).
- Encourage instructor(s) participating in the research to complete instructor-facing data collection efforts, including an instructor questionnaire and a weekly log of instructor time allocation.
- Assist instructor(s) participating in the research to order the General Chemistry I Assessment from the American Chemical Society and administer the assessment to their students.
- Encourage instructor(s) participating in the research to provide a small amount of course credit for their students who complete the Digital Promise Student Survey and the American Chemical Society General Chemistry I Assessment.
- Encourage instructor(s) participating in the research to notify and encourage their students to participate in voluntary and electronic student focus groups.
- Facilitate site visits by Digital Promise researchers who will observe a select subset of classes of participating instructors.
- Acknowledge Digital Promise will transmit de-identified and cleaned instructor questionnaire, weekly time log, student survey, chemistry assessment, and student focus group data from this project into a restricted access repository for academic research following the completion of this project in Spring 2026 (as described in Attachment 5).

## Digital Promise Responsibilities

- Payment to the institution to defray costs of pulling institutional records according to the following schedule:
  - \$3,000 upon receipt of student-level characteristics and course outcome data (as described in Attachment 4) for students in the section(s) of General Chemistry I taught by participating instructor(s) during Academic Year 2024-2025.



- An additional \$3,000 upon receipt of student-level characteristics and course outcome data (as described in Attachment 4) for students in the section(s) of General Chemistry I taught by instructor(s) participating in the research during Academic Year 2025-2026.
- Payment directly to participating instructors. Payment amount will vary based on whether the instructor is implementing REAL Chemistry I (see Attachment 2).
  - If the instructor is implementing REAL Chemistry I for the first time in their teaching of General Chemistry I:
    - \$1,250 for the initial term of implementation,
    - \$1,000 for the second term of implementation.
  - If the instructor has implemented REAL Chemistry I under a previous Statement of Work and Data Sharing Agreement executed with Digital Promise: \$1000/term for any subsequent term of implementation.
  - If the instructor is not implementing REAL Chemistry I: \$750/term.
  - In all instances, regardless of whether an instructor is implementing REAL Chemistry I, payment is conditional on the completion of all required data collections as described in Attachment 1.
- Maintain regular communication with participating instructor(s) to provide research support and connections to courseware support.
- During the Spring term, immediately following a Fall term during which participating instructor(s) used the REAL Chemistry I courseware as a part of this research, provide free access to REAL Chemistry II courseware to students who are enrolled in a General Chemistry II section taught by the participating instructor(s).
- Provide an institution-specific report showing student perceptions of the General Chemistry I course section(s) taught by participating instructor(s) upon completion of the research study.
- Provide an institution-specific report showing student performance on the American Chemical Society General Chemistry I Assessment and student grades in the General Chemistry I course section(s) taught by instructor(s) participating in the research upon completion of the research study.
- Clean and de-identify instructor questionnaire, weekly time log, student survey, chemistry assessment, and student focus group data in accordance with best practices to minimize disclosure risk before submission into a restricted access repository for academic research following the completion of this project in Spring 2026 (as described in Attachment 5).

### Project Milestones and Estimated Timeline

<i>Milestone</i>	<i>Estimated Timeframe</i>
Participating instructor(s) confirmed and Agreement between Digital Promise and higher education partner signed	Spring-Summer 2024
Participating General Chemistry I instructor(s) in the “Immediate Implementation Cohort” (IIC) use the REAL Chemistry I courseware in their course section(s).	Academic Year 2024-2025
Participating General Chemistry I instructor(s) in the “Delayed Implementation Cohort” continue “business as usual” instruction during their initial year in the study and then use the REAL Chemistry I courseware in their course section(s) during the subsequent year.	Academic Years 2024-2025 and 2025-2026
Participating General Chemistry I instructor(s) check-in monthly with Digital Promise research staff (virtually)	Monthly during each participation term in AY2024-25 (IIC & DIC); monthly during each



	participation term in AY-2025-26 (DIC only)
Participating General Chemistry I instructor(s) coordinate and facilitate class observation by Digital Promise research staff, if selected (in-person)	Once during each participation term in AY2024-25 (IIC & DIC); once during each participation term in AY-2025-26 (DIC only)
Participating General Chemistry I instructor(s) complete a weekly digital time log throughout the term	Weekly during each participation term in AY2024-25 (IIC & DIC); weekly during each participation term in AY-2025-26 (DIC only)
Participating General Chemistry I instructor(s) complete the online Instructor Questionnaire	Once during each participation term in AY2024-25 (IIC & DIC); once during each participation term in AY-2025-26 (DIC only)
Participating General Chemistry I instructor(s) have their students complete the Student Survey	Once during each participation term in AY2024-25 (IIC & DIC); once during each participation term in AY-2025-26 (DIC only)
Participating General Chemistry I instructor(s) encourage students to participate in voluntary student interviews / focus groups	Once during each participation term in AY2024-25 (IIC & DIC); once during each participation term in AY-2025-26 (DIC only)
Participating General Chemistry I instructor(s) have their students complete the American Chemical Society General Chemistry I Assessment	Once during each participation term in AY2024-25 (IIC & DIC); once during each participation term in AY-2025-26 (DIC only)
De-identified Academic Year 2024-2025 course outcome and student information system data for participating General Chemistry I section(s) submitted to Digital Promise	Summer 2025
Digital Promise provides institution and participating instructor(s) with a customized report on student performance in participating General Chemistry I course section(s) during Academic Year 2024-2025, disaggregated by student race/ethnicity and Pell status as sample sizes permit	Summer 2025
De-identified Academic Year 2025-2026 course outcome data and student information system data for participating General Chemistry I section(s) submitted to Digital Promise, if applicable	Summer 2026 (DIC only)
Digital Promise provides institution and participating instructor(s) with a customized report on student performance in participating General Chemistry I course section(s) during Academic Year 2025-2026, disaggregated by student race/ethnicity and Pell status as sample sizes permit	Summer 2026 (DIC only)



**ATTACHMENT 2  
Key Institution Staff Participating in the Research**

<b>Project Role</b>	<b>Name</b>	<b>Title</b>	<b>Email</b>
Main Point of Contact	David Perdian	Chemistry Faculty	dperdian@broward.edu
Institutional Research Office Contact	Erica Amorim	Chief Data Officer, Institutional Research	epereir1@broward.edu
Instructor 1	David Perdian	Chemistry Faculty	dperdian@broward.edu
Instructor 2	Behnoush Memari	Chemistry Faculty	bmemari@broward.edu
Instructor 3	Shiv Sharma	Chemistry Faculty	ssharma1@broward.edu
Instructor 4	Rajendra Shakya	Chemistry Faculty	rshakya@broward.edu
Instructor 5			

**Participation Cohort and Courseware Implementation Schedule for Each Participating Instructor**

<b>Project Role</b>	<b>Name</b>	<b>Participation Cohort</b>	<b>Participation Terms without Courseware Implementation</b>	<b>Participation Terms with Courseware Implementation</b>
Instructor 1	David Perdian	Immediate Implementation Cohort, and second year of Delayed Implementation Cohort as agreed upon with Digital Promise research team	N/A	Fall 2024, Spring 2025, Fall 2025, Spring 2026
Instructor 2	Behnoush Memari	Delayed Implementation Cohort	Fall 2024, Spring 2025	Fall 2025, Spring 2026
Instructor 3	Shiv Sharma	Delayed Implementation Cohort	Fall 2024, Spring 2025	Fall 2025, Spring 2026
Instructor 4	Rajendra Shakya	Delayed Implementation Cohort	Fall 2024, Spring 2025	Fall 2025, Spring 2026
Instructor 5				

Digital Promise recognizes that the participating instructor(s) may change. Institutions hereby agree to notify Digital Promise, in writing, of any roster changes within 90 days of said changes. Written notification should include name(s) of instructor(s) no longer participating in the research and names and contact information of instructors who will replace them. All such notifications will be deemed automatically incorporated into the Agreement.





### ATTACHMENT 3

#### Description of Elements Related to Implementing REAL Chemistry I Courseware with Fidelity

Testing the impact of using REAL Chemistry I courseware in General Chemistry I requires instructors to implement the courseware as intended and to collect the data from students that will measure courseware impacts.

The institution will allow instructors to

- Attend up to 7 hours of online training for courseware use provided by Arizona State University and Carnegie Mellon University
- Give students a small amount of course credit for completing the Student Survey (instructors will not see student survey responses; this will be participation credit)
- Administer the American Chemical Society General Chemistry I assessment for course credit (student score would count toward their grade in an amount determined by the instructor)

During the academic terms in which they are designated to use the REAL Chemistry I courseware in their classes, instructors will implement the courseware following these practices:

- REAL Chemistry I courseware is the principal source of course content; there is no other required textbook for the course
- Instructor assigns at least 75% of the available modules in REAL Chemistry I for course content and practice opportunities
- Of points toward students' grade that are not based on labs or mid-term and final exams, at least 50% are based on their work within the REAL Chemistry I courseware
- At least 50% of the available Explorations in REAL Chemistry I are assigned as homework or used during class

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**ATTACHMENT 4**  
**Data Elements Required for Participating General Chemistry I Students**

For All Students in the Participating Instructor's General Chemistry I Sections:

- Institutional Research Office-assigned unique student I.D.
- Institution Name
- Year of Birth (if possible) (YYYY)
- Gender
- Ethnicity/Race
- Pell Eligible
- First Generation College Goer Status (if possible)
- Date of First Enrollment at this institution (if possible) (MM/DD/YYYY)
- Prior Achievement Measure such as placement test; high school GPA; prior GPA at this college (specify option)
- Course Name
- Course Code
- Section ID/Code
- Course Section Modality
- Campus took place (if applicable)
- Instructor record (recommended)
- Term Start Date (MM/DD/YYYY)
- Term End Date (MM/DD/YYYY)
- Cumulative GPA at Start of Term
- Cumulative Credits at Start of Term
- Total credit hours for this term (if unavailable, Enrollment Status for this Term, e.g., FT or PT)
- Number Prior Attempts for this Course
- Whether prerequisite math for this course met (e.g., course taken in high school, placement exam); if available, specify how the requisite was met
- Whether prerequisite math course is being taken concurrently with General Chemistry I; if so, specify prerequisite course name and code
- Still Enrolled at Institution at Course Termination
- Course Grade
- Number Credits Earned for this Course
- Course grade for concurrent prerequisite math course
- The American Chemical Society General Chemistry I assessment results

For Students in the Fall Sections Only (in addition to the above list):

- Subsequent Term Start Date (MM/DD/YYYY)
- Subsequent Term End Date (MM/DD/YYYY)
- Course Name of Subsequent Course in Sequence (typically will be General Chemistry II)
- Course Code of Subsequent Course
- Still Enrolled at Institution at Subsequent Course Termination
- Course Grade for Subsequent Course
- Number of Credits Earned for Subsequent Course



## ATTACHMENT 5

### Submission to a Data Archive / Restricted Access File (RAF)

Through this project, we endeavor to build on the EBT evidence-base in general and drive the field to consider student identities, disaggregate their analysis and conclusions based on those identities, and ultimately create more equitable STEM classrooms. In order to further this goal, we aim to deposit de-identified and cleaned data from this project into a restricted access repository following the completion of this project in Spring 2026.

We have identified the Inter-university Consortium for Political and Social Research (ICPSR) (link: <https://www.icpsr.umich.edu/web/pages/>) housed through the University of Michigan as an ideal data archive. From their website:

*ICPSR is an international consortium of more than 750 academic institutions and research organizations. ICPSR (Inter-university Consortium for Political and Social Research) provides leadership and training in data access, curation, and methods of analysis for the social science research community.*

*ICPSR maintains a data archive of more than 250,000 files of research in the social and behavioral sciences. It hosts 21 specialized collections of data in education, aging, criminal justice, substance abuse, terrorism, and other fields.*

By depositing data in a restricted access repository, we are creating the opportunity for other researchers to use and build on our work. Additionally, an entity such as ICPSR will allow us to identify other researchers who are interested in this data for future collaboration.

ICPSR provides robust guidance on confidentiality and data sharing (link: <https://www.icpsr.umich.edu/web/pages/datamanagement/confidentiality/>), including guidance for consent forms, obscuring participant identity, and data sharing. We will follow this guidance to ensure the protection of the human subjects with whom we are working.

We would seek to include data from the following instruments for inclusion:

- The Weekly Time Log data
- The frequency tables from the Classroom Observations
- The instructor questionnaire, removing variables that could be used to re-identify instructors (e.g., Name of the Course, Course Code, Years of Teaching at that Institution, Race, and Gender as needed)
- The student survey, removing or obscuring variables that could be used to re-identify students (e.g., the combinations of Race/Ethnicity, Gender, Family Income, Working status, etc.)
- Transcripts from the Student Focus Groups, obscuring any identifiable information including student, instructor, and institution names, and references to any identifiable characteristics (e.g., Course name, city or town of the institution, etc.)
- The American Chemical Society General Chemistry I assessment results

We would NOT seek to include data that we believe could be too difficult / impossible to de-identify / obscure, that reflect our own interpretations of the data, or that honor the Institutional ownership of Institutional Research data, including any notes from the Monthly Check-In calls, notes taken by the

researcher during the Student Focus Groups, and de-identified student level data from Institutional Research offices.

