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New RRB Submission

Data Entry

- Submitted 09/20/2022 2:53 PM ET by Ryu, Minjung

Submission Type

RRB Number	2021-1584
Study Title	Professional Development for K-12 Science teachers in Linguistically Diverse...
Event Type	Modification/Continuing Review defined 10/27/2022
Schools Participating	No answer provided.

SUBMISSION TYPE INSTRUCTIONS AND OPTIONS

"New Submission" - if this is a brand new RRB proposal OR you need to make requested revisions to an RRB submission that is NOT yet approved.

"Entry of RRB project that was previously-approved outside of IRBManager" - if you would like to enter a project into IRBManager that was reviewed and approved outside of IRBManager (i.e. before IRBManager was implemented at CPS). For this selection, there must be no changes in your study protocol from when your study was previously approved.

"Modification/Continuing Review of RRB Project Previously approved outside of IRBManager" - if you would like submit a modification for a study that was **approved outside of IRBManager (i.e. before IRBManager was implemented at CPS).**

Type of Submission

Modification/Continuing Review of a RRB project previously approved outside of IRBManager

Please enter your RRB Protocol number below. If you're unable to find your RRB Protocol number, please indicate this in the following question.

2021-1584-CPS

If you're having problems looking up your RRB submission number, a "%" can be used in front of a sequence of numbers to find a RRB number containing that sequence. For example, inputting "%123" would bring up studies "2025-7123" and "2026-9123" (these numbers are examples and do not exist in the system.)

Were you able to find your RRB Protocol Number using the previous lookup function?

Yes

Amendment Summary

Description of Research Activities to Date

- Online PD workshop (Fall 2020-Spring 2021)
- Hybrid Lesson Study (Fall 2021-Spring 2022)
- Summer PD workshop (Summer 2022)
- Collecting research data (video-recordings of Lesson Study meetings and interviews of teachers and admin)

Preliminary Results to Date

First, from the analysis of interview data from participating teachers, we found that all science teachers at our partner school (Sullivan) are multilingual and grew up in multilingual and multicultural environments. Although these teachers' languages (Polish, Greek, Albanian, Spanish, French) do not necessarily overlap with the languages that their students are familiar with (Spanish, languages of Southeast Asian countries and African countries), we found that these teachers could draw on their linguistic knowledge, multilingual experiences, and disposition toward linguistic and racial diversity. We developed a conference proposal around these findings for AERA 2022 although it was not accepted for presentation. Second, we have analyzed video-recordings from teacher PD workshops. In this analysis, we focus on how teachers conceptualize relevance in the context of making modifications to the curriculum. Our preliminary findings show that teachers desired to revise the curriculum to incorporate more instructional scaffolds for class activities, draw on students' daily experiences outside of school, include analysis of publicly available data related to anchoring phenomena, and take actions to improve community as an outcome of teaching. We developed and submitted a conference proposal for American Educational Research Association, which is still under review. Finally, participating teachers and research team collaboratively developed a presentation and presented at National Science Teachers Association. The presentation focuses on the process of Japanese Lesson Study model and learning that we gained through this work. We shared insights into how to engage emergent multilingual students in science sense-making, employing multimodalities, and challenging taken-for-granted notions of engagement.

Type of Request

Continuing Review

Please select continuing review if no changes have been made to your study protocol. If you plan on proposing a modification AND a continuing review, please select modification, as an approved modification will extend your approval period.

Optional Attachments - please attach any reports/publications that have been created thus far here.

No answer provided.

Pertinent CPS Documentation

Submitter

Ryu, Minjung

Email: mjryu@uic.edu

Phone:

Overview of Pertinent CPS Documentation

The RRB is composed of members representing various Central Office academic departments as well as the Law Department. The RRB meets quarterly to evaluate new proposals to conduct research. The RRB calendar and deadlines for submissions can be found on the CPS Research Website here. Decisions resulting from the research review process will be communicated to the applicant of the request as well as appropriate CPS staff in accordance with the estimated timelines outlined in the respective RRB calendar. External researchers may not begin any research activities or obtain data for research purposes without first following the procedures outlined in this policy and securing the necessary approvals.

We expect all researchers to be familiar with the guidelines and policies guiding research within the district. Please verify that you have read and acknowledged the following:

External Research Study and Data Policy

✓ I have read and understood the External Research Study and Data Policy

CPS RRB Guidelines

✓ I have read and understood the CPS RRB Guidelines

CPS Equity Framework

✓ I have read and understood the CPS Equity Framework

CPS Vision

✓ I have read and understood the CPS Vision

CPS Volunteer Policy

✓ I have read and understood the CPS Volunteer Policy, including background check requirements

Study Personnel Details

Study Title

Professional Development for K-12 Science teachers in Linguistically Diverse Classrooms

Does your organization participate in a Research Practice Partnership (RPP) with Chicago Public Schools?

No

Primary Study Organization/University

University of Illinois at Chicago

Principal Investigator

Ryu, Minjung

Expirations:

**Background
Check
Level:**

PI Organization

University of Illinois at Chicago

If the form indicates "not found" when you add the Principal Investigator, please use the link below to add the contact to the IRBManager system.

User had the option to start a different form here.

Are there any other study contacts?

No

If the person completing this form is not the Principal Investigator, it is suggested that the submitter be entered as a contact.

Is the Principal Investigator a Student?

No

Is the researcher a CPS Staff Member?

No

Funding and Intervention Information

Is this project contracted by the CPS Board of Education?

No

Is a funding source associated with the proposed research?

Yes

Who is the primary funding source?

National Science Foundation

What is the amount of funding awarded?

\$847,245.00

Please list primary contact information of funder.

DRLDRK12@nsf.gov

Select the option that applies to your study

My study will involve a selection of individual schools

Please select all potential school sites involved with this study

Roger C Sullivan High School

Will this research require any in-person interaction or intervention activities?

Yes

Will this research require any virtual interaction or intervention activities (Google Meets, Zoom, etc.)?

Yes

Please note that Zoom is not approved for use with CPS Students. Any virtual activities will need to be conducted via Google Meets and safe@cps.edu must be invited to Google Meet. Please adjust virtual methods accordingly. For more information on permitted interactions with students and staff, please visit <https://www.cps.edu/about/policies/acceptable-use-policy/external-volunteers/>.

Please review CPS's Acceptable Use of Technology Guidance (AUP)



Questions about eligibility or appropriate use of communication channels should be directed to the school principal or CPS External Research department. Only CPS-approved communication channels may be used.

Please be aware that virtual interviews involving students may only be conducted via Google Meets. A CPS Staff member must be present for the entire duration of the interview. For more information on CPS' Acceptable Use of Technology policies, please visit <https://www.cps.edu/about/policies/acceptable-use-policy/external-volunteers/>

Please check all of the following that apply to your research protocol:

Classroom Artifacts
Interviews
Observations

Please describe your classroom artifact collection protocol, detailing when, where, duration, frequency, and with whom?

Classroom artifacts will be collected for the class a research team observes individual teachers' classes during a research lesson (part of Lesson Study protocol). After the observed lesson, the observed teacher will scan all student-generated artifacts and share the file with the UIC research team via Box, UIC-approved secured online data sharing/storage cloud. Each participating teacher will have one or two research lesson over the course of a school year.

Please describe how data will be captured and stored securely

Participating teachers will collect student-generated artifacts, which is their usual day-to-day practice. They will share a scanned copy of student artifacts via Box. Data will be stored in Box and PI's password-protected computer.

Please attach all relevant documents here.

Parental Consent v5 8-10-2021.pdf	Misc/Other
Student over 18 Consent v5 8-10-2021.pdf	Misc/Other
Student under 18 Assent v6 8-10-2021.pdf	Misc/Other

Please outline your protocol for individual interview activities, describing when, where, duration, frequency, and with whom.

Teacher, student, and admin interviews occur either in-person (at teacher's school) or online depending on scheduling. We will conduct one teacher interview per semester, one interview with students, and one interview with admin. Each interview will take about an hour. The location and time of interview will be determined based on the convenience of both participant and researcher. One of the research team members will interview participants individually.

Does this involve video, audio, or photograph recording?

Yes

Please describe the protocol for audio/video recording

The interview will be audio-recorded.

Please describe how data will be captured and stored securely

Data will be stored in online cloud Box, and only research team members will have access to the data.

Please attach all study materials corresponding to interview procedures (i.e., consent forms, protocol, recruitment and incentive plans)

Admin Staff Interview Protocol.docx	Interview Protocols
Student Interview Protocol.docx	Interview Protocols
Teacher Interview Protocol 1.docx	Interview Protocols
Teacher Interview Protocol 2.docx	Interview Protocols

Please outline your protocol for observation activities, describing when, where, duration, frequency, and with whom.

During the "Teach" phase of a Lesson Study Cycle, the research team and participating teachers will observe the research teacher's class and may make videorecordings of the class (depending on each cycle's needs). Video recordings of the participating teachers' classes would occur for one class period per one lesson study cycle, thus 1-2 classes over the course of a school year.

Does this involve video, audio, or photograph recording?

Yes

Please note: Video/Audio classroom observations where students are present is not permitted unless every student present for the observation has active assent and parental consent.

Please describe the protocol for audio/video recording

Videocameras will be installed by the research team at the beginning of a class and stay in the same location.

Please describe how data will be captured and stored securely

Videorecordings will be stored in Box, UIC-authorized secured online cloud. The data will be used only to facilitate the reflection of their teaching, NOT to answer research questions nor publication and dissemination. After using the data in the corresponding Lesson Study reflection meeting, data will be deleted from the server. This data will not be used for research purposes.

How will you protect individuals who did not consent to participate in the observation, and what will non-consented students be doing during the observation(s)?

No observation data or videorecordings will be taken by non-consenting students. We will identify non-consenting students and install videocameras to keep those students out of the video angles.

Please attach all study materials corresponding to observation procedures (i.e., consent forms, protocol, recruitment and incentive plans)

Overall study protocol including observation protocol Misc/Other

Will this research require the use or access of existing CPS data?

No

Will this research require the use or access of existing non-CPS data?

No

Study Details

Please select all of the following that will be participating in the study?

Students
Teachers
Other Staff

Will any of these students be under the age of 18?

Yes

Please be aware that the inclusion of study subjects younger than 18 requires active, written consent from the parent(s) or guardian(s). The consent form needs to explicitly inform parents of their rights to review all materials used with their children as provided for in the Protection of Pupils Rights Act. Please ensure you have added the following statement to your consent form(s) verbatim, with the appropriate personalization for your study:

"Parents please be aware that under the Protection of Pupils Right Act 20 U.S.C. Section 1232 (c)(1)(A), you have the right to review a copy of the questions asked of or materials that will be used with your students. If you would like to do so, you should contact [INSERT APPROPRIATE CONTACT] at XXX-XXXX to obtain a copy of the questions or materials."

Has this project been reviewed by an Institutional Review Board (IRB)?

Yes, and it was approved

IRB of Record Name

2019-1122

IRB Protocol Number

2019-1122

Please attach all of your IRB documentation here (include approval/exemptions letters, IRB study protocol, etc.).

Approval_20191122-143399-1.pdf IRB Letters

IR #2019-1122 V10 8-10-2021.pdf IRB Protocol

IRB of Record Primary Contact Email Address

uicirb@uic.edu

Please select your primary area of research from the following:

Professional Development

Secondary Study Subject(s)

STEM Education

Study Overview

Executive Summary or Abstract

Please provide a high-level overview of your study, including a summary of the motivation, design, and implications of the project.

This NSF-funded project aims to refine our understanding of:

- the key elements of instructional materials and teaching practices that support English Learners (ELs) in linguistically 'superdiverse' high school science classrooms
- the ways in which teachers in linguistically superdiverse high schools learn to adopt these practices and materials
- the impacts of a professional development program on ELs' classroom participation and science learning

The project includes a (non-research) professional development program and a research study.

The study will enroll a maximum of:

- 700 Sullivan High School students (enrolled in science classes)
- 20 teachers (in science, ESL or other subjects)
- 10 School/District Administrators/staff (e.g. Principals, district ESL staff)

Research Questions and Hypothesis

Please list all research questions and hypotheses associated with this project.

1. What are key elements of teaching materials and instructional practices that support ELs' learning in superdiverse science classroom settings?
2. How do teachers in linguistically superdiverse high schools learn to adopt these practices and materials?
3. What are the impacts of the innovative PD model on students' participation and learning?

Purpose and Literature Review

Please provide an overview of the existing research and literature on this subject. What is the contextual history of this subject area and how does this research build upon the body of extant knowledge?

Linguistic diversity in U.S. schools has increased due to the arrival of immigrants and refugees from around the world. Nearly 10% of the U.S. K-12 student population speak English as a second or third language and are still developing English proficiency (National Center for Education Statistics [NCES], 2017). While 77% of English learners (ELs) speak Spanish as their first language (L1), increasingly more ELs speak other languages than Spanish, such as Arabic, Chinese, Vietnamese, Hmong, and Somali. These changes have led to linguistically superdiverse classroom contexts (Creese & Blackledge, 2015), in which students speak multiple non-English languages with varying levels of proficiency in English, L1, and content area literacy. U.S. schools face an urgent need to support all ELs as they become independent members of a 21st century workforce while leveraging their rich and diverse cultural and linguistic resources and guide teachers in doing so (Suárez-Orozco, 2001).

Research on science education for ELs has recommended several effective teaching approaches, such as building on students' diverse and rich resources, engaging students in authentic science learning practices, and encouraging and valuing flexible use of multiple languages (Bruna & Gomez, 2009; Lee, 2002; Swanson, Bianchini, & Lee, 2014; Warren, Ballenger, Ogonowski, Roseberry, & Hudicourt-Barnes, 2001). However, most research has focused on teaching speakers of Spanish in elementary and middle school level science classrooms in which a majority of ELs speak the same language (for exceptions, see Domínguez, Alexsaht-Snyder, & Latimer, 2017; Roseberry, Ogonowski, DiSchino, & Warren, 2010; Upadhyay, 2009). Furthermore, while many professional development (PD) programs supporting science education for ELs provide a short-term workshop with newly designed curriculum and curriculum guide, there is a lack of PD models that engage teachers in a sustained community of practice through collaboration between researchers and teachers (Oliveira & Weinburgh, 2017).

To fill this gap in the literature and practices, the proposed project, Professional development for K-12 science teachers in linguistically diverse classrooms, will engage science and English as a New Language (ENL) teachers in a sustained professional development (PD) program embedded within their everyday classes, designed for a linguistically superdiverse group of ELs. This project is expected to aid teachers in transforming their teaching materials and instructional practices to foster science learning of ELs. We will draw on research-based science teaching practices that foster linguistic minority students' learning of science and in-service teacher PD practices that ensure teachers' sustained growth and instructional transformation. An innovation in this project is to provide collaboration

opportunities between the science and ENL departments, as such collaboration is often scarce or superficial, despite frequent recommendations from the research literature (National Academies of Sciences, Engineering, and Medicine, 2018).

Research Activities and Student/Staff Involvement

Please provide an overview of all primary and secondary research activities associated with this study. Please use this space to describe, as thoroughly as possible, all that will be asked of your research subjects (e.g. surveys, focus groups, observations, etc.)

Phase	Semester	Professional Development	RESEARCH (time for subjects' participation)
1	Fall 2019	Identifying potential partners: <ul style="list-style-type: none"> Interested teachers attend informational meeting with UIC team (1 hour) 	n/a
	Spring 2020	<ul style="list-style-type: none"> Photos/copies of teachers' classroom materials (0 hours) Field notes from classroom visits (0 hours) Pre-PD audio-recorded interviews with teachers and admin/staff (1 hour) Audio/video recordings of PD participation (teachers - 29 hours) Photos/copies of materials teachers create (0 hours) Audio-recorded teacher focus group (1 hour) Post-PD audio-recorded teacher interview (1 hour) Audio-recorded interview with admin/staff (1 hour) 	
Dates TBD	Building relationships, understanding the school context: <ul style="list-style-type: none"> Interested teachers allow UIC team to visit their classrooms (~1 hour/week) Week-long PD workshop #1: <ul style="list-style-type: none"> Introducing materials and practices for supporting ELs (29 hours) 		

Phase	Semester	Professional Development	RESEARCH (time for subjects' participation)
2	Dates TBD	<p>Ongoing cycles of Lesson Study:</p> <ul style="list-style-type: none"> • Plan-Teach-Reflect (~ 30 hours for teachers) 	<ul style="list-style-type: none"> • Audio/video recordings of Lesson Study meetings (teachers: ~ 30 hours) • Photos/copies of materials teachers create (0 hours) • Audio-recorded teacher focus group (1 hour) • Audio-recorded teacher interview (1 hour) • Audio-recorded student interviews (1 hour) • Photos/copies of students' class work (0 hours) • Audio-recorded interviews with teachers and admin/staff (1 hour)
	<p>Dates TBD</p> <p>Week-long PD workshop #2:</p> <ul style="list-style-type: none"> • Designing new materials and practices for supporting ELs (29 hours) 	<ul style="list-style-type: none"> • Audio/video recordings of PD participation (teachers -29 hours) • Photos/copies of materials teachers create (0 hours) • Audio-recorded teacher focus group (1 hour) • Audio-recorded teacher interview (1 hour) 	

Research Methodology and Analytical Technique

Please provide an overview of your research methodology and specific analytical techniques that will be utilized as part of this study.

Videorecordings: Videorecordings of the PD program in Phases 1 and 2 will be used to address Research Questions 1, 2 and 3. We draw on approaches from (mediated) discourse analysis (Bucholtz & Hall, 2005; Kelly & Crawford, 1997; Jones & Norris, 2005; Wortham & Reyes, 2015), ethnography (Gordon, Holland, & Lahelma, 2001; Holland, Skinner, Lachicotte, Jr., & Cain, 1998), and video analysis (Derry et al., 2010). The research team will: 1) watch the videorecordings in their entirety, 2) select key events from video recordings that provide insights into each research question, 3) write analytic notes for the selected events, and 4) create a matrix that documents selected events, themes generated from the analysis, and target research questions that each episode can potentially answer.

Interviews: We will use interview data to address research question 1, and supplement analysis of video recordings to address research question 2 and 3. Interviews will be transcribed and coded. We will listen to, transcribe, and code audio-recorded interviews for emerging themes. We will create a matrix that maps selected segments of interviews, themes generated from the analysis, and target research questions.

Digital images of artifacts: Artifacts (e.g. lesson plans and teacher reflection journal in Phase 1 & 2; student work in Phase 2) that are produced by participants during the ethnographic period and the PD program will be used to supplement the analysis of video recordings to address research questions 1, 2 and 3. We will generate themes to code segments of artifacts (as described above) and create a matrix to map selected segments of artifacts, themes generated from the analysis, and target research questions. During the pandemic and online PD activities, the artifacts will be shared using secured Box folder. The participating teachers will upload their artifacts to a shared Box folder, so that the research team can have access to them.

Benefits and Commitment to Equity

Benefit to CPS

Which (if any) CPS vision goals does your research support?

90% of students will graduate high school within five years.

Click here to access more information on the CPS Vision Goals.

Please describe how your project supports each of the Vision Goals selected above.

This PD project targets science teachers who teach in multilingual classrooms. Linguistic diversity in CPS is higher than the national average. Our professional development program will support teachers' instructional work in multilingual classrooms and thus support to increase the graduation rate of CPS.

Which (if any) of the CPS core values does your research support?

Equity

Please describe how your project supports each of the core values selected above.

Providing adequate support for multilingual learners through professional development of their teachers pertains to improving equity in CPS.

How does this project support the district broadly?

Participating teachers can share their work and findings with other CPS teachers and benefit them through (1) findings of their work, and (2) engaging in similar PD activities.

Commitment to Equity

In what ways does this project reflect/challenge/progress the district's commitment to equity?

Although there are multiple ways in which the current project reflect CPS's commitment to equity, one most important aspect is through prioritizing the perspectives and voices of stakeholders. Our PD work is highly practice-based and led by teachers. We have revised the Lesson Study protocol to meet the special needs and contexts of CPS teachers and will continue to do so. Our goal is to train teachers to be able to run Lesson Study work by themselves after the completion of the research project. Moreover, we would like to interview multilingual students enrolled in participating teachers' classes, as key stakeholders for their own learning. Reflecting their voices in the PD work will empower these students who have been traditionally marginalized.

Reflect on the district's equity framework as well as the following: As a researcher, what is my privilege / bias when it comes to this question? Am I assuming that Black and brown students will inherently perform poorly? Have I consulted those whose communities I want to research? Is the research designed with the holistic humanity of the people I am researching in mind? Do I perceive the communities I want to research as allies, or as research subjects? Am I interrogating / challenging policies and systems that may be contributing to inequities? Will this project create an undue burden on the communities I am seeking to research?

How are your research activities accessible to individuals with disabilities?

We invite special education teachers who co-teach with science teachers or solo-teach a self-contained science classes.

Are your research activities translated into languages other than English as appropriate for the community?

Encouraging translanguaging (including translation) in science classes is one goal of our PD work. However, the target audience of our research is teachers, not students, we do not produce any materials for students, thus translation of research activities is not appropriate for our research.

Please use the table below to list all District CPS Supporters and the role they will have in your study. Use the details box to describe your supporters' title and role in the district. List your primary supporter first.

Please click "save" after each line.

CPS Supporter Email Address	CPS Supporter Details
Decker, Laura Email: lmdecker@cps.edu Phone:	Facilitates partnership with schools and logistics of the project work.

Link to New Contact Form

User had the option to start a different form here.

How will you share your research findings with the population(s) you are studying?

Through the presentation of the work both CPS and outside as well as publications.

Research Activities**Start Date of Recruitment**

01/01/2020

End Date of Recruitment

09/20/2022

Please provide the date that you will begin primary data collection

03/01/2020

Please provide the end date of primary data collection

09/20/2022

Please provide the date that you will begin analysis

03/01/2020

Please provide the end date of analysis

09/20/2022

Please provide the approximate date that you will finalize your research report.

08/31/2024

Description of Deliverable/Final Product (i.e., academic/journal article, white paper, memo, report)

Journal articles and presentations at scholarly and practitioner-oriented professional meetings.

Will any portion of this research, including recruitment or consent, take place during or in any way interfere with standard activities?

Yes

With very few exceptions, research procedures cannot be carried out during or in any way interfere with standard activities, including instruction time or professional development sessions.

Please describe what specific school/district activities will be interrupted and how.

The informed consent process will occur during standard instructional activities.

Please justify the proposed interruption of standard instruction time or required classroom activities.

Interruption will be minimal. (less than ten minutes total)

Will this study involve study subject randomization or a control group?

No

Will your research employ study-subject deception or non-disclosure?

No

Will this research involve Product Testing?

No

Will this research involve collection of biological samples or biometric data?

No

Does this research involve other research procedures not described previously?

No

Is this research tied to a standard or novel curriculum, teaching or other program, staff professional development training or program, or other non-research activity or activities?

Yes

Please describe

Teachers will participate in professional development (Lesson Study), which include non-research, ongoing professional development efforts.

Has the curriculum, program, PD, etc. already been approved by the district?

Yes

Please list the contact information for internal CPS supporter.

Laura Decker. Note: No new curriculum is being used. Lesson Study has been used in other schools and supported by the district.

Does this study involve the use of educational technology (including survey tools, video conference platforms, and third party websites. See note for add'l details)?

No

Please be aware that under The Student Online Personal Protection Act, SOPPA (105 ILCS 85/), any platform students interact with must be compliant with current data security and student privacy regulations. Please note that this definition includes online survey tools such as Qualtrics. Please use the following website to check if your proposed platform is complaint with SOPPA: <https://cps.app.learnplatform.com/new/public/tools>

Study Population

Will you be submitting a secondary Data Request?

No

RRB Number

2021-1584-CPS

This is your RRB Number. Please reference this in any data request associated with this study.

Study Subject Inclusion Criteria

High school teachers who teach in classes enrolling multilingual students. Students who are enrolled in participating teachers' classes.

If the research involves more than one study subject population (e.g. students, parents, teachers, staff), please individually detail the inclusion criteria for each.

Study Subject Exclusion Criteria

N/A

If the research involves more than one study subject population, please individually detail the inclusion criteria for each

Please select all special populations that may be targeted for your study

Multilingual Learners

Describe the potential direct and/or indirect benefits for all detailed research procedures and populations

There may be potential benefits to the participants of the study. During the process of interviews, participating teachers and students may reflect on their own teaching and learning practices and how they improve their practices. This reflection may impact their future teaching and learning within and beyond the project context.

Describe the anticipated potential risks, however minimal, associated with the detailed research procedures and subject populations

There are some minimal potential risks to participants in this study. Risks may include self-consciousness of videorecordings during the PD program and anxiety or fatigue on the part of interviewees during interviews and focus groups. Furthermore, participants may risk being identified as participants in the study.

In online administration of this project, there are a few unique concerns of privacy and confidentiality. Videorecording of online meeting can end up recording participants' (both teachers and students) private space and sounds from other family members; the conversation between participants and the research team members can be heard by other family members. During the recruitment process, these possibilities will be fully discussed, and participants will be given an option to stop and reschedule any online meeting if unanticipated situation comes up that may potentially breach privacy and confidentiality of participants.

How will the identified risks for all research procedures and subject populations be minimized and/or mitigated to the greatest extent possible?

To minimize the risks of self-consciousness during videorecording, all participants will be encouraged to ask the researchers questions throughout the duration of the study and will be reminded throughout the study that they may withdraw at any time without penalty. To minimize anxiety or fatigue during interviews, subjects will be informed that they can skip any questions, especially those they do not feel comfortable answering. To minimize risk of breach of privacy and confidentiality during online data collection, participants will be encouraged to use a virtual background, mute their microphone while they are not talking, find a private space in their home (if they participate from home) where they can have a private conversation with a research team member. Participants will be also reminded that if an unexpected situation comes up that can potentially breach their privacy and confidentiality, data collection can be suspended until a more appropriate time becomes available.

What procedures will you use in the event that research questions/processes produce observable stress/distress in subjects?

Participants will be encouraged to ask questions at any time and reminded of their rights to stop participation.

Will you compensate study subjects?

Yes

Detail the proposed compensation (monetary and/or non-monetary) for each research procedure and population

Each participating teacher will receive \$1000 per semester for their completion of research participation.

Student incentives must be appropriate, equitable, and reasonable in amount. All staff incentives are limited to \$50 or less in a given year. Any amount in excess will require the secondary employment form to be completed by staff participants, or otherwise have the amount allocated to the school.

Describe when and where study subjects will be compensated and detail the mechanisms that will be in place to ensure study subject privacy when distributing compensation.

A check will be mailed to each participating teacher by UIC. There is a minimal risk of breaching privacy of participants.

Describe the compensation schedule for participants that withdraw from the research or that are withdrawn from the research by the study team.

The compensation will be prorated.

Study Recruitment

Outline every aspect of the recruitment process for students.

Researchers will work with consenting teachers to schedule student recruitment meetings in their science classrooms. At the recruitment meetings, we will provide the Student Research Recruitment Info Sheet, review the research information with students, and answer questions about the research. We will provide the consent forms and provide quiet time to read the form, followed by a period for subjects to ask questions about the form. We will remind subjects that they can withdraw from the study at any time, without consequences. We will invite them to pose questions to us directly at the meeting or privately via email or phone. Subjects may return their consent forms at the end of the recruitment meeting, or privately at a later date after their questions have been answered.

Outline every aspect of the recruitment process for teacher participants.

We will set up a research recruitment meeting for teachers who teach in the school we identified. PI Ryu will provide the Research Recruitment Info Sheet, review the research information with participants, and answer teachers' questions about the PD and the research. We will provide the consent form and provide quiet time to read the form, followed by a period for teachers to ask questions about the form. We will remind teachers that: 1) consenting to participate in the research is NOT required to attend the PD; 2) they can withdraw from the study at any time, without consequences (e.g. they can continue to attend the PD even after they withdraw from the research). Teachers may return their consent forms at the end of the recruitment meeting, or privately at a later date after their questions have been answered, before the PD begins.

Outline every aspect of the recruitment process for non-teacher staff participants.

Same as teacher participants.

Please attach all recruitment materials not attached elsewhere (Optional).

Student recruitment info sheet Recruitment Materials
Teacher recruitment info sheet Recruitment Materials

Please attach all consent/assent forms associated with this study not already attached elsewhere (Optional).

No answer provided.

Identify study team members who will recruit subjects.

PI Ryu

Will this research involve screening procedures

No

Compliance

FERPA

For more information on FERPA, click here.

Is any aspect of this research subject to FERPA?

No

ISSRA

For more information on ISSRA, click here.

Is any aspect of this research subject to ISSRA?

No

PPRA

For more information on PPRA, click here.

Is any aspect of this research subject to PPRA?

No

Permission, Confidentiality, and Security

Attach a draft of the permission letter that will be sent to school Principals

No answer provided.

Please note that Principals have final authority over what happens in their schools.

How will you protect the privacy of prospective research subjects? Please detail how study subject privacy will be protected during recruitment, screening, consent, and all research procedures. Provide an accounting for all applicable research procedures and study populations.

To protect the identification of teacher subjects by other teachers who attend the (group) recruitment meetings but choose not to participate in the study, we will invite teachers to return their consent forms to researchers in private, at a later time/date. Alternatively, teacher subjects may choose to forgo group recruitment meetings altogether, and instead receive research recruitment information from the researchers individually and privately. Researchers will not reveal which teachers have or have not consented to participate. Furthermore, during the study interviews will be conducted in a private room (other than the PD room), and arrangements for interviews will be made privately with each research participant, rather than publicly during the PD.

To protect teachers who attend the PD but who do not consent to the research from the researchers using any data about them, we will take active measures to exclude them from data collection. Specifically, we will seat them off camera during the PD, we will not interview them, and we will not copy their PD artifacts. Despite these measures, their voices may be captured by the video camera during the PD. Such data from non-subjects will not be transcribed nor included with the research data.

To protect the privacy of admin/staff subjects, we will hold recruitment meetings with individual subjects and will not reveal who has consented to participate.

To protect the privacy of student subjects, we will invite students to return their consent forms to researchers directly, and we will not reveal who has consented to participate.

Describe the data confidentiality or security provisions that will be in place for all research data.

All data will be stored in Box, UIC-authorized secure cloud, and PI's password-protected computer. Each subject will receive a unique identifier. This identifier will be linked to their identity on a Master Key that will be stored in the PI's locked office in the UIC Chemistry department. The file titles of all digital data will use this unique code/pseudonym (rather than participants' names) and will be securely stored (as described above). After data analysis, the subject Master Key will be destroyed by the PI. Artifacts produced by research subjects will be stripped of identifiers and replaced with pseudonyms/codes before being used for research purposes. Subject artifacts will be protected against unauthorized access by securely storing them in the same manner as the Recording Media (described above).

How will you store participant data?

With direct identifiers
With codes

These details must be included in all applicable consent forms

List the identifiers that will be stored and explain if identifiers will be deleted at a later date

Videorecordings and audiorecordings from PD meetings and interviews will include participants' face and voice, which can directly identify the participants. Due to the nature of the data, there is not way to completely delete the identifiers. After the completion of data analysis, the video/audio data will be deleted.

Describe the coding mechanism, indicate where links to codes will be stored, identify the individuals who will have access to coding keys or links, and clarify if codes will be deleted at a later date.

Each subject will receive a unique code. This code will be linked to their identity on a Master Key that will be stored in the PI's locked office in the UIC Chemistry department. The file titles of all digital data will use this unique code/pseudonym (rather than participants' names) and will be securely stored (as described above). After data analysis, the subject Master Key will be destroyed by the PI.

Will you keep participants' contact information on file after the data have been collected?

No

Will you share individual-level data with other researchers or practitioners beyond the designated key research personnel?

No

What will you do with the data once the research has been completed (choose all that apply)?

Other

Please note that the district discourages storing study data for longer than three years after study completion.

Please describe other plans for research data after your study is completed. Please be specific about timeline (i.e. how long) for retaining data.

All data will be deleted after the completion of data analysis.

Attachments

Please attach all miscellaneous attachments

No answer provided.

If you are resubmitting your protocol following initial review, please attach your response letter here.

Are there any additional finalized contracts or agreements associated with this research that have not been attached elsewhere as part of this application (e.g. CPS Data Authorization Agreements)?

No

Are there any pending (i.e. not yet signed by both parties) contracts or agreements associated with this research that have not been attached elsewhere as part of this application?

No

Acknowledgements

Acknowledgements

Please acknowledge the following:

- ✓ All parts of this submission are accurate, complete, consistent, and clear.
- ✓ I have accurately and completely described all intended human subjects research procedures and the populations with whom they will be carried out.
- ✓ I have attached all study materials, including, but not limited to, all materials that will be given to, sent to, read to, or otherwise used with all prospective study subject populations.
- ✓ This submission adhere to all CPS policies and guidance as outlined in the link below
<https://www.cps.edu/about/district-data/conduct-primary-research/>
- ✓ I have accurately identified all personnel who will be involved in this study.
- ✓ I acknowledge that any/all changes required by the CPS RRB in the course of its review of this submission will be reported to my IRB of record during the entire lifetime of this study.
- ✓ I attest that I will work with my IRB of record to address any concerns raised in the review of this submission.
- ✓ I attest that all of the research procedures detailed in this submission have been carried out with prospective IRB review and approval.
- ✓ I agree to comply with all background check and volunteer procedures required of my study, per the official CPS Volunteer Policy (link provided below):
<https://policy.cps.edu/download.aspx?ID=272>

Submission Date

09/20/2022

All RRB new submissions, modifications, continuing reviews require a \$50 processing fee. Please click on the following link to access our payment system. You will need to reference your assigned RRB number listed below:

CPS RRB/Data Request ePay System

Once you navigate to the Illinois E-Pay Site, please click on the blue text "RRB / Data Request Payment Option " to display the appropriate payment options. Once selected, your total will be displayed. Do not attempt to type in your total manually.

RRB #

2021-1584-CPS

Payment Confirmation Number

20000101

Verification of Previously Approved RRB
- Submitted 10/27/2022 3:07 PM ET by Corson, Adam

Office Verification

Ready for processing?

Ready for processing

Verify RRB #

2021-1584-CPS

Please indicate which of the following applies.

Project Currently Exists within IRBManager

Office RRB # Lookup

2021-1584-CPS

Load Initial Submission into IRBManager
- Submitted 10/27/2022 3:07 PM ET by System, The

Load CR/Mod into IRBManager

- Submitted 10/27/2022 3:07 PM ET by System, The

CR/Mod Processing
- Submitted 10/27/2022 3:10 PM ET by Corson, Adam

CR/Mod Processing

Ready for Review

Approve

Approval Date

10/27/2022

Approval Period (in number of months)

12

Existing Background Check Level

N/A

Existing Background Check Justification

N/A

Does background check level need to be updated?

Yes

Updated Background Check Level

Level I

Updated Background Check Justification

Interactions with staff and students

Please update the existing background check justification as needed.

Notes for Letter

No answer provided.

RRB Meeting Date for Notification

11/18/2022

Current School Sites

609733 - Roger C Sullivan High School

School Sites Chosen Within Data Entry

Roger C Sullivan High School

School Contacts for Sites Chosen

H Thomas, Chad

Email: CHAdams2@cps.edu

Phone:

Are the Supplementary Sites the same?

True

Administrative Reviewer

Corson, Adam

Email: ACorson1@cps.edu

Phone:

Determination Letter Finalization**- Submitted 10/27/2022 3:17 PM ET by Corson, Adam****Review Generated Letter and Confirm Before Sending****RRB #**

2021-1584

Study Title

Professional Development for K-12 Science teachers in Linguistically Diverse...

Principal Investigator

Ryu, Minjung

Email: mjryu@uic.edu**Phone:****Redisplayed Board Determination****Determination Letter**

In some cases you may see other determination letters attached by the submitter. However, only the generated determination letter will be sent in the decision email.

Name	Type	Date
RRB#2021-1584-Minjung Ryu 2022-10-27.docx	Determination Letter	10/27/2022

This determination letter will be automatically attached to an email being sent to the principal investigator.

Please use the link below, click on the Attachments link on the left side of the page if you need to upload an edited version of the above letter.

Modification/Continuing Review defined 10/27/2022

Output Background Check Level

N/A

Additional Attachments to Decision Email*No answer provided.*

Notes for Determination Email

No answer provided.

Study Site Contact Background Check Expirations

Name	Role	Background Check Expiration
Decker, Laura	District Supporter	Missing
Ryu, Minjung	Coordinator	Missing
Ryu, Minjung	Principal Investigator	Missing

Please use the text box above to indicate the background check level required or any other pertinent information.

Level I

Background Check Level Justification

Interactions with staff and students

Other Notes in Letter

N/A

RRB Meeting Date for Acknowledgment of Final Determination

11/18/2022

Please select the next meeting date of the RRB.

Please enter the date by which the coordinator should submit the Data Use Agreement. Automatic notifications will be sent out based upon this date.

11/30/2022

Professional development for K-12 science teachers in linguistically diverse classrooms

Admin Staff Interview Protocol

Thank you for your willingness to participate in this research interview, which is part of the Professional Development for K-12 Science Teachers in Linguistically Diverse Classrooms research study. This interview will help the research team to better understand the ways in which participating teachers make meaning of the professional development program in which you attended.

This interview should take about 60 minutes. You are free to skip any questions that you do not wish to answer with no negative consequences.

This interview is semi structured, which means that in addition to the specific questions (below) that I have pre-planned to ask you, I may ask additional follow up questions to better understand your thinking.

Your responses will be kept confidential.

Let's begin:

1. What is your role in the district?
2. What supports/professional development have teachers in this school been offered in terms of teaching linguistically diverse students?
3. What kinds of teaching practices have you observed in your school in terms of teaching linguistically diverse students?
4. What challenges do you and/or your teachers face in terms of supporting linguistically diverse students?
5. What are some resources that are available to you and/or your school's teachers in terms of supporting linguistically diverse students?

Professional development for K-12 science teachers in linguistically diverse classrooms

Student Interview Protocol A

Thank you for doing this research interview, which is part of the Professional Development for K-12 Science Teachers in Linguistically Diverse Classrooms research study. This interview will help the research team to better understand how students in schools like yours learn science best.

This interview should take about 60 minutes. You can skip any questions that you do not want to answer with no negative consequences.

This interview is semi structured, which means that in addition to the specific questions (below) that I have pre-planned to ask you, I may ask additional follow up questions to better understand your thinking.

Your responses will be kept confidential.

Let's begin:

1. What science classes have you taken?
2. What do you like and do not like about your science classes?
3. What are challenges in learning science?
4. What do you do when you have difficulties in learning science?

Professional development for K-12 science teachers in linguistically diverse classrooms

Teacher Interview Protocol A

Thank you for your willingness to participate in this research interview, which is part of the Professional Development for K-12 Science Teachers in Linguistically Diverse Classrooms research study. This interview will help the research team to better understand the ways in which participating teachers make meaning of the professional development program in which you attended.

This interview should take about 60 minutes. You are free to skip any questions that you do not wish to answer with no negative consequences.

This interview is semi structured, which means that in addition to the specific questions (below) that I have pre-planned to ask you, I may ask additional follow up questions to better understand your thinking.

Your responses will be kept confidential.

Let's begin:

1. What is it like to teach science in such a linguistically diverse school?
2. What professional learning opportunities and/or other kinds of support have you been offered in terms of teaching English learners?
3. What kinds of instructional strategies do you use to support English learners?
4. What kinds of assessments do you use with English learners?
5. How do you collaborate with others to support English learners in your classroom?

Professional development for K-12 science teachers in linguistically diverse classrooms

Teacher Interview Protocol B

Thank you for your willingness to participate in this research interview, which is part of the Professional Development for K-12 Science Teachers in Linguistically Diverse Classrooms research study. This interview will help the research team to better understand the ways in which participating teachers make meaning of the professional development program in which you attended.

This interview should take about 60 minutes. You are free to skip any questions that you do not wish to answer with no negative consequences.

This interview is semi structured, which means that in addition to the specific questions (below) that I have pre-planned to ask you, I may ask additional follow up questions to better understand your thinking.

Your responses will be kept confidential.

Let's begin:

1. What did you like about the PD program? Why?
2. What did you not like about the PD program? Why?
3. What would you like to do or learn more about in the PD program?
4. What have you learned through the PD program?
5. How will your participation in the PD impact your teaching?



**Initial Review Application: Social,
Behavioral, and Educational
Research**

201 AOB (MC 672)
1737 West Polk Street
Chicago, IL 60612-7227
Phone: 312 996-1711

<http://research.uic.edu/compliance/irb>

Version: 5.1; Date: 01/21/19

Date application completed by the Investigator: August 10, 2021

I. Research Title: Professional development for K-12 science teachers in linguistically diverse classrooms

II. Personnel

A. Principal Investigator (PI)

Name (Last, First) Ryu, Minjung	Degree(s) Ph.D.	Net ID (e.g., NetID@uic.edu) mjryu
Department Chemistry, Learning Sciences Research Institute	College Liberal Arts & Sciences	University Status <input type="checkbox"/> Student/Fellow/Resident <input checked="" type="checkbox"/> Faculty/Staff
Phone Number (312) 355-8055	UIC E-mail Address mjryu@uic.edu	

B. Faculty Sponsor – Complete only when PI is a student, fellow, or resident

Name (Last, First)	Degree(s)	Net ID (e.g., NetID@uic.edu)
Department	College	
Phone Number	UIC E-mail Address	

C. Primary Contact In Addition to PI – Complete only if the primary contact person is different than the PI

Name (Last, First)	Net ID (e.g., NetID@uic.edu)
Phone Number	UIC E-mail Address

☐ Principal Investigator grants this personnel access to OPRS Live for this protocol

D. List all co-investigators and key research personnel on [Appendix P](#) and upload with this application packet.

III. Performance Sites

Definition of a Performance Site: A performance site is a location at which the research is conducted, data is gathered from subjects and/or records, and/or subjects are consented into the research. Sites are performance sites whether the research activities there are funded or not funded.

A. Are there non-UIC performance sites?

- ☐ No – *Skip to Section IV.*
☒ Yes – Complete [Appendix K](#) and upload with this application packet

IV. Research Funding

A. Is this research funded?

- ☐ No – *Skip to Section V.*
☒ Yes
☐ Pending

B. Check all of the appropriate boxes for funding sources (including pending sources) for this research. If the study is supported by more than one funding source, complete and upload [Appendix Z](#) for each additional funding source.

- ☒ Federal Agency Name: **National Science Foundation**
☐ Foundation Name:
☐ State Agency Name:
☐ Department of Defense – Complete [Appendix Q](#) and upload with this application packet
☐ Sub-contract from non-UIC agency or institution: Name:
☐ Other - Name:

C. Funding Identification:

1. Institutional Proposal (IP) Number: **00534101**
2.
 - a. Name of the PI on the grant or contract received directly from the sponsor: **Minjung Ryu**
 - b. Is the PI of this grant or contract affiliated with UIC?

☐ No – Identify the agency or institution with which the above PI is affiliated:
 Explain the relationship between that agency or institution and UIC:

☒ Yes
 - c. Grant, contract or sub-contract title: **Professional development for K-12 science teachers in linguistically diverse classrooms**
 - d. Grant, contract or sub-contract number: **1813937**

V. Conflict of Interest (COI)

All investigators must disclose all real, apparent, or potential Significant Financial Interest (SFI) to the IRB. For more information, see the [Investigator Conflict of Interest Disclosure Policy for Human Subjects](#).

A. Disclosure

1. At present or in the 12 months prior to this disclosure, did or does any investigator or investigator's family members have a significant financial interest (SFI) with the research sponsor or any subcontract recipient; or have a SFI reasonably related to a product (e.g., drug, device, method, treatment, etc.) that is the subject of the research; or have any other relationships (e.g. fiduciary, even if uncompensated) that may present a potential conflict of interest with this research?

☒ No
☐ Yes – See Section B below.
2. Are you aware of an institutional conflict of interest with this study?

- ☒ No
☐ Yes – See Section B below.

B. Management

If **YES** is checked for any of these questions, complete the disclosure and management plan via START myDisclosures application (<https://myresearch.uillinois.edu/myDisclosures/>). Guidance can be found on the COI website at <http://research.uic.edu/compliance/coi> under “Managing Conflicts”. Final IRB approval of the research cannot be provided until a management plan is in place and is approved by the IRB. For additional assistance contact the COI Office at (312) 996-3642 / (312) 996-4070 or email coi@uic.edu.

VI. Protocol Components

- A. Provide a description of the background and rationale for the proposed research. Cite appropriate literature to support the relevance and importance of this research.

Linguistic diversity in U.S. schools has increased due to the arrival of immigrants and refugees from around the world. Nearly 10% of the U.S. K-12 student population speak English as a second or third language and are still developing English proficiency (National Center for Education Statistics [NCES], 2017). While 77% of English learners (ELs) speak Spanish as their first language (L1), increasingly more ELs speak other languages than Spanish, such as Arabic, Chinese, Vietnamese, Hmong, and Somali. These changes have led to linguistically superdiverse classroom contexts (Creese & Blackledge, 2015), in which students speak multiple non-English languages with varying levels of proficiency in English, L1, and content area literacy. U.S. schools face an urgent need to support all ELs as they become independent members of a 21st century workforce while leveraging their rich and diverse cultural and linguistic resources and guide teachers in doing so (Suárez-Orozco, 2001).

Research on science education for ELs has recommended several effective teaching approaches, such as building on students’ diverse and rich resources, engaging students in authentic science learning practices, and encouraging and valuing flexible use of multiple languages (Bruna & Gomez, 2009; Lee, 2002; Swanson, Bianchini, & Lee, 2014; Warren, Ballenger, Ogonowski, Roseberry, & Hudicourt-Barnes, 2001). However, most research has focused on teaching speakers of Spanish in elementary and middle school level science classrooms in which a majority of ELs speak the same language (for exceptions, see Domínguez, Allestaht-Snyder, & Latimer, 2017; Roseberry, Ogonowski, DiSchino, & Warren, 2010; Upadhyay, 2009). Furthermore, while many professional development (PD) programs supporting science education for ELs provide a short-term workshop with newly designed curriculum and curriculum guide, there is a lack of PD models that engage teachers in a sustained community of practice through collaboration between researchers and teachers (Oliveira & Weinburgh, 2017).

To fill this gap in the literature and practices, the proposed project, Professional development for K-12 science teachers in linguistically diverse classrooms, will engage science and English as a New Language (ENL) teachers in a sustained professional

development (PD) program embedded within their everyday classes, designed for a linguistically superdiverse group of ELs. This project is expected to aid teachers in transforming their teaching materials and instructional practices to foster science learning of ELs. We will draw on research-based science teaching practices that foster linguistic minority students' learning of science and in-service teacher PD practices that ensure teachers' sustained growth and instructional transformation. An innovation in this project is to provide collaboration opportunities between the science and ENL departments, as such collaboration is often scarce or superficial, despite frequent recommendations from the research literature (National Academies of Sciences, Engineering, and Medicine, 2018).

- B.** State the research objectives/hypothesis being explored by the current research. Please include primary and secondary aims.

This study will occur in multiple phases. The overarching research objectives of the (complete) study are:

- 1. Identifying instructional materials and practices that foster ELs' science learning in superdiverse high school classrooms**
- 2. Understanding how teachers in linguistically superdiverse high schools learn to adopt these materials and practices**
- 3. Examining the impacts of the proposed PD programs on ELs' participation and learning**

Phase 1 of this study focuses on Research Objectives 1 and 2.

Phase 2 focuses on Research Objectives 1, 2 and 3.

Note: the dates of each phase (and each activity within the phases) are to be determined (TBD), based on COVID-19-related guidelines from the State of Illinois, UIC, and CPS.

- C.** Clearly describe the study design/intervention. The description should demonstrate how the stated objectives will be met.

This multi-phase project (within which this study is situated) includes both "standard or innovative educational practices" and research activities. In Phase 1 the "standard or innovative educational practices" include a five-day PD workshop focused on fostering ELs' science learning in a linguistically superdiverse high school. In Phase 2, the PD takes the format of ongoing cycles of Lesson Study (described in VI.D. below), followed by another 5-day PD workshop (all dates TBD). The research activities in Phases 1 and 2 include collecting multiple forms of data to achieve the research objectives (see below).

Objective #1 will be met by studying the existing educational practices of the school, and the PD program (Phases 1 and 2), where teacher participants will develop, implement and evaluate materials and practices that foster ELs' science learning. Research data will include videorecordings of the PD workshop (Phases 1 and 2) and lesson study meetings (Phase 2), audio-recorded interviews with teachers, school and district administrators and staff (Phases 1 and 2) and students (Phase 2 only), a focus

group for teacher subjects who participated in the PD (Phases 1 and 2), and digital images of artifacts produced by teachers and students (Phases 1 and 2).

Objective #2 will be met by studying the PD program (Phases 1 and 2). Research data will include videorecordings of the PD program (workshops and lesson study cycles, Phases 1 and 2), interviews with teachers (Phases 1 and 2), admin/staff (Phase 2) and students (Phase 2) , a focus group for teachers (Phases 1 & 2), and digital images of artifacts produced by teachers and students (Phases 1 and 2).

Objective #3 will be met by studying the PD program (summer workshops and Lesson Study cycles) and conducting interviews, during which teachers and students will reflect on ELs' participation and learning.

- D. Describe in chronological order all the tasks/tests or procedures subjects will be asked to complete in participating in this research. Distinguish between tasks performed solely for research and those being performed for non-research purposes.**

Due to COVID-19 pandemic and CPS closure for face-to-face instruction, all professional development and research activities have been administered fully online via UIC Zoom or UIC Google Meet (hereafter, Zoom and Google Meet respectively). As CPS reopens in-person instruction, the team will gradually transition to hybrid research, in which professional development and research activities will be administered remotely and/or in-person depending on the needs and CPS reopening policy. The specific decision will be made in consultation with CPS Research Review Board and Sullivan High School. All PD and data collection plans will remain the same as stated in the initial review application.

Phase 1 (August 2019 - Summer 2021):

Tasks performed for non-research purposes:

- Fall 2019-January 2020: A non-research period to identify a partner school.**
- February 2020-TBD: In order to understand the existing standard education practices in place at the partner school, we will visit classrooms at the partner school, talk informally with teachers, take written notes of our visits, and collect teachers' curricular artifacts. These notes and artifacts will be used for tailoring a PD program to meet the school's existing needs. (As described below, teachers may also consent to the research team entering these notes and artifacts into the research data. Without teachers' consent, the notes and artifacts will only be used for designing the PD, and not for research purposes.)**
- Date TBD: Teachers from the partner school will be invited to attend a 5-day PD workshop that introduces materials and practices that foster ELs' science learning in superdiverse high school classrooms. (The PD program itself is a non-research "standard or innovative educational practice," and teachers may participate in the PD without consenting to participate in the research.) This workshop will occur outside of school hours, no students will be present, and will conclude with a focus group conducted by an external evaluator. Audio recordings of the teacher focus group**

(performed by an external evaluator) will be collected for evaluative (non-research) purposes only. A five day PD workshop will be spread out throughout the academic year. The total time commitment will remain the same. The detailed schedule will be determined through discussions with the participating teachers and school administrative staff. The online meeting will be recorded.

Tasks performed solely for research purposes:

- **February 2020 - date TBD:** an ethnographic research period to understand the school's existing standard educational practices. Includes classroom observations (field notes), digital copies of teachers' existing curricular materials, and/or an audio-recorded research interview with teachers and school/district administrators/staff regarding their experiences supporting learning in a linguistically superdiverse school.
- **Date TBD:** teachers who participate in the PD will be asked to: allow us to video- and audio record them during the 5-day PD workshops; allow us to make digital copies of all the materials that they created during the PD; participate in a research interview (in the weeks following the 5-day PD workshop).

Phase 2: (Fall 2021 - Summer 2022)

Tasks performed for non-research purposes:

- **Dates TBD:**
 - All science teachers at Sullivan High School will be invited to participate in a PD program consisting of ongoing cycles of "Lesson Study" (Lewis et al., 2004). Each cycle will consist of 4 steps, each of which lasts approximately 90 minutes, maximum one step per week:
 1. co-planning a lesson
 2. co-planning how that lesson will be observed by those not teaching it
 3. teaching, observing and video recording the lesson in one of the PD participants' science classrooms
 4. reflecting on the lesson using participants' observations, video recordings and student work from Step 3.
 - This PD program itself is a non-research "standard or innovative educational practice," and teachers may participate in the PD without consenting to participate in the research. Likewise, students of participating teachers may engage in the classroom lessons (in Step 3) without consenting to participate in the research.
 - Steps 1, 2, and 4 of each cycle will occur outside of school hours, no students will be present.
 - As part of Step 3 (teaching the lesson), the lesson will be video recorded solely for PD purposes, to be used in Step 4 of the PD. (The classroom videos will NOT be used as research data.) We will follow standard CPS protocol to ensure that students who have not submitted the standard CPS media permission form will not be video recorded (e.g. they will be seated off camera).

- During hybrid lesson study cycles (due to the public health guidelines from the States of Illinois, UIC, and CPS during the COVID-19 pandemic), planning meetings will be done remotely while teaching and observation will be done in person. The research team will videorecord the classroom for PD purposes. Participating teachers will identify students who have not submitted the standard CPS media permission form. These students will not be captured in the videorecording.
- In May 2021, a focus group will be conducted by an external evaluator. Audio recordings of the teacher focus group will be collected for evaluative (non-research) purposes only.
- **Dates TBD:**
 - All Sullivan science teachers will be invited to attend a 5-day PD workshop that engages teachers in developing materials and practices that foster ELs' science learning in superdiverse high school classrooms. (The PD program itself is a non-research "standard or innovative educational practice," and teachers may participate in the PD without consenting to participate in the research.) This workshop will occur outside of school hours, no students will be present, and will conclude with a focus group conducted by an external evaluator. Audio recordings of the teacher focus group will be collected for evaluative (non-research) purposes only. Depending on the public health condition and State of Illinois, UIC, and CPS's guidelines, the workshop may be modified. The total time commitment will remain the same. The detailed schedule will be determined through discussions with the participating teachers and school administrative staff. The online meeting will be recorded.

Tasks performed solely for research purposes:

- **Dates TBD:**
 - TEACHER subjects who participate in the PD will be asked to: allow us to video- and audio record them during the PD program described above; allow us to make digital copies of all the materials that they created during the PD program; participate in 1-2 audio-recorded research interviews (Phase 2 Interview #2 will serve as a follow-up to Phase 2 Interview #1). Note: the video recorded in Step 3 of each cycle of Lesson Study (teaching the lesson) WILL NOT be used for research purposes. Furthermore, we will take measures during Step 4 (reflecting on the lesson) to ensure that the non-research video recorded during Step 3 does NOT appear in the research data (e.g. During Step 4 of the PD, if the group watches the non-research classroom video recorded during Step 3, we will make sure that the monitors showing the classroom video are pointed away from the video cameras that are collecting research data.)
 - TEACHER subjects who do NOT participate in the PD will be asked to participate in an audio-recorded interview.
 - STUDENT subjects will be asked to allow us to make digital copies of classroom work, and to participate in 1-2 audio-recorded research

interviews. (Note: Student Interview Protocol A focuses on students' general experiences in a linguistically superdiverse school, and can be used with any student enrolled in a science class at the partner school. Student Interview Protocol B Focuses on students' experiences engaging in the lessons implemented as part of the PD program, and will be used only with students who are enrolled in classes where the teacher is participating in the PD.) Given that students are English language learners, they will be given the option of having an interpreter present during student interviews. (These interpreters will sign confidentiality agreements. Their names, affiliations, and other required contact information will be provided to IRB)

- ADMIN/STAFF subjects may be asked to participate in 1-2 audio-recorded interviews. (The number of interviews will vary from subject to subject. Any interviews conducted after the subjects' first interview (which could occur during Phase 1 or Phase 2, depending when the subject is identified) will serve as a follow-up to clarify or elaborate on responses provided during interview 1.
- **Dates TBD:**
 - Teacher subjects who participate in the 5-day Summer 2021 PD workshop will be asked to: allow us to video- and audio record them during the workshop; allow us to make digital copies of all the materials that they created during the workshop; participate in a research interview (in the weeks following the workshop).

E. Describe the plans for data analysis. If applicable, include statistical considerations and justification for subject population and planned enrollment numbers.

In order to meet our three research objectives above, we pose the following 3 research questions, which correspond to Objectives 1, 2, 3 above:

- 1. What are key elements of teaching materials and instructional practices that support ELs' learning in superdiverse science classroom settings?**
- 2. How do teachers in linguistically superdiverse high schools learn to adopt these practices and materials?**
- 3. What are the impacts of the innovative PD model on students' participation and learning?**

In Phase 1, we will focus on research questions #1 and 2 (and Objectives 1 and 2). In Phase 2, we will focus on research questions 1, 2 and 3 (and Objectives 1, 2 and 3). Our research data will include videorecordings of professional development activities (teachers only), interviews with participants (Phase 1: teachers and admin/staff only; Phase 2: teachers, school/district administrators and staff, and students), and digital images of artifacts produced by participants (Phase 1: teachers only; Phase 2: teachers and students). Analysis of each data type and the Research Objectives to which it corresponds are described below:

Videorecordings: Videorecordings of the PD program in Phases 1 and 2 will be used to address Research Questions 1, 2 and 3. We draw on approaches from (mediated) discourse analysis (Bucholtz & Hall, 2005; Kelly & Crawford, 1997; Jones & Norris, 2005; Wortham & Reyes, 2015), ethnography (Gordon, Holland, & Lahelma, 2001; Holland, Skinner, Lachicotte, Jr., & Cain, 1998), and video analysis (Derry et al., 2010). The research team will: 1) watch the videorecordings in their entirety, 2) select key events from video recordings that provide insights into each research question, 3) write analytic notes for the selected events, and 4) create a matrix that documents selected events, themes generated from the analysis, and target research questions that each episode can potentially answer.

Interviews: We will use interview data to address research question 1, and supplement analysis of video recordings to address research question 2 and 3. Interviews will be transcribed and coded. We will listen to, transcribe, and code audio-recorded interviews for emerging themes. We will create a matrix that maps selected segments of interviews, themes generated from the analysis, and target research questions.

Digital images of artifacts: Artifacts (e.g. lesson plans and teacher reflection journal in Phase 1 & 2; student work in Phase 2) that are produced by participants during the ethnographic period and the PD program will be used to supplement the analysis of video recordings to address research questions 1, 2 and 3. We will generate themes to code segments of artifacts (as described above) and create a matrix to map selected segments of artifacts, themes generated from the analysis, and target research questions. During the pandemic and hybrid PD activities, the artifacts will be shared using secured Box folder. The participating teachers will upload their artifacts to a shared Box folder, so that the research team can have access to them.

F. Is this a [clinical trial](#)?

☒ No – *Skip to section VII*

☐ Yes - Is the research required to be registered on <http://clinicaltrials.gov>? For more information, refer to the UIC HSPP policy [Clinical Trials Registration](#)

☐ No

☐ Yes – Include the required language within the informed consent document.

VII. Research Records

A. Indicate the type(s) of data being collected and/or recorded (*check all that apply*):

☒ Interviews/Questionnaires

☒ Audio recordings

☒ Video recordings

☒ Photographs

☐ School/Student records

☐ Internet research data

☐ Lab, pathology and/or radiology results

☐ University of Illinois Hospital & Health System medical records

☐ Physician/clinic/hospital medical records from sources outside of UI Health System

☐ Psychotherapy Notes

☐ Billing records

☐ Data previously collected for research purposes

- ☒ Data containing no health information
☐ Study-generated health information
☐ Biological specimens
☐ Other. Describe:

B. Will any of the following be banked or stored for future (planned or unplanned) analysis **beyond the scope of the current research proposal**? *If the following will be used and/or destroyed prior to the closure of the research, they are not considered to be stored; therefore, please answer "No".*

- biological samples or specimens
 - identifiable data,
 - coded data where a master list to the codes exists
- ☒ No
☐ Yes – Complete [Appendix D](#) and upload with this application packet.

Note: A plan for securely storing the data must be submitted for IRB review and approval if identifiable and/or coded data will be retained after the research has been completed. Development of a separate data/tissue repository/bank research protocol is required if the investigator will be retaining data from multiple proposals.

VIII. Research Subject Population

A. Indicate the anticipated subject enrollment number (This number cannot be exceeded without prior IRB review and approval via an amendment): **730**

B. Indicate which populations below are the PRIMARY FOCUS of this research. *Please refer to the [UIC HSPP policies](#) regarding the incidental enrolment of select vulnerable populations (i.e., decisionally impaired, prisoners, etc.).*

Check all that apply

- ☒ Adults (18 years of age and older)
☒ Minors (17 years of age and younger) – Complete [Appendix B](#) (required regardless of primary or incidental enrollment) and upload with this application packet
☐ Pregnant Women, Neonates, Fetuses/Fetal Tissue – Complete [Appendix U](#) and upload with this application packet
☐ Prisoners – Complete [Appendix C](#) and upload with this application packet - **Please note that certain types of research with prisoners approvable under the federal regulations may not be allowed under Illinois state law including, but not limited to, biomedical research.**
☐ UIC Employees
☐ UIC Psychology Student Subject Pool -
 - Complete [Appendix S](#) and a debriefing document and upload with this application packet;
 - Complete and upload [Appendix B](#) if the research will involve Pool subjects who are minors. If minors will be excluded, then a scientific justification must be provided under item VIII.D.1.b, below.☐ UIC Management Study Pool - Complete [Appendix S](#) and a debriefing document and upload with this application packet
☒ Students - Complete [Appendix S](#) (required only if the research involves classroom activities and/or student records) and upload with this application packet
☐ Decisionally-Impaired - Complete [Appendix V](#) and upload with this application packet
☐ Economically and/or Educationally Disadvantaged
☐ Vulnerable to Coercion or Undue Influence
☐ Other: specify

C. If including economically and/or educationally disadvantaged subjects, subjects vulnerable to coercion or undue influence, UIC Employees, and/or other populations that may be considered

vulnerable, provide a rationale for their inclusion and what additional safeguards, if any, are in place to protect their rights and welfare:

In this study, teachers could feel undue influence to consent to the research if we required this consent in order to attend the PD. Teachers are included as participants in the study because they are crucial to answering the study's research questions. In order to protect their rights and welfare (and reduce this influence on their decision of whether to consent to the research), we are inviting ALL science and ELL teachers from the partner school to attend the PD program, regardless of whether they consent to participate in the research.

In addition, teachers may be vulnerable to coercion or undue influence by their principal to participate in the research. In order to protect their rights and welfare, we will ask the school principal to guarantee (to us and to all teachers who are eligible to participate in this study) that he or she will not, pressure, reward or punish teachers for choosing to participate or not participate in this study. Principals will be excluded from teacher recruitment meetings and the researchers will not reveal who has attended those meetings or consented to participate in the research.

Students could feel undue influence to consent to the research if it in any way impacted their course grade. Students are included as participants in the study because they are crucial to answering the study's research questions. In order to protect their rights and welfare (and reduce this influence on their decision of whether to consent to the research), we will ask the teachers to verbally guarantee (to us and to all students who are eligible to participate in this study) that they will not pressure, reward or punish students in any way for choosing to participate or not participate in this study. Researchers will not reveal which students have consented to participate in the research. Teachers will provide their verbal guarantee to the research team and to students during class following group recruitment meetings.

Admin/Staff could feel undue influence to consent to the research if it in any way impacted their performance evaluations. They are included in the study because they may be able to give alternative perspectives or information vital to answering the research questions. In order to protect their rights and welfare (and reduce this influence on their decision of whether to consent to the research), we will ask their supervisors to guarantee (to us and to the admin/staff they supervise) that they will not pressure, reward or punish them in any way for choosing to participate or not participate in this study. Researchers will not reveal which admin/staff have consented to participate in the research.

In compliance with State of Illinois's public health guideline and CPS's decision to offer all instruction remotely in the first quarter of 2020-21 academic year, all research activities will be administered online, including recruitment and informed consent process. This change is TEMPORARY to mitigate the changes made due to COVID-19 pandemic. As CPS returns to in-person instruction in 2021-2022, the research team will gradually transition to hybrid PD and research activities. Potential participants will be invited to an online meeting, and recruitment information sheets will be shared via

email prior to the meeting and discussed in the meeting. Consent forms will also be shared and thoroughly discussed during the recruitment meeting as well.

Consent forms will be collected electronically using Qualtrics, UIC approved online platform for informed consent process and data collection.

D. Eligibility Criteria

1. Provide specific details regarding the following:

- a. Inclusion Criteria: **Participants will include teachers and school/district administrators/staff (Phases 1 and 2), and students (Phase 2) at the partnership school and district (Roger C. Sullivan High School in the Chicago Public Schools district).**
 - **Eligible teacher participants will include people who teach at Sullivan. Maximum 20 teacher participants will be recruited.**
 - **Eligible admin/staff participants will include people who are school- or district-based staff or administrators who support science and/or ELL programs at Sullivan. Maximum 10 admin/staff participants will be recruited.**
 - **Eligible student participants will include people who are enrolled in science courses at Sullivan High School. Maximum 700 students will be recruited.**
- b. Exclusion Criteria: **People who are not teachers, students, staff or administrators at the partner school/district. Students from the partner school who are not enrolled in science classes.**

2. Explain how and by whom potential subjects will be assessed to determine their eligibility for the research: **Research team members will verify that all potential teacher subjects are eligible to participate by verbally verifying their status as Sullivan High School teachers with the partner school principal. Student subjects' eligibility will be verified by their presence in the school building and in the science classrooms. (The school has a very strict security procedure in which students must present their school ID to be admitted to the building, thus verifying that they are enrolled as a student in the school. In addition, all teachers take attendance at the beginning of each class period, which will serve as verification that the students present in the science classes are enrolled in a science class and thus eligible to participate in the study. Admin/staff will be verified using school/district websites.**

3. Explain how initial eligibility will be documented (upload any screening documents): **Initial eligibility will be documented by printing lists of Sullivan teachers, staff, admin and CPS administrators that are publicly accessible online, and highlighting the participants' names.**

4. Explain how subjects will be monitored during the course of the research to ensure that they still meet the eligibility criteria and how their continuing eligibility will be documented:

Teacher subjects who attend the PD will be monitored during the course of the research by comparing records of attendance at the PD workshop to the printed lists (of publicly accessible information) described above. Researchers will add initials to each subject's name during each day of the PD workshop and before each interview. Other teacher, admin and staff subjects' will be monitored by reviewing updated lists (or publicly accessible information) described above. Because of the school's strict security procedures for student admittance described above, student subjects will be monitored as eligible if they are present in science classrooms in the school building.

OR

☐ N/A – Assessment of continued eligibility is not required

IX. Recruitment of Subjects

A. Describe how potential subjects will be initially identified for this research study.

Identifying the partner school for engaging in the (NON-research) PD program (Aug- Oct 2019): We used public data (e.g. <https://www.illinoisreportcard.com>) about student demographics (e.g. ethnicity, % of ELs) of High Schools in the Chicago Public Schools to identify potential partner schools for the PD. (Looking for school populations with a high percentage of ELs and a number of ethnicities). Next, a UIC researcher(s) (not affiliated with this study) who has worked with CPS district-based science staff introduced us to these staff (via email). We met with these CPS staff to explain our project, gauge their interest, and to discuss which schools that we previously identified might make good matches for our project, based on known school needs and existing partnerships. We asked these district-based staff to connect us with the principals and district science specialists who serve these schools. (Note: In October 2019, Sullivan High School was identified as our partner school.

Identifying teachers to attend the (NON-research) PD (Nov 2019 - Jan 2020): Working with the principal and department chairs of the potential partner schools, we will set up informational meetings about the PD with teachers at a time and place that is mutually agreeable and in accordance with CPS teacher contracts. At these meetings, we will: 1) provide information about the PD, 2) answer teachers' questions about the PD, 3) seek input from the teachers about the needs of their schools and the ways in which the PD program might be tailored to fit the school's specific context. Based on the feedback we receive from teachers and principals from the Nov 2019 - Jan 2020 informational meetings about the PD, we will select a partner school for the PD (Sullivan High School) and begin non-research activities for the purpose of tailoring the PD program, including: informal visits, conversations and written notes.

Identifying TEACHERS who attend the PD to participate in the RESEARCH STUDY: All teachers who commit to the first 5-day PD workshop (dates TBD) will be identified as potential subjects for the research. At the Nov 2019-Jan 2020 informational meetings about the PD, we will also explain that: 1) all PD attendees will be invited to participate in a research study (at a later recruitment meeting, dates TBD); 2) Consenting to participate in the research is NOT required to attend the PD; 3) compensation will be provided for participating in the research (NOT the PD). (Note: Although the purpose of the Nov 2019-Jan 2020 informational meetings is to introduce the PD (and NOT the research), ethically we want to be up front with teachers from the very beginning about the presence and conditions of the study.) See "Science PD for ELs Admin Teacher meetings v1"

Identifying TEACHERS who do NOT attend the PD to participate in the RESEARCH STUDY: As we engage in the ethnographic study of the school, questions will arise that are best answered by teachers who do not attend (or do not plan to attend) the PD. We cannot precisely predict who this group will include but it is likely that we will identify people such as: science teachers who choose not to attend the PD, the special education teachers who co-teach with science teachers, and/or teachers of other subjects who collaborate with science teachers.

Identifying ADMIN/STAFF to participate in the RESEARCH STUDY: As we engage in the ethnographic study of the school (classroom observation, interviews with teachers), questions will arise that are best answered by individuals other than teachers. We cannot precisely predict who this group will include but it is likely that we will identify people such as: the school principal and/or assistant principal, classroom aides, district administrators in the STEM and ELL departments, and/or the district science coach who supports the school.

PHASE 2:

Identifying TEACHERS to attend the (NON-research) PD: In early Sept 2020, we will work with the principal and science department chair of the partner school to set up an informational meeting about the Phase 2 PD program at a time and place that is mutually agreeable and in accordance with CPS teacher contracts. At these meetings, we will: 1) provide information about the PD, 2) answer teachers' questions about the PD, 3) seek input from the teachers about the needs of their schools and the ways in which the PD program might be tailored to fit the school's specific context. See "Science PD for ELs Admin Teacher meetings v1"

Identifying TEACHERS who attend the PD to participate in the RESEARCH STUDY: All teachers who commit to the Phase 2 PD will be identified as potential subjects for the research. At the early Sept 2020 informational meetings about the PD, we will also explain that: 1) all PD attendees will be invited to participate in a research study; 2) Consenting to participate in the research is NOT required to attend the PD; 3) compensation will be provided for participating in the research (NOT the PD). See "Science PD for ELs Admin Teacher meetings v1"). (Note: Although the purpose of the early Sept informational meeting is to introduce the PD (and NOT the research), ethically we want to be up front with teachers from the very beginning about the presence and conditions of the study.) See "Science PD for ELs Admin Teacher meetings v1"

Identifying TEACHERS who do NOT attend the PD to participate in the research study: As we engage in the PD and research with some science teachers, questions will arise that are best answered by teachers who do NOT attend the PD. We cannot precisely predict who this group will include but it is likely that we will identify people such as: science teachers who choose not to attend the PD, special education teachers who co-teach with science teachers, and/or teachers of other (non-science) subjects who collaborate with science teachers.

Identifying ADMIN/STAFF to participate in the RESEARCH STUDY: As we engage in the PD and research with teachers, questions will arise that are best answered by individuals other than teachers. We cannot precisely predict who this group will include, but it is likely that we will identify people such as: the school principal and/or assistant principal, classroom aides, district administrators in the STEM and ELL departments, and/or the district science coach who supports Sullivan.

Identifying STUDENTS to participate in the RESEARCH STUDY: all students enrolled in science courses at Sullivan are identified as potential research subjects.

B. Describe how, where, when, and by whom subjects will be recruited for the research.

PHASE 1:

RECRUITING TEACHER SUBJECTS (who plan to attend the first 5-day PD workshop):

On a date yet to be determined, we will set up a research recruitment meeting for teachers who plan to attend the first 5-day PD workshop at the partnership school, at a time and place that is mutually agreeable and in accordance with CPS teacher contracts. (Only teachers who are planning to attend the first 5-day PD workshop will be invited to this research recruitment meeting.) PI Ryu and Postdoc Ricketts will provide the (attached) "Research Recruitment Info Sheet", review the research information with participants, (including time commitments, research consent, risks and benefits, participants' rights and protections, compensation) and answer teachers' questions about the PD and the research. We will provide the consent form and provide quiet time to read the form, followed by a period for teachers to ask questions about the form. We will remind teachers that: 1) consenting to participate in the research is NOT required to attend the PD; 2) they can withdraw from the study at any time, without consequences (e.g. they can continue to

attend the PD even after they withdraw from the research). We will invite them to pose questions to us publicly at the meeting or privately via email or phone. Teachers may return their consent forms at the end of the recruitment meeting, or privately at a later date after their questions have been answered, before the PD begins. (We request that subjects return these forms prior to the PD so that we may take active measures during the PD to protect teachers who do not consent to the study from having data collected about them. See the section on Privacy and Confidentiality for more information about these protective measures.)

RECRUITING TEACHER SUBJECTS (who do NOT plan to attend the first 5-day PD workshop): As potential teacher subjects (who do not plan to attend the PD) are identified, project staff will meet with them individually to provide the (attached) "Teacher Recruitment Sheet - Interview Only," review the research information with them (including time commitments, research consent, risks, benefits, rights and protections). We will provide the consent form and provide quite time to read the form, followed by a period for subjects to ask questions about the form. We will remind subjects that they can withdraw from the study at any time, without consequences. We will invite them to pose questions to us at the meeting and/or later via email or phone. Subjects may return their consent forms at the end of the recruitment meeting, or at a later date after their questions have been answered.

RECRUITING ADMIN/STAFF SUBJECTS: As potential admin/staff subjects are identified, project staff will meet with them individually to provide the (attached) "Admin/Staff Recruitment Info Sheet," review the research information with participants (including time commitments, research consent, risks and benefits, participants' rights and protections). We will provide the consent form and provide quiet time to read the form, followed by a period for subjects to ask questions about the form. We will remind subjects that they can withdraw from the study at any time, without consequences. We will invite them to pose questions to us at the meeting and/or later via email or phone. Subjects may return their consent forms at the end of the recruitment meeting, or at a later date after their questions have been answered.

PHASE 2:

RECRUITING TEACHER SUBJECTS (who plan to attend the Phase 2 PD): On a date yet to be determined, we will set up a research recruitment meeting at Sullivan, at a time and place that is mutually agreeable and in accordance with CPS teacher contracts. (Only teachers who are planning to attend the Phase 2 PD program will be invited to this research recruitment meeting.) PI Ryu will provide the (attached) "Research Recruitment Info Sheet", review the research information with participants, (including time commitments, research consent, risks and benefits, participants' rights and protections, compensation) and answer teachers' questions about the PD and the research. We will provide the consent form and provide quiet time to read the form, followed by a period for teachers to ask questions about the form. We will remind teachers that: 1) consenting to participate in the research is NOT required to attend the PD; 2) they can withdraw from the study at any time, without consequences (e.g. they can continue to attend the PD even

after they withdraw from the research). We will invite them to pose questions to us publicly at the meeting or privately via email or phone. Teachers may return their consent forms at the end of the recruitment meeting, or privately at a later date after their questions have been answered, before the PD begins. (We request that subjects return these forms prior to the PD so that we may take active measures during the PD to protect teachers who do not consent to the study from having data collected about them. See the section on Privacy and Confidentiality for more information about these protective measures.)

RECRUITING TEACHER SUBJECTS (who do not attend the PD): Same procedure as Phase 1, see above.

RECRUITING ADMIN/STAFF SUBJECTS: Same procedure as Phase 1, see above.

RECRUITING STUDENT SUBJECTS: On a date yet to be determined, researchers will work with science teachers to schedule student recruitment meetings in science classrooms. At the recruitment meetings, we will provide the (attached) "Student Research Recruitment Info Sheet", review the research information with students, (including time commitments, research consent, risks and benefits, participants' rights and protections, compensation) and answer questions about the research. We will provide the consent forms and provide quiet time to read the form, followed by a period for subjects to ask questions about the form. We will remind subjects that they can withdraw from the study at any time, without consequences. We will invite them to pose questions to us directly at the meeting or privately via email or phone. Subjects may return their consent forms at the end of the recruitment meeting, or privately at a later date after their questions have been answered.

- C. Explain the proposed measures to minimize the possibility of coercion or undue influence on potential subjects, particularly for subjects identified in VIII.B. as being vulnerable (*for example: how will you maximize the subject's autonomous decision-making; what if the investigator is also the participant's healthcare provider, what if the participant is enrolled in a class the investigator is teaching, what if an employer/employee relationship exists*).

In order to maximize teachers' autonomous decision-making, teachers will NOT be required to participate in the research in order to attend the PD. As such, any teacher who withdraws consent from the research during the PD can continue to attend the PD.

In addition, we will request that the principal verbally guarantee (to us and to the teachers) that there will be no consequences for teachers' participation or non-participation in the research, and that the principal will not attempt to coerce any teacher into participating in the research in any way. Furthermore, principals will not be invited to teacher research recruitment meetings, and the researchers will not reveal who has consented to participate in the research.

In order to maximize admin/staff's autonomous decision-making, researchers will assure potential subjects that we will not reveal (to their supervisors, nor to anyone) who has or has not consented to participate in the research.

In order to maximize students' autonomous decision-making, we will request that their teachers guarantee (to us and to the students) that there will be no consequences for participation or non-participation in the research, and that the teachers will not attempt to coerce any subject into participating in the research in any way.

Furthermore, researchers will assure students that we will not reveal (to teachers, nor to anyone) which students have or have not consented to participate in the research.

- D. Will any identifiable data obtained at recruitment, including screening data from records, be retained without consent from subjects who failed to qualify or declined to participate?

☒ No

☐ Yes – Describe the screening data to be retained and justify the retention of such data:

- E. **Check and upload all materials that will be used for recruitment.** Refer to the OPRS website for the [Investigator Guidance: Recruitment Materials](#) for additional information.

☐ No recruitment materials will be used

☒ Print materials (flyer, brochure, info sheets, etc.) – Describe: **(see attached) info sheets for: 1) teachers who participate in the PD, 2) teachers - interview only, 3) admin/staff and 4) students**

☐ Ad (radio, TV, etc.) – Describe:

☐ Letter – Describe:

☐ Verbal script – Describe:

☐ Electronic materials (e.g., website, mass mailing, email notice) – Describe:

☐ Social Media – Specify social media outlets:

☐ Other – Describe:

X. Reasonably Anticipated Risks of the Research

- A. Identify all of the reasonably anticipated risks or discomforts that may result from participation in this research (actual and reasonably possible, current and future) and describe the expected frequency, degree of severity, and potential reversibility of those risks (if known). *Remember that risks can be psychological, physical, social, economic, or legal.* If any portion of the research involves review of medical records, the potential for loss of privacy or confidentiality of health information should be listed as a risk.

There are some minimal potential risks to participants in this study. Risks may include self-consciousness of videorecordings during the PD program and anxiety or fatigue on the part of interviewees during interviews and focus groups. Furthermore, participants may risk being identified as participants in the study.

In online administration of this project, there are a few unique concerns of privacy and confidentiality. Videorecording of online meeting can end up recording participants' (both teachers and students) private space and sounds from other family members; the conversation between participants and the research team members can be heard by other family members. During the recruitment process, these possibilities will be fully discussed, and participants will be given an option to stop and reschedule any online meeting if unanticipated situation comes up that may potentially breach privacy and confidentiality of participants.

- B.** Describe the measures taken to minimize the risks (other than undue influence or breaches of privacy and/or confidentiality) listed above. *Measures may include screening of subjects by qualified personnel, eligibility criteria, use of procedures already being used for clinical purposes, qualifications and experience of staff performing procedures, specialized facilities or equipment, medical or psychological services that may be required as a consequence of the research and frequency of monitoring.*

To minimize the risks of self-consciousness during videorecording, all participants will be encouraged to ask the researchers questions throughout the duration of the study and will be reminded throughout the study that they may withdraw at any time without penalty. To minimize anxiety or fatigue during interviews, subjects will be informed that they can skip any questions, especially those they do not feel comfortable answering.

To minimize risk of breach of privacy and confidentiality during online data collection, participants will be encouraged to use a virtual background, mute their microphone while they are not talking, find a private space in their home (if they participate from home) where they can have a private conversation with a research team member. Participants will be also reminded that if an unexpected situation comes up that can potentially breach their privacy and confidentiality, data collection can be suspended until a more appropriate time becomes available.

- C.** Describe the process for reporting any unanticipated problems to the IRB and sponsor, as applicable. **Any unanticipated problems will be reported via email by PI Ryu to UIC's IRB and to the NSF Program Officer designated to this project.**

XI. Reasonably Anticipated Benefits of the Research

- A.** Identify the potential for benefits to individual subjects, including those related to an experimental intervention or interaction that are available only in the context of the research. *Please note that participation in Social and Behavioral Sciences research (such as interviews, focus groups, surveys) rarely presents a direct benefit to the subject. Unless a direct benefit to subjects is anticipated (such as an educational benefit from a new curriculum, therapeutic benefit from a new service/therapy), please state that no direct benefits to subjects are anticipated.*

There may be potential benefits to the participants of the study. During the process of interviews, participating teachers may reflect on their own teaching and learning practices and how they improve their practices. This reflection may impact their future teaching and learning within and beyond the project context.

- B.** Indicate how the knowledge gained from the study could produce a benefit to society or to others who share the same disorder or condition.

Potential benefits of the project to the society include new knowledge in science teaching and learning of culturally and linguistically non-dominant learners, and its implications for science teaching in superdiverse classroom contexts.

XII. Privacy and Confidentiality

- A. Describe the precautions taken to protect subject privacy during the initial identification of subjects, subject recruitment, and collection of data from the subjects (*for example: what precautions will be taken to protect the subject from being recognized as a research subject if recruitment or data collection occurs in a group setting or in public?*).

To protect the identification of teacher subjects by other teachers who attend the (group) recruitment meetings but choose not to participate in the study, we will invite teachers to return their consent forms to researchers in private, at a later time/date. Alternatively, teacher subjects may choose to forgo group recruitment meetings altogether, and instead receive research recruitment information from the researchers individually and privately. Researchers will not reveal which teachers have or have not consented to participate. Furthermore, during the study interviews and focus groups will be conducted in a private room (other than the PD room), and arrangements for interviews and focus groups will be made privately with each research participant, rather than publicly during the PD.

To protect teachers who attend the PD but who do not consent to the research from the researchers using any data about them, we will take active measures to exclude them from data collection. Specifically, we will seat them off camera during the PD, we will not interview them, we will not include them in the focus group, and we will not copy their PD artifacts. Despite these measures, their voices may be captured by the video camera during the PD. Such data from non-subjects will not be transcribed nor included with the research data.

Because some of the research data collection (e.g. video recording) occurs in a public setting (during the PD), some of the research subjects may be able to be identified by other research subjects, and by the PD attendees who do not consent to the research (based on the location in which the video camera is placed). In addition, because the focus groups are conducted with all research participants simultaneously, research participants will be able to identify other research participants.

To protect the privacy of teacher subjects who do not attend the pd, we will hold recruitment meetings with individual subjects and will not reveal who has consented to participate.

To protect the privacy of admin/staff subjects, we will hold recruitment meetings with individual subjects and will not reveal who has consented to participate.

To protect the privacy of student subjects, we will invite students to return their consent forms to researchers directly, and we will not reveal who has consented to participate.

Security in online meetings: To minimize a potential breach of security during online interviews and PD meetings, university-recommended online meeting practices will be employed (see guideline by UIC's ACCC: <https://answers.uillinois.edu/uic/page.php?id=99814>)

B. Data Security and Management Plan**1. Indicate the identifiable elements that will be collected and/or included in the research records.**

Check all that apply

- | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------|
| <input checked="" type="checkbox"/> Names | <input checked="" type="checkbox"/> Social Security Numbers* | <input type="checkbox"/> Device identifiers/Serial numbers |
| <input type="checkbox"/> Phone numbers | <input type="checkbox"/> Medical record numbers | <input type="checkbox"/> Web URLs |
| <input type="checkbox"/> Street address | <input type="checkbox"/> Health plan numbers | <input type="checkbox"/> IP address numbers |
| <input type="checkbox"/> City or state | <input type="checkbox"/> Account numbers | <input type="checkbox"/> Biometric identifiers ¹ |
| <input type="checkbox"/> Zip Code | <input type="checkbox"/> Fax numbers | <input type="checkbox"/> Vehicle ID numbers |
| <input checked="" type="checkbox"/> E-mail address | <input type="checkbox"/> License/Certificate numbers | <input checked="" type="checkbox"/> Facial Photos/Images |
| <input type="checkbox"/> Financial account information (including student ID) | | |
| <input type="checkbox"/> All elements of dates (except year) for dates directly related to an individual; and all ages over 89 and all elements of dates (including year) indicative of such age | | |
| <input type="checkbox"/> Date of Birth | | |
| <input type="checkbox"/> Identifiable UIC Student Records ² | <input type="checkbox"/> University Identification Number (UIN) | |
| <input checked="" type="checkbox"/> Any other unique identifier - Specify: voices in audio recordings | | |
| <input type="checkbox"/> None of the identifiers listed above – Skip to item C | | |

¹ Biometric Identifiers are observable biological characteristics which could be used to identify an individual, e.g., fingerprints, iris/retina patterns, and facial patterns.

² Documentation of approval from the Registrar must be submitted unless prospective signed consent is obtained from the student or guardian.

***NOTE:** If social security numbers will be collected, explain below why they are necessary and how they will be used:

UIC researchers will not collect Social Security Numbers or Taxpayer Identification Numbers from any participants. Rather, teachers who are eligible for compensation for their participation in the study will complete the Vendor Information Form found at <https://www.obfs.uillinois.edu/common/pages/DisplayFile.aspx?itemId=158853>. Eligible teachers will submit this paper-based form privately and directly to UIC's Office of Business and Financial Services (OBFS) via U.S. Mail or fax. All information on the form (including Social Security Numbers or Taxpayer Identification) is used for the sole purpose of compensation, it is not part of the research data.

2. Data Collection and Storage**a. Identify what methods you will use to collect and store data:**

- ☒ Internet-based application/package – Specify:
- ☐ REDCap [define host] ☐ CCTS/IHRP ☒ Other (define): **Purdue University Research Repository**
- ☐ UIC ACCC Qualtrics
- ☒ UIC Box
- ☐ UIC Box Health Data Folder (for research involving PHI)
- ☐ *Survey Monkey or other commercial survey service – Specify:
- ☐ *Other - A thorough description of the characteristics of the application/tool must be provided. This description should address the following elements if applicable: product/tool name, host, security measures, encryption mechanism, and how collected data is maintained and stored by the application/tool.
- ☒ Non internet-based application (i.e. directly on a desktop/laptop).
- ☐ Paper
- ☒ Recording Media - ☒ Photo ☒ Video ☒ Audio

Specify how the data will be stored and how participants will be identified in the recordings:

These data will be stored in 4 secure places: 1) UIC Box; 2) password-protected external hard drive stored in a locked cabinet in the (locked) PI's office; 3) password protected desktop computer in the (locked) PI's office; 4) Purdue University Research Repository. Due to the

inherent audio/visual nature of video and audio recordings, participants' faces and voices may be directly identifiable in these (raw) recording media. (See data security section below for details about protecting participants' identity.)

- ☒ Subject Artifacts (such as classroom assignments, regular work products, lesson plans)
☐ Stored specimens
☐ Other:

***Note:** Any investigator who uses external survey software other than REDCap, UIC ACCC Qualtrics, or UIC Box Health Data Folder for collecting and maintaining UIC/UI Health PHI and/or [personal data](#) from individuals physically located in the [European Union Economic Area \(EEA\)](#) must provide evidence of a business associate agreement between the University and the external survey software provider. For more information, refer to the UIC HSPP policy [Research Data Security](#). Please contact OPRS for more information regarding data collected in the EEA and the [European Union General Data Protections Regulation \(EU GDPR\)](#).

- b. Describe whether and how social media platforms (e.g., Facebook, Twitter, Snapchat, etc.) will be used to collect data and/or communicate with subjects:
☒ Not applicable

3. Data Security

- a. Describe how all types of data as selected above will be secured.

- i. ☒ Indirectly with a code linked to the identity of the subject.

Describe the coding method, specify who will have access to the code/master key, indicate where the key is stored, and explain how it will be protected against unauthorized access: **CODING: Each subject will receive a unique identifier. This identifier will be linked to their identity on a Master Key that will be stored in the PI's locked office in the UIC Chemistry department. The file titles of all digital data will use this unique code/pseudonym (rather than participants' names) and will be securely stored (as described above). After data analysis, the subject Master Key will be destroyed by the PI.**

Subject Artifacts: Artifacts produced by research subjects during the ethnographic school study and the professional development program (including student work produced during the implemented classroom lessons) will be stripped of identifiers and replaced with pseudonyms/codes before they are scanned, photographed and/or digitally copied (e.g. making a copy of a google doc). Subject artifacts will be protected against unauthorized access by securely storing them in the same manner as the Recording Media (described above).

Interviews, videos: During audio-recorded interviews and audio/video recorded PD sessions, codes/pseudonyms will be used instead of participants' names. If any participant (or researcher) uses the real name of a participant/school/district during an interview or PD session, those names will be replaced in the transcript with pseudonyms/codes. With participants' explicit permission (see consent form), researchers may show short segments of research video during professional conferences or as part of educational coursework (NOT for future promotion as an educational program). No video clips will be shown that contain participants' real names. These data will be protected against unauthorized access by securely storing them in the manner described above. Note: The classroom video will be used SOLELY for PD purposes, NOT as research data, thus no segments of this video will ever be shown outside the PD setting.

- ii. ☒ Directly, personal or private identifiers (identifiable elements) are maintained with the data.
Justify the inclusion of direct subject identifiers, and indicate who will have access to the data: **Although pseudonyms/codes will be used during interviews and PD sessions, subjects' voices or faces may be directly identifiable in these (raw) recording media. Only the research team will have access to these data. [Exception: with participants' explicit permission (see consent form), researchers may show short segments of research video during professional conferences or as part of educational coursework. No video clips will be shown that contain participants' real names.] These data (raw recordings) will be protected against unauthorized access by securely storing them in the manner described above. Note: The classroom video will be used SOLELY for PD purposes, NOT as research data, thus no segments of this video will ever be shown outside the PD setting.**
- iii. ☐ Limited Data Set [Protected Health Information (PHI) subject to the Privacy Rule that includes elements limited to city, state, ZIP Code, elements of date, and other numbers, characteristics, or codes not considered as direct identifiers]. *Requires a Data Use Agreement.*

Please note:

- Items i and ii require consent and/or authorization (if PHI is involved) from the subject or a Waiver of Consent and/or Waiver of Authorization (if PHI is involved) from the IRB.
- UIC and/or outside agencies may require the use of a data use/data transfer agreement that outlines the procedures necessary to protect identifiable or coded data that will be transferred or shared between agencies. You must contact the [Office of Research Services \(ORS\)](#) at 312-996-2862 for additional information and direction.

b. Indicate the method(s) used to secure each data type.

- ☒ Password access
- ☒ Portable devices – Specify encryption software (required): **Western Digital**
- ☐ Encryption software will be used – Specify encryption software:
- ☒ Secure network server will be used – Specify secure server: **UIC Box; Purdue University Research Repository (for focus group audio ONLY)**
- ☒ Stand alone desktop/laptop computer will be used to store data
- ☐ Not connected to server/internet
- ☐ An organization outside of the UIC will store the code key.
- ☒ Locked file cabinet
- ☒ Locked office/lab.
- ☐ Locked office suite.
- ☐ Locked refrigerator/freezer
- ☐ Other - Specify:

c. Indicate when **identifiers (including the master list) will be removed or destroyed.**

- ☐ End of data collection
- ☒ End of data analysis
- ☐ Post publication/dissertation defense
- ☒ Other – Specify: **As described in Section XII.B.3.a.i and iii, with teacher participants' explicit consent, identifiers (faces and voices) from short segments of research video clips recorded during the PD will be retained indefinitely to be**

shown in professional conferences and educational courses (although pseudonyms will be used, faces and voices remain directly identifiable). All other identifiers will be removed and destroyed after data analysis. Note: Classroom video will be used solely for PD purposes, and will never be shown outside the PD setting.

4. Data Sharing

- a. Will the data or specimens be shared with persons **other than** UIC investigators and research staff noted on the protocol application and Appendix P?

☐ No – *Skip to item C.1.*

☒ Yes – Specify with whom the data will be shared: **The NSF funder requires investigators to complete an external evaluation of the project that is separate from this main study, and will be submitted and reviewed separately from this main study. As part of that external evaluation, Dr Lisa Kirkham, of Purdue University, will conduct an audio-recorded focus group with research subjects who consent to participate in the focus group. The external evaluation and the information collected will remain at Purdue University and the evaluators will not share their data with the investigators on this main study. A separate external evaluation report, which does not contain identifiers, will be shared with the NSF funder and the investigators on this main study.**

- b. Indicate the manner in which the data will be shared:

☒ As a de-identified dataset – *Skip to item C.1.*

☐ With direct identifiers

☐ With indirect identifiers (i.e., coded dataset) and/or [Limited Data Set](#)

Identify who will have access to the code key or master list:

- c. Specify how identifiable data will be transferred:

☐ Non-electronic transfer (hard copy or physical specimens) – Specify:

☐ Transmitted over a secure network – Specify network:

☐ Via UIC e-mail - Specify encryption:

☐ Cloud based data sharing program (*UIC Box Health Data Folder is the only approved method of sharing PHI in this manner*)

Specify:

☐ Other - Specify:

- C. 1. Does the research protocol have a data and safety monitoring plan? *For more information refer to UIC OPRS HSPP policy [Data and Safety Monitoring Plans \(DSMPs\)](#), [Data and Safety Monitoring Boards \(DSMBs\)](#), and [Data Monitoring Committees \(DMCs\)](#).*

☒ Not Applicable. – *Skip to item D* as all of the following criteria are met:

- research is minimal risk,
- research does not involve physical or therapeutic intervention with subjects,
- subject trauma or distress is not an anticipated risk, and
- the sponsor does not require a monitoring plan.

☐ Yes – Describe the plan:

2. Is this a multi-center trial AND UIC is the lead site or serving as the data coordinating center?

- ☐ Yes – Plans for managing and communicating the unanticipated problems involving risks to subjects or others, interim results, and protocol revisions among the multiple sites are described within the uploaded protocol OR explain:
- ☒ No

D. Will you be applying for a Certificate of Confidentiality? Research funded by NIH that involves sensitive, identifiable data will be automatically granted a Certificate of Confidentiality. Ensure the consent document includes the appropriate language.

- ☒ No
- ☐ Yes – Include the required template language in the consent document and refer to the [Guidance for Investigators: Certificates of Confidentiality](#) for more information regarding the submission process and regulatory requirements.

E. Is this research being funded by the National Institute of Justice?

- ☒ No
- ☐ Yes – The investigator is responsible for the following:
- Uploading the NIJ Privacy Certificate
 - Ensuring the proposal indicates that a copy of all data must be de-identified and sent to the National Archive of Criminal Justice Data, including copies of the consent document, data collection instruments, surveys, or other relevant research materials
 - Ensuring the Informed Consent Document(s) include:
 - o NIJ approved Privacy Certificate language
 - o De-identifiable information will be sent to the National Archives of Criminal Justice Data
 - o A statement indicating that if a subject is a danger to themselves or others, it will be reported to the authorities
 - o A statement indicating that communicable diseases (TB, HIV) will be reported to the state and/or federal public health authorities
 - o Statement that current or past domestic, child, or elder abuse is not reportable

Refer to the [Additional Consent Template Language](#) and the [Guidance for Investigators: Informed Consent](#) for additional information.

XIII. Compensation & Costs

Payment in exchange for referrals of potential participants (finder's fee) and payments designed to encourage or accelerate recruitment by being tied to the rate or timing of enrollment (bonus payment) are generally unacceptable.

A. 1. Will subjects receive any compensation (for example: money, gifts, or gift certificates) directly related to research participation? *If subjects will be entered into a lottery, select "No" and skip to item B.*

- ☐ No – Skip to item B.
- ☒ Yes - Indicate the type of compensation.
- ☒ Monetary (total amount: **\$:1000 per teacher participant each semester. (Students, admin/staff and those teachers who consent only to a research interview are not compensated.)** NOTE: Teacher subjects only receive the \$1,000 compensation for participation in the focus group, interview and video – and not for attending the PD.
- ☐ Non-Monetary
- ☐ Both

2. Describe in detail:

- a) How compensation will be prorated (e.g., \$x for each visit, \$y for subjects who do not qualify after screening visit, etc.): **Compensation will be prorated based on the percentage of the research completion [e.g. Number of hours of research participation during the 31- or 32-hour data collection period each semester]**
- b) When compensation will be provided (e.g., after each visit, at the completion of all visits, 6-8 weeks after the completion of all visits due to processing of check, etc.) **and** in what format (e.g., cash, check, VISA gift card, etc.): **compensation will be provided within 30 days of completion of each semester's data collection. A check will be mailed to individual participants by the University Payables.**

B. Will subjects be entered into a lottery for compensation (for example: money, gifts, or gift certificates) before, during, or after participation in the study?☒ No☐ Yes -

- a. Provide a justification for conducting a lottery rather than compensation per subject:
- b. Indicate the type of compensation:
- c. Indicate the odds of winning the lottery:
- d. Indicate when the winner will be notified and receive the compensation:

C. Does this study provide payments in exchange for referrals of potential participants (finder's fees) or payments designed to encourage or accelerate recruitment by being tied to the rate or timing of enrollment (bonus payment)?☒ No☐ Yes – Describe:**D. Are subjects or their insurance/third-party payer responsible for any research-related costs?**☒ No☐ Yes – Complete items a and b:

- a. List the procedures/expenses:

- b. Provide a justification as to why research-related expenses are not being covered by the research.

XIV. Procedures to Obtain Informed Consent/Assent

A. Indicate the type(s) of consent you will obtain:☒ Written☐ Verbal☐ Waiver of Informed Consent and/or Waiver of Signed Consent**B. Indicate who will obtain informed consent from potential subjects.**☒ PI☐ Co-investigators☒ Research coordinators/Others as delegated**C. Indicate where and when informed consent will be obtained from potential subjects.****Consent will be obtained prior to initiating any research activities.****PHASE 1:**

- We will obtain informed consent from **TEACHERS** who plan to attend the Phase 1 PD workshop at a date to be determined during a group recruitment meeting, at the partner school in a mutually agreed upon meeting space. Participants may return their consent forms publicly during this meeting or later in a private space. If new participants join the project after this date, we will obtain informed consent as they join, prior to collecting any research data.
- We will obtain informed consent from **TEACHERS** who do NOT plan to attend the Phase 1 PD workshop throughout the Phase 1 data collection period during individual meetings at the partner school in a mutually agreed upon meeting space.
- We will obtain informed consent from **ADMIN/STAFF** throughout the Phase 1 data collection period during individual meetings at the partner school/district office in a mutually agreed upon meeting space.
- During the period of the pandemic and hybrid PD, the research team and teachers who are interested in participating in PD and research will virtually meet via Zoom or Google Meet at a mutually agreed time. We will share an electronic version of consent form, give the teachers time to review the form, and discuss if they have any question. After the meeting, we will share the consent form electronically via Qualtrics and collect their electronic signature.

PHASE 2:

- We will obtain informed consent from **TEACHERS** who plan to attend the Phase 2 PD program (dates TBD) during a group recruitment meeting, at the partner school in a mutually agreed upon meeting space. Participants may return their consent forms publicly during this meeting or later in a private space. If new participants join the project after this date, we will obtain informed consent as they join, prior to collecting any research data.
- We will obtain informed consent from **TEACHERS** who do NOT plan to attend the Phase 2 PD throughout the Phase 2 data collection period (dates TBD) during individual meetings at the partner school in a mutually agreed upon meeting space.
- We will obtain informed consent from **ADMIN/STAFF** throughout the Phase 2 data collection period (dates TBD) during individual meetings at the partner school/district office in a mutually agreed upon meeting space.
- We will obtain informed consent/parent permission from **STUDENTS** on a date yet to be determined during student recruitment meetings in science classrooms at the partner school. Students may return their consent forms publicly during this meeting (if they are 18 or older) or later in private, directly to the PI. [Note: Researchers will request that ALL students (adults and minors) return the consent/parent permission form in a sealed envelope provided by the PI - regardless of whether it is completed or blank - so that students will not know who has consented to participate. If new participants join the project after this date, we will obtain informed consent as they join, prior to collecting any research data.
- We will obtain assent from **STUDENTS UNDER 18** (after they have provided parent permission as described immediately above), privately. At the beginning of each student's interview, we will ask them to read and sign the student assent document.

- **Below, we explain how we would each type of subjects will be consented remotely during the pandemic a hybrid research period.**
 - **Teachers:** The research team and teachers who are interested in participating in PD and research will virtually meet via Zoom or Google Meet at a mutually agreed time. We will share an electronic version of consent form, give the teachers time to review the form, and discuss if they have any question. After the meeting, we will send the consent form electronically via Qualtrics and collect their electronic signature.
 - **Admin/Staff:** The research team will contact potential subjects via email with the recruitment information and set up an initial meeting. In the initial meeting, we will share an electronic version of the consent form, give them time to read the consent form, and discuss any questions. Then, we will send the consent form via Qualtrics and collect their electronic signature. Depending on their preference and availability, interviews can be done either in this initial meeting or be scheduled for another time. All the virtual meetings/interviews will be done in Zoom or Google Meet.
 - **Students:** The PI will provide the participating teachers with links for student consent (age 18 or over), assent, and parent consent forms, to be emailed to their classroom students and parents. Once completed, the students/parents will receive an email confirmation that the form has been completed and to alter the PI if this has been done in error.

D. Does the potential exist for enrolling subjects (or subjects' LARs) who do not understand English?

☐ No

☒ Yes – Describe how the consent process will be conducted (e.g., who will convey information to the subject or LAR in a language they understand, whether the consent will be documented using a translated consent form or short form).

The research team will conduct the student recruitment meetings during which the consent process will be explained. To facilitate understanding, we will project onto large screens key terms (e.g. "interview," "consent") and several images (e.g. photos of people engaging in an interview, images of the consent documents) as we describe the consent and data collection (interview) processes. We will provide the Student Recruitment Info document translated into languages in which students speak and read to the extent possible. We will pair/group students who share a home language such that students who are less proficient English speakers are paired with more proficient English speakers, and facilitate pair/small group discussions to ensure that students' questions can be asked and answered in a language that they understand. We will verbally "quiz" each pair/group about the most salient parts of their participation in the study (e.g Students need parent permission if under 18, researchers need students'/parents' permission to interview students or make copies of student classwork, participation is not required, participation is confidential, all interview responses are confidential) to ensure that the pair/group discussion has provided sufficient interpretation. Consent forms will also be translated into the languages in which students speak and read to the extent possible, and will be provided to

students during the student recruitment meetings. As described in the recruitment and consent documents, student or parents who have questions can email PI Ryu in their native language, and we will use interpreters/translators to read and reply to their questions. (These languages are currently to be determined and will be reported, along with translated forms, to IRB in a future amendment. Likewise, once interpreters/translators have been identified, we will report to IRB their names and affiliations. All interpreters/translators will sign a confidentiality agreement before beginning any work on the project.)

For information about the involvement of non-English speaking subjects in research, including use of the short form, please refer to the [Guidance: Involvement of Non-English Speaking Subjects in Research at the University of Illinois at Chicago](#).

E. Will any portion of the research involve deception?

☒ No

☐ Yes - Upload [Appendix J](#) and a debriefing statement with this application.

XV. HIPAA Compliance

A. Does your research use and/or disclose Protected Health Information (PHI)*?

☒ No – Skip this section.

☐ Yes

**Data is considered to represent PHI when an individual's health information, including billing records, contains or is linked to one of the identifiers listed in #XII.B.1. For example, health-related information is considered PHI if any of the following are true:*

- *The researcher obtains the information directly from a provider, billing records, health plan, health clearinghouse or employer (other than records relating solely to employment status);*
- *The records were created by any of the entities listed above and the researcher obtains the records from an intermediate source which is NOT a school record or an employer record related solely to employment status; OR*
- *The researcher obtains it directly from the study subject in the course of providing treatment to the subject.*

Health-related information is not considered PHI if the researcher obtains it from:

- *Student records maintained by a school;*
- *Employee records maintained by an employer related to employment status; OR*
- *The research subject directly, if the research does NOT involve treatment.*

B. Will PHI be used for the purposes of identifying and/or recruiting potential subjects for the research?

☐ No

☐ Yes

C. Will subjects be selected from records outside the UI Health System?

☐ No

☐ Yes – Indicate who gave approval for the use of the records:

- Upload the protocol, consent documents, letters, etc., for securing consent of the subjects for the use of the records if the records are "private" medical or student records.
- Upload written documentation for cooperation/permission from the institutional holder or custodian of the records.



- D.** Will any research related information be put into the health information records or any other permanent record of the subject?
- ☐ No
- ☐ Yes - Explain:

**University of Illinois at Chicago
Research Information and Consent [Parental Permission]
for Participation in Social, Behavioral, or
Educational Research**

Professional development for K-12 science teachers
in linguistically diverse classrooms

Principal Investigator/Researcher Name and Title: Minjung Ryu, Assistant Professor of Chemistry and Learning Sciences
Department and Institution: Chemistry Department/Learning Sciences Research Institute, University of Illinois at Chicago
Address and Contact Information: 845 W. Taylor St., 4500 SES (MC 111), Chicago, IL 60607
mjryu@uic.edu, (312) 355-8055
Sponsor: National Science Foundation

Note: This research includes subjects who are minors. If you are a parent, guardian, or legal representative, the terms “you” or “your” refer to the research subject for whom you are responsible.

About this research study

You are being asked to participate in a research study. Research studies answer important questions that might help change or improve the way we do things in the future.

Taking part in this study is voluntary

Your participation in this research study is voluntary. You may choose to say “no” to this research or may choose to stop participating in the research at any time. Deciding not to participate, or deciding to stop participating later, will not result in the loss of any services, class standing, and/or professional status to which you are entitled, and will not affect your relationship with the University of Illinois at Chicago (UIC) and/or Chicago Public Schools/Sullivan HS or any of the agencies or organizations collaborating in this research.

This consent form will give you information about the research study to help you decide whether you want to participate. Please read this form and ask any questions you have before agreeing to be in the study.

You are being asked to participate in this research study because you attend a school in which some teachers are attending a professional development (PD) program designed to support science learning in linguistically diverse schools. Your participation will help us to better understand the context of the teaching and learning in that school and the impacts of the PD program. Up to 700 students may participate in this study.

Important Information

UIC IRB Social, Behavioral, and Educational
Research Informed Consent Template:
11/30/2018
Do NOT Change This Field – IRB Use ONLY

PARENT PERMISSION - STUDENTS UNDER 18

This information gives you an overview of the research. More information about these topics may be found in the pages that follow.

WHY IS THIS STUDY BEING DONE?	We want to better understand: 1) which instructional practices and materials support science learning in linguistically "superdiverse" high schools; 2) how teachers in linguistically "superdiverse" high schools learn to use these practices and materials; 3) how a professional development (PD) program helps English learners' (ELs') participation and learning in science.
WHAT WILL I BE ASKED TO DO DURING THE STUDY?	<p>You will be asked to allow us to make copies of the classwork you produce during lessons that are associated with the PD program. You will also be asked to do an audio-recorded research interview. These interviews aim to understand your current school/district setting and the impacts of the PD program on your experience learning in your science class.</p> <p>Please note that our research procedure can be modified in accordance with the COVID-19 related guidelines from the State of Illinois, UIC, and CPS. Depending on CPS's policy on public safety and social distance guideline, interviews may be conducted and audio-recorded (no video) online using Google Meet or Zoom. Researchers from our team may join your online or in-person class, observe your teacher's instruction, and take field notes. Your teachers may upload copies of your classwork to UIC Box, a secured cloud data storage system. If research activities are conducted in-person, all CPS's public safety guidelines (e.g., health check, masking) will be followed.</p>
HOW MUCH TIME WILL I SPEND ON THE STUDY?	You will spend a total of two hours (maximum) on the study, approximately one hour per interview, maximum two interviews, one per semester (Dates to be determined).
ARE THERE ANY BENEFITS TO TAKING PART IN THE STUDY?	While there may be no direct benefits, you may have opportunities to reflect on your own learning practices during the interviews, which would further help you learn science in the future.
WHAT ARE THE MAIN RISKS OF THE STUDY?	The primary risks presented by this research study are breaches of privacy (others outside of the study may find out you are a participant) and/or confidentiality (others outside of the study may find out what you did, said, or information that was collected about you during the study). Although this risk is a possibility, safeguards are in place as listed in the confidentiality section. Additional potential risks include feelings of anxiety or fatigue experienced during the interview. You can skip and/or not respond to any questions that may make you uncomfortable or fatigued.

	<p>Note: Your teacher has promised to the researchers that your choice to participate or not participate in this study will not affect your science grade or your experience in science class in any way.</p> <p>In online administration of this project, there are a few unique concerns of privacy and confidentiality. Audio-recording of online interviews can end up recording sounds from other people near you; the conversation between participants and the research team members can be heard by other people near you. If an unanticipated situation comes up during an interview that may breach privacy and confidentiality, you can request to stop and reschedule. You can also use virtual background and mute yourself. For interviews, which are only audio recorded, you can turn off your video camera if that makes you more comfortable.</p>
DO I HAVE OTHER OPTIONS BESIDES TAKING PART IN THE STUDY?	You have the option to decide not to take part at all or withdraw your participation at any time without any consequences.
QUESTIONS ABOUT THE STUDY?	<p>For questions, concerns, or complaints about the study, please contact Minjung Ryu, Assistant Professor of Chemistry and Learning Sciences at (312) 355-8055 or email at mjryu@uic.edu</p> <p>If you have questions about your rights as a study subject; including questions, concerns, complaints, or if you feel you have not been treated according to the description in this form; or to offer input you may call the UIC Office for the Protection of Research Subjects (OPRS) at 312-996-1711 or 1-866-789-6215 (toll-free) or e-mail OPRS at uicirb@uic.edu.</p>

Please review the rest of this document for details about these topics and additional things you should know before making a decision about whether to participate in this research. Please also feel free to ask the researchers questions at any time.

What procedures are involved?

The study procedures include audio recording during the interviews. We will ask questions such as “What science classes have you taken?” “What do you like and do not like about your science classes?” “What are challenges in learning science?” The interviews will take approximately an hour and will take place at a time that is mutually convenient for you and a researcher in a secured and safe place in your school.

What will happen with my information used in this study?

Your identifiable private information (voice in recordings) collected for this research study will not be used for future research studies or shared with other researchers for future research.

What about privacy and confidentiality?

PARENT PERMISSION - STUDENTS UNDER 18

Efforts will be made to keep your personal information confidential; however, we cannot guarantee absolute confidentiality. In general, information about you, or provided by you, during the research study, will not be disclosed to others without your written permission. However, laws and state university rules might require us to tell certain people about you. For example, study information which identifies you and the consent form signed by you may be looked at and/or copied for quality assurance and data analysis by:

- Representatives of the university committee and office that reviews and approves research studies, the Institutional Review Board (IRB) and Office for the Protection of Research Subjects.
- Other representatives of the State and University responsible for ethical, regulatory, or financial oversight of research.
- Government Regulatory Agencies, such as the Office for Human Research Protections (OHRP).
- The sponsor of the research study, the National Science Foundation

A possible risk of the study is that your participation in the study or information about you might become known to individuals outside the study. Your interviews will be coded, stored on a password protected computer and encrypted to prevent access by unauthorized personnel.

The audio recording of your interview will be transcribed within one week of the interview. Your individual data (e.g. your name) in the written transcripts or classwork will be stripped of direct and indirect identifiers after data collection. However, your voice may be identifiable in the raw interview audio. Only the research team will have access to these raw recordings, and they will be destroyed after data analysis.

What are the costs for participating in this research?

There are no costs to you for participating in this research.

Will I be reimbursed for any of my expenses or paid for my participation in this research?

You will not incur any expenses to participate in this research and you will not be paid to participate in this research.

Can I withdraw from the study?

If you decide to participate, you have the right to withdraw your consent and leave the study at any time without penalty. If you choose to no longer be in the study and you do not want any of your future information to be used, you must email the researcher Minjung Ryu at mjryu@uic.edu. The researcher team may still use your information that was collected prior to your written notice.

Parents/Guardians, please be aware that under the Protection of Pupil Rights Act, 20 USC 1232(c)(1)(A), you have the right to review a copy of the questions asked of or materials that will be used with your child. If you would like to do so, you should contact Dr. Minjung Ryu at mjryu@uic.edu or (312) 355-8055 to obtain a copy of the questions or materials.

Remember:

UIC IRB Social, Behavioral, and Educational
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PARENT PERMISSION - STUDENTS UNDER 18

Your participation in this research is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University. If you decide to participate, you are free to withdraw at any time without affecting that relationship.

Signature of Parent/Guardian

I have read the above information. I have been given an opportunity to ask questions and my questions have been answered to my satisfaction. I will be given a copy of this signed and dated form. Please choose the research activities for which you provide your consent:

_____ researchers taking photos/making copies of my class work
_____ participating in an audio-recorded research interview

Name of the Minor (Child)

Signature of Parent/Guardian

Date of Signature

Printed Name of Parent/Guardian

Signature of Person Obtaining Consent

Date (must be same as subject's)

Printed Name of Person Obtaining Consent

Online Consent

I have read the above information. I have been given an opportunity to ask questions and my questions have been answered to my satisfaction. **PLEASE PRINT OUT A COPY OF THIS DOCUMENT FOR YOUR RECORDS.** Please check-mark to choose the research activities for which you provide your consent:

_____ researchers taking photos/making copies of my class work
_____ participating in an audio-recorded research interview

Name of the Minor (Child)

Name of Parent/Guardian

Date

UIC IRB Social, Behavioral, and Educational
Research Informed Consent Template:
11/30/2018
Do NOT Change This Field – IRB Use ONLY

University of Illinois at Chicago
Research Information and Consent for Participation in Social, Behavioral, or Educational Research

Professional development for K-12 science teachers in linguistically diverse classrooms

Principal Investigator/Researcher Name and Title: Minjung Ryu, Assistant Professor of Chemistry and Learning Sciences

Department and Institution: Chemistry Department/Learning Sciences Research Institute, University of Illinois at Chicago

Address and Contact Information: 845 W. Taylor St., 4500 SES (MC 111), Chicago, IL 60607
mjryu@uic.edu, (312) 355-8055

Sponsor: National Science Foundation

About this research study

You are being asked to participate in a research study. Research studies answer important questions that might help change or improve the way we do things in the future.

Taking part in this study is voluntary

Your participation in this research study is voluntary. You may choose to say “no” to this research or may choose to stop participating in the research at any time. Deciding not to participate, or deciding to stop participating later, will not result in the loss of any services, class standing, and/or professional status to which you are entitled, and will not affect your relationship with the University of Illinois at Chicago (UIC) and/or Chicago Public Schools/Sullivan HS or any of the agencies or organizations collaborating in this research.

This consent form will give you information about the research study to help you decide whether you want to participate. Please read this form and ask any questions you have before agreeing to be in the study.

You are being asked to participate in this research study because you attend a school in which some teachers are attending a professional development (PD) program designed to support science learning in linguistically diverse schools. Your participation will help us to better understand the context of the teaching and learning in that school and the impacts of the PD program. Up to 700 students may participate in this study.

Important Information

This information gives you an overview of the research. More information about these topics may be found in the pages that follow.

WHY IS THIS STUDY BEING DONE?	We want to better understand: 1) which instructional practices and materials support science learning in linguistically "superdiverse" high schools; 2) how teachers in linguistically "superdiverse" high schools learn to use these practices and materials; 3) how a professional development (PD) program impacts English learners' (ELs') participation and learning in science.
WHAT WILL I BE ASKED TO DO DURING THE STUDY?	<p>You will be asked to allow us to make copies of the classwork you produce during lessons that are associated with the PD program. You will also be asked to do an audio-recorded research interview. These interviews aim to understand your current school/district setting and the impacts of the PD program on your experience learning in your science class.</p> <p>Please note that our research procedure can be modified in accordance with the COVID-19 related guidelines from the State of Illinois, UIC, and CPS. Depending on CPS's policy on public safety and social distance guideline, interviews may be conducted and audio-recorded (no video) online using Google Meet or Zoom. Researchers from our team may join your online or in-person class, observe your teacher's instruction, and take field notes. Your teachers may upload copies of your classwork to UIC Box, a secured cloud data storage system. If research activities are conducted in-person, all CPS's public safety guidelines (e.g., health check, masking) will be followed.</p>
HOW MUCH TIME WILL I SPEND ON THE STUDY?	You will spend a total of two hours (maximum) on the study, approximately one hour per interview, maximum two interviews, one per semester (Dates to be determined).
ARE THERE ANY BENEFITS TO TAKING PART IN THE STUDY?	While there may be no direct benefits, you may have opportunities to reflect on your own learning practices during the interviews, which would further help you learn science in the future.
WHAT ARE THE MAIN RISKS OF THE STUDY?	The primary risks presented by this research study are breaches of privacy (others outside of the study may find out you are a participant) and/or confidentiality (others outside of the study may find out what you did, said, or information that was collected about you during the study). Although this risk is a possibility, safeguards are in place as listed in the confidentiality section. Additional potential risks include feelings of anxiety or fatigue experienced during the interview. You can skip and/or not respond to any questions that may make you uncomfortable or fatigued.

STUDENTS OVER 18 CONSENT

	<p>Note: Your teacher has promised to the researchers that your choice to participate or not participate in this study will not affect your science grade or your experience in science class in any way.</p> <p>In online administration of this project, there are a few unique concerns of privacy and confidentiality. Audi-recording of online interviews can end up recording sounds from other people near you; the conversation between participants and the research team members can be heard by other people near you. If an unanticipated situation comes up during an interview that may breach privacy and confidentiality, you can request to stop and reschedule. You can also use virtual background and mute yourself. For interviews, which are only audio recorded, you can turn off your video camera if that makes you more comfortable.</p>
DO I HAVE OTHER OPTIONS BESIDES TAKING PART IN THE STUDY?	You have the option to decide not to take part at all or withdraw your participation at any time without any consequences.
QUESTIONS ABOUT THE STUDY?	<p>For questions, concerns, or complaints about the study, please contact Minjung Ryu, Assistant Professor of Chemistry and Learning Sciences at (312) 355-8055 or email at mjryu@uic.edu</p> <p>If you have questions about your rights as a study subject; including questions, concerns, complaints, or if you feel you have not been treated according to the description in this form; or to offer input you may call the UIC Office for the Protection of Research Subjects (OPRS) at 312-996-1711 or 1-866-789-6215 (toll-free) or e-mail OPRS at uicirb@uic.edu.</p>

Please review the rest of this document for details about these topics and additional things you should know before making a decision about whether to participate in this research. Please also feel free to ask the researchers questions at any time.

What procedures are involved?

The study procedures include audio recording during the interviews. We will ask questions such as “What science classes have you taken?” “What do you like and do not like about your science classes?” “What are challenges in learning science?” The interviews will take approximately an hour and will take place at a time that is mutually convenient for you and a researcher in a secured and safe place in your school.

What will happen with my information used in this study?

Your identifiable private information (voice in recordings) collected for this research study will not be used for future research studies or shared with other researchers for future research.

What about privacy and confidentiality?

STUDENTS OVER 18 CONSENT

Efforts will be made to keep your personal information confidential; however, we cannot guarantee absolute confidentiality. In general, information about you, or provided by you, during the research study, will not be disclosed to others without your written permission. However, laws and state university rules might require us to tell certain people about you. For example, study information which identifies you and the consent form signed by you may be looked at and/or copied for quality assurance and data analysis by:

- Representatives of the university committee and office that reviews and approves research studies, the Institutional Review Board (IRB) and Office for the Protection of Research Subjects.
- Other representatives of the State and University responsible for ethical, regulatory, or financial oversight of research.
- Government Regulatory Agencies, such as the Office for Human Research Protections (OHRP).
- The sponsor of the research study, the National Science Foundation

A possible risk of the study is that your participation in the study or information about you might become known to individuals outside the study. Your interviews will be coded, stored on a password protected computer and encrypted to prevent access by unauthorized personnel.

The audio recording of your interview will be transcribed within one week of the interview. Your individual data (e.g. your name) in the written transcripts or classwork will be stripped of direct and indirect identifiers after data collection. However, your voice may be identifiable in the raw interview audio. Only the research team will have access to these raw recordings, and they will be destroyed after data analysis.

What are the costs for participating in this research?

There are no costs to you for participating in this research.

Will I be reimbursed for any of my expenses or paid for my participation in this research?

You will not incur any expenses to participate in this research and you will not be paid to participate in this research.

Can I withdraw from the study?

If you decide to participate, you have the right to withdraw your consent and leave the study at any time without penalty. If you choose to no longer be in the study and you do not want any of your future information to be used, you must email the researcher Minjung Ryu at mjryu@uic.edu. The researcher team may still use your information that was collected prior to your written notice.

Remember:

Your participation in this research is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University. If you decide to participate, you are free to withdraw at any time without affecting that relationship.

Signature of Subject

UIC IRB Social, Behavioral, and Educational
Research Informed Consent Template:
11/30/2018
Do NOT Change This Field – IRB Use ONLY

STUDENTS OVER 18 CONSENT

I have read the above information. I have been given an opportunity to ask questions and my questions have been answered to my satisfaction. I will be given a copy of this signed and dated form.

Please choose the research activities for which you provide your consent:

- ☐ researchers taking photos/making copies of my class work
☐ participating in an audio-recorded research interview

Signature

Date

Printed Name

Signature of Person Obtaining Consent

Date (must be same as subject's)

Printed Name of Person Obtaining Consent

Online Consent

I have read the above information. I have been given an opportunity to ask questions and my questions have been answered to my satisfaction. **PLEASE PRINT OUT A COPY OF THIS DOCUMENT FOR YOUR RECORDS.** Please check-mark to choose the research activities for which you provide your consent:

- ☐ researchers taking photos/making copies of my class work
☐ participating in an audio-recorded research interview

Name

Date

University of Illinois at Chicago**Research Information and Assent for Participation in Educational Research**

Professional development for K-12 science teachers in linguistically diverse classrooms

Principal Investigator: Minjung Ryu, Assistant Professor of Chemistry and Learning Sciences
mjryu@uic.edu, (312) 355-8055

We are asking you to be in a research study because we are trying to learn more about how teachers in schools like yours can best teach science to English learners. Your science teacher has promised us that your decision to participate or not participate will not affect your science grade or your experience in science class in any way.

If you say yes to being in this study a member of the research team will make copies of some of your science classwork and/or interview you (ask you questions) about how you learn in science class. During the interview your voice will be recorded. Please note that our research procedure can be modified in accordance with the COVID-19 related guidelines from the State of Illinois, UIC, and CPS. Depending on CPS's policy on public safety and social distance guideline, interviews may be conducted and audio-recorded (no video) online using Google Meet or Zoom. Researchers from our team may join your online or in-person class, observe your teacher's instruction, and take field notes. Your teachers may upload copies of your classwork to UIC Box, a secured cloud data storage system. If research activities are conducted in-person, all CPS's public safety guidelines (e.g., health check, masking) will be followed.

You may get nervous or tired during the interview. You can skip any questions that make you uncomfortable or tired.

In online administration of this project, audio-recording of online interviews can end up recording sounds from other people near you; the conversation between participants and the research team members can be heard by other people near you. If an unanticipated situation comes up during an interview that may breach privacy and confidentiality, you can request to stop and reschedule. You can also use virtual background and mute yourself. For interviews, which are only audio recorded, you can turn off your video camera if that makes you more comfortable.

During the interview, you might think about your own learning, which could help you learn science in the future.

STUDENT UNDER 18 ASSENT

Please talk about being in this study with your parents before you choose if you want to say yes or no. We will also ask your parents to give their permission for you to be in this study. But even if your parents say “yes” you can still say “no.”

If you don’t want to be in this study, you don’t have to. Being in this study is your choice and no one will be upset if you don’t want to be in the study, or even if you change your mind later and want to stop.

You can ask any questions that you have about the study. If you have a question later that you didn’t think of now, you can email or call Dr. Minjung Ryu at mjryu@uic.edu, (312) 355-8055, or ask me next time.

Signing your name below means that you agree to be in this study. Please choose yes or no to each question below. You will receive a copy of this form after you sign it.

Can we make copies of your classwork? _____ YES _____ NO
Can we interview you? _____ YES _____ NO

Your name (Name of Subject)

Date

Signature

Age

Grade in School

Online Assent

Your typed name below means that you agree to be in this study. Please choose each question below. **PLEASE ALSO PRINT OUT A COPY OF THIS DOCUMENT FOR YOUR RECORDS. Please choose yes or no to each question below.**

Can we make copies of your classwork? _____ YES _____ NO
Can we interview you? _____ YES _____ NO

Your name (Name of Subject)

Date

Age

Grade in School



**Approval Notice
Amendment – Expedited Review
UIC Amendment # 6**

August 16, 2021

Minjung Ryu, PhD
Chemistry

RE: **Protocol # 2019-1122**
“Professional Development for K-12 Science Teachers in Linguistically Diverse Classrooms”

Dear Dr. Ryu:

Your application was reviewed and approved on August 16, 2021. The amendment to your research may now be implemented.

Principal Investigators must complete a [COVID-19 Human Subjects Research Review Worksheet](#) for a protocol COVID safety assessment prior to initiating or re-starting any research activities that require in-person contact between research subjects and staff during the COVID-19 pandemic.

For additional information about this process, please refer to the [Human Subjects Research Review page on the OVCR website](#). If you need assistance, questions may be directed to research@uic.edu.

Please note the following information about your approved amendment:

Please note that Chicago Public Schools (CPS) RRB approval expired on 20 March 2021 and no CPS participants may be recruited/enrolled and/or their identifiable information collected unless or until an updated approval has been granted by the CPS RRB. Also, a copy of the updated CPS RRB approval must be submitted to the UIC IRB/OPRS, via amendment, when available.

In future, please remember to ensure that footers in all revised documents match the electronic file tag and are updated appropriately. Kindly note that the revised Initial Review application and approved recruitment/consent documents were all administratively edited by OPRS staff to reflect the correct updated footers.

Please note that some revised recruitment materials have not been submitted for review/approval including, but not limited to, Teacher Recruitment Interview Only, v2,

Page 1 of 3



10/6/2020 and Admin Staff Recruitment Info, v2, 10/6/2020. Kindly remember to submit these recruitment materials if/as necessary.

Amendment Approval Date:

August 16, 2021

Amendment:

Summary: UIC Amendment #6, dated, and submitted and accepted 10 August 2021, is an investigator-initiated amendment regarding the following:

- (1) revising research procedures to reflect Chicago Public Schools' (CPS) plan to transition from remote to hybrid teaching in Fall 2021; as this research enters Phase 2 planning meetings with teacher participants will be conducted remotely, while teaching and observation activities with teacher and student participants will be conducted in person and video-recorded by investigators; only students for whom a CPS media permission/consent form is on file will be video-recorded; specific procedures will be made in consultation with the CPS RRB and Sullivan High School (Initial Review application, 8/10/2021); and
- (2) submitting revised recruitment and consent/assent documents reflecting the above (Phase 2 Teacher Recruitment Info, v4, 8/10/2021; Student Recruitment Info, v3, 8/10/2021; Phase 2 Teacher Consent, v5, 8/10/2021; Parental Permission, v5, 8/10/2021; Student under 18 Assent, v6, 8/10/2021; Student over 18 Consent, v5, 8/10/2021).

Approved Subject Enrollment #:

730

Performance Sites:

UIC, Purdue University

Sponsor:

NSF

Institutional Proposal (IP) #:

00534101

Grant/Contract No:

1813937

Grant/Contract Title:

Professional development for K-12 science teachers in linguistically diverse classrooms

Research Protocol:

- a) Professional Development for K-12 Science Teachers in Linguistically Diverse Classrooms; 08/10/2021

Documents that require an approval stamp or separate signature can be accessed via [OPRS Live](#). The documents will be located in the specific protocol workspace. You must access and use only the approved documents to recruit and enroll subjects into this research project.

Recruiting Materials:

- a) Student Recruitment Info; Version 3; 08/10/2021
- b) Phase 2 Teacher Recruitment Info; Version 4; 08/10/2021

Informed Consents:

- a) Student over 18 Consent; Version 5; 08/10/2021
- b) Phase 2 Teacher Consent; Version 5; 08/10/2021



Assent:

- a) Student under 18 Assent; Version 6; 08/10/2021

Parental Permission:

- a) Parental Permission; Version 5; 08/10/2021

Please be sure to:

- Use only the IRB-approved and stamped consent documents when enrolling subjects.
- Use your research protocol number (2019-1122) on any documents or correspondence with the IRB concerning your research protocol.
- Review and comply with the [policies](#) of the UIC Human Subjects Protection Program (HSPP) and the guidance [Investigator Responsibilities](#).

Please note that the IRB has the right to ask further questions, seek additional information, or monitor the conduct of your research and the consent process.

Please be aware that if the [scope of work](#) in the grant/project changes, the protocol must be amended and approved by the UIC IRB before the initiation of the change.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact the OPRS at (312) 996-1711 or me at (312) 996-2014. Please send any correspondence about this protocol to OPRS via [OPRS Live](#).

Sincerely,

Sandra Costello
Assistant Director, IRB # 2
Office for the Protection of Research Subjects

cc: Wonhwa Cho, Chemistry



**Initial Review Application: Social,
Behavioral, and Educational
Research**

201 AOB (MC 672)
1737 West Polk Street
Chicago, IL 60612-7227
Phone: 312 996-1711
<http://research.uic.edu/compliance/irb>

Version: 5.1; Date: 01/21/19

Date application completed by the Investigator: August 10, 2021

I. Research Title: Professional development for K-12 science teachers in linguistically diverse classrooms

II. Personnel

A. Principal Investigator (PI)

Name (Last, First) Ryu, Minjung	Degree(s) Ph.D.	Net ID (e.g., NetID@uic.edu) mjryu
Department Chemistry, Learning Sciences Research Institute	College Liberal Arts & Sciences	University Status <input type="checkbox"/> Student/Fellow/Resident <input checked="" type="checkbox"/> Faculty/Staff
Phone Number (312) 355-8055	UIC E-mail Address mjryu@uic.edu	

B. Faculty Sponsor – Complete only when PI is a student, fellow, or resident

Name (Last, First)	Degree(s)	Net ID (e.g., NetID@uic.edu)
Department	College	
Phone Number	UIC E-mail Address	

C. Primary Contact In Addition to PI – Complete only if the primary contact person is different than the PI

Name (Last, First)	Net ID (e.g., NetID@uic.edu)
Phone Number	UIC E-mail Address

☐ Principal Investigator grants this personnel access to OPRS Live for this protocol

D. List all co-investigators and key research personnel on [Appendix P](#) and upload with this application packet.

III. Performance Sites



Definition of a Performance Site: A performance site is a location at which the research is conducted, data is gathered from subjects and/or records, and/or subjects are consented into the research. Sites are performance sites whether the research activities there are funded or not funded.

A. Are there non-UIC performance sites?

- ☐ No – *Skip to Section IV.*
☒ Yes – Complete [Appendix K](#) and upload with this application packet

IV. Research Funding

A. Is this research funded?

- ☐ No – *Skip to Section V.*
☒ Yes
☐ Pending

B. Check all of the appropriate boxes for funding sources (including pending sources) for this research. *If the study is supported by more than one funding source, complete and upload [Appendix Z](#) for each additional funding source.*

- ☒ Federal Agency Name: **National Science Foundation**
☐ Foundation Name:
☐ State Agency Name:
☐ Department of Defense – Complete [Appendix Q](#) and upload with this application packet
☐ Sub-contract from non-UIC agency or institution: Name:
☐ Other - Name:

C. Funding Identification:

1. Institutional Proposal (IP) Number: **00534101**
2.
 - a. Name of the PI on the grant or contract received directly from the sponsor: **Minjung Ryu**
 - b. Is the PI of this grant or contract affiliated with UIC?
☐ No – Identify the agency or institution with which the above PI is affiliated:
Explain the relationship between that agency or institution and UIC:
☒ Yes
 - c. Grant, contract or sub-contract title: **Professional development for K-12 science teachers in linguistically diverse classrooms**
 - d. Grant, contract or sub-contract number: **1813937**

V. Conflict of Interest (COI)

All investigators must disclose all real, apparent, or potential Significant Financial Interest (SFI) to the IRB. For more information, see the [Investigator Conflict of Interest Disclosure Policy for Human Subjects](#).

A. Disclosure

1. At present or in the 12 months prior to this disclosure, did or does any investigator or investigator's family members have a significant financial interest (SFI) with the research sponsor or any subcontract recipient; or have a SFI reasonably related to a product (e.g., drug, device, method, treatment, etc.) that is the subject of the research; or have any other relationships (e.g. fiduciary, even if uncompensated) that may present a potential conflict of interest with this research?
☒ No
☐ Yes – See Section B below.
2. Are you aware of an institutional conflict of interest with this study?



- ☒ No
☐ Yes – See Section B below.

B. Management

If **YES** is checked for any of these questions, complete the disclosure and management plan via START myDisclosures application (<https://myresearch.uillinois.edu/myDisclosures/>). Guidance can be found on the COI website at <http://research.uic.edu/compliance/coi> under “Managing Conflicts”. Final IRB approval of the research cannot be provided until a management plan is in place and is approved by the IRB. For additional assistance contact the COI Office at (312) 996-3642 / (312) 996-4070 or email coi@uic.edu.

VI. Protocol Components

- A. Provide a description of the background and rationale for the proposed research. Cite appropriate literature to support the relevance and importance of this research.

Linguistic diversity in U.S. schools has increased due to the arrival of immigrants and refugees from around the world. Nearly 10% of the U.S. K-12 student population speak English as a second or third language and are still developing English proficiency (National Center for Education Statistics [NCES], 2017). While 77% of English learners (ELs) speak Spanish as their first language (L1), increasingly more ELs speak other languages than Spanish, such as Arabic, Chinese, Vietnamese, Hmong, and Somali. These changes have led to linguistically superdiverse classroom contexts (Creese & Blackledge, 2015), in which students speak multiple non-English languages with varying levels of proficiency in English, L1, and content area literacy. U.S. schools face an urgent need to support all ELs as they become independent members of a 21st century workforce while leveraging their rich and diverse cultural and linguistic resources and guide teachers in doing so (Suárez-Orozco, 2001).

Research on science education for ELs has recommended several effective teaching approaches, such as building on students’ diverse and rich resources, engaging students in authentic science learning practices, and encouraging and valuing flexible use of multiple languages (Bruna & Gomez, 2009; Lee, 2002; Swanson, Bianchini, & Lee, 2014; Warren, Ballenger, Ogonowski, Roseberry, & Hudicourt-Barnes, 2001). However, most research has focused on teaching speakers of Spanish in elementary and middle school level science classrooms in which a majority of ELs speak the same language (for exceptions, see Domínguez, Allestaht-Snyder, & Latimer, 2017; Roseberry, Ogonowski, DiSchino, & Warren, 2010; Upadhyay, 2009). Furthermore, while many professional development (PD) programs supporting science education for ELs provide a short-term workshop with newly designed curriculum and curriculum guide, there is a lack of PD models that engage teachers in a sustained community of practice through collaboration between researchers and teachers (Oliveira & Weinburgh, 2017).

To fill this gap in the literature and practices, the proposed project, Professional development for K-12 science teachers in linguistically diverse classrooms, will engage science and English as a New Language (ENL) teachers in a sustained professional

development (PD) program embedded within their everyday classes, designed for a linguistically superdiverse group of ELs. This project is expected to aid teachers in transforming their teaching materials and instructional practices to foster science learning of ELs. We will draw on research-based science teaching practices that foster linguistic minority students' learning of science and in-service teacher PD practices that ensure teachers' sustained growth and instructional transformation. An innovation in this project is to provide collaboration opportunities between the science and ENL departments, as such collaboration is often scarce or superficial, despite frequent recommendations from the research literature (National Academies of Sciences, Engineering, and Medicine, 2018).

- B.** State the research objectives/hypothesis being explored by the current research. Please include primary and secondary aims.

This study will occur in multiple phases. The overarching research objectives of the (complete) study are:

- 1. Identifying instructional materials and practices that foster ELs' science learning in superdiverse high school classrooms**
- 2. Understanding how teachers in linguistically superdiverse high schools learn to adopt these materials and practices**
- 3. Examining the impacts of the proposed PD programs on ELs' participation and learning**

Phase 1 of this study focuses on Research Objectives 1 and 2.

Phase 2 focuses on Research Objectives 1, 2 and 3.

Note: the dates of each phase (and each activity within the phases) are to be determined (TBD), based on COVID-19-related guidelines from the State of Illinois, UIC, and CPS.

- C.** Clearly describe the study design/intervention. The description should demonstrate how the stated objectives will be met.

This multi-phase project (within which this study is situated) includes both "standard or innovative educational practices" and research activities. In Phase 1 the "standard or innovative educational practices" include a five-day PD workshop focused on fostering ELs' science learning in a linguistically superdiverse high school. In Phase 2, the PD takes the format of ongoing cycles of Lesson Study (described in VI.D. below), followed by another 5-day PD workshop (all dates TBD). The research activities in Phases 1 and 2 include collecting multiple forms of data to achieve the research objectives (see below).

Objective #1 will be met by studying the existing educational practices of the school, and the PD program (Phases 1 and 2), where teacher participants will develop, implement and evaluate materials and practices that foster ELs' science learning. Research data will include videorecordings of the PD workshop (Phases 1 and 2) and lesson study meetings (Phase 2), audio-recorded interviews with teachers, school and district administrators and staff (Phases 1 and 2) and students (Phase 2 only), a focus

group for teacher subjects who participated in the PD (Phases 1 and 2), and digital images of artifacts produced by teachers and students (Phases 1 and 2).

Objective #2 will be met by studying the PD program (Phases 1 and 2). Research data will include videorecordings of the PD program (workshops and lesson study cycles, Phases 1 and 2), interviews with teachers (Phases 1 and 2), admin/staff (Phase 2) and students (Phase 2) , a focus group for teachers (Phases 1 & 2), and digital images of artifacts produced by teachers and students (Phases 1 and 2).

Objective #3 will be met by studying the PD program (summer workshops and Lesson Study cycles) and conducting interviews, during which teachers and students will reflect on ELs' participation and learning.

- D. Describe in chronological order all the tasks/tests or procedures subjects will be asked to complete in participating in this research. Distinguish between tasks performed solely for research and those being performed for non-research purposes.**

Due to COVID-19 pandemic and CPS closure for face-to-face instruction, all professional development and research activities have been administered fully online via UIC Zoom or UIC Google Meet (hereafter, Zoom and Google Meet respectively). As CPS reopens in-person instruction, the team will gradually transition to hybrid research, in which professional development and research activities will be administered remotely and/or in-person depending on the needs and CPS reopening policy. The specific decision will be made in consultation with CPS Research Review Board and Sullivan High School. All PD and data collection plans will remain the same as stated in the initial review application.

Phase 1 (August 2019 - Summer 2021):

Tasks performed for non-research purposes:

- **Fall 2019-January 2020: A non-research period to identify a partner school.**
- **February 2020-TBD: In order to understand the existing standard education practices in place at the partner school, we will visit classrooms at the partner school, talk informally with teachers, take written notes of our visits, and collect teachers' curricular artifacts. These notes and artifacts will be used for tailoring a PD program to meet the school's existing needs. (As described below, teachers may also consent to the research team entering these notes and artifacts into the research data. Without teachers' consent, the notes and artifacts will only be used for designing the PD, and not for research purposes.)**
- **Date TBD: Teachers from the partner school will be invited to attend a 5-day PD workshop that introduces materials and practices that foster ELs' science learning in superdiverse high school classrooms. (The PD program itself is a non-research "standard or innovative educational practice," and teachers may participate in the PD without consenting to participate in the research.) This workshop will occur outside of school hours, no students will be present, and will conclude with a focus group conducted by an external evaluator. Audio recordings of the teacher focus group**

(performed by an external evaluator) will be collected for evaluative (non-research) purposes only. A five day PD workshop will be spread out throughout the academic year. The total time commitment will remain the same. The detailed schedule will be determined through discussions with the participating teachers and school administrative staff. The online meeting will be recorded.

Tasks performed solely for research purposes:

- **February 2020 - date TBD:** an ethnographic research period to understand the school's existing standard educational practices. Includes classroom observations (field notes), digital copies of teachers' existing curricular materials, and/or an audio-recorded research interview with teachers and school/district administrators/staff regarding their experiences supporting learning in a linguistically superdiverse school.
- **Date TBD:** teachers who participate in the PD will be asked to: allow us to video- and audio record them during the 5-day PD workshops; allow us to make digital copies of all the materials that they created during the PD; participate in a research interview (in the weeks following the 5-day PD workshop).

Phase 2: (Fall 2021 - Summer 2022)

Tasks performed for non-research purposes:

- **Dates TBD:**
 - All science teachers at Sullivan High School will be invited to participate in a PD program consisting of ongoing cycles of "Lesson Study" (Lewis et al., 2004). Each cycle will consist of 4 steps, each of which lasts approximately 90 minutes, maximum one step per week:
 1. co-planning a lesson
 2. co-planning how that lesson will be observed by those not teaching it
 3. teaching, observing and video recording the lesson in one of the PD participants' science classrooms
 4. reflecting on the lesson using participants' observations, video recordings and student work from Step 3.
 - This PD program itself is a non-research "standard or innovative educational practice," and teachers may participate in the PD without consenting to participate in the research. Likewise, students of participating teachers may engage in the classroom lessons (in Step 3) without consenting to participate in the research.
 - Steps 1, 2, and 4 of each cycle will occur outside of school hours, no students will be present.
 - As part of Step 3 (teaching the lesson), the lesson will be video recorded solely for PD purposes, to be used in Step 4 of the PD. (The classroom videos will NOT be used as research data.) We will follow standard CPS protocol to ensure that students who have not submitted the standard CPS media permission form will not be video recorded (e.g. they will be seated off camera).

- During hybrid lesson study cycles (due to the public health guidelines from the States of Illinois, UIC, and CPS during the COVID-19 pandemic), planning meetings will be done remotely while teaching and observation will be done in person. The research team will videorecord the classroom for PD purposes. Participating teachers will identify students who have not submitted the standard CPS media permission form. These students will not be captured in the videorecording.
- In May 2021, a focus group will be conducted by an external evaluator. Audio recordings of the teacher focus group will be collected for evaluative (non-research) purposes only.
- **Dates TBD:**
 - All Sullivan science teachers will be invited to attend a 5-day PD workshop that engages teachers in developing materials and practices that foster ELs' science learning in superdiverse high school classrooms. (The PD program itself is a non-research "standard or innovative educational practice," and teachers may participate in the PD without consenting to participate in the research.) This workshop will occur outside of school hours, no students will be present, and will conclude with a focus group conducted by an external evaluator. Audio recordings of the teacher focus group will be collected for evaluative (non-research) purposes only. Depending on the public health condition and State of Illinois, UIC, and CPS's guidelines, the workshop may be modified. The total time commitment will remain the same. The detailed schedule will be determined through discussions with the participating teachers and school administrative staff. The online meeting will be recorded.

Tasks performed solely for research purposes:

- **Dates TBD:**
 - TEACHER subjects who participate in the PD will be asked to: allow us to video- and audio record them during the PD program described above; allow us to make digital copies of all the materials that they created during the PD program; participate in 1-2 audio-recorded research interviews (Phase 2 Interview #2 will serve as a follow-up to Phase 2 Interview #1). Note: the video recorded in Step 3 of each cycle of Lesson Study (teaching the lesson) WILL NOT be used for research purposes. Furthermore, we will take measures during Step 4 (reflecting on the lesson) to ensure that the non-research video recorded during Step 3 does NOT appear in the research data (e.g. During Step 4 of the PD, if the group watches the non-research classroom video recorded during Step 3, we will make sure that the monitors showing the classroom video are pointed away from the video cameras that are collecting research data.)
 - TEACHER subjects who do NOT participate in the PD will be asked to participate in an audio-recorded interview.
 - STUDENT subjects will be asked to allow us to make digital copies of classroom work, and to participate in 1-2 audio-recorded research

interviews. (Note: Student Interview Protocol A focuses on students' general experiences in a linguistically superdiverse school, and can be used with any student enrolled in a science class at the partner school. Student Interview Protocol B Focuses on students' experiences engaging in the lessons implemented as part of the PD program, and will be used only with students who are enrolled in classes where the teacher is participating in the PD.) Given that students are English language learners, they will be given the option of having an interpreter present during student interviews. (These interpreters will sign confidentiality agreements. Their names, affiliations, and other required contact information will be provided to IRB)

- ADMIN/STAFF subjects may be asked to participate in 1-2 audio-recorded interviews. (The number of interviews will vary from subject to subject. Any interviews conducted after the subjects' first interview (which could occur during Phase 1 or Phase 2, depending when the subject is identified) will serve as a follow-up to clarify or elaborate on responses provided during interview 1.
- **Dates TBD:**
 - Teacher subjects who participate in the 5-day Summer 2021 PD workshop will be asked to: allow us to video- and audio record them during the workshop; allow us to make digital copies of all the materials that they created during the workshop; participate in a research interview (in the weeks following the workshop).

E. Describe the plans for data analysis. If applicable, include statistical considerations and justification for subject population and planned enrollment numbers.

In order to meet our three research objectives above, we pose the following 3 research questions, which correspond to Objectives 1, 2, 3 above:

- 1. What are key elements of teaching materials and instructional practices that support ELs' learning in superdiverse science classroom settings?**
- 2. How do teachers in linguistically superdiverse high schools learn to adopt these practices and materials?**
- 3. What are the impacts of the innovative PD model on students' participation and learning?**

In Phase 1, we will focus on research questions #1 and 2 (and Objectives 1 and 2). In Phase 2, we will focus on research questions 1, 2 and 3 (and Objectives 1, 2 and 3). Our research data will include videorecordings of professional development activities (teachers only), interviews with participants (Phase 1: teachers and admin/staff only; Phase 2: teachers, school/district administrators and staff, and students), and digital images of artifacts produced by participants (Phase 1: teachers only; Phase 2: teachers and students). Analysis of each data type and the Research Objectives to which it corresponds are described below:

Videorecordings: Videorecordings of the PD program in Phases 1 and 2 will be used to address Research Questions 1, 2 and 3. We draw on approaches from (mediated) discourse analysis (Bucholtz & Hall, 2005; Kelly & Crawford, 1997; Jones & Norris, 2005; Wortham & Reyes, 2015), ethnography (Gordon, Holland, & Lahelma, 2001; Holland, Skinner, Lachicotte, Jr., & Cain, 1998), and video analysis (Derry et al., 2010). The research team will: 1) watch the videorecordings in their entirety, 2) select key events from video recordings that provide insights into each research question, 3) write analytic notes for the selected events, and 4) create a matrix that documents selected events, themes generated from the analysis, and target research questions that each episode can potentially answer.

Interviews: We will use interview data to address research question 1, and supplement analysis of video recordings to address research question 2 and 3. Interviews will be transcribed and coded. We will listen to, transcribe, and code audio-recorded interviews for emerging themes. We will create a matrix that maps selected segments of interviews, themes generated from the analysis, and target research questions.

Digital images of artifacts: Artifacts (e.g. lesson plans and teacher reflection journal in Phase 1 & 2; student work in Phase 2) that are produced by participants during the ethnographic period and the PD program will be used to supplement the analysis of video recordings to address research questions 1, 2 and 3. We will generate themes to code segments of artifacts (as described above) and create a matrix to map selected segments of artifacts, themes generated from the analysis, and target research questions. During the pandemic and hybrid PD activities, the artifacts will be shared using secured Box folder. The participating teachers will upload their artifacts to a shared Box folder, so that the research team can have access to them.

F. Is this a [clinical trial](#)?

☒ No – Skip to section VII

☐ Yes - Is the research required to be registered on <http://clinicaltrials.gov>? For more information, refer to the UIC HSPP policy [Clinical Trials Registration](#)

☐ No

☐ Yes – Include the required language within the informed consent document.

VII. Research Records

A. Indicate the type(s) of data being collected and/or recorded (*check all that apply*):

☒ Interviews/Questionnaires

☒ Audio recordings

☒ Video recordings

☒ Photographs

☐ School/Student records

☐ Internet research data

☐ Lab, pathology and/or radiology results

☐ University of Illinois Hospital & Health System medical records

☐ Physician/clinic/hospital medical records from sources outside of UI Health System

☐ Psychotherapy Notes

☐ Billing records

☐ Data previously collected for research purposes



- ☒ Data containing no health information
- ☐ Study-generated health information
- ☐ Biological specimens
- ☐ Other. Describe:

B. Will any of the following be banked or stored for future (planned or unplanned) analysis **beyond the scope of the current research proposal**? *If the following will be used and/or destroyed prior to the closure of the research, they are not considered to be stored; therefore, please answer "No".*

- biological samples or specimens
- identifiable data,
- coded data where a master list to the codes exists
- ☒ No
- ☐ Yes – Complete [Appendix D](#) and upload with this application packet.

Note: A plan for securely storing the data must be submitted for IRB review and approval if identifiable and/or coded data will be retained after the research has been completed. Development of a separate data/tissue repository/bank research protocol is required if the investigator will be retaining data from multiple proposals.

VIII. Research Subject Population

A. Indicate the anticipated subject enrollment number (This number cannot be exceeded without prior IRB review and approval via an amendment): **730**

B. Indicate which populations below are the PRIMARY FOCUS of this research. *Please refer to the [UIC HSPP policies](#) regarding the incidental enrolment of select vulnerable populations (i.e., decisionally impaired, prisoners, etc.).*

Check all that apply

- ☒ Adults (18 years of age and older)
- ☒ Minors (17 years of age and younger) – Complete [Appendix B](#) (required regardless of primary or incidental enrollment) and upload with this application packet
- ☐ Pregnant Women, Neonates, Fetuses/Fetal Tissue – Complete [Appendix U](#) and upload with this application packet
- ☐ Prisoners – Complete [Appendix C](#) and upload with this application packet - **Please note that certain types of research with prisoners approvable under the federal regulations may not be allowed under Illinois state law including, but not limited to, biomedical research.**
- ☐ UIC Employees
- ☐ UIC Psychology Student Subject Pool -
 - Complete [Appendix S](#) and a debriefing document and upload with this application packet;
 - Complete and upload [Appendix B](#) if the research will involve Pool subjects who are minors. If minors will be excluded, then a scientific justification must be provided under item VIII.D.1.b, below.
- ☐ UIC Management Study Pool - Complete [Appendix S](#) and a debriefing document and upload with this application packet
- ☒ Students - Complete [Appendix S](#) (required only if the research involves classroom activities and/or student records) and upload with this application packet
- ☐ Decisionally-Impaired - Complete [Appendix V](#) and upload with this application packet
- ☐ Economically and/or Educationally Disadvantaged
- ☐ Vulnerable to Coercion or Undue Influence
- ☐ Other: specify

C. If including economically and/or educationally disadvantaged subjects, subjects vulnerable to coercion or undue influence, UIC Employees, and/or other populations that may be considered

vulnerable, provide a rationale for their inclusion and what additional safeguards, if any, are in place to protect their rights and welfare:

In this study, teachers could feel undue influence to consent to the research if we required this consent in order to attend the PD. Teachers are included as participants in the study because they are crucial to answering the study's research questions. In order to protect their rights and welfare (and reduce this influence on their decision of whether to consent to the research), we are inviting ALL science and ELL teachers from the partner school to attend the PD program, regardless of whether they consent to participate in the research.

In addition, teachers may be vulnerable to coercion or undue influence by their principal to participate in the research. In order to protect their rights and welfare, we will ask the school principal to guarantee (to us and to all teachers who are eligible to participate in this study) that he or she will not, pressure, reward or punish teachers for choosing to participate or not participate in this study. Principals will be excluded from teacher recruitment meetings and the researchers will not reveal who has attended those meetings or consented to participate in the research.

Students could feel undue influence to consent to the research if it in any way impacted their course grade. Students are included as participants in the study because they are crucial to answering the study's research questions. In order to protect their rights and welfare (and reduce this influence on their decision of whether to consent to the research), we will ask the teachers to verbally guarantee (to us and to all students who are eligible to participate in this study) that they will not pressure, reward or punish students in any way for choosing to participate or not participate in this study. Researchers will not reveal which students have consented to participate in the research. Teachers will provide their verbal guarantee to the research team and to students during class following group recruitment meetings.

Admin/Staff could feel undue influence to consent to the research if it in any way impacted their performance evaluations. They are included in the study because they may be able to give alternative perspectives or information vital to answering the research questions. In order to protect their rights and welfare (and reduce this influence on their decision of whether to consent to the research), we will ask their supervisors to guarantee (to us and to the admin/staff they supervise) that they will not pressure, reward or punish them in any way for choosing to participate or not participate in this study. Researchers will not reveal which admin/staff have consented to participate in the research.

In compliance with State of Illinois's public health guideline and CPS's decision to offer all instruction remotely in the first quarter of 2020-21 academic year, all research activities will be administered online, including recruitment and informed consent process. This change is TEMPORARY to mitigate the changes made due to COVID-19 pandemic. As CPS returns to in-person instruction in 2021-2022, the research team will gradually transition to hybrid PD and research activities. Potential participants will be invited to an online meeting, and recruitment information sheets will be shared via



email prior to the meeting and discussed in the meeting. Consent forms will also be shared and thoroughly discussed during the recruitment meeting as well.

Consent forms will be collected electronically using Qualtrics, UIC approved online platform for informed consent process and data collection.

D. Eligibility Criteria

1. Provide specific details regarding the following:

- a. Inclusion Criteria: **Participants will include teachers and school/district administrators/staff (Phases 1 and 2), and students (Phase 2) at the partnership school and district (Roger C. Sullivan High School in the Chicago Public Schools district).**
 - **Eligible teacher participants will include people who teach at Sullivan. Maximum 20 teacher participants will be recruited.**
 - **Eligible admin/staff participants will include people who are school- or district-based staff or administrators who support science and/or ELL programs at Sullivan. Maximum 10 admin/staff participants will be recruited.**
 - **Eligible student participants will include people who are enrolled in science courses at Sullivan High School. Maximum 700 students will be recruited.**
- b. Exclusion Criteria: **People who are not teachers, students, staff or administrators at the partner school/district. Students from the partner school who are not enrolled in science classes.**

2. Explain how and by whom potential subjects will be assessed to determine their eligibility for the research: **Research team members will verify that all potential teacher subjects are eligible to participate by verbally verifying their status as Sullivan High School teachers with the partner school principal. Student subjects' eligibility will be verified by their presence in the school building and in the science classrooms. (The school has a very strict security procedure in which students must present their school ID to be admitted to the building, thus verifying that they are enrolled as a student in the school. In addition, all teachers take attendance at the beginning of each class period, which will serve as verification that the students present in the science classes are enrolled in a science class and thus eligible to participate in the study. Admin/staff will be verified using school/district websites.**

3. Explain how initial eligibility will be documented (upload any screening documents): **Initial eligibility will be documented by printing lists of Sullivan teachers, staff, admin and CPS administrators that are publicly accessible online, and highlighting the participants' names.**

4. Explain how subjects will be monitored during the course of the research to ensure that they still meet the eligibility criteria and how their continuing eligibility will be documented:

Teacher subjects who attend the PD will be monitored during the course of the research by comparing records of attendance at the PD workshop to the printed lists (of publicly accessible information) described above. Researchers will add initials to each subject's name during each day of the PD workshop and before each interview. Other teacher, admin and staff subjects' will be monitored by reviewing updated lists (or publicly accessible information) described above. Because of the school's strict security procedures for student admittance described above, student subjects will be monitored as eligible if they are present in science classrooms in the school building.

OR

☐ N/A – Assessment of continued eligibility is not required

IX. Recruitment of Subjects

A. Describe how potential subjects will be initially identified for this research study.

Identifying the partner school for engaging in the (NON-research) PD program (Aug- Oct 2019): We used public data (e.g. <https://www.illinoisreportcard.com>) about student demographics (e.g. ethnicity, % of ELs) of High Schools in the Chicago Public Schools to identify potential partner schools for the PD. (Looking for school populations with a high percentage of ELs and a number of ethnicities). Next, a UIC researcher(s) (not affiliated with this study) who has worked with CPS district-based science staff introduced us to these staff (via email). We met with these CPS staff to explain our project, gauge their interest, and to discuss which schools that we previously identified might make good matches for our project, based on known school needs and existing partnerships. We asked these district-based staff to connect us with the principals and district science specialists who serve these schools. (Note: In October 2019, Sullivan High School was identified as our partner school.

Identifying teachers to attend the (NON-research) PD (Nov 2019 - Jan 2020): Working with the principal and department chairs of the potential partner schools, we will set up informational meetings about the PD with teachers at a time and place that is mutually agreeable and in accordance with CPS teacher contracts. At these meetings, we will: 1) provide information about the PD, 2) answer teachers' questions about the PD, 3) seek input from the teachers about the needs of their schools and the ways in which the PD program might be tailored to fit the school's specific context. Based on the feedback we receive from teachers and principals from the Nov 2019 - Jan 2020 informational meetings about the PD, we will select a partner school for the PD (Sullivan High School) and begin non-research activities for the purpose of tailoring the PD program, including: informal visits, conversations and written notes.

Identifying TEACHERS who attend the PD to participate in the RESEARCH STUDY: All teachers who commit to the first 5-day PD workshop (dates TBD) will be identified as potential subjects for the research. At the Nov 2019-Jan 2020 informational meetings about the PD, we will also explain that: 1) all PD attendees will be invited to participate in a research study (at a later recruitment meeting, dates TBD); 2) Consenting to participate in the research is NOT required to attend the PD; 3) compensation will be provided for participating in the research (NOT the PD). (Note: Although the purpose of the Nov 2019-Jan 2020 informational meetings is to introduce the PD (and NOT the research), ethically we want to be up front with teachers from the very beginning about the presence and conditions of the study.) See "Science PD for ELs Admin Teacher meetings v1"

Identifying TEACHERS who do NOT attend the PD to participate in the RESEARCH STUDY: As we engage in the ethnographic study of the school, questions will arise that are best answered by teachers who do not attend (or do not plan to attend) the PD. We cannot precisely predict who this group will include but it is likely that we will identify people such as: science teachers who choose not to attend the PD, the special education teachers who co-teach with science teachers, and/or teachers of other subjects who collaborate with science teachers.

Identifying ADMIN/STAFF to participate in the RESEARCH STUDY: As we engage in the ethnographic study of the school (classroom observation, interviews with teachers), questions will arise that are best answered by individuals other than teachers. We cannot precisely predict who this group will include but it is likely that we will identify people such as: the school principal and/or assistant principal, classroom aides, district administrators in the STEM and ELL departments, and/or the district science coach who supports the school.

PHASE 2:

Identifying TEACHERS to attend the (NON-research) PD: In early Sept 2020, we will work with the principal and science department chair of the partner school to set up an informational meeting about the Phase 2 PD program at a time and place that is mutually agreeable and in accordance with CPS teacher contracts. At these meetings, we will: 1) provide information about the PD, 2) answer teachers' questions about the PD, 3) seek input from the teachers about the needs of their schools and the ways in which the PD program might be tailored to fit the school's specific context. See "Science PD for ELs Admin Teacher meetings v1"

Identifying TEACHERS who attend the PD to participate in the RESEARCH STUDY: All teachers who commit to the Phase 2 PD will be identified as potential subjects for the research. At the early Sept 2020 informational meetings about the PD, we will also explain that: 1) all PD attendees will be invited to participate in a research study; 2) Consenting to participate in the research is NOT required to attend the PD; 3) compensation will be provided for participating in the research (NOT the PD). See "Science PD for ELs Admin Teacher meetings v1"). (Note: Although the purpose of the early Sept informational meeting is to introduce the PD (and NOT the research), ethically we want to be up front with teachers from the very beginning about the presence and conditions of the study.) See "Science PD for ELs Admin Teacher meetings v1"

Identifying TEACHERS who do NOT attend the PD to participate in the research study: As we engage in the PD and research with some science teachers, questions will arise that are best answered by teachers who do NOT attend the PD. We cannot precisely predict who this group will include but it is likely that we will identify people such as: science teachers who choose not to attend the PD, special education teachers who co-teach with science teachers, and/or teachers of other (non-science) subjects who collaborate with science teachers.

Identifying ADMIN/STAFF to participate in the RESEARCH STUDY: As we engage in the PD and research with teachers, questions will arise that are best answered by individuals other than teachers. We cannot precisely predict who this group will include, but it is likely that we will identify people such as: the school principal and/or assistant principal, classroom aides, district administrators in the STEM and ELL departments, and/or the district science coach who supports Sullivan.

Identifying STUDENTS to participate in the RESEARCH STUDY: all students enrolled in science courses at Sullivan are identified as potential research subjects.

B. Describe how, where, when, and by whom subjects will be recruited for the research.

PHASE 1:

RECRUITING TEACHER SUBJECTS (who plan to attend the first 5-day PD workshop):

On a date yet to be determined, we will set up a research recruitment meeting for teachers who plan to attend the first 5-day PD workshop at the partnership school, at a time and place that is mutually agreeable and in accordance with CPS teacher contracts. (Only teachers who are planning to attend the first 5-day PD workshop will be invited to this research recruitment meeting.) PI Ryu and Postdoc Ricketts will provide the (attached) "Research Recruitment Info Sheet", review the research information with participants, (including time commitments, research consent, risks and benefits, participants' rights and protections, compensation) and answer teachers' questions about the PD and the research. We will provide the consent form and provide quiet time to read the form, followed by a period for teachers to ask questions about the form. We will remind teachers that: 1) consenting to participate in the research is NOT required to attend the PD; 2) they can withdraw from the study at any time, without consequences (e.g. they can continue to

attend the PD even after they withdraw from the research). We will invite them to pose questions to us publicly at the meeting or privately via email or phone. Teachers may return their consent forms at the end of the recruitment meeting, or privately at a later date after their questions have been answered, before the PD begins. (We request that subjects return these forms prior to the PD so that we may take active measures during the PD to protect teachers who do not consent to the study from having data collected about them. See the section on Privacy and Confidentiality for more information about these protective measures.)

RECRUITING TEACHER SUBJECTS (who do NOT plan to attend the first 5-day PD workshop): As potential teacher subjects (who do not plan to attend the PD) are identified, project staff will meet with them individually to provide the (attached) "Teacher Recruitment Sheet - Interview Only," review the research information with them (including time commitments, research consent, risks, benefits, rights and protections). We will provide the consent form and provide quite time to read the form, followed by a period for subjects to ask questions about the form. We will remind subjects that they can withdraw from the study at any time, without consequences. We will invite them to pose questions to us at the meeting and/or later via email or phone. Subjects may return their consent forms at the end of the recruitment meeting, or at a later date after their questions have been answered.

RECRUITING ADMIN/STAFF SUBJECTS: As potential admin/staff subjects are identified, project staff will meet with them individually to provide the (attached) "Admin/Staff Recruitment Info Sheet," review the research information with participants (including time commitments, research consent, risks and benefits, participants' rights and protections). We will provide the consent form and provide quiet time to read the form, followed by a period for subjects to ask questions about the form. We will remind subjects that they can withdraw from the study at any time, without consequences. We will invite them to pose questions to us at the meeting and/or later via email or phone. Subjects may return their consent forms at the end of the recruitment meeting, or at a later date after their questions have been answered.

PHASE 2:

RECRUITING TEACHER SUBJECTS (who plan to attend the Phase 2 PD): On a date yet to be determined, we will set up a research recruitment meeting at Sullivan, at a time and place that is mutually agreeable and in accordance with CPS teacher contracts. (Only teachers who are planning to attend the Phase 2 PD program will be invited to this research recruitment meeting.) PI Ryu will provide the (attached) "Research Recruitment Info Sheet", review the research information with participants, (including time commitments, research consent, risks and benefits, participants' rights and protections, compensation) and answer teachers' questions about the PD and the research. We will provide the consent form and provide quiet time to read the form, followed by a period for teachers to ask questions about the form. We will remind teachers that: 1) consenting to participate in the research is NOT required to attend the PD; 2) they can withdraw from the study at any time, without consequences (e.g. they can continue to attend the PD even

after they withdraw from the research). We will invite them to pose questions to us publicly at the meeting or privately via email or phone. Teachers may return their consent forms at the end of the recruitment meeting, or privately at a later date after their questions have been answered, before the PD begins. (We request that subjects return these forms prior to the PD so that we may take active measures during the PD to protect teachers who do not consent to the study from having data collected about them. See the section on Privacy and Confidentiality for more information about these protective measures.)

RECRUITING TEACHER SUBJECTS (who do not attend the PD): Same procedure as Phase 1, see above.

RECRUITING ADMIN/STAFF SUBJECTS: Same procedure as Phase 1, see above.

RECRUITING STUDENT SUBJECTS: On a date yet to be determined, researchers will work with science teachers to schedule student recruitment meetings in science classrooms. At the recruitment meetings, we will provide the (attached) "Student Research Recruitment Info Sheet", review the research information with students, (including time commitments, research consent, risks and benefits, participants' rights and protections, compensation) and answer questions about the research. We will provide the consent forms and provide quiet time to read the form, followed by a period for subjects to ask questions about the form. We will remind subjects that they can withdraw from the study at any time, without consequences. We will invite them to pose questions to us directly at the meeting or privately via email or phone. Subjects may return their consent forms at the end of the recruitment meeting, or privately at a later date after their questions have been answered.

- C. Explain the proposed measures to minimize the possibility of coercion or undue influence on potential subjects, particularly for subjects identified in VIII.B. as being vulnerable (*for example: how will you maximize the subject's autonomous decision-making; what if the investigator is also the participant's healthcare provider, what if the participant is enrolled in a class the investigator is teaching, what if an employer/employee relationship exists*).

In order to maximize teachers' autonomous decision-making, teachers will NOT be required to participate in the research in order to attend the PD. As such, any teacher who withdraws consent from the research during the PD can continue to attend the PD.

In addition, we will request that the principal verbally guarantee (to us and to the teachers) that there will be no consequences for teachers' participation or non-participation in the research, and that the principal will not attempt to coerce any teacher into participating in the research in any way. Furthermore, principals will not be invited to teacher research recruitment meetings, and the researchers will not reveal who has consented to participate in the research.

In order to maximize admin/staff's autonomous decision-making, researchers will assure potential subjects that we will not reveal (to their supervisors, nor to anyone) who has or has not consented to participate in the research.

In order to maximize students' autonomous decision-making, we will request that their teachers guarantee (to us and to the students) that there will be no consequences for participation or non-participation in the research, and that the teachers will not attempt to coerce any subject into participating in the research in any way.

Furthermore, researchers will assure students that we will not reveal (to teachers, nor to anyone) which students have or have not consented to participate in the research.

- D. Will any identifiable data obtained at recruitment, including screening data from records, be retained without consent from subjects who failed to qualify or declined to participate?

☒ No

☐ Yes – Describe the screening data to be retained and justify the retention of such data:

- E. **Check and upload all materials that will be used for recruitment.** Refer to the OPRS website for the [Investigator Guidance: Recruitment Materials](#) for additional information.

☐ No recruitment materials will be used

☒ Print materials (flyer, brochure, info sheets, etc.) – Describe: **(see attached) info sheets for: 1) teachers who participate in the PD, 2) teachers - interview only, 3) admin/staff and 4) students**

☐ Ad (radio, TV, etc.) – Describe:

☐ Letter – Describe:

☐ Verbal script – Describe:

☐ Electronic materials (e.g., website, mass mailing, email notice) – Describe:

☐ Social Media – Specify social media outlets:

☐ Other – Describe:

X. Reasonably Anticipated Risks of the Research

- A. Identify all of the reasonably anticipated risks or discomforts that may result from participation in this research (actual and reasonably possible, current and future) and describe the expected frequency, degree of severity, and potential reversibility of those risks (if known). *Remember that risks can be psychological, physical, social, economic, or legal.* If any portion of the research involves review of medical records, the potential for loss of privacy or confidentiality of health information should be listed as a risk.

There are some minimal potential risks to participants in this study. Risks may include self-consciousness of videorecordings during the PD program and anxiety or fatigue on the part of interviewees during interviews and focus groups. Furthermore, participants may risk being identified as participants in the study.

In online administration of this project, there are a few unique concerns of privacy and confidentiality. Videorecording of online meeting can end up recording participants' (both teachers and students) private space and sounds from other family members; the conversation between participants and the research team members can be heard by other family members. During the recruitment process, these possibilities will be fully discussed, and participants will be given an option to stop and reschedule any online meeting if unanticipated situation comes up that may potentially breach privacy and confidentiality of participants.

- B. Describe the measures taken to minimize the risks (other than undue influence or breaches of privacy and/or confidentiality) listed above. *Measures may include screening of subjects by qualified personnel, eligibility criteria, use of procedures already being used for clinical purposes, qualifications and experience of staff performing procedures, specialized facilities or equipment, medical or psychological services that may be required as a consequence of the research and frequency of monitoring.*

To minimize the risks of self-consciousness during videorecording, all participants will be encouraged to ask the researchers questions throughout the duration of the study and will be reminded throughout the study that they may withdraw at any time without penalty. To minimize anxiety or fatigue during interviews, subjects will be informed that they can skip any questions, especially those they do not feel comfortable answering.

To minimize risk of breach of privacy and confidentiality during online data collection, participants will be encouraged to use a virtual background, mute their microphone while they are not talking, find a private space in their home (if they participate from home) where they can have a private conversation with a research team member. Participants will be also reminded that if an unexpected situation comes up that can potentially breach their privacy and confidentiality, data collection can be suspended until a more appropriate time becomes available.

- C. Describe the process for reporting any unanticipated problems to the IRB and sponsor, as applicable. **Any unanticipated problems will be reported via email by PI Ryu to UIC's IRB and to the NSF Program Officer designated to this project.**

XI. Reasonably Anticipated Benefits of the Research

- A. Identify the potential for benefits to individual subjects, including those related to an experimental intervention or interaction that are available only in the context of the research. *Please note that participation in Social and Behavioral Sciences research (such as interviews, focus groups, surveys) rarely presents a direct benefit to the subject. Unless a direct benefit to subjects is anticipated (such as an educational benefit from a new curriculum, therapeutic benefit from a new service/therapy), please state that no direct benefits to subjects are anticipated.*

There may be potential benefits to the participants of the study. During the process of interviews, participating teachers may reflect on their own teaching and learning practices and how they improve their practices. This reflection may impact their future teaching and learning within and beyond the project context.

- B. Indicate how the knowledge gained from the study could produce a benefit to society or to others who share the same disorder or condition.

Potential benefits of the project to the society include new knowledge in science teaching and learning of culturally and linguistically non-dominant learners, and its implications for science teaching in superdiverse classroom contexts.

XII. Privacy and Confidentiality

- A. Describe the precautions taken to protect subject privacy during the initial identification of subjects, subject recruitment, and collection of data from the subjects (*for example: what precautions will be taken to protect the subject from being recognized as a research subject if recruitment or data collection occurs in a group setting or in public?*).

To protect the identification of teacher subjects by other teachers who attend the (group) recruitment meetings but choose not to participate in the study, we will invite teachers to return their consent forms to researchers in private, at a later time/date. Alternatively, teacher subjects may choose to forgo group recruitment meetings altogether, and instead receive research recruitment information from the researchers individually and privately. Researchers will not reveal which teachers have or have not consented to participate. Furthermore, during the study interviews and focus groups will be conducted in a private room (other than the PD room), and arrangements for interviews and focus groups will be made privately with each research participant, rather than publicly during the PD.

To protect teachers who attend the PD but who do not consent to the research from the researchers using any data about them, we will take active measures to exclude them from data collection. Specifically, we will seat them off camera during the PD, we will not interview them, we will not include them in the focus group, and we will not copy their PD artifacts. Despite these measures, their voices may be captured by the video camera during the PD. Such data from non-subjects will not be transcribed nor included with the research data.

Because some of the research data collection (e.g. video recording) occurs in a public setting (during the PD), some of the research subjects may be able to be identified by other research subjects, and by the PD attendees who do not consent to the research (based on the location in which the video camera is placed). In addition, because the focus groups are conducted with all research participants simultaneously, research participants will be able to identify other research participants.

To protect the privacy of teacher subjects who do not attend the pd, we will hold recruitment meetings with individual subjects and will not reveal who has consented to participate.

To protect the privacy of admin/staff subjects, we will hold recruitment meetings with individual subjects and will not reveal who has consented to participate.

To protect the privacy of student subjects, we will invite students to return their consent forms to researchers directly, and we will not reveal who has consented to participate.

Security in online meetings: To minimize a potential breach of security during online interviews and PD meetings, university-recommended online meeting practices will be employed (see guideline by UIC's ACCC: <https://answers.uillinois.edu/uic/page.php?id=99814>)

B. Data Security and Management Plan**1. Indicate the identifiable elements that will be collected and/or included in the research records.**

Check all that apply

- | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------|
| <input checked="" type="checkbox"/> Names | <input checked="" type="checkbox"/> Social Security Numbers* | <input type="checkbox"/> Device identifiers/Serial numbers |
| <input type="checkbox"/> Phone numbers | <input type="checkbox"/> Medical record numbers | <input type="checkbox"/> Web URLs |
| <input type="checkbox"/> Street address | <input type="checkbox"/> Health plan numbers | <input type="checkbox"/> IP address numbers |
| <input type="checkbox"/> City or state | <input type="checkbox"/> Account numbers | <input type="checkbox"/> Biometric identifiers ¹ |
| <input type="checkbox"/> Zip Code | <input type="checkbox"/> Fax numbers | <input type="checkbox"/> Vehicle ID numbers |
| <input checked="" type="checkbox"/> E-mail address | <input type="checkbox"/> License/Certificate numbers | <input checked="" type="checkbox"/> Facial Photos/Images |
| <input type="checkbox"/> Financial account information (including student ID) | | |
| <input type="checkbox"/> All elements of dates (except year) for dates directly related to an individual; and all ages over 89 and all elements of dates (including year) indicative of such age | | |
| <input type="checkbox"/> Date of Birth | | |
| <input type="checkbox"/> Identifiable UIC Student Records ² | <input type="checkbox"/> University Identification Number (UIN) | |
| <input checked="" type="checkbox"/> Any other unique identifier - Specify: voices in audio recordings | | |
| <input type="checkbox"/> None of the identifiers listed above – Skip to item C | | |

¹ Biometric Identifiers are observable biological characteristics which could be used to identify an individual, e.g., fingerprints, iris/retina patterns, and facial patterns.

² Documentation of approval from the Registrar must be submitted unless prospective signed consent is obtained from the student or guardian.

***NOTE:** If social security numbers will be collected, explain below why they are necessary and how they will be used:

UIC researchers will not collect Social Security Numbers or Taxpayer Identification Numbers from any participants. Rather, teachers who are eligible for compensation for their participation in the study will complete the Vendor Information Form found at <https://www.obfs.uillinois.edu/common/pages/DisplayFile.aspx?itemId=158853>. Eligible teachers will submit this paper-based form privately and directly to UIC's Office of Business and Financial Services (OBFS) via U.S. Mail or fax. All information on the form (including Social Security Numbers or Taxpayer Identification) is used for the sole purpose of compensation, it is not part of the research data.

2. Data Collection and Storage**a. Identify what methods you will use to collect and store data:**

- ☒ Internet-based application/package – Specify:
- ☐ REDCap [define host] ☐ CCTS/IHRP ☒ Other (define): **Purdue University Research Repository**
- ☐ UIC ACCC Qualtrics
- ☒ UIC Box
- ☐ UIC Box Health Data Folder (for research involving PHI)
- ☐ *Survey Monkey or other commercial survey service – Specify:
- ☐ *Other - A thorough description of the characteristics of the application/tool must be provided. This description should address the following elements if applicable: product/tool name, host, security measures, encryption mechanism, and how collected data is maintained and stored by the application/tool.
- ☒ Non internet-based application (i.e. directly on a desktop/laptop).
- ☐ Paper
- ☒ Recording Media - ☒ Photo ☒ Video ☒ Audio

Specify how the data will be stored and how participants will be identified in the recordings:

These data will be stored in 4 secure places: 1) UIC Box; 2) password-protected external hard drive stored in a locked cabinet in the (locked) PI's office; 3) password protected desktop computer in the (locked) PI's office; 4) Purdue University Research Repository. Due to the



inherent audio/visual nature of video and audio recordings, participants' faces and voices may be directly identifiable in these (raw) recording media. (See data security section below for details about protecting participants' identity.)

- ☒ Subject Artifacts (such as classroom assignments, regular work products, lesson plans)
- ☐ Stored specimens
- ☐ Other:

***Note:** Any investigator who uses external survey software other than REDCap, UIC ACCC Qualtrics, or UIC Box Health Data Folder for collecting and maintaining UIC/UI Health PHI and/or [personal data](#) from individuals physically located in the [European Union Economic Area \(EEA\)](#) must provide evidence of a business associate agreement between the University and the external survey software provider. For more information, refer to the UIC HSPP policy [Research Data Security](#). Please contact OPRS for more information regarding data collected in the EEA and the [European Union General Data Protections Regulation \(EU GDPR\)](#).

- b. Describe whether and how social media platforms (e.g., Facebook, Twitter, Snapchat, etc.) will be used to collect data and/or communicate with subjects:
 - ☒ Not applicable

3. Data Security

- a. Describe how all types of data as selected above will be secured.

- i. ☒ Indirectly with a code linked to the identity of the subject.

Describe the coding method, specify who will have access to the code/master key, indicate where the key is stored, and explain how it will be protected against unauthorized access: **CODING: Each subject will receive a unique identifier. This identifier will be linked to their identity on a Master Key that will be stored in the PI's locked office in the UIC Chemistry department. The file titles of all digital data will use this unique code/pseudonym (rather than participants' names) and will be securely stored (as described above). After data analysis, the subject Master Key will be destroyed by the PI.**

Subject Artifacts: Artifacts produced by research subjects during the ethnographic school study and the professional development program (including student work produced during the implemented classroom lessons) will be stripped of identifiers and replaced with pseudonyms/codes before they are scanned, photographed and/or digitally copied (e.g. making a copy of a google doc). Subject artifacts will be protected against unauthorized access by securely storing them in the same manner as the Recording Media (described above).

Interviews, videos: During audio-recorded interviews and audio/video recorded PD sessions, codes/pseudonyms will be used instead of participants' names. If any participant (or researcher) uses the real name of a participant/school/district during an interview or PD session, those names will be replaced in the transcript with pseudonyms/codes. With participants' explicit permission (see consent form), researchers may show short segments of research video during professional conferences or as part of educational coursework (NOT for future promotion as an educational program). No video clips will be shown that contain participants' real names. These data will be protected against unauthorized access by securely storing them in the manner described above. Note: The classroom video will be used SOLELY for PD purposes, NOT as research data, thus no segments of this video will ever be shown outside the PD setting.

- ii. ☒ Directly, personal or private identifiers (identifiable elements) are maintained with the data.
Justify the inclusion of direct subject identifiers, and indicate who will have access to the data: **Although pseudonyms/codes will be used during interviews and PD sessions, subjects' voices or faces may be directly identifiable in these (raw) recording media. Only the research team will have access to these data. [Exception: with participants' explicit permission (see consent form), researchers may show short segments of research video during professional conferences or as part of educational coursework. No video clips will be shown that contain participants' real names.] These data (raw recordings) will be protected against unauthorized access by securely storing them in the manner described above. Note: The classroom video will be used SOLELY for PD purposes, NOT as research data, thus no segments of this video will ever be shown outside the PD setting.**
- iii. ☐ Limited Data Set [Protected Health Information (PHI) subject to the Privacy Rule that includes elements limited to city, state, ZIP Code, elements of date, and other numbers, characteristics, or codes not considered as direct identifiers]. *Requires a Data Use Agreement.*

Please note:

- Items i and ii require consent and/or authorization (if PHI is involved) from the subject or a Waiver of Consent and/or Waiver of Authorization (if PHI is involved) from the IRB.
- UIC and/or outside agencies may require the use of a data use/data transfer agreement that outlines the procedures necessary to protect identifiable or coded data that will be transferred or shared between agencies. You must contact the [Office of Research Services \(ORS\)](#) at 312-996-2862 for additional information and direction.

b. Indicate the method(s) used to secure each data type.

- ☒ Password access
- ☒ Portable devices – Specify encryption software (required): **Western Digital**
- ☐ Encryption software will be used – Specify encryption software:
- ☒ Secure network server will be used – Specify secure server: **UIC Box; Purdue University Research Repository (for focus group audio ONLY)**
- ☒ Stand alone desktop/laptop computer will be used to store data
- ☐ Not connected to server/internet
- ☐ An organization outside of the UIC will store the code key.
- ☒ Locked file cabinet
- ☒ Locked office/lab.
- ☐ Locked office suite.
- ☐ Locked refrigerator/freezer
- ☐ Other - Specify:

c. Indicate when **identifiers (including the master list) will be removed or destroyed.**

- ☐ End of data collection
- ☒ End of data analysis
- ☐ Post publication/dissertation defense
- ☒ Other – Specify: **As described in Section XII.B.3.a.i and iii, with teacher participants' explicit consent, identifiers (faces and voices) from short segments of research video clips recorded during the PD will be retained indefinitely to be**

shown in professional conferences and educational courses (although pseudonyms will be used, faces and voices remain directly identifiable). All other identifiers will be removed and destroyed after data analysis. Note: Classroom video will be used solely for PD purposes, and will never be shown outside the PD setting.

4. Data Sharing

- a. Will the data or specimens be shared with persons **other than** UIC investigators and research staff noted on the protocol application and Appendix P?

☐ No – *Skip to item C.1.*

☒ Yes – Specify with whom the data will be shared: **The NSF funder requires investigators to complete an external evaluation of the project that is separate from this main study, and will be submitted and reviewed separately from this main study. As part of that external evaluation, Dr Lisa Kirkham, of Purdue University, will conduct an audio-recorded focus group with research subjects who consent to participate in the focus group. The external evaluation and the information collected will remain at Purdue University and the evaluators will not share their data with the investigators on this main study. A separate external evaluation report, which does not contain identifiers, will be shared with the NSF funder and the investigators on this main study.**

- b. Indicate the manner in which the data will be shared:

☒ As a de-identified dataset – *Skip to item C.1.*

☐ With direct identifiers

☐ With indirect identifiers (i.e., coded dataset) and/or [Limited Data Set](#)

Identify who will have access to the code key or master list:

- c. Specify how identifiable data will be transferred:

☐ Non-electronic transfer (hard copy or physical specimens) – Specify:

☐ Transmitted over a secure network – Specify network:

☐ Via UIC e-mail - Specify encryption:

☐ Cloud based data sharing program (*UIC Box Health Data Folder is the only approved method of sharing PHI in this manner*)

Specify:

☐ Other - Specify:

- C. 1. Does the research protocol have a data and safety monitoring plan? *For more information refer to UIC OPRS HSPP policy [Data and Safety Monitoring Plans \(DSMPs\)](#), [Data and Safety Monitoring Boards \(DSMBs\)](#), and [Data Monitoring Committees \(DMCs\)](#).*

☒ Not Applicable. – *Skip to item D* as all of the following criteria are met:

- research is minimal risk,
- research does not involve physical or therapeutic intervention with subjects,
- subject trauma or distress is not an anticipated risk, and
- the sponsor does not require a monitoring plan.

☐ Yes – Describe the plan:

2. Is this a multi-center trial AND UIC is the lead site or serving as the data coordinating center?



- ☐ Yes – Plans for managing and communicating the unanticipated problems involving risks to subjects or others, interim results, and protocol revisions among the multiple sites are described within the uploaded protocol OR explain:
- ☒ No

D. Will you be applying for a Certificate of Confidentiality? Research funded by NIH that involves sensitive, identifiable data will be automatically granted a Certificate of Confidentiality. Ensure the consent document includes the appropriate language.

- ☒ No
- ☐ Yes – Include the required template language in the consent document and refer to the [Guidance for Investigators: Certificates of Confidentiality](#) for more information regarding the submission process and regulatory requirements.

E. Is this research being funded by the National Institute of Justice?

- ☒ No
- ☐ Yes – The investigator is responsible for the following:
- Uploading the NIJ Privacy Certificate
 - Ensuring the proposal indicates that a copy of all data must be de-identified and sent to the National Archive of Criminal Justice Data, including copies of the consent document, data collection instruments, surveys, or other relevant research materials
 - Ensuring the Informed Consent Document(s) include:
 - o NIJ approved Privacy Certificate language
 - o De-identifiable information will be sent to the National Archives of Criminal Justice Data
 - o A statement indicating that if a subject is a danger to themselves or others, it will be reported to the authorities
 - o A statement indicating that communicable diseases (TB, HIV) will be reported to the state and/or federal public health authorities
 - o Statement that current or past domestic, child, or elder abuse is not reportable

Refer to the [Additional Consent Template Language](#) and the [Guidance for Investigators: Informed Consent](#) for additional information.

XIII. Compensation & Costs

Payment in exchange for referrals of potential participants (finder's fee) and payments designed to encourage or accelerate recruitment by being tied to the rate or timing of enrollment (bonus payment) are generally unacceptable.

A. 1. Will subjects receive any compensation (for example: money, gifts, or gift certificates) directly related to research participation? *If subjects will be entered into a lottery, select "No" and skip to item B.*

- ☐ No – Skip to item B.
- ☒ Yes - Indicate the type of compensation.
- ☒ Monetary (total amount: **\$:1000 per teacher participant each semester. (Students, admin/staff and those teachers who consent only to a research interview are not compensated.)** NOTE: Teacher subjects only receive the \$1,000 compensation for participation in the focus group, interview and video – and not for attending the PD.
- ☐ Non-Monetary
- ☐ Both

2. Describe in detail:

- a) How compensation will be prorated (e.g., \$x for each visit, \$y for subjects who do not qualify after screening visit, etc.): **Compensation will be prorated based on the percentage of the research completion [e.g. Number of hours of research participation during the 31- or 32-hour data collection period each semester]**
- b) When compensation will be provided (e.g., after each visit, at the completion of all visits, 6-8 weeks after the completion of all visits due to processing of check, etc.) **and** in what format (e.g., cash, check, VISA gift card, etc.): **compensation will be provided within 30 days of completion of each semester's data collection. A check will be mailed to individual participants by the University Payables.**

B. Will subjects be entered into a lottery for compensation (for example: money, gifts, or gift certificates) before, during, or after participation in the study?

☒ No☐ Yes -

- a. Provide a justification for conducting a lottery rather than compensation per subject:
- b. Indicate the type of compensation:
- c. Indicate the odds of winning the lottery:
- d. Indicate when the winner will be notified and receive the compensation:

C. Does this study provide payments in exchange for referrals of potential participants (finder's fees) or payments designed to encourage or accelerate recruitment by being tied to the rate or timing of enrollment (bonus payment)?

☒ No☐ Yes – Describe:

D. Are subjects or their insurance/third-party payer responsible for any research-related costs?

☒ No☐ Yes – Complete items a and b:

- a. List the procedures/expenses:

- b. Provide a justification as to why research-related expenses are not being covered by the research.

XIV. Procedures to Obtain Informed Consent/Assent

A. Indicate the type(s) of consent you will obtain:

☒ Written☐ Verbal☐ Waiver of Informed Consent and/or Waiver of Signed Consent

B. Indicate who will obtain informed consent from potential subjects.

☒ PI☐ Co-investigators☒ Research coordinators/Others as delegated

C. Indicate where and when informed consent will be obtained from potential subjects.

Consent will be obtained prior to initiating any research activities.**PHASE 1:**

- We will obtain informed consent from TEACHERS who plan to attend the Phase 1 PD workshop at a date to be determined during a group recruitment meeting, at the partner school in a mutually agreed upon meeting space. Participants may return their consent forms publicly during this meeting or later in a private space. If new participants join the project after this date, we will obtain informed consent as they join, prior to collecting any research data.
- We will obtain informed consent from TEACHERS who do NOT plan to attend the Phase 1 PD workshop throughout the Phase 1 data collection period during individual meetings at the partner school in a mutually agreed upon meeting space.
- We will obtain informed consent from ADMIN/STAFF throughout the Phase 1 data collection period during individual meetings at the partner school/district office in a mutually agreed upon meeting space.
- During the period of the pandemic and hybrid PD, the research team and teachers who are interested in participating in PD and research will virtually meet via Zoom or Google Meet at a mutually agreed time. We will share an electronic version of consent form, give the teachers time to review the form, and discuss if they have any question. After the meeting, we will share the consent form electronically via Qualtrics and collect their electronic signature.

PHASE 2:

- We will obtain informed consent from TEACHERS who plan to attend the Phase 2 PD program (dates TBD) during a group recruitment meeting, at the partner school in a mutually agreed upon meeting space. Participants may return their consent forms publicly during this meeting or later in a private space. If new participants join the project after this date, we will obtain informed consent as they join, prior to collecting any research data.
- We will obtain informed consent from TEACHERS who do NOT plan to attend the Phase 2 PD throughout the Phase 2 data collection period (dates TBD) during individual meetings at the partner school in a mutually agreed upon meeting space.
- We will obtain informed consent from ADMIN/STAFF throughout the Phase 2 data collection period (dates TBD) during individual meetings at the partner school/district office in a mutually agreed upon meeting space.
- We will obtain informed consent/parent permission from STUDENTS on a date yet to be determined during student recruitment meetings in science classrooms at the partner school. Students may return their consent forms publicly during this meeting (if they are 18 or older) or later in private, directly to the PI. [Note: Researchers will request that ALL students (adults and minors) return the consent/parent permission form in a sealed envelope provided by the PI - regardless of whether it is completed or blank - so that students will not know who has consented to participate. If new participants join the project after this date, we will obtain informed consent as they join, prior to collecting any research data.
- We will obtain assent from STUDENTS UNDER 18 (after they have provided parent permission as described immediately above), privately. At the beginning of each student's interview, we will ask them to read and sign the student assent document.

- **Below, we explain how we would each type of subjects will be consented remotely during the pandemic a hybrid research period.**
 - **Teachers:** The research team and teachers who are interested in participating in PD and research will virtually meet via Zoom or Google Meet at a mutually agreed time. We will share an electronic version of consent form, give the teachers time to review the form, and discuss if they have any question. After the meeting, we will send the consent form electronically via Qualtrics and collect their electronic signature.
 - **Admin/Staff:** The research team will contact potential subjects via email with the recruitment information and set up an initial meeting. In the initial meeting, we will share an electronic version of the consent form, give them time to read the consent form, and discuss any questions. Then, we will send the consent form via Qualtrics and collect their electronic signature. Depending on their preference and availability, interviews can be done either in this initial meeting or be scheduled for another time. All the virtual meetings/interviews will be done in Zoom or Google Meet.
 - **Students:** The PI will provide the participating teachers with links for student consent (age 18 or over), assent, and parent consent forms, to be emailed to their classroom students and parents. Once completed, the students/parents will receive an email confirmation that the form has been completed and to alert the PI if this has been done in error.

D. Does the potential exist for enrolling subjects (or subjects' LARs) who do not understand English?

☐ No

☒ Yes – Describe how the consent process will be conducted (e.g., who will convey information to the subject or LAR in a language they understand, whether the consent will be documented using a translated consent form or short form).

The research team will conduct the student recruitment meetings during which the consent process will be explained. To facilitate understanding, we will project onto large screens key terms (e.g. "interview," "consent") and several images (e.g. photos of people engaging in an interview, images of the consent documents) as we describe the consent and data collection (interview) processes. We will provide the Student Recruitment Info document translated into languages in which students speak and read to the extent possible. We will pair/group students who share a home language such that students who are less proficient English speakers are paired with more proficient English speakers, and facilitate pair/small group discussions to ensure that students' questions can be asked and answered in a language that they understand. We will verbally "quiz" each pair/group about the most salient parts of their participation in the study (e.g Students need parent permission if under 18, researchers need students'/parents' permission to interview students or make copies of student classwork, participation is not required, participation is confidential, all interview responses are confidential) to ensure that the pair/group discussion has provided sufficient interpretation. Consent forms will also be translated into the languages in which students speak and read to the extent possible, and will be provided to

students during the student recruitment meetings. As described in the recruitment and consent documents, student or parents who have questions can email PI Ryu in their native language, and we will use interpreters/translators to read and reply to their questions. (These languages are currently to be determined and will be reported, along with translated forms, to IRB in a future amendment. Likewise, once interpreters/translators have been identified, we will report to IRB their names and affiliations. All interpreters/translators will sign a confidentiality agreement before beginning any work on the project.)

For information about the involvement of non-English speaking subjects in research, including use of the short form, please refer to the [Guidance: Involvement of Non-English Speaking Subjects in Research at the University of Illinois at Chicago](#).

E. Will any portion of the research involve deception?

☒ No

☐ Yes - Upload [Appendix J](#) and a debriefing statement with this application.

XV. HIPAA Compliance

A. Does your research use and/or disclose Protected Health Information (PHI)*?

☒ No – Skip this section.

☐ Yes

**Data is considered to represent PHI when an individual's health information, including billing records, contains or is linked to one of the identifiers listed in #XII.B.1. For example, health-related information is considered PHI if any of the following are true:*

- *The researcher obtains the information directly from a provider, billing records, health plan, health clearinghouse or employer (other than records relating solely to employment status);*
- *The records were created by any of the entities listed above and the researcher obtains the records from an intermediate source which is NOT a school record or an employer record related solely to employment status; OR*
- *The researcher obtains it directly from the study subject in the course of providing treatment to the subject.*

Health-related information is not considered PHI if the researcher obtains it from:

- *Student records maintained by a school;*
- *Employee records maintained by an employer related to employment status; OR*
- *The research subject directly, if the research does NOT involve treatment.*

B. Will PHI be used for the purposes of identifying and/or recruiting potential subjects for the research?

☐ No

☐ Yes

C. Will subjects be selected from records outside the UI Health System?

☐ No

☐ Yes – Indicate who gave approval for the use of the records:

- Upload the protocol, consent documents, letters, etc., for securing consent of the subjects for the use of the records if the records are "private" medical or student records.
- Upload written documentation for cooperation/permission from the institutional holder or custodian of the records.



- D.** Will any research related information be put into the health information records or any other permanent record of the subject?
- ☐ No
- ☐ Yes - Explain:

University of Illinois at Chicago Research Recruitment Information Sheet

Study Title: Professional development for K-12 science teachers in linguistically diverse classrooms

What is this study about?: We will be working with some of the science teachers at your school to help them learn how to best teach students in science class. During this teacher learning program, we will be studying what and how you are learning about science.

Who can participate?

- Sullivan High School students enrolled in a science class.

What will I be asked to do during the study?

- You will be asked to:
 - Allow the research team to make copies of some of your science classwork.
 - Do one or more research interviews. In the interview, we will record your voice.
- Note: We will NOT use your real name in the copies of your work or in the interview transcripts.

How much time will this take?

- Interviews take approximately one hour. We will ask you to do a maximum of two interviews during the 2020-2021 school year.
- Note: we will schedule your interview at a time that works for you and your teachers so that you do not miss class.

What will the interview be like?

- You will meet one-on-one with a UIC researcher in a private room in your school.
- The researcher will ask you questions about how you learn in your science class.
- The researcher will record your voice using an audio recorder.
- You can skip any questions that you do not want to answer.
- You can have an interpreter who speaks your language in the room to help you understand and answer the questions.
- Please note that our research procedure can be modified in accordance with the COVID-19 related guidelines from the State of Illinois, UIC, and CPS. Depending on CPS's policy on public safety and social distance guideline, Until social distancing guideline is lifted, all interviews will may be conducted and audio-recorded (no video) online using Google Meet or Zoom. If research activities are conducted in-person, all CPS's public safety guidelines (e.g., health check, masking) will be followed.

STUDENTS

What kinds of questions will the researcher ask me during the interview?

- What science class are you taking and who is your teacher?
- What do you like about science class?
- What do you not like in science class?
- What helps you to learn in science class?
- What do you wish your teacher would do to help you learn better in science class?

Who will know that I am in the study?

- Only the researchers will know who is in the study. Principals, teachers and other students will NOT know who is in the study.

Do I need my parent/guardian's permission to be in the study?

- If you are 18 years or older, you do NOT need your parent/guardian's permission.
- If you are UNDER 18 years old, you DO need your parent/guardian's permission.

Are there any rewards for participating in the study?

- No. You will not receive payment, extra credit or any other rewards for being in the study.

Are there any punishments for NOT participating in the study?

- No. Your grades will NOT be affected and there are no other consequences for NOT being in the study.

Who can I or my parents contact if we have questions?

- *Minjung Ryu* (Principal Investigator, Learning Sciences Research Institute/Department of Chemistry) 845 W. Taylor St., 4500 SES (MC 111), Chicago, IL 60607 mjryu@uic.edu, (312) 355-8055

University of Illinois at Chicago Research Recruitment Information Sheet

Study Title: Professional development for K-12 science teachers in linguistically diverse classrooms

Description: This study investigates: 1) which instructional practices and materials foster science learning in linguistically "superdiverse" high schools; 2) how teachers in linguistically "superdiverse" high schools learn to adopt these practices and materials; 3) the impact of an innovative professional development (PD) program on English learners' (ELs') participation and learning.

Who is invited to participate?

- Science teachers in your school who attend the "L.E.T.S. Science" PD program (dates TBD)
-

Do I have to consent to the research in order to attend the PD?

- No! If you decide not to participate in any part of the research study, you can still attend the PD in any semester.

What will I be asked to do during the study?

- During the PD program, we ask that you allow us to: observe and audio/videorecord you; make copies of the curricular/assessment materials and reflection journals you develop in the PD, interview you and audio record the interview.
- At the end of each semester of the PD program (dates TBD) we will ask you to participate in a focus group to evaluate the research, and to allow us to audio record during that focus group session.
- Note: The PD program and interviews will be scheduled based on the COVID-19-related guidelines from the State of Illinois, UIC and CPS. Thus these dates are to be determined. Depending on CPS's policy on public safety and social distance guideline~~Until social distancing guideline is lifted~~, all interviews and PD meetings will may be conducted and audio-recorded (no video) online using Google Meet or Zoom. If research activities are conducted in-person, all CPS's public safety guidelines (e.g., health check, masking) will be followed.

How much time will this take?

- Approximately 31 hours per semester (outside regular contract hours), including 30 hours of audio/video recording during the PD program and a 1-hour interview.

PHASE 2 TEACHER RECRUITMENT INFO

Will I be compensated?

- Yes, research participants will receive up to \$1000 per semester. (Teachers who complete 100% of the 32-hour research activities will receive \$1000. Compensation for teachers who complete less than 100% of the 32-hour research activities will be prorated based on the number of hours completed.)
- In order to receive compensation, you must complete the University of Illinois' Vendor Information Form, which includes your Social Security Number. You will submit the form directly to the University via US mail or Fax, thus the research team will never have access to your SSN (or any other information on the form). You will receive payment via a paper check mailed to your home address approximately 30 days after submitting the Vendor Information Form.
- Please note: Compensation is provided for participating in the research, not for attending the PD.

For more information contact:

- *Minjung Ryu* (Principal Investigator, Learning Sciences Research Institute/Department of Chemistry) 845 W. Taylor St., 4500 SES (MC 111), Chicago, IL 60607 mjryu@uic.edu, (312) 355-8055



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Telephone: (773) 553-4444
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10/27/2022

Minjung Ryu

Dear Ryu,

Thank you for your interest in conducting research in The Chicago Public Schools. The Research Review Board has reviewed your Continuing Review proposal 10/27/2022 for research, titled: Professional Development for K-12 Science teachers in Linguistically Diverse....

The Research Review Board has completed the review of your Continuing Review proposal and has approved your request to conduct this research. Although your study is approved, school principals have final authority over activities that are allowed to take place in the school. If data collection continues beyond a year from this approval, please complete the Modification & Continuing Review Process Form through IRBManager.

Please note the following--

Background Check Level Required: Level I

Other Notes: Interactions with staff and students

Upon completion of the research study, a copy of the final report or summary of the results must be provided to the Research Review Board. The Board reserves the right to use the information in the research report or summary for planning, solicitation or grants, and staff development.

Please note that your study has been assigned Project ID #2021-1584. If you have any questions, please contact our office by email at research@cps.edu.

Sincerely,

A handwritten signature in black ink, appearing to read "Sarah Dickson".

Sarah Dickson
Co-Chair, Research Review Board