



Institutional Review Board

UNIVERSITY OF GEORGIA

Date: Tuesday, September 10, 2024 11:57:31 AM


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PROJECT00009335

Project Basics

Project Basics




1. * Title of Study:
3D Astronomy Education – Informing the Creation and Implementation of Virtual Reality Tools by Astronomy Education Faculty
2. * Principal Investigator:
[Nandana Weliweriya Liyanage](#)
3. * Does the Principal Investigator have a financial interest related to this research? 
☐ Yes ☒ No
4. The Principal Investigator will receive all communications related to this project. Select one or more persons to receive the same communications or to have read access to the project even if they are not study team members (e.g., a project coordinator.):

Name

Robin Allen
Inseok Song
David Seiden

Organization

[Franklin-Physics & Astronomy](#)
[Franklin-Physics & Astronomy](#)
[Franklin-Physics & Astronomy](#)

5. * Are you requesting determination if your project meets the definition of human subjects research? 
☐ Yes ☒ No
- * Are you requesting determination if your project meets the criteria for developmental review? 
☐ Yes ☒ No
- * Will an external IRB act as the IRB of record for this study? 
☐ Yes ☒ No

Project Funding

1. * Is the work described in this protocol, or the work described in the overarching project, funded by an external source:

☐ Yes ☒ No

2. Compare the scope of the Human Subjects Activities included in the overall project to the activities described in this protocol submission:

They are the SAME:

All human subjects activities in the overall project are included in this protocol submission:

☒ Yes ☐ No

They are DIFFERENT:

Human subjects activities included in the overall project but not part of this protocol submission have already been included in a separate pending or approved protocol submission:

☐ Yes ☐ No

Human Subjects Activities included in the overall project but not in this IRB Submission are intended to be included in a future UGA IRB Submission:

☐ Yes ☐ No

Human Subjects Activities included in the overall project but not in this IRB Submission have already been included in a separate pending or approved IRB Submission to an external institution/entity:

☐ Yes ☐ No


Human Subjects Activities included in the overall project but not in this IRB Submission are intended to be included in a future IRB Submission to an external institution/entity:

☐ Yes ☐ No

Study Team Members

1. Identify each UGA faculty, staff, or student who will be engaged in the conduct of human research. Do not select the PI again

	Name	Roles	Financial Interest	Involved in Consent	E-mail	Phone	Is Student Project
View	Robin Allen	CO-INVESTIGATOR	no	yes	rja90527@uga.edu		true
View	David Seiden	CO-INVESTIGATOR	no	yes	djs64688@uga.edu		false
View	Inseok Song	CO-INVESTIGATOR	no	yes	song@uga.edu	706-542-7518	false

2. Identify non-UGA collaborators* who will be engaged in the conduct of human research. 

Name	Email	Organization	Training Document	Investigator Agreement
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There are no items to display

**Submit an Individual Investigator Agreement for all study personnel with an institution that does not have an assurance with the Office for Human Research Protections or OHRP (typically, local schools, private doctors, clinics).*


**For study personnel who are affiliated with an institution that has an assurance (has its own IRB), do not submit an Individual Investigator Agreement. Instead indicate that you have an External Site on the Study Scope page.*

**If the submission is for reliance on an External IRB, do not list study team personnel at non-UGA sites.*


Training Records

Trainee	Course Title	Date	Course Provider
Nandana Weliweriya Liyanage	Social & Behavioral Research - Internet	Wednesday, August 21, 2019	CITI
Nandana Weliweriya Liyanage	Social & Behavioral Research	Wednesday, August 21, 2019	CITI
Nandana Weliweriya Liyanage	Social & Behavioral Research	Monday, September 2, 2024	CITI
Nandana Weliweriya Liyanage	Social & Behavioral Research - Internet	Monday, September 2, 2024	CITI
Robin Allen	Social & Behavioral Research	Friday, October 6, 2023	CITI
Robin Allen	Social & Behavioral Research - Internet	Friday, October 6, 2023	CITI
Inseok Song	Social & Behavioral Research	Saturday, October 7, 2023	CITI
Inseok Song	Social & Behavioral Research - Internet	Saturday, October 7, 2023	CITI
David Seiden	Social & Behavioral Research - Internet	Wednesday, September 27, 2023	CITI
David Seiden	Social and Behavioral Responsible Conduct of Research Course	Wednesday, August 30, 2023	CITI
David Seiden	Social & Behavioral Research - Internet	Wednesday, September 27, 2023	CITI
David Seiden	Social & Behavioral Research - Children	Sunday, August 29, 2021	CITI
David Seiden	Social & Behavioral Research - Children	Sunday, August 29, 2021	CITI
David Seiden	Social and Behavioral Responsible Conduct of Research Course	Wednesday, August 30, 2023	CITI

Study Scope


1. Will you recruit or conduct the study at a non-UGA agency/institution/facility (i.e., referred to as an External Site) where you do not normally have research privileges?: 

☐ Yes ☒ No

2. Check all that apply: 

Method/Procedure:


Project is Exempt

3. Does the study use any of the following test articles? Check all that apply. 
- There are no items to display

4. ClinicalTrials.gov Registration and Results Submission. Check all the requirements that apply (see Help):



There are no items to display

5. Will the project require use of the CTRU Unit? 

☐ Yes ☒ No

6. Will the project require use of the CTRU personnel?:

☐ Yes ☒ No

Exempt Categories

Q1 - If your study has federal funding, only the six categories in Q1 may be used. For all other projects, review the first six; If none apply, review the Q2-FLEX categories below. Please review the Policy and Procedure: Exempt Research for additional guidance. It is located in the Click IRB Library under SOPs.

Q1 - Choose any federally-defined category/ies that apply to your study. You may choose more than one. You must provide a response to all Yes/No questions..

* EDUCATIONAL RESEARCH: ☒ Yes ☐ No

DHHS - Exempt 1): Research, conducted in established or commonly accepted educational settings, that specifically involves normal educational practices that are not likely to adversely impact students' opportunity to learn required educational content or the assessment of educators who provide instruction. This includes most research on regular and special education instructional strategies, and research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

Check the box below to indicate that you will comply with the requirement to obtain External Site Authorization. Please complete the External site page accordingly. For more information on doing research at external sites, see our policy

at: <https://research.uga.edu/docs/policies/compliance/hso/PP-Use-External-Sites-Research.pdf>

* EXTERNAL SITE AUTHORIZATION: I must obtain site authorization that indicates the procedures are normal educational practices that are not likely to adversely impact students' opportunity to learn required educational content or the assessment of educators who provide instruction.

☒ Yes ☐ No

If the project involves access to or use of educational records, check the box below to acknowledge FERPA requirements. For more information about FERPA, see our policy at:

https://research.uga.edu/docs/policies/compliance/hso/PP_FERPA.pdf

* FERPA: I must obtain documented parental permission or adult student consent as required by FERPA unless the site authorization describes that my project meets criteria for exception to this requirement.

☒ Yes ☐ No

* SURVEYS, INTERVIEWS, OBSERVATION OF ADULTS: ☒ Yes ☐ No

(DHHS - Exempt 2): Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:

Check one of the following criteria i-iii:

* i. DATA ARE NOT IDENTIFIABLE: The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects (no a/v recording);

☐ Yes ☒ No

* ii. IDENTIFIABLE BUT NO RISK: Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation; or

☒ Yes ☐ No

* iii. IDENTIFIABLE SENSITIVE DATA: The information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review.

☐ Yes ☒ No

* BENIGN BEHAVIORAL INTERVENTIONS WITH ADULTS: ☐ Yes ☒ No

* SECONDARY DATA ANALYSIS: ☐ Yes ☒ No

* FEDERAL AGENCY RESEARCH: ☐ Yes ☒ No

* FOOD TASTING: ☐ Yes ☒ No

DHHS Exempt 7 - UGA has opted not to utilize the exempt categories related to broad consent.

DHHS Exempt 8 - UGA has opted not to utilize the exempt categories related to broad consent.

Q2 - If the study is not federally funded and none of the above categories apply, choose from one of the following institutionally-defined categories. If neither of these apply, go back to revise your response on the Study Scope page.


* Flex - Exempt 3: Minimal risk research that is not federally funded involving benign behavioral interventions and/or gentle physical movement in conjunction with the collection of information from a subject through verbal or written responses (including data entry), audiovisual recording, or use of commercially available measurement technology or tools.

☐ Yes ☒ No

* FLEX - Exempt 7: Non-federally funded, when the research activities do not conform to one of the eight DHHS exempt categories, and involves research of individual or group characteristics or behavior using established qualitative methods (e.g., ethnography, phenomenology.)


☐ Yes ☒ No


Human Research Participants


1. Targeted Populations - Click "Add" to provide a general description of the targeted participants. See Help text on the right for definition of human subject: 


Targeted Population	Targeted Gender	Age or Age Range	Total Number / Range
View Faculty involved in teaching science and astronomy courses and labs at the University of Georgia.	both male and female	20 - 60 years	5-10

2. Inclusion Criteria - if there are multiple targeted populations, identity the criteria for each:
Not Applicable

3. Exclusion Criteria - if there are multiple targeted populations, identity the criteria for each: 
Not Applicable

4. Eligibility Criteria - Describe how potential participants will be initially identified and how eligibility will be determined: 
Participants will be selected based on their involvement in teaching astronomy courses and labs at UGA.

5. Exclusion Justification - If the research will exclude a particular gender or minority group, provide justification: 
Not Applicable

6. Incentive Description - Describe any incentive/compensation for participation: 
Not Applicable

Vulnerable and Special Populations



1. Special Populations - check any that apply:

Population:

Students/Employees

2. Provide justification for including the group(s) checked above in this particular study:
The study is about developing and using 3D tools to use in astronomy courses at UGA and thus could not be reasonably conducted without collecting data from instructors.
3. Describe the working relationship between any researchers and the participants, as applicable:
The research team consist of faculty and graduate students at the same department as the participants (the astronomy instructors). But, none of the research team members be the research participants
4. Describe the safeguards to protect the rights and welfare of these participants and to minimize any possible coercion or undue influence:
Only Robin Allen and David seiden will have access to identifiable information. Then they will pick pseudonyms for each participant when sharing the details, findings with the research team and also during the publications, presentations.

Recruitment Methods and Materials

1. Will you recruit individuals to take part in the study?: 
- ☒ Yes ☐ No
2. Describe when, where, and how participants will be initially contacted: 
- The PI or a member of the research team will reach out to faculty via email to describe the study and determine willingness to participate.
3. Describe any follow-up recruitment (e.g. multiple attempts/contacts for the purpose of inviting someone to participate):
- Following initial contact with potential subjects PI will follow-up by visiting subjects office to inform them of the study.
4.
- Documents:

Document	Category	Date Modified	Content URL
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There are no items to display

Consent Process and Materials

1. Select the applicable option(s) below to describe the consent process/es for this study: ?

Option

Description:

Informed consent will be obtained and documented

The consent process includes all elements of consent and participants will sign a consent document.

You will be required to attach consent documentation on question #4 below before submitting to the HSO Office.

2. Describe how, where and when informed consent will be obtained from research participants: ?

Faculty who agree to participate in the interview portion of the study will fill out the printed consent form when they arrive for the interview. Participants will have the opportunity to ask any questions about the study.

3. Consent Forms:

Important Note: The IRB strongly recommends the use of consent templates that are available on the consent materials page to ensure that all the elements of informed consent are included (per 45 CFR 116). Add attachments below. If more than one consent document will be used, please name each accordingly.

Refer to the following:

Consent Templates

Consent Form for Exempt Research
– Signature Required
Minor Assent Script/Form
Telephone Eligibility Screening
Consent Script
TEMPLATE - Consent Document
Short Form
Template - Emergency Use
Template: Consent Letter for Exempt
Research - No Signature Required
Template: Consent Additional or
Optional Elements
Template: Consent Form for Non-
Exempt Research - Signature
Required



Consent Samples

Sample Consent for Research
Subject to GDPR
Sample Parental Permission for
Exempt Research – Educational
Study
Sample: Parental Permission and
Consent Form for Social Behavioral
Study - Signature Required
Sample: Consent for Exempt
Research - Medical Record Review
with Survey
Sample: Consent for Exempt Social
Behavioral Research



4.
Documents:

Document		Category	Date Modified	Content URL
View	StarChartConsentForm	Consent Form	2/23/2024	https://ovpr-click-prod.ovpr.uga.edu/irb/sd/Doc/0/87TQ94EICK8US153O6JBGLIG00/StarChartConsentForm.pdf

Research Design, Methods and Procedures

1. * Brief Description: 
 Star Chart™ is a commercially available VR application for the Meta Quest series of headsets. The application has several functionalities built in: night sky projection (Sky View), a 3D interactive solar system (Explore Mode), historical simulations (Moments in Time), and a 3D orrery (Orrery). Each of these functions has a built-in tutorial. These tutorials will be used to allow each of the subjects (astronomy instruction faculty at UGA) to become acquainted with the application and explore each of the functionalities of the application. After each subject has had an opportunity to use the application, we will conduct an interview about the experience with the subject.
2. * Describe the overall research design and method(s) of data collection. Also, identify specific factors or variables and, if applicable, treatment and control conditions or groups. 
 During each session, we collect videos and voice of the participant engage with the Star Chart.

 For each participant, a pseudonym will be selected at the first step and we use it for the other steps to follow.

 Then Robin Allen will use a qualitative research approach to transcribe each session, analyze using the social semiotic resources, representations, and resource graphs to analyze the data and present the findings.
3. * Describe the time commitment per activity per individual subject and provide the estimated total duration of participation. If known, also describe the anticipated duration to enroll all study subjects and the estimated time until completion of primary analyses.
 Individuals who participate in the study will be committing approximately an hour of their time. This time will be broken into three sections:
 1. Brief introduction (~10 minutes)
 2. Completion of StarChart™ Tutorials (~30 minutes)
 3. Post Completion interview of subject (~ 20 minutes)
 This study plans to collect data during the spring 2024 to to inform the design of subsequent 3D astronomy tools for following semesters. Based on this timeline, it is expected that primary analysis would be completed by the end of spring 2024 with publication of results completed by Fall 2024.
4. * Describe in detail, and in sequence, all study procedures from the perspective of the participant. Begin with any procedure that involves interaction or collection of data to determine eligibility, if applicable. Separate any procedures that are part of regular practice from procedures that are specific to this research study. If procedures are long and complicated, use a table, flowchart or diagram to outline the study procedures. 
 For individuals participating in the study, they will respond to a member of the study team's email. The participant will be asked to read the consent form, ask the researcher any questions, and sign if they agree to participate. The individual will then participate in the above mentioned tasks.
5. * Describe the data analysis plan, including any statistical procedures. For qualitative studies, specify the proposed analytic approaches. 
 Participants will have audio and video recorded while using the StarChart™ application. In addition to this, a recording of the application will be taken to monitor the visuals the participant is viewing to link those visuals and qualitative descriptors such as facial expression and body language. Analysis will involve

choosing participants and describing their reactions (with semiotics or other educational theory) to each stimulus. Recordings will also be used to identify trends in participant reaction.

Post completion interviews will be recorded and used to collect feedback and recommendations on how to implement StarChart™ in astronomy courses. Additionally, feedback will be considered when designing new and open-source 3D visualization tools to be used in astronomy education.

Data Collection Materials

Data Collection Materials may include, but are not limited to: surveys, interview guides/questions, questionnaires, focus group guides/questions, observation guides, bio-metric measure recording sheets. Do not list equipment such as audio/video-recording devices, EKG, Ultrasound.

- 1. Documents:

	Document Category		Date Modified	Content URL
View	Consent form	Materials for Data Collection	2/23/2024	https://ovpr-click-prod.ovpr.uga.edu/irb/sd/Doc/0/26V6O26ICO8US153O6JBGLIG00/StarChartConsentForm.pdf
View	Interview Guide	Materials for Data Collection	2/23/2024	https://ovpr-click-prod.ovpr.uga.edu/irb/sd/Doc/0/VS9UD8MICK8US153O6JBGLIG00/StarChart%20Faculty%20Focus%20Group%20Guide.docx

Risks and Benefits

1. If there is collection of information that could place a participant at risk of criminal or civil liability or damage a participant's financial standing, employability, or reputation, mark any box(es) that apply below. If information to be collected is not sensitive, do not mark any. The list below is not exhaustive but represents common elements or procedures in research where the primary risk is potential harm





associated with breach of confidentiality: ?

Collection

There are no items to display

2. Describe in detail the nature and degree of risk associated with participation. Address any items marked above in detail. Include risks associated with physical procedures/interventions and procedures and interventions that may cause psychological harm: ?
There is minimal risk in participation. The use of VR headsets can lead to eye fatigue are nausea. The participants will be sitting and will be allowed to take as many breaks in between as needed.
3. Describe the measures that will be taken to minimize each of the potential risks/harms identified in questions 1 and 2: ?
The risk will be mitigated by limiting the amount of time a subject is continuously using the VR headset to 20 minutes. Additionally, participants will be permitted to remove the headset whenever needed to rest their eyes or mitigate the nauseous feeling.
4. Describe any anticipated direct benefits to participants. If there are none, please state so:
Individuals participating in this study may develop an increased understanding of how new tools are being developed for astronomy education at University of Georgia. These participants will ultimately have access to the new tools and demonstrations developed from this study.
5. Describe any anticipated benefits to others (e.g., societal) that may result from the research. Describe the generalizable or transferable knowledge that may result: ?
Future students in astronomy courses may benefit from the developments of 3D tools and demonstrations. Additionally, the tools and demonstrations that are informed by this study will be made available via open source platforms such as GitHub.

Confidentiality and Privacy

1. Will the researchers collect or record any direct identifiers with the data (e.g., names, addresses, telephone numbers)? 
☒ Yes ☐ No
2. Indicate which of the direct identifiers below will be collected or included with the data:
Videos of Participants
Audio-Recordings of Participants
3. Will the researchers retain direct identifiers after data collection is complete?
☒ Yes ☐ No
4. * Explain why is it necessary to retain direct identifiers after completion of data collection? 
Depending on the number of participants consent to participate in this study, we'll keep the identifiable information like real name to pseudonym. But, it will be only for the use for Robin Allen and David Seiden. No information will be shared with research team and outside.
5. Will the researchers use a coding system and/or will the data be collected via the Internet? 
☐ Yes ☒ No
6. Will the link/indirect identifier be retained after data collection is complete?
☒ Yes ☐ No
7. * Explain why is it necessary to retain the link/indirect identifier?
we'll keep the identifiable information like real name to pseudonym. But, it will be only for the use for Robin Allen and David Seiden. No information will be shared with research team and outside.
The identifier information will be deleted stored in a password protected computer and will be discarded after the period of the project period.
8. * Describe how long the direct/indirect identifiers or the link will be retained, where and how this information will be stored, and what security provisions will be taken to protect the data. If information that associates a person with his/her data will be retained after data collection is complete, all potential uses of this information must be described here and in the consent documents. 
The identifier information will be deleted stored in a password protected computer and will be discarded after the period of the project period.

9. * Is it reasonable foreseeable that the study will collect or be privy to information that State or Federal law requires to be reported to other officials (e.g., child or elder abuse) or ethically might require action by the research (e.g., suicidal ideation, intent to hurt self or others)? If "Yes", this must be described in the the consent documents. ?

☐ Yes ☒ No

Supporting Documents

Documents:

	Document Category		Date Modified	Content URL
View	Consent form	Consent Form	2/23/2024 11:16 AM	https://ovpr-click-prod.ovpr.uga.edu/irb/sd/Doc/0/UE7DNH6ICO8US153O6JBGLIG00/StarChartConsentForm.pdf
View	Interview guide	Debriefing Materials	2/23/2024 11:17 AM	https://ovpr-click-prod.ovpr.uga.edu/irb/sd/Doc/0/0Q6FVH6ICS8US153O6JBGLIG00/StarChart%20Faculty%20Focus%20Group%20Guide.docx

Attach Consent Forms

1. * File to Attach:

 [StarChartConsentForm\(02-23\)](#)

2. Name (if not supplied, the file name will be shown):
StarChartConsentForm

3. Version Number:
02-23