

Advances in the Social, Behavioral, and Economic Sciences

Moderated by:

Dr. Frank A. Gomez
Executive Director, STEM-NET
Office of the Chancellor



<https://www2.calstate.edu/impact-of-the-csu/research/stem-net>

Speakers

John E. Yellen, National Science Foundation

Funding Opportunities in the Social Behavioral and Economic Sciences at the National Science Foundation

Pablo Gomez, Cal State San Bernardino

Interaction of Sensory and Response Processes in Decision Making

Lora Stevens-Landon, Cal State Long Beach

From Molecule to Migration: Improving the Use of Fecal Biomarkers in Archaeology

Albert D. Gonzalez, CSU East Bay

LatinXperimental Archaeology is on the Agenda!

Stephanie Ries, San Diego State

What is the Brain Doing When We are Speaking?



Funding Opportunities in the Social Behavioral and Economic Sciences at the National Science Foundation

John E. Yellen– National Science Foundation

Dr. John E. Yellen

National Science Foundation, Program Director

Division of Behavioral and Cognitive Sciences

jyellen@nsf.gov



National Science Foundation (NSF)

- Independent federal agency created in 1950
- NSF funds fundamental science
- NSF Mission
 - To promote the progress of science;
 - To advance the national health, prosperity, and welfare;
 - To secure the national defense
 - Fiscal year 2022 budget: \$8.8 billion

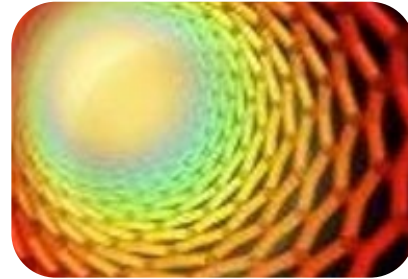




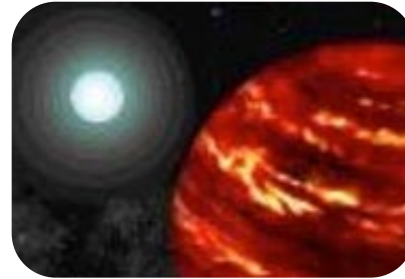
NSF Supports Multiple STEM Fields



Biological Sciences



Engineering



**Mathematical &
Physical Sciences**



**Computer &
Information Science &
Engineering**



**Geosciences (including
Polar Programs)**



Integrative Activities



**Education & Human
Resources**



**Social, Behavioral &
Economic Sciences
(SBE)**



**International Science
and Engineering**



Social, behavioral and economic (SBE) sciences advance scientific knowledge about people and society. This knowledge furthers NSF's mission to advance U.S. health, prosperity, welfare, and defense — it is critical for the country's well-being.

SBE sciences explore human behavior and social organizations. They look at how economic, political, environmental, social, and cultural forces affect the lives of people from birth to old age — and how people in turn shape those forces.

Before you apply... READ!!!



SBE Postdoctoral Research Fellowships (SPRF)

PROGRAM SOLICITATION
NSF 17-588

REPLACES DOCUMENT(S):
NSF 16-590



National Science Foundation
Directorate for Social, Behavioral & Economic Sciences
SBE Office of Multidisciplinary Activities

Full Proposal Deadline(s) (due by 5 p.m. submitter's local time):
November 01, 2017

October 09, 2018

Second Tuesday in October, Annually Thereafter

IMPORTANT INFORMATION AND REVISION NOTES

The FY 2018 solicitation underwent minor revisions to clarify the requirements of the solicitation and decrease burden on applicants.

- Eligibility information has been revised. Specification that the doctoral degree be obtained in the SBE sciences and justification for remaining at one's doctoral-granting institution were added.
- The sponsoring scientist must be listed as a Co-PI on the proposal's Cover Sheet.
- Award tenure start dates were amended to include the 15th of the month.
- The requirement for two reference letters on the Fellowship candidate has been removed.
- Guidance for registering as an individual in FastLane and completing the Cover Sheet, Project Summary, Project Description, Budget Sheet, Budget Justification, Current and Pending Support, the Postdoctoral Mentoring Plan, and the new Collaborations and Other Affiliations information template were added.

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised NSF Proposal & Award Policies & Procedures Guide (PAPPG) (NSF 18-1), which is effective for proposals submitted, or due, on or after January 29, 2018.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:
SBE Postdoctoral Research Fellowships (SPRF)

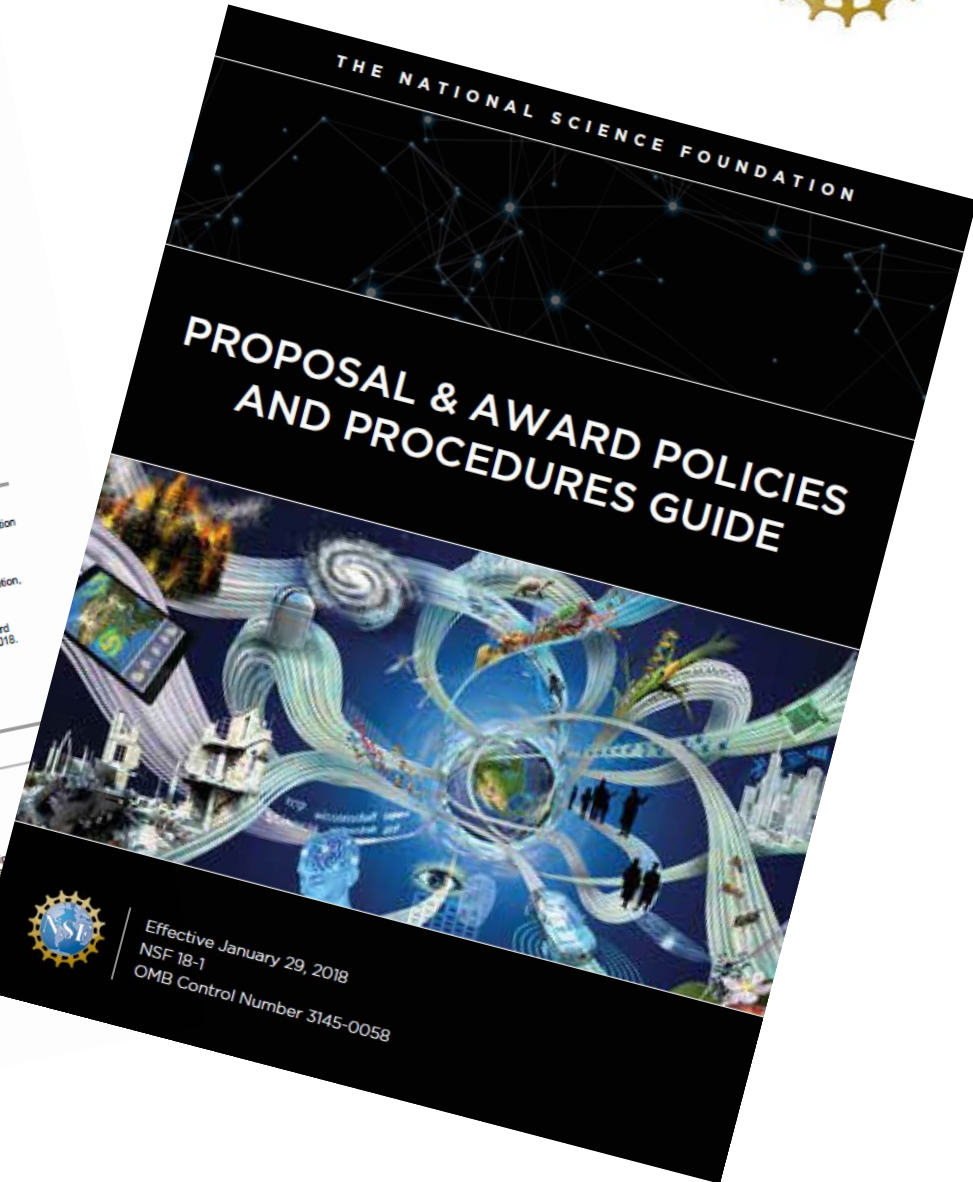
Synopsis of Program:

The Directorate for Social, Behavioral and Economic Sciences (SBE) offers Postdoctoral Research Fellowships to encourage independence early in the Fellow's career through supporting his or her research and training goals. The SBE Directorate and the specific guidelines in this solicitation. The SPRF program offers two tracks: (I) Full Research in the SBE Sciences (SPRF-FR) and (II) Encouraging Participation in the SBE Sciences (SPRF-EP). For the full text of the solicitation for a detailed description of these tracks.

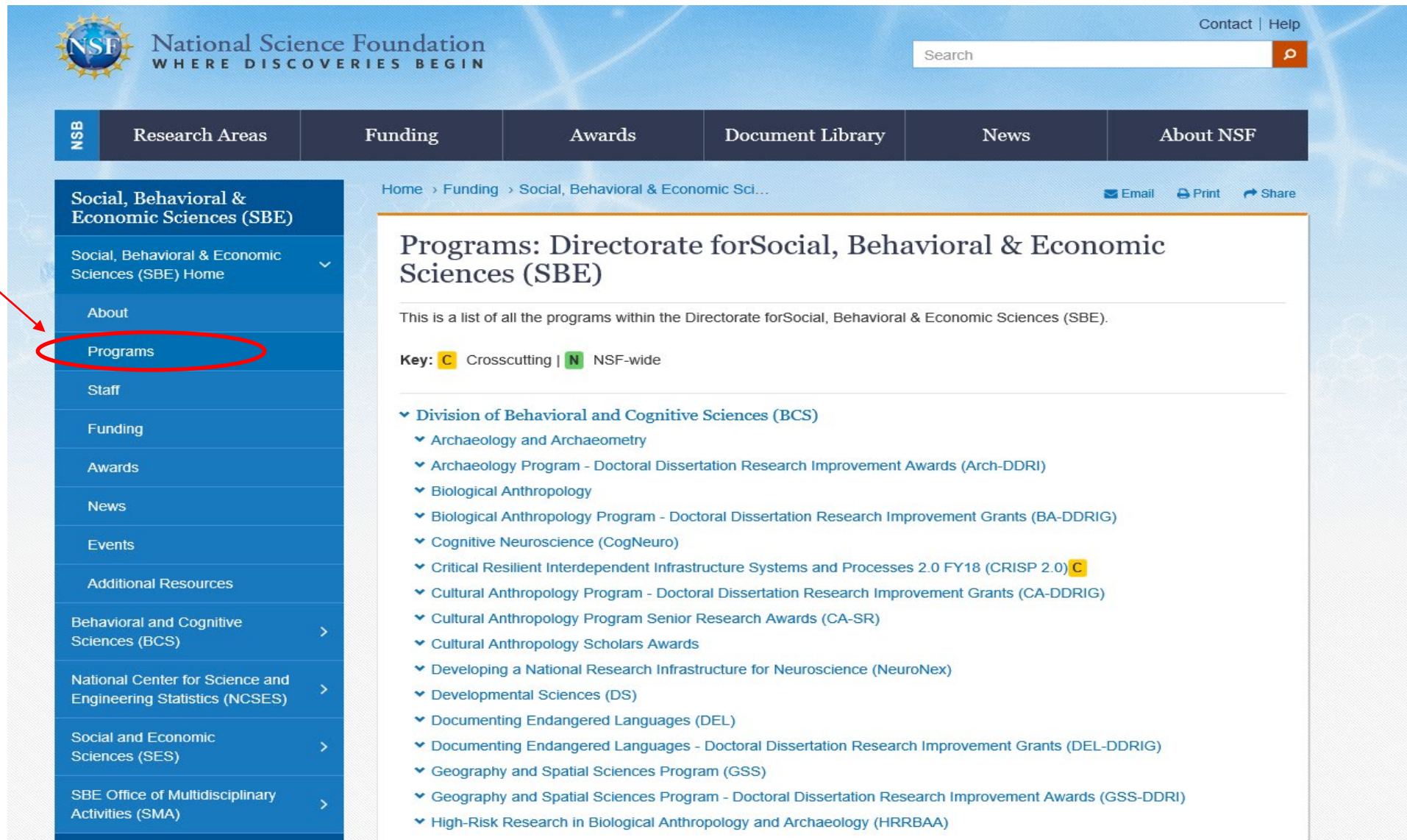
Cognizant Program Officer(s):

Please note that the following information is current at the time of publishing. See program website for any updates or contact.

- Josie S. Welkom - Acting Program Officer, telephone: (703) 292-7376, email: jwelkom@nsf.gov



Review the SBE Programs Page: <https://nsf.gov/funding/programs.jsp?org=SBE>



The screenshot displays the NSF website interface. At the top left is the NSF logo with the tagline "National Science Foundation WHERE DISCOVERIES BEGIN". A search bar is located at the top right. A navigation menu below the header includes "Research Areas", "Funding", "Awards", "Document Library", "News", and "About NSF". The left sidebar contains a list of links for the "Social, Behavioral & Economic Sciences (SBE)" section, with "Programs" circled in red and a red arrow pointing to it. The main content area shows the "Programs: Directorate for Social, Behavioral & Economic Sciences (SBE)" page. It includes a breadcrumb trail "Home > Funding > Social, Behavioral & Economic Sci...", a description "This is a list of all the programs within the Directorate for Social, Behavioral & Economic Sciences (SBE).", a key for filters (C for Crosscutting, N for NSF-wide), and a list of programs under the "Division of Behavioral and Cognitive Sciences (BCS)" category.

NSF National Science Foundation
WHERE DISCOVERIES BEGIN

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Search

Research Areas Funding Awards Document Library News About NSF

Home > Funding > Social, Behavioral & Economic Sci... Email Print Share

Social, Behavioral & Economic Sciences (SBE)

- Social, Behavioral & Economic Sciences (SBE) Home
- About
- Programs**
- Staff
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- Awards
- News
- Events
- Additional Resources
- Behavioral and Cognitive Sciences (BCS)
- National Center for Science and Engineering Statistics (NCSES)
- Social and Economic Sciences (SES)
- SBE Office of Multidisciplinary Activities (SMA)

Programs: Directorate for Social, Behavioral & Economic Sciences (SBE)

This is a list of all the programs within the Directorate for Social, Behavioral & Economic Sciences (SBE).

Key: **C** Crosscutting | **N** NSF-wide

- ▼ Division of Behavioral and Cognitive Sciences (BCS)
 - ▼ Archaeology and Archaeometry
 - ▼ Archaeology Program - Doctoral Dissertation Research Improvement Awards (Arch-DDRI)
 - ▼ Biological Anthropology
 - ▼ Biological Anthropology Program - Doctoral Dissertation Research Improvement Grants (BA-DDRIG)
 - ▼ Cognitive Neuroscience (CogNeuro)
 - ▼ Critical Resilient Interdependent Infrastructure Systems and Processes 2.0 FY18 (CRISP 2.0) **C**
 - ▼ Cultural Anthropology Program - Doctoral Dissertation Research Improvement Grants (CA-DDRIG)
 - ▼ Cultural Anthropology Program Senior Research Awards (CA-SR)
 - ▼ Cultural Anthropology Scholars Awards
 - ▼ Developing a National Research Infrastructure for Neuroscience (NeuroNex)
 - ▼ Developmental Sciences (DS)
 - ▼ Documenting Endangered Languages (DEL)
 - ▼ Documenting Endangered Languages - Doctoral Dissertation Research Improvement Grants (DEL-DDRIG)
 - ▼ Geography and Spatial Sciences Program (GSS)
 - ▼ Geography and Spatial Sciences Program - Doctoral Dissertation Research Improvement Awards (GSS-DDRI)
 - ▼ High-Risk Research in Biological Anthropology and Archaeology (HRRBAA)



Different types of competitions

Programs:

Clear disciplinary: economics, sociology, archaeology

Cut cake somewhat differently: Science of Organizations, Human Networks and Data Science

Program director; proposals grouped together, normally considered by discrete panels; discrete funds allocated to programs.

Cross Cutting:

Postdoctoral research fellowships

Research experiences for undergraduates

SBE-UK Collaborative Research

More complicated:

multiple review processes;

sometimes essentially program approach specific funds set aside, proposals grouped together,

sometimes proposals distributed to “disciplinary programs; reviewed by them in program context

Makes sense to contact relevant program official to gain insight into review context.



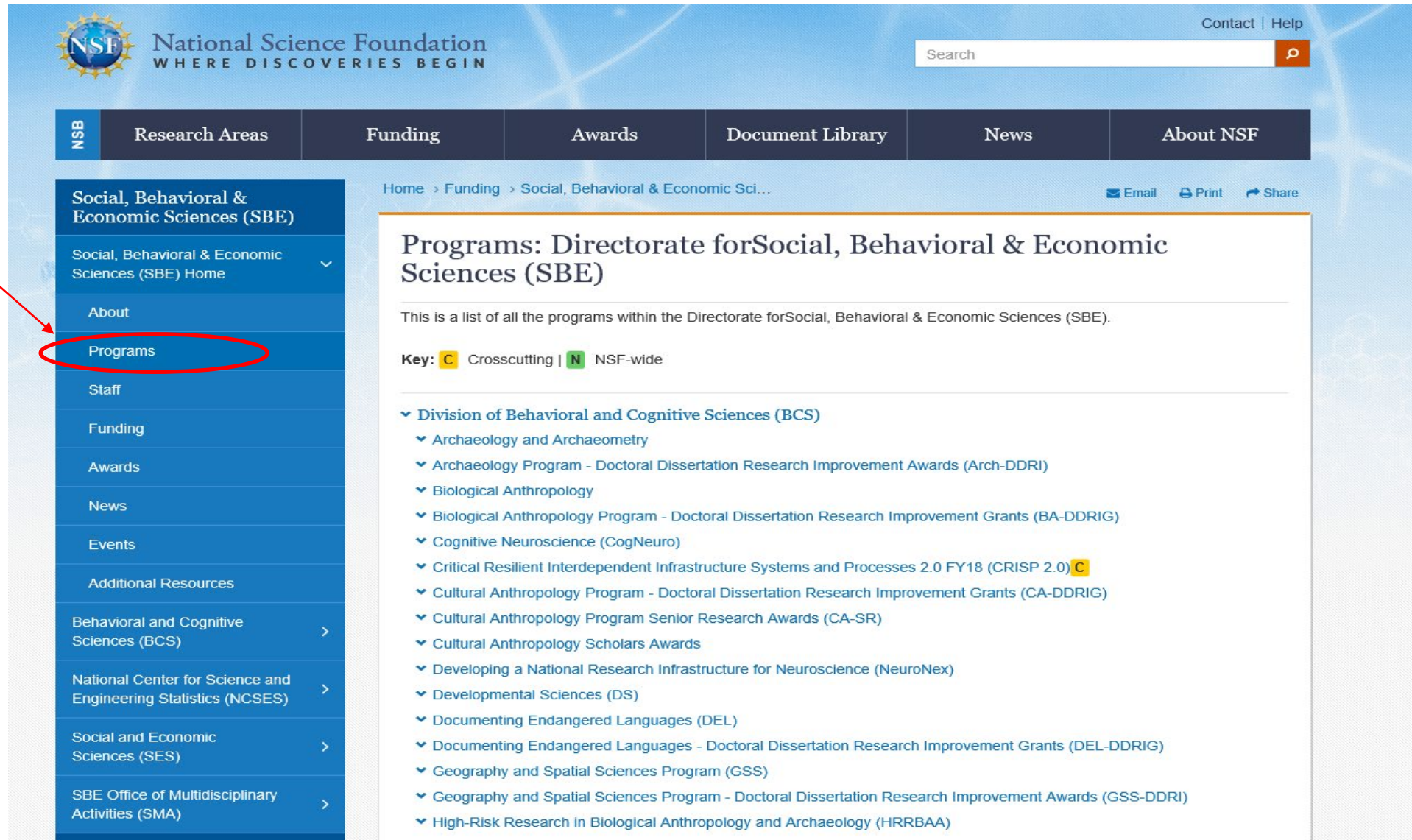
Build and Broaden: Enhancing Social, Behavioral and Economic Science Research and Capacity at Minority-Serving Institutions

Build and Broaden supports fundamental research and research capacity across disciplines at minority-serving institutions and encourages research collaborations with scholars at MSIs.

Smart Health and Biomedical Research in the Era of Artificial Intelligence and Advanced Data Science

The purpose of this interagency program solicitation is to support the development of transformative high-risk, high-reward advances in computer and information science, engineering, mathematics, statistics, behavioral and/or cognitive research to address pressing questions in biomedical and public health communities.

Review the SBE Programs Page: <https://nsf.gov/funding/programs.jsp?org=SBE>



The screenshot displays the NSF website's navigation and content for the SBE Programs page. The top navigation bar includes 'Research Areas', 'Funding', 'Awards', 'Document Library', 'News', and 'About NSF'. The left sidebar lists various SBE-related links, with 'Programs' highlighted by a red circle and a red arrow. The main content area features a search bar, a breadcrumb trail, and a list of programs under the 'Division of Behavioral and Cognitive Sciences (BCS)'. A key indicates that 'C' stands for Crosscutting and 'N' for NSF-wide.

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Search

Research Areas Funding Awards Document Library News About NSF

Home > Funding > Social, Behavioral & Economic Sci... [Email](#) [Print](#) [Share](#)

Social, Behavioral & Economic Sciences (SBE)

- Social, Behavioral & Economic Sciences (SBE) Home
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- Staff
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- News
- Events
- Additional Resources
- Behavioral and Cognitive Sciences (BCS)
- National Center for Science and Engineering Statistics (NCSES)
- Social and Economic Sciences (SES)
- SBE Office of Multidisciplinary Activities (SMA)

Programs: Directorate for Social, Behavioral & Economic Sciences (SBE)

This is a list of all the programs within the Directorate for Social, Behavioral & Economic Sciences (SBE).

Key: **C** Crosscutting | **N** NSF-wide

- ▼ **Division of Behavioral and Cognitive Sciences (BCS)**
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 - ▼ Geography and Spatial Sciences Program - Doctoral Dissertation Research Improvement Awards (GSS-DDRI)
 - ▼ High-Risk Research in Biological Anthropology and Archaeology (HRRBAA)

Find the Right Program (e.g., DS program webpage)

Developmental Sciences (DS)

CONTACTS

Name	Email	Phone	Room
Chalandra Bryant - Program Director	cbryant@nsf.gov	(703) 292-8457	995-39
Kenyatta Johnson - Pgm. Specialist	kenjohns@nsf.gov	(703) 292-4850	

PROGRAM GUIDELINES

Apply to PD 08-1698 as follows:

For full proposals submitted via FastLane: standard [NSF Proposal & Award Policies & Procedures Guide](#) proposal preparation guidelines apply.

For full proposals submitted via Grants.gov: the [NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov Guidelines](#) applies. (Note: The [NSF Grants.gov Application Guide](#) is available on the Grants.gov website and on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide)

Important Information for Proposers

ATTENTION: Proposers using the Collaborators and Other Affiliations template for more than 10 senior project personnel will encounter proposal print preview issues. Please see the [Collaborators and Other Affiliations Information website](#) for updated guidance.

A revised version of the [NSF Proposal & Award Policies & Procedures Guide \(PAPPG\)](#) (NSF 18-1), is effective for proposals submitted, or due, on or after January 29, 2018. Please be advised that, depending on the specified due date, the guidelines contained in NSF 18-1 may apply to proposals submitted in response to this funding opportunity.

DUE DATES

Full Proposal	Target Date
	January 15, 2019
	January 15, Annually Thereafter
	July 15, 2019

Who is the Program Director?

How do you contact the Program Director?

How do you apply?
Program Description vs. Solicitation

When do you apply?

Target date or deadline?

Find the right program: (scrolling down....)



SYNOPSIS

DS supports basic research that increases our understanding of cognitive, linguistic, social, cultural, and biological processes related to human development across the lifespan. Research supported by this program will add to our knowledge of the underlying developmental processes that support social, cognitive, and behavioral functioning, thereby illuminating ways for individuals to live productive lives as members of society.

DS supports research that addresses developmental processes within the domains of cognitive, social, emotional, and motor development across the lifespan by working with any appropriate populations for the topics of interest including infants, children, adolescents, adults, and non-human animals. The program also supports research investigating factors that affect developmental change including family, peers, school, community, culture, media, physical, genetic, and epigenetic influences. Additional priorities include research that: incorporates multidisciplinary, multi-method, microgenetic, and longitudinal approaches; develops new methods, models, and theories for studying development; includes participants from a range of ethnicities, socioeconomic backgrounds, and cultures; and integrates different processes (e.g., memory, emotion, perception, cognition), levels of analysis (e.g., behavioral, social, neural), and time scales.

The budgets and durations of supported projects vary widely and are greatly influenced by the nature of the project. Investigators should focus on innovative, potentially transformative research plans and then develop a budget to support those activities, rather than starting with a budget number and working up to that value.

While there are no specific rules about budget limitations, a typical project funded through the DS program is approximately 3 years in duration with a total cost budget, including both direct and indirect costs, between \$100,000 and \$200,000 per year. Interested applicants are urged to explore the NSF awards database for the DS program to review examples of awards that have been made.

The DS program also accepts proposals for workshops and small conferences. These typically have total cost budgets, including direct and indirect costs, of approximately \$35,000.

In addition to consulting the NSF awards database, it is often useful for interested applicants to submit (via email) a summary of no more than one page so that the Program Director can advise the investigator on the fit of the project for DS prior to preparation of a full proposal. New Investigators are encouraged to solicit assistance in the preparation of their project proposals via consultation with senior researchers in their area, pre-submission review by colleagues, and attendance at symposia and events at professional conferences geared towards educating investigators seeking federal funding.

RELATED PROGRAMS

[Facilitating Research at Primarily Undergraduate Institutions:](#)

[Faculty Early Career Development Program](#)

[What Has Been Funded \(Recent Awards Made Through This Program, with Abstracts\)](#)

[Map of Recent Awards Made Through This Program](#)

[News](#)

How do I know if my research is relevant to a particular program?

Click this!

Find the Right Program: Awards recently made

Export up to 3,000 Awards: [CSV](#) | [XML](#) | [Excel](#) | [Text](#) [Email this Link](#) | [Export All Results](#)

Sort By: Results size: Table List Page 1 of 4 Displaying 1 - 30 of 119

Adolescent Information Management with Parents and Siblings Award Number:1451757; Principal Investigator:Nicole Campione Barr; Co-Principal Investigator:David Schramm, Sarah Killoren; Organization:University of Missouri-Columbia;NSF Organization:BCS Start Date:07/01/2015; Award Amount:\$273,098.00; Relevance:48.0;
Collaborative Research: Stress, Academic Outcomes, and Health Outcomes among Language Brokers Award Number:1651128; Principal Investigator:Su Yeong Kim; Co-Principal Investigator:Belem Lopez; Organization:University of Texas at Austin;NSF Organization:BCS Start Date:06/15/2017; Award Amount:\$505,844.00; Relevance:48.0;
Collaborative Research: Stress, Academic Outcomes, and Health Outcomes among Language Brokers Award Number:1651138; Principal Investigator:Katharine Zeiders; Co-Principal Investigator;; Organization:University of Arizona;NSF Organization:BCS Start Date:06/15/2017; Award Amount:\$34,053.00; Relevance:48.0;
Expanding access to webcam-based online data collection for developmental research Award Number:1823919; Principal Investigator:Kimberly Scott; Co-Principal Investigator:Laura Schulz; Organization:Massachusetts Institute of Technology;NSF Organization:BCS Start Date:09/01/2018; Award Amount:\$584,445.00; Relevance:48.0;
CAREER: Discovering the Underpinnings of Statistical Language Learning in Infants Award Number:1352443; Principal Investigator:Jill Lany; Co-Principal Investigator;; Organization:University of Notre Dame;NSF Organization:BCS Start Date:03/01/2014; Award Amount:\$765,239.00; Relevance:48.0;
Neural measures of social reward and information value in infants Award Number:1627068; Principal Investigator:Rebecca Saxe; Co-Principal Investigator;; Organization:Massachusetts Institute of Technology;NSF Organization:BCS Start Date:07/15/2016; Award Amount:\$600,000.00; Relevance:48.0;
Exploring the relation between non-spatial skills and mental rotation from infancy to preK Award Number:1823489; Principal Investigator:Marianella Casasola; Co-Principal Investigator:Lisa Oakes, Vanessa LoBue, Felix Thoemmes; Organization:Cornell University;NSF Organization:BCS Start Date:09/01/2018; Award Amount:\$756,655.00; Relevance:48.0;
A Lifespan Conceptual Model of Ethnic-Racial Identity Award Number:1729711; Principal Investigator:Esther Calzada; Co-Principal Investigator:Adriana Umana-Taylor; Organization:University of Texas at Austin;NSF Organization:BCS Start Date:10/01/2017; Award Amount:\$24,369.00; Relevance:48.0;
After-School Activities: Identifying Risk and Protective Factors for Community Violence Exposure Award Number:1348957; Principal Investigator:Rosario Ceballos; Co-Principal Investigator:Jacquelyne Eccles; Organization:University of Michigan Ann Arbor;NSF Organization:BCS Start Date:09/01/2014; Award Amount:\$474,997.00; Relevance:48.0;
The Development of Relational Processing in Infancy Award Number:1729720; Principal Investigator:Susan Hesos; Co-Principal Investigator:Dedre Gentner, Kenneth Forbus; Organization:Northwestern University;NSF Organization:BCS Start Date:08/15/2017; Award Amount:\$596,080.00; Relevance:48.0;
SBE-RCUK: CompCog: Modeling the Development of Phonetic Representations Award Number:1734245; Principal Investigator:Naomi Feldman; Co-Principal Investigator;; Organization:University of Maryland College Park;NSF Organization:BCS Start Date:09/01/2017; Award Amount:\$520,058.00; Relevance:48.0;
Motor Exploration and Motor Learning During Child Development Award Number:1654929; Principal Investigator:Mei-Hua Lee; Co-Principal Investigator:Ferdinando Mussa-Ivaldi; Organization:Michigan State University;NSF Organization:BCS Start Date:03/01/2017; Award Amount:\$349,106.00; Relevance:48.0;
Collaborative Research: Science of Learning Center: Visual Language and Visual Learning (VL2) Award Number:1041725; Principal Investigator:Thomas Allen; Co-Principal Investigator:Laura-Ann Petitto; Organization:Gallaudet University;NSF Organization:SMA Start Date:10/01/2011; Award Amount:\$8,864,066.00; Relevance:48.0;
RR: Collaborative: Origins of Intergroup Perceptions and Attitudes Across Diverse Contexts Award Number:1728300; Principal Investigator:Kristin Pauker; Co-Principal Investigator;; Organization:University of Hawaii;NSF Organization:BCS Start Date:08/01/2017; Award Amount:\$90,121.00; Relevance:48.0;
Supporting Undergraduate Participation at the International Conference on Infant Studies: 2016-2020 Award Number:1551122; Principal Investigator:Martha Arterberry; Co-Principal Investigator:Samuel Putnam; Organization:Colby College;NSF Organization:BCS Start Date:03/01/2016; Award Amount:\$22,500.00; Relevance:48.0;

What has been funded through a particular program?

Click on a title to get the abstract

Find the Right Program: Abstracts of Awards Recently Made



Program Manager:	Chalandra Bryant BCS Division Of Behavioral and Cognitive Sci SBE Direct For Social, Behav & Economic Scie
Start Date:	September 1, 2018
End Date:	August 31, 2021 (Estimated)
Awarded Amount to Date:	\$756,655.00
Investigator(s):	Marianella Casasola mc272@cornell.edu (Principal Investigator) Lisa Oakes (Co-Principal Investigator) Vanessa LoBue (Co-Principal Investigator) Felix Thoemmes (Co-Principal Investigator)
Sponsor:	Cornell University 373 Pine Tree Road Ithaca, NY 14850-2820 (607)255-5014
NSF Program(s):	DS - Developmental Sciences
Program Reference Code(s):	1698
Program Element Code(s):	1698

ABSTRACT

Mental rotation, the ability to mentally manipulate a visual representation of an object and recognize its appearance from a different orientation, shows stability from infancy through preschool. This ability predicts mathematical achievement in kindergarten and beyond as well as entry into the Science, Technology, Engineering, and Mathematics (STEM) fields. The present work focuses on identifying how non-spatial processes contribute to mental rotation abilities. Findings will help identify ideal time points for intervention, advance understanding of the factors that contribute to mental rotation, and address how individual differences in mental rotation during infancy predict later abilities. This work will involve the creation and refinement of measures that can be used to trace the development of mental rotation from infancy into preschool; thereby, not only contributing new tools to the field, but also yielding insights that can inform current theoretical conceptions of mental rotation and its relation to non-spatial processes.

The critical research question is as follows: What are the non-spatial processes that contribute to mental rotation abilities and their development? Associations between mental rotation, object features, processing bias, and motor experience will be examined using a cross-sequential design with overlapping age cohorts. The investigators will recruit an infant cohort at 8 months, a toddler cohort at 20 months, and a preschool cohort at 3 years. Each cohort will be assessed at three time points -- every six months for infants (i.e., 8, 14, and 20 months), every 8 months for toddlers (i.e., 20, 28, and 36 months), and every year for preschoolers (3, 4, and 5 years). When examined at a specific age, the sample will provide a snapshot into the association between mental rotation and non-spatial skills (i.e., object features, processing bias, and motor experience). The longitudinal design will allow the investigators to follow participants across infancy, toddlerhood, or the preschool years. This approach provides an opportunity to understand how non-spatial skills, such as more precocious motor skills during infancy, may shape mental rotation over time. Such findings are central to bolstering understanding of the possible mechanisms by which particular types of

You can review the abstracts of awards made through a particular program.

Note:

- Program Manager
- Duration
- Awarded amount
- Co-funded?
- Topic area

Next Steps



After you have narrowed down to programs that match your area of research and you have read the program page and (solicitation):

Reach out to the Program Director by EMAILING a 1-page summary of your planned research project (IM and BI). Get feedback about project fit with program goals

Email ALL relevant programs in a SINGLE email.

Request a phone meeting if the program is a good fit

- Get in touch EARLY (well before the deadline)
- Follow-up if you have not heard back within 1- week
- Ask about other relevant programs and initiatives

**Funding Opportunities in the Social Behavioral and
Economic Sciences at the National Science
Foundation**



Questions?

Contact Information:

Name: *John E. Yellen*

Campus/Department: National Science Foundation

Email: jyellen@nsf.gov



Interaction of Sensory and Response Processes in Decision Making

Pablo Gómez - *California State University, San Bernardino (Palm Desert Campus)*
University of California, Irvine

Pablo Gómez, Associate Professor

CSUSB Palm Desert, Department of Psychology

pablo.gomez@csusb.edu

Dual Goals

Scientific Goals

New approaches to studying perceptual decision
Coachella making with neurophysiological and modeling tools.

Human Capital Development

The first academic endeavor in the
Valley.

Scientific Goals

1. We address the questions of whether and how sensory signals gain direct access to the motor system.
2. We establish the temporal relations among figure-ground segregation, spatial attention, and response planning as a function of different classes of stimuli and task demands.
3. We develop and assess a trial-by-trial EEG chronometric analysis.
4. We apply the EEG chronometry to paradigms with both priming and negative-priming (contrast) effects to understand the locus of opposing behavioral phenomena.
5. We provide a first-ever assessment of the time-course of object recognition in tactile perception.
6. We make use of novel cognitive studies of tactile perception to understand whether the interplay between perception, attention, and response planning generalizes across the sensory scene.

Human Capital Development

1. Our goal is to enhance STEM opportunities for underserved students at Palm Desert Campus of CSUSB by integrating the research and training programs of UCI Cognitive Sciences (PI Srinivasan and PI Rouder), with PDC (PI Gomez). PDC students are overwhelmingly Latinx (>80%), with 79% first-generation and 56% receiving Pell Grants.
2. We provide an opportunity for PDC students to gain STEM skills and to gain knowledge by contributing to active state-of-the-art research in cognitive neuroscience.
3. We help them discover new future research opportunities and directions at R1 universities and develop career goals in STEM fields.
4. We provide opportunities for UCI graduate students to develop teaching skills for students who may have fewer STEM opportunities in primary school.

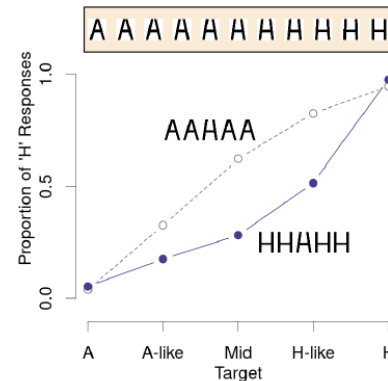
Basic Question

- How do we make decisions using sensory information, and how does context affect such process.

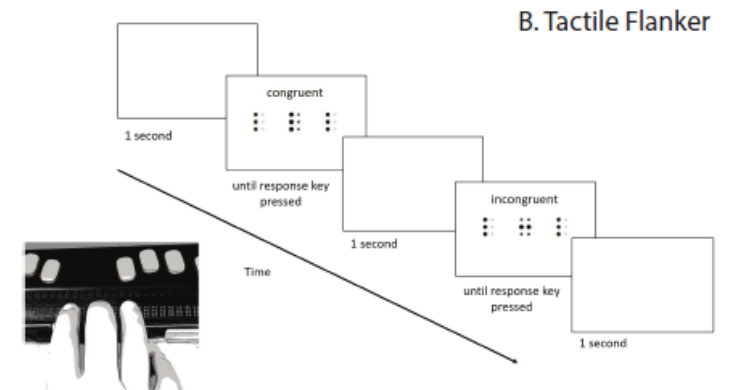


- Flanker task

- Morphed flanker task



- Tactile



Mathematical Models vs. Neurophys Evidence

As a driver approaches a traffic light, a decision to brake or accelerate is made.

- The classic sequential account is that the driver first identifies the color and position of the traffic light and then decides on what motor action to take (Donders, 1868; Luce, 1986; Ratcliff, 1978; Sternberg, 1969).
- In contrast, a parallel account of decision-making posits that perceptual and motor processing are engaged in a dynamic interaction as the driver approaches the intersection.

Summer Irvine Fellowship

- Students from CSUSB came to Irvine to be apart of a part of summer experience
- Students were apart of enrichment days where they learned about current research in neuroscience and how it goes along with the current research at hand
- Students were able to expand and create their own research project
- Challenges with COVID

Summer School Schedule (1 of 2)

Date	Topic	Program
July 19	Welcome meeting Virtual	All
July 20 – 21	EEG laboratory skills	PDC
July 25-28	EEG laboratory skills	PDC
August 1	EEG SOP presentation by PDC students	UCI
August 1	Demonstration of EEG recording (by PDC students with feedback from UCI students)	UCI
August 2	Basics of EEG signal processing using Python	UCI
August 2	Introduction to design of experiments and metacontrast masking	UCI
August 3	Implementation of a metacontrast masking experiment	UCI
August 3	Introduction to R for data analysis	UCI

Summer School Schedule (2 of 2)

Date	Topic	Program
August 8-11	EEG experiments on Flanker task	UCI
August 8-11	Behavioral pilot studies on metacontrast masking	PDC
August 15	R data analysis of behavioral data	UCI
August 15	R data analysis of EEG data	UCI
August 16	Discussion of Fall research plan and NeuroFest	UCI
August 16	R data analysis of EEG data	UCI

Students at UCI Fellowship



Experiments Underway

- At UCI
 - Studies related to the grants first specific goal: the effects of unattended stimuli on decision making using variations of the flanker task.
- At CSU
 - Three students are currently working on their honors theses, using paradigms that extend the experiments proposed in the grant.

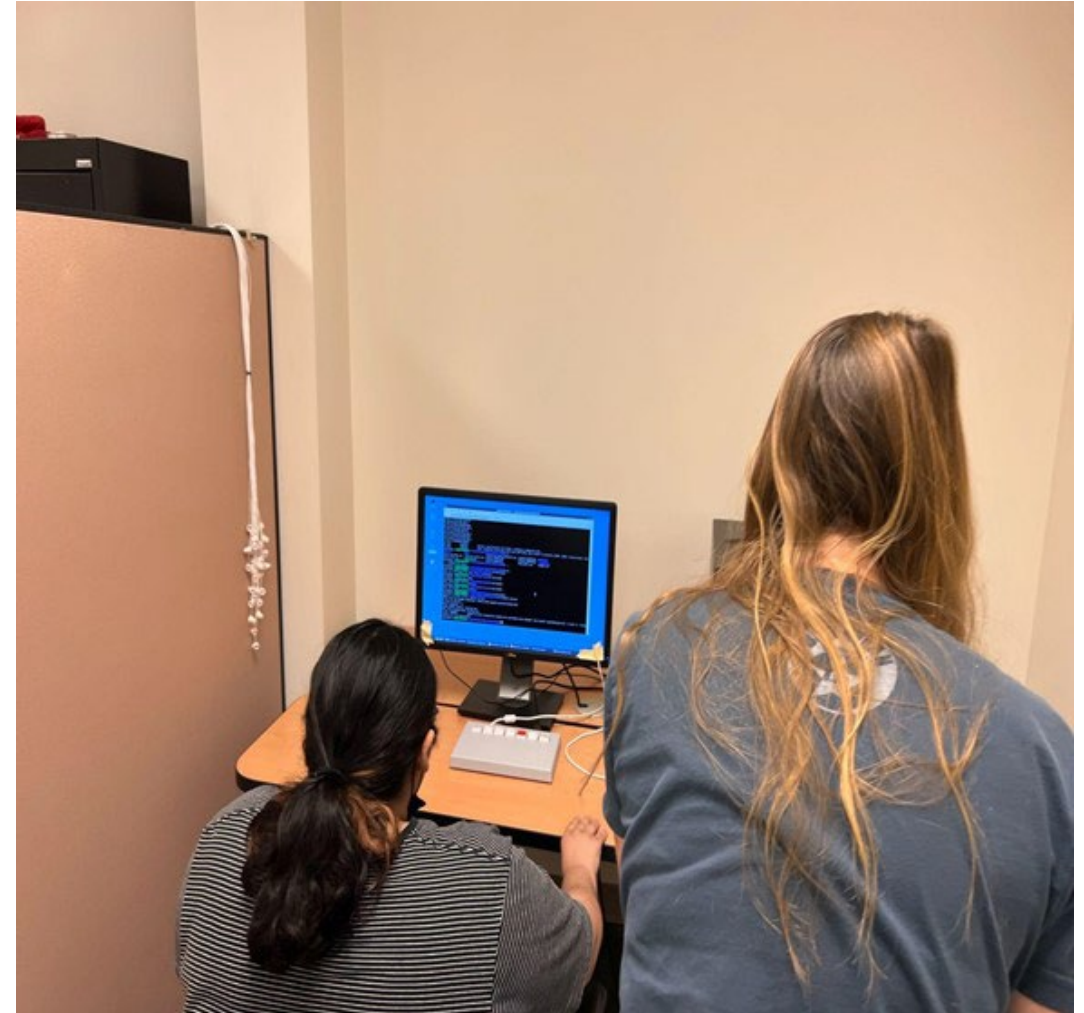
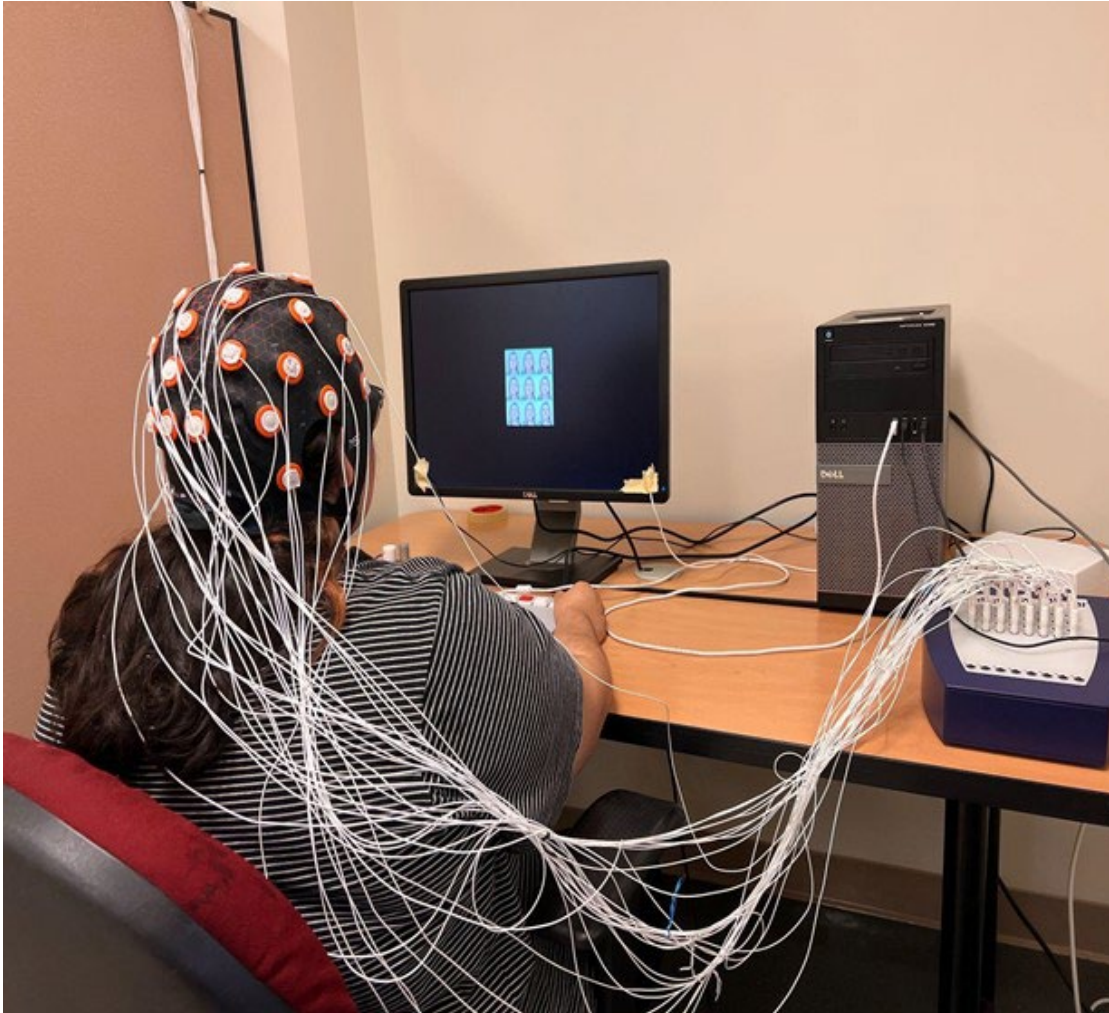
Electronics Components

One project that is in development makes use of novel cognitive studies of tactile perception to understand whether the interplay between perception, attention, and response planning generalizes across the sensory modalities.

Students develop the tactile interfaces for experiments.



Student Conducting Experiment



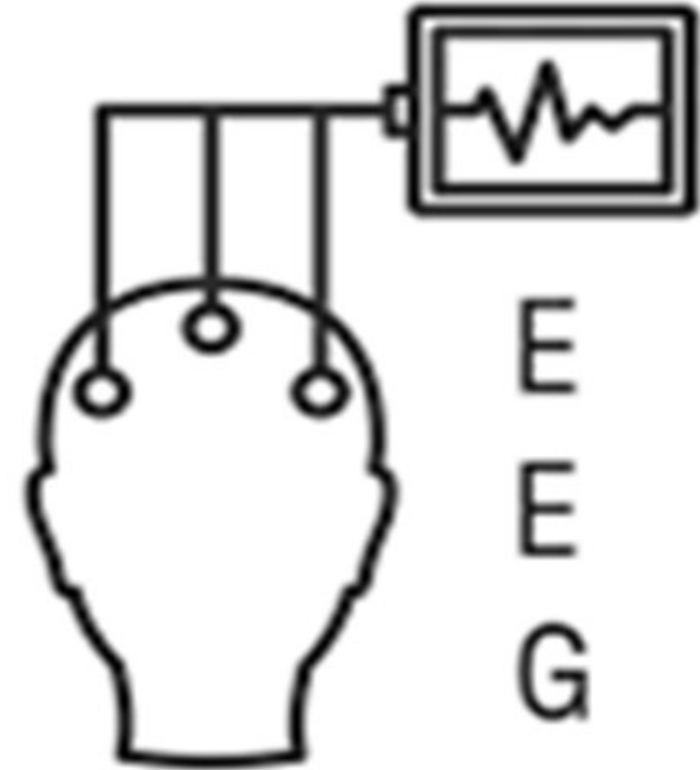
What will be next?

- **Neurofest**
 - Students will create a science-based science fair where they will show the community what they have done with their experiments. This will bring the community more awareness of the fields of research in neuroscience. The community will also be exposed to science research and the benefits of it. This will be held in early Spring 2023 in the Coachella Valley.

Challenges

- COVID
- Recruiting students at the beginning was quite a challenge; but once a critical mass was achieved, it stopped being a problem; now PDC lab has 8 undergraduates consistently working on projects
- CSU system teaching load
- Adjusting expectations

Thank you for your time!



Questions?

Contact Information:

Name: Pablo Gomez

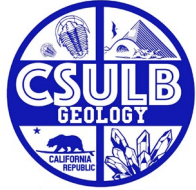
Campus/Department: California State University, San Bernardino (Palm Desert)

Website : <https://pdc-cognitive-neuro.academic.csusb.edu>

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From Molecule to Migration: Improving the Use of Fecal Biomarkers in Archaeology

Lora Stevens-Landon – Cal State Long Beach



Lora Stevens-Landon, Professor
CSULB, Department of Earth Science
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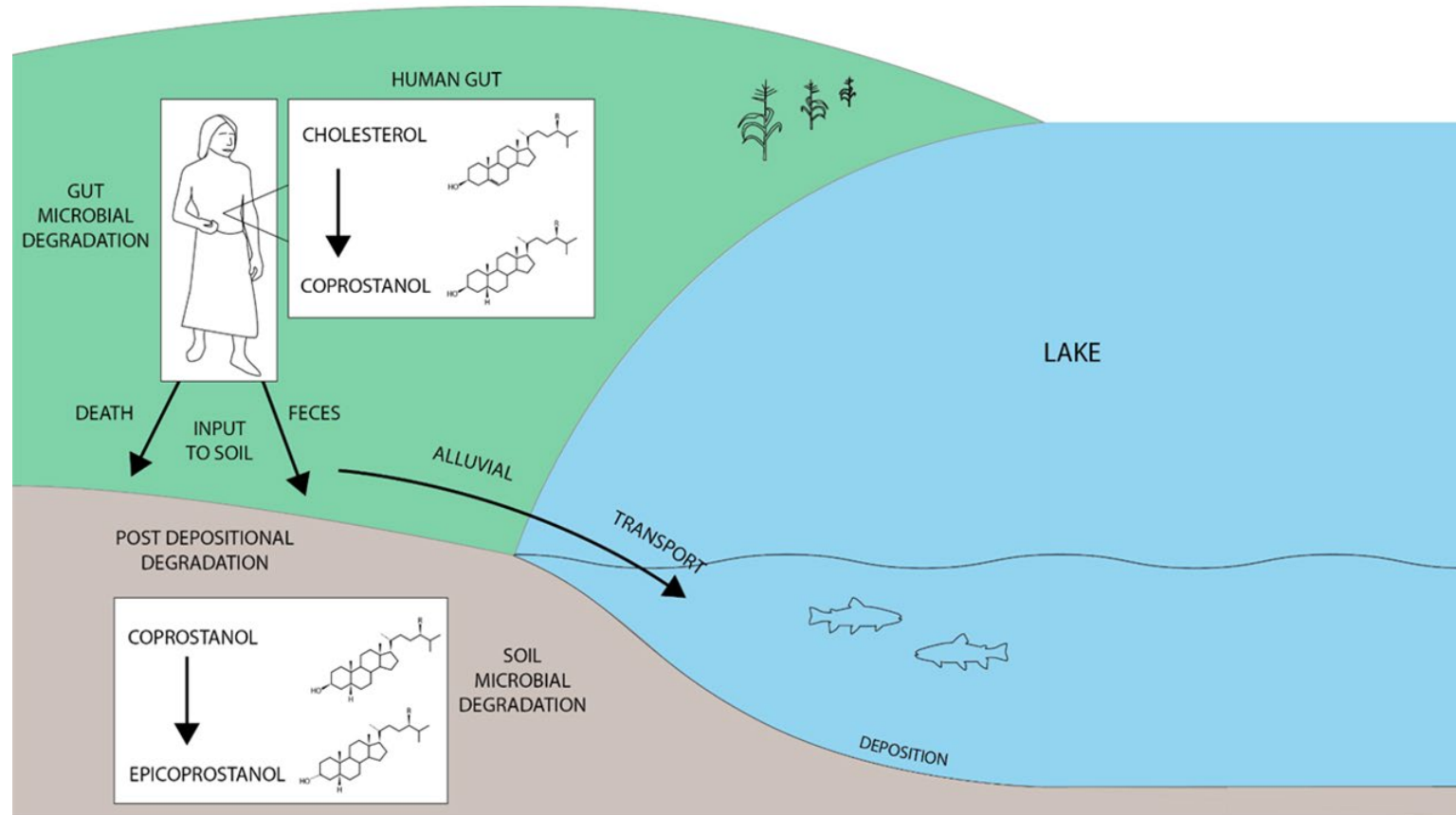


AJ White, PhD candidate
UC Berkeley, Dept of Anthropology
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Fecal Biomarkers in Archaeology

Research Question



Ancient agricultural practices
 (Bull et al., 1999; Jardé et al., 2007; Birk et al., 2011; Prost et al., 2017)

Presence of humans (migration patterns)
 (Briles et al., 2019; Vachula et al., 2019; Schroeter et al., 2020)

Human demographic changes
 (D'Anjou et al., 2012; White et al., 2018, 2019)

How do we know the coprostanol we measure is really from humans?

How do we know changes in coprostanol through time reflect changes in demographics?

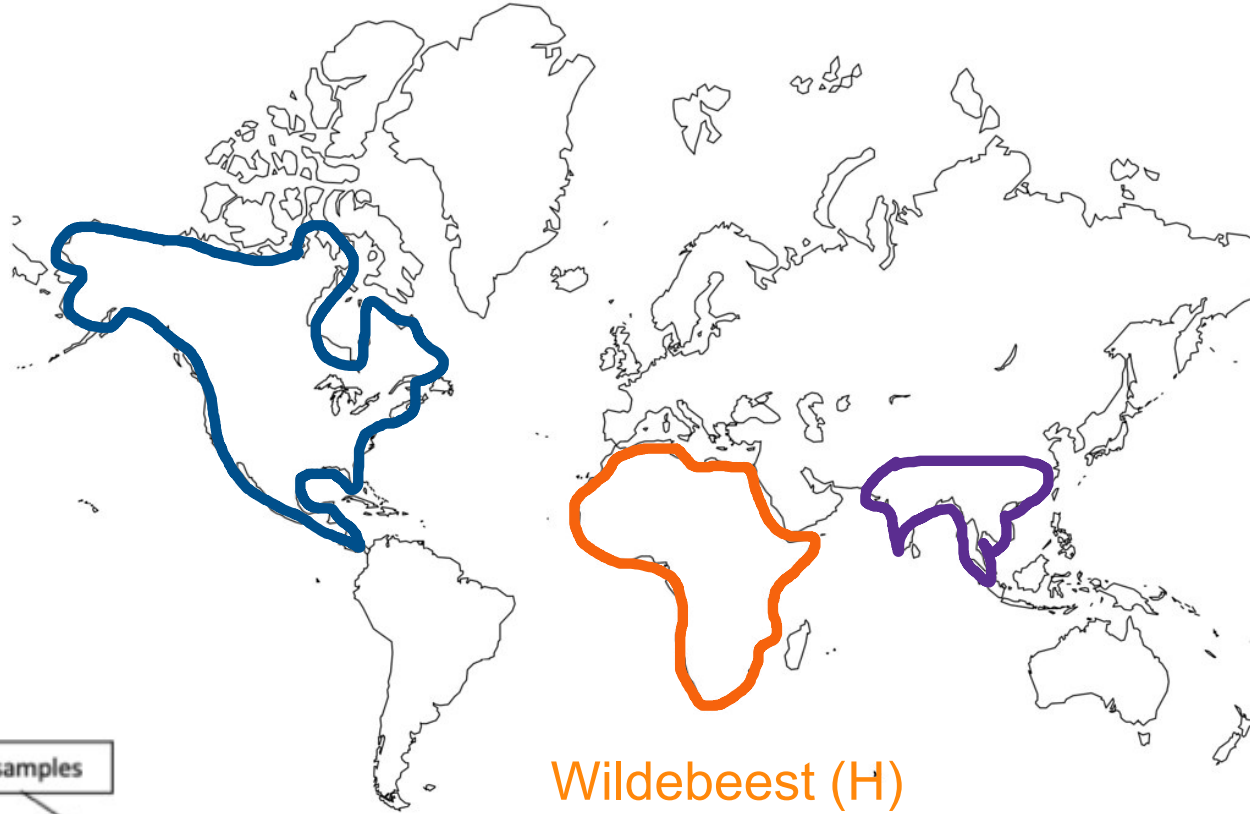
Can we use the isotopic composition of stanol suites to reconstruct major dietary shifts?



Fecal Biomarkers in Archaeology

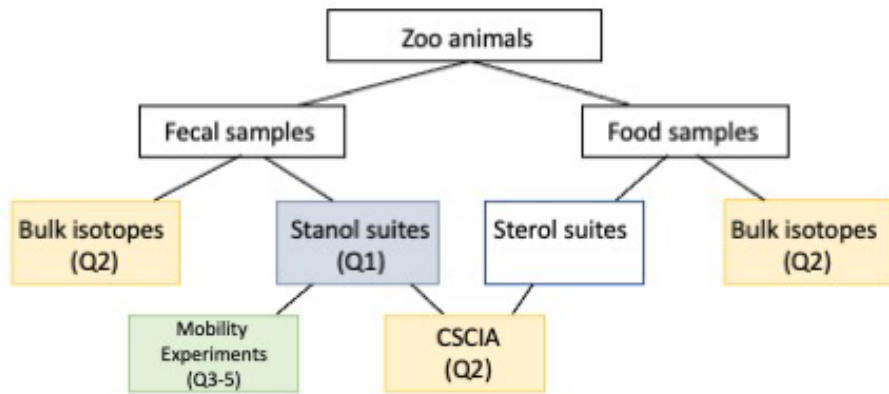
Research Design/Activities

Bison (H)
 Wolf (C)
 Black bear (O)
 Coyote (O/C)



Asian elephant (H)
 Gibbon (H/O)
 Sunbear (O)
 Dhole (C)
 Asian crocodile (C)

Wildebeest (H)
 African elephant (H)
 Painted Dog (C)
 Hyena (C)
 Warthog (O)
 Chimpanzee (O)



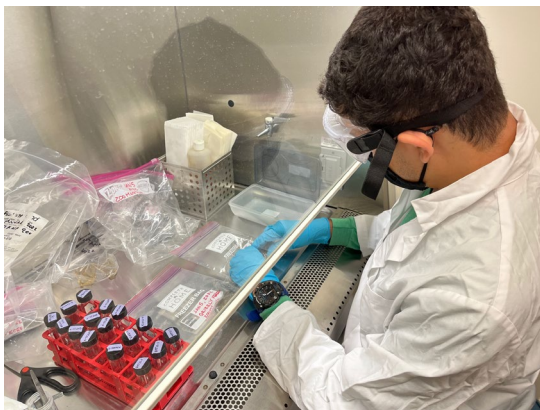


Research Design/Activities

Fecal Biomarkers in Archaeology

Stanol composition
of select animal
feces

*Who makes what and
how much?*



Grad student E. Jackson sampling feces

Controls on stanol
movement
/preservation in
sediment

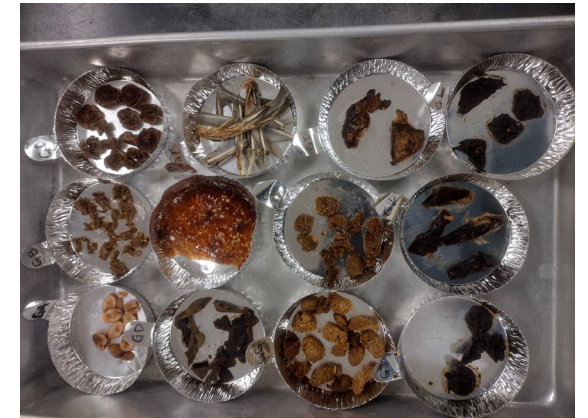
*How do stanols move
on the landscape?*



V. Lorenzi spreading pig feces in test plot

Stanol-specific
carbon isotopes
in feces

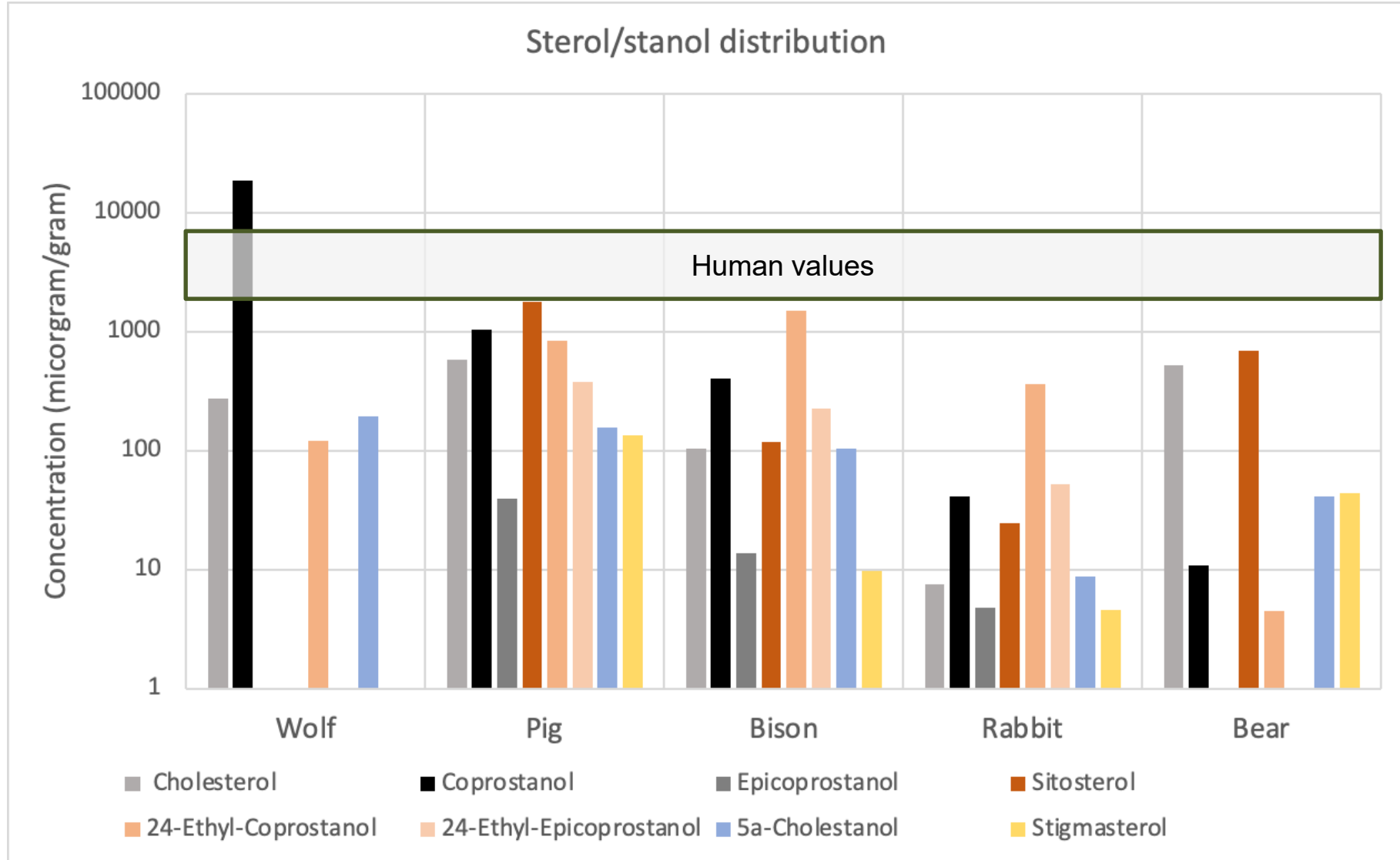
*Can isotopes track
dietary changes?*



Bear feed from Zoo Montana



Early Results

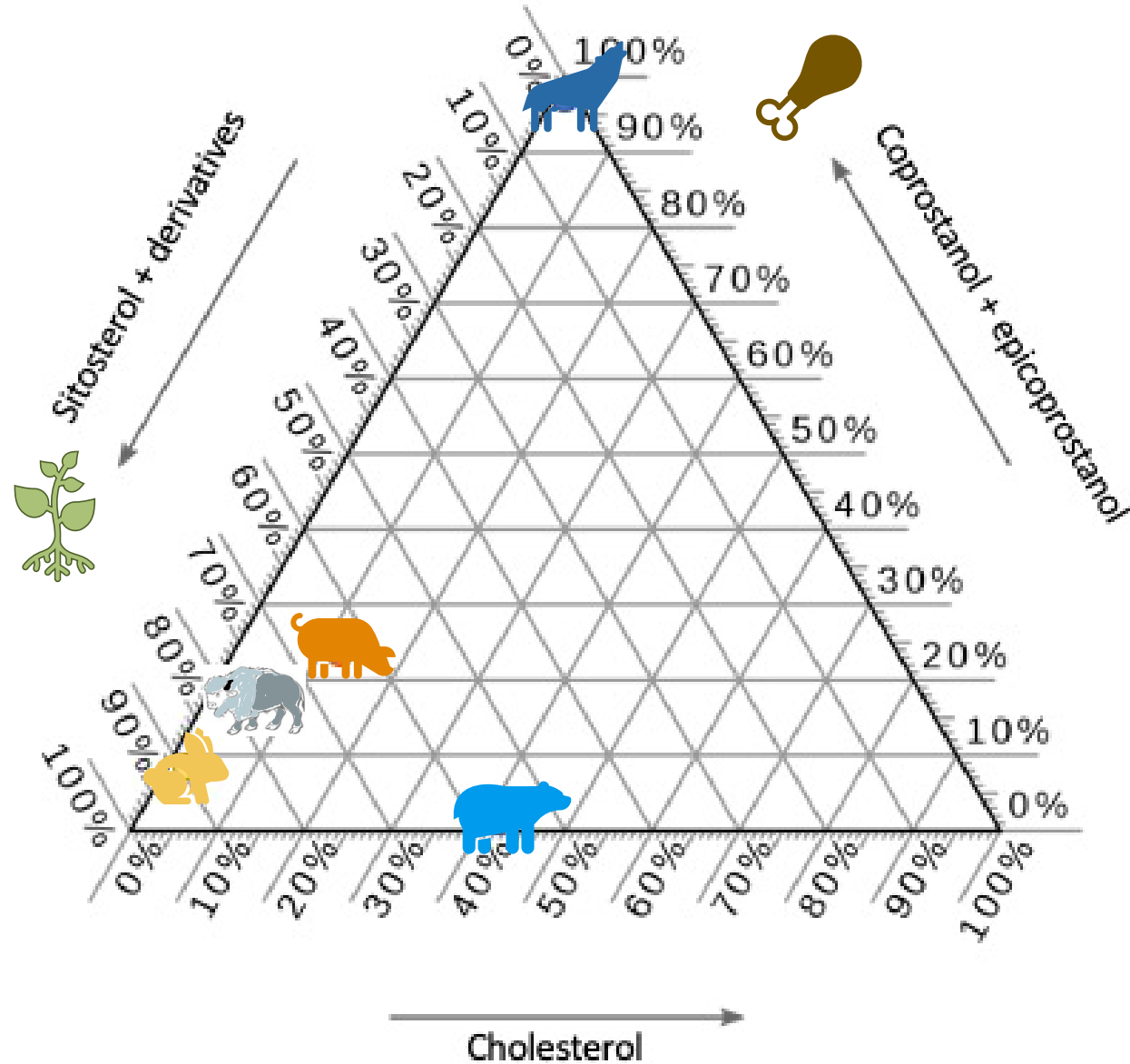


Wolves have coprostanol values similar to humans



Early Results

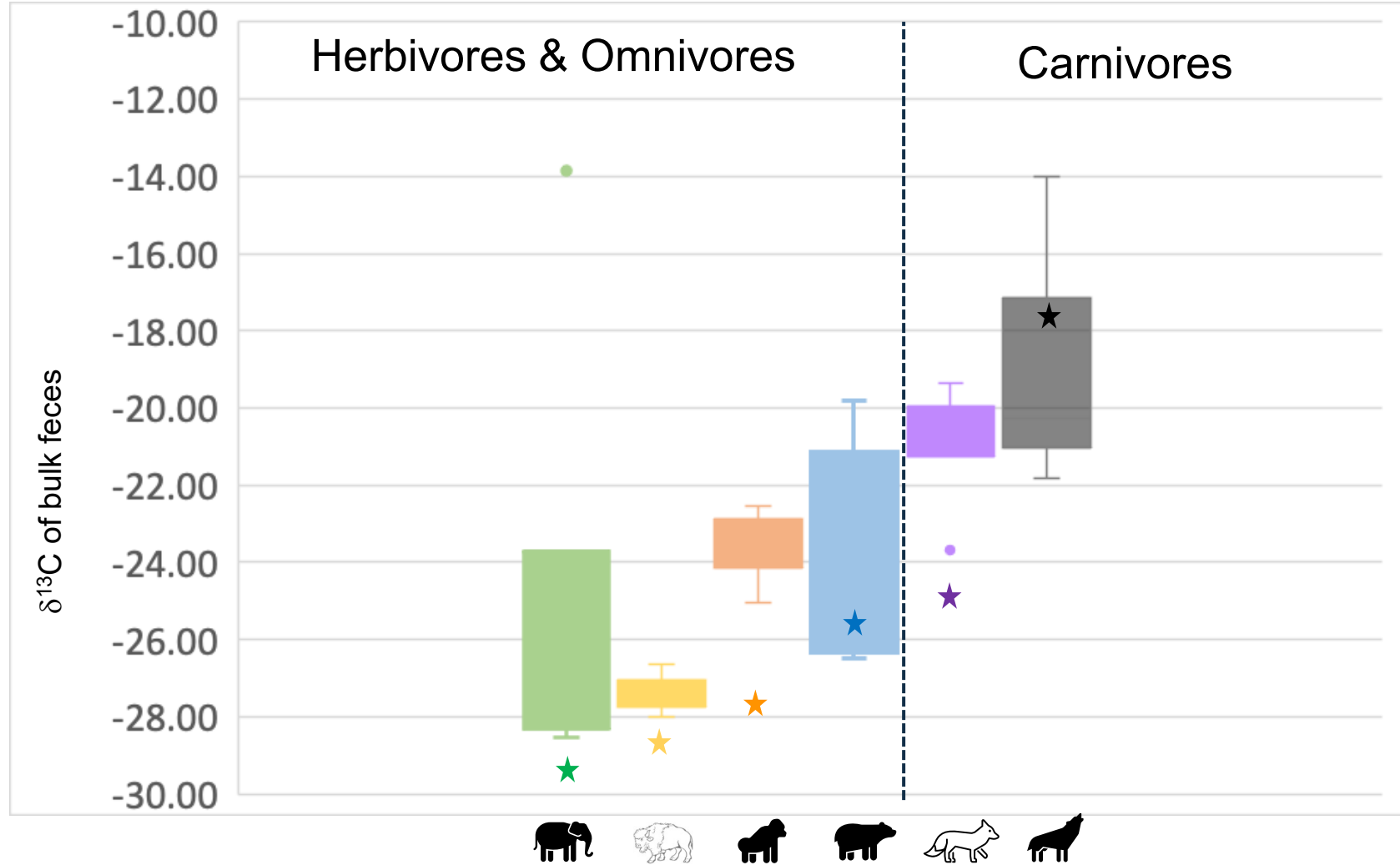
Wolves have a distinct stanol fingerprint





Early Results

Fecal Biomarkers in Archaeology



Wolf feces have a distinct isotopic signature



Lessons Learned

Fecal Biomarkers in Archaeology

- Coprostanol is produced by all tested animals *but* stanol fingerprint may link to feeding strategy (herbivore/omnivore/carnivore)
- Wolves (and their dog descendants) are likely complicating factors in fecal biomarker applications
- Carbon-isotopes of feces show promise in identifying stanol source

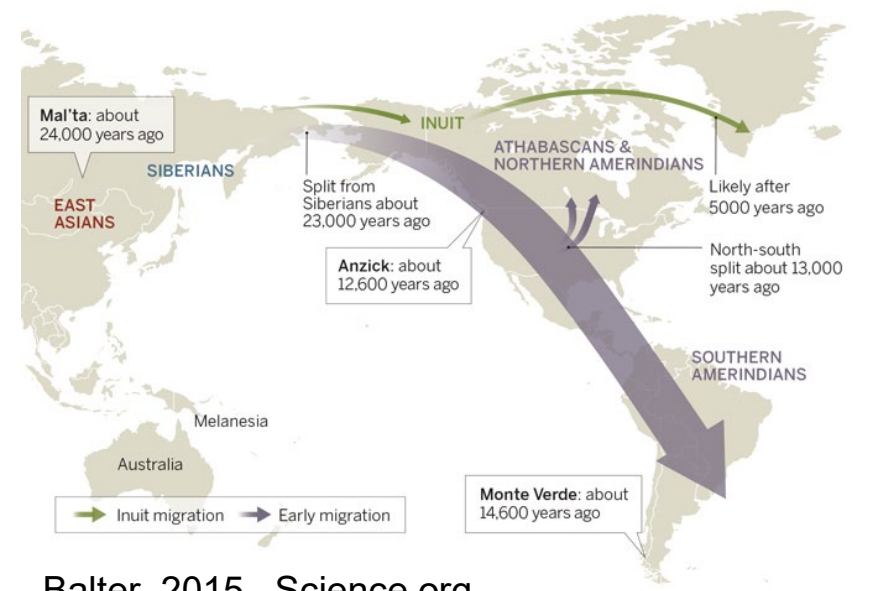


Long-term Plans

First Arrival:
Tracking the movements of early peoples in California

Migration and shifts in subsistence strategies:
Do subsistence strategies change as different cultural groups occupy Cahokia (or any area)?

Fecal Biomarkers in Archaeology



Balter, 2015. Science.org

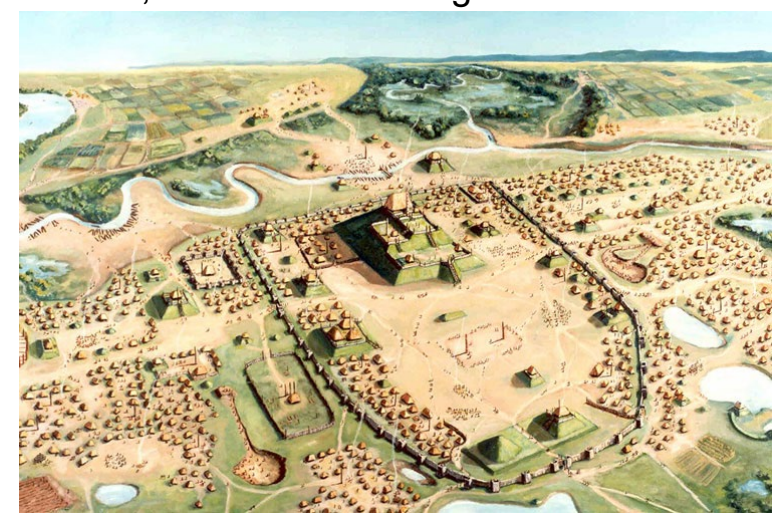
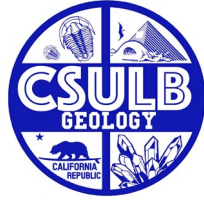


Image courtesy of Cahokia Mounds Historic State Site. Painting by William R. Iseminger



Fecal Biomarkers in Archaeology

Questions?

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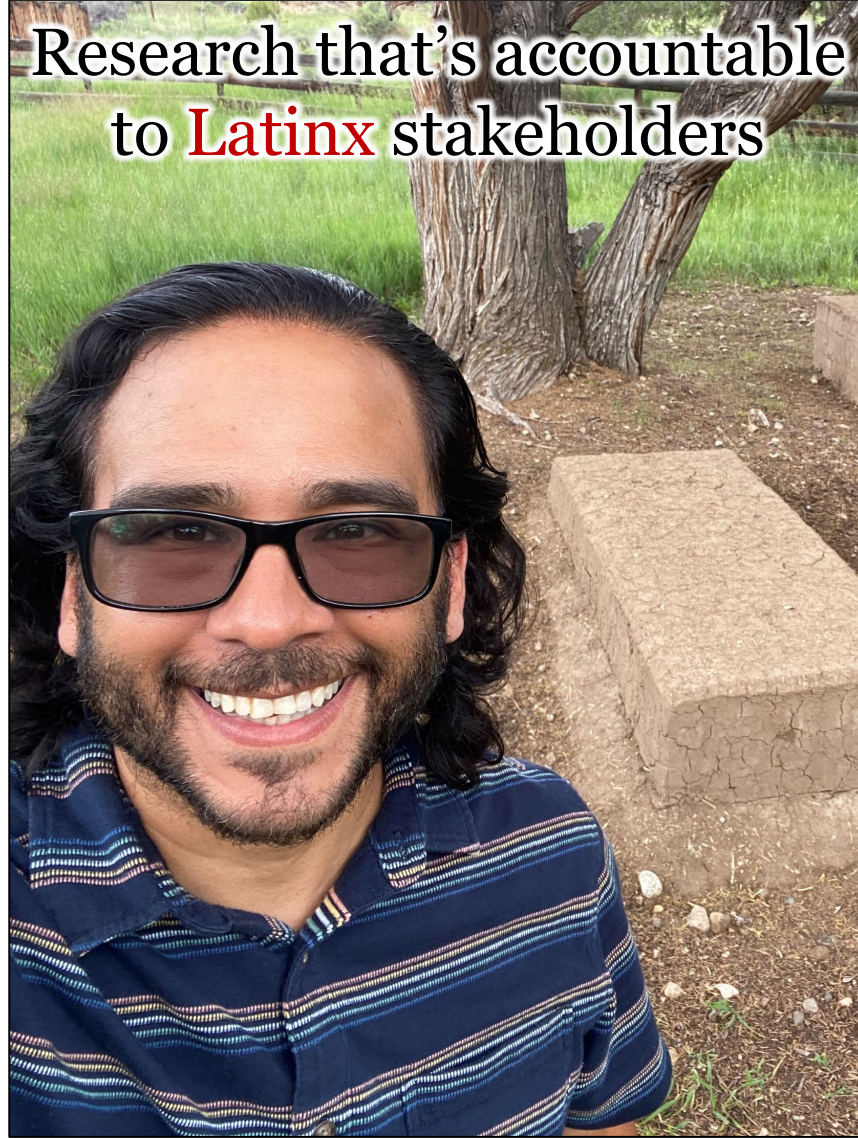
Instagram @ [iirmes_csulb](#) and

<https://www.youtube.com/c/PoopyArchaeology>



Onyx: Photo courtesy of Zoo Montana

LatinXperimental Archaeology is on the Agenda!



Albert Gonzalez, PhD

LatinXperimental Archaeology is on the Agenda!

Experimental Adobe Archaeology as **High Impact Practice**



- Creating community in northern New Mexico
- The Ranchos de Taos yearly *enjarre*.
- Replicating the work in research and to facilitate **student success**

LatinXperimental Archaeology is on the Agenda!

LatinXperimental Archaeology and **Student Success**

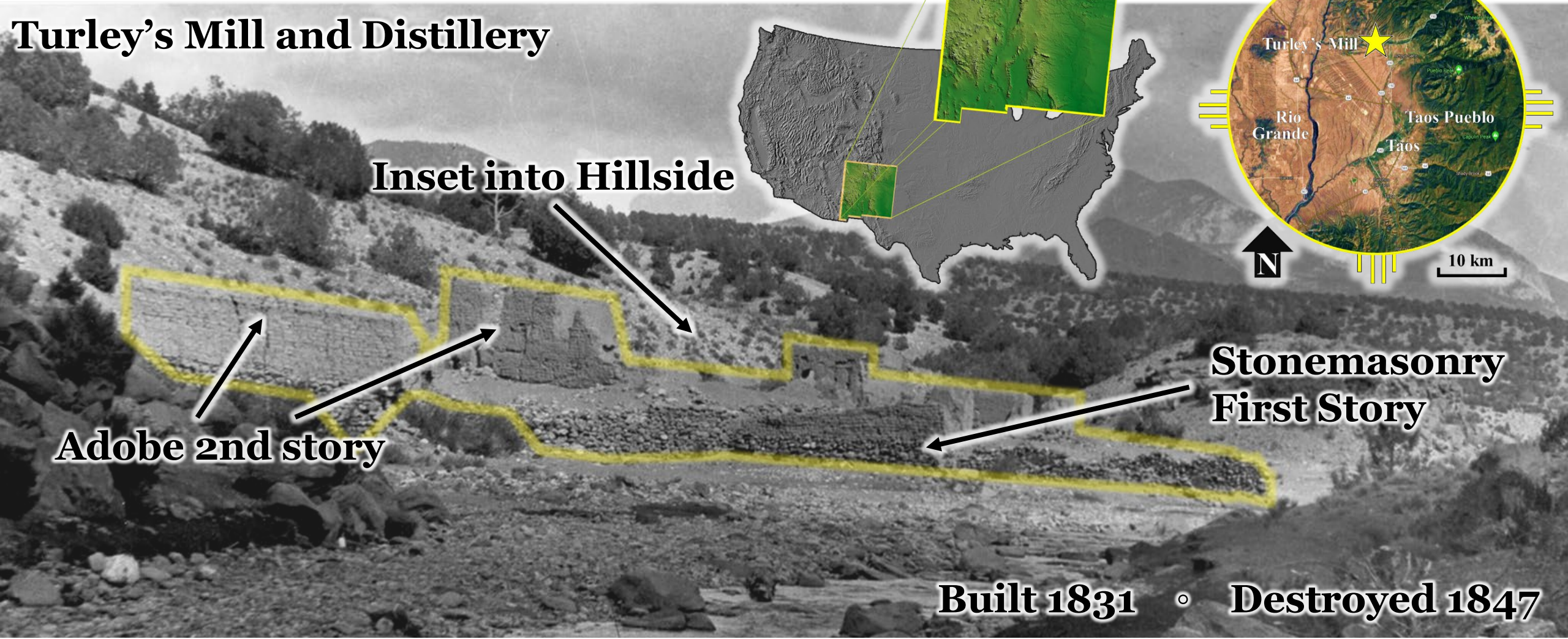
STUDENT
SUCCESS
IN THE MAKING



Latin **X**perimental Archaeology is on the Agenda!

Turley's Mill: Site Introduction

Turley's Mill and Distillery



Inset into Hillside

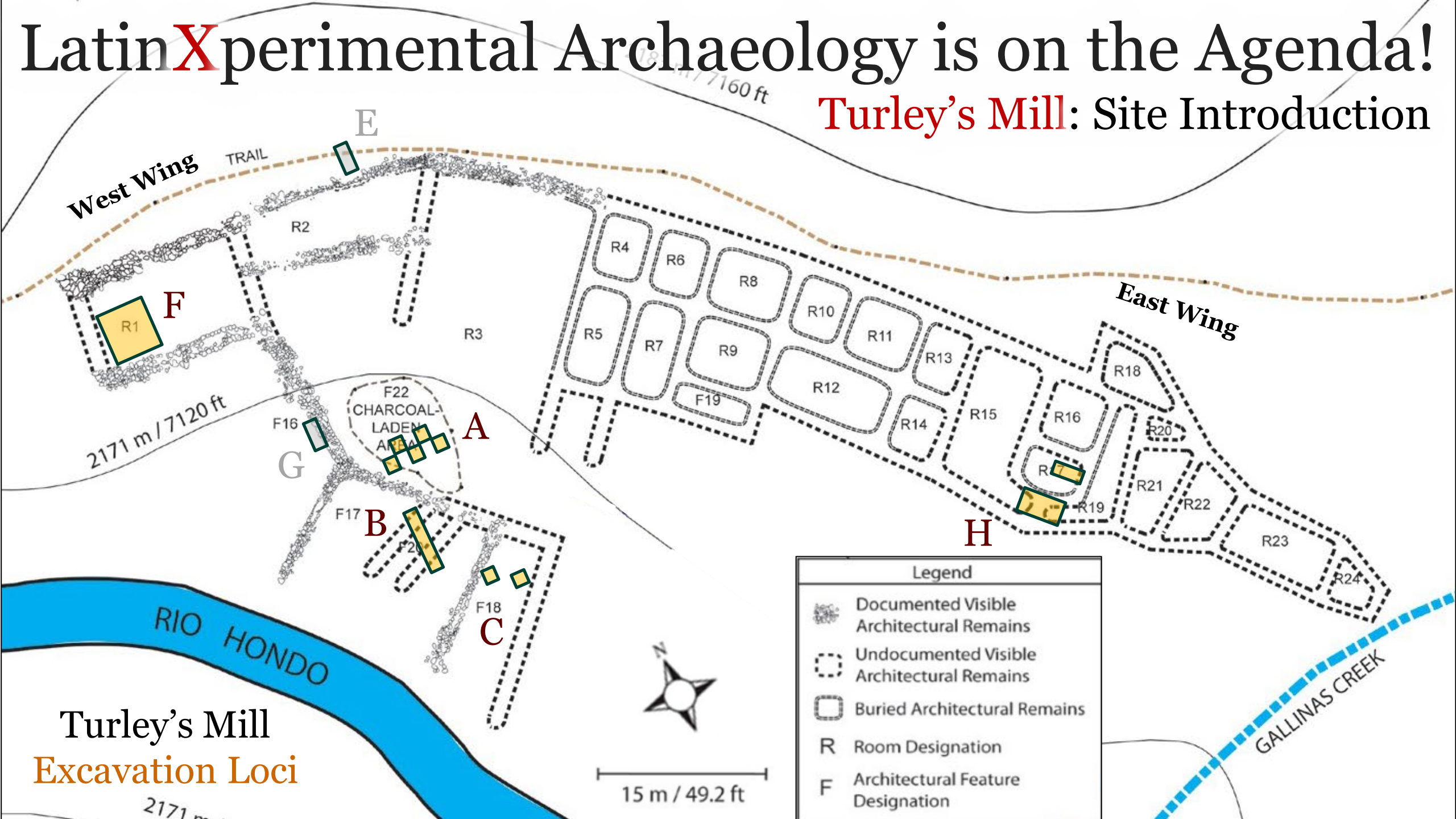
Adobe 2nd story

**Stonemasonry
First Story**

Built 1831 ◦ Destroyed 1847

Latin **X**perimental Archaeology is on the Agenda!

Turley's Mill: Site Introduction



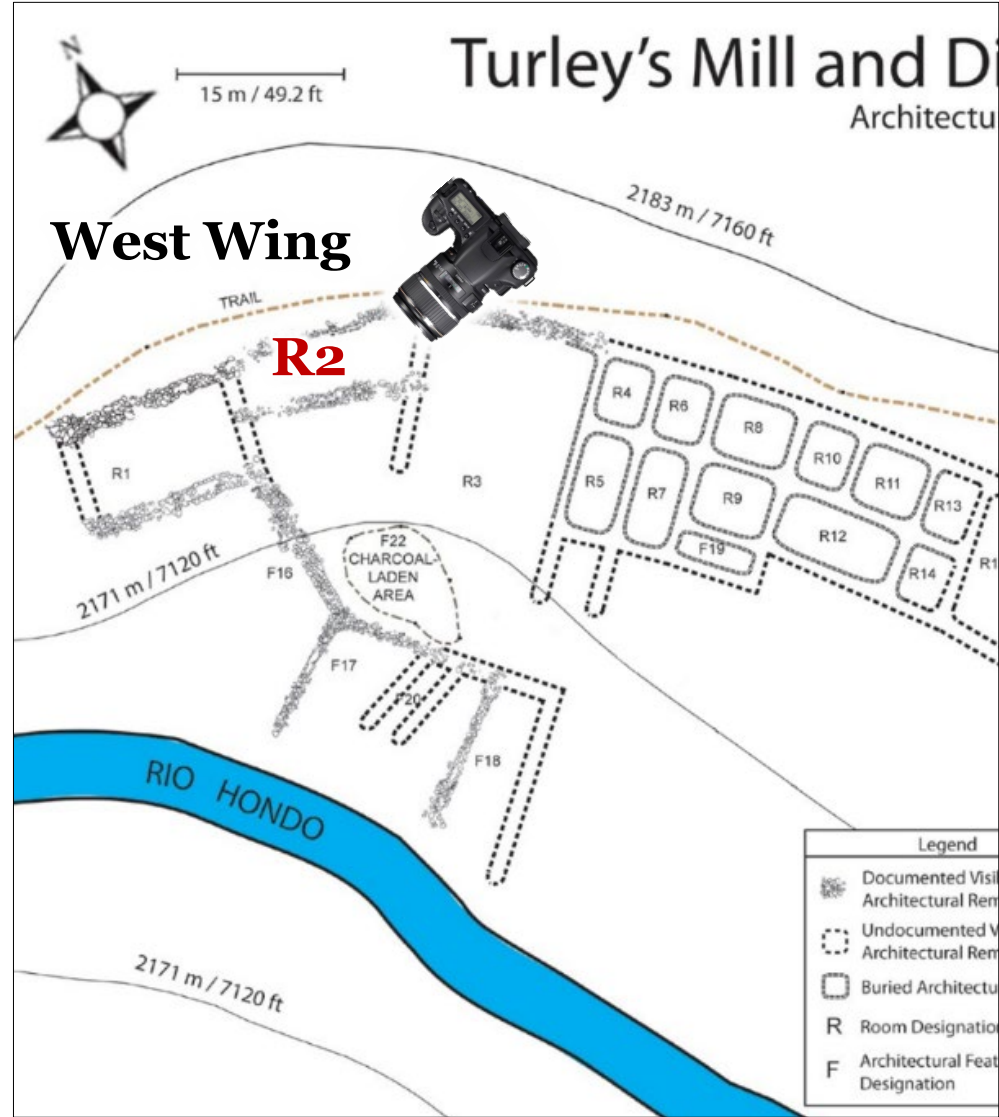
Turley's Mill
Excavation Loci

Legend	
	Documented Visible Architectural Remains
	Undocumented Visible Architectural Remains
	Buried Architectural Remains
	Room Designation
	Architectural Feature Designation

15 m / 49.2 ft

Latin **X**perimental Archaeology is on the Agenda!

Turley's Mill: Site Introduction



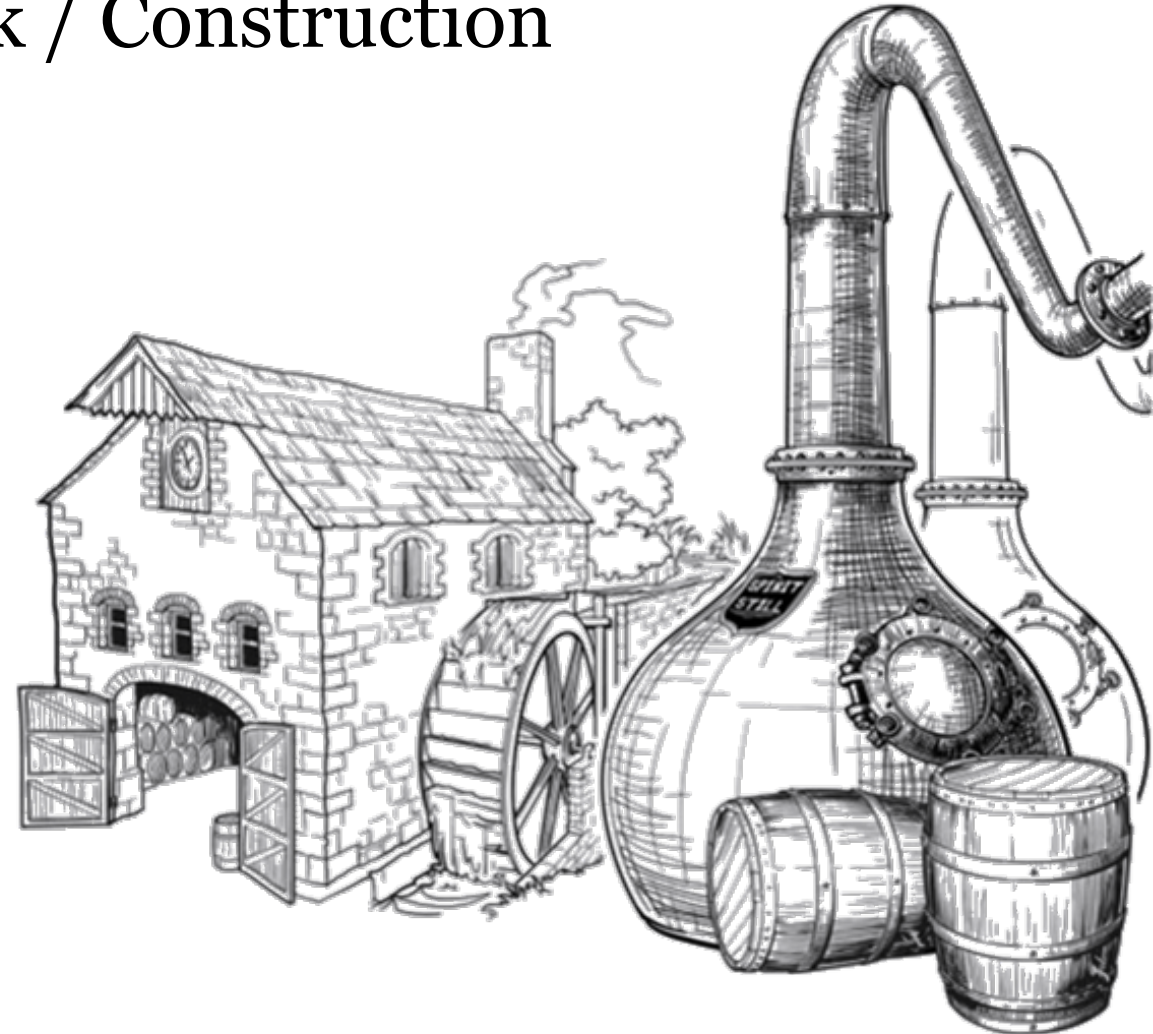
Latin **X**perimental Archaeology is on the Agenda!

Turley's Mill: Historical Background

- Anglo Arrival in NM and Local Work / Construction
- The Rise and Fall of Turley's Mill



- Curbing an Industrial Revolution
- The Research Question: **WHY?**



LatinXperimental Archaeology is on the Agenda!

Turley's Mill: Research Sub-Questions

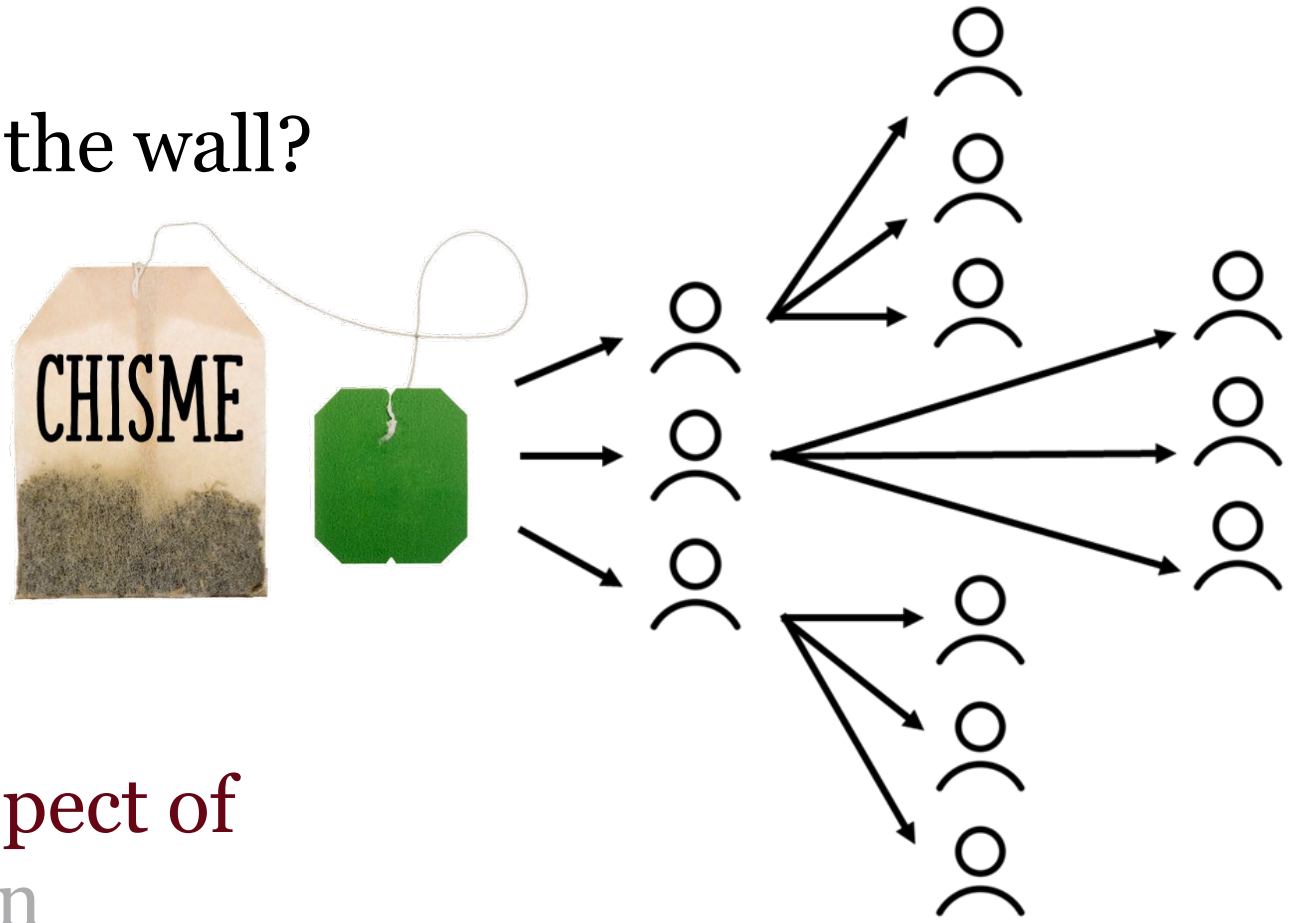
RQ: **Why** did the Rebels Choose Turley's Mill?

- Was the industrial writing on the wall?

- Laborers = **nodes** in a communicative **network**

Goal: labor in person-hours

- Landscape (wood/water) = aspect of field that spurs nodes to **action**

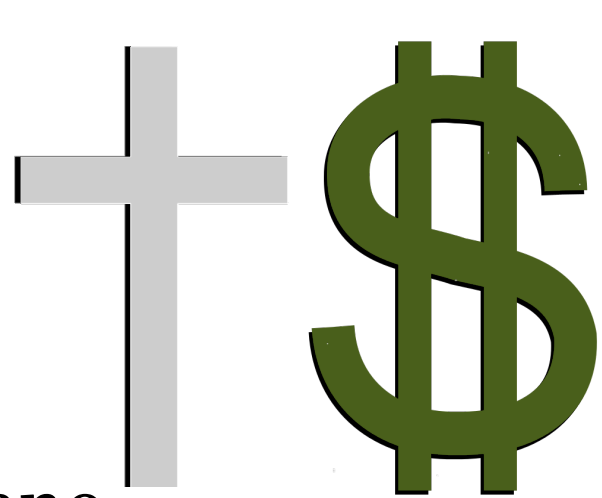


LatinXperimental Archaeology is on the Agenda!

Turley's Mill: Research Sub-Questions

RQ: **Why** did the Rebels Choose Turley's Mill?

- Sub-Question 1: Construction **person hours?**



LatinXperimental research methods

LatinXperimental Archaeology is on the Agenda!

High Impact Pedagogy, **Low Impact Archaeology**

- Brick Collection at NM Earth (Albuq.)
- Foundation excavation / construction



LatinXperimental Archaeology is on the Agenda!

High Impact Teaching, **Low Impact Archaeology**

- Mortar excavation and mixing
- Wall construction



LatinXperimental Archaeology is on the Agenda!

High Impact Teaching, **Low Impact Archaeology**

Plastered and Looking Good



LatinXperimental Archaeology is on the Agenda!

Thanks to:



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Questions?

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Uncovering the Neural Dynamics of Speech Monitoring Processes During Language Production

Stephanie Ries – San Diego State University

Collaborators:

Jerry Shih, Ashkan Ashrafi, Melissa Navaro, Zed Sehyr

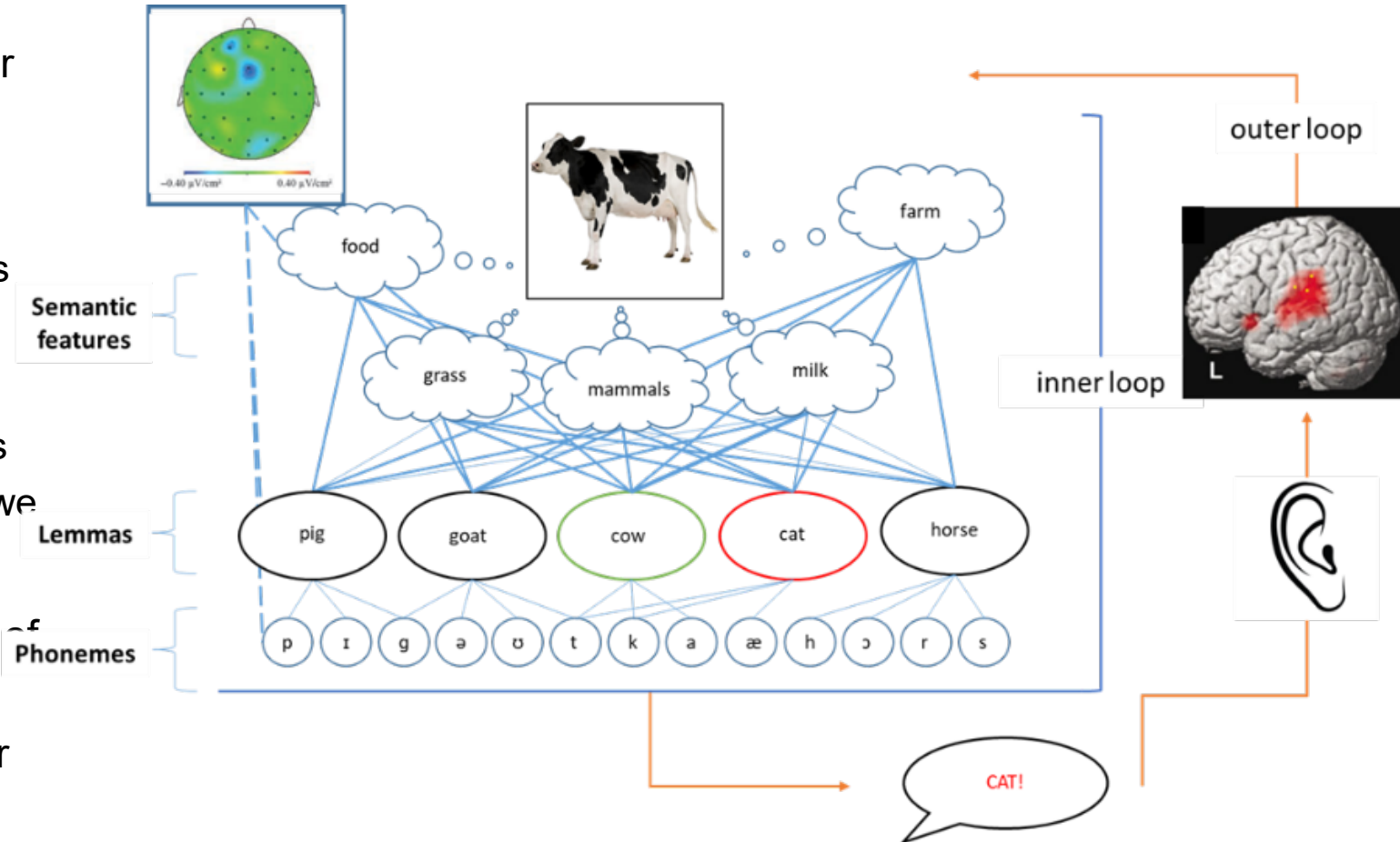
Stephanie Ries, Assistant Professor

San Diego State University, School of Speech Language and Hearing Sciences

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Project Overview

- Speech monitoring is a critical mechanism for efficient language production.
- It depends on 2 main loops:
 - The outer loop of speech monitoring allows us to detect and correct our errors once speech has been produced.
 - The inner loop of speech monitoring allows us to detect and correct our errors before we have started speaking.
- There is debate as to whether the inner loop speech monitoring depends on speech perception mechanisms similarly as the outer loop or on other mechanisms.



Scientific Activities

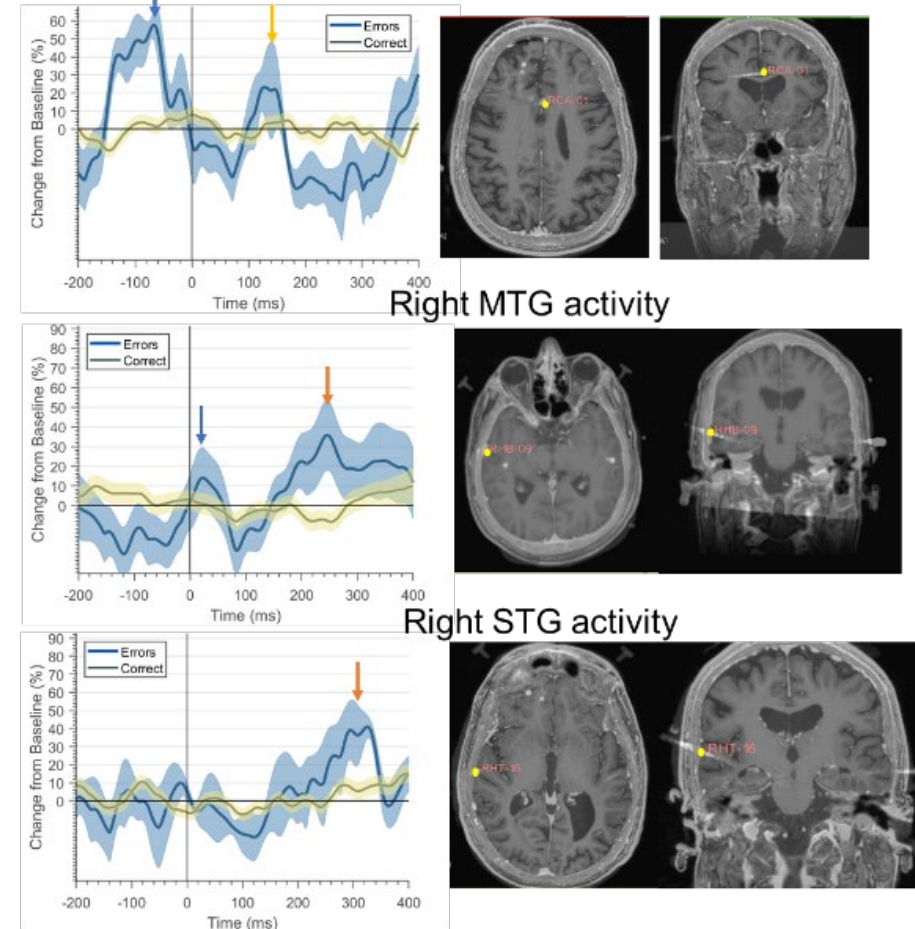
- We use Stereotactic Electroencephalography (SEEG) offering combined excellent spatial and temporal resolution to provide unprecedented insight on how we monitor language output in real time.
- The results will allow us to know when and where brain activity takes place relative to speech, and therefore which brain region supports inner versus outer speech monitoring.

Outreach Activities



- We are developing an outreach program on language and the brain for K-12 students to increase the accessibility and the participation of traditionally marginalized and linguistically diverse individuals in cognitive neuroscience.
- We are extending this outreach program to the neurosurgical patients participating in this research and their families providing them with structured information about the research performed and solicit their feedback on study design and objectives.

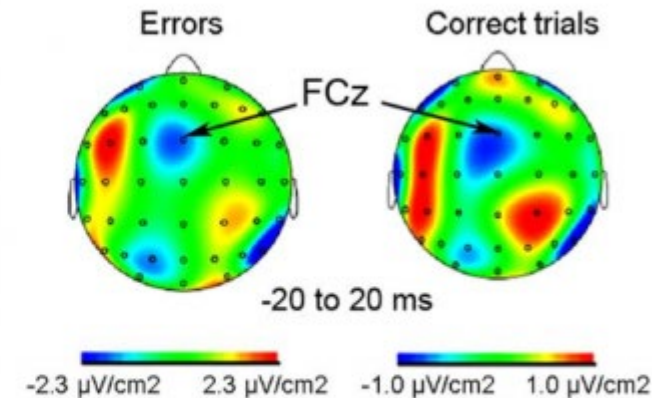
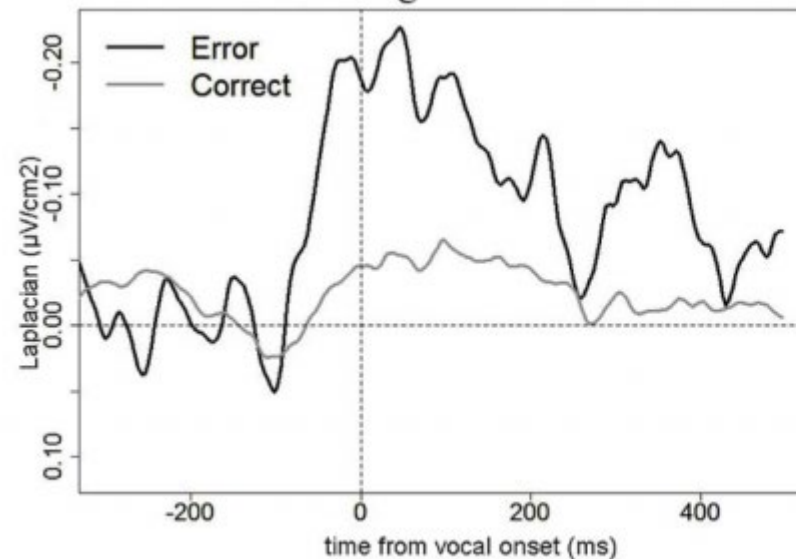
A. Time-course of the engagement of the brain regions of interest in speech monitoring during picture naming
dACC LFP activity



Preliminary Results

- My past investigations have led to the identification of electrophysiological correlates of speech monitoring and the proposal that inner speech monitoring is supported in part by a medial frontal domain-general action monitoring mechanism.
- By contrast, the electrophysiological activity recorded above the temporal cortices appears to peak later, which would be in agreement with a later involvement of the speech perception mechanisms in speech monitoring.
- These results are central to this proposal as they lay the groundwork for investigating the intracranial electrophysiological correlates of speech monitoring and testing our hypothesis.

Error-related negativity in correct vs. incorrect trials



Lessons Learned

- It takes a village! Having a good group of collaborators and students is critical to a project's success from inception to completion.
- Very grateful for SDSU's DRI and the workshops organized by John Crockett on grant writing and the NSF CAREER award in particular, and for the grant reviewer system which allowed to compensate an internal reviewer for their time reading my application and providing critical feedback.
- A thousand thanks to Simon Fischer-Baum at Rice for sharing his application materials as an example.
- So grateful to Jonathan Fritz, NSF's Cog Neuro's Program Officer, for meeting with me, providing his invaluable insight, and supporting me through this process.

Next Steps/Long-Term Plans

- Next steps: Launching this funded NSF project: completing the IRB, hiring personnel, getting the paradigm ready, starting data collection.
- Longer term plans:
 - Investigate individual differences in the neurobiology of speech monitoring and word retrieval processes.
 - Investigate the neurobiology of speech monitoring and word retrieval at a more fine-grained neurological level.
 - Bridge the fundamental knowledge acquired to understanding how speech monitoring and word retrieval may be affected by neurological conditions such as stroke.
 - Help design individualized treatment strategies that make use of this acquired knowledge.

Questions?

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Albert D. Gonzalez, CSU East Bay

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Stephanie Ries, San Diego State

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Next Steps/Closing Remarks

Dr. Frank A. Gomez
Executive Director, STEM-NET
Office of the Chancellor

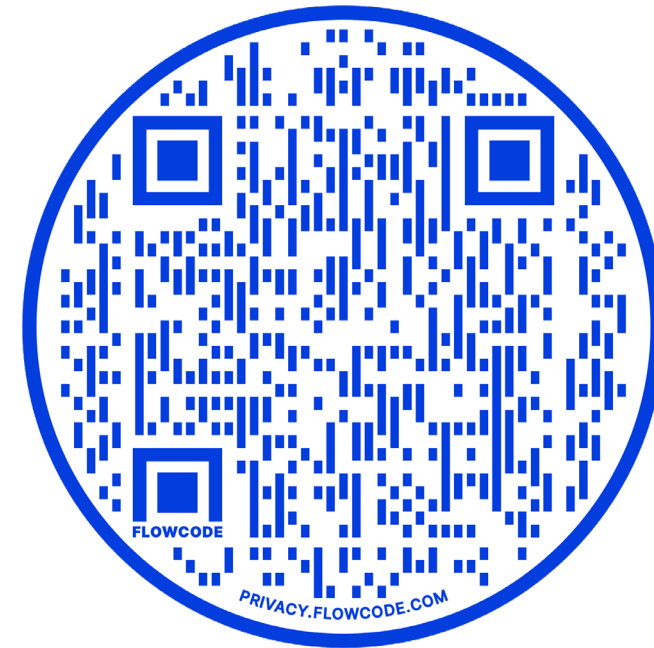


<https://www2.calstate.edu/impact-of-the-csu/research/stem-net>

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STEM-NET January Webcast

Topic: NSF Supported Computer and Data Science
Research in the CSU

Date: Friday, January 27, 2022

Time: 10am- 11:45AM

STEM-NET Upcoming Events

Register Here





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Begin a Conversation with Colleagues and Join our **Private CSU STEM-NET Facebook Group**

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