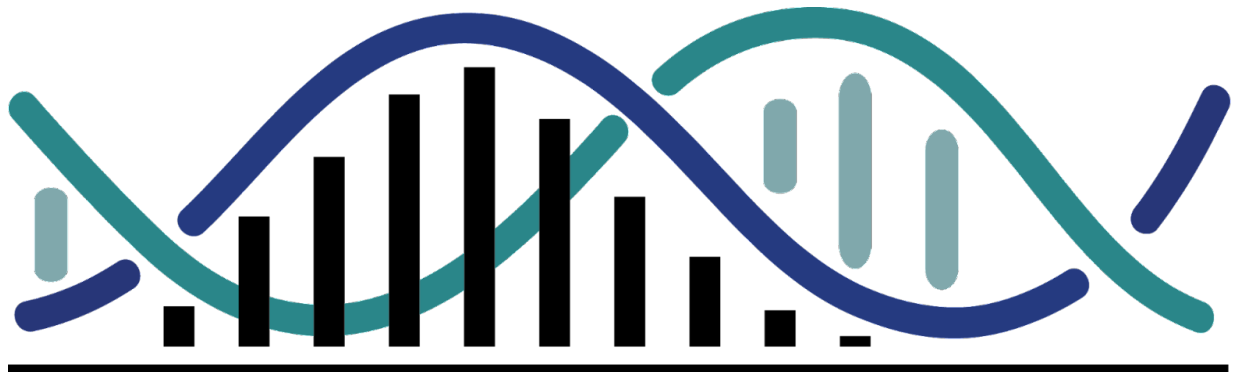


SABER West 2024

January 13 & 14

University of California Irvine



SABER

Society for the Advancement of
Biology Education Research

Supporting Equitable Transition in
STEM Education

 **UCI** School of Biological Sciences


ADINSTRUMENTS
making science easier



Achieve

Engage Every Student

ACHIEVE is Macmillan's new online platform that includes a comprehensive set of interconnected teaching and assessment tools.

ACHIEVE was co-designed through extensive collaboration and testing by both students and faculty including two levels of Institutional Review Board approval for every study of Achieve. Extensive student testing revealed powerful gains for students.

Engaging students for better outcomes

Pre-built assignments include a variety of activities to engage students both inside and outside of class.

Supporting students of all levels

Achieve was designed for all students whether they are high achievers or need extra support.

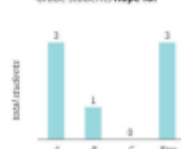
Partnering with you

Macmillan remains dedicated to expert authorship and support of the customer experience.

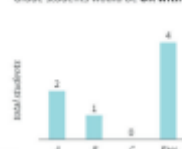
What goals do students have?

Course Goal Setting Intro Survey
Due Mon, February 21

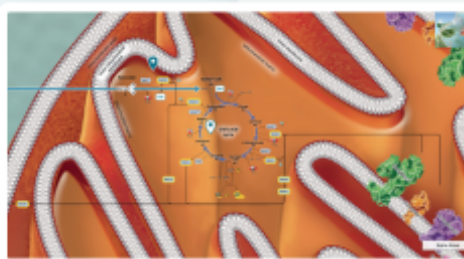
Grade students **hope** for



Grade students would be **OK** with



[View More](#)



Achieve supports these titles

MAJORS BIOLOGY

Morris et al., *Biology: How Life Works* 4e
Hillis et al., *Life: The Science of Biology* 12e Digital Update
Hillis et al., *Principles of Life* 3e Digital Update
OpenStax Biology

NON-MAJORS BIOLOGY

Shuster, *Biology for a Changing World* 4e
Phelan, *What Is Life?* 5e
OpenStax Biology

BOTANY

Evert/Eichhorn, *Raven Biology of Plants* 8e

GENETICS

Pierce, *Genetics Essentials* 5e
New! Pierce, *Genetics: A Conceptual Approach* 7e Digital Update
Griffiths et al., *Introduction to Genetic Analysis* 12e

CELL BIOLOGY

Lodish et al., *Molecular Cell Biology* 9e

MOLECULAR BIOLOGY

Cox/Nelson, *Molecular Biology* 2e

IMMUNOLOGY

Punt et al., *Kuby Immunology* 8e Digital Update

ECOLOGY

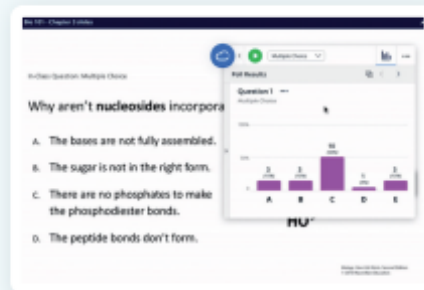
Relyea, *Ecology: The Economy of Nature* 9e

EVOLUTION

Emlen/Zimmer, *Evolution* 3e



Achieve also includes free access to iClicker, the most intuitive and flexible student engagement system available. With just a few clicks you can have your students answering questions in real time about anything you have on your screen, whether you're in the same room as them or not.



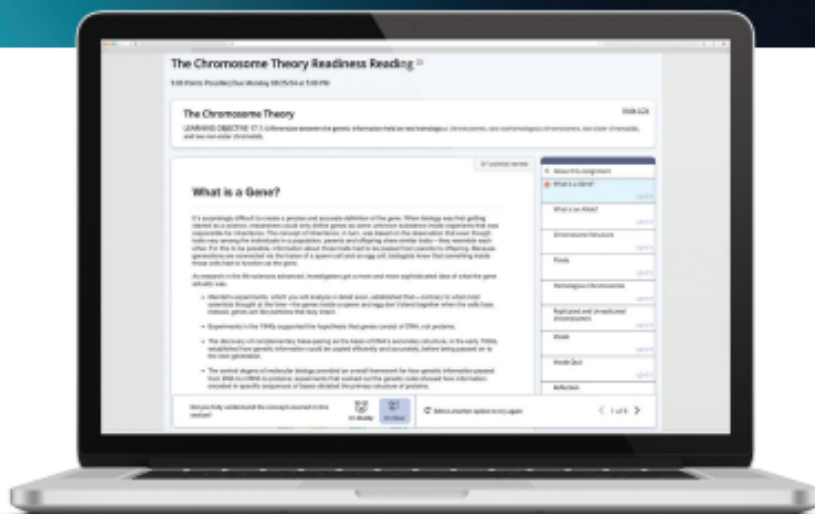
For more information, visit macmillanlearning.com/SABERWest2024

 | macmillan learning

CODONLEARNING

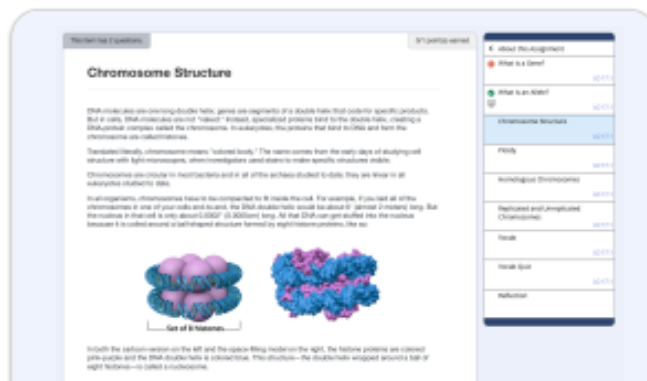
Introducing the Life Sciences

Scott Freeman (University of Washington) and colleagues



Readiness Readings replace traditional textbooks for biology majors and help students come to class prepared for active learning.

163 NSF-funded nationally endorsed lesson-level learning objectives provide biology majors with clear expectations of what they should know and be able to do.*

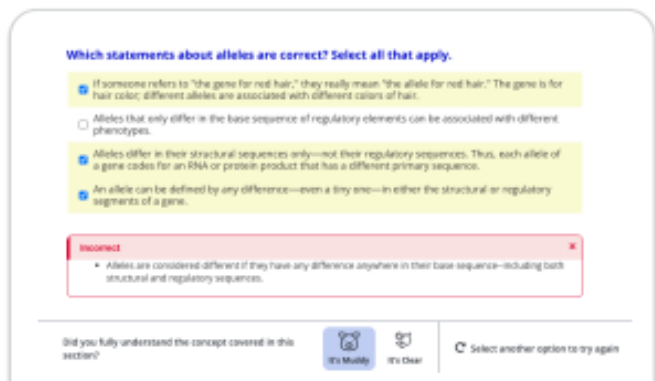


Streamlined and written for students

Students read only the content they need for each class session, which reduces their inclination to try to memorize everything.

Customizable

Instructors can customize every element of a Readiness Reading to match exactly what they want to teach.



Active and engaging

Students answer guiding questions while they read and practice metacognition by marking sections clear or muddy.

Assignable

Instructors assign readings for points — making students accountable for reading — and track their progress in the instructor application.

*See Hennessey and Freeman's study, *Nationally endorsed learning objectives to improve course design in introductory biology*, on bioRxiv, which is soon to be published in CBE-LSE.



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 - ✓ Strengthen Your Test Taking
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 - ✓ Time Management
 - ✓ Using the Resources
 - ✓ Accountability
 - ✓ Reading and Taking Notes

“

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-Student”

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Prepare Students, Streamline Course Management, and Empower Grading Consistency

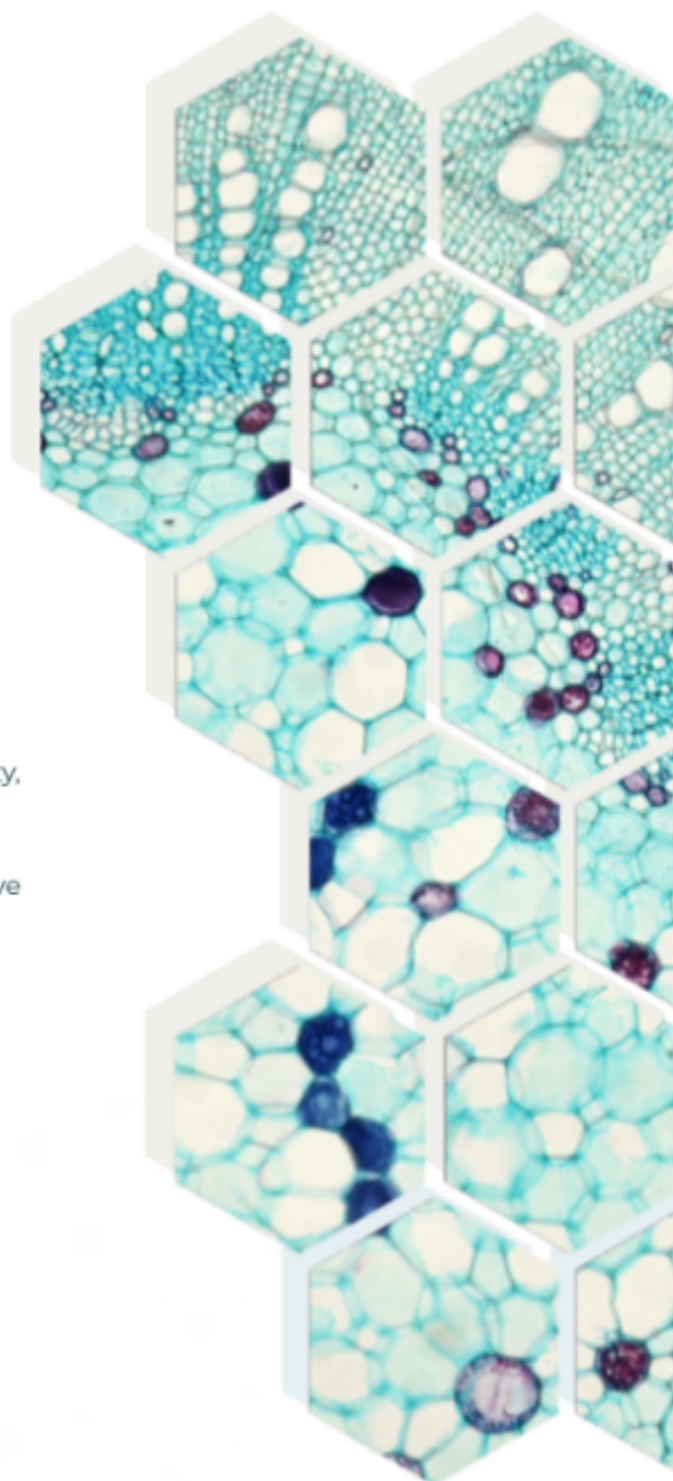
Catalyst Education now supports biology!

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Justin Shaffer, PhD

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UCI Postsecondary Education Research & Implementation Institute

The Postsecondary Education Research & Implementation Institute (**PERI²**) brings together an interdisciplinary team from across UC Irvine, including the [Office of the Vice Provost for Teaching and Learning](#) and the [School of Education](#), with the aim of supporting and conducting research that fosters equitable student success.

PERI² has the expertise to serve as **external evaluator** for education-focused [projects](#), [contracts](#), and [research grants](#) with staff that can:

- Generate & implement qualitative & quantitative data collection instruments
- Coordinate cross-campus & cross-unit data collection
- Tie program outcomes to institutional data
- Analyze data & disseminate results

Currently serving as external evaluator for projects funded by:



National Institutes
of Health



UCI PERI²

For more information, visit
www.educationresearch.uci.edu
or contact ssolanki@uci.edu

General Information

Travel and Hotel Information ([website](#))

Summary schedule ([link](#))

Attendee list (Google Sheets [link](#))

Wifi at UCI ([link](#))

All talk abstracts are listed [here](#).

All poster abstracts can be found [here](#).

Quiet room during the conference: ALP 2700

Collaboration space during the conference: ALP Lobby

UCI Contacts: Brian Sato (bsato@uci.edu), Adrienne Williams (adriw@uci.edu), and Alex Paine (painea@uci.edu)

All conference activities take place in the Anteater Learning Pavillion (ALP), building 605 on campus map ([link](#)).



The closest parking is Lot 7 ([Google maps link](#) and [self-parking link](#) \$15/day)

Friday, January 12

Welcome Happy Hour (sponsored by Macmillan Learning)

5:00 – 7:00 PM at [Hanger 24 Brewery and Restaurant](#) - 1 complimentary drink per registered attendee

Friday Workshops (optional, pre-registration required)

Enrollees will be contacted by the presenter. More about each of these workshops can be found [here](#).

Time/Location	Description
12:00pm-4:00pm Location: AIRB 1030 Lunch and afternoon coffee provided	R for Teachers and Education Researchers Presenter: Kameryn Denaro (UC Irvine) R is a free and powerful statistical computing language. Most courses that teach R start with an esoteric computer science lecture and sample data about cars. This course will provide busy faculty and graduate students with tools to analyze actual classroom data to start you on the path to using quantitative methodologies to conduct education research. Part 1 is an introduction to R through the lens of classroom teaching, Part 2 introduces R for analysis of classroom data for education researchers. Attendees are expected to be novices to R.
12:00pm-4:00pm Location: McGauth 4248 Lunch and afternoon coffee provided	CourseSource Writing Studio Workshop: Developing your innovative classroom activities for publication in CourseSource Presenters: Sharleen Flowers (CourseSource) and Jenny Knight (CU Boulder) In this workshop, we will help prospective CourseSource authors learn about the journal and submission guidelines. We will guide participants through each section of a CourseSource manuscript and provide helpful hints. Prospective authors will have time to work in small groups on manuscript ideas, receive feedback from peers, and ask questions of the editorial staff. Participants will work through a manuscript planning worksheet including all the components of a CourseSource Lesson article: learning goals, introduction, scientific teaching themes, lesson plan, supporting materials, and teaching discussion
1:00pm-4:00pm Location: ALP 3700 Afternoon coffee provided	Finding Belonging in STEM Education: A Contemplative Approach Presenters: Madhvi Venkatesh (Vanderbilt) & Yevgeniya Zastavker (Olin College) This workshop will provide a theoretical and experiential understanding of contemplative pedagogies and how they can be used to create learning spaces that foster belonging. This workshop will invite participants to engage with contemplative pedagogies while also gaining the knowledge and skills necessary to apply them in their own local contexts. Specifically, through both interactive lecture and experiential practice, participants will be introduced to a set of contemplative pedagogies that are transferable to diverse learning environments. This session is intended for all audiences who support students' learning so that they can engage these practices in fostering a personal and collective sense of belonging for their respective student populations.

Saturday, January 13

Shuttle Pick-up Times

From the hotel (Irvine Marriott) to the conference – **8:15 am, 8:45 am, 9:15 am**

If you miss the shuttle and need a ride to campus, the destination is “Parking Lot 7 at UCI” (Uber and Lyft can pick you up and should be ~\$10 one-way).

Google maps information can be found [here](#).

Self-parking information can be found [here](#) (\$15/day).

8:30 – 9:50 AM Registration and Breakfast

ALP Lobby. Registration & Breakfast, Poster setup (even numbers)

9:00 – 9:50 AM Special Interest Groups and Informal Meetups

Location	SIG/Meetup	Description
ALP 1600	New to SABER	Join us at the new attendee breakfast, where we warmly welcome all SABER and/or SABER West newcomers to enjoy a delicious breakfast while learning about the organization and connecting with current members.
ALP 2100	K-12 Education	The K-12 SABER SIG is for those interested in how K-12 education informs biology education research at the postsecondary level
ALP 2200	Biology through Art	Biology through Art is a collaborative network of biologists and artists that explores ways to integrate artwork and creative expression into biology courses.
ALP 2500	Physiology	Physiology instructors! Come find your colleagues at our Phys SIG. I will share some valuable resources for your teaching and we can exchange ideas on challenging topics. Looking forward to meeting each of you.
ALP 2600	Methodology	Methodology in BER SIG to brainstorm ideas for programming and activities that will advance our community's the epistemological underpinnings of research design and methodology.

10:00 - 10:30 AM - WELCOME/ANNOUNCEMENTS

ALP 1300

10:30 – 11:30 AM Plenary Speaker Dr. Andrew Estrada Phuong

Title: Adaptive Equity-Oriented Pedagogy: An Empirically Tested Framework for Increasing Student and Instructor Success - **ALP 1300**

11:45 AM – 12:30 PM Concurrent Talks 1

15 minutes to talk, 5 minutes for questions. Please keep time for each other.

	11:45 AM – 12:05 PM	12:10 PM – 12:30 PM
ALP 1600	Desiree Forsythe*(Chapman University); Jeremy Hsu (Chapman University) Impact of non-STEM minor on STEM students' STEM identity.	Shelby Chandar (Sacramento State)*; Ethan X Roberts (California State University, Sacramento); Abdullah Al-Janabi (California State University, Sacramento); Joya Mukerji (California State University, Sacramento); Catherine Ishikawa (California State University, Sacramento); Kelly McDonald (California State University, Sacramento) Identifying perceived barriers faced by students with disabilities in STEM research courses.
ALP 1700	Baylee A Edwards (Arizona State University)*; Sara Brownell (Arizona State University) Secular biology graduate teaching assistant perceptions of the relationship between religion and evolution	Juliana M Fox (UCSD)*; James Cooke (UC San Diego) Consistency of Sustaining and Extinguishing Epistemic Beliefs across STEM Classrooms
ALP 2200	Saya S. Shahoy (UC San Diego); Michelle Du (UC San Diego)*; Ola Mostafa (UC Berkeley); Aliyah Parker (Stanford); Dylan Martirano (CSU Northridge); Melinda T Owens (UC San Diego)* College level biology students' understanding of COVID-19 mRNA-based vaccines and their ability to apply their knowledge of the central dogma	Bailey M. Von der Mehden (University of Tennessee, Knoxville)*; Beth Schussler ("University of Tennessee, Knoxville") Navigating Success and Failure: Student Perspectives in Biology and Chemistry Lectures
ALP 2500	Gabriella Dauber (Chapman University)*; Jeremy Hsu (Chapman University) Examining Student Affect and Experiences in STEM Course Office Hours	Eduardo J Gonzalez (UCSB)*; Vanessa Woods (UCSB); Jesse Lewis (University of Minnesota); Daniel Wetzel (University of Pittsburgh); Lekeah Durden (Central Michigan University); Susan Cheng (University of Michigan) Exploring STEM Student Experiences: Analyzing Motivators and Barriers Impacting Office Hour Engagement

All talk abstracts are listed [here](#).

12:45 PM Lunch for all

12:45 PM Community College Lunch and Meetup

Community college colleagues, potential collaborators and friends are invited for networking and lunch
– ALP 1600

1:45 – 3:15 PM Workshops

See your badge for your workshop selection. All workshop abstracts can be found [here](#).

Location	Description
Workshop A ALP 1120	Claire Meaders (UC San Diego) & Petra Kranzfelder (UC Santa Barbara) Using Classroom Observational Protocol Data to Document Professional Growth in your Teaching
Workshop C ALP 1600	Sabrina Solanki, Alex Paine, & Anna Kye (UC Irvine) Currently in STEM Education Research
Workshop D ALP 1700	Adam Chouinard (Oregon State), Star Lee (UC Irvine), Diyala Shihadih (Portland State), & Erin Shortlidge (Portland State) Tools for Evaluating and Improving Teaching Assistant Professional Development
Workshop E ALP 2100	Parvaneh Mohammadian & Stephen Brown (Los Angeles Mission College) Navigating the Path to Becoming a Community College Educator: A Workshop on Applying for Teaching Positions
Workshop F ALP 2200	Ira Clark (UCLA), Shelly Thai (Glendale Community College), Alija Mujic (Fresno State), Alexander Tower (Santa Monica College), Marc Levis-Fitzgerald (UCLA), Casey Shapiro (UCLA), & Brit Toven-Lindsey (UCLA) Scaffolding research for undergraduates: How to integrate a Research Deconstruction module in your introductory biology courses
Workshop G ALP 2500	Jenny Knight (CU Boulder) & Sharleen Flowers (CourseSource) An interactive session using the Scientific Teaching Course: an online, open-access course on evidence-based teaching for undergraduate science educators
Workshop H ALP 2600	Diane Ebert-May (Michigan State) & Nate Emery (UC Santa Barbara) Assess what's important: Creating assessments that demonstrate students' knowledge and abilities to use knowledge

3:30 – 4:15 PM Concurrent Talks 2

15 minutes to talk, 5 minutes for questions. Please keep time for each other.

	3:30 – 3:50 PM	3:55 – 4:15 PM
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ALP 1600	Gregory J Crowther (Everett Community College)*; Usha Sankar (Fordham University); Leena Knight (Whitman College); Deborah Myers (Everett Community College); Kevin Patton (St. Charles Community College); Lekelia Jenkins (Arizona State University); Thomas Knight (Whitman College) Chatbot Responses Suggest that Hypothetical Biology Questions are Harder than Realistic Ones	Briana M Craig (Chapman University)*; Jeremy Hsu (Chapman University) A multi-year longitudinal study exploring the impact of the COVID-19 pandemic on students' familiarity and perceptions of active learning
ALP 1700	Mike Wilton (UCSB)*; Stanley M Lo (University of California San Diego); Kameryn Denaro (UCI); Brian Sato (UC Irvine); Hannah Kam (UC San Diego) Moving beyond the Ivory Tower: Analyzing University of California faculty hiring to promote diversification of the professoriate	Erik Arevalo (University of California, San Diego)*; Eva Fuentes-Lopez (UCSD); Mike Wilton (UCSB); Stanley M Lo (University of California San Diego) Hiring for Equity: Examining how Faculty Search Committees Conceptualize Inclusive Hiring Practices
ALP 2200	Joseph L Henry (University of California Irvine)*; Natascha Buswell (University of California Irvine) Elucidating the Transition Process of Latin and Hispanic PhDs into Teaching-Focused Faculty Positions Using a Community Cultural Wealth Framework	Alex R Paine (UCI)*; Brian Sato (UC Irvine); Sabrina Solanki (University of California, Irvine) Teaching-Focused Faculty in Research-Intensive Universities: Examining how Increased Engagement in Scholarship could Bridge Gaps between Research and Teaching Initiatives
ALP 2500	Alfonso Godinez Aguilar (Harvard University); Lilyan Mendez (UC San Diego); Clara Meaders (UC San Diego)*; Melinda T Owens (UC San Diego) Will it still work? Fidelity of a chemistry learning intervention for introductory biology when adopted by other instructors	Merri L Casem (CSU Fullerton)*; Julia Chan (CSU Fullerton); Sachel Villafane-Garcia (CSU Fullerton); Ariana Vasquez (Arroyo Research Services) Listening to Student Voices: A College-based Summer Bridge Program

All talk abstracts are listed [here](#).

4:30 – 5:30 PM Poster Session and Appetizers

Poster Session (**Even numbers**)

All poster abstracts can be found [here](#).

Poster authors and titles are at the end of the program.

6:00 PM Dinner on your own

Want a dinner buddy? Sign up [here](#).

Shuttle Return Times

For return to the hotel – **5:30 pm, 6:00 pm, 6:30 pm** at Parking Lot 7 outside of ALP

Sunday, January 14

Shuttle Pick-up Times

From the hotel (Irvine Marriott) to the conference – **7:45 am, 8:15 am, 8:45 am**.

If you miss the shuttle and need a ride service to campus, the destination is “Parking Lot 7 at UCI” (Uber and Lyft can pick you up and should be ~\$10 one-way).

Google maps information can be found [here](#).

Self-parking information can be found [here](#) (\$15/day).

8:00– 9:20 AM Breakfast

9:30 – 9:45 AM Announcements

9:45 – 10:45 AM Plenary Short Talks

	9:45 – 10:05 AM	10:05– 10:25 AM	10:25 – 10:45 AM
ALP 1300	Nkechinyere Iroanusi (UC San Diego)* Comparative Analysis of Instructional Courses Focusing on Race and Genetics	Emoni Cook (UCLA)*; Lauryn Famble (UCLA); Noelle Fuller (UCLA); Naomi Hammonds (UCLA); Maciel Duverge (UCLA); Siobhan Braybrook (UCLA); Jeffrey Maloy (UCLA) Evaluating the Impact of Justice Pedagogical Partnerships on Student and Faculty Partners in Life Sciences	Austin Zuckerman (University of California, San Diego)*; Lily Vo (University of California San Diego); Ashley Juavinett (University of California San Diego) When Coding Meets Biology: Student Attitudes, Motivations, and Expectations in a Contextualized Coding Class

11:00 AM – 12:10 PM Concurrent Talks 3

15 minutes to talk, 5 minutes for questions. Please keep time for each other.

	11:00 – 11:20 AM	11:25 – 11:45 AM	11:50 – 12:10 PM
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ALP 1600	Delaney Worthington* (Colorado State University); Barb Graham (Colorado State University); Hannah Gilliard (Colorado State University); Nicole Kelp (Colorado State University) Development and validation of a multifactorial scale to evaluate students' planned behavior in inclusive approaches to science communication.	Nicole Kelp (Colorado State University)*; Sydney Alderfer (Colorado State University); Katlyn M Murphy (Colorado State University); Delaney Worthington (Colorado State University) Helping students consider inclusivity and socio-scientific implications of the primary scientific literature	Madhvi J. Venkatesh (Vanderbilt University)*; Abigail M. Brown (Vanderbilt University); Janani Varadarajan (Vanderbilt University); Barbara Fingleton (Vanderbilt University); Kathleen L. Gould (Vanderbilt University) Development of a scale to measure bioscience doctoral students' self-efficacy in science process and professional skills.
ALP 1700	Nichole A Lewis (UC Berkeley)*; Diyala Shihadih (Portland State University); Dax Ovid (University of Georgia); Tamara L Mau (Dept. of Integrative Biology); Julianne M Winters ("University of California, Berkeley"); Tyrone Hayes (UC Berkeley); Eileen Lacey (UC Berkeley); Robert Full (UC Berkeley) Faculty interviews provide key insights to successful discovery-based undergraduate course transformations	J. Gwen Shlichta (Edmonds College)* and Mary Whitfield (Edmonds College) Beyond the Classroom: Fostering Inclusivity in STEM through External Validation Experiences in Community College CURE Programs.	Eric Pennino (California State University, Sacramento)*; Kelly McDonald (California State University, Sacramento); Andrea Palacio (California State University, Sacramento) Opening the Hidden Rule Book: Increasing Introductory Biology Students' Knowledge of Undergraduate Research Experiences through In-class Workshops
ALP 2200	Jiae Lee (California State University Long Beach)*; Madison Meuler (University of Washington); Elli J Theobald (University of Washington) Biology in a Social Context: A comprehensive analysis on humanization in introductory biology textbooks	Mallory M Rice (California State University San Marcos)*; Marcella Baiz (University at Buffalo, SUNY); Susan Cheng (University of Michigan); Kathy Darragh (University of California, Davis); Cesar Estien (University of California, Berkeley); Kaitlyn Gaynor (University of British Columbia); J. W. Hammond (Michigan Technological University); Lily Khadempour (Rutgers University); Danielle Ignace (University of British Columbia); Christopher Lawrence (Princeton)	Marina Ellefson (UC Davis)*; Shannon Behrman (Science Communication Lab); Amanda Molder (University of Wisconsin, Madison); Emily Howell (Science Communication Lab); Brittany Anderton (Science Communication Lab) What to watch? Impact of Educational Video Style Impact on Student Engagement, Speaker Credibility, and Scientific Identity

		University); Matthew McCary (Rice University); Kirby Mills (University of Michigan); Alex Moore (University of British Columbia); Justine Smith (University of California, Davis); Shersingh Joseph Tumber-Dávila (Dartmouth College) Terminology in Ecology and Evolutionary Biology Disproportionately Harms Individuals from Marginalized Groups	
ALP 2500	Cynthia Brame (Vanderbilt University)*; Lilian Baker (Vanderbilt University); Zoe Abel (Vanderbilt University) From 'helping peers succeed' to 'struggling to develop research questions': Factors that contribute to and detract from science identity in undergraduate learning assistants	Tolulope R Owolabi (Sacramento State University); Arik Davidyan (California State University Sacramento)* I Am an Expert; or Am I? Evaluating the Effects of Student Background on Students' Science Identity and Science Communication Efficacy	Celestial J Pigart-Coleman (Arizona State University)* Social comparison disproportionately mediates fear of negative evaluation in science classrooms for underserved science identities

All talk abstracts are listed [here](#).

12:10 – 1:25 PM Poster Session

Poster Session (**Odd numbers**)

All poster abstracts can be found [here](#).

Poster authors and titles are at the end of the program.

1:30 – 2:30 PM Lunch

Shuttle Return Times

For return to the hotel – **1:00pm, 2:00pm** at Parking Lot 7 outside of ALP

Posters

1

Abdullah Al-Janabi (California State University, Sacramento)*, Shelby Chandar, Ethan Roberts, Kelly McDonald, Cathy Ishikawa, and Joya Mukerji

Identifying general and course-specific barriers faced by students with disabilities in STEM research courses.

2

Sailaja Arungundram (Saint Martin's University)* and Uma Swamy

Implementing ASBMB core concepts to facilitate student centered learning in an upper-level undergraduate biochemistry course.

3

Melissa D. Almeida (University of California, Merced)*, Bianca E. Salazar, Zenaida Aguirre-Munoz

Exploring Gesture-Based Learning in Biology Education: A Study on Cell Division Instruction.

4

Mehri Azizi (Florida International University)*, Dr. Remy Dou, Dr. Bryan Dewsbury,

Self-Regulated Learning Theory for First Year of College.

5

Michelle L. Badura (Santa Clara University)*, Christelle Sabatier

Mastery grading improves student perceptions and outcomes in Human Anatomy

6

Megan K Barker (Simon Fraser University)*, Joss Ives, Analise Hoffman, Patrick Dubois

Who has influence? Gendered decision-making in two-phase collaborative group tests.

7

Megan K Barker*

The COPUS-TA observation protocol for supporting TA peer observation of teaching: Building skills and forming a community of practice.

8

Valerie La, Nicholas Seto, VyVy Au, Shashwat Bhargava, Yanying Liu, Rachael Barry (University of California - Irvine)*

Development of the STEM Office Hours Observation Protocol: An Instrument to Characterize Student and Instructor Behaviors in Biology Office Hours.

9

Ana T. Perez, Anmolpreet K. Sangha, Sarah A. Bissonnette (California State University, Stanislaus)*

Protein shake or p53: How well do non-biology majors and advanced biology majors understand the underlying process of cancer?

10

Cameron Pormir and Suzanne S. Bohlson (University of California Irvine)*

Assessment of Student Preparedness for Independent Research in a Research-Based Teaching Lab.

11

Carly Busch, Katelyn Cooper, Sara Brownell (Arizona State University)*

Undergraduates have few science instructor role models with concealable stigmatized identities.

12

Jim Burnette (University of California Riverside)*

Interactive tutorials in written in HTML and JavaScript to help students learn basic biological and laboratory concepts.

13

Ella Tour, Kolya Isterabadi, Maia Chareonsuphiphat (University of California San Diego)*, Jenny Reiswig

Analysis of Student's Counterclaims and Rebuttals in Biology Argumentative Writing through Argument Mapping

14

Yoojin J. Choi (Point Loma Nazarene University)* and Gregory J. Crowther (Everett Community College)

PROF FOR A DAY: STUDENTS WRITING PRACTICE QUESTIONS FOR TESTS

15

Anastasia Chouvalova (Texas Tech Institution)*, Isabel Billings, Kim Ga-Yeon, Abby Caraway, Aastha Mehta, Nathan Hoggatt, David Vizcaino, Lisa Limeri

How instructor behaviors and classroom factors shape undergraduate STEM students' meta-lay theories

16

Serena Salas, Ashely Futch, Heidy L. Contreras (California State University, San Bernardino)*

Bring Whole Self to Biology: Culturally Responsive Pedagogy Interventions in a First Year Biology Course

17

Katelyn Cooper (Arizona State University)*, Sara Brownell, Elisabeth Schussler, Randy Nesse, AJ Auerbach, Faith Consiglio, Virginia Downing, Ben England, Logan Gin, LaToya Grigler, Sam Maas, Kelly McDonald, Marco Molinaro, Michale Mullarkey, Nicole Nieset, Amy Pate, Jed Rasmussen, Jessica Schleider, Amina Simmons, Shawn Spurgeon, Cynthia Stonnington, Michael Trobiano

Anxiety in active learning: First findings from an RCN UBE Incubator meeting

18

Poorvi Datta (California State University, San Marcos)*, Mallory M. Rice

Investigating the captioning preferences of students with disabilities majoring in STEM

19

Saya Shahoy, Michelle Du (University of California San Diego)*, Ola Mostafa, Aliyah Parker, Dylan Martirano, Melinda T. Owens

Undergraduate biology students' understanding of COVID mRNA vaccines and their ability to apply knowledge of the central dogma.

20

Alexander Eden (Florida International University)* & Bryan Dewsbury

Validating an Instrument for Measuring Community Cultural Wealth with Introductory Biology Students at a Large Hispanic-Serving Institution.

21

John D. Espinosa (University of California Merced)*, Marcos E. García-Ojeda

Active Learning Classrooms Better Support Student Motivation and Psychological Needs Compared to Passive Lecture Halls.

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