

University of California Santa Barbara 2024-2025

ReLAUNCH

The Annual Research Magazine of the Gevirtz Graduate School of Education



Childhood Development Blooms in a Nature Playscape

**Harding University Partnership School transforms
a playground to enhance preschool learning**

ReLAUNCH



Photograph by Jeff Liang

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ON THE COVER:

Nature Playscape team at Harding University Partnership School: (Seated, left to right) Veronica Binkley, Devon Azzam. (Standing left to right) Lilly Garcia, Chryss Yost, Erin Cavazos.

Major Grant Awards Funded in Fiscal Year 2023-2024

Principal Investigator	Project & Sponsor	Total Award
Erin Dowdy	Establishment of the Mental Health Evaluation, Training, Research, and Innovation Center for Schools (METRICS) <i>Regents of the University of Wisconsin System</i>	\$ 914,639
Darby Feldwin	Supplement: COASTAL: Collaboration for Opportunities in and Advancement of STEM Teaching and Learning <i>National Science Foundation</i>	\$ 279,664
Rachel Lambert	Addressing Unfinished Learning in Mathematics; Games for Access to Mathematical Engagement (GAME) <i>UC San Francisco</i>	\$ 191,005
Jill Sharkey	Evaluation of a Socio-Ecological Model of Tobacco Use Prevention Amongst Students in Grades 6-12 (three-year extension) <i>Fighting Back Santa Maria Valley</i>	\$ 172,854
Kaela Farris	Health Policy Research Scholars Cohort Seven - 2023 <i>Robert Wood Johnson Foundation</i>	\$ 124,000
Tim Dewar	California Science Project (CSP) California Subject Matter Project (CSMP) OTF Integrate Computer Science <i>UC Riverside</i>	\$ 115,000
Rachel Lambert	DIBI: Developing Interventionists Through Bridges Intervention <i>The Math Learning Center</i>	\$ 99,563
Diana Arya	LEAFY: Literacies in Environmental Awareness and Farming for Youth <i>UC Office of the President</i>	\$ 56,000
Sarah Roberts	Supplement: CAREER: Understanding the Routinization of Mathematics Language Routines in Middle and High Schools <i>National Science Foundation</i>	\$ 51,851
Mayra Puente	A Platicando y Mapeando Mixed Methods Research Study on Rural Latinx Students' College Access and Choice Processes in California's Central Coast <i>Ford Foundation</i>	\$ 50,000

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Laying the Groundwork for Kindergarten Readiness

Research finds that a preschool playground transformation enhances healthy childhood development

Can the transformation of a traditional preschool playground into a “nature playscape” affect patterns of play to better support early childhood development? That was the question UCSB Gevirtz School researcher Devon Azzam sought to answer in her study, “Patterns of Play in an Early Childhood Nature Playscape.”

The study stemmed from an ambitious project spearheaded by the early childhood education team at Harding University Partnership School in 2020 to redesign the preschool playground. Dominated by blacktop and a large jungle gym structure, the playground hosted mostly high-energy, gross-motor play – with children spending plenty of time running and chasing each other – often escalating into interactions that required adult intervention.

Guidance from California Preschool Learning Foundations and visits to private preschool playgrounds led the Harding team to speculate that having an outdoor area with more nature-focused activities (which the study calls a nature playscape) would slow down and disperse the gross-motor play. In addition, the new space would give young children more choices in activities that were designed to enhance their development and better prepare them for kindergarten. Research has shown the central role of play in early childhood development and also the benefits of nature connection for social-emotional,



A large jungle gym dominated the Harding playground before the new nature playscape design (top photo).

physical, and academic development.

The design of the new nature playscape would replace the blacktop and large metal structure with areas for a garden, plant-lined paths and nooks, a nature art area, and a stage to inspire music and dramatic play.

As Assistant Director of Outreach for the Gevirtz School, Azzam

supports the creation of new programming in environmental education and schoolyard greening at Harding and other Santa Barbara County schools. The Harding and Gevirtz School partnership, formed in 2010, enables UCSB faculty, researchers and undergraduate tutors to work closely with teachers to deliver the latest evidence-based instruction. Azzam supported Harding Principal, Veronica Binkley, in writing the grant, which was the primary source of funding for the new playscape. In the course of planning for the playground transformation, Azzam saw the potential for a research project to observe children in the space before and after the redesign.

“At first, I thought this would be a great opportunity for some lucky graduate student,” Azzam recalled. “The more curious I became about this project, the more I realized I wanted to be the one to conduct the study.”

She worked with Professor Danielle Harlow in the Department of Education at the Gevirtz School to create a research application and obtain IRB approval for the study. (See page 4, “My Research Journey,” for more details on the research process.) The study involved observation sessions spanning a period of two years.

Azzam’s research, completed in April 2024, supported the objectives of Harding’s early childhood education team and resulted in four key findings.

First, the removal of the large play structure from the middle of the playground achieved the slowing down and spreading out of high-energy play across the entire space, a top goal for the new design.

The second notable finding was an unexpected one in that opportunities for social emotional



Plant-lined paths, a garden, and nature-inspired spaces (top photo) have replaced the blacktop and concrete of the former traditional playground (above).

individual play actually increased. During the playground planning process, the emphasis was on cooperative play and interaction, but individual play is also important for healthy development as it builds self-awareness and self-regulation.

In addition, literacy and language development opportunities were expanded as children had additional variety in their play choices leading to more speaking interactions with others.

Finally, there was a notable increase in opportunities for nature connection in the post-transformation playground. Providing the connection to nature at school is

especially important for children who do not have access to green space in their neighborhood. Harding School is located in an area which has been identified by the Trust for Public Land as a neighborhood in highest need for access to green space.

“This study shows how nature-based environments facilitate developmentally appropriate play that supports kindergarten readiness for preschoolers,” Azzam said. “Since the playground transformation at Harding, two additional schools in the area are already making plans to develop nature playscapes. I hope the trend continues.”

My Research Journey

By Devon Azzam



connections with local native plant growers to select the plant palette for the project. Volunteers from the Gevirtz School and the Harding community came together to plant the newly designed nature playscape. Harding Community Resource Center Coordinator and Westside resident, Chrissy Yost, volunteered her time to ensure the new plants were

watered and cared for throughout the summer months.

As the project evolved, I recognized the potential for a research project, as it presented the unique opportunity to observe children in the space before and after transformation. I reached out to Dr. Danielle Harlow, who agreed to work with me on a district research application and IRB approval. I imagined that some lucky graduate student would be interested in this opportunity. I soon realized that if the project was going to be studied, I would have to be the one to do it. This led me to my journey of applying for grad school, and becoming a doctoral student here at GGSE in 2022, advised by Dr. Harlow and Dr. Julie Bianchini.

At the time that the pre-transformation observations needed to take place, I was just beginning graduate school, and had very little research training. I was fortunate enough to lean on the collegiality and generosity of the Gevirtz School's graduate student community. Dr. Harlow invited me to share the project at one of the weekly science education cohort meetings, otherwise known as "STEMinar." Senior graduate students Matthew Shackley, Kimiko Russell-Halterman and Amanda Andersen

expressed interest in the project, and helped me refine the observation protocol, conduct observations, and code the data. The research component of this project was made possible by their voluntary commitment.

Dr. Harlow, Dr. Bianchini, and Dr. Rebeca Mireles-Rios advised the project, and provided support as well as challenged me to stretch my thinking as a researcher, particularly with the data visualization which was originally presented in a frequency table. They encouraged me to think of a more impactful way to show the data. In search of new ideas, I enrolled in the mixed-methods course offered by the department, which led me to think about using heat maps as a way to show the distribution of play across the playground.

In addition to the support of my advisors and fellow graduate students, this research project was also made possible by the engagement and support of Harding preschool teacher, Erin Cavazos. Erin was one of the visionaries behind the playground transformation, and participated in all aspects of the planning and implementation. Erin jumped on board when I approached her about participating in the research, and worked tirelessly to help coordinate four separate observations over the course of two years.

Thanks to the thriving partnership with Harding School, which is continually nurtured by Dean Jeffrey Milem and Director of Outreach Lilly Garcia, the setting was ideal for community-based research. The project originated from the desire of the early childhood education team at Harding School to change the play environment to meet the developmental needs of their students, and the research supported their inquiry.

The student centered structure of the graduate program here at the Gevirtz School supports me in my ongoing development as a researcher by providing guidance and expertise as well as the independence to follow my own research interests. It has been an exciting and fulfilling journey so far, and I look forward to my next steps in the program.

Photograph by Jeff Liang

An IMMERSE-ive Experience

One-year fellowship prepares education scholars to integrate mixture modeling into their equity-focused research



The Institute of Mixture Modeling for Equity-Oriented Researchers, Scholars, and Educators (IMMERSE) welcomed the second cohort of 12 fellows to the UC Santa Barbara Gevirtz School in June 2024 for the summer training segment of the program to support education scholars in integrating mixture modeling into their research.

One of the country's recognized experts in mixed modeling, Professor Karen Nylund-Gibson in the Department of Education, is the principal investigator (PI) for the training grant, funded by the Institute of Education Sciences, that hosts the one-year IMMERSE fellowship program aimed at supporting education researchers to integrate mixture modeling into their research to address critical research questions in education. This modeling approach, mixture modeling, is not taught at the graduate level at many schools.

"This type of training is often prohibitively expensive for junior scholars, so we are excited to be able

to offer it for free to the scholars with the support of the Institute of Education Sciences," Nylund-Gibson explained. "The training is an entire year and includes what we consider 'wrap-around' mentoring-- they get the statistical training on the modeling ideas, but also support with code and programming, supporting interpreting results, writing manuscripts-- any part of the writing of a manuscript they need."

In 2022, the Institute of Education Sciences (IES) awarded \$800,000 to Nylund-Gibson to create the IMMERSE training. The funding enables the recruitment of two cohorts of scholars to engage in a one-year intensive training program involving online synchronous and asynchronous mixture modeling training. Additionally, the fellows would come to visit UCSB for a four-day in-person training and community building event, followed by another year of intensive mentoring and ongoing professional learning. The first cohort of 12

scholars was selected in May 2023.

The second cohort of IMMERSE is comprised of the following 12 scholars: Nathan Alexander, Assistant Professor, Howard University; Meeta Banerjee, Assistant Professor, University of South Carolina; Alexa Budavari, Research Scientist, School of Education and Human Development, University of Virginia; Jennifer Cooper, Assistant Professor, School Psychology, Fordham University; Stephen Gibson, Fifth-Year Doctoral Candidate, Virginia Commonwealth University; Alexandra Golden, Assistant Professor, University of Memphis; Danielle R. Harrell, Assistant Professor, School of Social Work, University of Texas at Arlington; Natasha Johnson, Assistant Professor, Columbia University; Jacob Kirksey, Assistant Professor, College of Education, Texas Tech University; Jose Palma, Assistant Professor, Texas A&M University; Sonya Richardson, Assistant Professor, School of Social Work, University of North Carolina at Charlotte; Hye-Young Yun, Assistant Project Scientist, University of California, Los Angeles.

In addition to Nylund-Gibson as the principal investigator, the IMMERSE team includes co-PIs Marsha Ing of UC Riverside and Katherine Masyn of Georgia State University, plus graduate student researchers Dina Arch and Netasha Pizano, graduate students in UCSB's Department of Education.

"We have already seen the great things that the fellows have done-- published papers, given talks about the new insights found from this novel way of understanding their data, generated new ideas into their research grants and integrated these ideas into their teaching," Nylund-Gibson said. "We will be applying for continued funding so that we can continue working with more cohorts of scholars."

Preparing Future Faculty in School Psychology

New Partnership with Bowie State Offers Summer Research Program



The Department of Counseling, Clinical, and School Psychology is partnering with Bowie State University, Maryland's oldest historically black college or university, to create a clear pathway for graduate students from Bowie's school psychology master's program into the school psychology doctoral program at the Gevirtz School, with the specific focus on preparing future faculty.

"Pathways to the Professoriate in School Psychology Summer Research Program" will offer a six-week summer research program designed with two main goals: One is to recruit up to five master's level school psychology graduate students (or recent graduates) from Bowie State to the Gevirtz School to facilitate their preparation to pursue the Ph.D. degree. The second goal is to help

develop scholars from culturally and linguistically diverse backgrounds who may consider careers as school psychology faculty and researcher by providing opportunities to conduct research. Preparations are underway to welcome the first group of students for summer 2025.

A three-year award of more than \$408,000 from the University of California-Historically Black Colleges and Universities Initiative (UC-HBCU) is the funding source for the program. CCSP Associate Professor of Teaching Jon Goodwin is the principal investigator, and CCSP Professor Shane Jimerson is the co-PI.

"As an HBCU alumnus of Dillard University, I am very proud to have this partnership with Bowie State," said Goodwin, who is also the Director of Clinical Training and Credential Coordinator for the

doctoral and specialist level school psychology programs.

"This is a very important and prestigious award and project, and only a small number of proposals are selected from across all the UCs each year," said Jimerson. "It is a tremendous honor to partner with the greatly admired and esteemed Bowie State University school psychology faculty who have a strong tradition of excellence in preparing highly qualified professionals."

To be eligible for the program, applicants must be current graduate students or recent alumni of Bowie State. Undergraduates who are highly-motivated to participate in school psychology research may also be considered. Applicants should be pursuing a degree in school psychology or a related field, and have a strong interest in continuing their studies to pursue a Ph.D. and become a future faculty member.

"Current CCSP student Shemiyah Holland is precisely the exemplar of our vision, as she is a Bowie State alumna who is in our Ph.D. program as a Project TEAMS scholar," Jimerson said.

Holland received her M.A. in School Psychology in 2019 at Bowie State University. She is a third year doctoral student in the school psychology program at the Gevirtz School.

Through engagement with the research projects of UCSB faculty mentors, fellows in the program will gain valuable exposure to and research experience in areas that include school based mental health, positive psychology and youth development, and culturally and linguistically diverse students.

For more information on the "Pathways to the Professoriate in School Psychology Summer Research Program" visit: <https://bit.ly/4fgONXB>.

Building Equitable Access to Mathematics

Sarah Roberts enters second year of data collection for research on mathematics language routines



Every student regardless of their language proficiency should be getting access to high quality mathematics, explained Sarah Roberts, an Associate Professor of mathematics education in the Department of Education at the Gevirtz School.

The reality, however, needs improvement. Roberts has seen from experience that linguistically diverse students have not had equitable access to high-quality mathematics. Prior to attending graduate school for her Ph.D., Roberts taught high school and middle school math and

science for several years in the Bay Area. She witnessed the inequities among multilingual learners and the lack of tools available to teachers to address the issue.

Tackling that question is the focus of her research on "Understanding the Routinization of Mathematics Language Routines in Middle and High Schools." In 2022, Roberts was awarded a Faculty Early Career Development Grant of \$1.1 million from the National Science Foundation (NSF) to fund the five-year project.

A mathematical language routine is structured and adaptable to

develop students' language and mathematics simultaneously. The routines can be used in class lessons in each unit to fit the mathematical work to support students in using and improving their language use.

As the project begins its second year of data collection, the team has grown to more than 20 students for the fall 2024 quarter. Roberts said the project recently received its second year of supplemental funding for over \$123,000 to hire four undergraduate students to work with two graduate students.

The research focuses on studying three math language routines: "Collect and Display," "Compare and Connect" and "Stronger and Clearer." The routines aim to stimulate conversations, improve listening and writing skills, and build collaborative analysis among students studying math.

To collect data, the research team uses a professional development model called Studio Days Cycles, involving multi-day sessions, which are videotaped. On the Pre-Studio Day, teachers are introduced to the math language routines through a model lesson. The second step of the cycle is a Studio Day, where teachers go into a classroom to watch a peer teacher present a lesson to students.

"We found that this is unique, as a lot of the teachers don't usually have a chance to watch their peers teach," Roberts said.

The teachers also engage in the lesson, working with students. A debrief is conducted at the end of class to discuss the routines used during the lesson. Video recording that takes place during the lesson and the debriefs, including students wearing headband video cameras to collect student conversations, supports research and teacher learning.

"We feel like we had a good first year of data collection. We've been thinking about how teachers are working as a community of practice. Ultimately, we would like to make sense of how teachers and students are making sense of the routines. We hope to get more information on that as we get into our second and third years of data collection."

Graduate Student Association in Education 2024 Research Symposium Presentations

"A Critique of Belonging for Black STEM Students at Predominantly Non-Black Institutions (PNBI)"

Miriam Burnett

"Adaptive Expertise Development in a Studio Day Cycle"

Dylan Greany, Urszula Hunter, Paris Nemandoust, Royce Olarte, Margarita Rodriguez, Sarah Roberts

"Communities of Practice in Math Education"

Margarita Rodriguez

"Critical Race Theory in Law, Education, and Deaf Studies"

Nicole Mapp

"Empowering Students by Centering Their Identities Through Culturally Sustaining and Anti-Bias, Antiracist Frameworks"

Marcela Alvarez

"Interactional Routines in High School EFL Classrooms"

Evelyn Vera-Flández

"Intersections of Understanding: Affordances of Organizational Theory and Undocumented Critical Theory in Dialogue"

Fátima Andrade Martínez

"Managing a Paradox: Equity-Oriented Teaching in Structured English Immersion"

Samantha Harris

"Managing Stress, Getting Things Done, and Co-Creating a World We Want to Live In"

Robin Wendell Lilly

"Patterns of Play in an Early Childhood Nature Playscape"

Devon Azzam

"Power, Platforms and Tensions of Writer Ownership in Web2 and Web3"

Dogukan Ozgen

"Speculative Pedagogies: Designing Equitable Educational Futures with GenAI"

Dogukan Ozgen

"Systems for DEAI: How Science Museums are Structured to Support DEAI Initiatives"

Alexandria Muller, Alita Shettigar, Angel Castillo, Kai Rodrigues, Sanaz Ebrahimi

"Translanguaging Pedagogy in Dual Immersion Classrooms: Supporting Students' Multilingual Development"

Mallory Woods

"Trends of Geopolitical and Organizational Factors Within Diversity, Equity, Accessibility, and Inclusion (DEAI) Efforts Within Science Museums"

Alexandria Muller, Sanaz J Ebrahimi

"Understanding a Detracking Program Through Organizational Theories"

Yasmine Ibrahim

"Understanding Student Access Using Qualitative Data"

Travis Candieas, Ju Kim, Dalina Sinn, Marco Montenegro, Mai Hyunh, Ljoshia Kremliovsky, Elaine Barraza

"Using a Global Competency Framework for Sustainability and Climate Change Education"

Donnie McNish

"Using Technology to Support Multilingual Learners: A Case-Study of Preservice Math and Science Teachers"

Linxi Wen, Chuyu Zhong, Lianwen Feng, Matthew Bennett, Julie Bianchini

"Vision Boards as a Tool to Stimulate AI Awareness and Proficiency Among Community Youths"

Richard Durán, Betsy Brenner, Evania Cheng, Maria de Jesus Donan, Kefan Ma, Delmy Munguia, Brooke Smith

"어떻게 찾아야 하나요?: Online Information Regarding Language Support Services"

Damhee D. Hong

Counseling, Clinical, and School Psychology 2023 Research Festival Presenters

Maira Anaya-Lopez

"Parental Trajectories and Well-Being of Latine Spanish-speaking Parents of Children with Autism"

Lindita Djokovic

"It's Hard to Have Hope When You Don't See Any Hope: The Mental Health Impact of the Pandemic on Adults Who Lived Alone"

Damaris Garcia-Valerio

"Returning to Birth Land: An Exploration of DACA Recipients' Journey to Their Ancestral Roots"

Gabriella Hinojosa

"Impostor Phenomenon in Black School Psychology Graduate Students"

Isaiah Jay Jones

"It's Not Just How Hard You Work, But Who You Work With: The Power of Micro-Aggressions & Affirmations on Student Women of Color"

Lakhvir Kaur

"A Latent Class Analysis (LCA) Examining School Climate Perception Among Indian American Adolescents"

Sarely Licona

"Modifying Autism Early Interventions for Spanish-Speaking Families: Evaluating Outcomes of a Translated Pivotal Response Treatment Program"

Emmanuel Jose Pérez

"Supporting Kindergarten Readiness by Supporting Parents"

Angela Pollard

"Patterns of Youth-Caregiver Agreement and Intervention Outcomes: Findings from the Youth Empowerment Services Program"



Nic M. Ramirez

"Queer and Nonbinary Survivors of Trauma: A Mixed Methods Exploration of Sexual Negotiation and Shame Following Sexual Assault Among Queer Women and Nonbinary People"

Arnold Rodriguez Robles

"Examining the Effects of Language Instruction Models on Executive Functioning in Elementary School Students"

Hanan Salem

"Evaluating How Natural Helpers Engage Low-Income Latinx Parents in Parent-Child Interaction Therapy"

Daniela Sarmiento Hernández

"Acceptability and Effectiveness of a Mindfulness-based Prevention Program for Latinx families: Empowering Youth Perspectives"