

## Sydney A. Shaw

Arizona State University at the West Campus  
Knowledge Enterprise – Central Arizona-Phoenix Long-Term Ecological Research Program  
4701 W Thunderbird Road Glendale, AZ 85306-4908  
[SAShaw12@asu.edu](mailto:SAShaw12@asu.edu) | 571.289.1427 | she/her

### **Education**

2021-2024 B.S. in Environmental and Ocean Sciences (Marine Ecology Concentration),  
University of San Diego, San Diego, CA | Minor: Biology | GPA: 3.77  
2012-2015 B.A. in History, Texas A&M University, College Station, TX | GPA: 3.56

### **Professional Experience**

2024-Present Research Specialist and Lab Manager, Central Arizona-Phoenix Long-Term Ecological Research Program (CAP-LTER), Arizona State University at the West Campus, Glendale, AZ  
2024-Present Report Writer and Researcher, Independent Contractor in Environmental Consulting, Phoenix, AZ  
2022-Present Intelligence Officer, US Navy Reserve, Phoenix, AZ  
Summer 2024 Staff Environmental Scientist, Ninyo & Moore Environmental and Geotechnical Consultants, Phoenix, AZ  
2022-2024 Student Tutor, University of San Diego TRIO Student Support Services, San Diego, CA  
Fall 2023 Lab Teaching Assistant, University of San Diego Departments of Biology and Environmental and Ocean Sciences, San Diego, CA  
2022-2023 Executive Assistant, University of San Diego Naval Reserve Officers Training Corps, San Diego, CA  
2022-2023 Administrative Assistant, Normal Heights United Methodist Church, San Diego, CA  
2015-2020 Aviation and Intelligence Officer, US Navy (Active Duty), San Diego, CA

### **Areas of Research Interest (Alphabetical)**

Behavioral and Movement Ecology	Coastal and Pelagic Ecosystem Management
Elasmobranch and Cetacean Life Histories	Marine and Coastal Ecology and Zoology
Marine Ecosystem Response to Global Change	Remote Sensing Applications in Marine Ecology
Restoration and Conservation Ecology	Sustainable Fisheries and Bycatch Reduction

### **Research Experience**

2024-Present Research Specialist, CAP-LTER, Arizona State University at the West Campus, Glendale, AZ

- Conducting ongoing research with Dr. Becky Ball et al. studying the impacts of urbanization and climate change on the Sonoran Desert region as well as ecological succession on the Antarctic Peninsula
- Hot and cold desert biogeochemistry including sediment and plant sample processing, mesofauna identification and classification, data management and interpretation, and contributions to CAP-LTER databases, field work, and study site maintenance
- Instructing and managing five undergraduate student researchers across multiple grants, programs, and lines of inquiry

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- 2024-Present Environmental Consultant, Independent Contractor and Ninyo & Moore Environmental and Geotechnical Consultants, Phoenix, AZ
- Conducting historical documentation research, investigation, and aerial imagery interpretation for more than 60 environmental site assessments to date as a project manager and report writer in the environmental consulting industry
- 2022-Present Intelligence Officer, US Navy Reserve, Phoenix, AZ
- All-source intelligence analyst using remote sensing, literature review, multi-domain data fusion, and data-driven spatial-temporal pattern analysis to provide timely and actionable technical analysis reports to a wide array of supported units at operational and strategic scales
  - Team lead for 15 analysts responsible for directing lines of research and remote sensing analysis to provide technical reporting to remotely located customers in a high operational tempo environment during a large-scale exercise in June 2025
  - Experience tailoring research objectives, technical report writing, and actionable analysis delivery timelines to client needs across the spectrum of joint military information warfare disciplines which include all-source intelligence, meteorology and oceanography, cryptology, information technology systems, and space-based remote sensing platforms
- Fall 2023 Undergraduate Researcher, University of San Diego BIOL 491 – Science in the Public Domain course, University of San Diego, San Diego, CA
- Paired with a fellow undergraduate researcher to investigate scientific pedagogical technique efficacy as described in scientific literature, then design and implement a study examining the efficacy of two pedagogical techniques in a predominantly low-income and/or English Language Learner high school chemistry classroom as guest instructors
  - Developed experimental design, scientific pedagogical technique, and written and oral communication throughout the project as well as presenting results at University of San Diego Biology department undergraduate research poster session at the end of the semester
- Summer 2023 Undergraduate Researcher, University of San Diego Student Undergraduate Research Experience Program, University of San Diego, San Diego, CA
- One of approximately 50 students accepted into merit-based, grant-funded research program intended for undergraduate researchers across STEM majors
  - Conducted research with Dr. Drew Talley and Lou Pineda studying the efficacy of created versus naturally occurring salt marshes as habitats for *Fundulus parvipinnis* in San Diego, CA as well as researching aquatic community composition along a salinity gradient of the lower San Diego River
  - Developed experimental design, experimental and gear troubleshooting, fish trap sampling, abiotic factor recording (e.g., water temperature and salinity, tide timing, etc.), and data and statistical analysis skills throughout the project
  - Developed oral and written scientific communication through capstone multiformat presentation of research and results the following academic year
- Spring 2023 Undergraduate Researcher, University of San Diego EOSC 301 – Research Applications in Environmental and Ocean Sciences course, University of San Diego, San Diego, CA
- One of 30 student researchers who collectively conducted a full-semester research project comparing sediment and water quality, invasive *Arcuatula*

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*senhousia* mussel abundance, and macrofaunal abundance and diversity across areas along San Diego Bay, CA with disparate economic standards of living and historical investment involving management and quality assurance for hundreds of samples across numerous sampling and analytical techniques

- Conducted literature review on environmental justice, sediment and water quality analytical techniques, and mediterranean climate estuarine systems including *A. senhousia* propagation
- Developed extensive field and laboratory skills including marine and terrestrial sediment, water, and faunal sampling, processing techniques such as sediment composition and metal contamination analysis, chlorophyll and nutrient concentrations, meso- and macrofauna identification and tissue contamination analysis, data quality assurance, and technical writing throughout the project culminating in an individually written final 40-page research paper

Jul 2022

Undergraduate Researcher and Scientific Crewmember, GEOPATHS Oceanographic Research Expedition, University of California – San Diego, San Diego, CA

- One of 25 undergraduate and graduate student researchers selected from six universities to participate in merit-based, grant-funded research program aboard the R/V Revelle as part of the University of California – San Diego Scripps Institution of Oceanography GEOPATHS program
- Conducted round-the-clock sampling and initial processing operations for sediment coring and grabbing, Conductivity-Temperature-Density rosette sampling, as well as benthic infaunal and bathypelagic meso- and macrofaunal identification in support of research objectives investigating factors that impact near-offshore marine sedimentation and the relationship between benthic foraminifera and their environment to build a better model for using fossil foraminifera to assess paleoclimates
- Developed experience in shipboard scientific operations as well as multi-type sample processing under sub-optimal conditions while at sea

2017-2020

Intelligence Officer, US Navy (Active Duty), San Diego, CA

- All-source intelligence analyst using remote sensing, literature review, multi-domain data fusion, and data-driven spatial-temporal pattern analysis to provide timely and actionable technical analysis reports to a wide array of supported units at the individual unit/mission level while ashore and embarked
- Team lead for 30 analysts from 10 individual units and specialties directing research and analysis operations across a wide array of disciplines, lines of effort, and in support of a diverse customer base while embarked aboard an aircraft carrier during the COVID-19 pandemic
- Developed extensive experience in multi-domain research and analysis for a wide range of clients, technical report writing, written and oral communication through hundreds of tailored intelligence briefings consistently lauded for relevant and actionable analysis and operational planning impact, leadership and teamwork, project management, and materiel management including more than 120 computer systems, over 200 inventoried pieces of classified materials and equipment, as well as a research-fueled electronic database of updated analytics for operational planning

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### **Relevant Technical Skills (Alphabetical Within Subsections)**

**Lab Techniques and Equipment:** Acid Digestion, Ash-Free Dry Mass, Autoclaves, Biohazard (including USDA-regulated foreign samples) and Chemical Safety, Centrifuges, Infrared Gas Analyzers, Ion Extraction, Liquid Sample Filtration, Loss on Ignition, Microscopy (including dissecting, compound, compound-inverted, and fluorescence), pH and Electroconductivity of Sediment and Water Samples, Planning and Executing Multi-Week Lab Analysis Projects, Plant Protein Assays, Remote Sensing Data Analysis, Sediment Gravimetric Water Content, Sediment Texture Analysis (hydrometer and laser particle size analyzer methods), Spectrophotometers, Systems Diagnostics and Troubleshooting, Taxonomic Keys, Water Nutrient and Chlorophyll Analysis, X-Ray Fluorescence (XRF) for Sediment Metals Analysis

**Field Techniques and Equipment:** Aquatic Net Sampling, Conductivity-Temperature-Density Devices (rosette and handheld castaway) and Multiparameter Water Quality Meters, Eckman Grabs, Faunal and Floral Specimen Collection, Preservation, and Field Identification, Fish and Insect Traps, GPS and Handheld Weather Devices, Handheld XRF Sampling, In-The-Field Equipment Troubleshooting, Munsell Soil Color Charts, Plankton Tows, Point Count Species Surveys, Refractometers, Sediment Coring and Layer Slicing, Snorkeling (including reef percent coverage estimations), Topographic/Bathymetric Data Interpretation, Transect and Quadrat Surveys, Tree Coring and Ring Analysis, Van Dorn Bottle Sampling

**Software Proficiencies:** ArcGIS (introductory level), IBM SPSS, ImageJ, MS Office Suite (including Excel formulae, functions, and pivot tables), R/R Studio

**Additional Technical Skills:** Budgeting and Project Management, Customer-Tailored Reporting, Dataset Management and Statistical Analysis, Experimental Design Analysis, Composition, and Troubleshooting, Historical Trend Analysis Using Long-Term Datasets, Literature Review, Map/Chart-and-Compass Navigation, Oral and Multimedia Presentation, Remote Sensing Data Interpretation, Shipboard and Small Boat Operations, Standard Operating Procedure Generation and Review, Technical Writing

**Demonstrated Soft Skills:** Conflict Management, Flexibility and Adaptability to Change and Adverse Conditions, Interpersonal Oral and Written Communication, Leadership and Management, Mentorship, Rapid Retraining, Safety and Risk Management, Team Building and Organization, Workflow Optimization, Workspace Management

### **Teaching Experience**

2024-Present	Lab Manager, Ball Lab, Arizona State University at the West Campus, Glendale, AZ
2022-Present	Intelligence Tradecraft Instructor, US Navy Reserve, Phoenix, AZ
2022-2024	Student Tutor, University of San Diego TRIO Student Support Services, San Diego, CA
Fall 2023	Lab Teaching Assistant, University of San Diego Departments of Biology and Environmental and Ocean Sciences, San Diego, CA
2018-2020	Intelligence Tradecraft Instructor, US Navy (Active Duty), San Diego, CA

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### Scientific Research Presentations

- May 2024 *Comparison of a Constructed and an Adjacent Natural Tidal Marsh in San Diego, California as a Habitat for the California Killifish (Fundulus parvipinnis)*
- Solo presenter of research conducted under Dr. Drew Talley with fieldwork assistance from Lou Pineda
  - Capstone research presentation for Environmental and Ocean Science Department Senior Seminar at the University of San Diego, PowerPoint presentation
- Dec 2023 *Diverse Learning Approaches in HS Chemistry*
- Sydney Adams (maiden name) and Roman Kaur joint presentation
  - Examination of lecture-based versus active learning pedagogical techniques for retention of high school chemistry material
  - Biology Department Fall 2023 Senior Poster Session, poster presentation

### Relevant Coursework

**Mathematics:** Differential Calculus, Integral Calculus (enrolled fall 2025), and Statistics

**Physics:** College (algebra-based) Physics one year series with labs

**Chemistry:** General and Organic Chemistry series (one year each) with labs

**Biology/Ecology:** Bioenergetics and Systems with lab, Genomes and Evolution with lab, Insect Biology with lab, Marine Mammals, Science in the Public Domain (science education and communication focus), Organisms and Ecosystems with lab, Ecology, Wetlands Ecology, Marine Community Ecology, and Undergraduate Research and Synthesis (research project on efficacy of constructed vs. natural coastal wetlands as habitat for *Fundulus parvipinnis*)

**Earth Sciences:** Introductory Geology/Natural Disasters with lab, Introductory Atmospheric and Ocean Sciences with lab, Environmental Data Analysis, Environmental Issues (human impact focus), Research Applications in Environmental and Ocean Sciences with lab/research (coastal contamination and environmental justice focus), Climatology with lab, and Coral Reefs Sea Level and Climate Change with fieldwork-based lab (geoscience and paleoclimatology focus, San Salvador Island, Bahamas field location)

### Individual Scholarships and Funding

Summer 2023 Student Undergraduate Research Experience, Grant-Funded Research, University of San Diego, San Diego, CA - \$5,236.00

Summer 2014 Project Global Officer, Federally Funded Language Immersion Study Abroad in Batumi, Georgia, George Mason University, Fairfax, VA - \$8,543.30

### Professional and Academic Awards

May 2024 Service to the Department Award, University of San Diego Department of Environmental and Ocean Sciences, San Diego, CA

Jan 2024 Information Warfare Officer Qualification, US Navy Reserve, San Diego, CA

Sep 2020 Navy/Marine Corps Achievement Medal, US Navy (Active Duty), San Diego, CA

May 2009 Eagle Scout, Boy Scouts of America, Springfield, VA

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### **Scientific Service, Outreach, and Community Involvement**

Aug 2025      Attendee, Ecological Society of America Annual Conference, Baltimore, MD  
2023-2024      Volunteer Whale Watching Embarked Naturalist, Ocean Connectors, San Diego, CA  
2022-2024      Student Mentor, University of San Diego, San Diego, CA

### **Professional Affiliations & Certifications**

**Affiliations:** Ecological Society of America Member (Coastal and Marine Ecology and Early Career Ecologists Sections)

**Certifications:** EPA Lead (Pb) Inspector, Information Warfare Officer

### **Professional References**

Dr. Becky Ball, PhD, Arizona State University at the West Campus, Glendale, AZ

- Supervisor and lab PI for current position at Arizona State University, December 2024-present
- Mail: Arizona State University West Campus, School of Mathematical and Natural Sciences, 4701 W Thunderbird Rd, Glendale, AZ 85306, Mail Code 2352
- Email: [Becky.Ball@asu.edu](mailto:Becky.Ball@asu.edu)
- Phone: 602.543.2010

Dr. Drew Talley, PhD, University of San Diego, San Diego, CA

- Undergraduate research supervisor (grant-funded research, Summer 2023), professor (multiple semesters 2022-2024), and academic advisor (2021-2022)
- Mail: University of San Diego, Shiley Center for Science and Technology 274, 5998 Alcalá Park, San Diego, CA 92110
- Email: [DTalley@sandiego.edu](mailto:DTalley@sandiego.edu)
- Phone: 619.260.6810

Mr. Eric Cathcart, PG, University of San Diego, San Diego CA

- Undergraduate research supervisor (EOSC 301, Spring 2023) and professor (multiple semesters 2021-2024)
- Mail: University of San Diego, Shiley Center for Science and Technology 264, 5998 Alcalá Park, San Diego, CA 92110
- Email: [Cathcart@sandiego.edu](mailto:Cathcart@sandiego.edu)
- Phone: 619.840.1210

**Additional references available upon request**