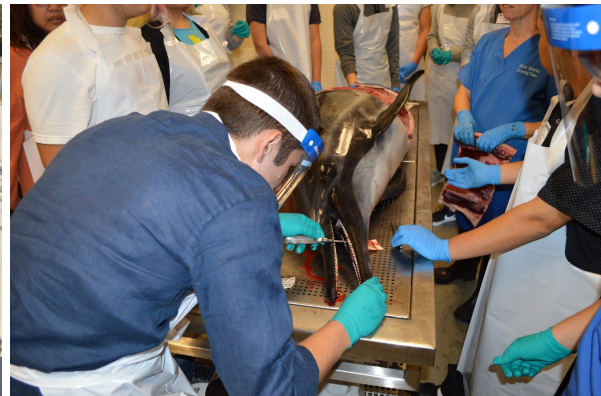


ROADS (Roadkill Observations And Deadly Strandings):

An investigation on roadkill and marine mammal strandings in San Diego County



Essential Questions

- What can we learn from the death of wildlife?
- How do the anatomy and physiology of marine/terrestrial mammals compare and contrast to our human body?
- How can we mitigate roadkill and marine wildlife strandings in San Diego and beyond?

Community Partners

- 1) Dana Point Ocean Institute: Human Impacts Overnight Program (labs and marine cruise)
- 2) Kerri Danil: Research Biologist for the Marine Mammal and Turtle Division, Southwest Fisheries Science Center (SWFSC), National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA) (marine mammal strandings and necropsies)
- 3) Singh Group: San Diego County Dead Animal Removal (wildlife vehicle collisions and collections)
- 4) David Garber: Forensic Specialist, Chula Vista Police Department (CVPD) (on site crime scene investigations)
- 5) Dr. Fraser Shilling: Co-Director of the Road Ecology Center at UC Davis and Project Lead for the California Roadkill Observation System (CROS) (roadkill observations, data collection, and analysis)

Overview

Throughout the school year we are on call with the Singh Group and Kerri Danil for wildlife collections and necropsies. Students will collect and dissect vehicle killed wildlife and participate in marine wildlife necropsies to better understand issues surrounding wildlife-human interactions. When we receive a call, small groups of students (4-12 students) will gather safety equipment and relevant data sheets and drive to meet our community partners. On site of vehicle-killed wildlife, we will conduct crime scene investigations using CVPD protocol, document (e.g. videos, photos), and collect organisms using the S.D. County Dead Animal Removal protocol. We will freeze organisms for at least 24 hours (to kill any parasites) and proceed with exhibition necropsies to determine exact causes of death. On site of marine mammal strandings (or at NOAA's Large Animal Necropsy Lab), we will document and assist Kerri Danil on all necropsy protocols.

Products (established by students/student interest)

Festival del Sol Exhibition (Wednesday, 3/22/17):

1. ROADS Hallway Dioramas (see Mr. Nick's prototype - Animal enclosed with attention grabbing quote or statistic).
2. Roadkill field camera study (with Dr. Fraser Shilling), "solutions" to roadkill/strandings, PSAs, exhibition maze, lightroom gallery, darkroom gallery, roadkill app, and roadkill/strandings billboard (physical PSA).

Campus-wide Exhibition (TBD)

3. Collected roadkill necropsies

Curriculum Topics

Anatomy and physiology

Ecology and conservation

Weekly Routines

- **Mondays** – *On call, Weekly Personal Reflections (WPR) share, Ecology reading packet and Visual Vocabulary.
- **Tuesdays** – *On call, ROADS *Festival del Sol* products work time.
- **Wednesdays** – *On call, WiLD Wednesdays (ecology hikes), internship preparation.
- **Thursdays** – *On call, in class reading/Journal Entry or Discussion Of Learning (DOL).
- **Fridays** – *On call, WPR (take home and present to parents/guardians) and/or ROADS Hallway Dioramas project work time.

*On call for roadkill collections (Mr. Nick is out of the classroom with small groups). What to work on: 1. ROADS Hallway Diorama project, 2. ROADS *Festival del Sol* products, 3. Reading/Visual Vocabulary and/or Journal Entry, or 4. WPR.

Honors

Option 1: Register for the SAT II [Biology E/M Subject Test](#), take exam, submit exam evidence to Mr. Nick, and receive full credit (10% of overall grade, not dependent on your exam outcome).

Option 2: All students will take our in-class Anatomy and Ecology Exam. Exam grades will be recorded (10% of overall grade) for those choosing option 2, not for those choosing option 1.

All students will be held up to the highest standards of quality when it comes to their work. All students will be doing honors-level work, so they might as well get credit for it. You will automatically be signed up for honors unless you notify me in writing (via email) of your desire to opt out. Opting out of honors means neither options will be counted towards your overall grade. However, you will still be required to take our in-class Anatomy and Ecology Exam.

Semester 2 Project Timeline (Subject to change understanding that project based learning is often a “moving target”)

Week	Topics
Week 1: Jan 2	<ul style="list-style-type: none">- No school Monday (Staff Day)- WiLD Wednesday (WW1)- ROADS Project re-launch- In class reading/Journal Entry 1- Internship community meeting (Friday 3rd period)
Week 2: Jan 9	<ul style="list-style-type: none">- Ecology reading/Visual Vocabulary 1- WW2- Discussion Of Learning (DOL)- WPR 7
Week 3: Jan 16	<ul style="list-style-type: none">- No school Monday (MLK Jr. Holiday)- WW3- In class reading/Journal Entry 2
Week 4: Jan 23	<ul style="list-style-type: none">- Ecology reading/Visual Vocabulary 2- WW4- Discussion Of Learning (DOL)- WPR 8
Week 5: Jan 30	<ul style="list-style-type: none">- Ecology reading/Visual Vocabulary 3- WW5- Discussion Of Learning (DOL)

Week 6: Feb 6	<ul style="list-style-type: none"> - No school Monday (Staff Day) - In class reading/Journal Entry 3 - Internship Interview Day (Friday the 10th) - WPR 9
Week 7: Feb 13	<ul style="list-style-type: none"> - Ecology reading/Visual Vocabulary 4 - Terrestrial Tuesday (WW6) - Junior College Day (Wednesday) - No school Friday (President's Day Holiday)
Week 8: Feb 20	<ul style="list-style-type: none"> - No school Monday (President's Day Holiday) - WW7 - In class reading/Journal Entry 4 - WPR 10
Week 9: Feb 27	<ul style="list-style-type: none"> - Ecology reading/Visual Vocabulary 5 - Minimum Day on Wednesday (Staff Day) - Discussion Of Learning (DOL) - Flora and Fauna Friday (WW8)
Week 10: Mar 6	<ul style="list-style-type: none"> - Ecology reading/Visual Vocabulary 6 - WW9 - Discussion Of Learning (DOL) - ROADS Final Products due by Thursday - WPR 11
Week 11: Mar 13	<ul style="list-style-type: none"> - Ecology reading/Visual Vocabulary 7 - Discussion Of Learning (DOL) - <i>Festival del Sol (FdS)</i> preparation/setup
Week 12: Mar 20	<ul style="list-style-type: none"> - <i>FdS</i> preparation/setup - <i>FdS</i> Exhibition (Wednesday)! - WPR 12 - Minimum Day on Friday
Week 13: Mar 27 - Apr 7	<p>Spring Break</p> <ul style="list-style-type: none"> - April 7th: last chance to register for the May 6th Biology E/M Subject Test
Week 14: Apr 10	<ul style="list-style-type: none"> - No school Monday (Staff Day) - In class reading/Journal Entry 5
Week 15: Apr 17	<ul style="list-style-type: none"> - Honors Ecology Exam (4/17/17) - WPR 13

Week 16: Apr 24	- Smarter Balanced Assessment (Tues - Fri)
Week 17: May 1	- Roadkill necropsies (Groups 1-7: 5/2/17) - Roadkill necropsies (Groups 8-14: 5/3/17) - Honors Anatomy Practical Exam - No school Friday (Snow Day)
Week 18: May 8 - Jun 2	Academic Internships - Last chance to take Biology E/M Subject Test (June 3rd)
Week 19: Jun 5	- Academic Internship wrap up - WPR 14
Week 20: Jun 12	- TPOLs
Week 21: Jun 19	- Minimum Day on Wednesday (Last Day of School)