

*Animal Training and Research,  
International  
&  
SLEWTHS Project  
Science, Learning, and Exploration  
With the Help of Sea lions*

**END OF THE YEAR SUMMARY  
2018**



## **Research**

### **Sea Lion Maneuverability Study**

Early 2016 1.3 of our sea lions participated in a pilot study to digitize and quantify sea lion maneuverability and physical characteristics working with Dr. Frank Fish of Westchester University. This work was submitted to the Office of Naval Research as a pilot study, requesting funding as part of a three year investigation. The grant was awarded in 2017 and research began in 2018.

In 2018, we collected data using 1.2 California sea lions during three separate one-week periods, progressively refining and expanding the scope, training and equipment. The study initially consisted of passively recording the sea lions with video photography while they swam under trained control or free swim conditions. This footage is to create a digital database of sea lion locomotion. The research primarily is focusing on steady, fore flipper driven forward motion, which sea lions use to generate the majority of thrust while swimming but it also includes data on accelerating from rest, turning (sea lions are highly agile and maneuverable), and station holding (hovering). In addition, indirect measurement of force production will be performed using the sea lions trained to swim through a sheet of microbubbles. The microbubbles are generated from a compressed air source running through a finely porous hose laid along the bottom of the pool approximately 2m away from the side-wall. The sea lions are being trained to swim over the hose with their front flippers passing through the bubble sheet while the movement is captured with underwater and surface mounted cameras.

When completed, this data, which will be the most extensive and highest quality in existence, will be used to develop models for hydrodynamic testing.

## **Publications, Presentations, Proposals and Permits (P<sup>4</sup>)**

### **Publications**

- Numerous overhauls and edits were made to the SOP manuals for the Encounters and regular laboratory operations.
- The staff as a whole wrote and published 1 volume of our *Inspiring Minds* Newsletter (10/18) and Dr. Zeligs produced a 2017 end of year report.

### **Presentations and conference participation**

The project participated in a local Moss Landing Craft fair by offering paintings made by our sea lions.

### **Proposals and Permits**

- Renewed our APHIS public display license.
- Renewed IACUC protocol #1009, 887

## **Education and Public Outreach**

### Sea Lion Stewards Environmental Education Program and Beach clean-up activities

SLEWTHS conducted 11 Sea Lion Stewards half-day programs for over 385 participants who collected over 70.5 lbs of garbage from our local beach in the process.

### Sea Lion Encounters Public Outreach Program

Based on daily performance tallies, approximately 175,000 people attended performances of *Sea Lion Encounters* in 2018.

*Sea Lion Encounters* was featured at:

- Pima County, Arizona: April 16<sup>th</sup>-26<sup>th</sup>, 2018
- The Santa Clara County Fair: August 2<sup>nd</sup>-6<sup>th</sup>, 2018
- Spokane County Interstate fair: September 7<sup>th</sup>-16<sup>th</sup>, 2018

### Tours for MLML, CSU, and other academic institutions

4 private tours and/or demonstrations were provided on-site by SLEWTHS.

- 5/25/18: Tour for John Oliver and 3 guests
- 8/20/18: MLML New Student orientation, 19 people
- 10/25/18: Moorpark College Exotic Animal Training and Management class came for annual demonstration and seminar, 43 people
- 11/28/18: John (MBARI) and 1 guest

### Classes

-A total of 17 undergraduate students from the all over US attended an intensive immersion class in marine mammalogy through CSUMB extended education department representing 4 different universities.

-26 students from around the world took in part in the Animal Training 101 online classes. 13 students earned General Behavior Modification Certificates and 2 students also earned Live Animal Certifications

### Workshops

- In January 2018, AT Formacion in Spain partnered with Dr. Zelig who gave a 3 day workshop titled "Unlock the True Science of Animal Behavior" 27 people participated from around Spain and Europe.
- In June 2018, David Lichman and Dr. Zelig collaborated in Moss Landing to host a horse and sea lion workshop titled "Behavior on Land and Sea". 14 people participated in the event both as active participants and spectators. Active participants worked with a horse and all participants worked with the sea lions.
- In July 2018, Dr. Zelig gave a 1 day workshop in Stafford, United Kingdom titled "Understanding Basic and Advanced Bridge Stimuli" for 20 people.
- In November 2018, Ewa Rumistrzewska and the Warsaw Zoo in Poland partnered with Dr. Zelig who gave a 3 day workshop titled "*Count Down to a Better Relationship*:"

Training for human and animal well-being!” Over 100 people participated from around Poland and Europe.

### Internships

- 17 day-long internships for class students were conducted
- 5 multi-day adult internships were also provided
- 6 Jr. Internships were provided for aspiring future marine mammalogists
- 1 Certificate of Completion in Marine Mammalogy were earned by people who successfully completed both classes and a week-long internship.

### Media

- Numerous interviews for local media were provided by SLEWTHS staff at each of our public outreach events.
- SLEWTHS staff created numerous Facebook posts to promote ATR and SLEWTHS activities and programs and started an Instagram account.

## **Consulting and Contract Work**

- Dr. Zeligs consulted for the Warsaw Zoo in Poland
- Dr. Zeligs consulted for Police dog training in Australia

## **Facilities**

### Projects

- Plumbed N4 drain lines to allow inline out pumping and created a new pump to do so
- Changed operating systems on all computers
- Cleaned out the outflow casson for the entire facility

### Acquisitions

- FK fridge and freezer
- Staff refrigerator
- Purchase new performance speakers
- Purchased a new laptop computer

## **Animals**

Behaviors started but not completed this year are called *started*, behaviors started and completed this year are called *learned*, work in progress behaviors neither started nor

completed this year are called *working on*, and behaviors started in a previous year and finished this year are called *finished*.

### Nemo

- working on Yes
- Finished Walk

### Ariel

- Working on seal
- Working on ultrasound training
- Working on tactile desensitization
- Working on blood stick
- Started Drink

### Cali

- Finished Walk
- Working on 2<sup>nd</sup> person swim
- Finished Superstar
- Started Upset

### Gaia

- Started seat
- Started Flexible
- Started balance
- Working on Compound landing training
- Working on shoulder target
- Working on 2<sup>nd</sup> person vet exam
- Working on gating
- Finished back up
- Finished rollover
- Learned retrieval/take

### Freya

- Started Rollover
- Started catch/throw
- Started Put
- Started balance
- Started hold fish
- Learned toothbrushing
- Working on Compound landing training
- Working on seat
- Working on 2<sup>nd</sup> person vet exam
- Working on gating
- Working on shoulder target

- Finished lie down
- Finished retrieval /Take

### Spot

- Finished peck the x
- Working on remote target
- Working on retrieve
- Working on circle
- Working on land hold
- Working on tactile
- Working on 2<sup>nd</sup> person work
- Working on Towel

## **Staff**

4 new people were hired into *Animal Care*

(Cheyenne McGregor, Jessie Rodriguez, Elliot Singleston, Enrique Gamez)

3 people left the project after an average longevity of 2.3 years

(Megan Fee -1.2years, Denielle Pritchard -3.3years, Kelsey Dodson – 2.4yrs)

2 people became *Senior Animal Care*

(Krista Yerena and Jessie Rodriguez)

2 people became *Assistant Trainers*

(Kaitlyn Kirkland, Krista Yerena)

Bree Wheeler became an *Assistant Trainer level 2*

1 people became *Senior Trainers*

(Jana Martin)

2 people received their *Multi-year Senior Trainer* anniversary Badges

(Melodie Lawicki(2) Austin Raymond (1))

**Paid contracts:**

Single event contracts were given to Melodie Lawicki, Amy Brandt, and Austin Raymond.

Michelle Jones continued in her role as Head Trainer.