

Harrison Daniel Smith

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EDUCATION

University of Delaware

Lewes, DE

M.S. Student: Marine Studies – Oceanography Concentration August 2018 – Present

Advisor: Dr. Matthew Oliver

Rutgers University

New Brunswick, NJ

B.S. Applied Physics – Ocean Option September 2015 – 2017

Ocean County College

Toms River, NJ

A.S. Computer Science, Summa Cum Laude September 2012 – 2014

PROFESSIONAL PREPARATION

University of Maine

Damariscotta, ME

Ocean Optics Class 2019 Student

June 2019

- ◇ Intensive 4-week cross-disciplinary graduate course in optical oceanography.
- ◇ Developed an independent research project with three other students; planned, organized, collected data and synthesized analysis and presentation.

University of Delaware

Lewes, DE

Research Experience for Undergraduates Student Research June – August 2017

- ◇ Developed an interactive RShiny web application to interactively validate satellite SST and chlorophyll against Slocum Electric glider data.
- ◇ Assisted in preparing and deploying a Slocum Electric glider equipped with a novel bioluminescence sensor.

RESEARCH EXPERIENCE

University of Delaware

Lewes, DE

School of Marine Science and Policy Fellow August 2018 – Present

- ◇ Decoding, converting, and compiling raw optical data in R from multiple AUV missions across the Mid-Atlantic to investigate relationship to remotely sensed chlorophyll estimates.
- ◇ Analyzing and decomposing trends in extreme biogeographic ocean provinces, with correlation to climate indices.

- ◇ Visualizing data from AUVs deployed before storm events in MATLAB.
- ◇ Analyzing data from AUV integrated LISST sensor for sediment resuspension events.

AT SEA EXPERIENCE

R/V Ira C, University of Maine

Damariscotta, ME

June 2019: Day-long research cruise to deploy optical oceanography equipment for collecting data on individual research projects

R/V Joanne Daiber, University of Delaware

Lewes, DE

July 2017, November 2018: Several day-long cruises to deploy and/or recover Slocum gliders, and take SeaBird SBE19 CTD casts.

R/V Rutgers, Rutgers University

New Brunswick, NJ

Spring 2017: Day long cruise to investigate salt wedge & precipitation effects in Raritan Bay estuary system, operation of SeaBird and YSI Castaway CTDs, Bongo Plankton Netting, ADCP, sample filtering.

HONORS & AWARDS

1 st Place - DENIN Pitch 90 Elevator Pitch competition	November 14 2019
UD School of Marine Science and Policy Program Fellowship	September 2018 – 19
<i>Summa Cum Laude</i> - Ocean County College	September 2014

PRESENTATIONS

Smith, H., Oliver, M. J., Developing evaluation tools for chlorophyll algorithms in the US East Coast using autonomous underwater vehicles. Talk for weekly seminar series at Virginia Institute of Marine Science Gloucester Point, VA. 17 October 2019

Smith, H., Oliver, M. J., Developing evaluation tools for chlorophyll algorithms in the US East Coast using autonomous underwater vehicles. Student poster contest at NOAA/EUMETSAT Joint Satellite Conference Boston, MA. 5 October 2019

Smith, H., Feen, M., Letaru, L., de Lima Olivera, A., Project GATORADE – Gelbstoff Absorption Transience over Radiant Amplitude Daytime Extremes. Ocean Optics 2019. Damariscotta, ME. 28 June 2019

Smith, H., Oliver, M. J., Developing evaluation tools for chlorophyll algorithms in the US East Coast using autonomous underwater vehicles. Poster at 8th EGO meeting and International Glider Workshop (EGO/UG²) New Brunswick, NJ. 21-24 May 2019

Smith, H., Oliver, M. J., Developing evaluation tools for chlorophyll algorithms in the US East Coast using autonomous underwater vehicles. 3rd place scientific poster. Graduate Student Association Research Symposium, Lewes DE. 27 April 2019

Smith, H., Oliver, M. J., Breece, M. W., Haulsee, D. E., Gradone, J., Goodrich, C., Hudson, K. Comparing Satellite and AUV: Observations of chlorophyll and sea surface temperature. Scientific poster. Delaware Environmental Institute Research Symposium, Newark DE. 7 March 2019

Smith, H., Oliver, M. J., Breece, M. W., Haulsee, D. E., Gradone, J., Goodrich, C., Hudson, K. Comparing Satellite and AUV: Observations of chlorophyll and sea surface temperature. REU presentation. Lewes, DE. 11 August 2017

Smith, H., Lee, C., Griffith, J., Shalack, C., Chen, E., Liang, A. OOI Data Quality. Undergraduate Research Symposium presentation. 5 May 2017

OUTREACH AND VOLUNTEER EXPERIENCE

National Ocean Sciences Bowl Chesapeake Bay Bowl Lewes, DE
Annual academic competition on February 1, 2020 at Virden Center

- ◇ Volunteered as timekeeper for round-robin, elimination, and championship matches in academic competition for high school students

Public Tours of University of Delaware Hugh R. Sharp Campus Lewes, DE
Recurring public events from June – September 2019

- ◇ Provided over 24 interactive tours of Global Visualization Lab to diverse members of the community (middle/high school students, retirees, specialty teacher groups, boy/girl scouts)
- ◇ Engage in discussions about current research, public data sets, and public science interest

Love Creek Elementary School Science Fair Judge Lewes, DE
One-time public event on April 17, 2019 at Love Creek Elementary

- ◇ Spoke with 20+ grade 4-5 science students about independent science projects and served as judge for physics category.

Milford Central Academy Science Night

Milford, DE

One-time public event on January 18, 2019 at Milford Central Academy

- ◇ Facilitated activity allowing K-12 students and families to explore neutral buoyancy points in relation to AUV ballasting procedures.

University of Delaware Coast Day

Lewes, DE

Annual event at University of Delaware Hugh R. Sharp Campus: participated October 7, 2018 and October 6, 2019

- ◇ 30-minute presentation on lab research followed by extended public Q&A

SKILLS

Laboratory: Opening and ballasting Slocum gliders, ASV sensor integration, WetLABS ac9/ac-s, Sequoia LISST, spectrophotometry, benchtop fluorometry, chlorophyll extraction/filtering, radiometry, calibration of *in-situ* fluorometers/backscatter sensors, basic soldering/wiring.

Field: Deployment and recovery of Slocum gliders, SeaBird SBE-19 collection and operation, YSI Castaway, EchoBoat ASV remote operation and data acquisition, *in-situ* backscatter/fluorometer casts.

Computer: PC, Mac, Unix/Linux architecture, Remote/Cloud computing, MS Office, Arduino/Raspberry Pi, Google Earth, NASA SeaDAS, Hydrolight, Camtasia, Coding (fluent in R, proficient in Matlab, Java).