tidepool

June 2023

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Department of Ocean Sciences /
Ocean Sciences Centre Newsletter

Kyle Warman

Table of Contents

Thanks for Reading!

Thank you for reading the next edition of *tidepool*! With the continued support from members within the department, the current newsletter contains all sorts of exciting updates from our community.

As always, our goal is to increase transparency, communication and help to build a stronger sense of community at the Department of Ocean Sciences/ Ocean Sciences Centre (OSC).

If there are any recommendations for future issues of *tidepool* or you would like to become involved on the editorial team, please email Aidan at aidanh@mun.ca!

Kyle Warman

Faculty Spotlight: Dr. Pat Gagnon

Greetings! I am Pat Gagnon, Professor and Deputy Head in the Department of Ocean Sciences of MUNL. My research group, the Cold Ocean Benthic Ecology Lab (COBEL), addresses fundamental and applied questions to advance knowledge about the structure, function, and vulnerability of cold marine benthic systems. Our main playground is the extensive coast of Newfoundland and Labrador with its amazing and uniquely situated systems.

We use a variety of approaches, including scientific scuba sampling and monitoring techniques, drone and satellite surveying, experiments in wave tanks, GIS analysis/modeling, and Artificial Intelligence (AI) to better understand how marine life, in particular invertebrates and seaweeds, adapt to ocean climate variability. This work involves looking into the behavioral and physiological responses and adaptability of ecologically and economically important species, while keeping track of changes in benthic populations and communities across a range of spatial and temporal scales. Part of this work has (1) revealed new insights about the regulation and biological diversity of subarctic kelp beds and rhodolith beds; (2) produced innovative methods to better study cold marine benthic habitats; and (3) established a solid science-based foundation for a sustainable green sea urchin gonad industry in Newfoundland.

We are strongly committed to sharing our stories, findings, and data publicly whenever possible, which we see as an excellent way to help motivate and inspire the next generations of oceans students, scientists, and practitioners, while magnifying the outcomes of our government and industry collaborations and partnerships. Examples of this include the two following StoryMaps showcasing research programs we completed in the areas of marine habitat mapping and aquaculture on behalf of Fisheries and Oceans Canada (DFO) and provincial and international industry partners:

Marine habitat mapping: TBA

Aquaculture: https://storymaps.arcgis.com/stories/525a8ad076ba44d5ae673dd29f4f1d3b

Cheers

Pat Gagnon (pgagnon@mun.ca)

A Word from the Department Head

This is my final *tidepool* entry as department head. On July 1, Dr. Pat Gagnon will become head of the Department of Ocean Sciences. (I'll be starting as head of the Biology Department on September 1, although my lab will remain at the OSC).

I arrived at the OSC in early July, 2006, shortly before Dr. Tyson MacCormack completed his PhD under Dr. Bill Driedzic's supervision (see "Sea Stars" interview in this issue of *tidepool*). A lot has changed in the intervening 17 years. Some of these changes have been structural, such as the construction of the Cold-Ocean Deep-Sea Research Facility (CDRF). In addition to the large Canada Foundation for Innovation (CFI) and provincial grants that funded the building of the CDRF and other major infrastructure, we collectively have had a steady stream of large-scale research grants and amazing HQP (highly qualified personnel, e.g., graduate students, undergraduate students, postdocs and research staff) that helped propel OSC research to ever greater heights. Other major changes occurring at the OSC since I started here include the formation of the Department of Ocean Sciences with new programs and curricula (involving heroic efforts from faculty, staff, TAs and others). While many changes have been positive, there have also been challenges (e.g., the pandemic, and budget cuts) and some sad changes (e.g., the dwindling of our group of resident seals from 5 in 2006 to 2 currently).

One thing that has not changed since I arrived at the OSC is the amazing people (also noted in Tyson's interview). I am forever grateful for the incredible support I have received from staff (e.g., the main office, CREAIT, JBARB, CDRF and others), graduate students, postdocs, and faculty over the years. You are what makes the Department of Ocean Sciences and the Ocean Sciences Centre unique and highly successful as it strives to become "a global leader in cold-ocean and deep-sea research, education and engagement through the principles of inclusion, diversity, sustainability and transdisciplinary scientific innovations" (quoted from our Vision Statement on the department's website).

Kyle Warman's photo on the cover of this issue of *tidepool* inspires me to close with a quote from the eminent marine biologist, explorer and author, Dr. Sylvia Earle:

"Why is it that scuba divers and surfers are some of the strongest advocates of ocean conservation? Because they've spent time in and around the ocean, and they've personally seen the beauty, the fragility, and even the degradation of our planet's blue heart."

-Dr. Matt Rise

Field Services Unit Update

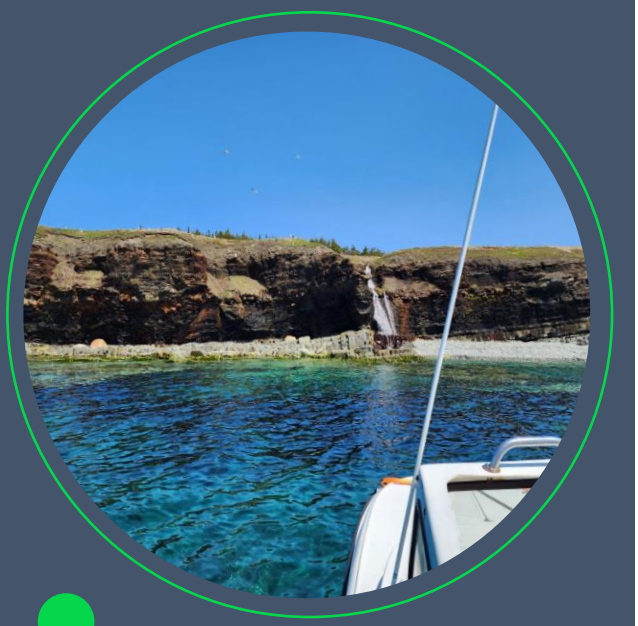
The Field Services Unit (FSU) was very busy this past winter, with over 20 Projects and 100+ dives completed. Projects ranged in scope from various collections to fish and water transfers to specimen collections for Biology and researchers of the Ocean Sciences Centre, Memorial University of Newfoundland and Labrador and Marine Institute.

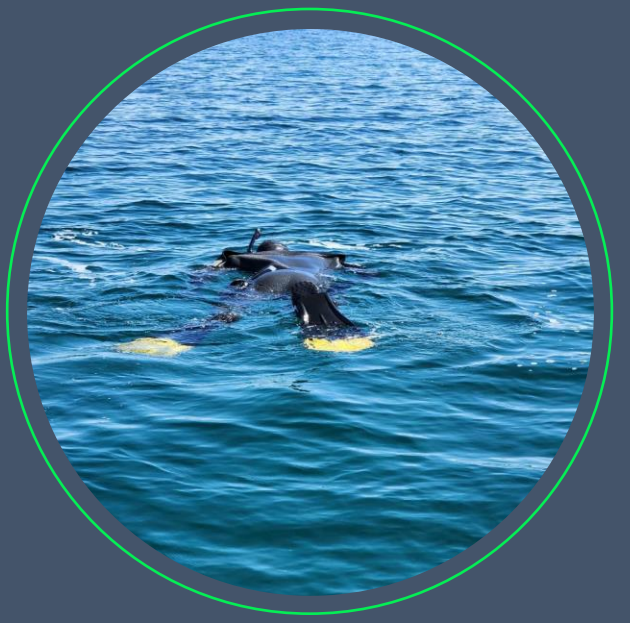
Kyle Warman accepted the lead role as Dive Technician III in early April 2022.

We had a great time helping out at the Marine Institute's ROV MATE competition the first week of May. July is going to see the opening of Champney's West Mini Aquarium and Bonne Bay Marine Station for the season, which involves the transfer of organisms from the Ocean Sciences Centre to each facility and some collection dives.

Our Boston Whaler Vessel has now been unwrapped after all winter and had its first run in the ocean. With improving weather and water temperatures, we can now explore offshore dives and projects.

-Kyle Warman





News from the CDRF

The Cold-Ocean Deep-Sea Research Facility (CDRF) is going into the spring and summer season with many exciting projects ongoing and on the horizon. In mid-May, we successfully obtained our AQC3 recertification documentation from the CFIA. Thank you to all parties involved in performing all of the checks and maintenance required to uphold our AQC3 biocontainment zone. In other good news, the scanning electron microscope (Phenom SEM) in CDRF has been repaired and is now operational! We are very excited to have this instrument up-and-running again and available for use by both the OSC community and our external clients. Reach out to myself or Zhiyu to schedule instrument use or training. Furthermore, we have established a regularly scheduled liquid nitrogen delivery to CDRF for the purposes of long-term sample storage in our dewar in the AQC3 biocontainment lab. We are offering space in this dewar to those who would be interested in using it for long-term sample storage (i.e., cell line stocks). For anyone who would be interested in availing of this service in CDRF, I can assist with establishing protocols for freezing cell line stocks and other samples. All users **must** be trained by CDRF staff prior to being granted access to the liquid nitrogen storage dewar. Reach out to me for more information.

Going forward this year, we are looking for input from the OSC community as we work towards obtaining funding for new and replacement equipment that best fits into the ongoing and future operations of the CDRF. We will also be looking to collaborate on upcoming grant applications to obtain such funding. Please feel free to reach out to me to discuss your views on what the ongoing and future equipment priorities should be for the CDRF.

On a personal note, I would like to take this opportunity to thank everyone at the Ocean Sciences Centre for greeting me with such a warm welcome. Everyone has been so helpful during my transition into the role of CDRF manager. I have thoroughly enjoyed getting to know everyone and learning so much about the great facilities here at the OSC. If we haven't had a chance to meet yet, please feel free to stop by the CDRF for a chat!

For any inquiries related to the CDRF, please feel free to contact me: by email, clgardner@mun.ca; in my office, CD-2006; or by phone, 864-3258.

Wishing everyone all the best for a fantastic spring/summer season!

Cassandra Gardner
CDRF Manager

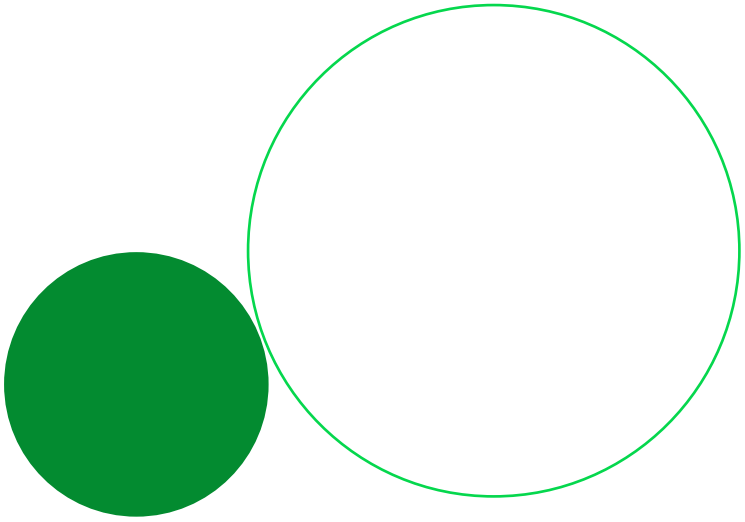
OceanUS Announcements

OceanUS (Ocean Sciences Undergraduate Society) is a student-run group that provides Ocean Sciences students with social events, networking opportunities, community engagement/volunteer opportunities, advice and more! With another school year ending, OceanUS would like to congratulate the undergraduate students who graduated this year! In addition, we would like to announce the turnover of the OceanUS executive team and introduce our committee for the 2023-2024 school year.

2023-2024 Executive Team:
President: Mary Londero
Vice President: Jenna Keveryga
Secretary: Holly Winchester
Treasurer: Rachael Stephan
Social Rep: Marcy Whelan
4th Year Rep: Kera Whitten
3rd Year Rep: Madison Malloy

To keep up with OceanUS updates feel free to follow us on social media! OceanUS can be found on Facebook (https://www.facebook.com/groups/OCEANUS/), Instagram (@mun_oceanus) and email (oceanusmun@gmail.com). We are looking forward to a great year!

-OceanUS Executive Team



OSGSA News

The Ocean Sciences Graduate Student Association (OSGSA) is an organization that aims to improve graduate student life at the OSC by providing both academic and social support!

On May 5th, we held our annual general meeting and elected a new committee for the 2023/2024 year.

2023/2024 Executive Team:
Chairperson: Victoria Heath
Treasurer: Chantelle Clermont
Seminar Series Coordinators: Stephan Hamisch and Aidan Hicks
Graduate Development Coordinator: Eleanor Barry
Graduate Studies Representative: Colleen McBride
Special Events Coordinator: Rahana Ebrahim
Graduate Student Food Coordinator: Sara Jobson
Graduate Student Union Representative: Sara Jobson

We would like to thank our outgoing executive team members – Eric Ignatz, Verena Kalter, Natalie Perrin, Coral San Roman, Joanna Dicks, Olivia Dillon, Mary Clinton and Grace Walls – for all their efforts making the previous year such a success!

The positions of **Communications Coordinator**, **Sustainability Coordinator**, **Fundraising Coordinator** and ***tidepool* Editor-in-Chief/Associate Editor** are still vacant and so if anyone is interested in filling any of these roles, please email Victoria (vlsheath@mun.ca) for more information.

We look forward to organizing more events, seminars and activities over the next few months, so be sure to follow us on social media to keep up to date!

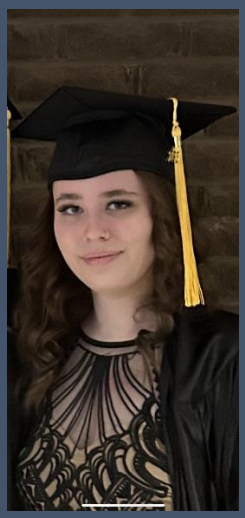
-OSGSA 2023/2024 Executive Team

MUN Ocean Sciences Graduate Student Association
@munosgsa
@munosgsa
osgsa@mun.ca

Welcome to New Arrivals

New Staff at JBARB

Daisy Archibald
Hi, my name is Daisy and I am a third-year student in the Marine Environmental Technology program. I am currently finishing my second work term at JBARB and thereafter will be employed as a Science Technician upon completion. In March, 2023, I was awarded the Fry Family Foundation Leadership Award at the Fisheries and Marine Institute for the second time based on academic performance and demonstrating outstanding leadership.



Brooke Hollett
Hi, my name is Brooke and I am a recent graduate from the Veterinary Assistant program with Academy Canada. I came to the Department of Ocean Science (JBARB) to complete my work term and thus was hired thereafter as a Science Technician. I am originally from Whitbourne, but living in St. John's presently. I am very passionate about animals and the well-being of animals. I take pride in my work and try to get any extra learning and practical experience available. On my free time I love to take my dog for walks, hiking, fishing, and most of all I love visiting our local farms.

Tyler Elliott
Hi, my name is Tyler and I am a recent graduate of the Natural Resources Technician program with Academy Canada. I recently completed my work term at JBARB and thus was hired thereafter as a Science Technician. I am originally from Manitoba but I have been living in Newfoundland for the past 2.5 years. I am passionate about my work and consider myself a people person. My hobbies include sports, hiking and fishing. I am always looking for new ways to express myself and I strive to create the best work possible.

Welcome to New Arrivals Cont.

Mark Young
Mark joined Dr. Ian Fleming's lab in May – he is co-supervised by Travis Van Leeuwen and Harry Murray at DFO – he is doing an MSc in Environmental Science working on the *Assessment of wild Atlantic salmon host variables associated with sea lice susceptibility and survival in different environments with varying intensity of salmon aquaculture*.

Rachael Stephan
I am in the COBEL lab this summer working with Dr. Pat Pagnon on changes in oxygen evolution along the ontogenic gradient of the blades of the brown macroalgae *Laminaria digitata*. The project is in the early stages, but there are plans to connect this gradient to physiological changes as the cells of *L. digitata* age, either as part of the USRA or a further honours project. I am working towards a BSc in Marine Biology and plan to graduate next spring.

Sea Stars

Sea Stars features interviews with OSC alumni

Name: Tyson MacCormack

Program Completed at the OSC: MSc Biology and PhD Biology

Supervisor: Dr. Bill Driedzic

Graduation Date: September 2006

Current Occupation: Professor of Biochemistry, Mount Allison University

Description of Occupation:

My research program is dedicated to understanding how aquatic animals regulate their cardiovascular function and metabolism to thrive in stressful environments. My trainees are mostly undergraduate honours students recruited from my biochemistry lecture and lab courses, but I often have at least one M.Sc. student and I co-supervise Ph.D. students at other institutions. In addition to our research at Mount Allison, my students and I regularly travel to Portugal and Brazil to work on interesting animals with interesting collaborators. I serve on several institutional committees and am a member of our Anti-Racism Education and Response Team. I am also a former chair of the Comparative Physiology and Biochemistry section of the Canadian Society of Zoologists.

What skills did you learn at the OSC that enabled you to find success in your career?

Learning the value of publishing my research findings in a timely manner really helped me. People often find writing difficult or feel their time would be better spent collecting data, but in many instances, peer-reviewed publications are the only hard evidence of your research productivity. Getting papers published early in grad school helped me secure fellowships later on and made me more competitive in the academic job market. Contextualizing your results through writing can also broaden your perspectives on a topic and help you to identify new opportunities.

What advice would you have for current students studying at the OSC?

Don’t be afraid to venture out of your comfort zone to expand your skillset. Take advantage of the wealth of expertise at the OSC and develop a new skill to elevate your research. The academic job market has always been brutal, but few careers offer as much freedom, satisfaction, and security. Differentiating yourself with a unique and/or interdisciplinary toolkit will open up more opportunities to land your dream job.

What is your favourite memory of the OSC?

The people were amazing. I worked with a great cohort of students, staff, and faculty during my time in Logy Bay and many of us stay in touch or collaborate to this day. I learned a lot about research, publishing, funding, and science in general through casual conversations with ecologists, oceanographers, statisticians, and other physiologists. The field services and facilities staff were also hugely knowledgeable, helpful, and always good for a laugh. Getting tackled by an angry seal, seeing a wave destroy the pump house, and watching a moose swim around the bay were also pretty memorable.

Accomplishments within the Department

Awards

Scientific Endeavors in Academia (SEA) Conference

Best poster (undergraduate) - Climate Change and the Environment: **Isaiah Power Smith**, BSc Honours Marine Biology (Supervisors – Dr. Ian Fleming & Dr. Sarah Lehnert)

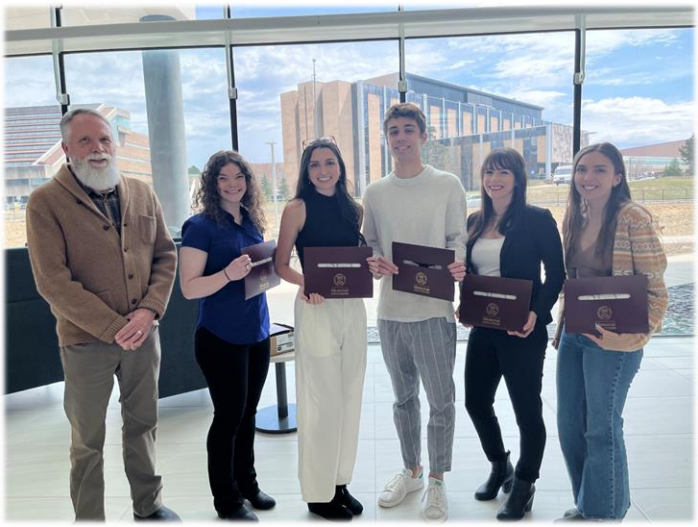
Best talk (graduate and post-doctoral fellow) - Climate Change and the Environment: **Carlissa Salant**, PhD Marine Biology (Supervisor – Dr. Chris Parrish)

Best Ocean Sciences presentation (poster or talk) (graduate): **Joanna Dicks**, MSc Marine Biology (Supervisor – Dr. Uta Passow)

Best Ocean Sciences presentation (poster or talk) (undergraduate): **Kera Whitten**, BSc Marine Biology

Best Innovation and Aquaculture presentation (poster or talk) (graduate): **Chantelle Clermont**, MSc Marine Biology (Supervisor – Dr. Pat Gagnon)

Best Innovation and Aquaculture presentation (poster or talk) (undergraduate): **Jacob Mercer**, BSc Honours Ocean Sciences (Supervisor – Dr. Pat Gagnon)



Destination St. John's Award of Distinction for hosting the 2022 World Aquaculture Conference
Newfoundland Aquaculture Industry Association (NAIA) – including **Danny Boyce** and **Dr. Kurt Gamperl**

The Dr. Joe Brown Graduate Research Award in Aquatic Ecology and Aquaculture
Ben King, PhD Biology (Supervisors – Dr. Paul Snelgrove and Dr. Robert Gregory)

NSERC Postgraduate Scholarship – PGSD
Kira Randall, PhD Marine Biology (Supervisors – Dr. Matt Rise & Dr. Chris Parrish)

Aquaculture Association of Canada Scholarship
Eric Ignatz, PhD Marine Biology (Supervisors – Dr. Kurt Gamperl & Dr. Matt Rise)

Best MSc poster award at the Biology Graduate Student Symposium
Coral San Roman, MSc Marine Biology (Supervisor – Dr. Ian Fleming)

1st Place – Oral presentation at the OFI Module J Symposium
Coral San Roman, MSc Marine Biology (Supervisor – Dr. Ian Fleming)

2nd Place – Oral presentation at the OFI Module J Symposium
Ignacio Vasquez, PhD Biology (Supervisor – Dr. Javier Santander)

Science Fair - Memorial University Department of Ocean Sciences Award 2023
Ava Gosse and **Brianna Walsh** – Holy Trinity High School – The Salinity of the Labrador Current and Gulf Stream and Their Effects on Climate

Graduate Theses Defended

Setu Chakraborty, PhD Biology, "Molecular Immune Responses Of Lumpfish (*Cyclopterus Lumpus*) To *Aeromonas Salmonicida*" (Supervisor – Dr. Javier Santander)

Jasmin Schuster, PhD Marine Biology, "Establishing physiological tolerance limits to synergistic environmental stressors in cold water invertebrates" (Supervisor – Dr. Amanda Bates)

Valesca De Groot, MSc Marine Biology, “The otolith-isotope method: an opportunity to examine field metabolic rate as an in situ indicator of climate change within and across juvenile Atlantic cod populations (*Gadus morhua*)” (Supervisor – Dr. Amanda Bates)

Honours Theses Defended

Ashley Nickson, BSc Honours Marine Biology, “Megabenthic biotope composition of the Rockall Escarpment, Northeast Atlantic” (Supervisor - Dr. Katleen Robert)

Isaiah Power Smith, BSc Honours Marine Biology “Gill morphology as an indicator of thermal adaptation and phenotypic plasticity in Atlantic salmon (*Salmo salar*) (Supervisors – Dr. Ian Fleming & Dr. Sarah Lehnert)

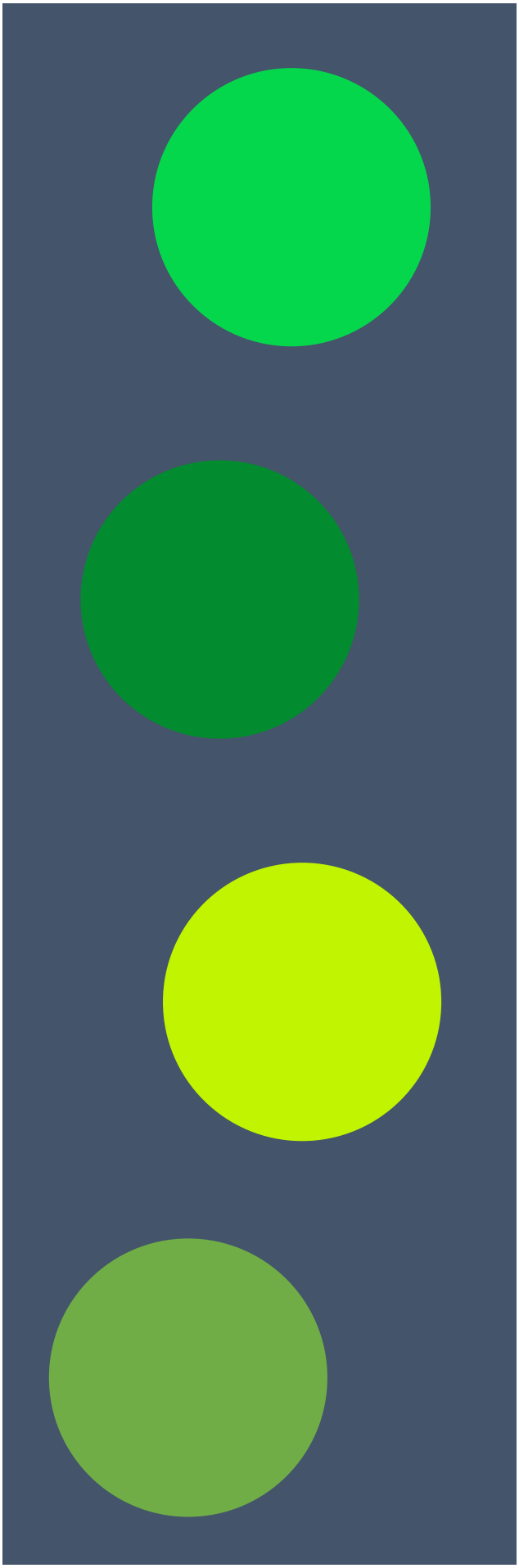
Jill Carter, BSc Honours Marine Biology, “Anesthesia in echinoderms: an experimental study of efficacy based on behavioural and cellular stress responses” (Supervisor – Dr. Annie Mercier)

Jacob Mercer, BSc Honours Ocean Sciences, “Effects of temperature and body size on covering in green sea urchin, *Strongylocentrotus droebachiensis*” (Supervisor – Dr. Pat Gagnon)

Comprehensive Examinations Completed

Colleen McBride, “A brief overview of the role of the nitrogen cycle in supporting marine productivity and the lower trophic levels of the marine food web” (Supervisors – Dr. Rachel Sipler & Dr. Sue Ziegler)

* If any updates / new arrivals / accomplishments were accidentally missed, please reach out to Aidan (aidanh@mun.ca) so that this information can be included in the next issue of *tidepool*!



Artwork Contest

* All members of the OSC community were previously asked to enter their aquatic themed artwork for a chance to win the opportunity to have it hung on the walls of the Ocean Sciences Centre. These were featured in the January 2023 edition of *tidepool*. An internal panel of judges selected their favourite submissions from each artist and has determined our overall winners! Each piece shown below will be offered a place to be displayed at the OSC. *

1st Place – Alana Barton

2nd Place – Joanna Dicks

Honourable Mention – Grace Walls

Honourable Mention – George Bishop