University At Its Best

It has been said if you follow your passion, you will never work a day in your life. Can the same be said for your studies?

The mission of the Huntsman Marine Science Centre is to inspire stewardship of the ocean. This is accomplished by working with universities to offer world class field courses. These hands-on courses allow students to gain a more in-depth understanding of the ocean and its inhabitants, inspiring life-long learning.

Since 2005, the University of New Brunswick Saint John (UNBSJ) has offered a marine semester based on the Huntsman campus. During the semester the students stay in our residences, eat meals at Anderson House, sail aboard our research vessel the Fundy Spray, tour the Fundy Discovery Aquarium, conduct experiments in our labs and visit a variety of local beaches. It is a hands-on marine immersion!

For the duration of the 12-week semester, the professors travel to the Huntsman and work with the students on-site. Students are exposed to a diversity of organisms such as whales, seals, seabirds, algae, fish and invertebrates; as well as, habitats, techniques and topics in the field of marine biology. With enrollment capped at 20 students there is plenty of time for one-on-one interactions with the professors; which include Dr. Heather Hunt, who coordinates the program, Dr. Rémy Rochette, Dr. Thierry Chopin, Dr. Jack Terhune, Dr. Heather Major, Dr. Ben Speers-Roesch and Dr. Rob Stephenson.

“Over the course of the semester, I see a big increase in the students’ research skills, including their ability to design scientific research and to present it orally and in writing.”
- Dr. Heather Hunt

The five courses offered during the marine semester are intended to give the 3rd and 4th year university students more hands-on experience in marine biology. While preference is given to UNB students, remaining seats are opened up to those visiting from other universities.

Kyle Lefort is a UNB student currently taking the marine semester. He says, “The time I have spent at the Huntsman through the UNB Marine Semester has been one of the most rewarding academic experiences of my undergraduate degree. Through field and laboratory experiments, I have discovered a passion for science which is impossible to acquire in the classroom. I would highly recommend courses offered by the Huntsman to anyone, regardless of their age or scientific background.”

Imagine being immersed in the habitat that you are passionate about studying. That is university at its best!

Those interested in learning more about the UNBSJ Marine Semester can visit, www.unb.ca/marinesemester.
2017 Summer Field Courses

Introduction to Marine Biology

A hands-on experience in field biology. Discover the diversity of invertebrates, fish, seabirds and mammals living in and around the Bay of Fundy.

Open to students 15 to 18 years old
July 10th to 14th, 2017

Intro to Marine Mammals & Seabirds

Discover the diversity of whales, porpoise, seals and seabirds that live in and around the Bay of Fundy.

Open to students 15 to 18 years old
July 24th to 28th, 2017

All Things Marine

A hands-on introduction to marine biology, with a little bit of maritime history.

Open to families & friends, 10 years old and over
August 8th to 11th, 2017

Booking, price and early-bird discount information available at www.huntsmanmarine.ca or (506) 529-1200

Student Explorer Days at the Huntsman Fundy Discovery Aquarium

Each Wednesday this summer and for a week in August the Huntsman Fundy Discovery Aquarium will present Young Explorer Days designed for students aged 5 to 11.

Each program will include: fun games, educational crafts, animal interactions and possibly a field excursion to the shore.

July 12 - Seastar Day

July 19 - Seal Day

July 26 - Whale Day

July 31 to August 4 - Marine Biology Week

August 2 - Seabird Day

August 9 - Shark Day

August 16 - Microscopic Day

August 23 - Lobster Day

NEW this summer the Huntsman Fundy Discovery Aquarium is presenting Advanced Explorer Days for students aged 11 to 15 on Thursdays in August.

Participants will increase their marine knowledge, learn about conservation issues and share their expertise with the aquarium visitors through interactive stations.

August 3 - Seabird Day

August 10 - Shark Day

August 17 - Microscopic Day

August 24 - Lobster Day

All participants will receive a certificate of completion to remember their special experience at the aquarium!

Please register in advance by calling the Huntsman main desk (506) 529-1200 or emailing huntsman@huntsmanmarine.ca.

About the Huntsman...

The Huntsman Marine Science Centre is a not-for-profit facility in St. Andrews, N.B., dedicated to education, research and applied science. Thousands of students come to our campus each year, from elementary school to university level. We publish this newsletter specifically for teachers twice a year. If you have any marine biology questions, feature ideas, or things you’d like to see us cover, contact us at:

Huntsman Marine Science Centre
1 Lower Campus Road, St. Andrews by-the-Sea, NB E5B 2L7 Canada
506.529-1200 huntsman@huntsmanmarine.ca
Visit us online at www.huntsmanmarine.ca
Throughout the years we hear interesting stories about how people come to attend a field course at the Huntsman. This past winter we received a very impassioned and enthusiastic email from Karine, who had travelled to the Huntsman from Ottawa with her school, Bell High. She loved the marine biology field course very much and wanted to share the experience with her friend Kea, “who's passion for the ocean is unlike any I've seen before”. Here is the story in their words.

“Wow! How amazing. Kea would love this.”

As a homeschooler living in the Ottawa Valley I am not always able to get a hands-on experience with teachers who can answer my questions and fuel my passions, especially when it comes to marine biology.

Going to the Introduction to Marine Biology field course at the Huntsman Marine Science Centre was like finally being able to do what I’ve been dreaming and learning about for years. I have been so passionate about marine biology for so long that I was quite nervous. I didn’t know if I would actually love it as much as I thought I did once I started doing the hands on stuff. But it was quite the opposite! It turned out to be my own little marine biology heaven where I became more and more passionate with everything we did. I had teachers who were passionate and willing to answer all and any questions I had, I was with a group of equally passionate youth who were as willing to learn as I was and who helped create a space where no one was judged on what they knew or didn’t know. And I got a FULL hands on glimpse into what marine biology might be all about. From digging up worms, to looking at tiny plankton, to beach cleanups and fish dissections, I loved it all!

Karine Habboub

I've never been able to appreciate biology in a high school class, but when I heard about the field trip to the Huntsman Marine Science Centre through my school, I knew this would be a wonderful chance to learn about a subject I’m extremely interested in. The week I spent at the Huntsman opened my eyes to a world I knew very little about. Simply taking grade 11 biology didn't capture all that I could be learning.

While I was there, I thought of my friend Kea, whose passion for marine life and its preservation never ceased to impress me. Every time I learned something new, or saw something interesting, I immediately thought of her. I would hold a sea star and think, “Wow! How amazing. Kea would love this.” While whale watching or looking at plankton, I would be thinking about my friend, knowing that I wanted her to have the same experience. For Kea’s birthday, I was looking into fundraising the money to sponsor Kea’s experience at the Huntsman. Unforeseen circumstances resulted in my inability to do this, but I’m happy to say that Kea still ended up going to the Huntsman. I was very confident that she would love everything about the summer field course, and that it would reinforce her passion for marine biology. Listening to Kea talk about her time at the Huntsman brought back so many happy memories from the Huntsman. It also reminded me of how Kea will proceed to educate those around her about marine life and in turn change the way we treat our oceans.

“...I was quite nervous. I didn’t know if I would actually love it as much as I thought...”

Kea McKay
Activity: Squid Propulsion Experiment

Grade level: Elementary and up

Purpose: To examine how squid move.

Background:
Squid move using jet propulsion. Water is taken into the mantle and then expelled through the siphon. This demonstrates Newton’s 3rd law of motion, that for every action, there is an equal but opposite reaction. The siphon can be moved to change the direction and speed of the squid’s movement. The fins are used for stability and to generate lift.

Materials:
- pictures, diagrams & videos of diverse squid species
- four chairs
- fishing line
- balloons (different shapes & sizes)
- straw
- tape
- scissors
- binder clip
- markers
- paper
- yarn

Procedure:
1. Show the class the pictures, diagrams & videos while discussing the basic squid body plan: 1) a head with two eyes and a mouth surrounded by eight arms and two tentacles and 2) a body, called the mantle, that has two fins on either side and a siphon opening below the head. Highlight how the fins, mantle & siphon are used during jet propulsion of the squid.
2. For the experiment the balloon is the mantle with the opening acting as the siphon. Students must choose: the size and shape of their mantle (balloon).
3. Have the students blow up their balloon and use a clip to hold the opening closed. Next they cut a piece of straw and tape it to the top of the balloon.
4. Let the students use the other materials to design their squid: cut the paper to be the fins (what size, shape & position) and cut the yarn to be the arms & tentacles.
5. Have the students complete a drawing and description of their squid, as well as giving it a Latin name. The name should reflect the features and characteristics of the squid.
6. Set up two chairs at one end of the room and tape a long piece of fishing line to the back of each chair. This will be the line the squid use to travel.
7. At the other end of the room have two students line up and thread the fishing line through the straw on the top of their squid. Tape this end of the line to a second set of chairs.
8. Release both squid at the same time by removing the clips from the balloons. Which one goes the farthest? Continue with all the squid.
9. Have the students write a description of the movement of their squid and if there is anything they would change about the design.

Sea Creature Facts: Squid

There are two species of squid that live in the Bay of Fundy, long-finned and short-finned. Both can be caught by fishing or squid jigging off a wharf after-dark in the summer. The past few years we have been noticing an increasing number of long-finned squid (*Doryteuthis pealeii*) egg capsules on local shorelines. Visit our blog to see pictures and videos of the egg capsules and larvae, huntsmaneducation.blogspot.ca/2015/09/squid.html.

Insights

Belong to Phylum Mollusca. Related to scallops, clams, octopuses, periwinkles and sea slugs.

Instead of having a shell on the outside like many other molluscs, a squid’s shell is carried inside their body and called a pen.

Within the mouth is a beak made of chitin. It looks very similar to a parrot’s beak.

Around the mouth there are eight arms and two longer tentacles, all of which have suckers.

Below the skin are chromatophores. These pigment cells allow for camouflage by changing colour and size.

When threatened an ink cloud can be released. It is a mixture of mucus and black ink containing melanin (the same pigment in your eyes, hair and skin).

Have a short life span that ranges from 6-12 months.

Depending on the water temperature eggs hatch in 11-26 days. Once hatched the larvae are planktonic.

During reproduction each female can lay about 20-30 capsules that contain 150-200 eggs each (see below).