
From: Leon H. Charney School of Marine Sciences <marine-info@univ.haifa.ac.il>
Sent: אפריל 16 יום שלישי 08:25 2019
To:
Subject: The Leon H. Charney School of Marine Sciences Spring 2019 Newsletter



The Leon H. Charney School of Marine Sciences Newsletter 2019 Spring

GREETINGS FROM CSMS DIRECTOR



**SPRING GREETINGS TO ALL OUR FRIENDS AND SUPPORTERS FROM
AROUND THE WORLD**

After a bountiful and rainy winter, we are well into our spring semester and the Leon H. Charney School of Marine Science's (CSMS) 11th year. You will see from the highlights presented here some of the exciting research and news from across all departments. The past six months have also been extremely busy with the CSMS faculty and staff working together to evaluate our strengths and challenges and to develop our strategy, objectives, and working plans for the coming decade. The CSMS has, in the years since its establishment, demonstrated its capacity for scientific excellence and leadership in marine science research and education, with our achievements independently validated in the 2018 Report of the international evaluation committee appointed by the Council of Higher Education. Today the CSMS boasts interdisciplinary research across our 4 departments (Maritime Civilizations, Marine Geosciences, Marine Biology, and Marine Technologies), 32 academic faculty, 50 administrative faculty and ~ 220 students and post-docs. **In-line with the original goals set-forth upon the establishment of CSMS, our mission is to provide science-based leadership for our sustainable future with the sea by striving towards our vision to become the leading academic center of excellence for Marine Sciences in the eastern Mediterranean.** Accordingly, during this next decade we will stimulate academic excellence by increasing our faculty and research-support staff, attracting quality students and developing educational programs for the next generation of marine scientists, and by expanding our physical infrastructures. This past month we presented our strategy and plans before the University's top administration. **We hope you will help us reach our goals by joining our efforts and continuing to support us in these exciting times as we move forward.**

Best wishes,
Ilana



DEPARTMENTAL NEWS & HIGHLIGHTS



DEPARTMENT OF MARINE BIOLOGY

The first semester of the year began with interesting (and tasty) weekly meetings presenting the research of our MSc graduates. Currently the Department numbers - ~ 60 research students including 16 new MSc students and 8 new PhD students (50% of whom continue with us after their MSc). We wish good luck to our 3 students who successfully completed their PhDs: Gal Dishon, a team-member of the educational framework The Ecological Greenhouse, Shani Levy, who began a Post Doctoral fellowship, and Amikam Bar-Gil, who has initiated his own start-up in the North. In January, the annual departmental meeting took place, showcasing student research via oral and posters.

In November we inaugurated the second laboratory building in Sdot Yam in the presence of Mr. Morris Kahn our staunch supporter, while in December the Center for Top Predators at Sdot Yam hosted a workshop with a special keynote lecture on ecosystem impacts on sharks by Dr. Neil Hammerschlag visiting us from the University of Miami.

Our call for new faculty members for the upcoming year has yielded many requests with short-listed candidates presenting their work in special seminars. We hope to begin the next academic year with an expanded team



of investigators.

Photo by H. Nativ

DEPARTMENT OF MARITIME CIVILIZATIONS

Welcomes Dr. Nimrod Marom, a new faculty member and expert on archaeo-zoology, who was awarded an ERC Young Investigator Award. Congratulations also to Prof. Ruth Shahack-Gross our newly elected Head of Department who will take over the position this summer. Our current students number ~60 MA students (with ~ 40 students writing research theses) and ~ 20 PhD students. We have recently received the final approval from the Israel Antiquities Authority for our new coastal and underwater excavation certificate, and qualified students will receive the certificate already this year. Our recent winter field schools were lively and successful, hosting guests from UCSD and Scripps, as well as from Flinders University in Australia. Our researchers continue to engage in cutting edge research, in field, lab, and archive alike, and we have produced a praiseworthy number of quality publications that are sure to generate academic impact and attract wide attention to our department. Looking ahead to the new academic year (2019-2020), we will offer a new “focus” courses dedicated to coastal and underwater archaeology for BA students from the Dept. of Archaeology.



THE HATTER DEPARTMENT OF MARINE TECHNOLOGIES

This fall semester we began teaching in our fully accredited (first of its kind in Israel) MSc program in Marine Technologies. This essentially completed the final stage in recognizing the department as a regular department and the "under establishment" supplement was removed from the Department's logo. We are busily preparing for the Charney School Yearly Research Cruise in collaboration with the Department of Maritime Civilizations to "Exploring the Seabed for Historical and Archaeological Targets". This promises to be a fascinating research voyage during which we plan to deploy our underwater vehicles and prove their capabilities in assisting research deep-sea research. New technologies in object recognition, acoustic communication, and in the maneuvering of underwater vehicles will be incorporated in the field for the first time.

Photo by H. Nativ

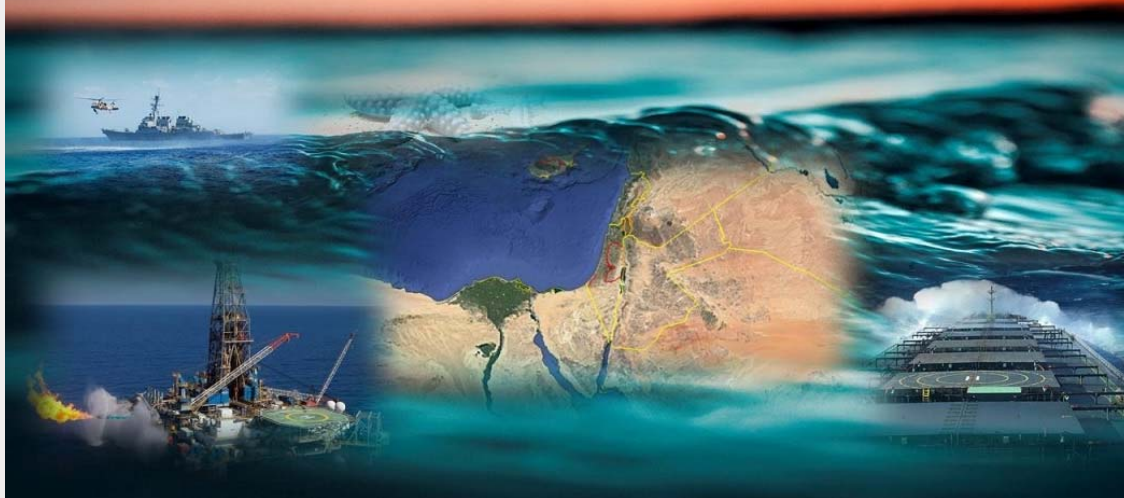


THE DR. MOSES STRAUSS DEPARTMENT OF MARINE GEOSCIENCES

This past fall semester has been busy for our Department with several high profile workshops, meetings, and visits. Dr. Regina Katsman and Dr. Yitzhak Makovsky successfully organized, chaired, and hosted the 14th annual conference on Gas in Marine Sediments (GIMS). Dr. Yitzhak Makovsky also helped organize the Geosciences Technology Workshop which was the first meeting ever held in Israel of the prestigious American Association of Petroleum Geologists (AAPG). Dr. Uri. Schattner organized and chaired a get-together of world-renowned experts during the 6th Haifa Conference on the topic of "Tectonics in the Oceans" held in November as a tribute to Prof. Zvi Ben Avraham the Founding Head of the CSMS. At the beginning of 2019 we participated (Dr. Michael Lazar, Prof. Tom Levy) in a high resolution shallow geophysical survey offshore northern Israel with researchers and students from the University of San Diego and in a Geophysical survey in Caesarea with San Diego State University (Dr. Michael Lazar, Dr. Beverly Goodman-Tchernov, Prof. Allen Gontz). Dr. Revital Bookman and Dr. Beverly Goodman-Tchernov hosted a high-level delegation from the University of Bremen to discuss student exchange and cooperation.

NEW PARTNERSHIPS

התמחות בלימודי ביטחון לאומי ואסטרטגיה ימית



JOINING FORCES ...FOR GREATER IMPACT.

This past semester The Charney School of Marine Sciences has joined forces with the newly opened program offering an MA in National Security and Maritime Strategy Studies at the University of Haifa's School of Political Sciences. Maritime security is one of the latest additions to the vocabulary of international security. The increase of the maritime security agenda is reflected by expanding interest among maritime scholars on questions of "order at sea" in an age of globalization, and in its increasing significance in national strategic, policy and doctrinal publications. This program, headed by Prof. Shaul Chorev, specializes in National Security and Maritime Strategy, and provides its participants with state-of-the-art developments in the field as well as applicative analytical tools within a broad interdisciplinary research approach. The Charney School of Marine Sciences faculty contribute their expertise by teaching perspectives of marine sciences focused on the Mediterranean Sea and provide joint supervision for graduate student projects and theses (**For more information:** <http://hms.haifa.ac.il/index.php/en/>).

CSMS faculty have also contributed chapters in the "2018 Maritime Strategic Evaluation for Israel" published annually by the Maritime Strategy and Research Center (HMS) at the University of Haifa. The annual report focuses on the Eastern Mediterranean and the Red Seas and includes a review of global developments and trends in the maritime domain that are likely to have an influence on the Eastern Mediterranean region and on Israel in particular. The Maritime Strategic Evaluation for Israel includes recommendations to various policy makers, primarily those in Israel. (Link: <http://hms.haifa.ac.il/index.php/en/maritime-evaluation>)

WELCOME!



DR. ANDREA PRICE

Joining us with a prestigious Zuckerman Post-Doctoral Fellowship to work with Dr. Nicolas Waldmann (Dept. of Marine Geosciences) to study the "Late Pliocene-Early Pleistocene enhanced humidity in the Levantine corridor: insights from marine and lacustrine records". Dr. Price received her BSc and MSc in Earth and Ocean Sciences (2010, 2012) from the University of Victoria (Canada). She completed her PhD in Physical Geography (2016) at McGill University (Montreal, Canada) where she developed organic-walled microfossils called dinoflagellate cysts as indicators of nutrient pollution in NW Atlantic coastal waters. Dr. Price went on for a Post-Doctoral Fellowship (2 years at the Dept. of Oceanography and Coastal Sciences at Louisiana State University(USA) to study oceanographic processes in the Gulf of Mexico.



DR. YOAV LEHAN OPENED A NEW LABORATORY FOR CROSS-DISCIPLINARY MARINE STUDIES.

We integrate state-of-the-art remote sensing technologies with in-situ measurements to investigate understanding the role of ocean circulation in controlling marine systems and regulating key interactions between their components. Our research involves close national and international collaborations, which opens the way for a synergy between a wide variety of scientific domains, including ocean dynamics, ecology of marine microorganisms and top-predators, and dynamics of the sea surface microlayer. Our current interdisciplinary projects, include the Charney School of Marine Sciences monthly cruises to the THOMO observatory, and a project aimed at investigating physical and biological controls on jellyfish swarms dynamics in collaboration with Dr. Tamar Lotan and Dr. Daniel Sher (Marine Biology).



DR. NIMROD MAROM

Nimrod Marom joins the Department of Maritime Civilizations as a senior lecturer. Nimrod has received his BA in Archaeology at the Hebrew University of Jerusalem (2004) and his PhD at the University of Haifa (2011), completing his postdoc at the University of Chicago (2012). He specializes in the analysis of vertebrate faunas from Quaternary archaeological and paleontological sites, using these to study human-animal interactions through time. Nimrod is the PI of the ERC-funded DEADSEA-ECO project (<https://sites.google.com/view/deadsea-eco/home>), which studies the effect of top-down human impact on mammal communities in antiquity through the study of archaeological and paleozoological sites in the Judean Desert.

HIGHLIGHT ON OUR INTERNATIONAL COMMUNITY...

THE MARINE MICROBIOLOGY LAB HEADED BY DR. LAURA STEINDLER REFLECTS OUR INTERNATIONAL COMMUNITY.

Welcome to our two new MSc students **Xinyu Tang** from China and **Chiara Conti** from Italy joining us in September and February, respectively and adding international flavor to our other students from Germany **Markus Haber** and India **Kumar Saurav**.



[Read more](#)

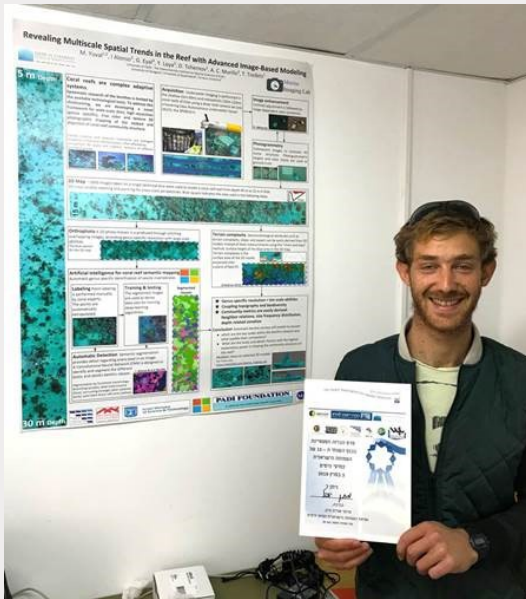
CONGRATULATIONS



ISRAELI SCIENTIST FROM UNIVERSITY OF HAIFA CHOSEN AS MEMBER OF the Science Advisory Group (SAG) of the International Continental Scientific Drilling Program (ICDP).

Dr. Nicolas Waldmann from the Department of Marine Geosciences has been recently chosen as a member of the Science Advisory Group (SAG) of the International Continental Scientific Drilling Program (ICDP). SAG is an independent body of internationally renowned experts from the research fields covered by ICDP projects. It has the task of carrying out a thorough scientific evaluation of the individual competing proposals submitted to ICDP and to compile a priority list based on expected scientific merits. The recommendations of the SAG are the primary input to the ICDP management committee as it develops projects for both annual and long-range programs.





Tal Luzzatto Knaan (Post-doctoral Fellow Marine Biology) won the **2019 Best Oral-Presentation Award** at the Meeting of the Israeli Association For Aquatic Sciences for her work on "Variation and stability in the physiology and metabolome of *Prochlorococcus* life cycle in mono vs. co-culture."

Matan Yuval (MSc Student Marine Technologies & Marine Biology) won the **best poster award at the 2019 annual meeting of The Israeli Association For Aquatic Sciences** for his work "Revealing Multiscale Spatial Trends in the Reef with Advanced Image-Based Modeling"

CONFERENCES AND SEMINARS



THE 6TH HAIFA CONFERENCE ON THE TOPIC OF "TECTONICS IN THE OCEANS"

Was held in November 2018 as a tribute to Prof. Zvi Ben Avraham the founding Head of the CSMS – who has retired from this position. Zvi continues to lead the unique consortium of the Mediterranean Research Center of Israel to further develop partnerships and research on the Mediterranean Sea. The meeting brought together an amazing crowd of distinguished scientists from around the world and ex-students and post-docs who came to honor Zvi. The two days were a huge success and kudos go to Dr. Uri Schattner, Bracha Zimmerman and the entire CSMS staff. As was commented by Dr. Itzik Makovsky – "It is hard to find such an event that brings together so many of the top names in the field - maybe only at a Noble Prize reception".



THE 14TH INTERNATIONAL CONFERENCE ON GAS IN MARINE SEDIMENTS (GIMS14)

held in Haifa, Israel, from October 14 to 20, 2018. The interdisciplinary conference brought together geologists, biologists, microbiologists, geophysicists, oceanographers, geochemists and scientists from other disciplines in order to facilitate interdisciplinary and international cooperation. The forum provided a platform for current knowledge and future programs in methane inventories, fluxes and their role within the carbon cycle and biodiversity.

[Read more](#)

CSMS SCHOOL-WIDE SEMINARS

During our fall-semester CSMS seminars we hosted excellent talks by renowned international scientists: Dr. Ingo Pecher (University of Auckland, New Zealand); Prof. Christian Betzler (Institute of Geology at the University of Hamburg, Germany); and Prof. Michelle Portman (Technion, Israel) gave excellent talks in the wide Marine Sciences discipline. The spring-semester's program includes Prof. Itay Halevy (Weizmann Institute), Prof. Ilana Berman-Frank (Charney School of Marine Sciences), and Prof. Jonathan Belmaker (Tel Aviv University). Altogether, the seminar series is designed to highlight the multidisciplinary perspectives of the marine-sciences community

RESEARCH HIGHLIGHTS



CORALS IN THE FUTURE OCEANS.

As shallow water corals continue to decline world-wide, determining their adaptive mechanisms will help predict impacts to community composition and the resilience of coral reefs world-wide in face of global changes. **Dr. Tali Mass from Dept Marine Biology (CSMS) and Dr. Gretchen Goodbody-Gringley from the Bermuda Institute of Ocean Sciences (BIOS)**

joined strengths to conduct a comparative study between corals from Eilat (Red Sea) and Bermuda (Atlantic Ocean), the two most northerly coral reefs in the world.

Photo by H. Nativ

[Read more](#)

MEDITERRANEAN STYLE RED-SEA PARROTFISH IN THE BYZANTINE NEGEV

The discovery of significant amounts of Red-Sea parrotfish bones in the trash mounds of Byzantine settlements in the Negev, such as Shivta and Haluza, raises significant questions of fish preservation and transportation in antiquity, commercial channels connecting the Red Sea and the Byzantine Mediterranean, and cultural influences of the Mediterranean basin over the Negev society. **Dr. Gil Gambash from the Department of Maritime Civilizations** teamed up with the ERC project 'Crisis on the Margins of the Byzantine Empire', led by Prof. Guy Bar-Oz from the Archaeology Department, to look for answers in the culinary preferences and cook-books of the period. The results of the research will be published soon in The Journal of Near-Eastern Archaeology.



Photo: One of the six Atlantic salmon bones recovered from Finnish prehistorical archaeological sites.
Photo: Don Butler

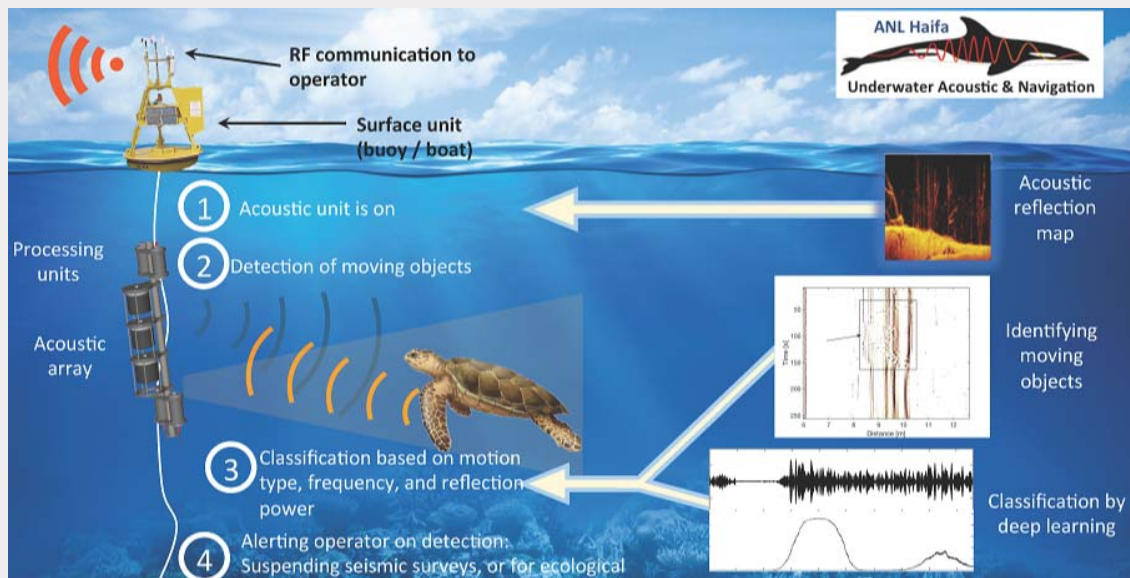
RARE EVIDENCE FOR PREHISTORIC SALMON FISHING

Salmon fisheries are thriving industries in many places across the north, and they have been so for hundreds of years, judging from historical sources. The antiquity of this readily available nutrition source is however much less known because salmon bones – the evidence used by archaeologists to tell that these fish were part of past human diet – are very rare in northern areas. Throughout Finland, for example, out of thousands of Stone Age (dating 10,500–3,500 years ago) settlements, only six bones were identified in over 100 years of archaeological exploration. An international team led by **Prof. Ruth Shahack-Gross from the Department of Maritime Civilizations** recently published a newly developed method, based on mineralogical transformations of heated salmonid bones, in the prestigious journal *Scientific Reports*. The research was spearheaded by post-doctoral fellow at the Charney School for Marine Sciences, Dr. Don Butler. Together with Finnish archaeologists the study provides, for the first time, direct evidence for the utilization of salmon resources up north in a 5,600 years old Neolithic site.



WHAT CAN WE LEARN FROM ANCIENT TSUNAMIS ?

Dr. Beverly Goodman-Tchernov from the **Dept. of Marine Geosciences** and her research team have been studying this and related questions intensively. Visiting Fulbright Senior Scholar Professor Jennifer Irish and Professor Robert Weiss (here on Sabbatical this semester from Virginia Tech, USA) have joined the team to work on a Ministry of Energy funded project to examine the impacts of tsunamis on the Israeli coastline. Dr. Goodman's scientific work has increased national awareness to Tsunami impacts. Thus, Dr. Goodman and her team participated in the National Tsunami Drill March 17th, 2019 in Tel Aviv with UN representatives and international observers coming the following day to Caesarea to hear about the active research and findings. Another Tsunami workshop will be held on April 14th to highlight the research results from the Ministry of Energy Tsunami Research Grant with postdoctoral researcher Dr. Sharon Molchanov presenting her work.



WHAT CAN SOUNDS BENEATH THE WAVES TELL US?

The Underwater Acoustic and Navigation Laboratory, headed by Dr. Roee Diamant, exceeded the present state-of-the-art in terms of transmission rate and successfully transmitted (acoustically) long SMS messages to a distance of 100 km. Moreover, the lab's team performed successful experiments (in closed pools and at sea) to detect sea turtles from ~ 700 m away (see schematic above). The importance of their work was recognized by a YNET on-line feature (<https://www.ynet.co.il/articles/0,7340,L-5481401,00.html>) that is important also in helping raise public awareness for the protection of sea-turtles. The team also developed a novel autonomous system for detecting sharks and scuba divers using active acoustics, and is continuing developments on cyber security in underwater communication networks, target detection in sonar imagery, and detection of acoustic signals. During the first half of 2019, the team of the Underwater Acoustic and Navigation Laboratory successfully deployed the deep water marine observatory (THEMO - a joint project between University of Haifa and Texas A&M University). The mooring is deployed 55 km west of Haifa at a water depth of 1500 m and is already transmitting on-line continuous environmental data that is essential to understand the alterations in this rapidly changing environment.



ENHANCING WHAT WE SEE UNDER THE SEA...

The Marine Imaging Lab headed by **Dr. Tali Treibitz** is developing powerful methodology for km-scale image-based mapping with genus-specific resolution, followed by automatic coral identification (in collaboration with Mr. Alonso and Dr. Murillo from the Univ. of Zaragoza, Spain). This protocol is currently in development in the Red Sea (at the Interuniversity Institute for Marine Science - Eilat) and in the Eastern Mediterranean (with the Morris Kahn Marine Research Station).

In May 2019, Aviad Avni and Matan Yuval, members of Treibitz's group will visit St. Eustatius in the Eastern Caribbean to conduct wide-scale mapping of selected dive sites around the island and to expand the automatic coral-identification abilities of our module applying Caribbean corals. Two highly different environments in terms of their sessile community structure were chosen.



OUTREACH AND COMMUNITY WORK



in the picture (from right to left): Dani Ben-Harush, Ivgeni Gotnick (CSMS), Omri Zvik, Dor Mandel, Ofer Honan, Sharon Farber (CSMS), Shai Karni.

THE JOYS OF OUTREACH.

Sharon Ferber from The Sub Sea Engineering lab in the Department of Marine Technologies, Leon H. Charney School of Marine Science has been collaborating with Carmel Zvulun High School Mechatronics class for the past three years, mentoring a group of scholars in the world of underwater sea engineering while developing an open source autonomous ocean glider underwater vehicle as part of the scholars' graduation project. The developed glider is an unmanned vehicle deployed underwater for autonomous measurements of environmental water column characteristics such as temperature, salinity, pH, and more. **This week, the scholars participated and won the 1st prize in a national competition for Robotics and Engineering after presenting their glider to the evaluation judges and fellow students**



"GOOD DEEDS FOR THE COMMUNITY DAY"

We would like to express our thanks and appreciation to everyone who took part in the Charney School of Marine Sciences staff's voluntary activity within the framework of the "Good Deeds in the Community Day" which took place on March 27th in the Carmel National Park, in the grounds of the Muhraqa Monastery, organized in collaboration with the University of Haifa's "Flagship Project".

This was a doubly rewarding educational experience combining both giving and receiving.

Volunteering and contributing for the good of society, the environment and the community creates a strong connection between people that are interested in volunteering and between organizations that are in need of volunteers.

We would be glad to receive your ideas for future activities within the community for the good of the community in advance of the next "Good Deeds in the Community Day".

UPCOMING EVENTS - SAVE THE DATE!



JULY 2ND, 2019. NAVAL ARCHITECTURE AND OFFSHORE-STRUCTURES CONFERENCE

The University of Haifa, Department of Marine Technologies will host, for the first time, the conference on Naval Architecture and Offshore Structures in collaboration with the Technion, faculty of Mechanical Engineering and the Israel Navy. The conference will focus on new developments on marine and naval platforms, offshore structures and underwater technologies. It is anticipated that more than 150 participants will attend the conference. Lectures will be given by members of academic faculties, industry and navy.



JANUARY 14TH -15TH, 2020. THE 7TH HAIFA CONFERENCE ON MEDITERRANEAN SEA RESEARCH- FOOD FROM THE SEA

One of the most significant challenges at present is how to secure the supply of the huge amounts of food that will be needed to feed the world's future population. Today, nearly 1 billion people (about 13 percent of the world's population) suffer from hunger and malnutrition on a daily basis; freshwater shortages are increasing in many parts of the world, and there is a growing global shortage of land suitable for growing agricultural crops. Most experts agree that to meet the challenge of feeding the world's future population, we will have to turn to the oceans which comprise 71% of our planet's surface and can potentially provide significantly increased quantities of marine-based protein. **STAY TUNED FOR MORE INFORMATION.**

[Read more](#)



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