



**Committee for the Evaluation of Marine Sciences
Study Programs in Israel**

**Hebrew University of Jerusalem
Oceanography Graduate Program
Evaluation Report**

June 2018

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Chapter 1: Background

The Council for Higher Education (CHE) decided to evaluate study programs in the field of Marine Sciences during the academic year of 2017-2018.

Following the decision of the CHE, the Vice Chair of the CHE appointed a Committee consisting of:

- **Prof. Colin Brownlee – Committee Chair.** *University of Southampton, UK.*
- **Prof. Isabel P. Montañez** – *University of California, Davis, USA.*
- **Prof. Larry Mayer** – *University of New Hampshire, USA.*
- **Prof. Adina Paytan¹** – *University of California, Santa Cruz, USA.*
- **Prof. Yonathan Zohar²** – *University of Maryland, USA.*

Ms. Molly Abramson served as the Coordinator of the Committee on behalf of the CHE.

Within the framework of its activity, the Committee was requested to:³

1. Examine the self-evaluation reports, submitted by the institutions that provide study programs in Marine Sciences, and to conduct on-site visits at those institutions.
2. Submit to the CHE an individual report on each of the evaluated academic units and study programs, including the Committee's findings and recommendations.
3. Submit to the CHE a general report regarding the examined field of study within the Israeli system of higher education including recommendations for standards in the evaluated field of study.

The entire process was conducted in accordance with the CHE's Guidelines for Self-Evaluation (of January 2017).

¹ In accordance with the CHE's policy, Prof. Adina Paytan did not participate in the evaluation of the Oceanography Graduate Program at the Hebrew University to prevent the appearance of a conflict of interests.

² In accordance with the CHE's policy, Prof. Yonathan Zohar did not participate in the evaluation of the School of Marine Sciences at Ruppin Academic Center to prevent the appearance of a conflict of interests.

³ The Committee's letter of appointment is attached as **Appendix 1**.

Chapter 2: Committee Procedures

The Committee held its first meetings on February 4th, 2018, during which it discussed fundamental issues concerning higher education in Israel, the quality assessment activity, as well as Marine Sciences Study Programs in Israel.

In February 2018, the Committee held its visit of evaluation, and visited Ben Gurion University, the Hebrew University of Jerusalem, Ruppin Academic Center and Haifa University. During the visits, the Committee met with various stakeholders at the institutions, including management, faculty, staff, and students.

This report addresses the Oceanography Graduate Program at the Hebrew University of Jerusalem. The Committee's visit to the Hebrew University took place on February 6th, 2018.

The schedule of the visit is attached as Appendix 2.

The Committee thanks the management of the Hebrew University of Jerusalem, and the Oceanography Graduate Program for their self-evaluation report and for their hospitality towards the committee during its visit at the institution.

Chapter 3: Evaluation of the Oceanography Graduate Program at the Hebrew University of Jerusalem

This Report relates to the situation current at the time of the visit to the institution, and does not take account of any subsequent changes. The Report records the conclusions reached by the Evaluation Committee based on the documentation provided by the institution, information gained through interviews, discussion and observation as well as other information available to the Committee.

1. Executive Summary

The Institute for Earth Sciences at The Hebrew University of Jerusalem (HUJI), as one of the first graduate programs in Oceanography, has the potential to provide state-of-the-art postgraduate training and to meet an identified national need for marine science. Faculty and researchers in the Oceanography Graduate Program come from the Institutes for Earth Sciences and Life Sciences as well as the Interuniversity Institute in Eilat creating a dynamic that is challenging to synergize. It is essential, however, that the Oceanography Program has a stand-alone identity with a clear vision and strategic plan. The recent appointment of a new Program Director represents an important positive step forward but requires that specific guidelines and responsibilities of that post are clearly defined. An investment of new resources to the program, overseen by the Program Director, is necessary to develop the 'common denominators' needed to build a coherent ocean science community of students and staff in which silos of speciality are minimized. The appointment of a non-academic coordinator (assistant) to complement the Director's effort in building the Oceanography academic community is strongly recommended.

The Oceanography Graduate Program has a strong focus on marine geochemistry, whereas biological and chemical oceanography are insufficiently represented. Approaches for greater integration of students and faculty from the Institute for Life Sciences are needed. A mechanism should be developed to ensure that the contributions of the cross-institute faculty to interdisciplinarity are recognized along with their contributions to their respective fields during the Promotion and Tenure process. In the longer-term, an administrative coordinator with appropriate authority and without allegiance to an individual faculty should be considered to facilitate this process. It is essential that areas of expertise of retiring faculty members be kept in mind when making future hires in the Oceanography Graduate Program and that new hires are guided by a clear strategic plan in order to strengthen the biological component of the Oceanography Graduate Program. In a national context, HUJI should consider opportunities for more integration with programs offered by other universities and research institutes.

2. National Marine Science Program

The Committee recommends that the institutions which deliver Marine Science study programs in Israel should strive to better coordinate and integrate activities at the

national level in order to enhance the overall experience of students and scientists engaged in the Marine Sciences, avoid redundancies and maximize outcome and benefits through diverse and prestigious programs:

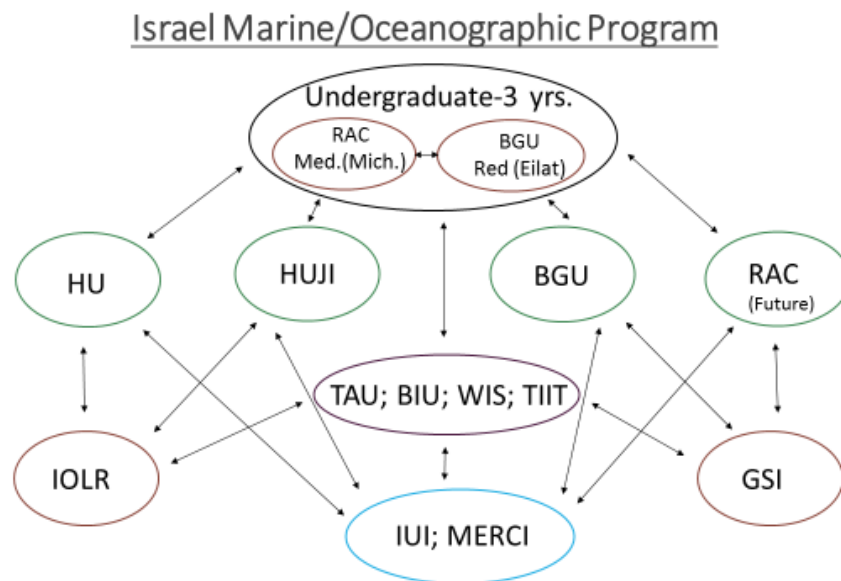


Figure 1. Schematic of nationally coordinated marine study programs showing two full three-year undergraduate programs, one at BGU (3 years in Eilat) and one at RAC. Undergraduate programs feed students to all current marine graduate institutions and to other non-marine graduate programs that carry out marine research: Tel Aviv University (TAU), Bar Ilan University (BIU), Weizmann Institute (WI), Technion Institute (TIIT). Double-headed arrows represent graduate programs that provide teachers to the undergrad programs. Graduate programs feed students and teachers to IUI and MERCI (for university-wide courses) and collaborate (students, teachers) with Research Institutions (IOLR, GSI) through which graduate students may study for higher degrees at research institutes; scientists from research institutes teach at undergrad and grad programs.

The following conclusions and recommendations of the Committee hereinafter derive from the proposed national marine science program (see Figure 1 above).

3. Background

The Hebrew University continues to provide one of the first postgraduate programs in Oceanography to be established in Israel. The Evaluation Committee (hereafter referred to as “the Committee”) noted that the Institute for Earth Sciences (IES) provides an excellent resource for broad studies in earth system science, including marine science. As such, the IES has the potential to provide state-of-the-art postgraduate training in ocean sciences and in meeting an identified national need for marine science.

The Committee noted that the program is historically pioneering and still leading in many aspects, in particular in the subarea of geochemical sciences. The Committee noted that the program has moved away from biological oceanography in recent years and has had much less interaction with the Institute for Life Sciences. In this context, it is challenging for the faculty from the Life Sciences to participate in the Oceanography Program given the demands on their time and expectations for promotion dictated by their home institute.

The Committee noted that it is important to consider oceanography training and research in a national context. The HUJI Oceanography program in the Faculty of Mathematics and Natural Sciences at HUJI exists in a changing landscape with developments taking place in a number of areas and locations nationally. With the recent funding of the Mediterranean sea Research Center in Israel (MERIC) and developments at Ben Gurion University, Haifa University, and the Marine Science Program at the Ruppin Academic Center, a good degree of integration both internally and with other organizations, will be an important component of a national initiative.

4. Leadership and Academic Faculty

The Committee noted that a strong vision, identity and strategy for an integrated and inclusive Oceanography Graduate Program did not appear to be well developed at HUJI. Faculty in the Oceanography Program come from the IES as well as the Institute for Life Sciences. A small number of faculty are also based at the Interuniversity Institute in Eilat (IUI). The Committee also noted that it was unlikely that the University's higher administration would consider this program as a stand-alone unit. However, the recent appointment of a new Program Director represents an important positive step forward so long as the specific rules and responsibilities for that post are clearly defined and agreed upon at all levels. In addition, it is considered that the appointment of a non-academic coordinator (assistant) would be beneficial to enable the Program Director to focus on the academic issues of the program. The role of the non-academic coordinator would be to coordinate a wide range of program activities, including a HUJI-IUI oceanography seminar series and workshops, as well as in the national context. Across the IES, there is strong support for growing the Oceanography Graduate Program. It is clear that there are differing views between the different stakeholders on the development of the program, including future hiring directions, and how this could be resourced. There did not appear to be a clear forum for discussion of program strategy and directions.

The Committee was presented with a comprehensive funding plan by the Program Director to establish *The Hebrew University Oceanography Center*. The Committee commended this initiative but considers that it is important to first establish the Program's vision, mission, coherence and synergy prior to moving forward with plans for development of a Center or a Department. The Committee also noted that this plan was not included in the preliminary material presented to the committee and was only

presented during the site visit. A different vision for a HUJI virtual Department of Oceanography was presented by the Director of the IUI.

The Committee further noted that biological and chemical oceanography are not well represented in the Oceanography Graduate Program, while there is a strong focus on marine geochemistry. It was considered that the Program would benefit from being more well-rounded in structure. It was noted that within the Oceanography Graduate Program two faculty members have retired and three more are approaching retirement, potentially threatening the viability of the Program. However, this also represents a unique opportunity to rejuvenate and re-balance the Program. Additional options for increasing the number of faculty were discussed, including jointly-funded appointments with other programs at HUJI or institutes such as IUI. A lack of recognition for teaching in Promotion and Tenure process for senior faculty was considered to be a contributing factor in the limited course diversity, especially in the discipline of marine biology. It was also noted that the Oceanography Graduate Program has no directly allocated Full Time Equivalents (FTEs) that would create a sense of identity and ownership. The absence of recognition by one faculty for effort spent in teaching or supervising students in another faculty was noted as a constraint on delivering a truly interdisciplinary oceanography program.

5. Students and program structure

In 2017, there were 10 MSc and 10 PhD students and 4 postdocs in the Oceanography Graduate Program. However, the Committee noted a 2-fold discrepancy between the student count registered in Oceanography vs. those *affiliated* with Oceanography but registered in other programs. The Committee considered that working to more formally recognize the affiliated students will enhance teaching opportunities. This goes hand in hand with the establishment of a clear, nationally recognized identity for the Oceanography Graduate Program.

Students and alumni appeared generally very satisfied with their experience. However, the Committee heard from multiple groups that the Oceanography program is not a true interdisciplinary program, rather its character reflects its host, i.e. the Institute for Earth Sciences. It was also noted that in the past the Oceanography program has been jointly overseen by the life and geological sciences, and as such was more diverse and balanced.

It was noted that the Oceanography Graduate Program does not have a particularly strong identity. Rather, students tend to choose their graduate study programs according to the individual faculty members. While this reflects the strong reputations of the supervising faculty, it is considered better if students made choices based on both advisor and attractiveness of the study program. This also creates a very limited pool of prospective graduate students who are aware of the individual faculty

members. A program with a national identity could attract a much broader pool of applicants.

Some believe having more of the core courses at IUI with a distance-learning option for the HUJI-based students would be better, as the faculty at IUI want their students to be there to engage more effectively and continuously in the research. The Committee noticed that students felt that if distance learning was available for mandatory credit (i.e. part of the required courses) this would be attractive.

In a national context, the Committee noted that there are opportunities for better integration with other programs offered by other universities (Figure 1). IUI for example could play a major part in this. A recent evaluation of marine research institutes has recommended that a more nationally-coordinated research program is developed. The Program Director noted that currently it is difficult to establish formally shared teaching programs in Israel despite common educational foci and goals of the universities and colleges offering a Marine Sciences or Oceanography program.

Chapter 4: Recommendations

Essential:

- 1) The Program Director together with the faculty members should define the vision, structure and guidelines of the Oceanography Graduate Program. These should aim to build the synergy and identity required to regain and maintain the historical national reputation in Oceanography that the Program has previously enjoyed. The establishment of this clear identity and vision can then be used as a framework for a program development plan for future growth and diversification. This should include active joint participation with the Institute for Life Sciences, so that the Program truly represents the full breadth of oceanographic science and become more broadly appealing to prospective students.
- 2) Considering the complexity of researchers from multiple departments and institutes, the specific rules and responsibilities of the new Program Director should be clearly defined and agreed upon.
- 3) In developing a plan, it is important that the Program Director is given resources to develop the 'common denominators' needed to build a coherent ocean science community identity and one in which silos of specialty are minimized. Seed funding is needed to establish incentives for faculty and students to strengthen and diversify research and mentoring collaborations (small seed grants), coordination within the faculty via an Oceanography seminar series, distance learning facilities to interactions and sharing of information.
- 4) Appointment of a non-academic coordinator (assistant) should be made so that the Program Director can focus on the academic issues of the program, whereas the non-academic assistant can work across institutes, faculties and in the national context to coordinate program activities.
- 5) In order to ensure the continued viability of the Oceanography Graduate Program, Institute and Faculty heads must ensure that recent and future retirees are replaced with other marine scientists. However, the hires should be guided by a clear strategic, programmatic and hiring plan, to make sure the program becomes balanced again, with strengthening of the biological oceanographic sciences.
- 6) Options for increasing the number of cross-institute faculty should also be considered. Faculty Deans should ensure that faculty members working across institutes/departments must be given credit specifically towards their promotion and tenure process, for teaching in the Oceanography Program or supporting interdisciplinary activities and effort.
- 7) The Program Director should ensure that students from the Institute for Life Science who register in the Oceanography Program are not disadvantaged in any way in regards to courses and course scheduling.

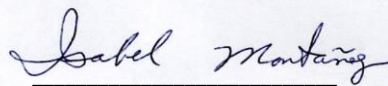
Desirable:

- 1) Once better established, the Oceanography Graduate Program should consider building ties with the new Faculty of Computer Science and Engineering.

Signed by:



Prof. Colin Brownlee - Chair



Prof. Isabel Montañez



Prof. Larry Mayer



Prof. Yonathan Zohar

Appendix 1: Letter of Appointment



January 2018

Prof. Colin Brownlee
Director, the Marine Biological Association of the United Kingdom
Professor within Ocean and Earth Science
National Oceanography Centre Southampton at the University of Southampton,
UK
Committee Chair

Dear Professor,

It is with great pleasure that I hereby appoint you to serve as chair of the Council for Higher Education's Committee for the Evaluation of the study programs in **Marine Sciences**. In addition to yourself, the composition of the Committee will be as follows: Prof. Isabel P. Montañez, Prof. Larry Mayer and Prof. Adina Paytan.

The Israeli Council for Higher Education (CHE) and its' Planning and Budgeting Committee (PBC), strive to ensure the continuing excellence and quality of Israeli higher education through a systematic evaluation process. By engaging upon this mission, the CHE seeks: to enhance and ensure the quality of scientific research and academic studies, and to ensure the continued integration of the Israeli system of higher education in the international academic arena.

As part of this important endeavor, we reach out to world-renowned scholars to help us meet the challenges that confront the Israeli higher education by accepting our invitation to participate in our international evaluation committees. This process establishes a structure for an ongoing consultative process around the globe on common academic dilemmas and prospects.

We therefore deeply appreciate your willingness to join us in this crucial enterprise.

Ms. Molly Abramson will be the coordinator of the Committee.

Details regarding the operation of the committee and its mandate are provided in the enclosed appendix.

We wish you much success in your role as a member of this most important committee.

Sincerely,

Prof. Ido Perelman
Vice Chair,
The Council for Higher Education (CHE)

Prof. Yaffa Zilbershats
Chair,
The Planning and Budgeting Committee (PBC)

Enclosures: Appendix to the Appointment Letter of Evaluation Panels

cc: Dr. Varda Ben-Shaul, Deputy Director-General for QA, CHE
Ms. Molly Abramson, Committee Coordinator

Appendix 2: Schedule of Visit

<u>Marine Sciences - Schedule of site visit</u> <u>Hebrew University of Jerusalem</u> <u>February 6th, 2018</u>		
09:15-09:45	Opening session with the heads of the institution	Prof. Asher Cohen - President Prof. Barak Medina – Rector Prof. Berta Levavi-Sivan – Vice-Rector & Head of the Office of Academic Assessment & Evaluation.
09:45-10:15	Meeting with the Head of the Institute of Earth Sciences	Prof. Yehuda Enzel
10:15-10:30	Break	Closed-door meeting of the committee
10:30-11:30	Meeting with the Head of the Oceanography Graduate Program	Prof. Yeala Shaked
11:30-12:15	Meeting with Senior Academic Staff*	Dr. Miguel Frada Dr. Adi Torfstein Prof. Boaz Lazar Prof. Nathan Paldor
12:15-13:00	Lunch (in the same room)	Closed-door meeting of the committee
13:00-13:45	Tour of Facilities	Geochemistry Lab (Profs. Shaked & Torfstein), Coral Lab (Prof. Erez), Niv Center (Profs. Agnon & Hall), Paleomagnetism Lab (Dr. Shaar)
14:15-13:45	Meeting with the Head of the IUI in Eilat (& a Senior Academic Staff)	Prof. Amatzia Genin
15:00-14:15	Meeting with M.Sc. Students* **	
15:00-15:45	Meeting with Ph.D. Students * **	
15:45-16:30	Meeting with Alumni (both M.Sc. and Ph.D.) * **	
16:30-16:50	Closed-door meeting of the committee	
16:50-17:15	Closing meeting	Prof. Asher Cohen - President Prof. Barak Medina – Rector Prof. Berta Levavi-Sivan – Vice-Rector & Head of the Office of Academic Assessment & Evaluation.