EVALUATION OF LIFE SCIENCES STUDIES

THE HEBREW UNIVERSITY

COMMITTEE FOR THE EVALUATION OF LIFE SCIENCE STUDIES IN ISRAEL

September 2023

Section 1: Background and Procedures

1.1 In the academic year 2022, the Council for Higher Education [CHE] put in place arrangements for the evaluation of study programs in the field of Life Sciences and Biology in Israel.

1.2 The Higher Education Institutions [HEIs] participating in the evaluation process were:

- Achva Academic College
- Ariel University
- Bar Ilan University
- The Hebrew University
- The University of Haifa
- Technion
- Tel Aviv University
- Weizmann Institute

1.3 To undertake the evaluation, the Vice Chair of the CHE appointed a Committee consisting of[1]:

- **Prof. Lynne Regan** – Institute of Quantitative Biology, Biochemistry and Biotechnology, Edinburgh University, UK. *Committee chair.*
- **Prof. Joseph Buxbaum** – Department of Psychiatry, Icahn School of Medicine at Mount Sinai, USA.
- **Prof. Edna Cukierman** – Cancer Signaling & Microenvironment Program, Fox Chase Cancer Center / Temple Health, USA.
- **Prof. Orna Elroy-Stein** – Shmunis School of Biomedicine and Cancer Research, Tel Aviv University, Israel.
- **Prof. Mark Hauber** – School of Integrative Biology, The University of Illinois at Urbana-Champaign, USA.
- **Prof. Bruno Lemaitre** – School of Life Science, École polytechnique fédérale de Lausanne (EPFL), Switzerland.
- **Prof. Carol Shoshkes Reiss** – Department of Biology, New York University, USA.
- **Prof. Shai Shaham** – Developmental Genetics, Rockefeller University, USA.
- **Prof. Vincent Tropepe** – Department of Cell and Systems Biology, University of Toronto, Canada.

Anat Haina served as the Coordinator of the Committee on behalf of the CHE.

1.4 The evaluation process was conducted in accordance with the CHE's Guidelines for Self-Evaluation (January 2022). Within this framework the evaluation committee was required to:

- examine the self-evaluation reports submitted by the institutions that provide study programs in Life Sciences and Biology;
- conduct on-site visits at those institutions participating in the evaluation process;

[1] The committee's letter of appointment is attached as **Appendix 1**.

- submit to the CHE an individual report on each of the academic units and study programs participating in the evaluation;
- set out the committee's findings and recommendations for each study program;
- submit to the CHE a general report regarding the evaluated field of study within the Israeli system of higher education including recommendations for standards in the evaluated field of study;

1.5 The evaluation committee examined only the evidence provided by each participating institution — considering this alongside the distinctive mission set out by each institution in terms of its own aims and objectives. This material was further elaborated and explained in discussions with senior management, lecturers, students, and alumni during the course of each one-day visit to each of the institutions.

1.6 In undertaking this work, the committee considered matters of quality assurance and quality enhancement — applying its collective knowledge of developments and good practices in the delivery of higher education in Life Sciences and Biology (mainly from European countries and North-American countries) to the evaluation of such provision in Israel.

Section 2: Executive Summary

The Alexander Silberman Institute of Life Sciences (AS-ILS) at the Hebrew University of Jerusalem (HUJI) is renowned for its exceptional research. It comprises six departments with over 70 active research laboratories and has gained national and international recognition for its scientific achievements in the life sciences. The institute's strong reputation attracts top trainees in Israel. The combination of highly qualified principal investigators (PIs) and the influx of talented staff and trainees, further strengthens the research caliber of the institute.

The organizational structure of the Institute as a collection of departments spanning life sciences, provides a useful framework for collegial governance and a coherent approach to supporting high-caliber teaching and research in different fields with shared needs in terms of research resources and pedagogical approaches. However, it appears that the current model of budget allocation to the AS-ILS and the centralized bureaucracy that requires tiers of approval, is stifling the Institute’s ability to realize its full potential. AS-ILS leadership and senior faculty aspire to become an independent Faculty at the University, as a means to rectify these problems. Having said that, many of the functional and organizational issues within the Institute could be addressed with greater independence of the Chair to make decisions on financial and academic matters, and a refined allocation of budget to the AS-ILS that puts more weight on research achievements.

Our review of the Departments of Biological Chemistry, Ecology, Evolution & Behavior, and Genetics, were generally positive, and we also met successful trainees and faculty from these Departments. The relationship of AS-ILS to ELSC (Edmond & Lily Safra Center for Brain Sciences), or the other entities, such as the Grass Center for Bioengineering or the Institute of Environmental Science, that compete with the Institute departments, harms the viability of

the departments of Bioengineering and Neurobiology. These are issues that are of an immediate concern and should be addressed.

The programming for the bachelor's level courses was considered excellent by the students and by the Evaluation Committee. The MSc program was similarly well structured. By contrast, the PhD program was much less well organized as described in the sections below, despite the excellent students enrolled in the program. There does not seem to be a formal educational structure leading to very different experiences among students, few opportunities for feedback and evaluation on whether they are achieving their milestones, and limited counselling and guidance on career development. Many of the issues raised by graduate students are serious and would be best handled by creating a centralized Graduate School at the level of the Faculty.

Faculty members in AS-ILS are internationally recognized for their excellence in research and the Institute has an excellent complement of technical and administrative staff. Faculty recruitment packages are generous and competitive with most peer institutions, except for PhD fellowship support, which falls short of national norms in this discipline. Challenges with recruiting faculty that want to live in Jerusalem were also identified as an issue. Teaching loads were considered adequate, but more weighting for non-frontal based teaching should be considered. Gender disparity is significant and greater effort should be made to address this issue, including enhancing the maternity leave policy. Similarly, there should be a greater effort to enhance diversity in the faculty ranks and staff.

AS-ILS should develop a strategic research plan with the goal of recognizing the entire group's scientific potential and areas in need of growth. Highlighting the importance of life sciences for sustaining HUJI's national standing, will emphasize the need for allocating funds to reinforce the institute's recognized focus.

The age of the Silberman building dictates the state of some of its facilities. Older labs are in need of renovation. We learned about abandoned plans to utilize existing and potential spaces to enhance overall institutional infrastructure. Consideration should be given to resuming this planning process and making real investments to improve the quality of spaces for the AS-ILS community. The Institute would also benefit from an improvement of the core's instrumentation that is critically needed *in situ* (e.g. live imaging, cell sorting) whereas other services (sequencing, mass-spec) could be abandoned locally in favor of outsourcing nationally or internationally. A dedicated annual budget for sourcing large, shared equipment needs for the AS-ILS would greatly enhance research capacity and allow labs to stay at the cutting edge.

Section 3: Observations

3.1 The institution and the parent unit

The Faculty of Science and Math at HUJI includes 6 Institutes (Biology, Chemistry, Earth Sciences, Mathematics, Physics, and, most recently, Applied Physics). There are 17 different BSc tracks, and 6 graduate programs. The Biology program is called The Alexander Silberman Institute of Life Science (AS-ILS). The Faculty of Science and Math is led by a Dean, who reports to the Rector and President.

AS-ILS includes five Departments: Biological Chemistry; Bioengineering; Ecology, Evolution & Behavior; Genetics; Neurobiology; and, Plant & Environmental Sciences. The Institute is headed by a Chair, who reports to the Dean of the Faculty. Serious concerns arose around two of these five Departments, specifically Neurobiology and Bioengineering, as discussed in greater detail below. A significant challenge for the AS-ILS is the limited independence of the Institute Chair to make academic budgetary decisions. This limited independence influences the activities of the various committees in the department since decisions and recommendations to the Chair may or may not be enacted and the Chair feels powerless because there is limited discretionary budget. It is recommended to remove bureaucratic barriers and streamline the Institute's approval processes to ensure that the AS-ILS Chair has more academic authority in the decision-making processes.

We heard throughout the day that the 2009 CHE review recommended that the Institute become a Faculty, effectively separating from the rest of the non-life science departments. The President proactively indicated to this Evaluation Committee that this was a difficult proposition that made little practical sense because life science based research exists in the Faculties of Medicine, Agriculture, and various Centers. This is common to many international institutions. The Evaluation Committee did not have the opportunity to review information from these cognate units as it relates to life science research and teaching since it was not in our purview. However, the Committee sees the poor organizational and functional structure of AS-ILS, and the problematic graduate program, as more immediate concerns (See in Section 3.3 Department/Study Program). In addition, if the current leadership and senior faculty of AS-ILS have not addressed these issues (or shown appropriate awareness of them to the Committee) it is hard to understand how things will improve simply upon a restructuring as a Faculty.

It seems the core of the issues expressed by the Institute members and Chair relate to the model of budget allocation and the centralized bureaucracy requiring tiers of approval. In principle, these issues could be addressed within the context of the existing academic structure, with critical refinements. For example, instead of distinct Departments, the institute could be organized in clusters/areas with "academic leads" in these areas within AS-ILS. This flexible organization would eliminate the redundancies of staff and space resources to increase efficient operations. More importantly, the budget allocated to AS-ILS should acknowledge its outstanding research quality by increasing the weighting for research revenues and not relying so heavily on undergraduate enrollment numbers. For a given student enrolled, supporting one outstanding math professor is not the same as supporting one outstanding life science professor. The University must acknowledge that if they want to be at the cutting edge of life science research, and the biotechnology innovations that emerge for it, then they need to differentially invest in their life science academic unit. Providing the AS-ILS Chair with a more discretionary budget and streamlining the approval process could be transformative for the Institute.

At the same time, the President asked for a "candid assessment of the inner structure of life sciences" and also asked, "what kind of interdisciplinary connections can be improved." The Committee shares its views below, with the caveat that, over the course of the day, the Committee learned that at least one of the most active programs in life sciences (ELSC) was considered outside the purview of CHE Evaluation Committee. If the University were

interested in a robust evaluation, it should make sure that the Committee is able to evaluate all the programs involved in the educational mission in life sciences.

3.2 Internal Quality Assurance

HUJI has an internal quality assessment mechanism and a detailed quality assessment policy. The self-evaluation to guarantee internal quality assurance was taken very seriously by the HUJI management team at all levels. The visit of the Committee the HUJI was well organized, allowing the Committee to discuss current issues faced by HUJI, although in the case of the relationship between Neurobiology and ELSC there was less transparency. Professors and students express their points of view with freedom. Of note, the two students representing the alumni (one of them being a PhD student at HUJI) were not at all representative, revealing a weakness of HUJI regarding alumni.

The Office of Academic Assessment & Evaluation, which reports to the University's Academic Policy Committee (headed by the Rector), monitors the implementation of recommendations provided by internal review committees and those appointed by CHE. It seems that in the current case, this policy was not fully executed, as a significant number of CHE recommendations listed in response to the previous self-evaluation report (SER) have not been implemented. The current SER together with our discussions with the President, Rector, Dean, Chair of Teaching & Students Affairs, and Chair of the Silberman Institute clearly indicated that the position holders at all levels were fully aware of the existing deficiencies. It undoubtedly pointed to a main problem which is the lack of budget. They state that the SER preparation has helped them to raise awareness of important issues and to set up a systematic way of gathering important information in the future.

In addition, the Committee was informed about the problematic situation of the Silberman Institute for Life Sciences with respect to the 'Faculty of Sciences and Math' ability and desire to meet their needs. We learned that the HUJI inner budgeting model is mostly based on undergraduate-teaching parameters, while a much smaller portion of it is based on research outcomes. Since the Silberman Institute for Life Sciences is an experimental research entity with additional teaching responsibilities, it is seriously affected by the deficit of its allocated budget. Our discussions with senior academic staff with and without tenure highlighted the budget-related difficulties they encounter, which force them to find resources for needs related to the execution of top-notch research, since the support from the higher management is minimal.

There was no concrete action plan set to address several challenges that were highlighted by the current SER process. Some of the improvements (such as hiring excellent new faculty) were not achieved through a structured action plan. Infrastructure limitations remain. The number of undergraduate programs increased, while the computational biology program moved to a different School.

The main problems raised in the previous CHE report is related to the Silberman Institute for Life Sciences not being an independent faculty. We got the impression that the refusal to allow the institute to function as an independent faculty/school mostly stems from budgetary motives, as it will increase the administrative burden, while reducing by 30% the size of the current Faculty. The existence of other institutes carrying research in life sciences at HUJI, that are not integrated under a single umbrella, is another challenge. The Committee did not settle

on a strong and specific recommendation regarding the delicate question of the reorganization of life sciences in an independent faculty. It however hopes that a creative solution will emerge to unify research and teaching in life sciences at HUJI while limiting bureaucracy. Thus, one future challenge is to increase the visibility of life sciences at HUJI, while facilitating quick and efficient decision-making.

The Department evaluated its overall performance in Internal Quality Assurance:

(1=unsatisfactory, 2=needs significant improvements, 3=needs minor improvements, 4=satisfactory, 5=highly satisfactory)

	1	2	3	4	5
				X	

The Evaluation Committee evaluated the Department's overall performance in Internal Quality Assurance:

	1	2	3	4	5
				X	

Although the self-evaluation to guarantee internal quality assurance was taken very seriously by the HUJI management team, a significant number of CHE recommendations listed in response to the previous self-evaluation report (SER) have not been implemented.

3.3 The Department/Study Program

AS-ILS includes five Departments. Our review of the Departments of Biological Chemistry, Ecology, Evolution & Behavior, and Genetics, were generally positive, and we also met successful trainees and faculty from these Departments. In contrast, the programs in Neurobiology and Bioengineering appear to the Committee to be moribund. In the case of Neurobiology, this appears to be largely due to the competing Edmond and Lily Safra Center for Brain Sciences (ELSC). We note that we were not given information about ELSC or about other entities (e.g., the Grass Center for Bioengineering, or the Institute of Environmental Sciences) that are potentially quite relevant to the effective function of AS-ILS.

Over the course of the day and from our review of websites, we learned that there are three programs in neurosciences. The first is the Neurobiology Department in AS-ILS, which according to data provided and discussions held over the course of the day, is tiny and shrinking. We also learned that that Department does not try to recruit new faculty because of competition (with ELSC, see below) and that it is effective a vestigial department.

The second unit is the ELSC, which is focused on systems neuroscience, computational neuroscience, psychology, and cognitive neurosciences. The appealing space and modern

layout in ELSC are in stark contrast to those in the Silberman building. ELSC reports directly to the President and hires exceptional neuroscience applicants, but there is no apparent coordination between ELSC and the Neurobiology Department. ELSC was not formally reviewed by the Committee, and there was little or no discussion from anyone in leadership or in senior faculty about the vestigial nature of the Neurobiology Department in AS-ILS. This is in spite of the fact that all neurobiology courses are in fact taught by members of ELSC. (When probed, the Chair of the Institute noted that he did not have the authority to bring ELSC into the evaluation because it is not under life sciences.)

The third program is the Department of Medical Neurobiology (DMN) at the Faculty of Medicine (on a separate campus), which is the largest and one of the best programs of its kind in Israel, and elsewhere.

Thinking about just the Neurobiology Department, these three entities (together with the Brain Disease Research Center, which provides travel and graduate awards) have an opportunity to support each other and create a multidisciplinary, broad, and exciting structure that would be incredibly attractive to undergraduate and graduate students, to postdocs and faculty interested in neuroscience. Instead, they remain as isolated fiefdoms, apparently competing for resources, space, and personnel, and this is to the detriment of each of the units.

The Neurobiology program within AS-ILS should be reinvigorated and there should be a division of focus that is mindful of ELSC and DMN. Specifically, neurobiology in AS-ILS should consider focusing on molecular and cellular neurobiology, and animal models. These are areas that leverage the colocalization with biochemists and molecular biologists in AS-ILS, and are not a focus of ELSC. Neurobiology in AS-ILS should also be built in a manner that considers the strengths of parallel programs in DMN. In this way, each of the three programs can legitimately say that all areas of modern neuroscience are covered across the campus, and that students have an opportunity to interact and interface with other labs and departments. Even simply having a common listserv of lectures and events, as well as an annual neuroscience retreat — where all three entities come together – would go a long way to developing a culture where students, trainees, and faculty have opportunities to be exposed to all aspects of modern neuroscience, develop collaborations, consider future laboratories for advanced (graduate or postdoc) training, and consider options for a potential, future faculty position.

We do not know what other biology disciplines there are that might have similar complex structures. We recommend that the HUJI leadership look at all of the Departments in AS-ILS and other relevant programs on campus, and make efforts to integrate the programs in a thoughtful manner, in order to provide the best training and research environment.

In addition, programs like ELSC should also be part of the CHE review.

The programming for the bachelor's level courses was considered excellent by the students and by the Committee. Reasonable educational structures are in place to cover necessary materials. As a specific example, students noted that the integrated biology and chemistry program was thoughtfully developed and easier to navigate than a more common dual major. The result of this thoughtful approach was that the course load was less burdensome and the structure well-defined.

Students felt that their issues and concerns about courses are generally listened to. There are several honors programs within the BSc, all of which include an obligatory research project in the final year; some of the programs that are cross-disciplinary (such as biology/chemistry) have a similar requirement. Even though research projects are not required for other programs, the majority of students appear to do some sort of lab work. The payoff for such a well-developed study program is clear: The BSc students were exceptional, and faculty had access to these excellent trainees.

The MSc program has a strong education structure. In contrast to the BSc and MSc programs, the PhD program was much less well organized, and has systemic issues that are unacceptable. These issues are described in detail below, but key issues are as follows: the PhD program has no formal educational structure. Students noted that MSc and PhD courses are to be selected from the same pool. They simply choose amongst courses that they did not take in their MSc, and take them during the PhD, to achieve the necessary credits. Surely there should be advanced and specific courses in a PhD program, including exposure to fellowships and grant writing, dissection/critique of publications, science writing, and speaking, etc., not to mention advanced concept courses within specific disciplines.

Another issue is the nature of the graduate school experience for each student, which is almost entirely controlled by the laboratory they work in. Salary, job security (with funding coming from a PI who may or may not have funds for the duration of the doctorate), availability of travel funds, expectations for giving science talks over the course of the PhD, duration of PhD, and, support for personal, practical and professional matters, were all largely under the control of the PI. The PhD committee meetings, which would be a natural means to begin to address some of these issues, were seen as nothing but 'rubber-stamp' committees.

The Evaluation Committee believes that many of the issues raised by graduate students are serious and would be best handled by creating a centralized Graduate School at the level of the Faculty as detailed in section 3.5. Further recommendations for the Study Program are also found in the same section below.

The Department evaluated its overall performance in Study Program:

(1=unsatisfactory, 2=needs significant improvements, 3=needs minor improvements, 4=satisfactory, 5=highly satisfactory)

	1	2	3	4	5
				X	

The Evaluation Committee evaluated the Department's overall performance in Study Program:

	1	2	3	4	5

				X	

The study plan for the BSc level courses was considered excellent by the students and by the Committee. Progress should be made at the PhD level. The split of neuroscience in different units is regrettable, considering the added value of unifying them.

3.4 Teaching and Learning Outcomes

The Committee was impressed by the diversity of courses offered in AS-ILS at the BSC level, as well as the strong commitment of faculty members to teaching. Students recognize that they have chosen the Hebrew University because it provides them with the best quality teaching in life science in Israel. The Students the Committee met with did not raise any criticism about a single course, and when they had concerns in the past, the school was responsive. The integration of new students into HUJI was sometimes perceived as a challenge, but the mentoring established for first year-students by second year and third year students was judged beneficial. Specific tracks for excellent students have been successfully developed.

HUJI Teaching policy and procedures documentation is re-evaluated yearly and published on the main website in three languages. Specific Faculty's additions for graduate students are published only in Hebrew, and should at least be available also in English, for the benefit of international students. There is a computerized mechanism for updating curricula and syllabi. In future SERs, it is recommended to add to the course names in addition to their numbers, for more efficient tracking. The syllabi provided to the Committee included information on more than 500 courses given in 2021. It would have been preferable to provide more structure to the syllabi, for example to core courses and elective courses given in life science studies.

Courses are evaluated by students through online questionnaire surveys done at the University level. Importantly, a council of students provides the faculty and Chair of teaching feedback on course quality. Students serving in this council mentioned during the site visit that their comments are taken seriously by the faculty. Collectively, the Committee felt a good connection between students and faculty members; the latter appear to pay attention to the students' requests. Teaching evaluation serves as an important factor in academic faculty promotion. However, except for problematic cases, there is currently no program for routine monitoring of teaching skills. These should be developed or deployed.

The Teaching and Learning Center provides a wide range of courses and workshops to improve teaching and apply modern techno-pedagogical tools. There is an excellent learning portal in Hebrew and English, and a yearly teaching orientation day. Recently recruited faculty members are required to take the basic teaching workshop before their tenure procedure commences, but not before they start teaching. It is recommended to ask new faculty to complete their basic teaching workshop during their first year on campus. Personal mentoring is also offered by this center, but the SER mentioned that it is too rarely used by faculty members. The Chair of Teaching and Student Affairs should make this workshop and personal mentoring mandatory for faculty receiving low grades. Also, senior faculty members should

be encouraged to participate in workshops representing modern-teaching tools, in order to maintain teaching proficiency and/or develop new pedagogic skills.

Importantly, faculty was trained for remote teaching and online evaluation of students learning using the Moodle technology. Many final exams are conducted through Moodle by using features that allow students to answer open-ended questions. The exams are held on campus, using university computers connected to an internal net system that does not allow students to communicate with the outside world during the exam.

Efforts made to include open-ended questions via Moodle exams are endorsed by the Committee. Additional evaluation methods such as seminars and writing papers should be seriously considered. Teaching in smaller classes and using more quizzes and homework exercises are recognized by the Committee as essential, but they require additional TA positions. There is awareness for testing Low- and High- order cognitive skills (LOCS and HOCS), but the budget for TAs is low.

Various types of teaching methods are used at the HUJI, although frontal lectures dominate. Faculty members however regret that the development of online teaching has led to a drop in course attendance. The Committee recognizes that the re-establishment of normal campus life is a challenge faced by many universities that require remedies. This in-campus life is however critical for learning and for favoring student life fulfillment in a community.

Documents related to Intended Learning Outcomes (ILOs) descriptions were heterogeneous in terms of course syllabi. More information on the content should be provided alongside a table of content. A uniform format and a clearer description of each course's ILOs would be more useful for students to avoid redundancy between courses. The ILOs are reviewed by a committee every year. The SER did not provide an easy way to navigate through the BSc and MSc tracks. An overview of the various study tracks with mandatory or optional courses would be useful to the Evaluation Committee. A student mentioned the existence of a study track with a pre-defined set of courses; it was perceived positively by some students to avoid the cumbersome task of course selection.

The SER reflects the awareness of the teaching body of the importance of various tools for ILO evaluations, in addition to final exams. The SER states that in large courses 70-90% of the final grade is based on multiple choice questions, and a few simple open-ended questions. 15% of exams are taken with open books. Some courses use 10-15% of the final grade based on weekly tutorials in small groups. Sometimes lab reports consist of 25-50% of the final grade.

The Committee endorses the fact that HUJI welcomes Arab students from both Israel and the West Bank. 20% of the incoming BSc students are from the Arab communities. Considering the high attrition rate of Arab students, HUJI has developed a preparatory program prior to their first academic year. This preparatory year aims to address language difficulties, learning skills, and cultural differences, among other issues that should be further developed to enhance chances for academic success. This preparatory year could also be opened to international students to facilitate their integration.

Language mastering (Hebrew and English) and the development of writing and oral skills seem to be an important challenge at the BSc level. The Committee was pleased to see that the Chair of Teaching was aware of all these issues, trying to find remedies.

The Department evaluated its overall performance in Teaching and Learning Outcomes:

(1=unsatisfactory, 2=needs significant improvements, 3=needs minor improvements, 4=satisfactory, 5=highly satisfactory)

	1	2	3	4	5
				X	

The Evaluation Committee evaluated the Department's overall performance in Teaching and Learning Outcomes:

	1	2	3	4	5
				X	

The Committee recognizes the strong commitment of the Institute to teaching, and its willingness to find solutions.

3.5 Students

As part of the Institute of Life Sciences, the Hebrew University offers an undergraduate BSc degree, as well as graduate MSc and PhD degrees. BSc studies are carried out over a 3-year period, MSc degrees typically take 2 years to complete, and those students pursuing PhDs spend 5 years pursuing their research. The Committee interviewed students from all degree programs as well as two alumni of the MSc program. The provided documents indicated that PhD students finished their studies in four to five years. But the students the Committee met all said that they did not know anybody who finished in four years, and most commonly more than five years. Of greater concern was that the Committee learned that the timing of the end of the PhD is negotiated by the student with the PI: the student comes to the PI and suggests that they are ready to wrap up, and the PI, who may have a differing opinion and/or competing interests, can then agree or disagree. The existence of student thesis committee that can follow the progresses and help to finalize the date of end would allow to address those issues.

The Evaluation Committee was impressed with the outstanding BSc program and with the enthusiasm of the students for their studies. Students repeatedly cited the high level of the courses, the high quality of the instruction, the prominent national standing of the degree program, the research opportunities available, and the support to those struggling with their studies. Admission to the honors programs depends on university entrance exams or performance in first year classes; these honors programs appear to be successful in attracting motivated students who seek exposure to research. Importantly, BSc students all agreed that they are listened to by the faculty and course organizers, and that problems that arise are taken seriously.

The major criticisms voiced by BSc students we interviewed were the heavy course load coupled with lack of information regarding flexibility in scheduling specific courses. The Committee believes that the latter issue could be addressed by specifically informing students first entering the University of scheduling and course selection options, and by posting relevant information on the program website. Another concern raised by students was the apparent lack of a Course Manager when several faculty members co-taught a course. There was overlap in content and expectations were not clearly communicated.

While the BSc program is highly organized, and commands the attention of the administration, the MSc and especially PhD programs have several issues discussed point by point below:

1) Salaries and stability: MSc and PhD student fellowships, which depend on faculty funds (on an annual basis) and Teaching Assistantship salaries, are not uniform, which can create a sense of resentment among students. Moreover, the TA allocation is not regularized and students are not certain that they will have the opportunity to serve and also to earn the supplements. The Committee heard of cases where PhD students needed to switch labs after the first year of their studies, and were asked to pay first-year tuition, normally covered by TA-ships, again, out of pocket. There are also too few slots for the teaching needs.

2) Student academic life: Because students are recruited directly into labs, they have only limited interactions with faculty other than their direct mentor. The existence of a doctoral school will break student isolation creating a community spirit.

3) PhD courses and career advices: As stated above, the number of courses specific to PhD is too limited in scope and number. There is no career counselling for graduate students, and as a result, many are not aware of opportunities for postdoctoral fellowships to study abroad. In addition, students are not exposed to non-academic career options they could pursue following graduation. Although a yearly university-wide career fair exists, it appears to focus exclusively on biotech positions, and is not substantive. Indeed, one of the alumni we interviewed reported getting career planning advice through a Jerusalem municipal program, because resources at the University were not available.

4) Conflict and mental health: Students who face conflicts with their mentors and other personnel, or who are having other difficulties are not aware of opportunities for help and report that they "try to solve problems on their own". One student suggested that mental health support for graduate students is minimal, and that the University tends to focus its counselling resources on BSc students. The main source for graduate student advising and assistance in the Institute appears to be a single person, the Secretary for teaching and student affairs. The Evaluation Committee was concerned that in the absence of this person, students are left with no one to turn to.

5) PhD thesis committee: As indicated above, the Evaluation Committee believes it is important to conduct yearly meetings of the student thesis mentoring committee (and not only two after two years (PhD) and six months before the end of their studies). This will not only allow scientific evaluation of student progress, staving off difficulties that would otherwise not be addressed, but would also be a forum where students could discuss (in the absence of their mentor) non-scientific issues that may be affecting their progress.

6) Access to conferences: While travel to conferences is covered by the University, we found that most graduate students were unaware of the availability of these funds.

7) Websites: The websites describing the graduate program and other aspects of the Institute often have outdated information, and do not address many topics relevant to graduate student life in the Institute

8) Disabilities: It was of concern that students with disabilities felt that they were actively encouraged to 'overcome' the disability. In two examples, students with learning disabilities who had accommodations given to them under the Bagrut program (after neuropsychological testing) were refused accommodations at the University. Progress should be done to better support students with disabilities.

The Committee believes that many of the issues raised by graduate students are serious and would be best handled by creating a centralized Graduate School at the level of the HUIJ Faculty. Such a school, whose purpose would be to assist with navigating every aspect of graduate student life, is commonplace in many universities across the world and is an invaluable resource. While creating such a school would involve a modest financial investment, a more well-adjusted graduate student body would likely result in higher scientific productivity, which will ultimately increase grant revenue to the University.

The Department evaluated its overall performance in Students:

(1=unsatisfactory, 2=needs significant improvements, 3=needs minor improvements, 4=satisfactory, 5=highly satisfactory)

	1	2	3	4	5
				X	

The Evaluation Committee evaluated the Department's overall performance in Students:

	1	2	3	4	5
		X			

The Evaluation Committee was impressed with the outstanding BSc program and with the enthusiasm of the students for their studies. However, there were major issues at the Master and especially the PhD programs.

3.6 Academic Faculty and Human Resources

The SER states that there are 62 faculty members in the AS-ILS, representing approximately a 10:1 ratio of undergraduate students to faculty members. The Chair also stated that there are ~15 emeritus faculty with very active research programs, and he estimates that, overall, AS-ILS has ~50% more PIs than other institutes in the Faculty.

In the last 5 years, there have been 10 retirements and resignations that have all been replaced as well as at least two net new positions, suggesting that the faculty complement has modestly increased during this period. Within the next 2 years, another 4 faculty members are scheduled to retire. The pattern in the data suggests that these positions will be replaced, but we did not receive specific information that searches to fill these positions have been approved. We heard from the President that there are budget constraints and that not all positions requested will be approved. He also described an interest in prioritizing positions that were interdisciplinary (giving bioconvergence as a specific example) between biology, engineering, and computer science, though these are situated in different faculties. How this might align with the AS-ILS 5-year strategic plan remains uncertain.

The procedures for recruitment and promotion based on research excellence are generally uniform across the institution with some differences based on the disciplines. Nonetheless, the Evaluation Committee heard that the time it takes for approvals can be excessive (because of the added administrative level of Faculty/dean approval) and in the case of recruitment, this could put the Institute at a disadvantage if there is strong competition with other Universities for the same candidate. In some cases, however, there is even internal HUJI competition for PI recruitment; this is the case for neurobiology, where the Life Science Institute's faculty are relatively sparse, and strong new hires are picked up instead by the ELSC on the same campus.

Faculty members describe the promotion and tenure process as rigorous, fair, and transparent. This was not, however, the case for promotion to full professorship. Some felt that the discipline-specific expectations could be better articulated at the level of the department or during interactions with the junior faculty's mentor. In addition, more than one mentor per junior PI may benefit the latter's experience of the pre-tenure period.

We learned from the Dean that positions for Faculties are requested and approved in advance of a search. Assuming the top candidate from a recruitment process is strongly endorsed by the department search committee and Institute Chair, then the Evaluation Committee sees no reason why the final approval to make an offer should not be at the level of the Dean, cutting down the time and bureaucracy in this process.

The official policy for the university is that recruitment is based on research excellence, and other considerations, such as a specific field of study, are given less priority. These two criteria do not have to be mutually exclusive, but the AS-ILS administration as well as faculty members perceive this as a challenge in filling specific gaps in curricular and research coverage. We heard from some faculty members that their desire to recruit in specific fields in the Life Sciences could be vetoed if there is a top candidate in Chemistry or Physics, for example. However, this notion was firmly dismissed by the Dean who made it very clear that the process for requesting positions is bottom-up; departments make requests based on their needs and the Dean makes the case to the Rector and President for these positions. While the number of new positions may be less than requested based on budgetary constraints, departments are not competing from the Dean's perspective.

By national standards, start-up packages are considered excellent and very competitive (in most, but not all aspects) with peer intuitions. As one measure of the success of recruiting top scientists, we learned from the Institute Chair that >50% of newly recruited faculty receive prestigious ERC starter grants. Each new PI will receive 50% FTE funding from the University

for a lab technician, which can be supplemented to 100% (or more, to be competitive against industry salaries) through the PI's start-up and grant funding. We learned that the process for lab renovations begins when a PI retires and down-sizes their lab, and that this coincides with ~1 year before a new faculty member is hired and allocated the renovated space. This timing is not always successful, and some new faculty have had to wait up to a year or more for their lab space to be ready. In the meantime, the departments in AS-ILS make every effort to find temporary space.

There are challenges with recruitment, however. The first is the strong competition with the Weizmann Institute and the second is living in the City of Jerusalem. To tackle the first challenge, new resources for enhancing core equipment are necessary (see section on Infrastructure). We heard from the AS-ILS Chair that living in Jerusalem might be less attractive for some candidates given the city's religious and political climate. Obviously, this is a complex issue to address, but there could be better incentives for attracting and retaining PIs. For example, increasing the guaranteed fellowships for graduate students (currently provided at 1 grad student/lab that achieve an excellent ranking, after the start-up funds are exhausted), a process that has begun but only at modest levels, is one way to enhance the attractiveness of a PI's initial offer. A faculty member provided an analysis of the fellowship resources for new hires in life science faculties/departments at peer institutions. The results suggest that most provide 250k-300k NIS per year for graduate student fellowship support, whereas AS-ILS provides 80k NIS/year (and only just recently), which covers only (<) one PhD student. We recommend that the University rectify this competitive disadvantage for AS-ILS by increasing the support for PhD students.

In addition, the Evaluation Committee recommends that the President work with the CHE and City officials to develop incentives for recruiting faculty to the region. With the new High Tech/Biotech complex being built on campus, this would be an excellent opportunity to proactively plan for a collaborative recruitment strategy.

As described in the SER, frontal weekly teaching per semester averages approximately 1.72 hours/week at all faculty ranks. In addition, faculty members spend time teaching in tutorials, lab and field courses, and graduate student supervision. Three adjunct faculty are associated with the Institute and they teach approximately 2-3 hours/week. Through the SER, the Committee learned that faculty teaching loads are heavily weighted to frontal teaching, and given that experiential learning in small tutorial and lab and field courses is critical for life science education, teaching using these alternative modalities should be acknowledged with a more appropriate weighting.

We learned that there are ~90 staff in the AS-ILS, including lab managers in PI labs, core facilities, and teaching labs, as well as facility managers and administrative staff. The staff is described as highly qualified, professional, and valued by the Institute. We learned about specific areas in need of improvement. For example, the new SAP is extremely time consuming for ordering and purchasing for PI labs, and some labs have resorted to hiring administrative staff to support their operations. The recent push to provide better centralized support at the level of the institute for administrative tasks is a good approach, but it seems that additional staff are required as well as better training on new procurement systems. Staff recruitment, especially for lab managers, is challenging. The role of lab manager should be better defined

and appropriately compensated to match the job description, which would facilitate better recruitment and retention of these coveted positions.

The Department evaluated its overall performance in Academic Faculty and Human Resources:

(1=unsatisfactory, 2=needs significant improvements, 3=needs minor improvements, 4=satisfactory, 5=highly satisfactory)

	1	2	3	4	5
			X		

The Evaluation Committee evaluated the Department's overall performance in Academic Faculty and Human Resources:

	1	2	3	4	5
			X		

The Committee concurs with the institution's evaluation.

3.7 Diversity

Only 22% of the faculty (14 of 55) are women at the ranks of Senior Lecturer and Associate Professor and less (17%) at the rank of Full Professor. The gender disparity is significant and greater than most other life science departments or faculties at peer institutions internationally. As stated in the SER, there are no minority faculty members in AS-ILS (being Arab, Ethiopian, or Haredi). Administrative staff also appears to be almost entirely Israeli Jews, which is surprising in Jerusalem, a heterogeneous city. It is clear that equity and diversity at the faculty ranks requires attention and dedicated effort in future recruitment. It is recommended to engage in a more specific outreach to underrepresented faculty candidates and administrative staff.

The Chair and Vice Chair of Life Sciences indicated that the Institute is making a conscious effort to recruit more women by asking Department heads to use their research networks to encourage female applicants. Yet we learned that for the last 10 hires, 4 have been women and that an even greater proportion of job offers were given to women. Perhaps this networking approach has had some success, but the Evaluation Committee encourages the Institute to advertise positions more broadly (through research societies, peer institutions abroad, job bulletin boards, etc.).

Another suggestion is to consider the radical change of hiring postdocs from other Israeli institutions (Technion, Ben Gurion, Tel Aviv, for example), and not only relaying on the Israeli

standard to recruit women faculty who have had a postdoc abroad. Senior or mid-career women faculty members should also be considered.

Other aspects of the work environment could positively impact these efforts. For example, we heard from faculty members that only recently has there been more clarity and better financial support for maternity leave and an extended tenure clock when requested. Female faculty members were asked to serve on many more committees than their male counterparts, stating that each committee must include a female. Also, the Committee was surprised to hear that females were still expected to teach while on maternity leave. For graduate students and postdoctoral fellows, the Evaluation Committee was told that the lab PI/mentor uses research funds to cover the maternal leave of trainees. Although various accommodations for women on maternity leave are stated in the official university policy for Childhood and Parenting Leave, they seem not to be followed.

The Evaluation Committee has looked into the Israeli national and the CHE guidelines with respect to Maternity leave. CHE's regulation is that graduate studies scholarship **must** continue in the period of maternity leave. Institutions can limit the period to 15 weeks. Further, the National Insurance administration has defined regulations and support for pregnancy, maternity leave, for stillbirths, and other situations.[2]

Further, there are no dedicated spaces for breastfeeding/pumping to assist faculty and students when they return. Policy enforcement, and space planning to address these shortcomings are required and could make a very big difference in improving the reputation of the Institute as a supportive work environment for women.

Some faculty members indicated that ILS was not accommodating to the disproportionate impact of the COVID pandemic on the female faculty members who were caring for young children, trying to maintain their research, and to teach remotely. This was not only stressful, but when a request to delay the tenure clock was made, this was not received with compassion and empathy. Female faculty members should not be penalized for diminished productivity as a result of the pandemic. A year's delay in the tenure clock should be automatically granted.

The data provided in the SER indicate that the student body is overwhelmingly female. 70% BSc students are women; 61% MSc students are female and 56% PhD students. It is not apparent why there is attrition in the proportion of women as they progress through the degree program. This attrition of women from BSc to MSc to PhD programs must be examined, and where possible, the reasons should be addressed.

HUJI has some policies and programs to support students who are members of the Arab minorities, which are commendable. Nevertheless, the SER states that there are too few Haredi and Ethiopian students to provide this supplemental support; but no support programs for minority faculty & administrators was described. As Jerusalem is a city with a large plurality of Haredi students, some of whom (most likely the women) seek higher education.

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2 https://www.btl.gov.il/English%20Homepage/Benefits/Maternity%20Insurance/Maternity%20Allowance/Pages/Conditionsofentitlement.aspx

Many admitted students are challenged by financial, personal, educational, and social difficulties in work-life Balance. The “Minority Equality Unit” under the Dean of Students has a guidance program to promote academic excellence with group-specific offices. According to the SER, minorities are absent from faculty and (almost none) admin staff due to “sociological factors” not institutional policy. This paucity of minorities among the staff and students could be overcome by proactive searches.

The SER stated that programs that increased support for minority students led to more students enrolled in the graduate degree programs. This is something very positive and must be continued as well as expanded. Table 14 shows aggregate data, and does not break students down by degree: 7.64% Arab, 0% Ethiopian, and 2% Haredi. However, we were told that ~20% of the entering students were from the three Arab student groups (Israeli, East Jerusalem, and West Bank.

There appears to be a higher attrition rate of Arab BSc students who are admitted initially at rates proportional to their population. This is a nation-wide issue and may result from lack of academic preparation, the younger age of entering Arab students, who do not serve first in the military, and language barriers, although the specific causes for attrition at the Institute for Life Sciences have not been determined. The Committee was told that admissions criteria for Arab students may be lower than for their fellow Jewish students, which is not in line with CHE regulations. There may be financial and/or social pressures on this student cohort that are not as common among the other students in the degree programs. The Evaluation Committee was told that some Arab students were encouraged to take longer than 3 years to complete their BSc degree, and that this was successful in the goal of graduation. While there are some remedial and support programs directed to this heterogeneous group, clearly more effort for tracking the reasons students leave, and more resources are needed to enable successful completion of their studies

Furthermore, the Evaluation Committee was told that the insurance for non-Israeli students is inferior than of Israeli students, and may be inadequate when a student experiences a medical condition. In at least one case, the fee for the coverage was paid by a research mentor.

The Department evaluated its overall performance in Diversity:

(1=unsatisfactory, 2=needs significant improvements, 3=needs minor improvements, 4=satisfactory, 5=highly satisfactory)

	1	2	3	4	5
				X	

The Evaluation Committee evaluated the Department's overall performance in Diversity:

	1	2	3	4	5

		X			

The increasing support for minority students and the establishment of the Minority Equality Unit under the Dean of Students is laudable, but addressing issues of attrition for Arab BSc students, for example, requires greater attention. It is also important to clarify the accommodations for maternity leave and ensure there is a supportive work environment for women when returning from maternity leave. Faculty diversity should be prioritized for future hires; engaging in a more specific outreach to underrepresented faculty candidates and administrative staff is recommended.

3.8 Research

The Alexander Silberman Institute of Life Sciences at the Hebrew University of Jerusalem is renowned for its exceptional research. With over 70 active research laboratories, the institute has gained national and international recognition for its scientific achievements. The Institute's strong reputation in the field of life sciences/biology attracts top trainees in Israel. The combination of highly qualified PIs and the influx of talented individuals further strengthens the research caliber of the institute. One ready metric that reflects the excellence of the Silberman Institute is the success of PIs in receiving competitive grants, including ERC grants and ERC Starting Grants. ERC Starting Grants provide support for new recruits, demonstrating the high level of the newest faculty.

During the evaluation, it was observed that some fields within the institute would benefit from achieving critical mass, while others are already well-established. To address this, the Evaluation Committee recommends that faculty members engage in a series of brainstorming meetings, such as retreats, to identify thematic research strengths. By recognizing the scientific potential of the entire group and identifying areas in need of growth, the institute can consider reorganizing its departments and formulating a long-term strategic plan (e.g., 5 years - each time) to strategically attract and identify new PIs. This approach would facilitate the desired multidisciplinary research development.

Another area of concern highlighted by the Evaluation Committee is the perceived lack of influence the Institute holds within the Faculty. Despite generating a significant amount of high-quality research and obtaining grants successfully, the Institute's overall success in securing internal funding at the Faculty and University levels appears to be modest. To address this issue, the Committee suggests that a well-organized Institute, armed with a clear research strategic plan (as mentioned above), should collectively seek the Dean's support. This collaborative effort would emphasize the importance of life sciences for the University's future national standing and result in more targeted allocation of funds to support the recognized focus of the Institute.

The Committee also identified philanthropic donations as a potential obstacle to the research conducted at the Life Science Institute. It was observed that donor preferences often outweigh the actual needs of the research faculty members, creating a disparity in funding between different departments. For instance, the Edmond and Lily Safra Center for Brain Sciences (ELSC), which includes faculty members from the Life Science Institute, enjoys exclusive funding opportunities that are not accessible to other departments. The Committee

recognizes the resulting inequity in funding and research support, which leads to resentment among the faculty, and differing experiences among trainees. Therefore, the Committee recommends that relevant faculty members within the Life Science Institute come together to explore the possibility of unifying all relevant faculty members and research teams under a single umbrella within the Life Science Institute. This unified approach would enable them to collectively demand a revision of funding allocation by the University's leadership.

Lastly, the Evaluation Committee was informed that the University's centralized funds allocation has been redesigned to prioritize research excellence alongside teaching. This new approach, erroneously stated as akin to the VATAT's model, was expected to significantly improve funding for the Life Science Institute in general and individual research labs in particular. However, the Committee found no evidence of the promised positive effects.

In light of these findings, the Evaluation Committee urges the University leadership to recognize the contemporary value of life sciences as an essential discipline for the present and future of Israel. The Committee strongly recommends that the leadership take effective measures to rectify the allocation of funds, ensuring that research excellence is genuinely and meaningfully rewarded.

The Department evaluated its overall performance in Research:

(1=unsatisfactory, 2=needs significant improvements, 3=needs minor improvements, 4=satisfactory, 5=highly satisfactory)

	1	2	3	4	5
					X

The Evaluation Committee evaluated the Department's overall performance in Research:

	1	2	3	4	5
				X	

The AS-ILS is renowned for its exceptional research and strong reputation in the field of life sciences attracting top faculty and trainees in Israel. To further leverage this research excellence represented in the Institute, as well as across the University, it is recommended to brainstorm new ways to organize the subdisciplines and collaborate with cognate units. Assuring budgetary independence, recognition within the University, and fairness in making decisions are essential.

3.9 Infrastructure

The Institute of Life Sciences is based in two main buildings, one allocated mostly for the EEB Department (we did not visit this building), and one for the rest of the Life Sciences departments. Several other faculty members are also based at different buildings on campus, including the newly built Safra Neuroscience Center's building. Overall, the age (~50 years old) of the Silberman building dictates the state of some of its facilities we visited, including the oddly designed lecture hall (with columns blocking student view but supporting the electron microscopy suite above it), and the series of small and outdated lecture halls within the same building. Larger, introductory course lectures are given in other buildings to accommodate higher student numbers.

In turn, we visited both a recently and beautifully renovated, modern research lab space, which was designed according to the new PI's plans, and an older, outdated laboratory space used by a mid-career PI, where renovations would be much welcome. As we saw, new PIs are given the freedom and the space to plan their own laboratory spaces according to their needs, but this process is sometimes significantly delayed from the time of hire, with the initial year(s) spent by the new PIs in temporary research spaces until their lab is fully refurbished.

New PIs are given generous, internationally and nationally competitive start-up packages which can also include expensive instrumentation to be either housed at the core facilities of the Institute or at the PI's lab space itself, and it can be partly or predominantly used by the relevant PI as her/his research requires. In contrast, mid-career PIs have a hard time sourcing large and expensive instrumentation, as these are often handled at the Faculty level, where biologists have to compete with physicists, applied physicists, and chemists for institutional support for new equipment. The Committee felt that the facilities at Life Sciences did not match the high quality of the labs and their productivities.

In turn the Life Science Institute's Core Facilities have recently been united under a single directorate, and include spectroscopy, mass-spec, cell biology, next-generation sequencing, and bioimaging suites. These core facilities are staffed by PhD level scientists, some of whom are on University payroll whereas others are funded by Faculty/Institute funds. The services fees are relatively low for these core facilities, and are not designed to recover service contract costs, as these are expensive and not purchased along with the price of most of the instruments in the Core Unit. Some faculty members mentioned that much of their core-relevant research is still outsourced to facilities outside HUJI, and that perhaps the Institute would benefit from an improvement of the core's instrumentation that is critically needed *in situ* (e.g. live imaging, cell sorting) whereas other services (sequencing, mass-spec) could be abandoned locally in favor of outsourcing nationally or internationally.

The Institute houses up to 15 emeritus faculty members, many of whom are still actively funded by extramural research grants and generate patentable research products, but whose labs and spaces are readily made available for new recruits on a case-by-case basis. There is also more space available in the building for the development of new facilities and resources, including an empty atrium and perhaps an extra floor on top of the Silberman building, but these plans have not been put into the planning stage for quite some time now, because of financial constraints. In turn, the campus has been benefiting from recent and ongoing construction, including the Safra Neuroscience building and the High Tech/Biotech hub for

tech companies to be co-located on the edge of campus. This ongoing construction will also include faculty housing for new recruits, alleviating some of the costs and burdens of finding accommodations in an expensive city such as Jerusalem.

The Department evaluated its overall performance in Infrastructure:

(1=unsatisfactory, 2=needs significant improvements, 3=needs minor improvements, 4=satisfactory, 5=highly satisfactory)

	1	2	3	4	5
			X		

The Evaluation Committee evaluated the Department's overall performance in Infrastructure:

	1	2	3	4	5
		X			

There are several outdated laboratory spaces (for the non-recently hired faculty members) that need to be significantly updated/renovated.

Section 4: Conclusions and Recommendations

4.1 Conclusions

The Hebrew University's life science programs are academically strong, productive, and well-funded. They bring together distinct subfields of life sciences, some of which are very strong and others appear to be remnants of prior faculty strengths. However, recognition of the life sciences as a key discipline for the benefit of the University and STEM in Israel, is essential. The organizational structure of the Institute should be strengthened to remove bureaucratic barriers and streamline the Institute's approval processes to ensure that the AS-ILS Chair has more academic authority in the decision-making processes. Developing a strategic research plan with the goal of recognizing the AS-ILS's scientific potential and areas in need of growth will reinforce the importance of life sciences for sustaining HUJI's national standing and encourage the institution to prioritize research excellence in allocating resources.

The undergraduate program of study was considered excellent by the students and the Committee was impressed by the diversity of courses offered in AS-ILS at the BSc level, as well as the strong commitment of faculty members to teaching. While the graduate program was generally considered to be of high quality, the graduate student experience should be improved by considering ways to achieve more sustainable funding, strengthening

professional training, and reinforcing the importance of having regular thesis advisory committee meetings. The creation of a centralized Graduate School at the level of the Faculty should be considered in order to normalize the student experience across subdisciplines.

Faculty recruitment is generally successful and research start-up packages are considered competitive with peer intuitions, yet there is a need for increasing support for PhD students to better align with the norms across other institutions to maintain a competitive edge. Faculty members describe the promotion and tenure process as rigorous, fair, and transparent. This was not, however, the case for promotion to full professorship and steps should be taken to make this process more transparent. The gender disparity in the faculty and staff complement is an area in need of improvement. Finally, there is an urgent need to address aging infrastructure, especially for research labs, and core facility equipment in order to maintain the strong national standing in research. While there has been investment in infrastructure in some areas of the Faculty, different buildings have very different spaces and resources leading to quite disparate experiences for some faculty and students.

4.2 Recommendations

Essential

The University has to recognize the value of life sciences and allocate funds more generously to the Institute given its research contributions and the disproportionately large grant revenue it brings to the University.

The University, alongside the Institute, has to develop and implement a strategic plan to reorganize the life sciences research across the University to allow integration of the various life science research branches.

The University and Faculty need to create a centralized graduate school, whose purpose is to assist with navigating every aspect of graduate student life.

The University, alongside the Institute, has to develop and implement a strategic plan to reorganize the life sciences research across the University to allow integration of the various life science research branches.

The Institute should implement annual meetings of graduate students with their thesis mentoring committee, including, at the end of a meeting, discussion in the absence of the student research mentor. This allows early discovery of issues related to scientific progress, and a setting to bring up non-scientific issues of concern.

University and Faculty: Establish a uniform and transparent graduate student stipend scale to prevent the appearance of favoritism or discrimination.

The financial penalty for switching laboratories, particularly early on, in the PhD studies, has to be eliminated.

The Institute has to address issues of gender disparity among faculty members. This can be done by broadening the job advertisement in different global venues, and by instituting policies that provide a more supportive work environment for women with families.

Dealing with the outcomes of the COVID Pandemic, the Institute must ensure the tenure clock and/or tenure expectations are adjusted for all faculty members, to make up for diminished productivity pandemic.

The Institute has to put in place a tracking system to understand the reasons Arab BSc students leave the program, to reduce attrition without lowering the standard of admissions.

Important

The university should report on the different programs when Life Science is evaluated to allow the CHE committee to have a better view of the research done in Life Science at HUJI and assess the efforts to integrate these different programs.

The de-facto requirement for teaching while on maternity leave must be eliminated at once. The University must ensure employee and student rights are kept and enforced, and the proper accommodations are provided.

When providing course syllabi in the SER, the Faculty should make them easier to assess, by, for example, dividing courses into core requirements and electives.

The Faculty and Institute should update their websites, so that it has information about every aspect of Life Science student life at the university, including mentorship, fellowships, required timelines, travel opportunities, etc.

The Faculty must ensure the proper accommodations are given to students with demonstrated needs (such as learning disabilities) in courses and exams.

The Institute should establish regular career counseling events for students, to expose them to non-academic tracks (biotech, policy, patents, law, etc.).

The Institute should increase efforts in recruiting minority administrative and technical staff.

The Institute should establish regular contact with alumni. Tracking alumni career progression can contribute to help educating students about career opportunities outside the academy. Alumni are beneficial also for fund-raising, and for advertising the Institute.

Desirable

The University and Institute should engage in thoughtful space planning that covers: update of bioimaging core facility with modern instrumentation and other large shared equipment needs; renovation and update infrastructure of mid-career PI labs; renovation of small lecture

rooms in the Silberman building; and provision of private spaces for lactation rooms for new mothers.

The Faculty should provide a dedicated annual budget for sourcing large, shared equipment needs for the Life Sciences Institute

There is an attrition of women from BSc to MSc to PhD programs. The institute should examine these phenomenon, and where possible, address the reasons.

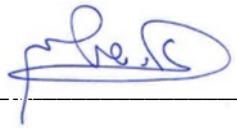
Signed by:

Prof. Lynne Regan
Committee Chair

Prof. Joseph Buxbaum

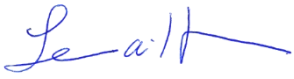
Prof. Edna Cukierman

Prof. Orna Elroy-Stein



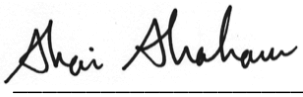
Prof. Mark Hauber

Prof. Bruno Lemaitre



Prof. Carol Shoshkes Reiss

Prof. Shai Shaham



Prof. Vincent Tropepe

Appendix I: Letter of Appointment

October 3, 2022

Prof. Lynne Regan,
Institute of Quantitative Biology, Biochemistry and Biotechnology,
Edinburgh University
UK

Dear Professor,

The Israeli Council for Higher Education (CHE) strives 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 academic studies, to provide the public with information regarding the quality of study programs in institutions of higher education throughout Israel, 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 academicians 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.

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

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 **Life Science and Biology** departments. Other members of the Committee will include: Prof. Joseph Buxbaum, Prof. Edna Cukierman, Prof. Orna Elroy-Stein, Prof. Mark Hauber, Prof. Bruno Lemaitre, Prof. Carol Shoshkes Reiss, Prof. Shai Shaham, and Prof. Vincent Tropepe.

Ms. Anat Haina will be the coordinator of the Committee.

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

Sincerely,

Prof. Edit Tshuva
Vice Chair,
The Council for Higher Education (CHE)

Enclosures: Appendix to the Appointment Letter of Evaluation Committees

cc: Dr. Varda Ben-Shaul, Deputy Director-General for QA, CHE
Dr. Liran Gordon, Senior Advisor for Evaluation and Quality Enhancement
Ms. Anat Haina, Committee Coordinator