



EVALUATION OF LIFE SCIENCE STUDIES

ACHVA ACADEMIC COLLEGE

COMMITTEE FOR THE EVALUATION OF LIFE SCIENCE STUDIES IN
ISRAEL

March 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 of¹:
- **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 Lemaître** – 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 System 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 and North American countries) to the evaluation of such provision in Israel.

Section 2: Executive Summary

Achva Academic College pursues the very important mission of making higher education accessible to under-represented populations that live in the southern part of Israel. The passion, motivation and faith in the students' potential form the basis of these amazing achievements. Current and prior students spoke with love and appreciation for all that the College offered, directed others to the College, and expressed a desire to remain part of the Achva family. The Committee was very impressed by Achva College and is hoping to provide its best advice as to how to maintain and further enhance its Life Science education. The comments below are in this spirit of making a wonderful and critical College even better and ensuring its long-term success.

The Department of Life Sciences at Achva is currently at a critical juncture in its planning for the future, and the Committee believes it is essential that the Department establish a Strategic Plan to put forth a clear vision with a well-developed plan and timeline for implementation. Such a plan should address the creation of a pre-med track, a pre-med program, and/or proposed MSc program, how to plan infrastructure, the need for life science faculty research, hiring of new faculty, developing new buildings to support life science research and teaching, and other issues.

The extraordinary efforts at Achva to deliver higher education to under-represented students are commendable. Integration of the under-represented students into mainstream society can be seen as an international model. The Committee strongly recommends that these efforts be supported with increased financial and oversight commitment by the CHE and government funding agencies.

Section 3: Observations

3.1 The institution and the parent unit

Achva Academic College pursues the very important mission of making higher education accessible to under-represented populations that live in the southern part of Israel. This College is a fusion of two undergraduate schools – one specializing in education and one in sciences – and one school for graduate degrees. The Life Sciences program, developed in the 1990s under the academic supervision of Ben-Gurion University, is part of the School of Science and became independent in 2010. The Life Sciences program faces an enormous challenge in training a diverse population of disadvantaged and/or under-represented students who would usually not pursue higher education.

The mission of the College is very clear to all stakeholders. Prof. Yifat Bitton, the President of Achva Academic College, brings with her great enthusiasm, an extraordinary commitment, and obvious passion for the success of the College. The Committee was impressed by the collegial and collaborative spirit instilled by the President, and promulgated by the CEO, Dean, Department Head, and the faculty.

The Committee was also very impressed by the devoted teaching team and the student achievements it has fostered. However, the Committee notes the fragile structure of the Department, which relies mostly on part-time professors, limited infrastructure, and limited financial support. The Committee believes that financial stability will greatly strengthen the critical mission of the College.

While the organizational structure of the School for Sciences was clearly described in the self-evaluation report, the decision-making processes for the Department seem somewhat ad hoc, and need to be better structured. For example, there is a lack of overarching vision for the direction of the program, as noted below. This creates a lack of coordination among those in leadership roles. The new Dean was unfortunately not fully up-to-date on most of the issues; and although this is perhaps expected given his very short tenure, it was, nonetheless, surprising that major issues (such as space planning and use, as well as other issues detailed below) were not discussed between the President, CEO, the Dean, the Head of the Department and key faculty and personnel. Indeed, over the course of the Committee's visit, the same questions asked of different stakeholders provided inconsistent answers that evolved during the visit. The entrepreneurial approach taken by the President and leadership do offer flexibility in the face of frequent and/or unexpected difficulties that may arise, but such an approach alone is not sufficient. The Committee therefore feels that the vision for the Department of Life Sciences at Achva College should be better articulated.

To address the vision and coordination issues, the Committee strongly believes that the Department must develop a Strategic Plan that details all aspects of the Department's future development. The first step in developing such a plan will require establishment of a leadership team, which should include a steering committee with external advisors. This leadership team could address the question of the pre-med track/program and proposed MSc program, how to plan space, the need for life science faculty research, hiring of new faculty, developing new buildings to support life science research and teaching, and other important issues.

The Committee was impressed with the educational efforts at Achva and believes that by developing a clear Strategic Plan for the future of life science education, the College will be in a better position to attract more resources from CHE, more interest from future faculty, and greater external support from foundations/donors.

3.2 Internal Quality Assurance

The Department of Life Sciences at Achva provided many documents to the Committee in the self-evaluation report. The Committee agrees with the aspirational quality assurance program which is documented in the self-evaluation report, and believes the program should now be fully implemented. As detailed in other sections of this report, the Committee recommends quantitative collection of data regarding faculty efforts, student progress, and student research. The Committee strongly urges that the quality assurance mechanism be explicitly appended to the Strategic Plan discussed in §3.1.

The Committee found the numerous folders and subfolders in the self-evaluation report difficult to navigate, and urges consolidation of the files into a more user-friendly format for future evaluations.

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		

The Department of Life science at Achva seriously considered the self-evaluation process, and provided useful narrative and data-based information. Nonetheless, the Committee would recommend additional quantitative assessments that should be presented in a more accessible form to the evaluators.

3.3 The Department/Study Program

The study program syllabi and courses are appropriate, and the leadership has proven to be very responsive to issues raised by the students and issues raised by the recent pandemic. The students are highly motivated and very positive about their experience at Achva. The teachers are passionate and bring a very strong personal touch, allowing students who might not succeed in other systems to achieve success at Achva College.

The Committee received somewhat varying impressions about how much interaction there is with other academic sites, and with biotech or other industries. Statements ranged from those saying that there were virtually no interactions, to statements that there were frequent seminars. Clearly, these seminars or other events should be better advertised to the student community. The Committee recommends creating more frequent opportunities for other academics or industry leaders to provide in-person and remote lectures. This could be structured such that students are expected to participate in these lectures as part of some of their advanced coursework. In addition, on-site visits are encouraged by local and international guests, which would include face-to-face informal interactions with students.

Guest lecturers and exchange programs between Achva Academic College and other colleges and universities should be formalized. There should further be a strong effort to build relationships with biotech and agritech. Annual career days should be established where alternate careers can be presented by representatives of diverse fields, including by the alumni (as elaborated on in §3.5). The Committee recommends that these initiatives be captured on the website and in communications with students, and tracked on an ongoing basis.

The leadership presented a strong desire to create both a pre-med program and a Master's program. The timing and planning process around these initiatives were not well articulated to the Committee. However, at the closing meeting, these issues were discussed at some length. The Master's program was then positioned as a longer-term goal (perhaps at 5 years), which, in the view of the Committee, is a reasonable target, if the College develops as hoped. The leadership placed emphasis in the closing meeting that, as a start, there will be a pre-med track within the Life Sciences program, but ultimately this would become an independent BSc program. While the leadership of the College would like the creation of an independent pre-med program to happen immediately, the Committee strongly recommends a step-wise approach as being more reasonable. The College has approval for advertising the pre-med track within the Department of Life Sciences; if this proves successful and there are compelling reasons for establishing a separate program in the future, it could be considered at that time. Key metrics of success for the pre-med track should include 1) the proportion of students that go on to medical school in Israel or other schools whose alumni are approved for practicing medicine in Israel, and 2) the proportion of students that end up practicing medicine in Israel, including in the periphery.

The Committee recommends that CHE oversee these critical decisions that impact the future of Achva Academic College. We recommend annual checkpoint meetings on the planning of the pre-med track (as part of the strategic planning process advocated in other sections of this report), and the possible creation of an independent pre-med program (only after the premed track is successful). It may be necessary to recruit several new full-time faculty members to sustain the ambitious initiatives.

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 Committee concurs with the Department's evaluation in "Study Program".

3.4 Teaching and Learning Outcomes

It is the impression of the Committee that the instructors at Achva Academic College are doing an excellent job conveying course material and fostering excitement among students for the content being presented. The students feel very supported by a nurturing faculty and reported that faculty are highly responsive to their needs. Based on a survey of some alumni (Extra doc 3.3.4 - II, with the limitation that it does not include the information about the percentage of responders), ~60% of graduating students go on to MSc degree studies across Israel, which would be strong evidence for the success of the teaching program. It would be valuable to collect data on the post-degree paths of all graduating students.

The Committee identified a few areas for improvement that should be considered. The School of Sciences currently implements a "Zoom day" once a week, during which classes are administered online. This is intended to allow flexibility to some students, and the infrastructure was useful during the Covid-19 pandemic and during missile attacks. However, some students do not have access to electricity or Wi-Fi at home and come to the campus to do online work. Furthermore, interviewed students reported unanimous preference for in-class instruction. The Committee, therefore, recommends significant curtailing of Zoom-only online instruction.

While the Committee agrees with the faculty and students that in-person teaching is best for the Achva students, the use of online instruction to supplement in-person instruction could be considered. The Committee recommends that faculty members experiment with modern teaching tools, such as "flipped classes", that seamlessly integrate online and in-person instruction. Expertise in these teaching methods may be available at the School of Education and the Department of Communication Disorders at Achva.

Documents concerning the curriculum that were received by the Committee did not clearly delineate whether overlap exists between courses, and whether courses are ordered in logical progression. From conversations with students, the Committee understands that as students advance, courses cover similar material but in greater depth. If this is indeed the case, the Committee recommends: (1) explicitly stating the intended learning outcomes from in each course’s syllabus, and quantitatively monitoring whether these outcomes are achieved; (2) producing a document that explains how courses build on each other; and (3) careful ongoing review of course content by a curriculum committee would be important to ensure that there is no redundancy in instruction.

The Committee found that the student survey, containing 15 questions covering all aspects of teaching, was well thought out and comprehensive. The Committee was told that teaching quality is also evaluated closely by the Department Dean on a regular basis, but it is not clear how. It would be valuable to have unannounced class visits by faculty members for one component of the teaching evaluation process.

Student assessments in courses, with a combination of multiple question choices and open form questions was satisfactory. Given that research projects executed outside of Achva are highly diverse, it is recommended to clearly specify the expected outcome of all itemized parts, in a way that will enable standardization of the grades.

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 finds that teaching and learning outcomes in the Department are generally excellent. However, a few modifications, including reconsideration of online instruction, more explicit documentation of course content, and the use of peer or other professional assessment of teaching, rather than relying on student course evaluations, are recommended.

3.5 Students

It is the impression of the Committee that students are highly motivated and very satisfied with their classes, faculty, and overall experiences. The students comprise a diverse group, most from economically-challenged backgrounds, and many are first-generation students for higher education. Students tend to come from families who live in communities close to the College.

Life Sciences Department enrollment has been growing over the last 3 years of data provided. According to the data provided, the majority of students are women (>90%), and ~40% are Bedouin (the Committee would have appreciated meeting with a more representative group of the student body). Many entering students need the national "Gateway to the Academy" program to provide remedial coursework, including Hebrew language support. But many of these students overcome these challenges and perform as well as those who do not require the services. The Committee was told that study tracks may be fluid; one student reported that she entered to study in the medical tech program, but because of a positive course experience, modified her program to prepare for premedical studies.

30% of entering students drop out of the program before graduation. There may be many reasons for this, including financial issues and family support. Nonetheless, the Committee believes that without a clear understanding of this attrition rate, preventative measures are and will continue to be difficult to implement. Even if only a handful of students would benefit from such measures, this would represent a substantial improvement. The Committee recommends, for example, (1) meeting with each student at the end of the academic year to assess progress; (2) meeting on an ongoing basis with students that instructors identify as struggling; (3) contacting students who did not finish their studies, to identify the reasons they left the College and discuss how they could have been helped. This information should be tabulated and appropriate action plans developed. CHE could help recruit a third party to participate in this process, to maintain student confidentiality.

About 30% of 3rd year students participate in research projects, generally at Ben Gurion University. Others are placed in agri-tech companies nearby. The faculty and students have been doing the best they can with the resources available. The Committee highly commends these efforts. Going forward, the Committee recommends that details about these projects be tabulated, for the benefit of new students seeking research projects, as well as for the benefit of CHE evaluation committees. The Committee was concerned when told that Achva has been paying companies to enable internships/research projects. The companies should not charge the College. Instead, where appropriate, students should be paid for their research/work contributions by the companies.

Students reported that they often work several part-time jobs to support their families during their studies. Lack of student housing also contributes to financial concerns, although there are plans and hopes for a dormitory. The pressure to work takes away from study and research time. The Committee urges increasing scholarship support to working students to enable more students to pursue research or internships. Paying students for research activities would be an efficient way to deal with both the financial and educational issues.

From an alumni survey with 100 respondents, it appears that almost 60% of graduates go on to pursue advanced degrees, which is impressive. Other graduates participate in the medical

technology program at Tel Hashomer hospital, and some go to biotechnology and other programs. Altogether, 80% of graduates are in Life Science-related fields. This is an impressive achievement.

The alumni who met with the Committee are passionate about their experience at Achva and feel deeply obligated to give back to the school. Some of those working locally serve as adjunct instructors, teaching one course in their areas of expertise. The Committee feels that the alumni are an excellent resource. The alumni represent a knowledgeable, committed, and engaged group of people that can help the College achieve its missions and ensure the success of its students. Regardless, there does not seem to be a systematic outreach process from the College to the alumni. The Committee recommends that the College develop an outreach program to alumni, and have them participate in the College's activities. Examples of these can be participating in career days (where alumni discuss their career trajectories); giving formal or informal lectures to empower the student; and even providing internship opportunities to current students.

Student job and post-graduation academic studies following graduation is impressive, based on data provided in the self-evaluation report (Extra docs, 3.3.4 Alumni surveys I+II with the limitation that the information related to percentage of responders is missing). Nonetheless, information about specific areas of academic research in other institutions in Israel and worldwide is not readily accessible. The Committee recommends establishing opportunities, such as a regular seminar series, where prominent researchers from outside Achva can present their work and interact with students.

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 with Students:

	1	2	3	4	5
				X	

The Committee believes that Achva students are given outstanding instruction and support, and have only minor ideas for improvement. These are mostly related to post-graduation outreach, and increased financial support, which may be beyond the purview of the department.

3.6 Academic Faculty and Human Resources

The academic faculty consists of permanent faculty with part-time appointments, adjunct instructors hired on a semester basis to teach dedicated courses, and graduate-level Teaching Assistants, typically Achva graduates with MScs or PhD candidates. Several permanent faculty hold concurrent and primary research appointments at other universities (including Ben Gurion University). Others are co-appointed in both Life Sciences and the Science Education Departments within Achva.

The faculty benefits from an administrative open door policy from the President to the Department head. Faculty are asked to serve on few institutional committees, allowing their commitment to teaching across the different years, and, for select faculty, research mentoring of 3rd year students. Faculty members benefit from enthusiastic central office administrative support and from a dedicated lab technician for the teaching laboratories. However, there are no permanent research technicians to support faculty or student research activities, though there used to be some in the past. The faculty expressed interest in benefitting from such support in the future.

Permanent faculty members seeking promotion must comply with research criteria set by the CHE. Conducting exceptional research can be complicated by the lack of dedicated faculty research laboratories on the Achva campus. Nonetheless, some faculty have received promotions based on research efforts elsewhere.

The Department is planning to increase student numbers for a proposed pre-med track, and is planning to hire new faculty to accommodate this increase. The Committee strongly recommends that the details of faculty hiring, including the number of faculty, areas of instruction, and research endeavors, be described in the Strategic Plan described in §3.1.

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	
--	--	--	--	---	--

Faculty commitment to the Achva mission is a strong and positive element of the College. The Committee applauds every one of the members of this tight-knit and student-success focused academic community.

3.7 Diversity

Perhaps the strongest aspect of Achva is its diverse student population, and the focus of the institution on students who are unable or unqualified to pursue undergraduate studies at universities. College students are predominantly women (>90%), and men are under-represented. Although it is likely to be a representation of the cultural and local societal attitudes, enrolling more men as students could be improved with outreach.

About 40% of the student body comes from nearby Bedouin communities. According to the self-evaluation report, members of the Ethiopian community, as well as orthodox religious Jewish students, are also represented. Geographically, the School mainly attracts students from the south of Israel.

The number of academic staff and faculty is small, and it is therefore difficult to make statistically meaningful comments about diversity in this setting. Nonetheless, the Committee urges the Department to pursue hiring more diverse faculty members that would serve as role models for the varied student population. A recently instituted policy at the College is used by the Hiring Committee to address this disparity and the Committee believes this is a step in the right direction.

Overall, the Committee was very impressed with the commitment of the College toward educating a diverse and underprivileged student population.

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 Committee believes that by its very nature, and true to its mission, Achva College is a place for empowering the higher education of ethnic, gender, and other minorities. The College provides these students with a setting that allows them to advance their knowledge and skills, especially for technical life-science related fields. The Committee’s main recommendation is to continue to focus on ensuring a greater gender balance at the undergraduate level, and increasing diversity in faculty.

3.8 Research

It is more than commendable that Achva faculty members conduct impactful research and harness collaborative opportunities with neighboring and other institutions. It is also to be applauded that the top 35th percentile of students are encouraged to undertake a research project during their last year, and that the faculty members support conducting these projects at Achva or in collaboration with industry, or other academic institutions. The Committee also commends the “project day” which gives the opportunity for the project students to present posters and scientifically interact with other students and Faculty members. It is this type of research that has given Achva students the opportunity to thrive and close academic gaps, opening doors to life science-related careers in medicine, veterinary care, clinical laboratories, and many others. That being said, the Committee learned that Achva typically pays for the industry internships for the students. The Committee discourages this practice and suggests that the College utilize other mechanisms, such as the Rothschild Foundation or the Aluma Organization initiatives to take intern students.

The Committee noted that current research opportunities focus on research areas of existing faculty. This is a sensible approach. The greenhouse is especially well established and that is one area of research that can be maintained with minimal ongoing effort, providing enormous benefit to faculty members and students alike. Similarly, the field work is not resource-intensive and can be maintained. With these strong programs in place, it is now important to develop (and clearly articulate/convey) a “strategic vision” depicting how Achva Academic College leadership and faculty members envision further enhancing ongoing and future areas of research. This should be part of the proposed Strategic Plan described in §3.1, and is also mentioned in other sections of this report.

One immediate opportunity that Achva College has is the outfitting of two research labs and one shared equipment rooms (located on the top floor) in the science building. The Committee perceived some lack of vision as to how to best plan and operationalize these spaces. At the end of the site visit day (during the walkthrough), there was an attempt by the Head of the Department to clarify the proposed use of this space, suggesting that these rooms could form a general cell and molecular laboratory that would cover multiple research interests (e.g., serving pre-med intended research). However, the Committee noted that the space in question is quite restricted, and given this and modest resources, a small institution such as Achva cannot fully support cutting-edge research across multiple disciplines. Lack of

funding from CHE for research at Achva further challenges the College’s ability to gain strength in this area.

It is hence this Committee’s recommendation that the faculty members meet to form a “strategic planning” committee to brainstorm on what their vision is, and then proceed to identify what exactly will be needed to be included in these research and common equipment spaces. The Committee thinks that the College develops a vision by first identifying one or two areas where they can excel, where students can, after going through the basic research training provided by the College, conduct reasonably high-level research that is supported by appropriate infrastructure and faculty expertise. This is a critical decision and will impact the entire arc of the strategic plan for Achva. For example, leadership is very excited about developing the pre-med track and that would interface directly with a strong and cutting-edge research program. Leadership is also keen on developing - over time - a MSc program: here, the ability to offer strong research possibilities resulting in publications in competitive areas would be critical.

In summary, a key recommendation of the Committee is that there be a very clear multi-step strategic plan that articulates specifically what research areas they would like to focus on; how that was decided upon; what equipment and other resources would be needed for that research area; which existing faculty would be appropriate mentors; and which new faculty would need to be recruited with which specific expertise. This approach will serve the academic/laboratory needs of students conducting research projects for life sciences, pre-med, and similar tracks, as well as potential future research needs to facilitate the envisioned application for a MSc program. This vision should then be reviewed and overseen by an external scientific advisory committee over the next 2-3 years.

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 Committee concurs with the Department’s evaluation in “Research”.

3.9 Infrastructure

The College has excellent existing resources for three biological and chemistry teaching laboratories which can accommodate up to 24 students each in a single laboratory session, with two students sharing equipment and resources for their respective team work. Laboratories are run by full-time and adjunct faculty members, a dedicated laboratory technician, and target-recruited teaching assistants to assure student learning and success. The teaching labs are heavily used and, therefore, not available for faculty and/or student research. Instead, faculty and student research projects are conducted in the field as well as in the cold-blooded animal facility and the greenhouse space. Both of these research facilities are intensively used and generate research outcomes for students and faculty alike.

The college intends to build on the existing physical infrastructure for life science education, including two research and teaching labs that are being refurbished in the new science building. Future plans for a new office building will further support the life science faculty by providing more office spaces.

During the visit to the College, the Committee had extensive discussions with the senior leadership regarding the intended purpose of these labs. As stated above, the Committee learned that on the one hand, there was a need for faculty to have in-house access to molecular biology based research facilities. Faculty appointed to the College typically have other appointments at universities where their core research activities are located. Thus, these two labs have the potential to enhance their ability to leverage existing facilities by providing space and equipment to spend more time on campus engaged with students on research projects. On the other hand, the Committee also heard about plans that the College has to develop a pre-med program that would attract new faculty members engaged in biomedical research. These new labs could, in part, serve the research needs of future faculty and student projects in this area.

There are advantages for having shared, multipurpose molecular biology labs of this type as they provide flexibility in supporting different research projects, but from the Committee's perspective they would be inadequate to support a major increase in faculty research activity in these spaces. A sensible plan would be to use these two labs to enhance student research projects supervised by faculty. Beyond this, and as stated above, a very strategic plan for how well-defined faculty research could be supported using these labs would need to be developed to ensure a successful implementation.

The Library is a centrally located building, with opening hours to accommodate student presence on the campus. Access to textbooks, research books, and journals is assured but can be somewhat limited in range and numbers. It is unclear whether the library engages in interlibrary loan services to obtain missing resources for students and faculty when requested. Database access is available for digital search engines and resources relevant for Life Sciences. If a national initiative for shared electronic library and database resources is established, it would benefit Achva with a much wider resource available at a much lower cost.

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		

The gap between the Department's and the Committee's evaluation is regarding the uncertainty of the educational and research purpose of the recently constructed, empty research laboratories (including type of equipment to purchase).

Overall, the Committee recommends that the College undertake a strategic planning approach (as discussed in other sections) to determine how these labs could be maximized for current and future faculty. Over time, as the existing pre-med track develops and there is a need for expanding lab infrastructure on campus, the College could then develop plans, as part of a strategic planning exercise, for creating new lab spaces.

Section 4: Conclusions and Recommendations

4.1 Conclusions

The Committee believes that Achva Academic College is pursuing a critically important mission to educate under-represented populations in Israel. The Committee staunchly believes that Achva's mission should be strongly supported and that, where possible, should be supplemented by additional funding. The Department of Life Sciences at Achva is currently at a critical juncture in its planning for the future, and the Committee believes it is essential that the department establish a Strategic Plan to put forth a clear vision with a well-developed plan for implementation.

4.2 Recommendations

Essential

The College needs to establish a life sciences steering committee/leadership team, with an external advisory board. This Team should develop a strategic plan for Life Science education, research, faculty recruitment, and infrastructure.

The College should proceed with the development of a pre-med track/program in a stepwise manner, while carefully monitoring the track/program's success.

The Department of Life Sciences have to implement mechanisms to assess content overlap between courses, and whether courses are ordered in logical progression.

Important

The Department should diversify the teaching team to match the students' diversity.

The Department should plan and implement a strategy to increase the percentage of male students.

The Department should foster interactions with other institutions to promote a tradition of open slots for excellent students who wish to do research projects.

The Department should develop and implement mechanisms for career counseling and development, to empower graduating students.

Desirable

For future self-evaluation reports, the College should better collect and present the data provided, in a user-friendly folder arrangement.

The Department should collect data related to the number of students who struggle with remote learning and minimize the number of 'zoom days' per semester, according to this information.

The Department should maintain granular data on the progress of students within the program, intercede when students need academic/financial/medical support in order to promote more entering students to complete their BSc degrees. The department should maintain a database on students leaving with their degrees to identify where they go for advanced degrees or for jobs.

Signed by:

Prof. Lynne Regan

Committee Chair



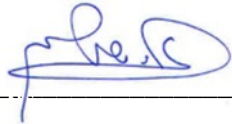
Prof. Joseph Buxbaum



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