



## **Committee for the Evaluation of Chemistry Study Programs**

**The Hebrew University of Jerusalem**

**The Faculty of Mathematics and Natural Sciences**

**The Institute of Chemistry**

**Evaluation Report**

**March 2012**

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## **Chapter 1- Background**

At its meeting on July 14, 2009, the Council for Higher Education (CHE) decided to evaluate the study programs in the field of Chemistry in higher education in Israel.

The initial steps by CHE included the formulation of a self-evaluation study for each participating institution and the appointment of an evaluation committee consisting of:

- Professor Richard Eisenberg, Department of Chemistry, University of Rochester, Rochester, NY
- Professor Allen J. Bard, Department of Chemistry, University of Texas, Austin, TX
- Professor Tobin J. Marks, Department of Chemistry, Northwestern University, Evanston, IL
- Professor William L. Jorgensen, Department of Chemistry, Yale University, New Haven, CT
- Professor Joan S. Valentine, Department of Chemistry, University of California - Los Angeles, Los Angeles, CA
- Professor David Milstein, Weizmann Institute of Science, Rehovoth

Each of the committee members is a research active chemistry faculty member with broad disciplinary experience. Each non-Israeli member is a member of the U.S. National Academy of Sciences and is fully involved in all aspects of chemistry programs at the graduate and undergraduate levels.

The committee was assisted in its efforts by Ms. Alisa Elon, Coordinator of the committee on behalf of the Council for Higher Education.

Within the framework of its activity, the Committee was requested to submit the following documents to CHE:

1. A final report on each of the evaluated departments,
2. A general report on the state of the discipline in the Israeli higher education system, including recommendations to the CHE for standards and potential state-wide changes in the evaluated field of study.

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

The process was conducted in accordance with the CHE's Guidelines for Self-Evaluation (of October 2009).

## **Chapter 2- Committee Procedures**

The Committee held its first meetings on June 12, 2011 during which it discussed fundamental issues concerning higher education in Israel, the quality assessment activity, as well as Chemistry study programs.

In June 2011, the Committee held its first round of visits and went to Ben-Gurion University of the Negev, Bar-Ilan University, and the Weizmann Institute of Science. The second round of visits was carried out in December 2011 with site visits to the Hebrew University, the Open University, the Ariel University Center of Samaria, the Technion Israel Institute of Technology, and Tel Aviv University.

**This report deals with the evaluation of chemistry studies at the Institute of Chemistry at the Hebrew University of Jerusalem (HUJI).**

In the preparation of this report, the Committee met with senior and junior faculty, students at the bachelors, masters and doctoral levels, and university administrators and leaders. The analysis given below reflects the results of those meetings coupled with the information provided by Hebrew University of Jerusalem in its self-evaluation study.

The Committee's visit to the Hebrew University took place on December 12-13, 2011. The Committee thanks the management of the Hebrew University and the Institute of Chemistry for their self-evaluation report and for their hospitality towards the Committee during its visit at the institution.

The schedule of the visit is attached as **Appendix 2**.

### **Chapter 3-Executive Summary**

Several points that are elaborated below need to be addressed to maintain and enhance the entire teaching and research program of the Institute of Chemistry. The Committee recommends changes in the requirements for undergraduate and graduate programs to promote more research and active learning in the undergraduate degree program and to facilitate and streamline the path to the Ph.D. degree at the graduate level. For the former, more undergraduate research and reduction in the number of formal courses is advocated, while for the latter, the Committee advocates facilitating the entry of students beyond the first degree into the "Direct to Ph.D. program".

Other specific Committee recommendations:

- Modify program to encourage undergraduate research during the academic year and obtain more scholarships for B.Sc. students for research during the summer.
- A more effective advising structure should be implemented. Students should be made aware of options in the program with regard to course and track selection, as well as research opportunities for B.Sc. students.
- Move one second-year laboratory course to a different semester to ease student laboratory course load.
- Efforts to reduce the teaching loads of M.Sc. and Ph.D. students while maintaining or increasing their levels of support should be made.
- Career counseling for graduate students at all levels is recommended.
- Graduate student admission should not be linked to financial considerations of any specific faculty member.
- Ph.D. students should receive feedback more often from their Review Boards throughout their program of study.
- For upper level graduate students, more writing activities and possibly a seminar in English should be encouraged to help improve facility with English for scientific communication
- Start-up packages for new faculty members should have separately budgeted renovation and equipment components. New faculty members should not be responsible for renovation costs.
- Commencement of renovations for new appointments should be undertaken before new faculty arrives, with every effort to complete the renovation within 3 months of arrival.
- More vigorous attempts to recruit the best young scientists to faculty positions regardless of nationality or citizenship
- Pro-active recruitment of female faculty members should be undertaken.
- A special fund for instrument repair is recommended.
- Consider replacement of the 600 MHz spectrometer if it cannot be repaired.
- Institute new funding mechanisms and programs to provide funds for mid-career and senior scientists for the purchase of new instrumentation and equipment and laboratory refurbishment

#### **Chapter 4: Evaluation of Chemistry Studies at the Institute of Chemistry at the Hebrew University of Jerusalem**

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

#### **Background**

The study of chemistry at Hebrew University (HUJI) has a long and distinguished history. The Chemistry Department was founded in the 1930's and was joined with Physics and other departments into the Faculty of Science. In the 1960's, research and teaching activities were transferred to the present Givat Ram campus. During a long period of growth, separate sub-disciplinary departments (Organic Chemistry, Physical Chemistry, Inorganic Chemistry, Analytical Chemistry) were created, and new buildings were constructed. Subsequently, the sub-disciplinary departments were re-aggregated into the Institute of Chemistry to reflect the changing nature of chemistry and to facilitate multi-investigator research efforts. The Institute of Chemistry is now one of five institutes and one school under the Faculty of Mathematics and Natural Sciences. Also in this Faculty are current Research Centers and future ones that will be created through new government initiatives for interdisciplinary and inter-institutional research.

The Faculty of Mathematics and Natural Sciences has approximately 240 faculty members. The current number of faculty in the Institute of Chemistry is 33, which is down from approximately 60 in 1990. The decline was driven by retirements and government cutbacks in higher education that have led to the current faculty level. Continuing decline in the number of faculty is not anticipated with renewed efforts by the government in higher education and research, but with planned retirements, the Institute will need to hire at least two faculty members per year for the next 5-6 years just to remain at its current level. The current chemistry faculty envisions a slight growth in faculty number to 35-37, so that faculty-recruiting efforts in the coming decade need to be substantial.

The Institute of Chemistry currently has approximately 260 second and third degree students and nearly 200 students at the B.Sc. level. The facilities for teaching and research are generally good with the occasional needs for major equipment and renovation funds that any top-rated research and teaching institution must have.

#### **Undergraduate Program**

The Institute of Chemistry provides a rigorous, high quality chemistry program for chemistry students and also serves an important role in providing service courses for a large number of undergraduate students in other fields of study. The main study program is referred to as chemistry, while joint programs such as chemistry-biology and chemistry-exact sciences (i.e., physical chemistry) exist as well.

The study program in chemistry offers several tracks to B.Sc. students, which differ primarily in the depth and breadth of the chemistry courses. The expectation is that students will complete all of the required courses within three years, but often students

extend their undergraduate studies to 3.5-4.0 years. There are two chemistry major tracks, the "chemistry extended" track and the "chemistry major" track. The vast majority of students in chemistry elect to take the extended track, which requires 156 credits. Of these 156 credits, 125 are for obligatory (required) courses, 21 are for elective chemistry courses, and 10 are for courses outside the program. The chemistry major track has fewer course requirements in chemistry. In this case, students are required to take at least 90 credits from the chemistry program and, in addition, 44 credits consisting of a structured set of complimentary courses offered by one or more of the programs in the Faculty of Sciences or by other faculties.

The large number of credits required in the extended track in chemistry makes it difficult for students to complete their first degrees in three years, but a more serious problem perceived by the Committee is that with the mandated program in three years, students have difficulty in doing undergraduate research projects in faculty members' research laboratories. The feedback from students appears in contrast to comments from the self-evaluation regarding participation in undergraduate research. Such research projects, which can occur during the academic year or during the summer, would allow students to experience the excitement of investigative research and play an important role in furthering the transition of undergraduate students into functioning scientists. Such efforts also stimulate students to continue study in chemistry or related fields for advanced degrees while giving them the opportunity to choose the specific area of research in which they would like to engage.

Incorporating undergraduate research, preferably for academic credit, into the current extended chemistry track will be very difficult unless some flexibility is built into the program. The Committee believes that this goal can be achieved by offering undergraduate research as an elective in the third year and moving some of the elective third year courses to the graduate program.

The Committee recommends further that summer scholarships be made available for talented undergraduates to carry out research projects in the laboratories of faculty members in the first or second year, with the hope that this activity will continue during their final year of undergraduate study. A capstone event such as a departmental undergraduate research poster session or an undergraduate honors thesis should be considered. In the same vein, programs are needed (not necessarily courses) that expose undergraduates (and graduate students) to career options in chemistry and allied fields such as exposure to industrial chemistry and chemists, and to I.P. concepts.

The Committee also had concerns about the advisability of requiring three intensive laboratories during the second semester of the second year of the undergraduate program. This requirement puts enormous pressure on the students and doesn't make best use of undergraduate laboratory facilities, which lie idle during the first semester.

The required mathematics courses need attention from the chemistry faculty to be sure that they cover the appropriate material at a high enough level to prepare the students for advanced degrees. Students should be advised to take the more rigorous course options in math if their interests are in physical, theoretical or computational aspects of chemistry and if their pre-college preparation is adequate. Students indicated that catch-up courses are valuable after military service, prior to entering the University.

***Recommendations:***

- **Modify program to encourage undergraduate research during the academic year. Achievement of this objective can be stimulated through presentations by faculty of their research in seminars to first degree students.**
- **More scholarships are needed for B.Sc. students to enable undergraduate research during the summer.**
- **A more effective advising structure should be implemented. Students should be made aware of options in the program with regard to course and track selection, as well as research opportunities for B.Sc. students.**
- **Move one of the second year laboratory courses to a different semester to ease student laboratory course load.**

**Graduate Program**

The Chemistry graduate program is strong and generally healthy. Well-qualified highly motivated graduate students (largely HUJI alumni) are attracted by the diversity of excellent faculty research programs, generally excellent facilities, especially in the materials/nanotechnology areas and location. The graduate curriculum offers a wide variety of, and flexibility in, course curriculum and thesis research topics. The “cap” on the graduate student stipend has recently been relaxed but nevertheless, the high cost of living in Jerusalem presents a challenge for all graduate students.

Students enter the Chemistry graduate program as Master’s (M.Sc.) students, which is usually a two-year program, but they can only enter the graduate program by being formally accepted into a faculty member’s research group. Acceptance of students should not be based on financial considerations alone. As M.Sc. students, they are supported by some combination of teaching assistantships (TA) and research grant funds, with the latter depending on the resources of the individual faculty member. Because of the large teaching demands placed on the Institute of Chemistry (many are large service courses for non-chemistry majors) the teaching loads on TAs can be very large (8-22 hours/week for typical M.Sc. students), and it is clear that the teaching resources are stretched very thin. For example, the Committee was told that one service course for 300 undergraduates had only two TAs. Combined with the large course loads, graduate student full-time TAs are substantially limited in the amount of meaningful research that they can do in their first year. Full-time teaching in the second year for M.Sc. students also limits their research productivity. One positive aspect is that all TAs are funded by the Institute to attend one national or international conference once during four years as a TA. Career advising and other experiences that expose students to industrial chemistry and chemists, and to I.P. concepts should also be done.

The Ph.D. program at HUJI is typically a four-five year program that includes some coursework as suggested by their Review Board (thesis committee). Review Boards consist of three faculty members and the thesis preceptor; one Board member must be from outside the Chemistry Faculty. As part of the Ph.D. requirements, students must present a written and oral proposal (in essence, an analysis of the student's thesis project and research progress to date) to the Review Board in the second year of the program. Students can give the presentation in either Hebrew or English, which the Committee feels is a positive aspect. Because of the importance of English as the international language of chemistry, there is a sense that students would benefit more from doing the proposal in English (with the oral review in Hebrew if desired). Students meet with their respective Board 1.5 years after the first exam to discuss their research progress, and then



at their thesis exam. The Committee recommends an annual meeting with the Review Board to assess better the student's progress in the program. If the students do well in their last exam, they present a thesis seminar to the entire Institute as the final step to the Ph.D. Many Ph.D. students are fully or partially supported by TA funds, however these positions are limited to four years of support.

The large number of required course credits (for clarification, the courses are generally electives, but the course credits are required) together with teaching obligations (and with family obligations for many of the students) often result in the M.Sc. program requiring 2.5-3.5 years for completion, rather than the allotted two years, and the Ph.D. program requiring 4.5-5.0 years (or longer) rather than the allotted four years. The net result is that the time from entrance into the M.Sc. program until Ph.D. completion stretches from the programmed six years to more than seven years to complete.

The Committee regards this length of time as too great and believes that it can be shortened significantly (>1 year) by elimination of some formal course credit requirements and the general adoption of the "Direct to Ph.D." program. The "Direct to Ph.D." program has usually been open to students who have a grade point average above a certain threshold. The Committee believes that in chemistry as a discipline the "Direct" path should be more generally adopted upon entrance for graduate study. The Ph.D. program is primarily research-based, and high grade point average does not always correlate with research success.

The Committee also notes that the number of formal courses required in the Masters and Ph.D. programs is currently very large. Students indicate that even when they take all of the courses offered in their general area of specialization, they are required to enroll in courses far afield from their research field to fulfill the required number of courses. A decrease in the number of required courses for the Ph.D. program should be considered, together with the view that sufficient courses in areas relevant to research programs be offered.

In recommending a general following of the "Direct to Ph.D." option, the Committee thinks it is important to consider the relative merits of Masters and Doctoral programs in Chemistry. For advancement in chemistry-related professions, the doctoral degree is essential. The value added for the doctorate is much greater than that for the Master's degree relative to the B.Sc. degree. The situation contrasts with that found in engineering disciplines where the Master's degree has a substantial premium over the corresponding Bachelor's. By advocating the "Direct to Ph.D." track for most graduate students in chemistry, the Committee is recognizing a reality in both academic and industrial chemical professions and is trying to facilitate accomplishment of the Ph.D. degree within a shorter timeframe.

### ***Recommendations***

- **Students should be encouraged to enroll in the "Direct to Ph.D." and criteria for enrollment should be more flexible.**
- **Efforts to reduce the teaching loads of M.Sc. and Ph.D. students while maintaining or increasing their levels of support should be made.**
- **Sufficient elective courses that are relevant to particular graduate research programs should be offered.**
- **Career counseling for graduate students at all levels is recommended.**
- **Graduate student admission should not be linked to financial considerations of any specific faculty member.**

- **Ph.D. students should receive feedback more often from their Review Boards throughout their program of study.**
- **For upper level graduate students, writing of the research proposal and drafts of papers and possibly a seminar in English should be encouraged to help improve facility with English for communication of scientific results.**

## **Faculty**

The Institute of Chemistry is one of five institutes and one school in the Faculty of Mathematics and Natural Sciences with B. Sc., M. Sc., and Ph.D. programs. There are 33 active faculty members engaged in teaching and research (22 professors, 5 associate professors and 6 temporary senior lecturers), as well as 5 emeriti who also teach in the undergraduate and graduate programs. There are also about 70 Junior Academic Staff (Teaching Assistants) who assist in the laboratory and lecture courses.

The size of the chemistry faculty has decreased significantly over the past 20 years from more than 60 to the present level of 33. While there is generally satisfaction with this level, numerous retirements are anticipated over the next 5 years and it is vital that hires of new faculty at the rate of at least 2 per year be carried out to maintain the faculty at a projected steady-state level of about 35. Two faculty members are expected to retire in 2012 and 2 new hires are planned in that year. If this plan can be maintained, a good mix of junior and senior faculty will result. The selection of the best candidates is vital to maintain the current high quality of teaching and research activities in the Institute. Such new hires can reflect themes of Centers of Excellence or the basic programs of the Institute as decided by quality of the candidates and the needs of the institute.

The Committee had the perception that even as prestigious a faculty as at HUJI has difficulty in recruiting excellent young scientists from traditional pools. With full recognition of the special circumstances in Israel, the Committee believes that casting a broader net for faculty candidates is very advisable. Currently, the approach is largely ad hoc and confined to Israeli Ph.D.'s who apply after a postdoctoral experience abroad. Announcement of faculty openings in international journals such as *Science* and *Nature* should be done along with notification of distinguished scientists in the field, who may have current or former co-workers to recommend. All aspects of the scientific environment at HUJI are competitive with those at the most distinguished institutions worldwide. Therefore, efforts to recruit the best faculty available should be done.

Consideration of pro-active recruitment of female faculty members should be given in view of the fact that less than 10% of the Chemistry faculty (2/33) are female, while more than 50% of the students are female. For female candidates with families, some consideration should be given to relax the informal criterion of postdoctoral study abroad.

The startup packages for new faculty appear to be adequate and competitive with those at other top universities. However the startup packages reflect both equipment costs and renovation expenses for laboratories. Since estimates of the renovation costs are often not available until after a new faculty member is in residence, the amount that is actually available for equipment is uncertain and frequently less than anticipated. The committee feels that these two different components of the start-up package should be separated, with guaranteed funding for laboratory equipment. A second aspect of new faculty startup is the timing of the needed renovations. These appear to start only after arrival of new faculty, which can then delay their research programs by as much as two years. In the case where a new faculty member has experienced considerable delays in the availability of research space, this should be taken into consideration in the timing of the tenure decision. The Committee has been told that these problems have been recognized by the

administration, and we are in accord with planned changes regarding these actions to assist new faculty in beginning their research programs.

The junior faculty appears satisfied with general mentoring by senior faculty and they also network among themselves. Based on some student comments, it might be useful to have more mentoring focused on teaching. The teaching loads of the junior faculty are reasonable, with one or two semesters of relief from teaching in their first year to allow time for research startup. We recommend that a more formal program of periodic evaluation of junior faculty performance be introduced to provide feedback to them on how well they are doing relative to institutional expectations, and some teaching relief in the year before the tenure decision should be considered to allow for needed writing and external lecturing activities. The tenure and promotion process seems to be normal for Israeli universities with about 90% of the junior faculty successful in promotion to tenure positions.

The faculty support most graduate students through research assistantships from grant funds and from teaching assistantships. There was considerable interest among the faculty in obtaining more university scholarships for student support, as in some other institutions.

***Recommendations:***

- **Start-up packages for new faculty members should have separately budgeted renovation and equipment components. New faculty members should not be responsible for renovation costs.**
- **Commencement of renovations for new appointments should be undertaken before new faculty arrives, with every effort to complete the renovation within 3 months of arrival.**
- **Pro-active recruitment of female faculty members should be undertaken.**
- **Greater effort should be made in looking for new faculty members in the international community.**

**Research**

Research activities at the Institute of Chemistry remain at the international forefront. The Institute is no longer subdivided into divisions, though major research themes are reflected in the five research centers: the Casali Institute for Applied Chemistry, Center for Nanoscience and Nanotechnology, Farkas Center for Light-Induced Processes, Fritz Haber Center for Molecular Dynamics, and the Lise Meitner Minerva Center for Computational Quantum Chemistry. The latter three are all Minerva Centers, which promote Israeli-German scientific collaborations. It appears that almost all faculty members are affiliated with a center.

Most current and emeritus faculty members of the Institute are well known in the international chemistry community. Their success and high productivity are reflected by all citation measures, as summarized in the self-evaluation. The recent rate of publication is ca. 200 articles per year, which is impressive for a faculty with ca. 35 members. The activities are also unusually broad with emphasis on materials science, nanotechnology, spectroscopy, and theoretical/computational chemistry. Synthetic organic chemistry is one area that can be identified as underrepresented in comparison with other leading chemistry departments internationally.

The major equipment resources for the Institute are consistent with its world-class status. The computer facilities associated with the Fritz Haber and Lise Meitner Centers are

excellent including tens of Linux-based servers and many hundreds of processor nodes. The installed software includes all well-known programs for quantum chemistry such as Gaussian, MOLCAS, and GAMESS. There is also an NMR laboratory that appears to be equipped with 300, 400, 500, and 600 MHz spectrometers. Hands-on use as well as sample submission are both accommodated. Multinuclear, 1D, 2D, solid-state, and protein NMR experiments are all handled. In addition, small-molecule X-ray crystallography is carried out in-house using single-crystal and powder diffractometers. There is also a microanalysis laboratory, which provides elemental analysis (C, H, N, S, P, and halogens) services for both the Institute and outside organizations. The C, H, N analyses are most routine and performed by combustion using a Perkin-Elmer instrument.

One item that could use some improvement is the Institute's website. It is currently minimal with mostly just information on individual faculty members, the centers, and the research facilities. Overview material on the organization and activities is lacking as well as information on the undergraduate and graduate programs. It could also include announcements of faculty searches.

***Recommendations:***

- **Consider additions of faculty in synthetic organic chemistry.**
- **Develop a comprehensive website for the Institute.**

**Resources, Facilities**

Generally, there is enough laboratory and office space, both for research and teaching. The situation of the teaching laboratories is generally good, particularly those located in the new building. The organic teaching labs are older, but their condition is generally adequate. The status of teaching instrumentation is fine.

Research laboratories are generally well equipped, although they are often not ready when new faculty arrives; efforts should be made to rectify this situation as discussed above.

Shared major equipment is generally adequate. A full list of equipment is given in the self-evaluation and some of the equipment is mentioned in the previous section. Concern was expressed regarding the condition of a "dying" 600 MHz NMR spectrometer. If keeping this spectrometer operational is a problem, the acquisition of a new spectrometer should be considered. Refurbishing of the EPR spectrometer should also be considered.

Technical staff responsible for the shared facilities, particularly the NMR facility, including training of students and maintenance, is essential. While group instrumentation is generally adequate, faculty members have mentioned that there are no funds for repair of instruments of individual groups. Establishment of a special fund for this purpose, possibly based on usage fees, is recommended.

Mid-career funding for lab renovation, and possibly equipment, is lacking. It is strongly recommended to make such funds available when needed.

**Recommendations:**

- Extra effort should be made to have the laboratories and equipment of new faculty ready before they begin employment.
- A special fund for instrument repair is recommended.
- Consider replacement of the 600 MHz spectrometer if it cannot be repaired.
- Funds for mid-career purchases of new equipment and lab renovation should be made available when needed. Such a program should be implemented and coordinated through CHE, ISF and HUJI.

**Signed by:**

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**Prof. Richard Eisenberg**  
Committee Chair



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**Prof. Allen J. Bard**



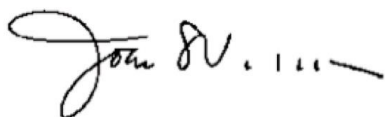
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**Prof. Tobin J. Marks**



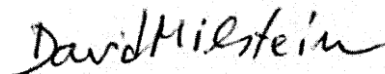
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**Prof. William L. Jorgensen**



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**Prof. Joan S. Valentine**



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**Prof. David Milstein**

# Appendices

**Appendix 1- Copy of Letter of Appointment**

March, 2011

Prof. Rich Eisenberg  
Department of Chemistry  
University of Rochester  
USA

**שר החינוך**  
**Minister of Education**  
**وزير التربية والتعليم**

Dear Professor Eisenberg,

The State of Israel undertook an ambitious project when the Israeli Council for Higher Education (CHE) established a quality assessment and assurance system for Israeli higher education. Its stated goals are: 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. Involvement of world-renowned academicians in this process is essential.

This most important initiative reaches out to scientists in the international arena in a national effort to meet the critical challenges that confront the Israeli higher educational system today. The formulation of international evaluation committees represents an opportunity to express our common sense of concern and to assess the current and future status of education in the 21<sup>st</sup> century and beyond. It also establishes a structure for an ongoing consultative process among scientists around the globe on common academic dilemmas and prospects.

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

It is with great pleasure that I hereby appoint you to serve as the chair of the Council for Higher Education's Committee for the Evaluation of Chemistry Studies.

The composition of the Committee will be as follows: Prof. Rich Eisenberg (Chair), Prof. Allen Bard, Prof. William Jorgensen, Prof. Tobin Marks, Prof. David Milstein and Prof. Joan Valentine.

Ms. Alisa Elon will coordinate the Committee's activities.

In your capacity as the chair of the Evaluation Committee, you will be requested to function in accordance with the enclosed appendix.

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

Sincerely,

*Gideon Sa'ar*  
Gideon Sa'ar

Minister of Education,  
Chairperson, The Council for Higher Education

*Enclosures:* Appendix to the Appointment Letter of Evaluation Committees

cc: Ms. Michal Neumann, The Quality Assessment Division  
Ms. Alisa Elon, Committee Coordinator

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כתובת אתר ממשל זמין: <http://gov.il>  
כתובת אתר המשרד: <http://www.education.gov.il>

**Appendix 2- Site Visit Schedule**

**Monday, December 12, 2011:**

09:00-09:30	Opening session with the heads of the institution and the senior staff member appointed to deal with quality assessment	Prof. Yaacov Schul – vice rector
09:30-10:00	Meeting with the heads of the Faculty of Mathematics and Natural Sciences	Prof. Gad Marom
10:00-10:45	Meeting with the heads of the Institute of Chemistry	Prof. Yoel Sasson, Prof. Assaf Friedler, Prof. David Avnir
10:45-11:45	Meeting with Senior Academic Faculty* + representatives of relevant departmental committees*	Prof. Uri Banin Prof. Roi Baer Prof. Avi Bino Prof. Daniel Cohn Prof. Shlomo Magdassi Prof. Edit Tshuva Prof. Shlomo Yitzchaik
11:45-12:30	Meeting with Junior academic faculty*	Dr. Raed Abu-Reziq Dr. Meital Reches Dr. Roy Shenhar Dr. Roie Yerushalmi
12:30-13:15	Lunch (closed working meeting in the same room)	
13:15-15:15	Tour of campus (Including classes, labs, library, offices of faculty members, computer labs etc.)	Dr. Meital Reches' Labs – Philadelphia building Prof. Edit Tshuva's Labs – Los Angeles building Dr. Roie Yerushalmi's Labs – Los Angeles building Brandman laboratory building Prof. Yoel Sasson Prof. Assaf Friedler Prof. Avi Bino



**Tuesday, December 13, 2011:**

<b>Time</b>	<b>Subject</b>	<b>Participants</b>
10:00-10:45	Meeting with B.A. students*	
10:45-11:30	Meeting with M.A. students*	
11:30-12:15	Meeting with PhD students*	
12:15-13:30	Lunch (closed working meeting)	
13:30-14:15	Summation meeting with heads of the faculty and department.	Prof. Gad Marom Prof. Yoel Sasson Prof. Assaf Friedler
14:15-14:45	Going to Mount Scopus	
15:00-15:30	Summation meeting with heads of the institution	
15:30-16:00	closed working meeting	