Human Resources Strategy for Researchers

Internal Analysis and Action Plan

1. Introduction

Technion - Israel Institute of Technology opened its doors in 1924 and began the historic task of preparing young men and women to build a new nation. Today, the Technion is Israel's primary University of Science and Technology and the largest center of applied research. The Institute's 13,000 students can study in 18 faculties including 49 undergraduate and 65 graduate programs in engineering, science, architecture, medicine and management.

Ranked among the top technological universities in the world, the Technion has 554 full-time faculty members including three Nobel Prize winning scientists, as well as 385 research faculty and 300 doctors with part-time academic appointments. These faculty members collaborate with leading scientists in research projects worldwide. In the campus there are 42 research institutes and centers and nine interdisciplinary centers of excellence.

Since 1927 the Technion has awarded 93,000 degrees. At any given time, the Technion has a strong presence of visitors from abroad. The Technion operates an active student program and has exchange agreements with almost 100 universities world-wide. It hosts international full time undergraduate and graduate students, researchers, post-doctoral fellows and academic visitors from all over the world, and for varying periods of time.

2. Existing Practices

Existing Technion practices described in Table 1 are summarized according to the C&C principles.

Table 1:

Ethical and Professional Aspects	Principle
Technion's Academic Regulations are summarized in the *'Manual for New Academic Faculty'* which is distributed every year. The Manual contains researcher's main rights (salary, health insurance, pension, vacations, sabbatical, absences, etc.) & obligations (teaching, training & discipline). It also contains information regarding the freedom of research, dissemination of knowledge, funding opportunities, property bylaws, Technion's facilities & services (post office, daycare, gym, pool, courts, etc.).	1 through 9

The Technion is open to all without regard to race, religion, nationality or gender, and does not discriminate in its activities in any way against any person (Technion Constitution & Bylaws).	10
Technion's Senate committees are responsible for the evaluation/appraisal systems of professional performance. Their responsibilities are published in the Technion Constitution, Bylaws and Regulations.	11,16, 35
Technion Intellectual Property Bylaws are based on the goal of producing and disseminating knowledge for the benefit of society. The distribution of knowledge is determined by its creators. Academic freedom is of the highest priority. Protection of knowledge is essential for the best interests of the Technion and its employees, as well as for achieving greater public benefit.	1,8,9
The University has published Ethics Committees Regulations. These regulations emphasize the importance of integrity in all research carried out at, and in partnership with the University.	1, 2, 6,7,8
The Technion provides advanced computing services to students and staff at the *'Taub Computer Centre'* as is appropriate to a leading technological institute.	7
Safety Unit – Technion's management is committed to provide employees, academic staff, technical and administrative staff, students, guests and service providers a safe workplace and healthy environment.	7
T3- Technion Technology Transfer: T3 has extensive expertise in IP development rights, patenting and licensing inventions and forming win-win business agreements, bringing together groundbreaking ideas with investors and entrepreneurs and thereby transforming scientific discovery and technological innovation into real-life applied solutions.	5, 8, 31
Recruitment	**Principle**
The University's recruitment and selection policies comply with the European Charter and Code.	12 through 15
The Executive Vice President for Academic Affairs is responsible for all the aspects of academic and administrative functions pertaining to the academic staff, which includes senior staff members, adjuncts and academic visitors.	5, 12, 13, 15, 16, 19, 21, 25, 28, 29, 32, 33, 34, 37, 39

The Executive Vice President for Research is the Managing Director of the Technion Research and Development Foundation Ltd., and is responsible for all academic aspects of research at the Technion, contact with researchers, research prizes, absorption of new immigrant scientists, and is the facilitator of funded research including external funding (Scientific, Government, Public funds) and internal research funds.	2, 4, 5, 6, 7, 29, 31, 32, 39
Working Condition and Social Security	**Principles**
The University is continuingly improving its campus. This process includes new dormitories and facilities for the University's key workers, students and research staff.	23, 24
Research Authority - serves as the administrative and financial framework for research activities, scientific experiments and technical analyses carried out by Technion faculty, and TRDF staff. The missions of the Research Authority are: • Location, collection, processing and distribution of information concerning local and international research funding • Assistance in locating appropriate funding sources for Technion researchers • R&D information management services and in-campus marketing • Guidance and administrative services for Technion researchers in submitting research proposals to granting agencies and business entities • Management of contractual engagements with granting agencies and business entities • Contractual and budgetary administration of research grants and other accounts	4, 5, 6, 26, 28, 29, 30
Liaison Office promotes applicable research activities among the Technion researchers, in collaboration with industry & other strategic partners. The Liaison team has a one-on-one advice meeting with each new faculty member regarding funding opportunities. Information regarding funding opportunities, R&D Programs, Industry-Academic cooperation & Mobility is available on the Liaison office portal.	4,5,28,29,30,31
University induction day for research/new faculty takes place annually in November (organized by the Executive VP for Research office). These induction days are designed to familiarize new	26

faculty/researchers with the range of funding opportunities and training available.	
'The Task Force on the Status of Women' at the Technion is responsible for providing a pro-active action plan for increasing the number of women at the Technion.	27
The Technion Mobility Center offers free, customized assistance and information to researchers and their families. We assist researchers in all matters relating to their professional and daily lives; offering practical information on housing, schools, day-cares, language courses, visas and working permits.	29
Center for Promotion of Teaching provides workshop for improving teaching skills (all new faculty members have to attend at least one workshop during their first semester). There is an Online Teaching Evaluation Survey at the end of each semester - the Technion rewards students who complete the survey.	33
Technion Prizes for excellent teaching are awarded annually to faculty members who excel in teaching skills and in their positive, supportive and inspiring attitude toward students.	33
Training	**Principles**
The Dean of Undergraduate Studies is responsible for admission to the Technion. The terms of acceptance and instructions for applying to the undergraduate study programs are given in the Applicant's Information Booklet distributed by the Technion's Registration and Admissions Center.	33, 36, 38, 40
Dean of the Graduate school oversees all matters concerning M.Sc. and Ph.D. studies in the Technion, from registration to the awarding of those degrees.	33, 36, 38, 40

3. Internal Gap Analysis

An Internal Gap Analysis was conducted during 2010 in order to analyze Technion's Human Resources Strategy and recruitment regulations. The internal analysis procedures started by establishing an ad-hoc forum based on the Technion management, Executive VP for Research, Executive VP for Academic Affairs, Faculty Deans, HR, Research Authority and the Liaison Office in order to identify and address the gaps. Through individual interviews and evaluations, the forum reviewed all 40 principles and reached a consensus on every single one of them. Each principle was

evaluated concerning any foreseen gaps within the topic at hand. As a result of evaluating the 40 original principles, the forum identified 9 relevant gaps requiring further examination. This process was carried out in order to perform a qualitative survey receiving significant responses. In addition, we compared the institutional practices with the Charter & Code principles and by studying the relevant Israeli Legislation (Israel's Council for Higher Education, Statement and Code of Ethics of Israel's National Council for Research and Development, National Council for Bio Ethics, the Law of Equal Opportunities in Employment & other regulations as required). We studied the Technion's employment rules and regulations, Technion Intellectual Property bylaws, etc. A university-wide gap analysis was distributed to all the researchers and faculty staff at the Technion. It included 9 questions regarding the Charter & Code principles.

We received 106 responses:
- 78 Faculty members (Dean, Chair, Prof., Associate Prof., Senior lecturer)
- 22 Temporary staff (Senior Researcher, Lecturer, Research team)
- 6 of undisclosed status

The next step was the assembly of the 'C&C Working Group'. It included the Executive VP for Research, Executive VP for Academic Affairs, the Director of the Research Authority, Head of the Liaison Office, etc. The 'C&C Working Group' decided on the action plan (presented below), using the gap analysis table.

4. Action Plan

The action plan is summarized in Table 2. The table presents the principles that have to be improved following the outcomes of the internal analysis.

Table 2: Gap Analysis and Action Plan

I. Ethical and Professional aspects

Principle	Gap analysis	Existing Institutional rules & Action Plan
4. Professional attitude: Researchers should be familiar with the strategic goals that govern their research environment and funding mechanisms, and should seek all necessary approvals before starting their research or accessing the resources provided. They should inform their employers,	*Gap analysis survey:* 78% agree with the statement that researchers at the Technion are familiar with the strategic goals governing their research environment and funding mechanisms, and seeking all necessary approvals before starting their research or accessing the	*Existing Institutional rules and /or practices:* Liaison Office distributes information regarding European Founding, Opportunities & Regulations by personal meetings, conferences & informative Emails.

Principle	Gap analysis	Existing Institutional rules & Action Plan
funders or supervisor when their research project is delayed, redefined or completed, or give notice if it is to be terminated earlier or suspended for whatever reason	resources provided.	*Action required:* Liaison Office will continue monitoring via a "Technion Researchers Satisfaction survey" every 6 months (January & June). *Services involved:* • Executive VP for Research • Faculty Deans • Director of Research Authority • Head of Liaison Office
5.Contractual and legal obligations: Researchers at all levels must be familiar with the national, sectoral or institutional regulations governing training and/or working conditions. This includes Intellectual Property Rights regulations, and the requirements and conditions of any sponsor or funders, independently of the nature of their contract. Researchers should adhere to such regulations by delivering the required results (e.g. thesis, publications, patents, reports, new product developments, etc.) as set out in the terms and conditions of the contractor equivalent document	*Gap analysis survey:* 44% disagree with the statement that researchers at the Technion at all levels are familiar with the national or institutional <u>regulations</u> governing training and/or working conditions.	*Existing Institutional rules and /or practices:* Academic Regulation. *Action required:* • Raise awareness among students/researchers about national & <u>institutional regulations</u> governing training and/or working conditions, including the Technion RCR – Responsible Conduct of Research, which will be published in August 2012, and the Conflict of Interest in Research. *Services involved:* • Executive VP for Academic Affairs – prizes & scholarships • Executive VP for Research –funding • Graduate School – information to Graduate students (PhD; MSc) &

Principle	Gap analysis	Existing Institutional rules & Action Plan
		Post-docs • Research Authority – Information on Competitive Academic & External grants • Liaison Office – Strategic EC, The Office of the Chief Scientist and industrial funds and grants • Technion Technology Transfer Office – Short term training in Entrepreneurship
10. Non discrimination: Employers and/or funders of researchers will not discriminate against researchers in any way on the basis of gender, age, ethnic, national or social origin, religion or belief, sexual orientation, language, disability, political opinion, social or economic condition.	*Gap analysis survey:* 90% agree with the statement that the Technion in its role as employers and/or funders of researchers doesn't discriminate against researchers in any way on the basis of gender, age, ethnic, national or social origin, religion or belief, sexual orientation, language, disability, political opinion, social or economic condition.	*Existing Institutional rules and /or practices:* Technion Constitution & Bylaws. *Service involved:* HR - Continuous monitoring of the policies and processes in place.

II. Recruitment

Principle	Gap analysis	Existing Institutional rules & Action Plan
13. Recruitment (Code): Employers and/or funders should establish recruitment procedures which are open, efficient, transparent, supportive and internationally comparable, as well as tailored to the type of	Gap analysis survey: 71% agree with the statement that the Technion as an employer has established recruitment procedures which are open, efficient, transparent, supportive and internationally comparable, as well as	*Existing Institutional rules and /or practices:* Academic Regulations. *Action required:* • Active "Head-hunting", of new excellent researchers- Participation

Principle	Gap analysis	Existing Institutional rules & Action Plan
positions advertised. Advertisements should give a broad description of the knowledge and competencies required, and should not be so specialized as to discourage suitable applicants. Employers should include a description of the working conditions and entitlements, including career development prospects. Moreover, the time allowed between the advertisement of the vacancy or the call for applications and the deadline for reply should be realistic.	tailored to the type of positions advertised.	in Career Fairs abroad. • Publication of Jobs and positions on the various websites (including on the EURAXESS Jobs portal) every 3 month the Mobility Center distributes an email to the faculty members asking for update regarding new positions. _Services involved:_ • Executive VP for Academic affairs • Liaison Office • HR Departments
18. Recognition of mobility experience (Code): Any mobility experience, e.g. a stay in another country/region or in another research setting (public or private), or a change from one discipline or sector to another, whether as part of the initial research training or at a later stage of the research career, or virtual mobility experience, should be considered as a valuable contribution to the professional development of a researcher.	_Gap analysis survey:_ 83% agree with the statement that any mobility experience, e.g. a stay in another country/region or in another research setting (public or private) or a change from one discipline or sector to another are considered by the Technion as a valuable contribution to the professional development of a researcher.	_Existing Institutional rules and /or practices:_ Mobility experience is highly valuable in faculty recruitment process. _Actions required:_ • Development of complaints monitoring system aimed to improve the future services for mobility relocation and re-integration. • Raise more awareness among researchers at the Technion of job opportunities and vacancies worldwide, including for senior faculty members.

Principle	Gap analysis	Existing Institutional rules & Action Plan
		Service involved: Technion Mobility center distributing the survey every 6 months.

III. Working conditions and Social Security

Principle	Gap analysis	Existing Institutional rules & Action Plan
25. Stability and permanence of employment: Employers and/or funders should ensure that the performance of researchers is not undermined by instability of employment contracts, and should therefore commit themselves as far as possible to improving the stability of employment conditions for researchers, thus implementing and abiding by the principles and terms laid down in the *EU Directive on Fixed-Term Work*.	*Gap analysis survey:* 55% state that the Technion as an employer does not ensure that the performance of researchers is not affected by instability of contracts of employment.	*Existing Institutional rules and /or practices:* Faculty members may receive tenure after ~ 5 years subject to the tenure process which involves the particular Faculty and Technion- wide Committees. Academic promotion – based on evaluation by an external scientific committee, following faculty request. *Action required:* Raise awareness among temporary researchers regarding employment conditions and founding - Ongoing activity. *Services involved:* • Executive VP for Academic affairs • Technion HR Department • Faculties
26. Funding and salaries: Employers and/or funders of researchers should ensure that researchers enjoy fair and attractive conditions of funding	*Gap analysis survey:* 48% disagree with the statement that Technion as an employer and/or funder of researchers ensures that researchers at all career stages <u>enjoy</u>	*Existing Institutional rules and /or practices:* Technion Best Practice - Supplements to young researchers who apply to competitive funds.

Principle	Gap analysis	Existing Institutional rules & Action Plan
and/or salaries with adequate and equitable social security provisions (including sickness and parental benefits, pension rights and unemployment benefits) in accordance with existing national legislation and with national or sectoral collective bargaining agreements. This must include researchers at all career stages, including early-stage researchers, commensurate with their legal status, performance and level of qualifications and/or responsibilities	<u>fair and attractive conditions of funding and/or salaries</u> with adequate and equitable social security provisions.	*Action required:* Due to low awareness of the basic national & international regulations on the recruitment and promotion of academic staff, we believe that raising awareness of these regulations will aid in overcoming a feeling of inequality amongst researchers. *Services involved:* • Research Authority • Liaison Office • HR department Ongoing action, including distributing the policies on the Mobility Center website.
28. Career development: Employers and/or funders should draw up, preferably within the framework of their human resources management, a specific career development strategy for researchers at all stages of their career, regardless of their contractual situation, including for researchers on fixed-term contracts. It should include the availability of mentors involved in providing support and guidance for the personal and professional development of researchers, thus	*Gap analysis survey:* 66% disagree with the statement that the Technion as employer of researcher's draws up a <u>specific career development strategy</u> for researchers at all stages of their career, regardless of their contractual situation, including for researchers on fixed-term contracts.	*Existing Institutional rules and /or practices:* • Technion Academic Regulations for Career development, based on competitive grants, external scientific evaluation committees and tutorial evaluation. • Individual Career plan guided by the Executive VP for Academic Affairs & the Dean – personalized treatment according to individual recruitment of researcher. • Training: Seminars for new faculty members for information regarding research funds, academic

Principle	Gap analysis	Existing Institutional rules & Action Plan
motivating them and contributing to reducing any insecurity in their professional future. All researchers should be made familiar with such provisions and arrangements		rights, obligation, union rights, etc. • Seminars for new faculty members (in their first 2 years) on how to write proposals. • All the courses regarding internship, innovation & business are open to all faculty member. • Researchers are offered an individual service regarding promotion of ideas for research, patents & business plans – Liaison office, T3 & Research Authority. *Action required:* • We are continually raising awareness among researchers regarding the variety of opportunities in career development. • Recruitment models followed by the specific and individual design of Research Career Planning with the assistance of research advisors, and massive investment in infrastructures research facilities, form the basic environment for career development. • We believe this holistic strategy will enable us to accommodate and recruit excellent researchers & faculty. • Supplements for excellent teachers who were chosen as excellent teachers by

Principle	Gap analysis	Existing Institutional rules & Action Plan
		the Academic Committee (assembled by the Executive VP for Academic affairs, student & faculty members). *Services involved:* • Faculty Deans • Executive VP for Academic affairs – responsible for career development of all faculty members in the campus, evaluation of candidate & evaluation committees, recourses committees, etc. • Thesis advisor • Laboratory Manager • Research Authority & Liaison Office – Emails distribution, information regarding opening curses, proposal etc.

IV. Training

Principle	Gap analysis	Existing Institutional rules & Action Plan
37. Supervision and managerial duties: Senior researchers should devote particular attention to their multifaceted role as supervisors, mentors, career advisors, leaders, project coordinators, managers or science communicators. They should perform these tasks to the highest professional standards. With regard to their role as supervisors or	*Gap analysis survey*: 83% agree with the statement that senior researchers at the Technion devote particular attention to their multi-faceted role as supervisors, mentors, career advisors, leaders, project coordinators, managers or science communicators.	*Existing Institutional rules and /or practices:* Technion Ethical Code. *Action required:* Raising more awareness among new Faculty members - Annual information day for new Faculty members. *Services involved:* • Senior VP

Principle	Gap analysis	Existing Institutional rules & Action Plan
mentors of researchers, senior researchers should build up a constructive and positive relationship with the early-stage researchers, in order to set the conditions for efficient transfer of knowledge and for the further successful development of the researchers' careers.		• Executive VP for Academic affairs • Faculty Deans • External Academic Evaluation committees

Technion Responsible Conduct of Research is currently being updated and will be published in August 2012.

Constant monitoring of the C&C strategy will be carried out, the 'C&C Working Group' will be convened every 6 months in order to examine the implementation of the action plan.