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R&D ASSESSMENT AT JORDANIAN UNIVERSITIES: ENCOURAGING TRANSFER OF TECHNOLOGY TO INNOVATION STAGE

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I. Objective:

Review the current legislation at Jordan University (the “JU”) and Jordan University for Science and Technology (the “JUST”) with the purpose of modifying/modernizing such legislation and provide clear suggestions and recommendations for modifying/modernizing the same, for the purpose of encouraging and facilitating university professors/academics to invest in their intellectual capital for the benefit of the economy.

II. List of Acronyms

▪ The Association of University Technology Managers	-	AUTM
▪ Confidential Disclosure Agreement	-	CDA
▪ Hamdi Mango Centre for Scientific Research	-	HMCSR
▪ Intellectual Property	-	IP
▪ Intellectual Property Rights	-	IPRs
▪ Jordanian Dinars	-	JD
▪ Jordan University	-	JU
▪ Jordan University for Science and Technology	-	JUST
▪ King Abdullah II Design and Development Bureau	-	KADDB
▪ King Abdullah University Hospital	-	KAUH
▪ Pharmaceutical Research Centre	-	PRC
▪ Princess Haya Biotechnology Centre ("PHBC")	-	PHBC
▪ Masters in Business Administration	-	MBA
▪ Renewable Energy Centre	-	REC
▪ Research and Development	-	R&D
▪ Royal Scientific Society	-	RSS
▪ Trade-Related Aspects of Intellectual Property	-	TRIPS
▪ Technology Transfer Centre	-	TTC
▪ Technology Transfer Office	-	TTO
▪ University of California	-	UC
▪ Wisconsin Alumni Research Foundation	-	WARF

III. Executive Summary:

1. Introduction:

The Introduction of this Report defines the scope of the Report, which is to reform the current Legislation and IP Policies at the Universities with the aim of encouraging and facilitating the transfer of technology from the R&D stage to the innovation and commercialization stage.

The Introduction, in addition, gives a brief overview of the general legal framework the report has dealt with, as well as the current situation in Jordan, which while promising, still requires extensive work to achieve significant steps in technology transfer.

2. Legal Review of University Legislation:

The objective of this section is to examine and analyze the Legislation dealing with R&D and innovation incentives at the two Universities, in light of making the process of technology transfer easier, incentivized, and ultimately possible. Subsequent to such examination we have set out the issues within the provisions of the Legislation, and have provided a recommendation for resolving such issues, and drafted the amendments and additions into the text of the Legislation as required to affect the recommendations, which are attached as Schedule 1 to this Report.

3. University IP Policies:

As with the above section (2), the objective of this section is to examine and analyze the IP Policies of the Universities, and to point out where such IP Policies fall short in providing researchers and inventors with the required guidance, flexibility, and incentive. The recommendations set forth as a result have also been drafted in as suggested provisions in the existing IP Policies and attached as Schedule 2 to this Report.

4. Other Recommendations:

In addition to the recommendations set out in the above sections, the following are recommendations addressing ways in which technology may be transferred to the marketplace:

4.1. Technology Transfer Office:

This section dealt with explaining the relevance and importance of establishing a Technology Transfer Office (TTO) in each of the Universities, by examining the

merits and wisdom of doing so. Reference was made to western examples of the success of TTOs and the impact they have had on their respective institutions. This section also highlighted the manner in which TTOs may be staffed, operated, and most importantly established in accordance with the existing University Legislation.

4.2. The Fund for Supporting Scientific Research:

In this Section the role, mandate, revenue sources, and IP Policy of the Fund for Supporting Scientific Research (the “Fund”) are examined. The recommendation resultant from such examination encourages the increased use of the Fund’s resources for the benefit of practical R&D being turned into innovation and business, by way of increased communication and cooperation between the University, TTOs and the Fund.

4.3. Existing Scientific Centers and Programs at the Universities

4.3.1 Scientific Centers at the Universities

This section dealt with existing centers at the Universities which are presently there to support scientific research in specified fields. Examples of successful centers are pointed out and special emphasis is given on how a TTO can actually support and further improve the role of these centers in technology transfer.

4.3.2 "A Doctor for Every Factory" Program

This is a Program launched by JU in corporation with a number of Jordanian universities aiming to strengthen the relationship between academics and the private sector.

5. Conclusion:

The Conclusion to this Report provides a brief summary of the recommendations set forth in the body of the Report, and is augmented by a Conclusion Matrix which is attached as Schedule 5.

1. Introduction

This Report will focus on the laws, regulations and instructions (hereinafter referred to as the “Legislation”) implemented in Jordan University (JU) and Jordan University for Science and Technology (JUST) (hereinafter referred to individually as “University” and collectively as “Universities”) and the manner in which the Legislation is implemented in these two institutions so as to encourage academics to translate Research & Development (“R&D”) into new business ideas that will benefit academics, Universities and the Jordanian economy. Consideration will also be given to the available opportunities to exploit R&D to benefit existing industry/businesses.

The research undertaken clearly shows that modernizing the Legislation will directly assist the Universities and positively impact the Jordanian economy. Encouraging innovation will inject income into the economy, decrease reliance on governmental funding by the Universities and result in better wages and further incentives for the academics thus enhancing Jordan’s technological industry. The future outcome of this program is to minimize Jordan’s dependence on foreign assistance in this field.

The role of Intellectual Property Rights (“IPRs”) in driving innovation at universities is vital. The assumption is that Intellectual Property (“IP”) management at the university level grows in tandem with strong R&D and the capacity for the local economy to commercialize this technology¹. Hence the role of IP Legislation in driving innovation in Jordan will be of great importance. Jordan is a member and signatory to the Agreement on Trade-Related Aspects of Intellectual Property (TRIPS Agreement), and has enacted numerous pieces of legislation dealing with varied intellectual IP issues, including: copyright law, patent law and trademark law, and in accordance with the US-Jordan Free Trade Agreement Jordan has undertaken further IP reforms.

With regards to the development of R&D, Jordan has taken promising steps at the university level. Reforms implemented include IP protection for academics and the University, the issuance of regulations that govern research at the Universities and the introduction of an Article in the Higher Education Law requiring Public Limited Companies to contribute part of their net profit to support R&D. Nevertheless the problem facing Jordanian Universities is the lack of understanding on how to commercialize the R&D carried out at the University into viable business opportunities for both the University and the academics. For example, in 2004, Jordan only granted four patents to residents of Jordan and 56 patents to foreign residents². For a country that has taken the initiative in introducing new IP laws and boasts a relatively advanced education system, these numbers are not overly promising.

¹ Graff GD. 2007. Echoes of Bayh-Dole? A survey of IP and Technology Transfer Policies in Emerging and Developing Economies. Available online at www.ipHandbook.org.

² *Ibid*

This problem stems from the fact that Universities pay attention to developing R&D, yet no awareness or funding is being allocated towards commercializing these ideas. Hence, University professors are mostly unwilling and unenthusiastic to take part in R&D work because there is no monetary incentive to do so. What is therefore required is for a distinction to be made between R&D and the concept of innovation. The following is a Table¹(1) which compares both of these concepts.

Table 1

	Research & Development	Innovation
Purpose	Generation of new ideas	Conversion of ideas into business and wealth
People	Academics Scientists Researchers	Entrepreneurs Business People
Place	Universities Research establishments	The marketplace Companies
Price	Cost to the economy	Income for the economy
Summary	“the <u>science</u> of turning money into ideas”	“the <u>art</u> of turning ideas into wealth”

What the Universities lack is the ability to convert the ideas that have been already developed into “business and wealth”. Furthermore, what this table reveals is that R&D is a burden on the economy. Money is being poured in to help R&D at Universities, yet this money is not being translated into businesses which can then re-inject income into the economy. We are therefore faced with a problem where R&D is costing the Jordanian economy millions of Jordanian Dinars (“JD”) without turning that expenditure into any sort of business. Therefore what is required is the amendment of several laws that address this issue and the establishment of certain institutions which will in turn assist the Universities and provide an incentive for academics in transferring technology to the marketplace.

The facilitation of interaction and communication between the Universities (especially its academics) and the private sector is key in transferring technology to the marketplace. Many developed countries have successfully developed thriving businesses instigated by R&D. The United States of America is one of the more prominent countries in this respect. The concept of taking IP from the laboratory to market originated in the US, and is now so institutionalized that the Association of University Technology

¹ D. Tee. 2007. A Practical Guide to Wealth Creation, Proposals for an Innovation Policy for Jordan.

Managers (AUTM) can regularly attract a cross-section of the world's leading companies, lawyers, and venture capitalists to its annual conference¹.

Thus the report will focus on the following issues addressed by the TOR:

1. Reviewing relevant University Legislation and IP Policies and laws which oversee R&D.
2. Ascertaining the problems associated with the said Legislation and policies including omissions and weaknesses which would hinder innovation
3. Issuing recommendations which shall include: amending the IP instructions associated with the Universities, a discussion of best practices undertaken in developed countries specifically looking at the establishment of a Technology Transfer Office ("TTO") in each respective University and how such an office can assist in transferring R&D into commercial businesses; how the inception of the Scientific Research Fund by virtue of Article 13 of the Higher Education Law can be used effectively to contribute towards the economy in general and the Universities in particular.
4. Looking at existing infrastructure already established at the Universities and how such infrastructure is currently being used and how it can be improved. The "Doctor for Every Factory" Program is also addressed, focusing on how the Program operates and what are its limitations.

¹ Page N. 2007. The Making of a Licensing Legend: Stanford University's Office of Technology Licensing. Available online at www.ipHandbook.org

2. Legal Review of University Legislation

2.1 Introduction:

The following section identifies relevant University Legislation for JU and JUST which require revision. The purpose of such a review is to reward and encourage innovation by amending and removing limitations and omissions in the law and allowing the student body to play an active role in research and innovation efforts.

Attached as Schedule (1) of this Report are suggested draft provisions in a table format, amending or adding to, the existing provisions of Legislation, which are based on our recommendations as set out in Table (2) and (3) below.

2.2 List of Legislation reviewed:

JU

- Employees Regulation (no.52 of 2003)
- Researchers Association Regulation (no.45 of 1998)
- Scientific Research Regulation (no.9 of 1998)
- Researchers Association Instructions

JUST

- Employees Regulation (no.146 of 2003)
- Scientific Research Regulation (no.17 of 2005)
- Researchers Association Regulation (no.48 of 1998)

Jordan University (JU)

<i>Legislation</i>	<i>article</i>	<i>problems</i>	<i>Recommendations</i>
Employees Regulation No. 52 of 2003	2		<ul style="list-style-type: none"> - Add the following definition: Scientific Research means; every effort aimed at the development of humanitarian knowledge
	20/B	<p>According to special conditions , the President of the University may grant the Employee an exceptional monetary reward that does not exceed that Employee's monthly salary in any of the following cases :</p> <ul style="list-style-type: none"> 1-if he/she proposed a patent that was useful for the community or the university 2-if he/she did a creative work or achievement that saved public expenses 	<ul style="list-style-type: none"> -If a reward is granted to motivate the Employee, in such a case it should be at least worthwhile amount. -Quantify the amount of the reward granted by the President of The University taking into consideration the value of the patent or the creative work submitted and after consulting with experts in the concerned field. - The reward granted shall not be less than the total monthly salary of six months. -Suggested amendment for article 20/B/1: "If he/she proposed a patent or a Scientific Research that was useful for the community or the university".
	44	<p>The Employee is prohibited from conducting any sort of activity outside the University without the prior written approval from the President of the University</p>	<ul style="list-style-type: none"> - Indicate the mechanism by which the Employee may acquire such approval. - Strict the mentioned later mechanism to be for activities related to research purposes. - Facilitate and clarify the approval's procedures - The request for approval should be submitted not later than 30 days before the commencement of the activity if it is in Jordan and not later than 60 days if it is abroad - The President's response should be delivered no later than 2 weeks before the commencement of

			the activity if it is in Jordan and no later than 30 days if it is abroad, or else the approval for conducting or participating in such activity is considered implicit.
Researchers' Association Regulation No. 45 of 1998	General Issue	There is no mention of the following : <ul style="list-style-type: none"> - The main purpose of the Association. - Benefits of being in the Researcher's Association. - If the member of the faculty can combine the two memberships (Faculty membership & the Researchers' Association membership) 	
	2		Add the following definition: Scientific Research means; every effort aimed at the development of humanitarian knowledge
	3	The members of the Researcher's Association in the University are : <ul style="list-style-type: none"> A- Senior Researcher B- Associate Researcher C- Assistant Researcher D- Research Assistant There is no mention of students being members of the mentioned Association.	-Add Student Researcher as members of the association
	21	The member of the Researchers' Association is prohibited from conducting any sort of activity outside the university without the prior written approval from the president of the university	<ul style="list-style-type: none"> - Indicate the mechanism by which the Researcher may acquire such approval - Facilitate and clarify the approval's procedures - The request for approval should be submitted not later than 30 days before the commencement of the activity if it is in Jordan and not later than 60 days if it is abroad - The President's response should be delivered no later than 2 weeks before the commencement of the activity if it is in Jordan and no later than 30

			days if it is abroad, or else the approval for conducting or participating in such activity is considered implicit.
Researcher's Association Instruction.	12/2	In addition to the other conditions, the member of the Researchers' Association applying for a promotion should have attempted to obtain foreign funding for at least 3 researching projects and succeeded in obtaining one.	<ul style="list-style-type: none"> - Not to limit the funding to foreign funding only. - Delete the term "attempt"
Scientific Research Regulation No.9 of 1998	3	<p>The members of the Board of Scientific Research in the University are the following :</p> <ul style="list-style-type: none"> a- the Scientific Research Dean as President; b- Eight members of the faculty chosen by the Deans Council upon the recommendation of the Scientific Research Dean for two years c- Two expert members from outside the University who are connected to the Scientific Research chosen by the Dean's council upon the recommendation of the Scientific Research Dean for one year <p>And the Board of Scientific Research may invite one or more of the stakeholders to be part in the sessions without having the right to vote.</p>	<ul style="list-style-type: none"> - Replace the required two members in article 3/c with four members from the following sectors : - Energy sector - Health /Biotechnology /Pharmaceutics sector - Technology/ Industry sector - Water/ Agriculture sector

**Jordan University of Science and Technology
(JUST)**

<i>Legislation</i>	<i>article</i>	<i>problems</i>	<i>Recommendations</i>
Employees Regulation No. 146 of 2003	18	<p>C- The Deans' council in the University and upon the recommendation of the President of the University may grant the Employee an exceptional monetary reward that does not exceed (5%) of the overall monthly salary in any of these cases:</p> <p>1- If he/she submitted a patent that is useful for either the University or the community ; to be also applicable, new, creative and not copied</p> <p>2- If he/she submitted a publication, research, idea or study that is applicable and is useful for either the University or the community.</p> <p>D- the patent, research or study mentioned in articles (1) & (2) are evaluated by a specialized scientific committee ,whereas the service , creative work or achievement are evaluated by a specialized committee that is established by the mentioned Council</p>	<p>-If a reward is granted to motivate the Employee, in such a case it should be at least worthwhile amount.</p> <p>- The reward granted that is estimated by the committee mentioned in article (18/D) and it shall not be less than the monthly salary of six months.</p>
	41	<p>The Employee is prohibited from conducting any sort of activity outside the University without the prior written consent from the President of the University</p>	<ul style="list-style-type: none"> - Indicate the mechanism by which the Employee may acquire such approval. - Strict the mentioned later mechanism to be for activities related to research purposes. - Facilitate and clarify the approval's procedures - The request for approval should be submitted not later than 30 days before the commencement of the activity if it is in Jordan and not later than 60 days if it is abroad - The President's response should be delivered no later than 2 weeks before the commencement of the activity if it is in Jordan and no later than 30

			days if it is abroad, or else the approval for conducting or participating in such activity is considered implicit. -
Researchers' association regulation No. 48 of 1998	General Issues	There is no mention of the following : - The main purpose of the association. - Benefits of being in the researcher's association. - If the member of the faculty can combine the two memberships (Faculty membership & the Researchers' Association membership)	
	2		Add the following definition: Scientific Research means; every effort aimed at the development of humanitarian knowledge
	3	The members of the Researcher's Association in the University are : E- Senior Researcher F- Associate Researcher G- Assistant Researcher H- Research Assistant There is no mention of students being members of the mentioned Association.	-Add Student Researcher as members of the association
	21	The member of the Researchers' Association is prohibited from conducting any sort of activity outside the University without the prior written approval from the President of the University	- Indicate the mechanism by which the Employee may acquire such approval - Facilitate and clarify the approval's procedures - The request for approval should be submitted not later than 30 days before the commencement of the activity if it is in Jordan and not later than 60 days if it is abroad - The President's response should be delivered no later than 2 weeks before the commencement of the activity if it is in Jordan and no later than 30 days if it is abroad, or else the approval for conducting or participating in such activity is considered implicit.

<i>Scientific Research Regulation No.17 of 2005</i>	4	<p>A- The committee of Scientific Research is composed of the Dean of Scientific Research in the University as president and the membership of :</p> <ol style="list-style-type: none"> 1- Six members of the faculty chosen by the Deans' Council upon the recommendation of the Scientific Research dean for two years that may be renewed 2- Two experts from outside the University who are connected to the Scientific Research chosen by the Dean's Council upon the recommendation of the Scientific Research Dean for one year <p>B-The Deans' Council chose one of its members to be the Vice-President for this committee</p>	<p>- Replace the required two members in article 4/A/2 with four members from the following sectors by the same appointing procedures :</p> <ul style="list-style-type: none"> - Energy sector - Health /Biotechnology /Pharmaceutics sector - Technology/ Industry sector - Water/ Agriculture sector <p>- Add "And the Committee of Scientific Research may invite one or more of the stakeholders to be part in the sessions without having the right to vote"</p>

3. University IP Policies:

Both JU and JUST have internal Intellectual Property Instructions (“IP Instructions”) set in place for the purpose of, among other things, setting the respective IP sharing rights, obligations, and cost sharing of each of the inventor and the Universities in the registration, development, and profits sharing of an invention, patent, or other IP right.

In order to encourage innovation and provide commercial spin off to R&D IP Instructions must be:

- A) Clear-cut, well defined, and unambiguous
- B) Equitable for the inventor/researcher,
- C) Flexible in application,
- D) Adaptable to the IP sharing requirements that may arise in the event of multiple inventors or funders
- E) Encompassing a role for a TTO.

3.1 JU IP Instructions

The IP Instructions: for Patents, Copyrights, and Publication in JU (the “JU IP Instructions”) were issued by the President of JU pursuant to the above mentioned Scientific Research Regulations. The JU IP Instructions are quite extensive and contain a significant level of detail, but as mentioned above fall short in some areas which may be remedied pursuant to the recommendations set forth below:

3.1.1. Recommendation 1

In order to add the several suggestions referred to later in this section, we will first address the definitions section in the JU IP Instructions.

Firstly, a clear definition for a TTO needs to be added in order to define what a TTO is and its job at the University, therefore the following needs to be added:

"Technology Transfer Office: An office to be established in the University which shall be responsible for the protection, administration and commercial development of all inventions and creations made at the University, and shall have the authority to do whatever is necessary to reach these goals."

Secondly, in order to regulate the job of the TTO and to clearly establish a means to work with the researchers and inventors. We have decided to add three separate agreements to be entered into between various parties in order to safeguard both the University's rights in any IPRs developed and the Inventor. The following definitions are to be added:

"Participation Agreement: An Agreement to be entered into by the Technology Transfer Office and the Researcher whereby the provisions of these Instructions shall strictly apply to the Researcher."

"Non-Disclosure Agreement: An Agreement entered into between the Technology Transfer Office and the Researcher, whereby the Technology Transfer Office is obligated not to disclose any documents or information related to the creation or invention submitted by the Researcher to the office whether for the purpose of seeking funding or to make use of the office's services."

"Confidential Disclosure Agreement: An Agreement entered into between the Technology Transfer Office and a third party willing to investigate, evaluate or fund a research or invention, such a third party will adhere to the terms and confidentiality of any information it obtains relating to the creation or invention."

3.1.2. Recommendation 2

Throughout the JU IP Instructions no differentiation is made between ‘significant use’ and ‘insignificant use’ of JU resources, and whether such a differentiation is directly indicative of the level of ‘support’ actually being provided by JU and exploited by the researcher. The level of support will of course in turn have a direct bearing on the percentage, if any, JU should be entitled to in the IP right(s) or invention(s) developed by the researcher. Therefore we suggest the inclusion of two additional articles in the JU IP Instructions clarifying the matter.

In order to define “significant use/support”, the term JU ‘support’ i.e. JU resources must be clearly identified. University resources may be defined as all tangible resources made available by a university or an R&D institution to inventors, including:

- office, laboratory and studio space and equipment;
- computer hardware, software and support;
- secretarial services;
- research, teaching and laboratory assistants;
- supplies and utilities; and
- Funding for research and teaching activities, travel and other funding or reimbursements.

University resources may not include salary, insurance or retirement plan contribution to or for the benefit of the inventor.

In addition, every university or R&D institution is encouraged to define what does not constitute significant use of its resources. In some universities, use of library facilities, facilities available to the general public and occasional use of office equipment and office staff may ordinarily not be considered “significant use” of the institution’s facilities and equipment.¹

¹ Guidelines on Developing Intellectual Property Policy for Universities and R&D Organizations p. 11, World Intellectual Property Organization – Geneva. (hereinafter referred to as the "WIPO Report")

Additional articles to be included may be drafted as as new Article 4 and 5 as follows:

Article 4: ‘The Researcher shall be considered to be receiving Significant Support from the University in the event the University is directly and financially funding the Researcher’s research, or in the event the Researcher is exploiting any of the University’s offices, laboratories, studio space, equipment, supplies, utilities, or is frequently exploiting any of its computer hardware, software and support, and secretarial services’.

Article 5: ‘ In the event any patent, intellectual property, or invention is developed by a Researcher independently and without the use of any Significant Support of the University, then all rights in such patent, intellectual property, or invention shall vest solely with the Researcher, except as otherwise agreed with the University or any other source of funding’.

Furthermore the term ‘Significant Support’ should replace the ‘Support’ in several instances throughout JU IP Instructions to ensure only the fruits of research conducted with ‘Significant Support’ from JU is shared with JU.

3.1.3. Recommendation 3

Pursuant to a TTO being established for JU in accordance with section 4.1.3 of this Report, the TTO shall be responsible for registering all IP rights and shall negotiate and draft licensing agreement, among other duties and capabilities, as well as undertaking certain responsibilities formerly unaddressed or left to the discretion of the President of JU.

Article 12 of the JU IP Instructions presently states the following:

‘The President of the University, or who he appoints in writing, shall be responsible for administrating matters regarding patents which are related to the University’.

We recommend that Article 12 be amended as follows:

‘The Technology Transfer Office of the University shall be responsible for administrating matters regarding patents which are related to the University’.

Article 16 of the JU IP Instructions presently states the following: ‘Negotiation undertaken regarding the provisions of an invention’s licensing agreement on a case by case basis and on each case’s circumstances’

We recommend that Article 12 be amended as follows:

‘Negotiations undertaken regarding the provisions of an invention’s licensing agreement on a case by case basis and on each case’s circumstances. The Technology Transfer Office of the University will assist in such negotiations at all time, and when requested act as a proxy for the Researcher upon the written request of the Researcher’.

3.1.4. Recommendation 4

A new article should be introduced which states the methods in which the TTO shall manage the IPRs of the University and the Researcher:

Article 13:

"The Technology Transfer Office shall have the responsibility to manage issues relating to Intellectual Property Rights in connection with the University through the following Agreements:

1. Participation Agreements
2. Non-Disclosure Agreements
3. Confidential Disclosure Agreements
4. Any other Agreements which the Technology Transfer Office deems necessary

3.1.5. Recommendation 5

Article 19 of the JU IP Instructions defines the term ‘Technological Knowledge’ as a party which may share in the IP Rights. This is ambiguous, and despite extensive enquires on the matter, the meaning of such term has not been clarified . We recommend that such term be either clarified or exchanged for a term which explains the meaning behind the provision in more clarity.

3.2. JUST IP Instructions:

The IP Instructions issued by JUST in contrast to JU are simple and lack detail. . We were only able to obtain such Instructions in rudimentary form and cannot trace its issuing body or date of issue, but we may assume that the JUST IP Instructions were issued by order of the JUST President.

Due to lack of detail the IP Instructions omit several important issues and shall require a more substantial reconstruction. We have decided to replicate the JU IP Instructions and accommodate the suggested recommendations made in section 3.1 into a newly drafted IP Instructions for JUST which tackle's all the elements associated with having a clearly defined IP policy consistent with best practice. The new JUST IP Instructions are attached to this Report as Schedule 3.

3.3. JU IP Policy Draft Provisions:

Attached as Schedule (2) of this Report are suggested draft provisions, amending or adding to, the existing provisions of, which are based on the above stated recommendations.

4. Other Recommendations

In addition to recommending amendments to the Universities legal framework, the following are recommendations addressing ways in which technology may be transferred to the marketplace.

4.1. Technology Transfer Office

4.1.1. Introduction

A TTO is a department, unit or section which is responsible for the protection and commercial development of inventions and creations. A TTO is often established within universities and R&D institutions. The concept of a TTO is a relatively new concept given that even top research universities like the California Institute of Technology only established a specialized department for technology transfer in 1995¹. Yet, a TTO is vital in successfully commercializing R&D.

In a knowledge-based economy, access to know-how and use of knowledge outside the research environment in which the knowledge was attained is a valuable commodity². The U.K. Research Councils define such knowledge transfer as:

The two-way flow of people and ideas between the research environment and wider economy, [which] thereby contribute[s] to national prosperity, the quality of life of U.K. citizens, and cultural enrichment of our society. Knowledge Transfer encompasses the systems and processes by which knowledge, expertise and skilled people transfer between the research environment (universities, centers and institutes and its user communities in industry, commerce, public and service sectors.³

TTOs are specifically established to identify potentially valuable research taking place within the university and to provide a means for its commercial exploitation (through a number of different mechanisms). The TTO's mission should be consistent with the institution's mission, and the TTO's approach and activities should support and add value to the institution.

¹ <http://www.ott.caltech.edu/>

² Arnesse F and A Cohendet. 2001. Technology Transfer Revisited from the Perspective of the Knowledge-based Economy. *Research Policy* 30:1459-1478

³ U.K. Parliament. 2006. Research Council Support for Knowledge Transfer 2006. The Stationary Office Limited: London. www.publications.parliament.uk/pa/cm200506/cmselect/cmselect/995/99507.htm.

In general, a TTO would be responsible for a number of different activities; these can be summarized in the following list¹:

- Processing and safeguarding patent and copyright agreements;
- Determination of the patentability or copyrightability (including receiving patent disclosures, undertaking patent search and completing application for patents and copyright);
- Evaluating the commercial potential of the invention;
- Determine whether to commercialize technology by spin-out or license;
- Manage spin-off company formation;
- Obtaining appropriate patent protection;
- Locating suitable commercial development partners; and
- Negotiating and managing licenses.

This is not meant to be an exhaustive list, yet it shows the different duties that a TTO takes on. Looking closer at these duties, one can see that the overwhelming majority of the duties that a TTO assumes are more business/managerial rather than technical or scientific. This is a vital aspect of any TTO because as stated above, a TTO is responsible for commercial development of R&D, since professors and researchers in universities often lack practical business experience, specialists should be brought in to market and license the products which are being developed by the researchers. The TTO thus acts as a mediator between the professor/researcher and the business world and in turn transforming R&D into innovation.

4.1.2. Establishing a Technology Transfer Office

TTOs are established for a variety of ancillary objectives. While the public good is always a part of a TTO's agenda, some have made income generation their prime target. Others base their agenda on public benefit or local economic development. Therefore, the senior management of the host institution must actively support establishing these offices, and it is only through their guidance and instructions will a successful TTO be established.

After studying various different models of technology transfer throughout the developed world, it is our recommendation that in order to stimulate innovation at the Universities, two separate TTOs must be established, one for each University. TTOs work as the driving force behind innovation and their role in universities and R&D institutions around the world is essential for the successful transfer of R&D into innovation. The following are suggestions on how a TTO can be established at the Universities, the issues which need to be tackled prior to establishing a TTO, examples of successful TTOs from around the world, and the current technology transfer state in Jordan.

¹ WIPO Report, Page 14

Prior to discussing in depth the importance of establishing a TTO it is important to note that since holding the workshop with representatives from the Universities at SABEQ where we discussed the merits of this Report and after receiving the comments from University officials in regards to this Report, it has been clearly expressed to us that both Universities have decided on establishing TTOs. We therefore suggest that our recommendations are carefully examined if and when such offices are established.

4.1.3. Technology Transfer in Jordan

There are two different ways in which a TTO can be established. The first of which is the conventional way; whereby the TTO would be established as a department or unit which is directly affiliated with the University, the second is that the TTO would be established as a subsidiary company which is wholly owned by the university. Universities with an advanced system of technology transfer have used both ways to establish Transfer Offices. It is often the case of how much work the TTO has to manage and what sort of route the university would like to take to best reach its objectives. Yet, because of the structural complexities found in the law, establishing a TTO as a centre in the University would be a more appropriate method

Establishing a TTO under the JU regulations is done through the Regulation for Scientific Centers at Jordan University (no. 15 of 1981). Article 3 of the Regulations states the following:

Article 3 (a): “A centre (scientific centre) is to be established in the university by a decision of Board of Trustees upon recommendation from the university council, provided that the decision is given royal assent”

(b): “The centers shall aim to achieve scientific goals with a special outlook towards research, teaching, training, qualification or any other matters.

Article (3)(a) and (b) set out a clear mechanism in which scientific centers can be established in the University. Thus, a proposal from the University’s council recommending to the Board of Trustees the establishment of a TTO in the University is needed. If approved by the Board of Trustees, the proposal must receive royal assent in order for it to be valid.

The legal structure of JUST makes it an almost identical task to establish a TTO. Article 3 of the Regulations for Scientific Centers at Jordan University for Science and Technology (no.87 of 2003) states the following:

Article 3(a): “A centre or centers (scientific centre) is to be established in the university in accordance with the law which aims to achieve scientific goals in particular research, teaching, training, qualification or anything else”

- (b): “The Centre shall be established pursuant to a decision by the Council of Higher Education”.

Article 3(a) and (b) provide a clear path on how to establish scientific centers in the University. The decision to establish such a center must be issued by the Council of Higher Education and unlike Jordan University there is no need for royal assent, which makes establishing a TTO aiming to assist science at the university a straightforward task.

4.1.4. Personnel

The most important element of having successful technology transfer in an institution is its personnel. A TTO needs to be especially efficient and careful. The volume and type of R&D being carried out at each university or institute would determine the size of the office and the discipline(s) in which its staff member would need to specialize in. Yet, typically TTOs do not employ a large number of people, and to start with a TTO would not need more than 5 employees.

As with any company or business the directors must have the ability to engage with people at all levels and across national boundaries. The technology transfer director needs to understand the potential of what is being offered by the inventor and he should be highly flexible; business skills are important and hiring Master of Business Administration (“MBA”) graduates with a bachelors of science degree is the norm. It is of vital importance for any director working in a TTO to have an understanding of the details of running a business.

The duties of a TTO director are diverse and cover a multitude of tasks. The main and most important duty would be to try and maximize the commercial value of an invention. In order for the director to be able to do so, he would have to be able to create business networks and alliances both locally and internationally; to build up an understanding of the potential for new opportunities and most importantly win the confidence of the academics.

The rest of the staff will be made up of the right combination of analysts who should collectively possess both technical and business skills and have the ability or potential to develop expertise in IPRs and commercialization. The analysts should as a minimum possess a Masters Degree or a PH.D in his/her field of study with at least five years of professional experience in the field to support the educational background. Administrative staffing is also a vital aspect for the success of a TTO. Since the TTO should pride itself on efficiency administrative support will allow the TTO to be run in an efficient and appropriate manner.

In addition to the personnel which have already been discussed, there is a growing trend in developed countries to outsource specialist advice which TTO employees cannot typically assist with. Outsourcing is usually reserved for legal counsels who can provide

intellectual property advice, specifically patent advice. While most offices use external legal advisors, bigger TTOs which take care of more complex issues and a higher volume of inventions now employ in-house advisors. A discussion of the role of such a legal team or an outsourced legal counsel will be further discussed below.

In order to ensure the hiring of competent TTO staff they must take advantage of , various opportunities that are available to build core skills. Since Technology transfer has become a global concept recognized in many countries, there are a number of training forms that focus on networking, the exchange of information and capacity building.

In Europe, the well renowned networking forum: the Association of European Science and Technology Transfer Professionals (“ASTP”)¹, is a professional membership organization for technology transfer directors that host conferences across Europe. Membership is easily attained and the association accepts both individual (can include analysts or directors) and commercial memberships. As for technology transfer training, Praxis (a non-profit organization) offers a full range of courses that are delivered by professionals who have knowledge in the field.² The training is available for both new entrants and for more experienced professionals seeking to further their career in the field of technology transfer. Furthermore UNICO has published a series titled *UNICO Practical Guides*³, this provides in-depth advice on how to establish and manage student IP rights, legal agreements with sponsors from the industry and how to establish spin-off companies through the TTO.

These forums create the opportunity to hire people with the appropriate combination of both technical and business expertise yet with no actual experience in technology transfer. The opportunity to train such individuals is available whereby the employee’s credentials and knowledge of technology transfer would be practically furthered.

4.1.5. IP Policy for the TTO

It is of vital importance for any TTO to establish a clear-cut easily accessible IP policy. The commitment to technology transfer is a long term one, and key information on IP rights and legal agreements must be captured, organized and maintained long term.. Ambiguity in this area would be troublesome and would render the TTO as an inefficient organization. It is important to note that since both Universities have already set in place IP policies on the how to deal with inventions it would be difficult for a TTO established under the authority of either University to draft a new IP policy specific for that office. Therefore, the general IP policy of the Universities has already been addressed, recommendations together with suggested draft policies are available (in Section 3). A discussion of what legal agreements should be available for the success of the office will be considered instead.

¹ <http://www.astp.net/>

² <http://www.praxiscourse.org.uk>

³ <http://www.unico.org.uk>

The TTO must draft standard agreements for its IP Policy. The following is a list of the most important agreements which need to be available for a TTO. These agreements are often drafted by the outsourced legal counsel of the TTO.

1. Participation Agreements

As a means of enforcing the intellectual property policy of the university, universities are advised to devise a participation agreement which confirms acceptance of the IP policy by the employees, students or researchers. In order to use the University's resources a participation agreement must be on file. The agreement should be a standard form agreement which (depending on the IP policy of the University) shall clearly show how *ownership* of inventions and IP rights are governed.¹

2. Confidential Disclosure Agreement

An invention disclosure is used to give a formal description of an invention that is confidentially made by the inventor to the university or research institute. The disclosure document must provide information about the inventor or inventors, what was invented, the circumstances leading to the invention and facts concerning subsequent activities. What it hence provides is the basis for determining patentability of the invention and the technical information for drafting a patent application.²

Furthermore, staff at the university should be aware that public disclosure of an invention prior to completion of the evaluation process by the university and the more important filing of the patent application may be an obstacle to patentability. Therefore, a Confidential Disclosure Agreement (a "CDA") should be signed during the evaluation period of an invention. Whereby the invention may be safely disclosed outside the institution under the protection of a CDA.

CDAs are used when the need arises and there is potential for the patentability of an invention. Particularly, when a staff member wishes to disclose an invention to an external researcher associated with a profit organization to evaluate the invention. The CDA should therefore contain an obligation on the recipient not to use the invention for any purpose other than to evaluate it.³

3. Service Agreements

¹ WIPO Report. Page 9

² WIPO Report, Page 14

³ *Ibid*, Page 17

This is a contract between the university and a company in which the university performs research such as, evaluation, field testing or clinical trials relying on protocols either directly specified by the investing company or protocols developed by the university in order to meet very specific criteria set by the company.¹

These agreements are particularly useful when considering that they play a direct role in technology transfer and more importantly form a link between the university and the private sector. Service agreements can particularly be helpful when we consider Article 13 of the Higher Education Law.

4.1.6. Model TTOs from around the World

There are many successful TTO Models established throughout the world. The following are European and American examples.

Europe

King's College London, established a technology transfer unit only 12 years ago. The University then established KCL Enterprises Ltd., a wholly owned subsidiary of the University. The initial team was composed of no more than 10 employees working in the TTO, the staff specialized in the protection and commercialization of college IP rights. By garnering a variety of grants and contracts with the private sector KCL Enterprises now has over 50 employees. The technology transfer team works with patent prosecution, drafting and negotiating license agreements and is supported by a team which is dedicated to mentoring and incubating new company spin-offs from the University.

In Switzerland a push for technology transfer in the past 10 years has created more than 20 technology transfer offices across the country. The two biggest universities of Bern and Zurich established a jointly owned subsidiary non profit technology transfer company in 1999, named Unitechtra. With a staff of only seven and serving two other research institutes, Unitechtra's objectives are pursued through activities that include the commercialization of research results; the negotiation of research agreements; support for the creation of new spinout companies; and training and education for scientists in the field of technology transfer.

One of the more successful stories on how to extract funding for research is that of Sheffield University in the UK. Sheffield University lacked the necessary funding to fulfill its technology transfer obligations, so the director of the Sheffield TTO established a separate company: BioFusion PLC (Sheffield, U.K.)². BioFusion immediately signed a ten year *exclusive* agreement with Sheffield University to commercialize all University-owned medical IP rights and has also signed a similar agreement with Cardiff University to commercialize all university IP rights. This has led Bio Fusion to become a company

¹ *Ibid*, Page 9

² www.biofusion.co.uk

which is traded on the Alternative Investment Market (AIM) of the London Stock Exchange, BioFusion raised UK £8.2 million in 2005 alone. Such funding now allows BioFusion to manage and fund both existing and new portfolio companies within the university and the area of Sheffield, England.

Biofusion's aim is to sign long term exclusive partnership agreements with top 10 research intensive universities for 100% of their future IP pipelines and the right to 100% of the equity in the resultant spin-out companies on incorporation. BioFusion then aligns the interests of the academic with the company by giving them a significant shareholding in the spin-out company. This has proved to be a successful business model which has made a significant amount of money.

The United States of America

In the United States of America, concept of commercializing innovations has been well-established and is extremely sophisticated. We will concentrate on American public universities rather than private universities, merely because the Universities are both public institutions and so similarities can be drawn up from public American universities.

The University of California ("UC") is likely the largest public research enterprise in the world. In 2004, university researchers reported nearly 1,200 new inventions. The UC technology transfer program has been administered through six functional departments that support all aspects of invention reporting, licensing, and administration.¹ These departments are as follows:

- Information Technology and Communications
- The Office of General Counsel (Legal)
- Licensing
- Patent Prosecution
- Financial Management; and
- Policy Analysis and Development

The most distinctive features of the UC technology transfer system are its size and the development of a distributed institutional network of campuses that operate under a common policy framework that share certain resources, but function relatively independently of each other. Valuable lessons can be learnt from this system.

Centralized elements are specifically, those elements of the program for which,

1. uniform activities are required to minimize legal or financial risk; or
2. economies of scale can be achieved by a consolidation of the activities

In contrast, the following activities have been designated to the campus-based technology transfer offices:

¹ Bennet AB and M Carriere. 2007. Technology Transfer at the University of California. Available online at www.ipHandbook.org

- invention disclosures and evaluation
- patent prosecution
- technology licensing; and
- business developments activities

The centralized/decentralized structure described, could be emulated and implemented at a relatively small-scale research consortium made of a network of institutions or on a large scale national network of universities.

The University of Wisconsin at Madison is one of the best public research universities in the world. It is well renowned for its research in various different sectors. The university's mechanism in extracting funding is particularly unique. In 1925 the university established the Wisconsin Alumni Research Foundation ("WARF") which to this day serves the purpose of commercializing innovations made at the university.

"The official mission of this private, non-profit organization is to support scientific research at the UW-Madison. WARF accomplishes this by patenting inventions arising from university research, licensing the technologies to companies for commercialization, and returning the licensing income to the UW-Madison to support further scientific endeavors. Since making its first grant of \$1,200 in 1928, WARF has contributed more than \$915 million dollars to the UW-Madison, including monies to fund research, build facilities, purchase lands and equipment, and support a bevy of faculty and graduate student fellowships each year."¹

Once an invention is proposed by a UW-Madison researcher, WARF's staff evaluates the discovery for patentability and commercial value. If WARF accepts the invention for patenting and licensing, the foundation provides an attorney to help the researcher with the patent application. The researcher also agrees to assign ownership of the invention to WARF. It is at this point WARF may contact companies considered good matches for the technology. WARF's policies call for 20 percent of the gross licensing revenue from an invention to be returned to the inventor (or inventors). The remainder is shared with the UW-Madison Graduate School, and the inventor's laboratory and department.

4.1.7. JU Alumni Network

JU is the oldest and largest University in Jordan. Having educated some of the best engineers, doctors and businessmen in Jordan its alumni network is very well accomplished and is influential across the region. This is a resource that needs to be better exploited in order to further improve technology transfer at the University. The Jordan University Alumni Club can be utilized in a better way to extract funding for the University and can be specifically used to help fund scientific research.

¹ www.warf.org

The example stated in part 4.1.6 above which has been implemented at UW Madison “WARF” is an exceptional idea which can be implemented at JU. UW Madison is a university which is similar in size to JU in terms of faculty members and students. The manner in which it has utilized its alumni network is just phenomenal and there is no reason to think that JU will not be able to mirror WARF’s example.

The prospect of implementing a similar concept to that of WARF would be an would go steps in raising funding to academia and increase their business awareness. Dr. Dia-Eddin Arafah (the Vice President for Development, Planning and Quality Assurance at the University) stated that there remains to be various alumni who are willing and able to donate money and help assist the University and its researchers. This can be done through various different ways, either through: developing better connections between the alumni business owners and the researchers of the University, providing funding to help assist researchers at the University, or by provide direct funding from the alumni network to the various scientific centers at the University.

Furthermore, with the introduction of a TTO at JU the relationship between the Alumni Club and the TTO would be crucial. The Alumni Club would provide much needed private sector expertise and input to the University, it would give the TTO a steady source of funding whereby the University through the TTO can suggest research projects to the Alumni Club which would require funding, this would lead to a solid relationship between the Alumni Club and the University, and more importantly the increased role of the Alumni Club would form an important link between the researchers and Jordan’s leading private sector professionals.

4.1.8. The Consultative Centre for Science and Technology at JUST

The Consultative Centre for Science and Technology (the “Centre”) was established in 1996. It has since played a major role in the University and has seen its income soar from JD 250,000 in 2004 to JD 1.3 million in 2007¹. The current Director of the Centre is Prof. Khalil Ereifej. After speaking to Prof. Ereifej and analyzing the Center’s Instructions, we are of the opinion that the Centre performs the role of a TTO for the University. The two main objectives of the Centre are the following:

- a. Co-coordinating the technical and human resources of the University to assist the private and public sectors to develop their human resources.
- b. Upgrading the income of the faculty members and other employees through the Center’s activities.

More importantly the Centre performs these objectives through the following activities:

- a. Consultations and studies.
- b. Laboratory testing and analysis.
- c. Continuing Education Programs (workshops, short courses etc...)

¹ These are unofficial figures provided by Prof. Ereifej

- d. Linking with the Industry
- e. Technological Investment.
- f. Total quality management (TQM)

Furthermore in pursuance of these objectives and activities the Centre has established departments to assure proper implementation. Through its council (which supervises and directs its activities), the Centre established three departments to enhance and organize its activities:

- a. Department of Consultation and Technical Services
- b. Department of Linking with the Industry
- c. Department of Continuing Education.

4.1.8.1. Limitations of the Centre

The Centre runs a very effective structure with efficient decision making at the director level, and sufficient delegation to the employees of the Centre. According to Prof. Ereifej's estimate the Centre is one of the more active and efficient at the University since it all 700 faculty members can make use of its resources. Nevertheless, there remains to be some aspects of the Centre which can be improved so as to transform the Centre into a resourceful TTO.

a. Personnel

The Centre currently employs 11 employees which work in the various different departments. Prof. Ereifej stated that all employees working at the Centre have no engineering or technical background and that most have no business degree backgrounds to support the faculty in pursuing their business opportunities. As stated above in section 4.1.4, personnel at a TTO must be diligently recruited and should collectively have to develop their expertise in IPRs and commercialization.

This of itself is a major limitation in the Center's workforce. The Centre employs 11 employees, these employees should ideally be experienced individuals with the right form of education who can handle the pressure of catering the needs of the 700 faculty members at the University. It is therefore our recommendation to the University, to closely study how recruiting is done at the Centre and to try and change the employment standards so as a more competent staff is employed with a collective combination of technical and business skills, in accordance with the standards specified in section 4.1.4.

b. Patenting and IP Agreements

As part of any TTO, legal assistance needs to be provided to assist faculty members at the University. The Centre is in need of adding a department in the Centre which should provide legal services to the Faculty members of the University or

alternatively outsource legal assistance to a local lawyer who can support the Center's legal needs.

The job of such a department or the outsourced lawyer would be to draft the standard agreements as stated in section 4.1.5., assist with licensing negotiations with the private or public sector, and to register IPRs whether locally or internationally. This would be an invaluable asset to the Centre.

c. Issues of bureaucracy

The Centre is run by the council and the Director, which together help make decisions in the best interest of the Centre. The council directs and supervises the Center's activities, as for the Director he is immediately responsible before the President of the University. This gives the Centre a legally efficient structure which is needed to make quick decisions without undue delay. Yet, Prof. Ereifej expressed that in order for the University and the Centre in particular to undergo investment opportunities in the private sector either through partnership with a professor or another private entity, approval from the Higher Education Council is obligatory which is often a troublesome and lengthy process and frequently does not yield the expected results.

4.1.8.2. The Consultative Centre for Science and Technology Instructions¹

Attached as Schedule (4) of this Report are suggested draft provisions, amending or adding to, the existing provisions of the Center's current Instructions, which are based on the below stated recommendations.

<i>Legislation</i>	<i>article</i>	<i>problems</i>	<i>Recommendation</i>
The Consultative Center for Science and Technology Instruction	6	"A) After consulting with the Deans council the president shall establish a board called "the center's council" with a maximum number of 11 expert and qualified members appointed by the president from within or outside the university for one renewable year".	a) after consulting with the Deans council the president shall establish a board called " the center's council" with a maximum number of 11 experts and qualified members appointed by the president, seven members from inside the university and four members from outside the university of the following sectors: - Energy sector - Health/ Biotechnology/ pharmaceutical sector - Information Technology - Industry sector - Water/Agriculture sector
	12	The income generated out of the center's activities is divided according to the following : a) the studies and consultations that used the university's facilities or services as follows: "The centre undertakes the following missions: a) (20%) of the revenue is divided equally between the center and the faculty	Add the following : d) Provide funding for unique and practical ideas, studies and researches. The income generated out of the center's activities is divided according to the following after deducting the direct or indirect expenses of the costs within the University for facilitating the researchers' task inside or outside the university.
	5	b) contribute in eliminating the difficulties that confront national industries through conducting studies, researches and submitting the required consultations to improve these studies c) The team shall endure any other direct or indirect expenses. private/public sector may need and prepare reports including the results".	e) Enable researchers to use the university facilities. g) Carry out any task that shall contribute in linking scientific research with industry such as registering companies and Intellectual Property Rights that are based on the results of scientific researches conducted under the umbrella of the center.

¹ - Issued upon article (8) of the scientific centers regulation in JUST NO. 87 of 2003

4.1.9. The Royal Scientific Society

The Royal Scientific Society (hereinafter referred to as the “RSS”) is the premier government research institution in Jordan, which has taken initiative by realizing the importance of technology transfer and establishing a Technology Transfer Centre. The Technology Transfer Centre describes its activities as follows¹:

The RSS has embarked on a plan to serve the local communities by undertaking a new strategy designed to bring in a new vision and perspective to the various industrial and social activities in Jordan. This has been materialized in the launching of a new centre known as the Technology Transfer Centre (TTC). The TTC serves to provide instant services to local enterprises and community utilizing the resources of RSS technical centers. The fields of work of the TTC include intellectual property, business development, research and development, innovation and training.

The TTC currently works with outsourced legal counsel in order to register the IP rights owned by the RSS. Moreover the TTC has adopted an IP policy which governs inventions made at the RSS. It is interesting to note that the RSS does not require researchers or inventors to be members of the RSS for them to enjoy the benefits of its facilities and the TTC; provided that they sign agreements with the RSS designating any IP royalties to the RSS (in accordance with its IP Policy). The TTC receives its funding mainly from countries donating money to support research in Jordan. The RSS and the TTC do not actively seek out funding from the private sector for a combination of factors most notable of which, is the lack of willingness on the part of the private sector to contribute money towards R&D.

The fact that the TTC has already been established is an important step that should be utilized in pursuing technology transfer at the Universities. There are realistic options available to utilize the TTC to support R&D at the Universities. Our suggestion is to transform the TTC into a centralized TTO which overlooks the TTOs of the two Universities. This idea creates a solid starting point for technology transfer at the Universities but needs a strong political will and a solid legislative foundation on the part of the Universities and the RSS in order for it to be successful.

The advantages are clear, since the TTC has already had experience in technology transfer and have a competent staff in place, the staff would act as a guide to support the newly established TTOs of the Universities and learning experiences can be gained from the directors of the TTC so the same issues won't be replicated at the Universities.

The model adopted in Switzerland by the two Universities of Bern and Zurich (as stated above) and at the University of California may be followed in Jordan. Just like the two examples above, the RSS's TTC can serve both Universities' objectives by, commercializing research results, the negotiation of research agreements with the private and public sectors, support for the creation of new spinout companies, and training and

¹ <http://www.rss.gov.jo/techtrans/TTC/about%20TTC.html>

education for scientists in the field of technology transfer. This would greatly assist both Universities' research objectives and would help unify the efforts of both Universities in trying to assist the Jordanian economy through the research done at their respective institutes.

4.2. The Fund for Supporting Scientific Research

In 1998 the Jordanian government was well aware of the lack of funding to support R&D at various universities and institutions in the Kingdom. As a result, it introduced the Regulation for Supporting Scientific Research and Practical Training (no.66 of 1998), this regulation was issued pursuant to Article 188 of the Companies Law (no.22 of 1997). Thus, awareness on the importance of R&D has been well established for the last decade. The regulations were since modified in 2007 and have since made the Fund available exclusively for supporting Scientific Research removing the “practical training” headline and more importantly have made the monetary contribution of 1% from net profits compulsorily donated to the Fund, instead of giving an option to the Public Limited Company to spend that money on developing its own R&D.

The Fund for supporting scientific research (hereinafter referred to as the “Fund”) was established pursuant to the Higher Education and Scientific Research Law and its amendments (no.4 of 2005). Article 13 establishes the Fund and sets out the sources of funding:

- A. Establishing a fund named (the Fund for Supporting Scientific Research) which enjoys separate legal, monetary and administrative status and aims to encourage and support scientific research in the Kingdom
- B. 1% of the net profits of all Public Limited Companies are dedicated to the Fund.
- C. The monetary resources for the Fund shall consist of the following:
 - 1. The percentage allocated in accordance with subsection B.
 - 2. Any other resources allocated to the Fund which are approved by the Prime Ministry.
- D.1. The Fund shall be governed and run by a Board of Directors which is made up of the following individuals:
 - a. The Minister as President (referring to the Minister of Higher Education and Scientific Research).
 - b. The Secretary General of the Ministry of Higher Education/ Vice President and manager of the Fund.
 - c. The Secretary General of the Ministry of Planning
 - d. The Secretary General of the Ministry of Industry and Trade.
 - e. The Secretary General for the higher council for Science and Technology.
 - f. General Companies Controller

- g. Two Deans of Scientific Research in Jordanian Universities to be assigned in alteration.
 - h. Four experienced members from the private sector.
2. The members who have been referred to in sub clause (g and h) from this Article, are to be appointed for 2 year terms capable of renewal by a decision of the higher education.

The Fund for Supporting Scientific Research Regulations (no.4 of 2007) (hereinafter referred to as the “Regulations”) was consequently adopted pursuant to Article 13 of the Higher Education Law. The following are the particular aims of the Fund in supporting scientific research found in Article 3:

- A. Supporting scientific research projects by providing monetary support to Jordanian universities.
- B. Helping solve technical problems that face Jordanian companies and institutions in developing its industries and products by helping to increase its competitive edge by coordinating with the Jordanian universities.
- D. Awarding funding with the aim of employing scientific knowledge of research to further develop technology and directing it to solve problems which include scientific research, incubating work to further develop excellence and marketing for scientific projects.
- F. Finding the right environment for universities and scientific institutes to connect its research and development activities in accordance with the demand of Jordanian companies and corporations.
- G. Encouraging outstanding students, by giving educational and research scholarships in addition to encouraging on going research in higher education, provided that the student is capable of doing so.

Relevant Articles from the Fund for Supporting Scientific Research Instructions (no.4 of 2007), (hereinafter referred to as the “Instructions”)

Article 8 – The requirements for applying for funding:

- A. For the project or research to be applied by a researcher or a group of researchers who are nominated by their institution(s) which they work in.
- B. For the institution(s) which is benefiting from the researcher(s) the necessary ability to perform the research project and invest in its returns.
- C. In event that, the researcher(s) works in a private university, then the university must have spent the necessary percentage of the budget towards scientific research in the past two years.
- D. In the event that the entity applying for funding is a public limited company, then it must have fulfilled its obligations to the fund in the past two years.

Article 9 - Applications for receiving funding for a research, project or the conference in the subjects which are to be announced by the Ministry of Higher Education and Scientific Research, shall come from the following categories:

- A. Jordanian Universities
- B. Researchers from Jordanian Universities
- C. Researches from the private and public sectors.
- D. Researchers from industrial institutions either separately or in conjunction with academic institutes.
- E. Students of higher education through his higher education faculty or through a trustee of higher education in Jordanian universities.

Article 14 - Intellectual Property Rights:

- A. The Fund's percentage from the returns of intellectual property rights accrued from fully funded projects shall be 50%, the rest will be divided in a separate Agreement.
- B. The Fund's percentage from intellectual property accrued from projects which are supported by the Fund and another association(s) shall be governed by a separate agreement whereby the parties' rights are decided.
- C. Every research, report or book completed by full or partial funding from the Fund has to state in clear writing that the Fund has assisted in its completion.

4.2.1. Interpreting the Law

The legal structure of the Fund is straightforward and very detailed. The Fund is run by a board of directors (article 13 of the Law on Higher Education) and it extracts funding from the net profit of listed public limited companies in Jordan. It is therefore run by a sufficiently knowledgeable group of people who have an abundant source of funding to support R&D throughout the Kingdom. Hence on the face of it, it seems as though the Fund has been constructed in an efficient and effective way to support R&D. Nevertheless, there are some issues in the legal structure of the Fund which need to be addressed.

The Board of Directors

As mentioned above Article 13 (D.1) gives a complete list of the individuals who shall occupy the board of directors of the Fund. The “permanent” members (D.1 (A-F)) are all public sector officials. On the other hand, the “temporary” members (those mentioned in subsection D.(2)) are made up of university deans and private sector individuals. This therefore gives the board of directors 6 permanent members and 6 temporary members, a well-balanced mixture of both private and public sector individuals.

The law merely states that private sector seats shall be reserved for “Four experienced members from the private sector”, hence it is important to set clear criteria regarding their appointment by taking into consideration the following factors:

1. Who are these individuals and on what basis are they appointed?
2. Are these individuals experienced in technology transfer?
3. Do they have sufficient knowledge in what the Jordanian economy needs in terms of technology?
4. What practical role do these individuals have as part of being members of the board of directors of the Fund?

The role of private sector individuals in managing the Fund is vital. The private sector representation in the board of directors is important because it gives public sector individuals insight into what the industry needs in terms of technology transfer, and in what private sector industry is innovation lacking. Yet, the individuals who represent the private sector must be influential and more importantly have sufficient knowledge in investing money into research institutes and projects. The private sector representation on the board is the only way in which public sector individuals would have access to the practical side of technology transfer, therefore set criteria should be established in order to decide who shall occupy the four seats nominated to the private sector to ensure a more efficient and better way of investing into research projects.

IP Policy of the Fund

The Fund has only been established for a year now, and has only just started the first cycle of proposals. The Instructions of the Fund establish a brief IP policy in Article 14 of the Instructions, which states the Fund's stake in any IP rights developed as a result of financial contributions from the Fund.

Since the instructions of the Fund were only released in the end of 2007, the current IP policy of the Fund is basic. It is interesting to note that the Fund is currently in a process of establishing a detailed IP policy which would give set guidelines for the Fund's stake in any IP rights. As for the current structure highlighted in Article 14 of the Instructions, the IP rights arising out of the Fund's financial contribution towards innovation will mostly be governed by separate agreements between the inventor, the university or research institute, and the Fund. Therefore, for the time being it is still unclear the percentages which will be allocated to each of these parties.

There remains one specific concern relating to the inventor's stake in the IP rights which have been developed. Consolidation with other institutes needs to be addressed to find an appropriate arrangement between the inventor, the Fund and the supporting institute/body. It is of vital importance in these agreements that the inventor's stake is not reduced to a minimal stake in the proprietary rights of his invention. Therefore, we recommend that best practice should be ensured, which gives inventors a minimum of a third of any IP rights developed as a result of the invention.

4.2.2. How the Fund can be used in a more effective way to support R&D at the Universities

The Fund, as currently constructed serves various different objectives (as stated above). Perhaps the most important aspect of running such a fund is where it extracts its monetary contributions. Since this issue is well dealt with and the monetary contributions are secured year in and year out, then what follows is what can be done with the financial contributions. In April of 2006 David Tee of the Euro-Jordanian action for the development of enterprise [EJADA], consummated a report headlined "Proposals for an Innovation Policy for Jordan". Among its many recommendations, the report tackled how the Fund can be utilized in a more effective way; the following relevant points were made:

- Give a role to the business associations in controlling and governing the implementation of this Article (referring to Article 188 of the Companies Law)

- Proceeds of this Fund should be overseen by a mix of public and private sector entities with a business, industrial or commercial bias.
- Although the money will be invested in the R&D institutions of Jordan, it must be used to the general benefit of the businesses that contributed and not for pure research.

In light of the above-mentioned points, it is clear that the Fund has actually taken into consideration the suggestions which have been made in 2006. Nevertheless, further improvements can still be made.

The way in which the Fund has been constructed and the considerable amount of money that it collects from public limited companies means that it is bound to be effective in managing, monitoring and controlling the various different R&D projects across Jordan.

The Fund can benefit from the establishment of TTOs in both Universities. Communication between the Fund and the Universities would become more accessible and efficient to the researcher. The TTO would act as an intermediary between the researcher at the University and the Fund, whereby it can prepare the documents needed for the application to the Fund, assist in choosing the right research topic, and coordinate joint research projects with other researchers at the University. The relationship between the University and the Fund would also gain strength as issues of bureaucracy would be reduced.

Our recommendation is that the TTOs to be established at the Universities should serve the purpose of specifically searching for funding for research undertaken at the Universities. Therefore, there should be strong communication link between the TTOs and the Fund in order to exploit the research undertaken at the University.

A practical example of the role a TTO can perform with the Fund is the TTC at the RSS. The TTC has already benefited from the establishment of the Fund. The RSS in collaboration with the TTC have already gained significant financial contribution from the Fund for five projects initiated by RSS researchers. This is an excellent sign of communication between the RSS and the Fund and an encouraging step for innovation in Jordan.

4.3. Existing Scientific Centers and Programs

4.3.1. Scientific Centers at the Universities

This section focuses on existing infrastructure at the Universities which support scientific research in specified fields. Each University has a variety of centers focusing on different specialties, some of these centers are privately funded while others are directly funded from the University's budget. Some of these centers have long established relationship and connections with the private sector in their various respective fields of discipline or sector. The existence and development of these centers has and will be a very important feature in the furtherance of research and development and the innovation thereof.

The centers at the Universities have an inherent problem, which is the lack of funding available to them. Establishing TTOs at both Universities would assist these centers in a variety of issues namely, the TTO would help extract funding for the centers at the University, increase communication between the centre and the private industries, and would directly assist the researchers in registering IPRs. The following are examples of centers established at the Universities, stating their objectives and in some instances the difficulties they face.

JU has several examples of such centers, which operate with varying degrees of success. Hamdi Mango Centre for Scientific Research ("HMCSR") serves as an independently funded University unit dedicated for the support of original, interdisciplinary and well-defined research projects in the fields of Basic, Applied Science and Technology. HMCSR performs various tasks to assist scientific research at JU.

The Renewable Energy Centre ("REC") is an establishment representing a joint effort between the mechanical engineering department at JU and King Abdullah II Design and Development Bureau ("KADDB"). The REC is considered to be a major national establishment which is authorized to deal with different renewable energy systems.¹

JUST, in addition, has some interesting examples of scientific centers, the Princes Haya Biotechnology Centre ("PHBC") and Pharmaceutical Research Centre ("PRC"). Since its establishment, the PHBC has been a pillar of scientific activity in Jordan through: cooperation agreements with the local institutions and hospitals dealing with genetic diseases in Jordan and through continuous

¹ http://www1.ju.edu.jo/old_offices/REB/index.htm

scientific activities at the national and regional levels. Furthermore, the centre actively seeks to advance the pharmaceutical industry in Jordan through its R&D cooperation agreements with private national pharmaceutical companies.¹

PRC was established to meet the growing needs of pharmaceutical manufacturing companies and their wide expansion in drug discovery, development and evaluation. The presence of a wealth of expertise, excellent scientific infra-structure, rich resources, state-of-the-art instrumentations, and a modern and a leading premiere educational hospital, King Abdullah University Hospital ("KAUH"), all make PRC at JUST a highly qualified pioneer centre in serving the pharmaceutical industries' market, not only in Jordan but also in the region.²

4.3.2. "A Doctor for Every Factory" Program

"A doctor for every factory" is a Program launched by JU in corporation with a number of Jordanian universities aiming to strengthen the relationship between academics and the private sector. The program seeks to effectively contribute to the development of medium and small sized corporations in Jordan by using a collection of funders formed from non-governmental organizations and private Jordanian companies. The program enables members of the faculty of Jordanian universities to enhance their expertise and employ their knowledge to better serve industry, which will positively reflect in their academic standing and scientific research in addition to providing students with insight into the latest developments in Jordanian industry.³

The program aims at covering various different industrial areas such as: medical, agricultural, and all aspects of engineering. The participating faculty members are appointed at the intended factory with the aim of solving a specific issue at the factory using the faculty member's expertise, the Program is run during the summer and commitment to the factory is capped at 3 months. Both Universities are active members in the Program, both Dr. Abdulla Malkawi from JUST and Dr. Dya'a Eddin Arafa from JU spoke highly of the Program praising its invaluable effect on faculty members.

Financially, JUST estimates that each project costs around JDs 3200. The expenses are divided into two main components: the first, is the cost of the member of faculty's services to the factory which is 80% of the total cost, the second is the cost of using the

¹ <http://www.just.edu.jo/center/PHBC/index.aspx?PID=13&PNAME=Welcome>

² <http://www.just.edu.jo/center/PRC/index.aspx?PID=13&PNAME=Welcome>

³ <http://www.just.edu/fff/intro.htm>

university's facilities which is 20% of the total cost. The funding for each individual project comes from the funding entities which cover 80% of the project and the beneficial company which contributes 20% of the total cost.¹

There remains to be some issues which need to be closely looked at in order to better utilize this Program for the faculty member's benefit. Each project costs approximately JD 3200 with 80% of that cost going to the faculty member, this would come up to JD 2560. The factory owner is solving significant defects in his factory without incurring much cost, concurrently the faculty member is dedicating 3 months of his vacation in order to be rewarded with, as a maximum JD 2560 (this does not take into account whether there are other faculty members on the research team, in which case the research team shares in the faculty member's percentage). We believe that the faculty members are effectively being exploited to solve major issues at factories at minor costs to the factory owner (who only contributes 20% of the total cost).

We recommend that the percentages and the cap on the cost of each project need to be reconsidered to accommodate for higher income for the faculty member as a reward for his job. However, any changes to the above formula should be done while considering the fact that this Program has been so successfully received by industry due to the low cost that industrial members incur. Therefore, a balance needs to be struck between the benefit that needs to be affected for the faculty members and the reason the program is so attractive for factory owners and managers.

One recommendation would be that, in addition to the 20% paid by the factory, the factory should reward the faculty member with, at a minimum, JD 300 per month to compensate for his valuable time and to give further incentives for the faculty member to participate in the program. Furthermore, the IPR developed by the faculty member during his work for the factory has not been specifically addressed. Since the faculty member will not be an employee at the factory, there needs to be a legal contract between the factory owner, the faculty member and the University on the percentages allocated to each in the event of an IPR being discovered during the faculty member's research. Such contract would typically be concluded by the legal team at the TTO established at the University and should place particular emphasis on the faculty member's share in the IPRs developed.

¹ <http://www.just.edu.jo/fff/proc.htm>

5. Conclusion:

In order to identify “ways in which academics may invest in their intellectual capital for the benefit of the Jordanian economy” this report provides a critical review of relevant legislation of both JU and JUST that impacts the transformation of R&D into the marketplace. Moreover, the report suggests amendments to the law and analyzes various international models and best practices that have successfully transferred technology. Finally the report provides suggestions on how TTO’s can be established in JU and JUST.

In terms of modernization relevant legislation, the report recommends the need for (a) Clear definition of Scientific Research which is consistent in all the pieces of Legislation, (b) introducing a more enticing internal prize-oriented incentive scheme for researchers at the Universities, (c) clarifying and therefore facilitating the method by which consent may be granted for a researcher to work in business/industry in parallel to such researchers academic duties or while on academic sabbaticals, (d) including Student Researchers as a defined component of the general definition of a Researcher, and (e) including four individuals from major industry/business sectors as members of the Board of Scientific Research at each University. The results of such recommendations have been drafted as suggested new or amended provisions in the existing Legislation, and are attached as Schedule (1).

Critical analysis of IP Policies for JU and JUST reveal that The IP Policy for JUST was inadequate while the JU IP Policy was more substantial and if adequately reformed should also prove a useful platform for reforming the JUST IP Policy. In conducting such reform the following should be considered: (a) establishing a clear and fair definition of Significant Support offered by JU and the ramifications of a researcher either utilizing or not utilizing the same, (b) establishing a defined role for the TTO in assisting the researcher in such matters such as IPR management and licensing agreement negotiations, and (c) recommending the clarification or exchange of the ambiguous term ‘Technological Knowledge’. The results of such recommendations have been drafted as suggested new or amended provisions in the existing JU IP Policy, and are attached as Schedule (2).

After studying various different models of technology transfer throughout the developed world, we have concluded that in order to stimulate innovation at the Universities, two separate TTOs must be established, one for each University. Such TTOs may be established as Scientific Centers pursuant to the Regulations for Scientific Centers at each of the Universities. Therefore we recommend that this be done at both the Universities.

Furthermore support must be provided to existing institutions such as the Fund for Supporting Scientific Research. In order to understand the role of the Fund, its mission, and capabilities we have had to undertake an analytical examination of the legislation

pursuant to which it was established and pursuant to which it operates, and conducted interviews with senior Fund staff. The Fund can benefit from the establishment of TTOs in both Universities. Communication between the Fund and the Universities would become more accessible and efficient to the researcher. The TTO would act as an intermediary between the researcher at the University and the Fund, whereby it can prepare the documents needed for the application to the Fund, assist in choosing the right research topic, and coordinate joint research projects with other researchers at the University. The relationship between the University and the Fund would also gain strength as issues of bureaucracy would be reduced.

A discussion has also been undertaken to study the current infrastructure established at the Universities to support scientific research. There are various centers established at the Universities which aim at furthering research in their specified sectors. These centers in addition to "The Doctor for Every Factory" Program form excellent starting points for technology transfer and can be better utilized with the establishment of TTOs at the Universities.

We therefore recommend that the TTOs to be established at the Universities should serve the Universities by trying to search for funding to further develop the research undertaken. Therefore, there should be strong communication links between the TTOs and the Fund in order to exploit the research undertaken at the University.

Since holding the workshop with representatives from the Universities at SABEQ where we discussed the merits of this Report and after receiving the comments from the Universities in regards to this Report, it has been clearly expressed to us that both Universities have decided on establishing TTOs. We therefore suggest that our recommendations are carefully examined if and when such offices are established.

A matrix summarizing the conclusions and recommendations is attached as Schedule 5 of this Report.

Schedule 1

نظام الموظفين في الجامعة الأردنية وتعديلاته رقم 52 لسنة 2003

المادة (2)

يكون للكلمات والعبارات التالية ، حيثما وردت في هذا النظام المعاني المخصصة لها ادناه ما لم تدل القرينة على غير ذلك :

- الجامعة : الجامعة الاردنية .
- المجلس : مجلس عمداء الجامعة .
- الرئيس : رئيس الجامعة .
- العميد : أي عميد في الجامعة .
- الوحدة : الوحدة التنظيمية الرئيسية في الهيكل الاداري او الفني او الخدمات ، وتشتمل على دائرتين فاكثر .
- الدائرة : جزء من الوحدة وتشتمل على شعبتين فاكثر .
- الشعبة : جزء من الدائرة وتشتمل على فرعين فاكثر .
- الفرع : جزء من الشعبة .
- اللجنة : لجنة شؤون الموظفين .
- المدير : أي مدير في الجامعة .
- الموظف : الشخص المعين في وظيفة مصنفة ودائمة في الجامعة او في أي معهد او مركز او مؤسسة تابعة لها بمن في ذلك الموظف المعين بعقد ولا يشمل المعين باجر يومي .
- المرجع الطبي : المرجع الطبي المعتمد من الجامعة .

التعديل المقترح:

يكون للكلمات والعبارات التالية ، حيثما وردت في هذا النظام المعاني المخصصة لها ادناه ما لم تدل القرينة على غير ذلك :

- الجامعة : الجامعة الاردنية .
- المجلس : مجلس عمداء الجامعة .
- الرئيس : رئيس الجامعة .
- العميد : أي عميد في الجامعة .
- الوحدة : الوحدة التنظيمية الرئيسية في الهيكل الاداري او الفني او الخدمات ، وتشتمل على دائرتين فاكثر .
- الدائرة : جزء من الوحدة وتشتمل على شعبتين فاكثر .
- الشعبة : جزء من الدائرة وتشتمل على فرعين فاكثر .
- الفرع : جزء من الشعبة .

اللجنة : لجنة شؤون الموظفين .
المدير : أي مدير في الجامعة .
الموظف : الشخص المعين في وظيفة مصنفة ودائمة في الجامعة او في أي معهد او مركز او مؤسسة تابعة لها بمن في ذلك الموظف المعين بعقد ولا يشمل المعين باجر يومي .
المرجع الطبي : المرجع الطبي المعتمد من الجامعة .
البحث العلمي : كل جهد علمي يهدف الى تنمية المعرفة البشرية

المادة (20) :

"الرئيس وفقاً لشروط خاصة يحددها :
ب- أن يمنح الموظف مكافأة مالية استثنائية لا تتجاوز مقدار راتبه الإجمالي لشهر واحد في أي من الحالات التالية :
1. إذا قدم براءة إختراع وكان ذلك الإختراع ذا فائدة للجامعة و المجتمع .
2. إذا قام بعمل إبداعي أو حقق إنجازاً ترتب عليه وفر في النفقات "

التعديل المقترح :

ب- للرئيس وبعد الإستئناس برأي ذوي الخبرة أن يمنح الموظف مكافأة مالية تتناسب مع مقدار الفائدة وأهمية الإنتاج العلمي على أن لا تقل عن مجموع رواتبه لستة أشهر في أي من الحالات التالية:
1. إذا قدم براءة إختراع أو بحث علمي وكان ذلك الإختراع أو البحث ذا فائدة للجامعة و المجتمع.
2. إذا قام بعمل إبداعي أو حقق إنجازاً ترتب عليه وفر في النفقات

المادة (44) :

يحظر على الموظف الإقدام على أي من الأعمال التالية :
هـ - القيام بأي عمل خارج نطاق الجامعة دون موافقة خطية من الرئيس .
و - الالتحاق بأي برنامج دراسي دون موافقة خطية من الرئيس.

التعديل المقترح:

حذف الفقرتين (هـ) و (و) وإضافة المادة التالية :
المادة (...)

- أ. يجب على الموظف قبل القيام بأي عمل أو الإلتحاق بأي برنامج خارج نطاق الجامعة أن يحصل على موافقة خطية من الرئيس .
- ب. لغايات الحصول على الموافقة يقدم الموظف طلب خطي مبين فيه الأمور التالية :
 - 1- طبيعة العمل أو البرنامج الدراسي الذي يريد الإلتحاق به
 - 2- اسم الجهة صاحبة العمل أو القائمة على تنظيم البرنامج الدراسي
 - 3- تاريخ البدء بالعمل أو البرنامج و تاريخ إنتهاءه وبيان الساعات اليوميه .

- ج. يجب على الموظف قبل القيام بأي عمل يتعلق بالبحث العلمي أو الإلتحاق بأي برنامج خارج نطاق الجامعة أن تقديم الطلب المشار اليه في الفقرة (ب) من هذه المادة قبل مدة لا تقل عن ثلاثين يوم من تاريخ البدء بالعمل أو البرنامج الدراسي إذا كان مقام داخل الأردن و قبل مدة لا تقل عن ستين يوم إذا كان في الخارج
- 1- إذا لم يتلق الموظف رداً من الرئيس قبل مدة أسبوعين من تاريخ البدء بالعمل أو البرنامج الدراسي المقام في الأردن يعتبر طلبه مقبولاً.
- 2- إذا لم يتلق الموظف رداً من الرئيس قبل مدة ثلاثين يوم من تاريخ البدء بالعمل أو البرنامج الدراسي المقام خارج الأردن يعتبر طلبه مقبولاً

نظام هيئة الباحثين في الجامعة الأردنية رقم 45 لسنة 1998

المادة (2)

يكون للكلمات التالية حيثما وردت في هذا النظام المعاني المخصصة لها أدناه ما لم تدل القرينة على غير ذلك :

الجامعة : الجامعة الأردنية
المجلس : مجلس العمداء
الرئيس : رئيس الجامعة

التعديل المقترح :

يكون للكلمات التالية حيثما وردت في هذا النظام المعاني المخصصة لها أدناه ما لم تدل القرينة على غير ذلك :

الجامعة : الجامعة الأردنية
المجلس : مجلس العمداء
الرئيس : رئيس الجامعة
البحث العلمي : كل جهد علمي يهدف الى تنمية المعرفة الإنسانية

المادة (3) :

- أعضاء هيئة الباحثين في الجامعة هم :
- أ. باحث رئيس (Senior Researcher)
ب. باحث مشارك (Associate Researcher)
ج. باحث مساعد (Assistant Researcher)
د. مساعد بحث (Research Assistant)

التعديل المقترح :

- أعضاء هيئة الباحثين في الجامعة هم :
- أ. باحث رئيس (Senior Researcher)
ب. باحث مشارك (Associate Researcher)

- ج. باحث مساعد (Assistant Researcher)
د. مساعد بحث (Research Assistant)
هـ . طالب بحث (Research Student)

المادة (21) :

لا يجوز لعضو هيئة الباحثين القيام بأي نشاط خارج الجامعة إلا بموافقة خطية مسبقة من الرئيس

التعديل المقترح :

- ج. يجب على عضو هيئة الباحثين تقديم الطلب المشار اليه في الفقرة (ب) من هذه المادة قبل مدة لا تقل عن ثلاثين يوم من تاريخ البدء بالعمل أو البرنامج الدراسي إذا كان مقام داخل الأردن و قبل مدة لا تقل عن ستين يوم إذا كان في الخارج
د. 1- إذا لم يتلق عضو هيئة الباحثين رداً من الرئيس قبل مدة أسبوعين من تاريخ البدء بالعمل أو البرنامج الدراسي المقام في الأردن يعتبر طلبه مقبولاً.
2- إذا لم يتلق عضو هيئة الباحثين رداً من الرئيس قبل مدة ثلاثين يوم من تاريخ البدء بالعمل أو البرنامج الدراسي المقام خارج الأردن يعتبر طلبه مقبول

تعليمات هيئة الباحثين في الجامعة الأردنية

صادر بموجب المادة 23 من نظام هيئة الباحثين في الجامعة الأردنية رقم 45 لسنة 1998

المادة (12) :

- " أ. بالإضافة الى الشروط الأخرى يشترط في عضو هيئة الباحثين المتقدم للترقية :
2- أن يكون قد استدرج تمويلاً من داخل أو خارج الأردن لثلاثة مشاريع بحثية على الأقل وحصل على تمويل فعلي لواحد منها" .

التعديل المقترح :

- " أ. بالإضافة الى الشروط الأخرى يشترط في عضو هيئة الباحثين المتقدم للترقية :
2- أن يكون قد حصل على تمويل فعلي واحد من داخل أو خارج الأردن "

نظام البحث العلمي في الجامعة الأردنية رقم (9) لسنة 1998

المادة (3) :

يؤلف مجلس البحث العلمي في الجامعة على النحو الآتي :

- أ- عميد البحث العلمي : رئيساً .
 - ب- ثمانية أعضاء من هيئة التدريس يختارهم مجلس العمداء بناء على تنسيب من عميد البحث العلمي لمدة سنتين قابلة للتجديد.
 - ج- عضوان من خارج الجامعة من ذوي الرأي و الخبره ممن لهم صلة بالبحث العلمي يختارهما مجلس العمداء بتنسيب من عميد البحث العلمي لمدة سنة قابلة للتجديد.
- و لمجلس العمداء الحق في دعوة شخص أو أكثر من العنيين بشؤون البحث العلمي للمشاركة في جلساته دون ان يكون لهم الحق في التصويت .

التعديل المقترح :

يؤلف مجلس البحث العلمي في الجامعة على النحو الآتي :

- أ- عميد البحث العلمي : رئيساً .
- ب- ثمانية أعضاء من هيئة التدريس يختارهم مجلس العمداء بناء على تنسيب من عميد البحث العلمي لمدة سنتين قابلة للتجديد.
- ج- أربعة أعضاء من القطاع الخاص يختارهم مجلس العمداء بتنسيب من عميد البحث العلمي لمدة سنة قابلة للتجديد وفقاً للتخصصات التالية :
 - 1 - قطاع الطاقة
 - 2- قطاع الصحة أو الأحياء أو تركيب الأدوية
 - 3- قطاع التكنولوجيا أو الصناعة
 - 4- قطاع المياه أو الزراعة

و لمجلس البحث العلمي الحق في دعوة شخص أو أكثر من المعنيين بشؤون البحث العلمي للمشاركة في جلساته دون ان يكون لهم الحق في التصويت

نظام الموظفين في جامعة العلوم و التكنولوجيا و تعديلاته رقم 146 لسنة 2003

المادة (18) :

- "ج- للمجلس بناء على تنسيب الرئيس منح الموظف مكافأة مالية إستثنائية لا تزيد على (5 %) من راتبه الإجمالي لشهر واحد في أي من الحالات التالية :
- 1- إذا قدم براءة إختراع وكان ذلك الإختراع ذا فائدة للجامعة أو المجتمع ووضع موضع التطبيق على أن تتوافر في الإختراع صفة الإبتكار و التجديد و عدم النقل
 - 2- إذا قدم مؤلفاً أو بحثاً أو دراسة يتحقق من تطبيق موضوع أو أفكار أي منها فائدة أكيدة للجامعة أو للمجتمع
 - د- يتم تقييم الإختراع أو البحث أو الدراسة المشار إليها في البندين (1) و (2) من الفقرة (ج) من هذه المادة من لجنة علمية متخصصة يعتمدها المجلس كما يتم تقييم الخدمة أو العمل الإبداعي أو الإنجاز المشار إليه في البند (3) من تلك الفقرة من لجنة متخصصة يشكلها المجلس لهذا الغرض".

التعديل المقترح :

- ج- للمجلس بناء على تنسيب الرئيس منح الموظف مكافأة مالية تقدرها اللجنة المذكورة في الفقرة (د) من هذه المادة على أن لا تقل عن راتبه الإجمالي لمدة ستة أشهر في أي من الحالات التالية :
- د- يتم تقييم الإختراع أو البحث أو الدراسة المشار إليها في البندين (1) و (2) من الفقرة (ج) من هذه المادة و التوصية بقيمة المكافأة المالية المشار إليها في الفقرة السابقة من قبل لجنة علمية متخصصة يعتمدها المجلس كما يتم تقييم الخدمة أو العمل الإبداعي أو الإنجاز المشار إليه في البند (3) من تلك الفقرة و التوصية بقيمة المكافأة المالية لها من لجنة متخصصة يشكلها المجلس لهذا الغرض".

المادة (41)

- يحظر على الموظف تحت طائلة المسؤولية التأديبية الإقدام على أي من الأعمال التالية :
- ز – القيام بأي عمل خارج نطاق الجامعة دون موافقة خطية من الرئيس.

التعديل المقترح:

حذف الفقرة (ز) و إضافة المادة التالية :

المادة (...)

- أ- يجب على الموظف قبل القيام بأي عمل خارج نطاق الجامعة أن يحصل على موافقة خطية من الرئيس .
 - ب- لغايات الحصول على الموافقة يقدم الموظف طلب خطي مبين فيه الأمور التالية :
- 1- طبيعة العمل الذي يريد الإلتحاق به
 - 2- اسم الجهة صاحبة العمل.
 - 3- تاريخ البدء بالعمل و تاريخ إنتهاءه وبيان الساعات اليومية .
- ج- يجب على الموظف تقديم الطلب المشار إليه في الفقرة (ب) من هذه المادة قبل مدة لا تقل عن ثلاثين يوم من تاريخ البدء بالعمل أو البرنامج الدراسي إذا كان مقام داخل الأردن و قبل مدة لا تقل عن ستين يوم إذا كان في الخارج

- د. 1- إذا لم يتلق عضو هيئة الباحثين رداً من الرئيس قبل مدة أسبوعين من تاريخ البدء بالعمل أو البرنامج الدراسي المقام في الأردن يعتبر طلبه مقبولاً.
- 2- إذا لم يتلق عضو هيئة الباحثين رداً من الرئيس قبل مدة ثلاثين يوم من تاريخ البدء بالعمل أو البرنامج الدراسي المقام خارج الأردن يعتبر طلبه مقبول

نظام هيئة الباحثين في جامعة العلوم و التكنولوجيا رقم 48 لسنة 1998

المادة (2)

يكون للكلمات التالية حيثما وردت في هذا النظام المعاني المخصصة لها أدناه ما لم تدل القرينة على غير ذلك :

الجامعة : جامعة العلوم و التكنولوجيا
المجلس : مجلس العمداء
الرئيس : رئيس الجامعة

التعديل المقترح :

يكون للكلمات التالية حيثما وردت في هذا النظام المعاني المخصصة لها أدناه ما لم تدل القرينة على غير ذلك :

الجامعة : جامعة العلوم و التكنولوجيا
المجلس : مجلس العمداء
الرئيس : رئيس الجامعة
البحث العلمي : كل جهد علمي يهدف الى تنمية المعرفة الإنسانية

المادة (3) :

أعضاء هيئة الباحثين في الجامعة هم :

أ. باحث رئيس (Senior Researcher)
ب. باحث مشارك (Associate Researcher)

- ج. باحث مساعد (Assistant Researcher)
د. مساعد بحث (Research Assistant)

التعديل المقترح :

أعضاء هيئة الباحثين في الجامعة هم :

- أ. باحث رئيس (Senior Researcher)
ب. باحث مشارك (Associate Researcher)
ج. باحث مساعد (Assistant Researcher)
د. مساعد بحث (Research Assistant)
هـ. طالب بحث (Research Student)

المادة (21) :

لا يجوز لعضو هيئة الباحثين القيام بأي نشاط خارج الجامعة إلا بموافقة خطية مسبقة من الرئيس

التعديل المقترح :

- أ- يجب على عضو هيئة الباحثين قبل القيام بأي عمل نشاط خارج نطاق الجامعة أن يحصل على موافقة خطية من الرئيس .
ت- لغايات الحصول على الموافقة يقدم عضو هيئة الباحثين طلب خطي مبين فيه الأمور التالية :
4- طبيعة النشاط الذي يريد القيام به
5- اسم الجهة منظمة النشاط إن وجدت
6- تاريخ بدء النشاط و تاريخ إنتهاءه وبيان الساعات اليوميه .
ج. يجب على عضو هيئة الباحثين تقديم الطلب المشار اليه في الفقرة (ب) من هذه المادة قبل مدة لا تقل عن ثلاثين يوم من تاريخ البدء بالعمل أو البرنامج الدراسي إذا كان مقام داخل الأردن و قبل مدة لا تقل عن ستين يوم إذا كان في الخارج
د. 1- إذا لم يتلق عضو هيئة الباحثين رداً من الرئيس قبل مدة أسبوعين من تاريخ البدء بالعمل أو البرنامج الدراسي المقام في الأردن يعتبر طلبه مقبولاً .
2- إذا لم يتلق عضو هيئة الباحثين رداً من الرئيس قبل مدة ثلاثين يوم من تاريخ البدء بالعمل أو البرنامج الدراسي المقام خارج الأردن يعتبر طلبه مقبول

نظام البحث العلمي في جامعة العلوم و التكنولوجيا رقم (17) لسنة 2005

المادة (4)

- أ . تؤلف في الجامعة لجنة تسمى (لجنة البحث العلمي) برئاسة العميد وعضوية كل من :
1- ثلاثة من أعضاء هيئة التدريس ممن يشغلون رتبة الأستاذية وثلاثة ممن لا تقل رتبة أي منهم عن أستاذ مشارك ، يختارهم مجلس العمداء بقاء على تنسيب العميد لمدة سنتين قابلة للتجديد

2- اثنين من خارج الجامعة من ذوي الرأي والخبرة ممن لهم صلة بالبحث العلمي ، يختارهما مجلس العمداء بناء على تنسيب العميد لمدة سنة قابلة للتجديد ولمرة واحدة
ب- يختار المجلس من بين أعضائه نائباً لرئيس اللجنة .

التعديل المقترح :

- أ . تؤلف في الجامعة لجنة تسمى (لجنة البحث العلمي) برئاسة العميد وعضوية كل من :
- 1- ثلاثة من أعضاء هيئة التدريس ممن يشغلون رتبة الأستاذية واثنين ممن لا تقل رتبة أي منهم عن أستاذ مشارك ، يختارهم مجلس العمداء بناء على تنسيب العميد لمدة سنتين قابلة للتجديد
 - 2 - أربعة أعضاء من القطاع الخاص يختارهما مجلس العمداء بناء على تنسيب العميد لمدة سنة قابلة للتجديد ولمرة واحدة وفقاً للتخصصات التالية :
 - 1 - قطاع الطاقة
 - 2- قطاع الصحة أو الأحياء أو تركيب الأدوية
 - 3- قطاع التكنولوجيا أو الصناعة
 - 4- قطاع المياه أو الزراعة

ب- يختار المجلس من بين أعضائه نائباً لرئيس اللجنة .
و للجنة البحث العلمي الحق في دعوة شخص أو أكثر من المعنيين بشؤون البحث العلمي للمشاركة في الجلسات دون ان يكون لهم الحق في التصويت

Schedule 2:

تعليمات حقوق الملكية الفكرية : براءات الاختراع ، و التأليف ، و النشر في الجامعة الأردنية

إضافة التعريفات التالية في المادة (2) :

مكتب نقل التكنولوجيا : مكتب يؤسس بالجامعة يتولى أعمال التطوير التجاري بالإضافة الى الحماية والإدارة المتعلقة بمخترعات و مبتكرات المخترع و القيام بجميع الأعمال اللازمة لتحقيق هذه الأهداف.

إتفاقية عدم الإفصاح : إتفاقية يتم توقيعها من قبل المكتب يلتزم بموجبها بعدم الإفصاح أو إطلاع الغير على أي بيانات أو معلومات متعلقة بالإبتكار أو الإختراع المقدم لغايات الحصول على دعم أو أي خدمة أخرى يقدمها المكتب .

إتفاقية المحافظة على السرية : إتفاقية توقع بين المكتب وأي جهة أخرى راغبة في الإطلاع و/أو تمويل أي بحث أو إختراع . تلتزم بموجبها الجهة الأخرى بالمحافظة على سرية أي معلومات و/أو بيانات متعلقة بموضوع البحث أو الإختراع .

إتفاقية الإلتزام : إتفاقية يلتزم بموجبها الباحث بجميع ما ورد في نصوص هذه التعليمات.

إضافة المادة المقترحة التالية في الجزء الأخير من الفصل الثاني : العناصر المتعلقة بالبحث العلمي

"يعتبر الباحث أنه تلقى دعم جوهري من الجامعة إذا قدمت له الجامعة دعم مالي و مباشر للبحث أو في حالة استعانة الباحث أو استعماله لأي من مكاتب الجامعة ، مختبراتها ، مراسمها ، معداتها ،مواردها ، مرافقها أو الاستعمال المعتاد لأي من خدمات السكرتاريا أو أي من معدات الحاسوب و/ أو برامجه" .

المادة (4) :

" على جميع الباحثين الحاصلين على دعم من الجامعة أو بواسطتها أن يوقعوا عقداً بالتنازل لها عن حقوق ملكية الإبتكارات و الإختراعات وبراءات الإختراع الناجمة عن بحوثهم العلمية المدعومة لديها "

التعديل المقترح :

" على جميع الباحثين الحاصلين على دعم جوهري من الجامعة أو بواسطتها أن يوقعوا عقداً بالتنازل لها عن حقوق ملكية الإبتكارات و الإختراعات وبراءات الإختراع الناجمة عن بحوثهم العلمية المدعومة جوهرياً لديها "

إضافة المادة التالية بعد المادة الرابعة من الفصل الثالث المتعلق ببراءات الإختراع

" إذا توصل الباحث منفرداً الى إختراع أو ابتكار فكري دون الاستعانة بأي دعم جوهري من الجامعة عندها تكون جميع الحقوق الناتجة عن الإختراع أو الابتكار الفكري من حقوق ملكية فكرية وبراءات اختراع وغيرها حق خالص للباحث وحده إلا إذا تم الإتفاق على خلاف ذلك مع الجامعة أو أي جهة داعمة أخرى".

المادة (5):

" على جميع الباحثين الحاصلين على دعم من الجامعة أو بواسطتها إبلاغ الجامعة خطياً و فوراً بأي مبتكرات أو إختراعات قابلة للتطبيق العملي إنبثقت عن البحوث المدعومة "

التعديل المقترح :

" على جميع الباحثين الحاصلين على دعم جوهري من الجامعة أو بواسطتها إبلاغ الجامعة خطياً و فوراً بأي مبتكرات أو إختراعات قابلة للتطبيق العملي إنبثقت عن البحوث المدعومة جوهرياً "

المادة (7) :

" تطلق الجامعة حقوق براءة الإختراع لتصبح ملكاً للمخترع إذا لم تكن هناك إلتزامات مسبقة نحو الجهات الخارجية الداعمة أو المشاركة في الدعم في الحالتين التاليتين :
أ) إذا لم تقم الجامعة بإجراءات تسجيل براءة الإختراع خلال أربعة أشهر من تاريخ إبلاغها بالمبتكرات أو الإختراعات القابلة للتطبيق العملي المنبثقة عن البحوث المدعومة "

التعديل المقترح :

" تطلق الجامعة حقوق براءة الإختراع لتصبح ملكاً للمخترع إذا لم تكن هناك إلتزامات مسبقة نحو الجهات الخارجية الداعمة أو المشاركة في الدعم الجوهري في الحالتين التاليتين :
أ) إذا لم تقم الجامعة بإجراءات تسجيل براءة الإختراع خلال أربعة أشهر من تاريخ إبلاغها بالمبتكرات أو الإختراعات القابلة للتطبيق العملي المنبثقة عن البحوث المدعومة جوهرياً "

المادة (12) :

" يتولى الرئيس أو من يفوضه خطياً إدارة الشؤون المتعلقة ببراءات الإختراع المرتبطة بالجامعة "

التعديل المقترح :

" يتولى مكتب نقل التكنولوجيا إدارة الشؤون المتعلقة ببراءات الإختراع المرتبطة بالجامعة "

المادة (13) :

" تلتزم الجامعة بتقييد عملية نشر النتائج و المبتكرات الناجمة عن البحث العلمي المدعوم من قطاع الصناعة أو أي جهة داخلية أو خارجية أخرى بموجب إتفاقيات تعقد لهذه الغاية ما لم يتم الإتفاق على خلاف ذلك "

التعديل المقترح :

- " يتولى مكتب نقل التكنولوجيا إدارة الشؤون المتعلقة ببراءات الإختراع المرتبطة بالجامعة من خلال الإتفاقيات التالية :
- 1- إتفاقية الإلتزام "Participation Agreement"
 - 2- إتفاقية عدم إفصاح "Non Disclosure Agreement"
 - 3- إتفاقية المحافظة على السرية. "Confidential Disclosure"
 - 4- إتفاقية الكشف عن المبتكرات أو المخترعات القابلة للتطبيق العملي
 - 5- أي إتفاقيات أخرى ."

المادة (16) :

" التفاوض حول بنود إتفاقية ترخيص استخدام الإختراع حسبما تقتضيه الظروف في كل حالة على حدى "

التعديل المقترح:

" يجرى التفاوض حول بنود إتفاقية ترخيص استخدام الإختراع حسبما تقتضيه الظروف في كل حالة على حدى ويتولى مكتب نقل التكنولوجيا في جميع الاحوال مهمة المساعدة في هذه المفاوضات، وقد يكون وكيلاً عن الباحث إذا تقدم الأخير بطلب خطي لذلك" .

Schedule 3:

تعليمات براءات الإختراع فى جامعة العلوم والتكنولوجيا

الفصل الأول

التعريفات

المادة (1):

تسمى هذه التعليمات (تعليمات براءات الإختراع فى جامعة العلوم والتكنولوجيا) ويعمل بها من تاريخ إصدارها.

المادة (2):

يكون للكلمات والعبارات التالية حيثما وردت فى هذه التعليمات المعانى المبينة إزاء كل منها ما لم تدل القرينة على غير ذلك:

الجامعة: جامعة العلوم والتكنولوجيا

الرئيس: رئيس الجامعة

المخترع: الباحث أو الباحثون الذين يتوصلون الى أى فكرة إبداعية أو ابتكار فى أى من مجالات التقنية بمنتج أو بطريقة صنع أو بكليهما تؤدي علمياً إلى حل مشكلة معنية فى أى من هذه المجالات.

مكتب نقل التكنولوجيا : مكتب يؤسس بالجامعة يتولى أعمال التطوير التجارى بالإضافة الى الحماية والإدارة المتعلقة بمخترعات و مبتكرات المخترع و القيام بجميع الأعمال اللازمة لتحقيق هذه الإهداف.

إتفاقية عدم الإفصاح : إتفاقية يتم توقيعها من قبل المكتب يلتزم بموجبها بعدم الإفصاح أو إطلاع الغير على أى بيانات أو معلومات متعلقة بالابتكار أو الإختراع المقدم لغايات الحصول على دعم أو أى خدمة أخرى يقدمها المكتب .

إتفاقية المحافظة على السرية : إتفاقية توقع بين المكتب وأى جهة أخرى راغبة فى الإطلاع و/أو تمويل أى بحث أو إختراع . تلتزم بموجبها الجهة الأخرى بالمحافظة على سرية أى معلومات و/أو بيانات متعلقة بموضوع البحث أو الإختراع .

إتفاقية الإلتزام : إتفاقية يلتزم بموجبها الباحث بجميع ما ورد فى نصوص هذه التعليمات.

الفصل الثانى

العناصر المتعلقة بالبحث العلمى

المادة (3):

تسعى الجامعة فى تعاملها مع حقوق الملكية الفكرية المتحصلة من البحث العلمى المدعوم من قبلها الى تحقيق ما يلي:

- (أ) تشجيع الباحثين ومساعدتهم على الاستفادة من تشريعات الخاصة بالملكية الفكرية.
- (ب) تسهيل الوصول بالبحوث المبتكرة إلى التطبيقات النافعة للمجتمع.
- (ج) تسهيل إجراءات تسجيل براءات الاختراع والترخيص باستخدامها والتوزيع العادل لمردودها إن أفضت الى ذلك.
- (د) تقييم وتعيين الحقوق النسبية المنصفة لكل الأطراف المعنية بالبحث العلمي.
- (هـ) الحصول على المزيد من الدعم للبحوث العلمية
- (و) يعتبر الباحث أنه تلقى دعم جوهري من الجامعة إذا قدمت له الجامعة دعم مالي و مباشر للبحث أو في حالة استعانة الباحث أو استعماله لأي من مكاتب الجامعة ، مختبراتها ، مراسمها ، معداتها ،مواردها ، مرافقها أو الإستعمال المعتاد لأي من خدمات السكرتاريا أو أي من معدات الحاسوب و/ أو برامجه

الفصل الثالث

براءة الاختراع

المادة (4):

على جميع الباحثين الحاصلين على دعم جوهري من الجامعة أو بواسطتها أن يوقعوا عقداً بالتنازل لها عن حقوق ملكية الابتكارات والاختراعات وبراءات الاختراع الناجمة عن بحوثهم العلمية المدعومة جوهرياً لديها.

المادة (5):

إذا توصل الباحث منفرداً الى إختراع أو ابتكار فكري دون الاستعانة بأي دعم جوهري من الجامعة عندها تكون جميع الحقوق الناتجة عن الإختراع أو الابتكار الفكري من حقوق ملكية فكرية وبراءات اختراع وغيرها حق خالص للباحث وحده إلا إذا تم الإتفاق على خلاف ذلك مع الجامعة أو أي جهة داعمة اخرى.

المادة (6):

على جميع الباحثين الحاصلين على دعم جوهري من الجامعة أو بواسطتها إبلاغ الجامعة خطياً و فوراً بأي مبتكرات أو إختراعات قابلة للتطبيق العملي إنبتقت عن البحوث المدعومة جوهرياً.

المادة (7):

يوثق اسم المخترع بشكل واضح على طلب تسجيل براءة الإختراع.

المادة (8):

تطلق الجامعة حقوق براءة الإختراع لتصبح ملكاً للمخترع إذا لم تكن هناك إلتزامات مسبقة نحو الجهات الخارجية الداعمة أو المشاركة في الدعم الجوهري في الحالتين التاليتين :
أ) إذا لم تقم الجامعة بإجراءات تسجيل براءة الإختراع خلال أربعة أشهر من تاريخ إبلاغها بالمبتكرات أو الإختراعات القابلة للتطبيق العملي المنبثقة عن البحوث المدعومة جوهرياً
ب) إذا تضمنت شروط وحقوق ملكية براءة الإختراع ضرورة إطلاقه ليصبح ملكاً للمخترع.

المادة (9):

في حال إطلاق حقوق براءات الإختراع لتصبح ملكاً للمخترع فإنه يشترط أن لا يتم بحوث مكملة لتطوير ذلك الإختراع إلا إذا التزم الباحث بما جاء في المادة (4) من هذه التعليمات.

المادة (10):

أ) بعد التنازل عن حقوق الملكية براءة الإختراع للجامعة تلتزم الجامعة بأن تدفع سنوياً إلى المخترع الذي ورد اسمه في تسجيل براءة الإختراع أو من جرى تنازل المخترع عن حقوقهم إليهم 35% من الربح النهائي لبراءة الإختراع ومستحقاته التي تسلمتها الجامعة.
ب) إضافة الى ما ورد في الفقرة (أ) من هذه المادة تقوم الجامعة بتحويل 15% من الربح النهائي والمستحقات الناجمة عن براءة الإختراع لأغراض دعم البحث العلمي في أي جهة في الجامعة ينتمي إليها المخترع.

المادة (11) :

أ) يجري توزيع حصة المخترع من قيمة الربح الوارد الى الجامعة خلال شهرين من تاريخ تسلمها الربح
ب) إذا كان الإختراع نتيجة عمل مشترك بين عدة أشخاص توزع حصتهم من الربح بينهم بالتساوي إلا إذا إتفقوا مسبقاً على غير ذلك .

ج) للجامعة الحق في وقف توزيع الربح المستحق من براءة الاختراع حال وجود نزاع قضائي بشأنها الى أن يتم البت فيه بقرار قطعي شريطة قيام الشخص صاحب العلاقة بإعلام الجامعة خطياً بوجود ذلك النزاع.

المادة (12) :

يعنى الربح النهائي إجمالي الربح و المستحقات بعد طرح تكاليف تسجيل براءة الاختراع وحمايته والمحافظة على حقوق ملكيته وتكاليف الإحتفاظ ببراءته وترخيصه وأي حقوق أخرى ذات علاقة .

المادة (13) :

يتولى مكتب نقل التكنولوجيا إدارة الشؤون المتعلقة ببراءات الاختراع المرتبطة بالجامعة من خلال الإتفاقيات التالية :

- 6- إتفاقية الإلتزام "Participation Agreement"
- 7- إتفاقية عدم إفصاح "Non-Disclosure Agreement"
- 8- إتفاقية المحافظة على السرية بين مكتب نقل التكنولوجيا وأي جهة أخرى. "Confidential Disclosure Agreement"
- 9- أي إتفاقيات أخرى .

الفصل الرابع

علاقة الجامعة بقطاع الصناعة

المادة (14) :

تلتزم الجامعة بتقبيد عملية نشر النتائج و المبتكرات الناجمة عن البحث العلمي المدعوم من قطاع الصناعة وأي جهة داخلية أو خارجية أخرى بموجب اتفاقيات تعقد لهذه الغاية ما لم يتفق على خلاف ذلك .

المادة (15) :

تعطى الأولوية في الحصول على تصريح باستخدام التكنولوجيا الناجمة عن البحث العلمي للمؤسسات و الشركات الوطنية .

المادة (16) :

للجامعة أن تمنح ترخيص باستخدام براءة الاختراع ، و عليها في هذه الحالة مراعاة ما يلي :

- (أ) طبيعة التكنولوجيا موضوع الترخيص .
- (ب) مرحلة تطور الاختراع ومدى تأثيره على البحث العلمي المرتبط به
- (ج) مدى فائدة الاختراع للجامعة و المجتمع .
- (د) الإلتزام بتطوير الاختراع

المادة (17) :

يجري التفاوض حول بنود إتفاقية ترخيص إستخدام الإختراع حسب ما تقتضيه الظروف في كل حالة على حدى .

المادة (18) :

للجهة الداعمة حق الاعتراض على الترخيص للغير بإستخدام الإختراع وعلى أن يؤخذ بعين الإعتبار عند منحها هذا الحق حجم الدعم الذي قدمته .

الفصل الخامس

البحوث العلمية المدعومة من مصادر خارجية

المادة (19) :

في حالة وجود دعم خارجي للبحث العلمي كلياً أو جزئياً يتم التفاوض بين الجامعة والجهة الداعمة على حقوقها الناتجة عن أي براءات إختراع أو حقوق تأليف أو نشر شريطة أن تبدي تلك الجهة رغبتها خطياً في المشاركة في هذه الحقوق عند تقديم الدعم و في هذه الحالة تتحمل الجهة الداعمة نسبة من نفقات تسجيل الحقوق المذكورة وحمايتها تعادل نسبة ما تستحقه ، وفي كل الأحوال يجب أن لا تقل حصة الجامعة عن 40 % من الربح النهائي المتأتي من براءة الإختراع الممنوحة .

المادة (20) :

أ) تكون حصة المعرفة التكنولوجية في تطوير إبتكار يقود الى تسجيل براءة إختراع مساوياً ل 40 % من الربح النهائي الناتج عن حق البراءة الذي يقع ضمن حدود مرحلة تطوير الإختراع المبينة في تلك البراءة .
ب) إذا شارك مصدر دعم خارجي في المعرفة التكنولوجية يجري التفاوض مسبقاً على حصة الجامعة شريطة أن لا تقل عن 20% من الربح النهائي المتأتي من البراءة .

المادة (21) :

تكون حصة الجامعة من الربح النهائي عن الإستثمار التجاري لإبتكار جرى تسجيل براءة الإختراع فيه مساوية لقيمة (س×ص) ع . حيث س تمثل إجمالي كلفة البحث والتطوير وأي نفقات أخرى ترتبت خلال كل مراحل التطوير المغطاة في براءة الإختراع . وتمثل ص قيمة س مضافاً إليها (أي مضافاً لقيمة س) مجموع النفقات المترتبة أثناء كل مراحل البحث والتطوير التي تلي مرحلة تسجيل براءة الإختراع، وكذلك النفقات الإدارية والإنتاجية والتسويقية المفضية الى التسويق النهائي للمنتج ، بينما ع تساوي 15 % من إجمالي المبيعات .

المادة (22) :

أ) على الرغم مما ورد في المادة (18) من هذه التعليمات فإنه يجوز – إذا تعاقبت جهة ما مع الجامعة لتطوير إبتكار أو مصنف كانت تلك الجهة قد بدأت تطويره – الإتفاق على منح تلك الجهة 15% كحد أعلى من حقوق براءات الإختراع أو حقوق التأليف .
ب) تلتزم الجهة المذكورة في الفقرة (أ) من هذه المادة بالتنازل عن حقوقها المشار إليها في الفقرة ذاتها إذا لم تقم تلك الجهة بتسجيل الإختراع أو حق التأليف لدى الجهات المختصة خلال مدة يتفق عليها مسبقاً .

الفصل السادس

حق التأليف وحق النشر

المادة (23) :

تملك الجامعة حق التأليف وحق نشر إنتاج البحث العلمي من أعمال ثقافية أو فنية أو جمالية نتجت عن دعم كلي أو جزئي من الجامعة أو بواسطتها .

المادة (24) :

(أ) تكون حصة المؤلف مساوية ل 25% من الربح النهائي المترتب على حقوق التأليف والنشر الذي تستلمه الجامعة ، ويمثل الربح النهائي هنا إجمالي الربح الوارد للجامعة مطروحاً منه كل النفقات المرتبطة بتسجيل حقوق التأليف والنشر و المحافظة عليها وحمايتها والترخيص باستخدامها وأي حقوق أخرى ذات علاقة .
(ب) للمؤلف / المؤلفين الحق في الحصول على (5%) من عدد النسخ المطبوعة من المؤلف وبما لا يتجاوز (50) خمسين نسخة من مؤلفهم .
(ج) تسري أحكام الفقرتين (أ) و (ب) من هذه المادة على الطبعة / الطباعات الجديدة للمؤلف

المادة (25) :

للجامعة أن تتنازل عن حق النشر لجهة أخرى داعمة شريطة إتخاذ ترتيبات تقضي الى تخلي تلك الجهة عن حق النشر بعد فترة يتفق عليها مسبقاً إذا لم تقم تلك الجهة بالنشر أثنائها .

المادة (26) :

(أ) تمتلك الجامعة الحقوق الناتجة عن ترجمة أي مصنف إذا تمت ترجمته بناء على تكليف من الجامعة وبدعم منها أو بواسطتها.
(ب) تكون حصة المترجم مساوية ل 25% من صافي الربح النهائي المترتب على حقوق الترجمة.

الفصل السابع متحصلات البحث العلمي

المادة (27) :

تشجع الجامعة استخدام واستثمار متحصلات البحث العلمي التي لا تتوافر شروط براءة الاختراع أو حقوق التأليف فيها مثل: المركبات الكيميائية، والمواد الحيوية كنسل الخلايا والبلازميدات، والأشكال التخطيطية للدارات الكهروإلكترونية، والرسوم والنماذج الصناعية إضافة إلى المتحصلات الأكثر تجريداً كالأشكال التفصيلية ومجموعات النصوص المتعلقة بالطرق والإجراءات المخبرية والطرق التحليلية أو أي معرفة أخرى مشابهة.

المادة (28) :

في حالة الترخيص باستخدام أو باستثمار متحصلات البحث العلمي تحتفظ الجامعة بحق التصرف بنشر نتائج البحث العلمي والسماح باستخدام موارد تلك المتحصلات لأغراض البحث العلمي فقط.

المادة (29) :

تكون حصة الباحث مساوية إلى 25% من الربح النهائي المترتب على حقوق متحصلات البحث العلمي الذي تسلمته الجامعة ويمثل الربح النهائي إجمالي الربح الوارد للجامعة مطروحاً منه كل النفقات المرتبطة بتسجيل حقوق الملكية والمحافظة عليها وحمايتها والترخيص باستخدامها وأي حقوق أخرى ذات علاقة.

الفصل الثامن

احكام عامة

المادة (30):

يحول ما نسبته 20% من الدعم الخارجي من الدعم الخارجي للبحوث العلمية إلى الجامعة بدل النفقات الجارية المتعلقة بالخدمات التي تقدمها، ويجوز تعديل هذه النسبة بقرار من الرئيس أو من ينيبه وذلك لتتماشى مع انسب المقابلة المعتمدة من المؤسسات الأكاديمية أو معاهد البحث العلمي التي تشترك مع الجامعة في إجراء البحث العلمي المدعوم من مصادر خارجية.

المادة (31):

في الحالات التي تقوم أكثر من جهة خارجية بتوفير الدعم للبحث العلمي يتم تحديد الحصص المتعلقة بحقوق براءة الاختراع والتأليف والنشر وفقاً لمستوى الدعم المقدم من كل منها والتطوير المعرفي التكنولوجي الذي توفره.

المادة (32):

يبت الرئيس في الحالات التي لم يرد عليها نص في هذه التعليمات.

المادة: (33):

الرئيس وعميد البحث العلمي مسؤولان عن تنفيذ أحكام هذه التعليمات.

Schedule 4

تعليمات المركز الاستشاري للعلوم و التكنولوجيا صادرة عن مجلس العمداء بموجب المادة (8) من نظام المراكز العلمية في الجامعة رقم (87) لسنة 2003

المادة (2) :

يكون للكلمات التالية حيثما وردت في هذه التعليمات المعاني المخصصة لها أدناه ما لم تدل القرينة على غير ذلك:
الجامعة : جامعة العلوم والتكنولوجيا.
المركز : المركز الاستشاري للعلوم و التكنولوجيا
الرئيس : رئيس الجامعة
المجلس : مجلس المركز
المدير : مدير المركز

التعديل المقترح :

يكون للكلمات التالية حيثما وردت في هذه التعليمات المعاني المخصصة لها أدناه ما لم تدل القرينة على غير ذلك:
الجامعة : جامعة العلوم والتكنولوجيا.
المركز : المركز الاستشاري للعلوم و التكنولوجيا
الرئيس : رئيس الجامعة
المجلس : مجلس المركز
المدير : مدير المركز
مرافق الجامعة أو خدماتها : أي من مكاتب الجامعة ، مختبراتها ، مراسمها ، معداتها ،مواردها ، مرافقها أو خدمات السكرتاريا أو أي من معدات الحاسوب و/ أو برامجه .

المادة (5)

يقوم المركز بالمهام التالية :

- أ- تقديم الدراسات والاستشارات لمؤسسات القطاعين العام والخاص و الشركات و الأفراد.
- ب- المساهمة في الحد من المشاكل التي تواجه الصناعات الوطنية من خلال إجراء الدراسات و الأبحاث و تقديم الاستشارات اللازمة للمساعدة في تطوير هذه الصناعات كما ونوعاً .
- ج- إجراء الفحوصات و التحاليل المخبرية التي يحتاجها القطاعان العام والخاص وإصدار تقارير بالنتائج.

التعديل المقترح:

يقوم المركز بالمهام التالية :

- أ- تقديم الدراسات والاستشارات لمؤسسات القطاعين العام والخاص والشركات والأفراد.
- ب- المساهمة في الحد من المشاكل التي تواجه الصناعات الوطنية من خلال إجراء الدراسات والأبحاث وتقديم الاستشارات اللازمة للمساعدة في تطوير هذه الصناعات كما ونوعاً .
- ج- إجراء الفحوصات والتحليل المخبرية التي يحتاجها القطاعان العام والخاص وإصدار تقارير بالنتائج.
- د- توفير التمويل لكل من الأفكار ، الدراسات والأبحاث المميزة والقابلة للتطبيق العملي .
- هـ - تمكين الباحثين من استعمال مرافق الجامعة أو خدماتها.
- و- تأمين كافة الموافقات الإدارية من داخل الجامعة واللازمة لتسهيل و/أو تمكين الباحثين من القيام بأعمالهم داخل أو خارج الجامعة.
- ز- القيام بما يلزم للربط بين مخرجات البحث العلمي والصناعة . ومنها على سبيل المثال لا الحصر؛ تسجيل الشركات وحقوق الملكية الفكرية القائمة على نتائج البحوث العلمية للمركز.

المادة (6) :

" أ- يشكل الرئيس بعد الإستئناس برأي مجلس العمداء مجلساً يسمى "مجلس المركز" لا يزيد عدد أعضائه عن أحد عشر عضواً من ذوي الخبرة والكفاءة يعينهم الرئيس من داخل الجامعة ومن خارجها لمدة سنة واحدة قابلة للتجديد كما يختار الرئيس من بينهم رئيساً للمجلس "

التعديل المقترح :

" أ- يشكل الرئيس بعد الإستئناس برأي مجلس العمداء مجلساً يسمى "مجلس المركز" لا يزيد عدد أعضائه عن أحد عشر عضواً من ذوي الخبرة والكفاءة لمدة سنة واحدة قابلة للتجديد يعينهم الرئيس بواقع سبعة أعضاء من داخل الجامعة وأربعة من خارجها موزعين على القطاعات التالية :

- 1 - قطاع الطاقة
- 2- قطاع الصحة أو الأحياء أو تركيب الأدوية
- 3- قطاع التكنولوجيا أو الصناعة
- 4- قطاع المياه أو الزراعة

و يختار الرئيس من بين أعضاءه رئيساً للمجلس " .

المادة (12)

" يوزع الدخل المتأتي من عمل المركز وفقاً لما يلي :

- أ- الدراسات والاستشارات التي تستخدم فيها مرافق الجامعة أو خدماتها تعامل كالتالي :
1. (20%) من الدخل الإجمالي تخصم لصالح المركز مناصفة بين المركز والكلية .

2. يوزع الباقي على الفريق الذي قام بتنفيذ العمل وحسب إتفاق خطي مسبق بين أعضائه .
 3. يتحمل الفريق المنفذ للدراسة أو الإستشارة أية نفقات أخرى مباشرة أو غير مباشرة .
- ب – الدراسات و الإستشارات التي لا تستخدم فيها مرافق الجامعة أو خدماتها تعامل كالتالي:
1. (15%) من الدخل الإجمالي تخصم (10%) لصالح المركز و (5%) للكلية .
 2. يوزع الباقي على الشخص أو الفريق الذي قام بتنفيذ العمل وحسب إتفاق خطي مسبق بين أعضاء الفريق.
 3. يتحمل الفريق المنفذ للدراسة أو الإستشارة أية نفقات أخرى مباشرة أو غير مباشرة " .

التعديل المقترح :

- " يوزع الدخل المتأتي من عمل المركز بعد خصم النفقات المباشرة وغير المباشرة التي تكبدها الفريق الذي قام بالعمل وفقاً لما يلي:
- ب- الدراسات والاستشارات التي تستخدم فيها مرافق الجامعة أو خدماتها تعامل كالتالي :
1. (20%) من الدخل الإجمالي تخصم لصالح المركز مناصفة بين المركز و الكلية .
 2. يوزع الباقي على الفريق الذي قام بتنفيذ العمل وحسب إتفاق خطي مسبق بين أعضائه .
- ب – الدراسات و الإستشارات التي لا تستخدم فيها مرافق الجامعة أو خدماتها تعامل كالتالي:
1. (15%) من الدخل الإجمالي تخصم (10%) لصالح المركز و (5%) للكلية .
 2. يوزع الباقي على الشخص أو الفريق الذي قام بتنفيذ العمل وحسب إتفاق خطي مسبق بين أعضاء الفريق.

Schedule 5

Conclusion Matrix

Finding	Recommendation	Implementation
IP Policy for JU	Thorough reform of the IP policy should be done, including: establishing a definition for Significant Support, establishing a define role for the TTO, and exchanging or clarifying the term “Technological Knowledge”.	The recommendations can only be implemented by the President of the University.
IP Policy for JUST	Inadequate IP policy which affords little in detail and needs complete amendment, preferably to the mold of the new IP Policy for JU.	The President of the University.
Legislation at the Universities	<ul style="list-style-type: none">▪ A Clear definition of Scientific Research in all Legislation.▪ Added prize incentives for researchers.▪ Clarifying and facilitating the method in which consent is given to researchers in order to work in business/industry.▪ Clearly including student researchers as a defined	The Legislation at the Universities can be amended in accordance with the following procedure: The Board of Trustees at the Universities makes a recommendation amending the said Legislation to the Council of Higher Education. The Council of Higher Education pursuant to Article 25 of the Jordanian Universities Law (no. 42 of 2001) and Article 6(H) of the Higher Education and Scientific Research Law (no.4 of 2005) has the authority to discuss such recommendations, if approved the recommendations requires the approval of the Prime Ministry.

	<p>component in the general definition of a Researcher.</p> <ul style="list-style-type: none"> ▪ Adding four individuals from the private sector as members of the Board of Scientific Research at each University. 	
Technology Transfer Office	<p>Establish TTOs at both Universities, with the purpose of transforming R&D into innovation.</p>	<ul style="list-style-type: none"> ▪ JU: a proposal from the University's council recommending to the Board of Trustees the establishment of a TTO; the decision must receive royal assent. ▪ JUST: A decision issued by the Council of Higher Education.
The Consultative Centre for Science and Technology at JUST	<p>Transform and refine the Centre into a TTO.</p>	<p>Improve fundamental aspects of the Centre to include:</p> <ul style="list-style-type: none"> ▪ Better recruiting standards for the Personnel employed. ▪ Establishing a legal department or employing an outsourced lawyer to assist with IPR.
The TTC at the Royal Scientific Society	<p>Transform the TTC into a central TTO which overlooks both Universities' TTOs and helps guide the TTOs at the Universities.</p>	<p>This should be done by close collaboration between the Universities and the RSS. New legislation should be established to support this idea.</p>
The Fund for Scientific Research	<p>Better communication between the Fund and the Universities, which could be facilitated by the establishment of TTOs at the Universities.</p>	<p>This recommendation is closely linked with the establishment of TTOs at the Universities. There is no implementation process here.</p>
Scientific Centers at the Universities	<p>Better utilization of the Centers at the University to assist with transferring R&D into innovation.</p>	<p>The establishment of a TTO at each University will significantly affect the Centers at the Universities by providing much needed assistance in extracting funding for the centre, increasing communication with the private sector, and assist the centers with the registration of IPRs.</p>
A Doctor for Every	<p>Added benefits for the</p>	<p>The factory should reward the faculty member with, at a</p>

Factory	participating faculty members, and the registration of IPRs acquired during the research.	minimum, JD 300 per month, and the TTO at the Universities should assist the faculty member with registering the IPRs discovered during research.
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