SWIP: SCIENTIST WHITE PAPER

1. Introduction

The Department of Surgery is currently developing its new Strategic Plan that defines the main goals and directions for the next decade. Our Department has a particularly vivid scientific life, which is characterized by a remarkable and internationally acclaimed scientific profile and productivity. This is due to a rather unique and - by now - traditional structure, which incorporates, coordinates and builds on the research activities of clinician scientists and basic scientists who have no direct clinical duties. The latter set, formerly called as "non-clinician scientists" (NCS), is a formidable group of approximately 40 researchers, constituting the arguably biggest principal investigator cohort of non-clinicians associated with any clinical department at U of T and beyond. While well-integrated into the structure and function of the Department as a whole, the work and modus operandi of these researchers offer unique opportunities and represent particular challenges. To discuss and address these, we held a Non-clinician Scientist Retreat in November, 2011. One of the goals of the retreat was to assess the current state (needs, intellectual and psychological well-being, satisfaction level, enablers and hurdles) of the group, with the non-disguised intention that the achieved conclusions contribute to the strategic planning process. The main means to get insight into the current state of affairs was an anonymous web survey with 17 detailed questions, covering most aspects of the group's professional life and its administrative relationship to the Department. The results and the evaluation of the entire survey, which has been submitted to and discussed with the Research Committee and our Chair, are attached to this document as an appendix. Another important impetus for the generation of this overview is the recent issue of the "White Paper", a document which provides and insightful analysis of the research landscape and contains a list of ideas for future improvements from a clinician-scientist viewpoint.

Thus, based, on this background and resources the objective of this document is threefold:

1) To contribute to the strategic planning process and the implementation of the new plan by highlighting the most important needs and challenges faced by scientists at the Department;

2) To help create an optimal research niche for all, by supplementing and harmonizing the views of clinician-scientists with every scientist, and thereby establishing a unified "research code" at the Department;

3) To facilitate the highest quality research at the Department by raising ideas that will improve efficiency and ensure sustainability of both the research endeavor and the researchers themselves.

For the sake oif succinctness, this document will focus only on a few critical issues, including the sustainability of the scientist cohort at the Department, job security, funding and support, visibility and recognition.

2. Nomenclature

In the past, scientists at the Department who do not work as practicing physicians were called non-clinicians scientist (NCS). It is important to note that this distinction served a very useful role, inasmuch as it identified and acknowledged a cohort of researchers who have specific needs and requirements, and who perform a unique role at the Department by providing specific

expertise through their own research and as collaborators, and who actively participate in the education of the trainees in the Surgeon Scientists Program. Nonetheless, it was felt at the last retreat that the term has fulfilled its "historic role" and it is not fortunate to define this set of researchers by something that they are not, as opposed to defining them by what they are. Thus, it has been proposed that the negative definition be dropped, and the physician-researchers at the Department be called as Surgeon-scientists (a term which is already in use), while everybody else performing research as a principal investigator belong to the Scientist category.

3. Sustainability of the scientist positions at the Department (issues regarding recruitment)

The initial recruitment of a substantial group of scientists at the Department goes back the "pre-Research Institute" era. Although several of the research institutes already existed, neither their own recruitment policies nor their relationship to the various clinical departments had been defined. There are two important points to make in this regards: 1) This practice in the past was not, in any way, contra-selective, and indeed many of the current leading and most productive researchers at the Department were recruited at that time. 2) However, with the development of the research institutes and their defined policies, this practice is neither sustainable nor desirable. In fact, the research committee of the Department has put considerable efforts in clarifying the scientist positions, ensuring that all of our scientists are appointed at the appropriate level in their corresponding research institutes (or other departments). After a rather hectic transitional period, the majority of the statuses are now clear and appropriate. However, the current situation raises a hitherto unconsidered problem: What is going to be the future of recruitment of scientists who belong to the Department of Surgery?

It is very important to address and dissipate a few misconceptions in this regard.

1) This question has nothing to do with any kind of favoritism or by-passing of any competition-based recruitment mechanism. This is the farthest from the intention and from anybody's interest. The problem arises from a thematic viewpoint. The research institutes recruit scientists according to their own topical profile, which is usually not the same as the thematic needs/interests of the Department (which led to the formation of the current, very substantial scientist cohort). How can the Department ensure the recruitment of promising young scientists who perform research in areas that are important and relevant from a surgical point of view? One obvious way would be that the Department establishes its own research institute. However, this solution is not realistic either from a conceptual or a financial standpoint. The other possibility is the generation of a few, common (jointly-financed) positions at certain research institutes. These should be open, competition-based statuses with a clear description of the particular research area, which is congruent with the interests of the Department. Obviously such statuses require financial contributions and ongoing planning/negotiations. Importantly, such positions are not unprecedented (e.g. some exist at the Hospital for Sick Children), and they may represent an important means to maintain the high profile of PhD PI-conducted research at our Department. Such a solution may also lead to the re-definition of some of the current positions, which could increase job security (See Section 3). Moreover, this This would be a mutually beneficial solution from another aspect as well, because the research institutes need to provide the newly recruited scientists with a U of T appointment. This is not a straightforward or even recognized

task, but without this, the new investigators cannot have access to graduate students and certain types of grants. . which the research Institute might not even recognize or acknowledge!
In summary, Therefore, our recommendation is that the Department initiate discussions with the various research institutes about the generation of joint statuses.

2) Another key point to emphasize is that the scientists at the Department are fully independent principal investigators who are required to pursue their own, original research line and accordingly obtain their own, independent funding. Thus, neither the current practice nor the future directions assign an ancillary or supportive role for PhD scientists working at the Departments of Surgery. Any such notions are fully outdated. In this regard, it was very positive to see that the vast majority of scientists at the Department feel that they are indeed highly independent both in terms of their ideas and publications (score 4.52 in a scale of 5 in the survey). In conjunction with this, the vast majority is engaged in active collaborations with surgeon scientists (4.55) and sees potential for further collaborations (4.67), clearly testifying that a) a productive intellectual symbiosis exists between these groups of scientists; and b) there is ongoing and increasing need to maintain this cooperation. Accordingly, we recommend that both the independence of every scientist at the Department and the value of their collaboration in the overall research endeavor be explicitly expressed in a new research code of the Department.

4. Funding and support

Many scientists at the Department share the opinion that the single most important stress factor in their lives is the low level of job security. Clearly, this very valid problem is not specific for the Department of Surgery. It follows from the fact that most scientists hold non-tenurable positions, as well as from the low funding rates and the extremely competitive nature of grant capture. While competition is an important driving force to improve the quality and quantity of research, it is clear that the number of highly valuable and fundable applications is much higher than that of the funded ones. Furthermore, as the current reforms in the CIHR system testify, there are important questions about the objective comparability and the quality of the decisions made by a highly overloaded evaluation system. In addition even the proposed changes in the CIHR system will likely not facilitate the funding of the majority of mid-carrier scientists. Clearly there is an existing and well recognized discrepancy between those who are funded at any particular grant competition and those who would deserve to be funded. Importantly, scientists at the Department without clinical practice are particularly vulnerable, since their research institute-based salary is their only income. The direct coupling between their continuous success in an extremely competitive environment with the stability of their position (and consequently with their financial survival) is an unavoidable but very significant stress. Moreover, the system itself consumes and derails a great deal of creative energy through the constant re-writing of applications and the incessant generation of preliminary data, which hinder the completion of the key projects.

We fully recognize that the Department is not responsible for and cannot (alone) solve these general hardships. Nonetheless, the Department can significantly help in alleviating this stress by various means:

1) The Department should participate more proactively in helping the scientists to negotiate optimal working conditions at their institutes. Increased communication between the Department

and the Research Institute (as well as the creation of common positions as discussed in Section 3) is an important means toward this goal. It was felt that the communication between the scientists and the Department as well as between the Department and the research institutes should be further improved.

2) Alternative forms of research funding should be considered. A particular issue is to provide a better access to divisional Academic Enrichment Funds (AEF). The survey showed that scientists have a dismally small (practically non-existent) access to such funds. (The score given to the question: "Do you have access to AEF?" is 2.17 in a scale of 5, which places nearly everybody in the strongly disagree/disagree category.) Thus, in full agreement with the Surgeon Scientist White paper, we recommend an in-depth discussion on the availability and fair distribution of AEFs. Ideally, such discussion should lead to the development of a mechanism, whereby all scientists have equal access to a defined portion of AEFs.
This support could, in principle, be used as a bridging fund (an absolutely and frequently critical type of funding), participation at international meetings and for publication fees.

3) Sabbaticals are important means of intellectual and technical retooling, provided for faculty members at basic science departments. Again, in full agreement with the Surgeon Scientist White Paper, we support the idea that a form of sabbatical be developed for scientists working at surgical divisions or in research institutes. The realistic time-frames, the financial backing and the administrative aspects of this initiative should be worked out in the future. This would be a uniquely attractive factor at our Department that would certainly facilitate innovation and grant capture. Clearly such plan also requires coordination with the research institutes.

4. Recognition and Visibility

Despite measurable improvements since the previous survey, scientists still have a general feeling that they are not adequately appreciated at the Department (as indicated by a score of 3.16 on a scale of 5). A number of concrete ideas were raised, which could improve this situation:

1) Recognition of supervision. One area where scientists contribute a great deal to the operation of the labs of surgeon-scientist is their participation in the training of MSc and PhD students in the Surgeon Scientist Program as well as of other lab personnel. This is a very significant work that often remains –at least officially – unrecognized. The solution is that if the contribution is substantial, the scientist should be appointed as an official co-supervisor. Such claim can originate from a) the primary supervisor; b) the contributing scientist or c) the trainee. If there is no consensus, a decision-making mechanism should be worked out.
Furthermore, it was raised that any contribution to supervision be recognized by the Department as a form of teaching. The details of such evaluation should be discussed and developed. Clearly, this system would not only provide fair recognition of a very important contribution, but would also help the career of our scientists, since teaching (to which some research institute scientists have little access) is an official requirement for promotion. Finally, many scientist members of the Department do teach at various courses at the University but very often this activity is not recognized. This should be rectified. In addition to the need of proper documentation, this raises

the possibility that the Department can be financially compensated for the teaching activity exerted by its members.

2) Membership in the Appointments Committee. It was proposed that the Appointments Community should have more scientist members. These colleagues would be helpful for the proper assessment of the performance of the scientists at the Department. It must be mentioned though that no under-appreciation is visible in terms of promotion as the distribution of scientists at the higher academic ranks is not lower than that of the surgeon scientists.

3) The mentorship program that provides one-on-one guidance for new faculty members and especially for surgeon scientists and investigators should make better use of our experienced scientists. The value of the participation of a non-clinician in this regard is often at least equal to, if not more than, that of a surgeon scientist. In addition, such mentorship should be available to all faculty members in the first 5 years, irrespective whether they are clinicians or not.

4) SSP Supervision. There is general consensus that scientists should be better involved as primary supervisors in the training of surgeon scientists. This would be doubly beneficial since it would strengthen the quality of basic research training and would also provide higher visibility for our scientists. To achieve this goal, the trainees have to understand that being trained by a non-clinician is not disadvantageous for their surgical career, while it may enhance their basic research skill. This shift in the current mentality of trainees can likely be induced by the help of our leading surgeon scientists.

5. Summary

By any measures, the Department of Surgery has been an outstanding source of clinical and basic research and, in many respects, it serves as role model worldwide testifying that strong scientific training and productivity can be developed and nourished by a clinical Department. This status has been achieved through outstanding - often visionary- leadership that led to the creation of the Surgeon Scientist Program, the recruitment of a strong scientist cohort and wide-spread collaborations with leading scientists both nationally and internationally. Our common goal is to maintain this well-deserved prestige and to further increase the Department's research profile. This is a very challenging task that should be realized under the double pressure of deteriorating funding conditions and increasing intellectual, technical and financial demands to perform cutting edge research. We hope that this analysis and the proposed ideas will help us to reach our goal.