

A White Paper proposing the creation of a Faculty Surgeon-Scientist Program at the University of Toronto

1. Introduction

A generation ago, the Department of Surgery at the University of Toronto created a program to train surgeon-scientists. This program has been a remarkable success, leading to international accolades and recognition. It has been the model for the national Clinician-Investigator Program in Canada and similar programs around the world. Importantly, it enjoys wide support amongst the Department, both active researchers and busy clinicians, who universally recognize the importance of offering the opportunity for serious exploration of research, at a critical early stage in a young surgeons career. Many of its graduates continue to enhance the preeminence of the Department of Surgery by remaining as faculty.

The long-term success and enduring viability of this training program for surgeon-scientists rests in part in the established structures of the program and consistency of expectations, of both students and mentors. However, after the transition to the faculty role, there is an absence of transparent, consistent policies regarding time protection, recognition, evaluation and financial and other forms of support. This inconsistent approach is not in accord with the University's important role to foster a robust academic culture. Breakdown of that culture of excellence, the product of so much investment during the formative years, has the potential to degrade not just current stature of the Department of Surgery but will significantly influence the career choices of those about to embark on those critical junior resident years.

The Policy on Clinical Faculty ([weblink](#)) stipulates that each member with an academic full-time appointment must have an explicit *job description* which clearly identifies roles and responsibilities. A review of the existing surgeon-scientists in the Department of Surgery identified that such clarity was lacking, especially after the Continuing Appointment Review (typically conducted after the first 3-5 years on faculty) was completed. A Faculty Surgeon Scientist Program would encourage, and reinforce through formal mechanisms, the current policy requiring such explicit job descriptions, throughout the full length of one's career.

Moreover, while the Policy on Clinical Faculty does not stipulate uniformity across or within Departments, review of existing surgeon-scientists identified a extremely wide range of practices. While the autonomy of Divisions and Practice Plans is to be respected and ultimately determines the acceptance of policy, the extent of this variation is much more likely to be detrimental to the viability of the surgeon-scientist role in particular. Furthermore, while the Policy on Clinical Faculty indicates that the faculty member's role and responsibilities must be explicitly stated, it makes no mention of the roles and responsibilities of Division Chiefs, Practice Plans, the Vice-Chair, Research or the Chair of the Department of Surgery in ensuring favourable conditions allowing the surgeon-scientist to flourish.

A written Policy regarding the Faculty Surgeon Scientist Program will enhance the excellence, already in existence, of the research endeavour comprising the Department of Surgery at the University of Toronto. It will allow increased uniformity, fairness, and morale across Divisions and hospitals. It will be a resource for leaders and new faculty alike, removing obstacles and avoiding difficulties during recruitment and evaluation at the 3 or 5 year mark. It will also establish policies and procedures for the career long evaluation of surgeon-scientists, to ensure the on-going appropriateness of that job description for each individual. Commensurate with that evaluation, it will detail policies and procedures regarding recognition and reward and financial and other forms of support. A written policy will establish a base for future improvements, ensuring broad applicability and a mechanism for acceptance.

2. Background

In 2010 a series of one-on-one interviews with all existing Surgeon-Scientists in the Department of Surgery was conducted. From these interviews a number of issues were identified and summarized. These were also raised in an evening meeting with the former Chair, Dr. Richard Reznick. The following represents the majority consensus view of those concerns.

- a. Hospital Division Heads at hospitals often do not make a distinction between Surgeon-Scientists and other job roles.
- b. Criteria for distinguishing faculty positions between Surgeon-Scientists and Surgeon-Investigator are not clear. Perhaps some faculty are not in the correct classification.
- c. Some Divisions divide teaching responsibilities equally without consideration of job description/role.
- d. It is often difficult for new faculty appointments to get graduate school appointments and therefore access to graduate students.
- e. A common sentiment expressed was there is no special recognition or distinction received in return for the large commitment made to research
- f. There is great variability between Hospitals and Division in regard to the mechanisms for income re-distribution.
- g. The relative incomes of Surgeon-Scientists and the other members of their practice plans can be widely disparate in some Practice Plans
- h. There is wide variability in the application of time protection, both in mechanism and in outcome
- i. Assessment of Academic Productivity reviews inform the degree of income re-distribution that does exist and is an important psychological motivation for academic surgeons. Criteria for a 1,2, or 3 score have been created for Surgeon-Scientists. Surgeon-Investigators and Surgeon-Teachers may not be expected to reach the same level of international preeminence to receive a 3 score in either the Research or Teaching domain

- j. The contribution of many Surgeon-Scientists to graduate student supervision is not quantified and therefore not rewarded, especially in comparison to the formal process in place in regards to undergraduate and postgraduate medical education.

In response to these concerns, there was felt to be a need to develop Department-wide policies in regard to the Surgeon-Scientist job description.

3. Roles and Responsibilities of the Surgeon-Scientist

- a. JOB DESCRIPTION - The job description in existence to date has used a time-based criterion – that is Surgeon-Scientists commit to spending 75% of their time on research. This criterion has served well in many instances and has value as a criterion on which faculty can compete for important salary awards. On the other hand, it is not widely held to in an explicit and rigorous way, and this often serves to blur or undermine the distinction from the Surgeon-Investigator role.

A more useful set of criteria should probably be defined in functional terms. A Surgeon-Scientist should be someone who maintains an independent scientific investigation effort as judged by papers published, students trained, grants held, positions on national and international grant review panels and other evidence of impact on the field. The process of evaluation itself is not new, since all Surgeon-Scientist undergo yearly review as well as intermittent re-evaluation for promotion, for graduate school appointment or for Research Institute appointment. As the specific standards will vary by discipline, Department-wide policy should stipulate the process (see below) and not specific criterion. However, to be explicit, at a minimum a senior Surgeon-Scientist should be expected to maintain more than 1 peer-reviewed grant and have more than 1 graduate students or post-doctoral trainees.

- b. PERFORMANCE EVALUATION – The Surgeon-Scientist will submit materials as required to a Surgeon-Scientist Program Committee for re-appointment at regular intervals no less than every 6 years. Flexibility will be provided to allow performance reviews to be conducted simultaneously with Research Institute reviews where they exist.
- c. PARTICIPATION IN SURGEON-SCIENTIST PROGRAM – Surgeon-Scientist will be expected to participate in a departmental-wide Surgeon-Scientist Program to enhance the viability of research excellence across the University Department. This includes but is not limited to service on a Departmental Review Committee.

4. Roles and responsibilities of Hospital Division Heads, University Division Chiefs, and Department Chair and Vice Chair Research

The primary role for academic and hospital leaders is to ensure that time protection and other policies to support the Surgeon-Scientist are in place and to evaluate whether these policies are accomplishing the intended goals.

- a. HOSPITAL DIVISION HEAD – The Hospital Division Head plays a key role in the recruitment new faculty and is primarily responsible for ensuring there is adequate clinical resources to support this recruitment. In turn, the Hospital Division Head must assess the clinical need to ensure that these pressures are consistent with recruitment to a Surgeon-Scientist role. For both new and existing faculty, the Hospital Division Head must consider faculty job description in terms of assignment of elective OR time, on-call duties, teaching responsibilities and other hospital administrative tasks. As a starting point, the Department should expect that the Surgeon-Scientist carry a teaching and administrative load equivalent to 0.5 FTE with respect to other members of the group. That is, a group with 3 surgeon-scientists and 2 surgeon-teachers would have 3.5 FTE and each Surgeon-Scientist would carry a load no greater than to 0.5/3.5. Distribution of call and elective OR time should be left to the discretion of the group but the Division Head should be expected to report periodically on how these duties have been assigned in consideration of the Surgeon-Scientist role. At the discretion of the individual Surgeon-Scientist, they should have the option of taking as little as 0.5 FTE of call and other clinical work. The Hospital Division Head should also develop plans for financial support of Surgeon-Scientists thorough Hospital Foundations and other funding arrangements. The Hospital Division Head must also ensure that the Surgeon-Scientist obtains and maintains a Research Institute appointment.
- b. UNIVERSITY DIVISION CHAIR - The University Division Chair should be expected to be the chief advocate for the Surgeon-Scientist throughout their career. They are expected to maintain policies and standards across the University and between Practice Plans of the same specialty to support the academic roles of Surgeon-Scientists. This would include examination of call schedules, Practice Plan Support Summary (see below) and teaching assignment distribution plans, .
- c. VICE-CHAIR RESEARCH – The Vice-Chair Research is expected to maintain standardized policies in support of the Surgeon-Scientist role across Divisions. This would include review of appointments and re-appointments in the Surgeon-Scientist role, as Chair of the Surgeon-Scientist Program Committee, as well as review of annual Support Summary statements.
- d. CHAIR, DEPARTMENT OF SURGERY – The Chair is expected to support and maintain policies that enhance the academic productivity across the entire

Department by all Faculty, regardless of academic role. To specifically support Surgeon-Scientists, the Chair should advocate for acceptance of the Surgeon-Scientist Program with University Division Chairs and Hospital Surgeons-in-Chief. The Chair should also review opportunities to support Surgeon-Scientist through University-wide programs such as Canada Research Chairs and Faculty-based endowed Chairs. The Chair will also adjudicate expenditure of a departmental wide AEF fund for support of research excellence, including but not limited to salary support of Surgeon-Scientists. The Chair should create a Surgeon-Scientist Program Committee (see Appendix A – Terms of Reference), chaired by the Vice-Chair, Research. It would report to the SAC on matters of policy and to the Finance Committee on matters of financial support.

- e. HOSPITAL SURGEONS-IN CHIEF – Surgeons-in-Chief will be expected to support new recruits as in the past. Moreover, they will advocate for ongoing support of Surgeon-Scientists at all stages of their careers. This will include financial support from sources such as Medical Programs, Research Institutes, and Hospital Foundations. It will also include support and advocacy for a specialized role for Surgeon-Scientists in terms of administrative and teaching assignment duties.

5. Roles of the Practice Plans

Excellence in research requires a substantial commitment of time, for development of competitive grants, completion of manuscripts and research projects, meetings with collaborators and graduate students. None of these activities generate significant income. New recruits often receive significant income through non-clinical sources during the initial few years of their career. However, after completion of the “start-up package”, any financial support of the Surgeon-Scientist falls to the individual Practice Plan. Practice Plans need to balance the support offered to Surgeon-Scientist with participation by all surgeons within the group. Nonetheless, it is to be expected that all Surgeon-Scientists should receive no less than \$100,000 in salary support to offset time spent in non-clinically remunerative activities. This would include all forms of non-clinical support. For example, a surgeon who received \$50,000 for salary support from a Research Institute, and received \$25,000 in “gain after re-distribution” should also receive an additional support of \$25,000. This amount should be considered a justifiable AEF expenditure. Practice Plans unable to provide this level of support could appeal to the Departmental AEF funds. In contrast, a Surgeon-Scientist with an endowed Chair generating 80,000 in annual expendable funds would be encouraged to take sufficient amounts of those funds as salary support until the minimum level of 100,000 support was reached. Each Practice Plan manager would prepare an annual Support Summary for each Surgeon-Scientist in their practice plan as they prepare

their annual Accountability Report. This would be reviewed by Surgeon-Scientist Program Committee.

6. Evaluation

The Surgeon-Scientist Program Committee, chaired by Vice-Chair, Research will establish a Review Committee with representation from Hospital Research Institute VPs, University Division Chairs and mid-career Surgeon-Scientists' in a manner analogous to Departmental Promotions committee. This committee would review CV, career synopsis, 5 year plans, and solicited external letters of support indicating stature in the field. A letter of support from Hospital Division Head and Practice Plan manager would also be required indicating that either that the Surgeon-Scientist already has a minimum of 100,000 salary support in place or the Practice Plan would be willing and able to provide the required support to reach that level. As the support offered by Research Institutes and the Department of Surgery Surgeon-Scientist Program would differ, the outcomes of the reviews would not be linked. For greater clarity, a Surgeon-Scientist could be successfully reviewed in the Research Institute process and have ongoing access to support in terms of lab space etc yet not be successful at the Departmental level and thus not be eligible for financial and other support. If however a Surgeon-Scientist lost a Research Institute position such that the actual ability to conduct research was compromised, support at the Departmental level would be modified immediately.

7. Financial Support

As mentioned above, to allow for long-term stability of the research excellence of the Department of Surgery at the University of Toronto, financial support for the non-remunerative activities of those contributing to research advances will need to increase. The level of support will vary between individuals depending on their success and ability to attract other sources of support. On the other hand, to be a meaningful job description, a certain minimum level of support should be expected. To that end, a minimum of \$100,000 salary support should be established and a minimum salary level of 25th percentile for the group should be achieved. This minimum should be reviewed periodically by the Surgeon-Scientist Program Committee in pursuit of two objectives. First, equity across the Department should be maintained. Second, support levels should take into account the overall affordability across the Department. For example, if a large number of Surgeon-Scientists do not have extra-mural funding such that this level of minimal support is unaffordable, it may need to be reduced. Conversely, with a large number of Surgeon-Scientists with endowed Chairs and other forms of support, it will be desirable to increase the level of support in the future.

8. Sabbatical Program

To encourage sustainable scientific renewal within faculty ranks, a voluntary Sabbatical Program will be an important development. Every Surgeon-Scientist will be eligible to up to 6 month leave for research activity. Permitted and encouraged by Hospital Division Heads, faculty will be supported with 200K/6 months within 2 years of successful review by the Surgeon-Scientist Program Review Committee.

9. Support for Scientific Leadership

Funding agencies have very limited ability to compensate for the extensive time commitment involved in grant review panel membership and other leadership positions. Surgeons are very poorly represented in such positions, perhaps in part due to the large proportion that fee-for-service incomes contributes to most surgical practice plans. As a consequence, surgical priorities and perspectives can receive less attention that they deserve to the detriment of the long-term agenda of the University of Toronto. To redress this disadvantage to surgical science, participation in grant review panels and other forms of scientific research leadership will be compensated as an eligible AEF expenditure, either within the Practice Plan or at the Departmental level. The principle of compensation for time away from clinical activities will remove at least one barrier for fuller participation by busy surgeons.

10. Surgeon-Scientist Program

To maximize the potential of surgical research at the University of Toronto, a formal Surgeon-Scientist Program with a goal of establishing on-going mentorship and mutually beneficial interactions. While the precise format is yet to be determined, dinner meetings twice a year with a research presentation from one junior and one senior Surgeon-Scientist will provide a foundation. Formal presentations or workshops on a career development topics such as “graduate student supervision”, “building a philanthropic support base”, and “maximizing international society leadership opportunities”. This will provide additional opportunities for networking and mutual support. Most importantly, it will provide an opportunity for Surgeon-Scientists themselves to compare notes. Such transparency will do much to ensure that Departmental policies intended to transparency and fairness are maintained over the long run.

11. Special Considerations for New Faculty

- a. Current (2012) University of Toronto Department of Surgery policy stipulates that Geographic Full-time Faculty positions should only be offered after a robust international search to attract the best possible candidates. The Search Committee will be responsible for ensuring that the standards used in selecting new Faculty to Surgeon-Scientist position are commensurate with those standards expected for continuing appointment

as a Surgeon-Scientist. Clearly, assessment of junior Faculty involves much greater evaluation of scientific potential than demonstrated achievement but framework of expectations should be consistent.

- b. There is widespread recognition that criteria for appointment in the Department of Surgery and at the School of Graduate Studies should be different. The primary function of a faculty appointment at the graduate level is to ensure that the conditions are appropriate for ideal education of the student. This includes training and experience of the supervisor as well as stability and funding of the research program. In contrast, basic science departments appear to consider appointment of faculty synonymous with privileges to supervise graduate students. In consideration, the department itself often plays a larger role in graduate student education. New faculty, in particular, are disadvantaged by a system that recognizes only individual accomplishment. More importantly, this system can deny students an opportunity to work with junior faculty during the time when they are in fact spending the most time in the research environment themselves. The Department needs to develop a strategy to more effectively create training environments that are robust. Ideally, all junior Surgeon-Scientist will be appointed to work in well-funded teams, with senior colleagues with significant experience in graduate supervision. When that is indeed the case, the Department should formalize this arrangement and document clearly the conditions that would allow Graduate School appointment at the Associate Member level with mentored co-supervision of the first students.

12. New Structures Required to Implement a Faculty Surgeon-Scientist Program

Several of the initiatives described here simply entail documenting who is responsible for which functions which heretofore have been informally addressed by various personnel but with out clear guidelines. On the other hand, several elements procedures designed to enhance the research excellence will entail the creation of new structures, detailed below.

- a. Surgeon-Scientist Program Committee – This committee, perhaps to be chaired by the Vice Chair, Research, reporting to the Departmental Research Committee will have two primary functions. To have oversight of all aspects of the Surgeon Scientist Program and to advise the Department Chair on overall strategy regarding the long term viability of the Surgeon Scientist Program. Specifically, to organize the details regarding Surgeon-Scientist meetings and workshops, the creation, operation, and evaluation of the Sabbatical Program. Importantly, to conduct re-appointment evaluations of Surgeon-Scientists.

- b. Surgeon-Scientist Program Finance Committee – This committee (perhaps these duties could be managed by the existing Finance Committee?), chaired by the Department Chair, will have oversight over the financial components of the Surgeon Scientist Program, such as the minimum salary support levels, the affordability of the Sabbatical Program, and the Surgical Leadership in Research Funding mechanisms. This committee will also review annual Support Summary statements to encourage compliance with Surgeon Scientist Program policy.

- c. Department-wide Divisional AEF for Research Excellence – Several of the program elements will only be sustainable based on dedicated funding. The overall generosity of practicing surgeons at the University of Toronto is already substantial. Many academic programs, including research, education and engagement in the broader surgical community are already crucially supported by Practice Plan AEF mechanisms. On the other hand, the distribution of research excellence is not always aligned with the largest or most financially successful Practice Plans. Commensurate with efforts to harmonize and standardize appointments, evaluation, and support across the Department, there will need to be some effort to equilibrate funding inequalities between Practice Plans. To that end, Practice Plans will contribute 10% of the final AEF for any given year towards a Departmental Practice Plan that will be used to fund academic excellence, if not solely the Surgeon-Scientist Program, at the discretion of the Chair.