

# Are there jobs in academic pulmonary medicine in Canada? A resident's view of the future

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A survey of all Canadian academic institutions with an adult pulmonary training program was undertaken in 1992 to investigate the number of positions in pulmonary medicine that would be available up to 1997. The positions were divided into clinician scientist (75% research) and clinician teacher (75% clinical) categories. Inquiry into specific areas of interests and prerequisite training requirements were made. Ten of 14 centres responded; 35 to 44 positions were identified, 22 to 27 for clinician scientists with at least two to four years' research training after completion of a clinical pulmonary fellowship. For the remaining 13 to 17 clinician teacher positions, the requirement was for two to three years of additional clinical training beyond the clinical pulmonary fellowship. Some centres did not specify whether available positions were in the clinician scientist or in the clinician teacher group. The results of the survey suggest that there are jobs available in academic pulmonary medicine but that they are mainly in the basic research area, requiring at least an MSc, and preferably a PhD or equivalent research training. A questionnaire is included in an attempt to obtain information about other opportunities in both academic and community hospitals.

**Key Words:** *Clinician scientists, Clinician teachers, Employment, Pulmonary medicine, Questionnaires*

## Y-a-t-il des emplois en pneumologie dans le réseau universitaire canadien ? Portrait de l'avenir dressé par un résident

**RÉSUMÉ :** Une enquête auprès de toutes les universités canadiennes offrant un programme de formation en pneumologie adulte a débuté en 1992 pour déterminer combien de postes seraient offerts en pneumologie jusqu'en 1997. Ces postes ont été divisés en deux catégories, chercheur-clinicien (75 % pour la recherche) et professeur-clinicien (75 % pour la clinique). Le questionnaire portait notamment sur les centres spécifiques d'intérêt et sur les qualifications exigées. Dix centres sur 14 ont répondu; 35 à 44 postes ont été identifiés, 22 à 27 étaient des postes de chercheurs-cliniciens ayant au moins deux à quatre années de formation en recherche après une spécialisation en pneumologie clinique. En ce qui concerne les 13 à 17 postes de professeurs-cliniciens, les qualifications exigées consistaient en deux à trois années supplémentaires de formation clinique après une spécialisation en pneumologie clinique. Certains centres n'ont pas spécifié si les postes disponibles se trouvaient dans la catégorie chercheur-clinicien ou professeur-clinicien. Les résultats de l'enquête laissent croire que des postes sont disponibles en pneumologie dans le milieu universitaire mais qu'ils sont surtout dans le domaine de la recherche fondamentale, nécessitant au minimum une MSc, et de préférence un PhD ou une formation en recherche équivalente. On a joint un questionnaire pour tenter d'obtenir des renseignements sur les autres emplois disponibles à la fois dans les hôpitaux universitaires et non universitaires.

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THIS ARTICLE IS BASED ON A COMPILATION OF RESPONSES to a survey that was mailed to a number of academic centres across Canada in the summer of 1992. The survey was conducted to investigate the types of positions that were available to graduating respirologists in some Canadian academic institutions. The principal objectives were to determine what positions were available and the training requirements for them. The results of this totally unvalidated survey are interesting and perhaps helpful for trainees in respiratory training programs across Canada. Furthermore, the results may encourage dialogue between faculty and trainees in terms of realistic expectations from both parties in filling these academic positions.

**METHODS**

A questionnaire was mailed to the heads of pulmonary divisions at 14 academic institutions across Canada. These sites were chosen because they were listed as pulmonary fellowship training sites in the American Thoracic Society Registry in 1992 (1).

Specific inquiry was made regarding the number of academic positions that might be available up to 1997. The respondents were asked to classify these positions into categories: clinician scientist (CS), defined as at least 75% time committed towards research; and clinician teacher (CT), defined as 75% of time committed towards clinical activities and teaching. Specific requests addressed the type of training, number of years of additional research/clinical training required, and the prerequisite skills and specific needs.

**RESULTS**

From the 14 sites contacted (Table 1), 10 completed questionnaires were returned over a period of approximately 15 months. The last response was received in September 1993.

Overall, 35 to 44 positions were projected to be available at the 10 academic centres between 1992 and 1997. The majority, 22 to 27 of these positions, were designated CS positions, and of these, at least 10 were for cellular/molecular biolo-

gists. In terms of specific training requirements, the expectations were somewhat variable among centres. The minimum perceived requirement to qualify a cellular/molecular biologist for a position in the CS track was two to three years of research training. The highest expectation in the same category was four to five years, or a PhD equivalent at some centres. Another four of the CS positions were designated for clinical epidemiologists, with a training requirement of as little as one to two years and as high as two to three years or MSc equivalent. The remaining eight CS positions were for a wide spectrum of research, encompassing physiology, sleep, oncology and other fields, with an expectation of at least two additional years of research training.

Of the CT positions, four of 10 were for experts in sleep, two for transplantation, two for intensive care-related work and two for laser endoscopy and home ventilation. The general training requirement was about two to three years of additional clinical/laboratory training. It is important to note that not all centres specified how many positions there were in each of the CS or CT tracks. Also, some centres appeared to be flexible, as they did not specify the type of special expertise required.

**DISCUSSION**

The limitation of this questionnaire was that it covered only a small portion of what may be actually available. There are clearly more than 14 academic centres across Canada; the requirements at centres that do not offer pulmonary fellowship training programs may be similar to those that responded, but they may be quite different. A suggestion that arises from this uncertainty is for an organization such as the Canadian Thoracic Society to keep a central registry of academic centres, which would be updated regularly and contain information on the availability, type of positions and the training expectations for potential applicants.

Given the limitations of the survey, the conclusions based on the available evidence are that there seem to be ample job opportunities in academic institutions for trained pulmonolo-

**TABLE 1**  
**Academic positions in 10 centres across Canada, 1992-1997**

Centre	Clinician scientist	Specific skills	Clinician teacher	Specific skills
University of British Columbia	2-3	Molecular biology, physiology, clinical epidemiology	1-2	Intensive care
University of Alberta	2-3	Cellular biology, clinical epidemiology, molecular biology	2	Laser endoscopy, sleep, home ventilation
University of Manitoba	3	Molecular biology, cellular biology	1	
Queen's University	1-2	Clinical epidemiology, sleep	1-2	Sleep
University of Toronto	4-5	Molecular biology, clinical epidemiology	3-4	
McMaster University	3-4	Cellular biology, molecular biology, physiology, molecular pharmacology	1-2	
University of Western Ontario	2			
McGill University	1		2	Transplantation
Laval University	2	Immunology, cellular biology, pathology	2	Sleep, transplantation, intensive care
University of Sherbrooke	2	Lung biology		
Total (range)	22-27		13-17	Grand total: 35-44

gists, with a great demand for researchers. On the other hand, trainees who have acquired special clinical and laboratory skills (Table 1) are also in demand.

We were surprised by the variability among the centres in the prerequisites or type of training and preparation required. Two or three years of training in cellular/molecular biology is probably inadequate to prepare someone as an independent investigator in this field. However, after two to three years of research training, someone who is to be taken into a strong and well established research program may be nurtured in the subsequent years as a junior investigator on faculty. Four to five years of research training will probably provide a much stronger research foundation and allow an individual to become an independent investigator. In the area of clinical epidemiology, a minimum of two years is the expectation at most sites. That period of time is generally sufficient to allow the trainee to acquire basic skills and educational requirements. But to put the acquired skills into practice and to have a chance to develop as an independent investigator would also require substantial development beyond an MSc training. Thus, a more realistic research training requirement for such individuals may also be three to four years.

For the CT track, the requirements of the late 1990s seem to be in the area of intensive care, transplantation and laser endoscopy. However, sleep medicine and home ventilation are still in demand at selected sites across Canada. The training requirements and expectations are perhaps more realistic, with a minimum of one year, and the optimal training requirement is probably two years, to establish expertise and to function well as a CT in these fields.

From the perspective of a pulmonary trainee, the prerequisites outlined in Table 1 may be a source of worry for those considering a CS track position. There is no question that somewhere between three to five years of the trainee's time will be devoted to developing skills and expertise in one of these research areas. Once the necessary research training has been completed in a particular field, there is generally no guarantee that the 'right' job will be available at a desirable site. Furthermore, some of the jobs that might become avail-

able could be taken by trainees from other centres or from the United States. Even assuming a position is available and highly desirable, there is still no guarantee that this heavy investment of time and the sacrifice of personal earnings during training will result in a successful, independent research career. The facts that become evident from this survey are that it takes a special group of very committed respiratory trainees to go into a CS track, but that for these dedicated individuals, there is a wide selection of job opportunities.

In terms of the CT positions, the results of this survey should be taken in context. Since the survey was targeted at academic centres involved in pulmonary fellowship training, the responses reflect the requirements of tertiary centres and should not be generalized to other centres. We hope to use this article to stimulate further correspondence and perhaps provoke comments from chairs of medicine, chiefs of pulmonary divisions, fellowship training program directors and, last but not least, the future of academic pulmonary medicine, the trainees themselves. Given the permission of space and editorial approval by the *Canadian Respiratory Journal*, a comprehensive survey of current and future job opportunities in pulmonary medicine at all the academic centres and community hospitals would be of great benefit to current trainees. Our hope is to use this article as a sounding board and as the first step in conducting a survey of available positions and possible future positions in the nontertiary academic and community centres for 1995 to 2000. This will help establish a database for graduating pulmonary trainees and help them find a position that suits their needs and qualifications. Thus, we encourage readers of the *Journal*, whether head of pulmonary medicine, chief of medicine or chief of staff, to complete the form and return it by mail or by fax. After six months we will tabulate the results, draw some conclusions and provide an update for the *Journal* if the response has been adequate.

#### REFERENCE

1. ATS/ALA training programs in adult pulmonary disease and critical care and training programs in pediatric pulmonary disease 1992 edition. *Am Rev Respir Dis* 1992;146:1111-2.

#### Mini-survey of respiratory medicine positions across Canada

Centre or hospital: \_\_\_\_\_

Completed by (name): \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

Do you agree to allow publication of the above information?

Yes

No

1. How many positions in pulmonary medicine are currently or will become available at your centre between 1995 and 2000? \_\_\_\_\_

2. Are any special skills or training required for this position?

Yes

No

If yes, please specify: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. Any other comments? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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