General surgeons are vital to maintaining the health of our population. They manage patient care from routine hernia repairs to catastrophic traumas and from simple biopsies to complicated Whipple operations. A general surgeon draws satisfaction from helping patients in a very tangible, concrete way, seeing the results of interventions in a short time. To effectively care for patients, a general surgeon acts as an advocate, communicates with patients and collaborates with peers in other specialties. General surgery is a challenging, rewarding field and entry was once highly competitive. In the last decade, there has been a trend towards fewer medical students applying to general surgery, as well as other surgical subspecialties, with some programs recently having difficulty filling their residency positions.\textsuperscript{1-3} For example, in 1993, 75 Canadian students ranked general surgery as their first choice discipline; whereas in 2001, only 46 students ranked general surgery as their top choice.\textsuperscript{1} In 2009, 17 spots were left unmatched in general surgery programs across Canada after the first Canadian Resident Matching Service (CaRMS) match.\textsuperscript{3} It is important to understand the reasons for declining interest in general surgery as a career. Since general surgeons perform a vital role in our healthcare system, this trend must be addressed.

What are the factors affecting interest and applications to general surgery? Topics cited in the literature include biases and stereotypes, workload, lifestyle, difficult residency training, gender inequality and earning potential.\textsuperscript{4-11} What do students of the Michael G. DeGroote School of Medicine at McMaster University think about general surgery as a career, and how do their concerns compare to the reality of residency and to the practice of general surgery? To explore this further, the authors (a group of medical students, residents and a staff surgeon at McMaster University) conducted informal interviews with six to seven medical students in each year of the three-year undergraduate program, six general surgery residents and five general surgeons. Some of the students interviewed were chosen because of an expressed interest in a surgical career. We asked the participants to discuss their perceptions of the prestige and competitiveness of various specialties, as well as their passion for those specialties. Residents and surgeons were asked about their satisfaction with their choice to become general surgeons. This brief survey suggests some reasons why McMaster medical students either are or are not interested in general surgery, and some factors that students may want to consider when choosing a career.

Some students observe that general surgery is a profession with great clinical variety, one that is necessary, unique, and provides lifesaving care to patients. Others associate general surgery with long hours that hinder work-life balance. First-year medical students are inundated with negative stereotypes about general surgery and general surgeons. These stereotypes may create strong biases that decrease interest in general surgery. Some medical students we interviewed are under the impression that general surgeons are
brute, arrogant, egocentric, always on call, “knife-happy”, narcissistic; that they have poor bedside manner, little patient interaction, a “God complex”; that general surgery is like an “Old Boys’ Club”; and that their procedures are mundane. With this “buzz”, who would consider general surgery as a career? We were surprised to find that much of the negative stereotyping is propagated by students themselves in their early training, when they have had little or no experience with general surgery. These students often declared that they acquired these perceptions from their pre-clerkship peers. Unfortunately, these negative stereotypes go unchallenged and uncorrected because of a lack of contact between surgical faculty and pre-clerkship students.12

As students gain clinical experience and encounter general surgery in clerkship, their perceptions of the specialty improve. Some maintain their desire to enter general surgery while others without prior interest for surgery gain an appreciation for the field after experiencing the positive and immediate impact that surgical procedures have on patient outcomes. Despite earlier perceptions in medical training, clerks and residents feel that the negative stereotypes of the “surgeon personality” are unfounded. Both male and female residents feel that they are well-treated and respected in the surgical program.

Although medical students hear from surgeons that there is a great deal of flexibility in general surgery, many remain sceptical. Junior medical students equate the workload of general surgery to inflexibility, long hours, call duties, hard work and poor compensation; however, all interviewed surgeons report being able to achieve an optimal balance between workload and personal life and adequate remuneration. To quote one senior surgeon, “General surgeons have a fair bit of control over lifestyle compared to other, non-medical professions.” General surgery allows surgeons to sculpt their practices by balancing community or non-clinical duties, family life and other interests. Female surgeons are supported by their colleagues and by flexible systems of practice that allow for their unique needs and expectations. They thrive as general surgeons by tailoring their practices in ways that allow them more personal time. “It takes organization and intent to organize,” as one female senior surgeon pointed out. Residents admit that general surgery is very demanding, but that leading a balanced life is possible. Furthermore, residents acknowledge the trend of improving conditions in general surgery residency and practice, and expect these to be significantly better by the time they become surgeons. This is validated by all staff surgeons. One new surgeon stated explicitly that the “grass is definitely greener after residency.”

Another factor that may influence career choice is earning potential. The discussion of income around medicine is now less taboo. Today’s medical students are more conscious about their future finances due, in part, to the rising cost of medical education.13 However, does salary really influence whether a medical student will pursue a surgical career? Of the various deciding factors that influence specialty choice, it became clear that earning potential is only an occasional contributor. Students pursue a specialty based on their passion for the field, as they have stated and as the surgical residents affirmed. Surgeons feel that they are well remunerated and are more concerned about non-clinical activities and family life than they are about income. They have the financial freedom to modify their practices to suit their lifestyles.

This paper reflects current perceptions of McMaster University medical students from all years, general surgical residents and general surgeons about the factors that influence students as they consider general surgery as a career. Unfortunately, long-held negative stereotypes about workload, work-life balance, male dominance and the “surgeon personality” still exist. However, residents feel that training conditions have improved and that general surgeons do not personify these stereotypes. General surgeons are content with their choice of specialty, noting work variety and flexibility as important factors. They also enjoy a high degree of career satisfaction that is due to the congruence between their personal values and the nature of general surgical practice. They find that they have good work-life balance, achieved by attending to their priorities. Female surgeons thrive in their surgical careers with their predominantly male colleagues. All surgeons see training and practice as becoming more flexible and responsive to the needs of the individual surgeon.

How do we reconcile the difference between the unrealistic stereotypes that students hold with the positive experience of surgical residents and the satisfaction of surgeons? Old stereotypes and impressions have not changed with the changes in the profession because junior medical students at McMaster see little of surgeons and general surgery practice. However, many become quite enthusiastic about general surgery when they are exposed to surgery and surgeons in clerkship. At this late juncture, they often cannot explore their interests, and sometimes are too late to change their originally-intended career paths, if that would be their wish. General surgeons, who must hold the responsibility for attracting and nurturing interest in general surgery, need to pay attention to medical students early in training. Long estranged from the early years of medical school, they will need to find ways to become visible and to help medical students understand what surgeons do and what the field of general surgery has to offer as a career. Ways to accomplish this include giving large group sessions in first year, developing mentoring relationships with medical students, tutoring small group sessions, offering a “day in the operating room”, providing a list of elective experiences that medical students can access, and participating in the Surgical Interest Group at McMaster University. Medical students need to take initiative as well and can contact surgeons to
gain experience in a field in which they may have some interest.

Society needs bright, young, skilled surgeons. Many general surgeons at McMaster University and in surrounding communities are eager to generate excitement about surgical careers in potential future colleagues. We invite all interested students to explore general surgery early so that they can develop their interest into a passion for a great career. As one senior surgeon put it, “general surgery is the best career in the world.”

REFERENCES

Author Biographies
Song Hon H. Kim attended McMaster University for both an Honours Bachelor of Science degree in biochemistry and his medical degree. He is currently a first-year general surgery resident at McMaster University.

Natalya N. Zhang graduated from the University of Toronto in 2007 with degrees in laboratory medicine and pathobiology, and earned a medical degree from the Michael G. DeGroote School of Medicine at McMaster University. She is a first-year general surgery resident at McMaster University.

Juan J. Russo earned a Bachelor of Health Sciences degree from McMaster University in 2006 and is a second-year medical student at the Michael G. DeGroote School of Medicine at McMaster University.

Ismail K. El-Salfiti is a second-year medical student at the Michael G. DeGroote School of Medicine at McMaster University. He earned a Bachelor of Science degree from the University of Ottawa in 2008.

Marcin Kowalczuk completed a Bachelor of Medical Science degree from the University of Western Ontario in 2008 and is a second-year medical student at the Michael G. DeGroote School of Medicine at McMaster University.

Azadeh N. Rajaee graduated from Carleton University in 2008 with a Bachelor of Science degree, and is a second-year medical student at the Michael G. DeGroote School of Medicine at McMaster University.

Manpartap Bal obtained a Bachelor of Science degree from Carleton University in 2008 and is a second-year medical student at the Michael G. DeGroote School of Medicine at McMaster University.

Mandeep S. Gill earned his Bachelor of Health Sciences degree from McMaster in 2008 and is a second-year medical student at the Michael G. DeGroote School of Medicine at McMaster University.

Paul J. Lysecki completed his Bachelor of Science in Kinesiology from McMaster in 2007 and is a third-year medical student at the Michael G. DeGroote School of Medicine at McMaster University.