



The Morpheus Reporter

Fitzgerald Building, Room 121, 150 College St., Toronto, Ontario M5S 3E2 416-946-0926 www.anesthesia.utoronto.ca



Chair's Comments: The UT Anesthesia Merit Award Competition 2009

Dr. Brian Kavanagh

A few weeks ago, the results of the inaugural university department Merit Award competition were mailed to all the applicants, as well as to their Chiefs. In summary:

- 45 applied to the research panel, and 16 were funded
- 36 applied to the education panel, and 10 were funded.

A special career award, for first place in the research competition, was awarded to Dr. Duminda Wijesundera – a special profile of whom will appear in the fall 2009 Morpheus Reporter.

There are several points to make about this competition. **First**, most (95%) of those who had previously received on-going university-derived income agreed to redirect that income in support of the new system so that departmental funding could be merit-based, peer-reviewed and competitive. **Second**, there were a total of 81 applications. **Third**, each of the teaching hospital departments sent a representative to each of the review panels (Education/CPA and Research), and these individuals –together with the external reviewers- reviewed, discussed and ranked the applications. Thus, there was extensive participation in this venture throughout the department. Beyond the university department, the approach has received the unalloyed support of the Faculty of Medicine's leadership.

In the Research competition, the following faculty members were funded:

\$80,000 per year, for a 5-year term: WIJEYSUNDERA, Duminda (Lecturer, UHN), *Evaluating Preoperative Anesthesia Care in Ontario at a Population-Based Level*

\$60,000 per year for a 2-year term: BEATTIE, Scott (Associate Professor, UHN), *To Maintain an Active Perioperative Outcomes Research Program*

\$40,000 per year for 2-year terms (alphabetical order):

- ANGLE, Pam (Assistant Professor, WCH), *Multi-Centered RCT Examining the Effect of Small vs. Large Tuohy-Type Epidural Needles on PDPH*
- BAKER, Andrew (Professor, SMH), *Analysis of Shockwave Blast Parameters on Cytoskeletal Alterations and Neuronal Function*
- DJAIANI, George (Associate Professor, UHN), *Reducing Delirium After Cardiac Surgery: A Multifaceted Approach of Perioperative Care*
- FISHER, J (Professor, UHN), *Translation of New Non-Invasive Monitoring Techniques from the Bench to the Bedside*
- HARE, Greg (Associate Professor, SMH), *Characterizing Physiological and Cellular Mechanisms Which Reduce Brain Injury and Promote Survival*
- KARKOUTI, Keyvan (Associate Professor, UHN), *Advance Targeted Transfusion in Anemic Cardiac Surgical Patients for Kidney Protection*

In this Issue...

Merit Awards 2009.....	1
Faculty Recognition Event and Departmental Awards.....	3
Academic Promotions.....	4
Success: Royal College Exams.....	4
Shields Day 2009.....	5
New: Interprofessional Teaching Award.....	5
<i>Article: Does Preoperative Anesthesia Consultation Help Our Patients?.....</i>	6
UT Faculty Development Day 2009.....	7
Curriculum Renewal Project...	7
<i>Article: The Green Anesthesiologist.....</i>	8
Awards.....	9
Meetings.....	10.
Recent Publications.....	11
People.....	12

- MAZER, C David (Professor, SMH), *Translational Studies of Mechanisms of Renal Dysfunction Following Cardiopulmonary Bypass*
- MORGAN, Pamela (Professor, WCH), *Obstetric Team Training and Surgical Safety Checklist Introduction*
- WASOWICZ, Marcin (Assistant Professor, UHN), *Volatile Anesthetics for ICU Sedation; Platelet Function in Post-PCI pts*

\$20,000 per year for 2-year terms (alphabetical order):

- BRULL, Richard (Assistant Professor, UHN), *Femoral Nerve Block After Total Knee Arthroplasty: A Randomized Placebo-Controlled Double-Blind Trial*
- FRIEDMAN, Zeev (Assistant Professor, MSH), *Aseptic Techniques and Ultrasound for Regional Anesthesia*
- KATZNELSON, Rita (Assistant Professor, UHN), *Melatonin Administration and Postoperative Delirium*
- WONG, Jean (Assistant Professor, UHN), *Efficacy of Intraoperative Topical Application of Tranexamic Acid Versus Placebo in Reducing Perioperative...*
- YOU-TEN, Eric (Assistant Professor, MSH), *Preoperative Noninvasive Computer Tomography Coronary Angiogram in Cardiac Risk Stratification*

In the Education/CPA competition, the following faculty members were funded:

\$40,000 per year for 2-year terms (alphabetical order):

- FEDORKO, Ludwik (Associate Professor, UHN), *Bar Code Aided Drug Verification Process During Medicating Patients in the Operating Room*
- GRAHAM, Marianne (Assistant Professor, SHSC), *Leader, University of Toronto Anesthesia Curriculum Review*
- YOU-TEN, Eric (Assistant Professor, MSH), *Development and Integration of a Comprehensive Airway Course in the Anesthesia Residency Curriculum*

\$20,000 per year for 2-year terms (alphabetical order):

- ABRAHAMSON, Simon (Associate Professor, SMH), *A Novel, Web-Based Tool of Self-Directed Learning Supported by Multimedia Modalities in Critical Care*
- BEATTIE, Scott (Associate Professor, UHN), *Perioperative Clinical Anesthesia Information System (CAIS)*
- CAMPBELL, Fiona (Assistant Professor, HSC), *The SickKids Pain Centre - First Steps*
- COOPER, Richard (Professor, UHN), *A Structured Approach to Training in Flexible Bronchoscopic Intubation*
- DAVIES, Sharon (Assistant Professor, MSH), *Accredited Continuing Education Web Site*
- MEINERI, Massimiliano (Assistant Professor, UHN), *Transesophageal Echocardiography and Weaning from Cardiopulmonary Bypass*
- PENG, Philip (Associate Professor, UHN), *Education in Chronic Pain*
- TARSHIS, Jordan (Assistant Professor, SHSC), *The Development of a National Simulation Curriculum for Postgraduate Training in Canada*
- VEGAS, Annette (Assistant Professor, UHN), *Cardiac Anesthesia Fellow's Manual*

The final scores for each application in this competition were focused around a consensus score (possible range 1-5) that was agreed upon following discussion. The panel members then voted on this consensus score to within ± 0.5 . The variability among the ratings was tight; the standard deviation of score range on each application, averaged across all applications, was 0.27 in the Education/CPA panel, and was 0.16 in the Research panel. This suggests that there was little heterogeneity in the scores of each application, and reflects thorough consideration and rigorous review by each panel.

What is the significance of being funded in this competition? A financial basis for research is necessary - but is never sufficient. In our context, funding can be leveraged by researchers at the level of the practice plan, to enable resources (e.g. time) beyond the sometimes modest absolute dollar amount of the award. Further, these awards would assist with academic promotion as they are intramural, competitive, and peer-reviewed.

This leads to a natural follow-up question: what does it mean when an application is not funded? All of the applications were ranked by each review panel, and the individual candidate and anesthetist-in-chief have all been told of their approximate ranking in the overall competition. The list of applications is very impressive, and our benchmarks here are the ratings of the external reviewers and the publication track record of our faculty in general. Thus being ranked in such a competition, even without funding, means that individual faculty can discuss their research in a structured way with their hospital department and articulate their research program,

and in many cases note that they achieved a meritorious ranking. Such structure provides hospital departments with the confidence that individuals are serious about their academic plans, and have a tangible template on paper that can be discussed and implemented. In this sense, submitting a completed application to the merit competition is invaluable, whether individuals are funded or not.

Equally important is that the high quality and competitiveness of the applications, when viewed in tandem with our department's current strategic planning process, points to the need for a well-developed, and targeted fund-raising program. Ultimately, our goal will be to fund as many educators, researchers and those developing novel creative processes as possible. Indeed, the assembled applications represent evidence of a substantial research, educational and creative enterprise, and could present potential donors with significant opportunities.

While many of our faculty members were pleased, many also will be disappointed; it is important to recognize that in the professional world of research, education or any creative activity, 'failure' (as defined by not getting funded in a specific competition) is extremely common – in fact, on a case-by-case basis, it is more the 'norm' with submissions to journals or funding agencies, than it is the 'exception'. Just as the positive feelings of success –although fundamentally personal- can pervade a hospital department, so too can the feelings of failure. In weighing success it is vital to note that the number of applications funded is a direct reflection of the modest funds available; the reason that many more applications were not funded was because of limited funds.

The merit competition was an opportunity for all who are interested in the academic mission to plan their activity and get the opinions of their peers. All members of an academic department will be impressed with the efforts and abilities of those who plan to advance the profession and discover new knowledge or processes, whether they place in the highest rankings of a competition or not. As members of an outstanding academic department of anesthesia, we will all support such individuals in every way that we can.

If you have any questions about the Merit Awards competition, please do not hesitate to contact me.

Brian Kavanagh --- on behalf of the Executive Committee, Department of Anesthesia, University of Toronto

NEW: Faculty Recognition Event and 2009 Teaching and Research Awards

On October 30, 2009, the UT department will host the first Faculty Recognition Event at the Faculty Club, University of Toronto. At this new event, we will recognize those of our faculty members who have provided 25+ years service to the University of Toronto, as well as our faculty members who have recently achieved senior promotion.

In addition, we plan to honor the recipients of the 2009 teaching awards at this event. Previously, the awards were presented at the Annual Shields Research Day event. We are pleased to announce the recipients of these awards in 2009:

- The *Dr. John Desmond Award* for excellence in undergraduate teaching: **Dr. Isabel Devito** (Mount Sinai Hospital)
- The *Dr. Gerald Edelist Award* for excellence in graduate teaching: **Dr. Jeffrey Wassermann** (St. Michael's Hospital)
- The *Dr. David Fear Award* for excellence in continuing medical education: **Dr. Annette Vegas** (UHN-Toronto General Hospital).

Please join us in congratulating these individuals for their achievements in teaching!

New Faculty Appointments

Please welcome the following new faculty members to the UT Department of Anesthesia:

- Dr. Andrew McNaught, Assistant Professor (Women's College Hospital)
- Dr. Finola Naughton, Assistant Professor (University Health Network – Toronto General Hospital)
- Dr. Andrew Steel, Assistant Professor (University Health Network – Toronto General Hospital)

Promotions

Please join us in extending congratulations to the following UT Anesthesia faculty members who will be promoted to the rank of **Full Professor** effective July 1, 2009:

- Dr. Scott Beattie (University Health Network – Toronto General Hospital)
- Dr. David McKnight (St. Michael's Hospital)
- Dr. Haibo Zhang (St. Michael's Hospital)

We are also very pleased to announce the promotion of the following faculty members to the rank of **Associate Professor**, also effective July 1, 2009:

- Dr. Richard Brull (University Health Network – Toronto Western Hospital)
- Dr. Fiona Campbell (The Hospital for Sick Children)
- Dr. Sharon Davies (University Health Network – Mount Sinai Hospital)
- Dr. Zeev Friedman (University Health Network – Mount Sinai Hospital)
- Dr. Igor Luginbuehl (The Hospital for Sick Children)
- Dr. Karen McRae (University Health Network – Toronto General Hospital)
- Dr. Basem Naser (The Hospital for Sick Children)
- Dr. Brian Pollard (St. Michael's Hospital)
- Dr. Annette Vegas (University Health Network – Toronto General Hospital)

Finally, please join us in congratulating the following faculty members who have recently achieved promotion to the rank of **Assistant Professor**:

- Dr. Mark Friedlander (North York General Hospital)
- Dr. Brian Kashin (North York General Hospital)

Success in the Royal College Examinations

Submitted by: Dr. Mark Levine, Director, Postgraduate Education

We would like to extend our congratulations to all our PG5 Anesthesia Residents and several of our IMG trainees who successfully passed their RCPSC examinations. This is a great result, not only for the new Fellows of the Royal College, but also for our program. The national pass rate for "reference candidates" i.e. those who have completed a full residency in a Canadian program and are taking the exam for the first time, is around 90%. Our new consultant anesthesiologists will be embarking on a variety of different pathways including fellowships in Toronto, Boston and as far afield as Australia, and consultant positions in academic centres and community hospitals in the Greater Toronto Area. Our program is, therefore, producing anesthesiologists who are meeting the needs of multiple communities. We would like to wish all our new colleagues success in their new endeavors and remind them that they will always be alumni of the Department of Anesthesia at the University of Toronto.

Our successful PGY-5 candidates are:

Dr. Richard Ahn

Dr. Christopher Coutinho

Dr. Mital Joshi

Dr. Sheila Riazi

Dr. Greg Silverman

Dr. Elizabeth Au-Yeung

Dr. Thomas Donnelly

Dr. Nisha Kanani

Dr. Katharine Ryans

Dr. Collan Simmons

Dr. Alvin Chang

Dr. Ockert Fourie

Dr. Nicholas Lo

Dr. Daniella Samuel

And, our successful IMG candidates are:

Dr. Kamal Hussain

Dr. Elod Szabo

Dr. Coimbatore Srinivas

Dr. Ilavajady Srinivasan

Department of Anesthesia – 30th Annual Shields Research Day

On Friday, May 8th, 2009, the Department of Anesthesia at the University of Toronto held its 30th Annual Shields Research Day at the Bahen Centre, 40 St. George Street. Over 300 people attended the day's events which included Poster Viewings, Oral Presentations and the Shields Lecture given by Dr. Mark Warner, Professor of Anesthesiology and Dean of the Mayo School of Graduate Education, Mayo Clinic College of Medicine.

Please join us in congratulating the winners of the following awards, which were also presented at the Shields Day event:

The R.J. Byrick Award: **Dr. Edwin Seet** (Toronto Western Hospital) – for the best fellow's research paper presented at the Annual Shields Research Day.

The A.C. Bryan Award: **Dr. Robert Bonin** (Sunnybrook Health Sciences Centre) – for the best graduate student's research project presented at the Annual Shields Research Day.

The Dr. Hynek Rothbart Award: **Dr. Megan Hayter** (Saint Michael's Hospital) – for the best resident paper presented at the Annual Shields Research Day.

The Thomas Donald Hammell Memorial Award in Anesthesia: **Dr. Greg Silverman** (Mount Sinai Hospital) – for outstanding contributions to the Residency Program (as chosen by other residents).

The Dr. Evelyn Bateman Award: **John Kim** (Fitzgerald Academy, University of Toronto) –for excellence in anesthesia at the undergraduate level.

Best Poster for the Annual Shields Research Day: **Dr. John Hanlon** (Resident, Toronto General Hospital)

We thank all those who participated in this year's Shield's Research Day, and we look forward to providing you with an even more successful and stimulating event next year!

NEW!! Interprofessional Teaching Award

New in 2009, this award will be given to a University of Toronto Department of Anesthesia faculty member who is judged to be an outstanding teacher both within and outside the Anesthesia community. It may be given annually if the selections committee identifies a worthy recipient.

Nomination criteria include an excellent teaching record and demonstrated impact in interprofessional teaching over at least 3 years in any of the following areas:

- a) Excellence in clinical teaching, lectures and seminars.
- b) Demonstrated influence that resulted in improved teaching.
- c) Development of innovations to improve learning
- d) Active involvement in educational committees and/or administration that has advanced teaching or education

Nominations:

Members of the Department of Anesthesia are invited to nominate candidates. Each nomination must be signed by at least two (2) faculty members and two (2) persons outside of the department (e.g. Anesthesia Assistants, Respiratory Therapists, RNs, etc.)

Nominations should be accompanied by the candidate's curriculum vitae and other appropriate documentation which may include: letters of recommendation from peers, students and faculty in other professions, teaching evaluation data and/or evidence of educational innovation.

Deadline for nominations: July 31st, 2009

Submit nominations to:

Dr. Peter Slinger, Department of Anesthesia, 3EN, Toronto General Hospital, 200 Elizabeth Street, Toronto, ON, M5G 2C4

**Hold the Date:
Shields Day
2010**

The 31st Annual
Shields Research
Day will take place
on **Friday, May 7,
2010**

Does Preoperative Anesthesia Consultation Help Our Patients?

Submitted by: Dr. Duminda N. Wijeyesundera, MD, FRCPC



An inescapable feature of contemporary anesthesia practice is that our patients are usually admitted to hospital on the same day as surgery. The major driving force for this change has been cost-reduction. Since inpatient hospitalization is very expensive, hospitals are very keen to prevent or reduce it. However, this practice does impose new challenges. Our patients are also older, and have more co-morbid disease. How do we make sure that these increasingly sicker patients are optimized before their same-day admission?

Part of the solution has involved preoperative consultation by an anesthesiologist at a preoperative assessment clinic. A consultation clearly has important *potential* benefits. It provides an opportunity to better document co-morbid disease, selectively order investigations, optimize pre-existing medical conditions, discuss aspects of perioperative care, and defer or cancel surgery, if necessary. However, the question remains: do patients actually do better if they undergo consultation at a preoperative assessment clinic?

In a recent large Ontario-based study, we tried to answer this exact question. Using data housed at the Institute for Clinical Evaluative Sciences, a research institute located close to Sunnybrook Health Sciences Centre, we evaluated the use of outpatient anesthesia consultation among 271,082 people who underwent major elective non-cardiac surgery in Ontario between 1994 and 2004.¹ Rates of anesthesia consultation rose dramatically, from 19% in 1994, to 53% in 2003. Patients who underwent consultation had an associated reduction in hospital stay of 0.35 days (95% confidence interval [CI] 0.27 to 0.43). Although this difference does not seem to be much at an individual level, it is important once you account for the 32,000 people who underwent major elective non-cardiac surgery in Ontario in 2004. Thus, routine consultation has the potential to annually prevent 11,200 days of inpatient hospitalization. Despite this reduction in hospital stay, consultation was not associated with any reduction in mortality, at either 30-days (relative risk 1.04, 95% CI 0.96 to 1.13) or 1-year (relative risk 0.98, 95% CI 0.95 to 1.02).

We also tried to determine which alterations in processes-of-care might explain these overall effects. Several changes were apparent. First, epidural use increased substantially, from 18% to 28%. This increase is especially important given our recent finding that epidural use was associated with reduced 30-day mortality.² Thus, preoperative consultation may be an important approach for increasing patient acceptance of this important intervention. Second, patients underwent more preoperative cardiac testing, both echocardiograms (7.3% to 12%) and stress tests (7.4% to 9.8%). Whether this increase is a good thing is unclear; we are presently conducting studies to answer this specific question. Finally, patients who had undergone consultation were more likely to receive beta-blockers before surgery (relative risk 1.13, 95% CI 1.10 to 1.16). The recent POISE trial³ suggests that this increase may not have been as beneficial as earlier thought.

The bottom line is that anesthesia consultation appears to be a good thing: our patients do derive benefits from the process. It is certainly something that I try to remember, especially when trying to complete a busy clinic list on a late Friday afternoon!

1. Wijeyesundera DN, Austin PC, Beattie WS et al. A population-based study of anesthesia consultation before major non-cardiac surgery. *Arch Intern Med.* 2009;169:595-602.
2. Wijeyesundera DN, Beattie WS, Austin PC et al. Epidural anaesthesia and survival after intermediate-to-high risk non-cardiac surgery: a population-based cohort study. *Lancet.* 2008;373:562-9.
3. Devereaux PJ, Yang H, Yusuf S et al. Effects of extended-release metoprolol succinate in patients undergoing non-cardiac surgery (POISE trial): a randomised controlled trial. *Lancet.* 2008;371:1839-47.

GP Anesthesia Program Update

Submitted by: Dr. Henderson Lee, Director, GP Anesthesia Program

From the GP Anesthesia Program, there are three (3) residents accepted into the program for the 2009-2010 year. The program is in the midst of an extensive internal review being conducted by the Department of Family and Community Medicine at the University of Toronto. An additional site for community GP Anesthesia experience has been arranged for residents. The GP Anesthesia residents will be able to go to either Collingwood or Port Perry for their GP Anesthesia experience. Future sites for elective experience in GP Anesthesia experience are being considered.

Calling All Anesthesia Faculty and Fellows: Mark the Date!

Submitted by: Drs. Peter Slinger and Martin van der Vyver

Faculty Development Day Event Co-Chairs

On November 11, 2009, the University department will expand on previously held Faculty Development Days. All hospital departments will give this day the same status as Shields day, solving the main problem of poor attendance.

A format similar to Shields day will be followed – mixing work, social networking and a bit of pleasure. Several keynote addresses by experts in the fields of Faculty Development and Continuing Medical Education are planned in addition to 6 interactive workshops – the focus will be on engaging in discussion with regards to common challenges in anesthesia education rather than dry educational theory.

A number of oral presentations and a poster viewing session will conclude the academic part of the day. Staff or fellows involved in projects in areas of education or creative professional activities, including knowledge translation, development of clinical protocols or practice reviews are encouraged to submit their projects for presentation at Faculty Development Day. Online submission of abstracts will be coordinated through the UofT Anesthesia website.

After an early lunch – you have the rest of the afternoon off!

UT Anesthesia Curriculum Review Project

Submitted by: Dr. Marianne Graham, Sunnybrook HSC

Call me crazy, but I have agreed to lead the official review, revision and implementation of a new and hopefully improved Anesthesia residency curriculum. Fear not, I will not be alone in this quest, for I have bribed, coerced, and threatened several experienced colleagues including: Tricia Houston, Deven Chandra, Jordan Tarshis, Mark Levine, Howard Fisher (yet to confirm) and a brave resident, Warren Luksun.

We plan to attack the curriculum on several levels. First, we will need to update the knowledge content portion, to include the knowledge objectives of the new “National Anesthesia Curriculum”, developed by program directors from across the country.

The second major area of revision will be the didactic seminar program. We hope to revise the current “lecture centered” didactic teaching component to a case centered, Problem Based Learning style more consistent with the concept of residents as “adult learners” and encourage self directed study. We will also look to incorporate other innovative and alternative teaching models including simulation, web based modules, and hope to develop an “Anesthesia Skills Lab”.

The third and final goal is to produce a comprehensive CanMEDS “blue print”, that clearly indicates when, at what level and in what capacity each of the CanMED profiles are being taught in the residency program. Specific CanMED “Portfolios” for the residents have already been developed for the major CanMED categories. The vision is that these will become part of the ongoing professional development for the residents, much like their “log book” of clinical experience.

I have heard from many regarding areas they think we are weak in or need to add to the curriculum. I am open to any suggestions you have. Just keep in mind that we have a finite amount of time to allow for “out of OR teaching”, and a strong commitment to maximize their clinical experience, so we do have limits.

This is a monumental project that will take considerable time to complete, so I ask for your patience and cooperation especially when we come to the implementation phase. I will do my best to keep everyone updated.

**For More
Information on the
New Faculty
Development Day,
November 11/09:**

Please contact:

Dr. Peter Slinger

(peter.slinger@uhn.on.ca)

or

Dr. Martin van der Vyver

(martinvan@mac.com)

or

Wendy Kubasik

(wendy.kubasik@utoronto.ca)



The Green Anesthesiologist: Practical Tips to Reduce our Carbon Footprint

John Hanlon, PGY4 Resident



The provision of anesthesia is an energy intensive activity, producing significant amounts of environmental waste and greenhouse gases (GHGs).¹ While the environmental consequences of anesthesia may be the last thing on our mind when caring for patients, the worldwide escalation in ecosystem destruction and global warming are sentinel events that implore us as physicians to scrutinize our own carbon footprint.

Unfortunately there is a paucity of literature on the environmental impact of anesthesia. That notwithstanding, a review of the medical literature, hospital and intergovernmental reports suggest that the use of inhalational anesthesia as well as packaging and other plastic waste (disposable circuits/tubing) likely represents the majority of our profession's negative environmental impact.

In the OR, using non-disposable products, minimizing plastic waste, increasing recycling, lobbying for improved packaging and appropriately minimizing what is placed in biomedical waste receptacles will all help reduce our carbon footprint. Accordingly, indirect evidence suggests that using (as appropriate) low fresh gas flows, choosing sevoflurane, avoiding nitrous oxide and capturing scavenged halogenated anesthetic agents (using commercially available products) may also be important steps to reduce GHGs and ozone destruction. Table 1 (below) displays the global warming potentials (GWP) of various anesthetic gases; this globally accepted concept is used to compare the strength of GHGs to trap heat in the atmosphere relative to CO₂. Ozone depleting potential and atmospheric lifetimes are also reported.

In our clinics and offices, evidence from other industries suggests that reducing paper consumption by converting paper-based documents to digital media that can be modified and shared without printing is the most important change we can make. Requesting not to receive medical junk-mail/faxes, printing double sided (when you must print), reusing paper/envelopes/packaging and turning off lights/electronic equipment at the end of the day are all important initiatives. Maximizing our use of blue box recycling and our hospitals "beyond the blue box" recycling programs (i.e. ink cartridges, batteries etc.) are also central to reducing our carbon footprint.

Table 1: Environmental attributes of various inhalational anesthetics

Anesthetic Agent	Global warming potential ^{1,2} (per unit volume)	Metric tons of CO ₂ (equivalents) per 250ml bottle	Ozone Depleting Potential ^{1,3}	Atmospheric Lifetime (yr's) ¹⁻³
N ₂ O	289	NA	+++	120
Isoflurane	1230	0.46	+	5.9
Sevoflurane	1980	0.71	Nil	4.0
Desflurane	3766	1.39	Nil	21.4

Table 2: OR Based Waste Reduction Strategies

- Reduce and handle waste effectively: maximize recycling, minimize biomedical waste
- Choose reusable items (circuits, gowns etc.) whenever possible, or the best packaged disposable items
- Minimize fresh gas flow rates as appropriate at all times; turn off at end of case/day
- Avoid N₂O and consider choosing Sevoflurane as case permits
- Ensure your ADU is equipped with a method to capture scavenged anesthetic agents (i.e. deltasorb®)
- Attempt to keep your patient warm to minimize the energy required for re-warming
- Turn off suction when not in use

Table 3: Office and Clinic Based Waste Reduction Strategies

- Read, manipulate and transmit documents electronically whenever possible
- Ask the same of others, especially companies that send medical junk-mail or faxes
- When you must print:
 - use FSC (Forest Stewardship of Canada) certified paper from well managed Canadian forests

-reduce your margins, print double-sided or reuse paper as appropriate

- Reuse envelopes (inter-hospital mail) and packaging (or send to shipping/receiving)
- Purchase energy efficient equipment and turn off lights, computers, printer/copiers at the end of the day
- Maximize your use of the blue box for regular recycling
- Utilize your hospitals "beyond the blue box" recycling programs (ink jet and toner cartridges, batteries, transparencies, cell phones, electronics, soft plastics)

As outlined above, reducing the negative environmental impact of anesthesia is not complicated and can be approached using the "three R's" strategy: reduce, reuse and recycle. Reducing consumption (primary prevention) is the most important intervention we can make. As anesthesiologists, we have both the greatest responsibility and the greatest opportunity to lead these changes. In the same way that our profession developed the technology and culture of safety necessary to reduce patient harm, we must now explore and champion new strategies to reduce the harm we are inflicting on our environment.

REFERENCES:

1. Solomon S, Qin D, Manning M et al. (eds.) IPCC: Climate Change 2007: The Physical Science Basis. United Nations Environmental Program (UNEP). [www.ipcc.ch/ipccreports/ar4-wg1.htm, Feb 2,2009]
2. Oyaró N, Sellevag SR and Nielsen CJ. Journal of Physical Chemistry: A. 2005; 109: 337-46.
3. Landbein T, Sonntag H, Trapp D et. al. British Journal of Anaesthesia. 1999; 82: 66-73 .

Awards

The late **Dr. John Bradley** (Department of Anesthesia) has recently been honored posthumously by the Royal College of Physicians and Surgeons of Canada with the **2009 Duncan Graham Award**. This national honorary award is named for Dr. Duncan Graham, chair of the Department of Medicine of the University of Toronto from 1919 to 1947. Dr. Graham was among the first to undertake postgraduate medical training after graduating in 1905 and went on to set up a program for postgraduate training of medical specialists in Canada on which the Royal College is modeled. The Duncan Graham Award is one of the most notable and outstanding awards that the Royal College can bestow upon an individual. The award recognizes outstanding lifelong contributions to medical education. Dr. Bradley was unanimously nominated by the Dean and the Council of Education Deans. The award will be accepted by John's sister, Phyllis Todd, at the Royal College annual meeting being held later this year.

Dr. Frances Chung won an excellence and innovation award at the SAMBA meeting for her work on "Nocturnal oximeter: A sensitive tool to detect the surgical patients with moderate and severe obstructive sleep apnea". Dr. Chung also received the Society for Ambulatory Anesthesia Distinguished Services Award at the 24th annual meeting of SAMBA in Phoenix, May 2009.

UT Anesthesia Tuition Awards

The Education Council of the UT Department of Anesthesia, chaired by Dr. Patricia Houston, Vice Chair Education, UT Anesthesia, is pleased to announce the recipients of the 2009-2010 departmental tuition awards:

- **Dr. Sylvain Boet**, Fellow, St. Michael's Hospital. Dr. Boet is currently completing a Masters Degree in the Universite de Roen, Department de Sciences de l'Education (distance learning program) as well as a program in simulation.
- **Dr. Dylan Bould**, Fellow, St. Michael's Hospital and The Hospital for Sick Children. Dr. Bould is currently completing a Master of Education degree at the Ontario Institute for Studies in Education, here at the University of Toronto. Dr. Bould is undertaking these studies as he completes a two-year Clinical Fellowship here at the UT.

For further information on this program and other departmental awards, please visit the UT website.

Regional Fellows Research-in-Progress Rounds

Submitted by: Dr. Doreen Yee, Director, Fellowship Programs

Three ongoing research projects in regional/OB anesthesia done by fellows were presented at the event held on April 6, 2009 at JAMcafé, a neighborhood restaurant in Cabbagetown. Twenty-three faculty members and fellows came to the one hour presentation that was followed by dinner. Regional faculty and fellows from five different hospital sites mingled before and after the presentations. Research ideas were exchanged, suggestions made for improving study methodology, and ideas for future collaborations were discussed. Fellows from different sites had an opportunity to meet each other and discuss their experiences. The following talks were presented:

- Tsui test as a predictor of bupivacaine consumption in labor epidurals. Presenter: Dr. Aleksandra Dlacic, Fellow-OB Anesthesia, MSH. Supervisor: Dr. Jose Carvalho
- The secret recipe for femoral nerve block after total knee arthroplasty: A randomized, placebo-controlled, double-blind trial. Presenter: Dr. Dorothea Morfey, Regional Fellow, TWH. Supervisor: Dr. Ricky Brull
- Does ultrasound reduce the minimum effective anesthetic volume required for interscalene brachial plexus block? (SBPB). Presenter: Dr. Colin McCartney, Holland Centre, SHSC.

A pleasant evening (and good meal) was had by all. Partial support for this evening was generously provided by Sonosite.



L-R: Colin McCartney, Aleksandra Dlacic (OB Fellow), Jose Carvalho, Dorothea Morfey (Regional Fellow)

Simulator Day for Clinical Fellows: St. Michael's Hospital

Submitted by: Dr. Mary McLoone, SMH

The inaugural St. Michael's Hospital Anesthesia Fellows Simulation Day was held on March 7, 2009. As I hope you can tell from the photos, the aim was for us all to learn something and have some fun in the process. The overall consensus was that this was achieved.

We are lucky enough to have this resource available to us, and to have a group of very willing participants. This was a great opportunity to practice clinical scenarios in a safe environment and have the benefit of discussion and debriefing afterwards. Many of our clinical fellows come from overseas and the day became quite an international event with representatives from Germany, Brazil, Switzerland, UK and France. The malignant hyperthermia scenario in which all participants were involved was a sight to behold!

As the day was such a success, we are planning to make it a regular event, and we hope that it will become an integral part of our anaesthesia fellowships.



Future U of T Anesthesia CME/CPD Courses

Submitted by: Dr. Peter Slinger, Director, CME-CPD



- Tremblant Anesthesia Meeting, February 2009, Fairmont Hotel Mt. Tremblant. Contact: Jordan Tarshis (jordan.tarshis@sw.ca)
- Introductory Workshops for Ultrasound Guided Nerve Blocks. Oct. 2-4, 2009. Contact: Vincent Chan (Vincent.chan@uhn.on.ca)
- Regional Anesthesia and Pain Medicine, September 25-28, 2009. Contact: Vincent Chan (Vincent.chan@uhn.on.ca)
- Obstetric Anesthesia, September 2009, Mount Sinai Hospital. Contact: obanesthesia@mtsinai.on.ca
- Pediatric Anesthesia, November 2009. Contact: Larry Roy (Lawrence.roy@sickkids.ca)
- Hyperbaric Medicine. October 2009. Contact: Wayne Evans (hyperbaric@utoronto.ca)
- Perioperative Transesophageal Echocardiography Symposium, 2009. Contact: Julie Nigro (julie.nigro@uhn.on.ca)
- Critical Care Canada Forum, November 2009. Contact: Brian Kavanagh (brian.kavanagh@utoronto.ca)
- Anesthesia Faculty Development Day, November 11, 2009. Contact: Peter Slinger (peter.slinger@uhn.on.ca) or Martin van der Vyver (martinvan@mac.com).
- Toronto Anesthesia Practice, November 2009. Contact: Pamela Angle (pamela.angle@wchospital.ca)

Recent Publications

Abrishami A, Chung F, Wong J.

Topical application of antifibrinolytic drugs for on-pump cardiac surgery: A systematic review and meta-analysis.

Can J Anesth 2009 Mar;56(3):202-12.

Beattie WS, Karkouti K, Wijeyesundera DN, Tait G.

Risk associated with preoperative anemia in noncardiac surgery: A single-center cohort study.

Anesthesiology 2009 Mar;110(3):574-81.

Chundamala J, Wright JG, Kemp SM.

An evidence-based review of parental presence during anesthesia induction and parent/child anxiety.

Can J Anesth 2009 Jan;56(1):57-70.

Chung F, Yuan H, Yin L, Vairavanathan S, Wong DT.

Elimination of preoperative testing in ambulatory surgery.

Anesth Analg 2009 Feb;108(2):467-75.

Halpern SH, Carvalho B.

Patient-controlled epidural analgesia for labor.

Anesth Analg 2009 Mar;108(3):921-8.

Fujimoto A, Ochi A, Imai K, Chan D, Sharma R, Viljoen A, Chu B, Holowka S, Kemp SM, Chuang SH, Matsumura A, Ayuzawa S, Snead OC 3rd, Otsubo H.

Magnetoencephalography using total intravenous anesthesia in pediatric patients with intractable epilepsy: Lesional vs. nonlesional epilepsy.

Brain Dev 2009 Jan;31(1):34-41.

Halpern SH, Soliman A, Yee J, Angle P, Ioscovich A.

Conversion of epidural labour analgesia to anaesthesia for Caesarean section: A prospective study of the incidence and determinants of failure.

Br J Anaesth 2009 Feb;102(2):240-3.

Hanlon JG, Hayter MA, Bould MD, Joo HS, Naik VN.

Perceived sleepiness in Canadian anesthesia residents: A national survey.

Can J Anesth 2009 Jan;56(1):27-34.

Hare GM, Baker JE, Mazer CD.

Perioperative management of acute and chronic anemia: Has the pendulum swung too far?

Can J Anesth 2009 Mar;56(3):183-9.

Hayter MA, Friedman Z, Bould MD, Hanlon JG, Katznelson R, Borges B, Naik VN.

Validation of the Imperial College Surgical Assessment Device (ICSAD) for labour epidural placement.

Can J Anesth 2009 Apr 2 PMID 19340491.

Joo DT, Wong GK.

Drug interactions: Lipoxygenase inhibitors interfere with ropivacaine-induced vasoconstriction.

Can J Anesth 2009 Apr;56(4):279-83.

Karkouti K, Wijeyesundera DN, Yau TM, Callum JL, Cheng DC, Crowther M, Dupuis JY, Fremes SE, Kent B, Laflamme C, Lamy A, Legare JF, Mazer CD, McCluskey SA, Rubens FD, Sawchuk C, Beattie WS.

Acute kidney injury after cardiac surgery: Focus on modifiable risk factors.

Circ 2009 Feb 3;119(4):495-502.

Ko R, McRae K, Darling G, Waddell TK, McGlade D, Cheung K, Katz J, Slinger P.

The use of air in the inspired gas mixture during two-lung ventilation delays lung collapse during one-lung ventilation.

Anesth Anal 2009 Apr;108(4):1092-6.

Lad V, David TE, Vegas A.

Mitral regurgitation due to myxomatous degeneration combined with bicuspid aortic valve disease is often due to prolapse of the anterior leaflet of the mitral valve.

Ann Thorac Surg 2009 Jan;87(1):79-82.

Lilker S, Rofaeel A, Balki M, Carvalho JC.

Comparison of fentanyl and sufentanil as adjuncts to bupivacaine for labor epidural analgesia.

J Clin Anesth 2009 Mar;21(2):108-12.

Mandelcorn ED, McCartney CJ, Mandelcorn MS.

A controlled clinical interventional trial comparing 2% chloroprocaine-bupivacaine versus 2% lidocaine-bupivacaine for retrobulbar anesthesia in scleral buckling surgery.

Can J Ophthalmol 2009 Feb;44(1):83-7.

Macfarlane AJ, Arun Prasad G, Chan VW, Brull R.

Does regional anesthesia improve outcome after total knee arthroplasty?

Clin Orthop Relat Res 2009 Jan 7 PMID 19130163.

McCluskey SA, Cheung WK, Katznelson R, Poonawala H, Fedorko L, Djaiani G, Mehta B, Karkouti K. \

The pharmacokinetic profile of recombinant human erythropoietin is unchanged in patients undergoing cardiac surgery.

Eur J Clin Pharmacol 2009 Mar;65(3):273-9.

Nair GS, Abrishami A, Lermite J, Chung F.

Systematic review of spinal anaesthesia using bupivacaine for ambulatory knee arthroscopy.

Br J Anaesth 2009 Mar;102(3):307-15.

Perks A, Chakravarti S, Manninen P.

Preoperative anxiety in neurosurgical patients.

J Neurosurg Anesthesiol 2009 Apr;21(2):127-30.

Perlas A, Lobo G, Lo N, Brull R, Chan VW, Karkhanis R.

Ultrasound-guided supraclavicular block: Outcome of 510 consecutive cases.

Reg Anesth Pain Med 2009 Mar-Apr;34(2):171-6.

Slinger P.

Update on anesthetic management for pneumonectomy.

Curr Opin Anaesthesiol 2009 Feb;22(1):31-7.

Szabó EZ, Luginbuehl I, Bissonnette B.
Impact of anesthetic agents on cerebrovascular physiology in children.
Paediatr Anaesth 2009 Feb;19(2):108-18.

Tanaka M, Balki M, Parkes RK, Carvalho JC.
ED95 of phenylephrine to prevent spinal-induced hypotension and/or nausea at elective cesarean delivery.
Int J Obstet Anesth 2009 Apr;18(2):125-30.

Venkatraghavan L, Chinnapa V, Peng P, Brull R.
Non-cardiac implantable electrical devices: Brief review and implications for anesthesiologists.
Can J Anesth 2009 Apr;56(4):320-6.

Wijesundera DN, Austin PC, Beattie WS, Hux JE, Laupacis A.
A population-based study of anesthesia consultation before major noncardiac surgery.
Arch Intern Med 2009 Mar 23;169(6):595-602.

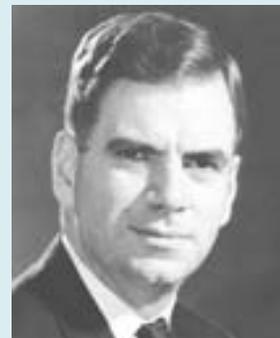
Wong DT, Woo JA, Arora G.
Lighted stylet-guided intubation via the intubating laryngeal airway in a patient with Hallermann-Streif syndrome.
Can J Anesth 2009 Feb;56(2):147-50.

Wong J, Tong D, De Silva Y, Abrishami A, Chung F.
Development of the functional recovery index for ambulatory surgery and anesthesia.
Anesthesiology 2009 Mar;110(3):596-602.

People

In Memory: Dr. Michael Campbell

It is with sadness that we learned of the passing of **Dr. Michael Campbell** on February 13, 2009 after a short illness. Dr. Campbell joined the Department of Anesthesia at the Toronto Western Hospital in 1957; he was Anesthetist-in-Chief there from 1971-1993, and retired in 1997. Born in 1927 in Dannhauser, South Africa he followed the path of his parents Samuel and Zara Campbell to become a physician. Dr. Campbell was committed to a life of continuous learning, teaching and improving health care. He served on many Boards and committees in all walks of life and was known and respected by all for helping find solutions to challenges and bringing people together to support a cause. A modest man who appreciated the people around him, he was a wonderful husband, an incredibly open-hearted, open-minded and generous-spirited father and a cherished friend and colleague to many.



Until Next Time... From Dr. Viren Naik

Dear Colleagues,

As many of you already know, I am leaving the University of Toronto at the end of this academic year for both a professional and personal opportunity that I couldn't turn down at the University of Ottawa. I have been at UofT since 1991 - first as a student, then resident, then faculty. So you can imagine, I am having some separation anxiety.

To the department - thank you for the support of medical education and simulation/education research. To the faculty - thank you for the mentoring and collaboration (not just related to anesthesia). To the residents and fellows - thank you for making it fun to come to work everyday; I guarantee I have learned more from you than you have from me.

Finally, to my partners at St. Mike's. Thanks for always supporting and believing in me and the simulation program. You are all more than friends - you're family... and I will miss you.

So I won't say goodbye ... but rather - until next time. I promise to bring some of my "political incorrectness" to the nation's capital.

All the best, Vern





[Morpheus Embrace: By Todd Peterson]

The Morpheus Reporter

[Please keep in touch!](#)

Faculty, Residents, Fellows, Alumni and Staff – send us your news, updates, articles and photos to share!

DEPARTMENT OF ANESTHESIA, UNIVERSITY OF TORONTO
150 College Street, Room 121 FitzGerald Building
Toronto, Ontario M5S 3E2
Reception/Undergraduate Office: (416) 946-0926
Office of the Chair/Business Manager: (416) 978-4306
Postgraduate Office: (416) 946-0608
Fax: (416) 978-2408
www.anesthesia.utoronto.ca

Chair: Brian Kavanagh
Business Manager/Newsletter Editor: Wendy Kubasik
Postgraduate Director: Mark Levine
Program Assistants: Jennifer Morris and Tina Nair
Undergraduate Director: Isabella Devito
Fellowship Director: Doreen Yee
CME Director: Peter Slinger
Director, GP Anesthesia: Henderson Lee