Research Symposium &
The Pam and Rolando Del Maestro Family Undergraduate Student Research Competition Awards

**Please note**: Undergraduate students wishing to compete in competition are encouraged to apply from anywhere in Canada. If selected to compete and not able to attend in person, teams will be streamed in.

Friday, October 20, 2017
1:00 pm - 4:30 pm
Sheraton Toronto Airport Hotel and Conference Centre
801 Dixon Rd
Toronto, ON
The Pam and Rolando Del Maestro Family Undergraduate Student Research Competition Awards
Friday, October 20, 2017 1:00 pm - 4:30 pm

Room: Ambrosia IV

Prizes will be provided for the top 3 teams who will be provided recognition for their efforts (see further in document).

In 2017, The Pam And Rolando Del Maestro Family Undergraduate Student Research Competition Awards were established to promote scientific innovation among Canadian undergraduate students.

35 years ago, Pam and Rolando Del Maestro co-founded Brain Tumour Foundation of Canada and over the years have fostered students in the field of brain tumour research by providing them with varied opportunities to present their ideas and engage with physicians and researchers in the field of neuro-oncology and neuroscience.

Brain Tumour Foundation of Canada thanks our co-founders Pam and Rolando Del Maestro for establishing this visionary opportunity.
Case Study:

Jacques is a 56 year old accountant who presented with a two month history of lethargy and moderate headache. Over the last two weeks he has become more forgetful and has developed some mild left-sided weakness. On examination he has some left-sided sensory neglect as well as some mild left-sided weakness. The emergency room doctor ordered a computerized axial tomography (CT) scan of the head which was abnormal. He then went on to have magnetic resonance imaging (MRI) of the head which better defined the abnormality: a right frontal brain lesion.

Jacques was referred to a neurosurgeon. Jacques and his family met with the neurosurgeon and there was discussion about the possible radiographic diagnoses. Management options were discussed. The neurosurgeon gave Jacques the Brain Tumour Foundation of Canada Handbook on brain tumour and after discussion with his family Jacques opted for resection of the brain lesion. Two days later Jacques underwent a craniotomy and resection of the brain lesion and piece was sent for pathological analysis. The neuropathologist reported that the lesion was a brain tumour called a glioblastoma and Jacques was informed.

A week after the surgery, Jacques and his family met with the neurosurgeon, neuro-oncologist and radiation oncologist to discuss the next steps. Jacques and his family had the following questions/concerns, having already searched the Internet:

1. What is the next best step for management of this glioblastoma – more surgery, chemotherapy, radiation therapy or some combination? What is the supporting evidence?

2. According to the Internet certain factors might impact how Jacques responds to treatment. What are these factors and what is their relative importance? What is being done to identify other factors?

3. Jacques and his family wanted to know if there were any experimental therapies for a patient with this kind of brain tumour. They wanted to know what a clinical trial was and if there might be any current clinical trials for which he might be eligible.

4. Jacques is concerned that his having a brain tumour is going to negatively impact his quality of life. He wants to know if there is any evidence to support his concern and, if so, is there anything being done to minimize this. Jacques also wants to know if anything is being done to help families optimally deal with a family member with a brain tumour.

Brain Tumour Foundation of Canada is inviting students to devise a proposal for scientific research that addresses one or more of the above issues surrounding Jacque’s brain tumour (glioblastoma).
Overview:
This undergraduate research competition is to showcase work to other scientists, researchers and professionals attending Research Symposium. Winning team receives the opportunity to present at our Join the Movement to End Brain Tumours National Conference the following day. Presentations will be relevant to the brain tumour research community. Its purpose will be to provide students an opportunity to create a research proposal, practice presentation skills and receive constructive feedback from a panel that will include physicians and researchers. This competition allows students to network and create awareness while engaging the brain tumour community in brain tumour research.

Process:
Brain Tumour Foundation of Canada’s Research Committee has created a standardized clinical case study relevant to brain tumours. Additionally teams will receive the ranking document the panelists will utilize during presentations to evaluate, once you share you plan on submitting a letter of intent.

Those participating will be asked to work in groups ranging from 2-4 group members. Grant proposals will be assessed via a two-step mechanism by the judging committee.
1) Inform sruypers@braintumour.ca you will be sending LOI no later than July 1, 2017

2) Letter of Intent- Please follow below format
The Letter of Intent (LOI) must include the following:

- **Background of the field**
  - Describe any background information on research topic. This must include key principles to understand proposal

- **Research problem**
  - This should clearly state an unresolved concern in the scholarly literature that needs to be improved or eliminated. The significance of your proposal should be illustrated here

- **Hypothesis**
  - State the hypothesis of the proposed study in the context of the research problem

- **Specific aims**
  - Present up to three specific aims. These should be the narrower and more specific objectives of the proposed study in relation to the hypothesis. Under each specific aim, elaborate on the methodologies. Where applicable, describe theoretical results.

- **Methodologies**
  - This section should elaborate on the experimental procedures that will allow any other scientist to replicate your experiments. Data collection and analysis protocol must be included.

- **Hypothesized results**

- **Rationale for proposed research/therapeutic relevance**
  - The following questions should be addressed in this section: How is the proposed study innovative and supportive on the goals of brain tumour research? Why should this project be done? How is it therapeutically relevant?

- **Key references**
  - Maximum of 30 references

**Additional Information:**

- All necessary information above required
- Letters of Intent should be no more than 2 pages single spaced.
- Font should be Arial and at least 10 points
- To submit your Letter of Intent, please email as a PDF attachment to sruypers@braintumour.ca

**Deadline:** **August 18, 2017**
**Results to be provided by:** **September 25, 2017**
(all those who submitted LOI’s will be notified regardless of results)
3) Oral Presentation
After reviewing the full research grant applications, teams will be invited to deliver an oral presentation to the selection committee at the Brain Tumour Foundation of Canada Research Symposium on **Friday, October 20, 2017**.

Participants will be given the opportunity to select their own specific topic of interest and be encouraged to form a research proposal that is experimental and not an observational study nor a clinical survey.

Visual Aids (i.e. illustrative slides) should be used were possible to make the presentation easy for judges and the audience to understand the research proposed. Presentations will be scored based on the how well the panel of judges believes your presentation meets each of the above criteria.

**NOTE:** Please respect copyright and academic citation standards when using images and data from text books and academic journals.

**What we do not expect:**
The goal for this competition is not “ready for the lab projects.”
The competition is not meant to be based on student thesis projects.
The basic idea is “If you were attempting to get funding for a whole project what would you present to a panel of scientists to convince them?”

**Possible Topics**

**Surgery**
Recent evidence casts doubt on whole brain radiation therapy as a main treatment option for brain metastases. Tumour bed directed stereotactic surgery may be a promising alternative for its localized therapy approach.


Endoscopic procedures permit precise observation of the surface of the tumour while avoiding vessels during resections, creating the possibility for almost complete resections of deep-seated tumours.


**Pharmacology**
Systemic drug therapy is a management option for meningioma that cannot be completely resected. Antiangiogenic agents that interfere with tumour-induced angiogenesis may serve as rational novel treatments in such cases.

The blood-brain barrier hinders drug delivery to the brain due to its selective nature. Increasing the blood-brain barrier permeability without disturbing other brain cells can be an innovative approach to increasing the success of targeted cancer therapies.

For more info: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4264241/

**Palliative & End-of-Life Care**
Discussing palliative and end-of-life care with parents of children with a brain tumour remains a challenge to healthcare providers. This study examines training procedures to prepare medical professionals to deliver Communication Plan: Early Through End of Life (COMPLETE) intervention to parents.

For more info: http://www.ncbi.nlm.nih.gov/pubmed/25623029

**Stem Cells**
One emerging topic of research focuses on cancer stem cells that may contribute to tumour growth via their self-renewal capacity. Therapies that selectively target cancer stem cells may help eradicate cancer and prevent reoccurrence.

For more info: https://med.stanford.edu/ludwigcenter/overview/theory.html

**Patient Selection**
Responses to one treatment may vary from patient to patient. For instance, age can largely influence treatment consequences for patients with medulloblastoma. Novel methods of risk stratification will be necessary to personalize approaches to medulloblastoma per case.

For more info: http://link.springer.com.libaccess.lib.mcmaster.ca/article/10.1007%2Fs11864-014-0306-4

**Molecular Biology**
MicroRNAs are implicated in the regulation of gene expression at the post-transcriptional level. It is hypothesized that they may alter key tumour suppressor activity to result in brain cancer development. MicroRNAs may thus be potential biomarkers and/or therapeutic targets for embryonal tumours.

For more info: http://www.ncbi.nlm.nih.gov.libaccess.lib.mcmaster.ca/pmc/articles/PMC4264241/

**Day of Conference:**
Day of Conference, each team will be provided 8 minutes to present proposals with 5 minutes of feedback. One winning team will be selected the following day at our JTM Conference based on presentation performance and content of abstract and full proposal scores previously earned.
Winning teams will be announced at the end of this day and 1st place team will present the following day at our Join the Movement to End Brain Tumours Conference on Saturday, October 21, 2017 (11:05 am - 12:05 pm). Presenting to the audience in attendance in concurrent session.

Prizes will be provided for the top 3 teams who will be provided recognition for their efforts.

1st Place- $1000 Plus opportunity to present same presentation at JTM Conference
2nd Place- $750
3rd Place- $500

**Ranking Committee/Case Study Development:** Dr. Joseph Megyesi, Dr. Chris Wynder, TBD

**Moderator of Event:** TBD