

Banting Postdoctoral Fellowships

An applicant's perspective

Eno Hysi, PhD

Banting and KRESCENT Fellow

St. Michael's Hospital, Division of Nephrology

Li Ka Shing Knowledge Institute

Keenan Research Centre for Biomedical Science

eno.hysi@unityhealth.to

June 23, 2021

Workshop overview

1. Perspective on application components [1:00-1:45]

a. Overview

b. Proposal anatomy

c. Supervisor statement

d. Arm's length reviewer

2. Perspective on the CCV [1:45-2:00]

a. Components

b. Make most of each entry

c. Fill out all entries

3. Questions/Open discussion [2:00-2:30]

My most important piece of advice

From now until September 22, make this your new homepage:

<https://banting.fellowships-bourses.gc.ca/en/home-accueil.html>

Government of Canada | Gouvernement du Canada | Canada.ca | Services | Departments | Français

Banting Postdoctoral Fellowships

Canada

Application process ▾ | Review process ▾ | Results ▾ | Information for Banting postdoctoral researchers ▾

At a glance

Value & duration

- \$70,000 per year (taxable)
- 2 years (non-renewable)

Next important date

Application submission deadline: **22 September 2021 (20:00 EDT)**

[View more fellowship details](#)

2020 Banting Postdoctoral researchers

Banting Postdoctoral Researchers 2019–2020

Item 1 of 3

Play

What does the Banting evaluate?

Dear Eno Hysi:

Thank-you for submitting an application to the 2019-2020 Banting Postdoctoral Fellowships program. The Canadian Institutes of Health Research (CIHR) received a total of 194 eligible applications of which a total of 24 fellowships were offered.

Score and rank

Below are the final scores received for each of the three selection criteria along with a final overall average score:

1. Research excellence and leadership in the research domain: 7.85
2. Quality of the applicant's proposed research program: 8.35
3. Institutional commitment and demonstrated synergy between applicant and institutional strategic priorities: 8.55

Overall average score: 8.25

Your application was ranked 10 out of the 194 applications reviewed by the CIHR Selection Committee.

Although the top 24 applications would normally be funded, any overall score below 5.1 on any of the three criteria will render an application "not recommended" for funding.

My personal dogma

The reviewers must be constantly reminded that YOU are an excellent researcher with a high-quality research proposal who has great synergy with the proposed institution

The anatomy of a proposal

Research Proposal Summary – CIHR Doctoral Research Award

Hysi, Eno – PIN 253431

Identifying information

Introduction: I propose to map the structure and function of tumour vasculature in order to longitudinally *monitor cancer treatment response non-invasively and early* (hours to days post-treatment). The diagnosis and treatment strategies for cancer have significantly increased in the recent years, in Canada and worldwide [1]. New treatments warrant the need for readily available imaging methods capable of assessing the therapeutic response of tumours in a timely and non-invasive fashion. Treatment response is commonly assessed through anatomical information obtained through physical examination and standard clinical imaging. Current imaging typically occurs after the entire treatment course is complete. These methods are costly and often require external contrast agents and lengthy scan times making them impractical for ongoing monitoring of cancer patients [2]. A modality capable of providing immediate, individualized feedback on treatment efficacy would allow oncologists to adjust ineffective treatments sparing the patient physical and psychological side effects. *Costs incurred by the Canadian health care system due to administration of ineffective therapies would also drop.* I propose using photoacoustic imaging (PAI) for the non-invasive monitoring of tumour treatment efficacy to improve upon current approaches. This will be accomplished through monitoring key determinants of treatment outcome: structural and functional vascular changes. As a hybrid imaging modality, PAI detects the ultrasound (US) signals generated from the laser excitation of tissues. Contrast arises from differential optical absorption of tissue chromophores, mainly the red blood cells' oxygenation state [3]. High resolution images provide simultaneous tissue structural (size and number of vessels) and functional (oxygenation status and perfusion) information. The success of many established treatments (radiation or chemotherapy) depends on tumour perfusion and oxygenation as hypoxic regions are resistant to treatment. PAI can potentially provide access to crucial parameters early during treatment allowing for effective clinical decisions.

Introduction

Hypothesis and Specific Aims: PAI can monitor the response of cancer treatments by mapping the changes in tumour vasculature and oxygenation occurring hours to days post-treatment. This project has 2 specific aims (SA): SA1 – Perform PAI on established pre-clinical models of cancer to determine the sensitivity of the technique for monitoring vascular-altering treatments; SA2 – Correlate PAI tumor oxygenation estimations during treatments to the structural changes that occur in the tumour vasculature to determine specificity of the technique in determining treatment efficacy.

Hypothesis and Specific Aims

Methodologies: SA1 will be achieved by imaging orthotopic xenografts from 3 common breast cancer cell lines (MDA-231, MCF7 and EMT-6) in female mice. These tumours vary in the degree of vascularity and will be grown to various sizes prior to treating them with conventional and novel approaches. Established angiogenesis inhibitors (ex. Avastin and Sutent) designed to hinder tumour growth by impeding the development of new tumour vessels will be used [4]. Additionally, vascular-disruption treatments (ex. Combrestatin A-4) will be used to destroy blood (nutrient) supply to the tumour [5]. Both types of treatments will be used in conjunction and compared to conventional chemotherapy and radiation. These pre-clinical models and treatments will be assessed longitudinally using 3D, multi-wavelength optical illumination of the VevoLAZR (Fujifilm-VisualSonics), a commercial PAI device for small animals. By imaging pre-treatment and hours, days and weeks post-treatment, the *sensitivity of PAI will be evaluated in its ability to monitor treatment response (assessed by tumour growth).* Oxygen distribution and degree of vascularity within the tumour will be obtained through image processing algorithms applied at each time point. In order to achieve SA2, the degree of tumour vascularity, a key component to tumour growth, will be assessed by measuring vascular perfusion and endothelial cell linings using FITC-lectin and CD31 immunohistochemistry staining, respectively. This histological evaluation will be used to correlate the in-vivo structural and functional parameters PAI provides to changes occurring within the tumour as a function of time. This will determine the *specificity of PAI in predicting treatment response based on early changes in tumor vasculature.*

Methodologies
Materials and Methods

Significance of Proposed Research: The proposed research will develop PAI as a new, non-invasive monitoring tool for assessing treatment induced changes in tumour morphology and physiology. By mapping the vessel structure and oxygenation, this project aims to predict the outcome of cancer early into treatment. This approach and its clinical translation have the potential to assess, in a tailored fashion, the effectiveness of health services offered the millions of Canadians undergoing cancer treatments.

Significance of proposed
Research/Conclusion

[1] Wistuba II et al, *Nat Rev Clin Oncol* 8 (2011) // [2] Punglia RS et al, *N Engl J Med* 356 (2007) // [3] Wang LV and Hu S, *Science* 335 (2012)
[4] Jain RK, *Nat Rev Cancer* 8 (2008) // [5] Thorpe PE, *Clin Cancer Res* 10 (2004)

References

5

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My Banting proposal anatomy (1/4)

Clinical problem (7-8 sentences)

- I described what the issue is with assessment of kidney transplants.
- This establishes the importance of your work.
- Keep in mind that the reviewers are non-specialists so avoid too much technical jargon.

Knowledge gap (3/4 page)

- I described the problems with biopsies and how they limit the assessment of kidney quality at the time of transplant.
- I then talk about the importance of accurate fibrosis detection in the context of kidney donations.
- Then I end off with emphasis on how there is no way of doing this, highlighting a knowledge gap that my work will address.

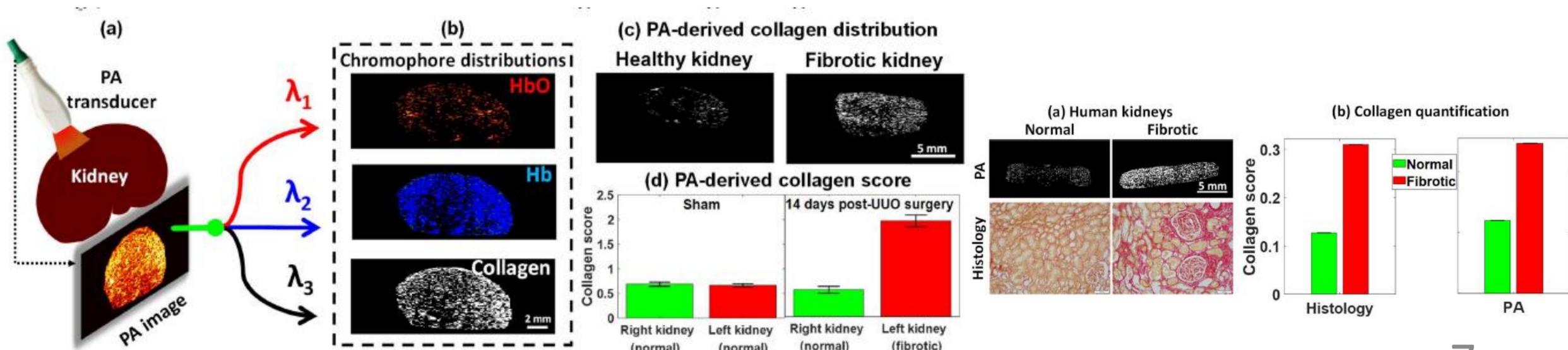
My Banting proposal anatomy (2/4)

Solution (1/2 page + 1 figure)

- I describe my technology, its advantages and what it can contribute to this problem.
- I used part (a) of one figure to include a schematic of my invention.
- Try and keep it simple and visually appealing, keeping in mind the reviewers likely not experts in your field.

Preliminary data (1/4 page + 1 figure)

- You should try and include here something that is simple to understand and demonstrates that what you are proposing has value.
- There is no magical number for how much to include but I personally think that it helps a great deal convincing the reviewers that you aren't proposing something that won't work.



My Banting proposal anatomy (3/4)

Hypothesis and specific aims (1.5 pages)

- This must be written in the most clear, concise and coherent manner possible.
- Include as much detail as you need to make sure that the reviewers fully understand your research question.
- The flow also matters - I had three aims that build up sequentially.
- I also included a timeline for each aim to show that what I am proposing is doable within two years.

Plan to disseminate findings (3-4 sentences)

- Because my project is clinical with direct patient outcomes, I wrote up a short paragraph to describe how the invention would be widely disseminated to nephrologists caring for patients that need transplants.
- This is specific to my work and might not apply to everyone.

Significance of the contribution (5-6 sentences)

- A short paragraph reminding them why this work matters, one last opportunity to sell the work.

My Banting proposal anatomy (4/4)

Rationale for selecting host institution (1/4 page)

- Sing praises to SMH and why it's the ONLY place in the world where you can do this work. This matters a LOT.
- You need to convince them why you are going/staying there versus somewhere else.
- This must be a robust reason that will advance your career in ways no other institute will and will also benefit the institute.
- The synergy between you, the institute and supervisor must come across everywhere. I highlighted the same reasons that the supervisor touches on in his letter, but from my perspective.

A word about Special Circumstances

- If you trained at UofT/SMH and are choosing to stay here again, you must write the Special Circumstances attachment.
- Pay very close attention to the following (and other info on this) from the Banting website:
 - Only in rare circumstances will a Banting Postdoctoral Fellowship be awarded to an applicant who is staying at the same institution or within the same research environment where they completed their PhD, PhD-equivalent or health professional degree.
 - If an applicant chooses to apply in collaboration with the same institution (or its affiliated hospitals, research centres and other laboratories) or within the same research environment from which they obtained their PhD, PhD-equivalent or health professional degree, a solid justification must be provided in the Special circumstances attachment.
 - Examples of valid justifications are **scientific reasons** (e.g., availability of specialized equipment/infrastructure or expertise), **family reasons** (e.g., family obligations), **health reasons** (e.g., proximity to health care facilities), **applicants conducting research with Indigenous communities**, and/or **reasons related to community or cultural responsibilities.**

Supervisor statement

- Probably the most important of the four reference letters (4 pages long).
- Helpful if written in consultation with applicant.
- A generic intro is also permissible as long as the mandatory sections below are included:
 - Supervisor biography
 - Clinical/research background/Research interests
 - Publications/Funding/Training record
 - Appropriateness of the supervisor
 - Describe applicant's research background
 - Highlight the fit between applicant's research expertise and supervisor's research interests
 - Research environment
 - Describe SMH research in the area of the proposal
 - Focus on what is available to the applicant in the supervisor's lab and SMH as a whole
 - Professional development
 - Specifics on how the applicant's research career will benefit from joining SMH and the proposed lab
 - Institutional synergy
 - Strongly defend why SMH is the ONLY place in the world where this applicant and this supervisor can hold a Banting

Arm's length referee

- The letter carries a lot of weight since this person does not benefit from success of the application.
- They should be provided at minimum with the proposal, applicant's CV but sending the complete application can also help.
- Its not a free-form letter, but rather contains three sections (detailed description found on the info for referees website section):
 - Applicant's research excellence and demonstrated leadership
 - Merits of the proposed research
 - Suitability of the proposed research environment
- Provide these descriptions to the referee just to avoid them not being aware of them.

Choice of arm's length referees

- Ideal choice
 - A highly accomplished leader in the field who professionally knows you to some degree (the more knowledge of the candidate's career, the better).
 - You or your proposed/past supervisor must have never published or collaborated together.
 - International vs. national experts: select the international person if you have a choice.
 - Has read the proposal carefully and can comment on specifics and how this work stands in the field.
 - PhD external examiners are a good place to start as well as people one interacts during conferences over the years.
- Less ideal choice
 - Someone who has never met the applicant (despite what is stated on the website, some prior knowledge of the applicant is an asset).
 - Someone who only comments on the merits of the proposal but not the applicant's ability research excellence or proposed environment.

Other two referees

- PhD supervisor must be one of these referees
 - It will raise huge red flags if that letter isn't there.
 - Specifically ask them to comment on your independence as a young scientist and evolution from student to PhD.
- Chose a senior scientist (ideally full professor) as your third referee
 - It would be nice if they are not in the same institution you trained in.
 - Collaborators from other institutions who can comment on your abilities as a scientist and assess your proposal are an asset.
- Make sure both highlight the same key elements in concert so that reviewers of your application become convinced of the fit between you, your proposed institution and supervisor.
 - Same form used for all 3 referees (except proposed supervisor).

Workshop overview

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c. Fill out all entries

3. Questions/Open discussion [2:00-2:30]

What is the CCV and why does it exist?

CCV's mission:

“Launched in 2002, the Canadian Common CV (CCV) is a web-based application that provides researchers with a **single, common approach to gathering CV information required by a network of federal, provincial and non-profit research funding organizations**. The CCV uses a common standardized data model to capture information that is used for peer-review and reporting activities.”

<https://ccv-cvc.ca/indexresearcher-eng.frm>

Canadian research community (2682 people)'s views:



Eno's views:

Ambivalence: better and worse things have happened...16

Section	Included/Entries	Last Updated
Personal Information ?		
✓ Identification	1/1	2021-06-22 01:10:26
✓ Language Skills	4/4	2019-08-10 14:54:06
✓ Address	2/2	2014-09-10 19:36:40
✓ Telephone	2/2	2014-09-10 19:39:18
✓ Email	2/2	2014-09-10 19:40:09
✓ Website	1/1	2018-08-18 08:20:55
✓ User Profile	1/1	2019-09-17 16:03:08
Education ?		
✓ Degrees	3/3	2019-07-29 08:49:32
✓ Credentials	8/8	2019-09-17 16:05:26
✓ Recognitions	20/20	2019-09-17 16:11:04
Employment ?		
✓ Academic Work Experience	4/4	2018-08-18 08:34:55
✓ Non-academic Work Experience	0/0	No Entry
✓ Affiliations	1/1	2019-07-29 08:59:07
✓ Research Funding History	6/7	2019-09-17 16:12:46
Contributions ?		
Publications ?		
You cannot select more than 20 entries of Publications to submit to Vanier-Banting Academic		
✓ Journal Articles	14/14	2019-09-20 01:47:19
✓ Journal Issues	0/0	No Entry
✓ Books	0/0	No Entry
✓ Book Chapters	1/1	2019-07-23 16:41:27
✓ Book Reviews	0/0	No Entry
✓ Translations	0/0	No Entry
✓ Thesis/Dissertation	1/3	2019-07-02 12:44:50
✓ Litigations	0/0	No Entry
✓ Newspaper Articles	0/0	No Entry
✓ Newsletter Articles	0/0	No Entry
✓ Encyclopedia Entries	0/0	No Entry
✓ Magazine Entries	0/0	No Entry
✓ Dictionary Entries	0/0	No Entry
✓ Reports	0/0	No Entry
✗ Working Papers	3/3	2019-09-20 01:56:32
✓ Manuals	0/0	No Entry
✓ Online Resources	0/0	No Entry
✓ Tests	0/0	No Entry
✓ Clinical Care Guidelines	0/0	No Entry
✗ Conference Publications	3/25	2019-09-20 01:15:33
Artistic Contributions ?		
✓ Artistic Exhibitions	0/0	No Entry
✓ Audio Recordings	0/0	No Entry
✓ Exhibition Catalogues	0/0	No Entry
✓ Musical Compositions	0/0	No Entry
✓ Musical Performances	0/0	No Entry
✓ Radio and TV Programs	0/0	No Entry
✓ Scripts	0/0	No Entry
✓ Fiction	0/0	No Entry
✓ Theatre Performances and Productions	0/0	No Entry
✓ Video Recordings	0/0	No Entry
✓ Visual Artworks	0/0	No Entry
✓ Sound Design	0/0	No Entry
✓ Set Design	0/0	No Entry
✓ Light Design	0/0	No Entry
✓ Choreography	0/0	No Entry
✓ Museum Exhibitions	0/0	No Entry
✓ Performance Art	0/0	No Entry
✓ Poetry	0/0	No Entry
✓ Other Artistic Contributions	0/0	No Entry
✓ Presentations	8/26	2019-09-20 02:00:54
Interviews and Media Relations ?		
✓ Broadcast Interviews	0/0	No Entry
✓ Text Interviews	9/9	2019-07-02 14:15:34
Intellectual Property ?		
✓ Patents	0/0	No Entry
✓ Licenses	0/0	No Entry

✓ Disclosures	0/0	No Entry
✓ Registered Copyrights	0/0	No Entry
✓ Trademarks	0/0	No Entry
Activities ?		
Teaching Activities ?		
✓ Courses Taught	5/7	2019-07-02 19:30:22
✓ Course Development	0/0	No Entry
✓ Program Development	0/0	No Entry
Supervisory Activities ?		
✓ Student/Postdoctoral Supervision	0/0	No Entry
✓ Staff Supervision ?		No Entry
Administrative Activities ?		
✓ Event Administration	5/5	2019-07-30 13:58:26
✓ Editorial Activities	0/0	No Entry
Advisory Activities ?		
✓ Mentoring Activities	5/5	2019-09-21 13:03:04
✓ Expert Witness Activities	0/0	No Entry
Assessment and Review Activities ?		
✓ Journal Review Activities	5/13	2019-09-06 00:30:59
✓ Conference Review Activities	0/0	No Entry
✓ Graduate Examination Activities	0/0	No Entry
✓ Research Funding Application Assessment Activities	0/0	No Entry
✓ Promotion Tenure Assessment Activities	0/0	No Entry
✓ Organizational Review Activities	0/0	No Entry
Participation Activities ?		
✓ Event Participation	0/0	No Entry
✗ Community and Volunteer Activities	14/14	2019-09-20 00:55:06
✓ Knowledge and Technology Translation	0/3	2019-07-23 21:29:05
✓ International Collaboration Activities	3/3	2019-09-17 16:27:39
Memberships ?		
✓ Committee Memberships	5/5	2019-09-17 16:28:27
✓ Other Memberships	5/5	2019-09-15 20:27:45

What does the Banting CCV contain?

Make the most of each entry

* Recognition Type ?

* Recognition Name

Organization ?

Organization

Organization Type

Country

Subdivision

Other Organization

* Effective Date Year ?

End Date Year ?

- You have every right to expand upon entries if you think it will clarify things for reviewers and help your application
- Make such descriptions super succinct and not too long (1 line max)

2015/5 - 2018/3
Principal Applicant

Vanier Canada Graduate Scholarship

Funding Sources:

2015/5 - 2018/3 Natural Sciences and Engineering Research Council of Canada (NSERC)
Top doctoral scholarship in Canada, awarded to only 150 students
Total Funding - 150,000 (Canadian dollar)
Funding Competitive?: Yes

2015/6 - 2016/6
Principal Applicant

Angel's Den Trainee Competition - Photoacoustic tracking of sickle cell crises

Co-applicant : Dr. Mark McVey; Mr. Muhannad Fadhel

Funding Sources:

2015/6 - 2016/6 MaRS Innovation
Awarded to a student-driven team proposing a novel health care solution in a pitch-style competition
Total Funding - 2,000 (Canadian dollar)
Funding Competitive?: Yes

Publication contribution % and role

- This is an addition that assesses how much involvement you had in papers you are part of and is used to assess your research leadership and initiative.
- Note to 1st authors: you did not do 90-100% of the work if your paper had $n > 2$ co-authors.
- Be concise when writing your roles, not too technical, avoid acronyms and be honest.

Moore, MJ, Hysi E*, Fadhel MN, El-Rass S, Xiao Y, Wen XY, Kolios MC. (2019). Original Research: Photoacoustic F-Mode imaging for scale specific contrast in biological systems. Nature Communications Physics. 2(1): 30.

Co-Author

Published

Refereed?: Yes

Number of Contributors: 7

Contribution Percentage: 31-40

Description of Contribution Role: Developed the vessel phantoms, performed all measurements and beamforming of the data for the photoacoustic tomography experiments. Co-wrote and edited the manuscript.

Fill out all entries

- Look at the descriptions for each entry carefully: you will realize that you have done a lot more than you think.
- There are aspects of your application that might never be discussed elsewhere other than the CCV, so use all entries to showcase yourself.
- Examples of typically ignored entries:
 - Courses taught: Expand on each course separately if you have TA'ed in the past
 - Event administration: Extracurriculars count here
 - Mentoring activities: Don't forget your undergrads
 - International collaboration activities: Describe them if you are involved even though your supervisor likely set them up, they demonstrate research engagement and willingness to collaborate

Examples of typically ignored entries

Event Administration

Co-founder, Organizer and Emcee, GRADShowcase Symposium Organizing Committee, Conference, 2017/3 - 2017/8

Co-founder and organizer of the inaugural, Ryerson University-wide showcase of graduate student research. The goal of the event was to foster inter-disciplinary collaborations between graduate students and to provide graduate student relevant workshops designed to navigate graduate school. With over 250 participants, I had the honor of emceeing the event as well as deliver a lecture on the "Anatomy of a Research Proposal".

Mentoring Activities

2017/9

Research Mentor to Undergraduate Thesis Students, Department of Physics, Ryerson University

Number of Mentorees: 2

I have provided scientific mentorship and guidance to the following 4th year undergraduate thesis students in the Medical Physics program as they embark on a year-long thesis course. My main role was to teach students the fundamental physics and experimental implementation of photoacoustic imaging. (1) Ben Gidalevich: Ultrasound and photoacoustic cepstral analysis of cancer cell pellets (Sept 2018 - Apr 2019) (2) Don Tang: Monitoring progression of ischemic reperfusion injury in kidneys using photoacoustic imaging (Sept 2017 - Apr 2019)

International Collaboration Activities

2016/7

Research collaboration - Case Western Reserve University, United States

As part of the last chapter of my doctoral dissertation, I have commenced a collaboration with Prof. Agata Exner's laboratory. Prof. Exner is a world renowned expert in the formulation on nanobubbles, a class of vascular disrupting agents. My role in this project is to test whether the nanobubbles can be used in conjunction with radiation therapy to enhance tumoral cell death. I have been responsible for coordinating experiments between our laboratory, Case Western and Sunnybrook Health Sciences. We have already presented this collaborative work in two international conferences and are in the process of submitting a manuscript for which I am lead author.

Other Memberships

2019/9

Leadership Award Adjudication Committee Member, Ryerson University

As the inaugural winner of the Yeates School of Graduate Studies Student Leadership Award, I was invited to sit on the adjudication committee for the Jennifer Mactavish Graduate Student Leadership Awards. These awards are recently named for the most recent Dean of the School of Graduate Studies celebrate student engagement and experience, SRC innovation and impact and community engagement/city building.

Purposely omitting discussion on:

- Lay abstract
 - Make it truly easy to read, for everyone, it really matters
- Proposal bibliography
 - Up to 4 pages (I know, shocking!)
- Significance of research contributions
 - 3 most important papers
- Significance of leadership contributions
 - 3 most significant activities
- Institutional letter of endorsement
 - SMH will provide that upon nomination

Good luck!

Work hard at it!

Celebrate when you win!

Reapply when you don't win!

Help someone else win!

Questions?

eno.hysi@unityhealth.to