

# Curriculum Vitae

## Wilson Poon

### EDUCATION & TRAINING

- Oct 2020 – present      NSERC Postdoctoral Fellow  
Department of Microbiology & Immunology, University of California (San Francisco), San Francisco, CA, United States of America  
**Supervisor:** Prof. Michael T. McManus
- Sept 2014 – Feb 2020      PhD in Biomedical Engineering  
Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, Canada  
**Supervisor:** Prof. Warren C.W. Chan  
Defining delivery pathways of nanoparticles
- Sept 2012 – Aug 2014      Master of Engineering (with thesis)  
Department of Biomedical Engineering, McGill University, Montréal, QC, Canada.  
**Supervisor:** Prof. Jay L. Nadeau  
Bioconjugation, peptide-based targeting, and imaging of ultrasmall gold nanoparticles for cancer treatment
- Sept 2008 – Apr 2012      Bachelor of Applied Science in Engineering Science (Major in Biomedical Engineering, with honours)  
Division of Engineering Science, University of Toronto, Toronto, ON, Canada  
**Undergraduate thesis supervisor:** Prof. Christopher M. Yip  
Structural mapping of molecular crystal dynamics and assembly of boron sub-phthalocyanines

### SELECTED HONOURS & AWARDS

- Oct 2020 – present      **NSERC Postdoctoral Fellowship Award - \$90,000**
- Apr 2020      **University of Toronto Student Leadership Award**
- Sept 2019      **IBBME Doctoral Completion Award - \$3,300**
- May 2019      **Winter / Spring 2019 School of Graduate Studies Conference Grant - \$2,350**
- June 2018      **IBBME Teaching Assistant Award of Excellence - \$250**
- Sept 2017 – Aug 2019      **Ontario Graduate Scholarship (OGS) - \$30,000**
- Sept 2016      **University of Toronto Faculty of Applied Science and Engineering Endowment - \$2,334**
- Sept 2015      **Barbara & Frank Milligan Graduate Fellowship - \$5,311**
- July 2015      **Cecil Yip Doctoral Research Award - \$5,000**
- Sept 2014 – Aug 2017      **CIHR Canadian Graduate Scholarship Doctoral Award - \$105,000**
- May 2014      **McGill University Faculty of Medicine Graduate Program for International Travel - \$1,000**
- May 2014      **BME GREAT Travel Award - \$500**
- June 2013      **NYAS-CIHR Institute of Cancer Research Early Career Investigator Travel Fellowship - \$1,000**
- Sept 2012 – Aug 2014      **BME Recruitment Award - \$10,000**
- Sept 2012 – Aug 2013      **CIHR Canadian Graduate Scholarship Master's Award - \$17,500**
- May 2012 – Aug 2012      **A\*STAR Singapore International Pre-Graduate Award - \$4,000SGD**
- May 2011 – Aug 2011      **University of Toronto Student Exchange Bursary - \$2,500**
- May 2011 – Aug 2011      **Ontario International Education Opportunity Scholarship - \$2,500**
- Sept 2008      **University of Toronto Scholars Program - \$5,000**

**PEER REVIEWED PUBLICATIONS** (\* denotes equal contribution as authors)

1. "A Framework for Designing Delivery Systems," **W Poon\***, BR Kingston\*, B Ouyang, W Ngo, WCW Chan, *Nature Nanotechnology* (Accepted)
2. "The dose threshold for nanoparticle tumour delivery," B Ouyang, **W Poon\***, YN Zhang\*, ZP Lin, BR Kingston, AJ Tavares, YW Zhang, J Chen, MS Valic, AM Syed, P MacMillan, JC Senécal, G Zheng, WCW Chan, *Nature Materials* (Published online, DOI: 10.1038/s41563-020-0755-z)
3. "Nanovaccine lymph node follicle delivery for humoral immunity," YN Zhang, **W Poon**, E Sefton, WCW Chan, *ACS Nano* (Published online, DOI: 10.1021/acsnano.0c02240)
4. "Nanoparticle size determines antigen retention and presentation in lymph node follicles for humoral immunity," YN Zhang, J Lazarovits\*, **W Poon\***, B Ouyang\*, LNM Nguyen, BR Kingston, WCW Chan, *Nano Letters*, 19(10): 7226-7235 (2019)
5. "Elimination pathways of nanoparticles," **W Poon**, YN Zhang\*, B Ouyang\*, BR Kingston, JLY Wu, S Wilhelm, WCW Chan, *ACS Nano*, 13(5): 5785-5798 (2019)
6. "The effect of removing Kupffer cells on nanoparticle tumour delivery," AJ Tavares\*, **W Poon\***, YN Zhang\*, Q Dai, R Besla, D Ding, B Ouyang, A Li, J Chen, G Zheng, C Robbins, WCW Chan, *Proceedings of the National Academy of Sciences*, 114(51): E10871-10880 (2017)
7. "Nanoparticle-liver interactions: understanding association with liver cell populations, hepatobiliary clearance, and the challenge of liver sequestration," YN Zhang\*, **W Poon\***, AJ Tavares, ID McGilvray, WCW Chan, *Journal of Controlled Release*, 240: 332-348 (2016)
8. "Targeting B16 tumours in vivo with peptide-conjugated gold nanoparticles," **W Poon**, X Zhang, D Bekah, JG Teodoro, JL Nadeau, *Nanotechnology*, 26(28): 285101 (2015)
9. "Determination of biodistribution of ultrasmall gold nanoparticles by photoacoustic and fluorescence imaging," **W Poon**, A Heinmiller, X Zhang, JL Nadeau, *Journal of Biomedical Optics*, 20(6): 066007 (2015)
10. "Nanoparticle drug formulations for cancer diagnosis and treatment," **W Poon**, X Zhang, JL Nadeau, *Critical Reviews in Oncogenesis*, 19(3-4): 223-245 (2014)

**NON-PEER REVIEWED PUBLICATIONS & PUBLISHED CONFERENCE PROCEEDINGS**

1. "Mechanisms of cell penetration and cytotoxicity of ultrasmall Au nanoparticles conjugated to doxorubicin and/or targeting peptides," JL Nadeau, **W Poon**, X Zhang, *SPIE BiOS*, 93380L (2015)

**PATENTS**

1. WCW Chan, B Ouyang, **W Poon**, YN Zhang, ZP Lin, inventors; University of Toronto, assignee; "Nanoparticle Delivery To A Target Tissue", United States Provisional Application No. 63/107,322, filed 29 April 2020.
2. WCW Chan, B Ouyang, **W Poon**, YN Zhang, ZP Lin, inventors; University of Toronto, assignee; "Nanoparticle Delivery To A Target Tissue", Canada Patent Application No. 3,079,765, filed 29 April 2020.

**INTERSHIPS & EMPLOYMENT**

April 2020 – Aug 2020	<b>Postdoctoral Researcher, University of Toronto</b> <b>Supervisor:</b> Prof. Warren C. W. Chan Developing a framework for designing delivery systems and 3D nanoparticle superstructures
June 2014	<b>Visiting graduate student, University of California (Santa Barbara)</b> Using ESEM and STEM to evaluate the biodistribution of ultrasmall gold nanoparticles
May 2012 – Aug 2012	<b>Research intern, Agency for Science, Technology, &amp; Research</b> Design and prototyping of a disposable cell phone microscope attachment for automated biosample preparation and sensing in point-of-care diagnostics

- May 2011 – Aug 2011      **Summer research student, National University of Singapore**  
Design and prototyping of an automated dehydration apparatus for biological sample preparation for use in helium ion microscopy
- May 2010 – Aug 2010      **Quality assurance analyst, NexJ Systems Inc.**  
Automated test cases for customer relation management software and performed server operations for test environments

## TEACHING EXPERIENCE

- Fall 2019      Laboratory Teaching Assistant, BME440 – Biomedical Engineering Technology and Investigation  
Winter 2019      Tutorial Teaching Assistant, BME205 – Biomolecules and Cells  
Fall 2018      Laboratory Teaching Assistant, BME440 – Biomedical Engineering Technology and Investigation  
Winter 2018      Tutorial Teaching Assistant, BME205 – Biomolecules and Cells  
Fall 2017      Head Laboratory Teaching Assistant, BME440 – Biomedical Engineering Technology and Investigation  
Winter 2017      Laboratory Teaching Assistant, BME205 – Biomolecules and Cells  
Fall 2016      Laboratory Teaching Assistant, BME440 – Biomedical Engineering Technology and Investigation  
Fall 2015      Laboratory Teaching Assistant, BME440 – Biomedical Engineering Technology and Investigation

## MENTORING & SUPERVISORY EXPERIENCE

- Sebastian F. Bramberger**, McGill University Physics Undergraduate      May 2013 – August 2013  
*Currently:* Graduate student, Max Planck Institute for Gravitational Physics
- Yuchen Yao**, McGill University Pharmacology / Biotechnology Undergraduate      May 2013 – April 2014
- Eric Tawagi**, McGill University Chemistry Undergraduate      September 2013 – August 2014  
*Currently:* Graduate student, University of Toronto
- Netra Unni**, University of Toronto Engineering Science Undergraduate      May 2016 – August 2016  
*Currently:* Graduate student, Stanford University
- Julien Couture-Senécal**, University of Toronto Engineering Science Undergraduate      May 2016 – August 2016  
*Currently:* Graduate student, University of Toronto

## PRESENTATIONS

1. "From bench to clinic: mRNA vaccines," W Poon, BioDojo Public Lecture Series. Online (<https://www.youtube.com/watch?v=VDwJ5uA572k>). April 2021 (Invited talk)
2. "Elimination pathways of nanoparticles," **W Poon**, YN Zhang, B Ouyang, BR Kingston, JLY Wu, S Wilhelm, WCW Chan, AIChE 4th Bioengineering and Translational Medicine Conference. Durham, NC. October 2019 (Poster)
3. "Removing Kupffer cells improves nanoparticle tumour delivery and elimination," **W Poon**, AJ Tavares, YN Zhang, B Ouyang, BR Kingston, JLY Wu, R Besla, D Ding, A Li, J Chen, S Wilhelm, G Zheng, C Robbins, WCW Chan, Vancouver Nanomedicine Day 2019. Vancouver, BC. September 2019 (Oral presentation)
4. "Elimination pathways of nanoparticles," **W Poon**, YN Zhang, B Ouyang, BR Kingston, JLY Wu, S Wilhelm, WCW Chan, Gordon Research Seminar / Conference – Cancer Nanomedicine 2019. West Dover, VT. June 2019 (Poster)
5. "Immune modulation of hepatic macrophages improves nanoparticle delivery to tumours," AJ Tavares, **W Poon**, YN Zhang, Q Dai, R Besla, D Ding, B Ouyang, A Li, J Chen, G Zheng, C Robbins, WCW Chan, Donnelly Centre Retreat 2017. Huntsville, ON. May 2017 (Oral presentation)
6. "Transient depletion of the mononuclear phagocyte system improves nanoparticle delivery and elimination in vivo," **W Poon**, AJ Tavares, YN Zhang, Q Dai, D Ding, WCW Chan, IBBME Scientific Day 2016. Toronto, ON. May 2016 (Poster)
7. "Correlated determination of ultrasmall gold nanoparticle biodistribution by photoacoustic and fluorescence imaging," **W Poon**, X Zhang, A Heinmiller, JL Nadeau, Photonics North. Montréal, QC. June 2014 (Oral presentation)

8. "Comparing targeting strategies of conjugated ultrasmall gold nanoparticles," **W Poon**, X Zhang, M Fedorova, O Amzallag, JG Teodoro, JL Nadeau, Nanomedicine and Drug Delivery Symposium. San Diego, CA. October 2013 (Poster)
9. "Conjugated ultrasmall gold nanoparticles for cancer targeting and treatment," W Poon, X Zhang, M Fedorova, JG Teodoro, JL Nadeau, Nanotechnologies for Cancer Diagnosis, Treatment, and Prevention Conference. New York, NY. June 2013 (Poster)
10. "Design of a biological sample preparation station for helium ion microscopy," Z Chen, **W Poon**, D Pickard, University of Toronto Undergraduate Engineering Research Day 2011. Toronto, ON. August 2011 (Poster)

## EXTRACURRICULAR & LEADERSHIP ACTIVITIES

Mar 2020 – present	Co-organizer, Virtual Zoom Nanomedicine Journal Club
May 2019	Master of Ceremonies, IBBME Annual Research Conference Organizing Committee, University of Toronto Biomedical Engineering Students Association (BESA)
Sept 2017 – May 2018	IBBME Annual Research Conference Judge Recruitment Committee Chair, University of Toronto Biomedical Engineering Students Association (BESA)
June 2017 – May 2018	Social Representative, Donnelly Centre Graduate Students Association (DCGSA)
July 2016 – July 2017	IBBME Annual Research Conference Co-Chair, University of Toronto Biomedical Engineering Students Association (BESA)
July 2015 – July 2016	Vice President (Events), University of Toronto Biomedical Engineering Students Association (BESA)
July 2015 – Sept 2015	Co-Chair, IBBME Orientation Week Organizing Committee (OWOC) 2015
Sept 2014 – July 2015	Events Coordinator, University of Toronto Biomedical Engineering Students Association (BESA)
Sept 2012 – Aug 2014	Vice President (Social), McGill University Biomedical Engineering Student Society (BMESS)
Sept 2011 – Aug 2012	4 <sup>th</sup> Year Engineering Science Class Representative, University of Toronto Engineering Society (EngSoc)
Sept 2011	Skule Patrol, University of Toronto Engineering Society Orientation Committee
Mar 2010 – Aug 2012	Executive Director, University of Toronto Emergency First Responders (UTEFR)
Sept 2010 – Aug 2012	Co-chair, University of Toronto Galbraith Society
Sept 2010	Skule Patrol Sub-Chair, University of Toronto Engineering Society Orientation Committee
Sept 2009 – Mar 2010	Vice Executive Director, University of Toronto Emergency First Responders (UTEFR)
Sept 2009	Skule Patrol, University of Toronto Engineering Society Orientation Committee
Sept 2008 – Aug 2009	Internal Director, University of Toronto Emergency First Responders (UTEFR)
Sept 2008 – Apr 2012	Bronze Cross Examiner, Lifesaving Society

## VOLUNTEERING & SERVICE

Sept 2020	Vancouver Nanomedicine Day 2020 Judge, University of British Columbia
May 2019	IBBME Annual Research Conference (iARC) Volunteer, University of Toronto
May 2019	Science Rendezvous Volunteer, University of Toronto
May 2018	Science Rendezvous Volunteer, University of Toronto
Sept 2017 – present	BME1010 Student Seminar Judge, University of Toronto
June 2017 – present	Facilitator, IBBME Biomedical Engineering And Me (iBEAM) Outreach Program, University of Toronto
May 2017 – Nov 2017	Graduate Student Representative, IBBME Director Advisory Committee to the Dean, University of Toronto
May 2016	Science Rendezvous Volunteer, University of Toronto
Nov 2015 – May 2016	IBBME Scientific Day IT & Abstract Selection Committees Member, University of Toronto
Sept 2015 – May 2016	Tutor, University of Toronto Saturday Program
July 2015	Event Services Host, Toronto 2015 Pan-American Games
June 2015	Volunteer, World Congress on Medical Physics & Biomedical Engineering 2015, Toronto

May 2015 Science Rendezvous Volunteer, University of Toronto  
March 2015 – May 2015 IBBME Scientific Day Abstract Selection Committee Member, University of Toronto

**PEER REVIEW ACTIVITIES**

ACS Nano (20), ACS Central Science (1), Science Advances (1), Small (1), Bioactive Materials (1)