

Liqian Ma

PhD Candidate

Professional Summary

I am a highly motivated PhD student specialized in tumor immuno-oncology. My expertise lies in immunology, molecular biology, cell biology, nuclear receptor pharmacology, and bioinformatics.

Education

- 2016 - Present **PhD, Molecular and Integrative Physiology**, *University of Illinois at Urbana-Champaign*, Urbana, IL.
 - GPA: 4.0/4.0
- 2016 - 2018 **MS, Molecular and Integrative Physiology**, *University of Illinois at Urbana-Champaign*, Urbana, IL.
 - GPA: 4.0/4.0
- 2012 - 2016 **BS, Honors in Biology**, *St. Lawrence University*, Canton, NY.
 - Summa Cum Laude
 - GPA: 3.88/4.00

Honors and Awards

- Fall 2019 **Departmental Travel Award**, *Awarded by Department of Molecular and Integrative Physiology, University of Illinois.*
- Spring 2019 **Best Capstone Project in Professional Skills for Careers in Biosciences Workshop Series**, *Awarded by Carl R. Woese Institute for Genomic Biology, University of Illinois.*
- Spring 2019 **Graduate College Travel Award**, *Awarded by Graduate College, University of Illinois.*
- Spring 2019 **Departmental Travel Award**, *Awarded by Department of Molecular and Integrative Physiology, University of Illinois.*
- Spring 2019 **Endocrine Society Annual Meeting 2019 Outstanding Abstract Award**, *Awarded by Endocrine Society.*
- Spring 2019 **Endocrine Society Annual Meeting 2019 Early Career Forum Travel Award**, *Awarded by Endocrine Society.*

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- Spring 2018 **Annual Tissue Microenvironment Symposium (TiMe) Outstanding Research Poster Award**, Awarded by Cancer Center at Illinois, University of Illinois.
- Spring 2018 **AACR Annual Meeting AACR-Bristol Myers Squibb Oncology Scholar-in-Training Award**, Awarded by American Association for Cancer Research.
- Spring 2018 **Departmental Travel Award**, Awarded by Department of Molecular and Integrative Physiology, University of Illinois.
- Fall 2016 **Block Grant Fellowship**, Awarded by School of Molecular and Cellular Biology, University of Illinois.
- Spring 2016 **Phi Beta Kappa Election**, Awarded by the St. Lawrence chapter of the Phi Beta Kappa national honor society.
- Spring 2016 **Davis Projects for Peace**, Awarded by Davis United World College Scholars Program.
- Spring 2015 **SLU Summer Research Fellowship**, Awarded by St. Lawrence University Fellowship Program, St. Lawrence University.
- Spring 2014 **Internship Fellowship**, Awarded by Career Services Summer Internship Fellowship Program, St. Lawrence University.
- Spring 2014 **Travel Research Grant**, Awarded by Center for International and Intercultural Studies, St. Lawrence University.
- Spring 2013 **Outstanding Student Beginning a Language in Japanese**, Awarded by Department of Modern Languages, St. Lawrence University.
- 2012 - 2016 **International Merit Scholarship**, Awarded by St. Lawrence University.

Research Experience

- 2016 - **Graduate Research**, Nelson Lab, University of Illinois at Urbana-Champaign.
- Present
- Thesis: Mechanism by which 27-hydroxycholesterol promotes breast cancer metastasis
 - Selected Skills: Mouse models, Primary/mammalian cell culture, Flow cytometry, ELISA, Immunofluorescence, in vivo bioluminescence imaging, Quantitative PCR (qPCR), RNA sequencing analysis

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- 2015 - 2016 **Senior Year Research**, *Heckman Lab*, St. Lawrence University.
- Thesis: Investigation of the anti-inflammatory potential ability of chaga (*Inonotus obliquus*) in macrophages
 - Selected Skills: Primary/mammalian cell culture, Preparation of chaga extract by rotatory evaporation and lyophilization, Flow cytometry, ELISA
- Summer 2015 **Summer Research Fellowship**, *Heckman Lab*, St. Lawrence University.
- Topic: Investigation of the immunomodulatory properties of cerium oxide nanoparticles
 - Selected Skills: T cell purification, Co-culture of bone marrow-derived dendritic cells with primary T cells to examine the T cell activation, Development of protocols for the lab activities of Cancer Biology, using B16 cell line
- Spring 2015 **Independent Study**, *Heckman Lab*, St. Lawrence University.
- Topic: Investigation of the immunomodulatory properties of Cerium Oxide Nanoparticles using bone marrow-derived dendritic cells
 - Selected Skills: Primary extraction and differentiation of dendritic cells, Flow cytometry
- Summer 2014 **Research Internship**, *NanoBioMedical Centre*, Adam Mickiewicz University, Poznan, Poland.
- Topics: Nanoparticle cytotoxicity in vitro and Cell-penetrating peptides as nanocarriers for drug delivery
 - Selected Skills: Grew cell lines, SDS PAGE, Confocal microscopy, BioImaging, Analysis of cell activities using Muse® Cell Analyzer
- 2012 - 2013 **Research Assistant**, *Pai Lab*, St. Lawrence University.
- Topic: Identify bees from two forage crops and determine which forage supports greater species diversity
 - Selected Skills: Preparation of bee samples, identification of bees using dissecting microscopy

Work Experience

- Spring 2018 **Teaching Assistant**, *University of Illinois at Urbana-Champaign*.
- & Fall 2018
- Courses: MCB 402 (Systems and Integrative Physiology), MCB 244 (Human Anatomy and Physiology I)
 - Graded exams and assignments
 - Host tutorial sessions to teach the contents of assigned journal articles to students
- 2015 - 2016 **Lab Assistant**, *Biology Preparatory Laboratory*, St. Lawrence University.
- Tested safety equipment, such as eyewash station and emergency shower
 - Prepared laboratory materials for biology classes and research groups on campus
 - Cleaned up the laboratory waste and glassware
- Summer 2014 **Practice Intern**, *Children's Care Hospital*, Poznan, Poland.
- Studied anti-epilepsy medication use by comparing three anti-epilepsy medicines used in hospital
 - Supported the daily life of the patients in the hospital by feeding them and administering medicine
 - Took care of the patients by facilitating them with basic therapies, including respiratory equipment

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- 2013 - 2014 **Program Coordinator**, *Liberal Arts Project in China*, Sanmen, PRC.
- Coordinated meetings, delegated the tasks, and supervised the progress of three individuals
 - Assisted with preparing courses on Global Studies and materials
 - Facilitated the communication and cooperation with the instructor, students and the library
 - Promoted the program by presenting informational meetings and recruited members
- 2013 - 2016 **Peer Tutor**, *Academic Advising*, St. Lawrence University.
- Subjects: Biology and Calculus
 - Coach tutees on a weekly basis on their understanding of calculus materials, including integrals, derivatives and limits
 - Tutor up to seven students per semester to understand General Biology materials
 - Prepare pretests and keep up with tutees' performances
- 2013 - 2014 **Teaching Assistant**, *Modern Languages*, St. Lawrence University.
- Subject: Chinese
 - Designed Chinese lab activities to improve students' oral, listening, reading and writing skills
 - Created pretests for students to review for midterm and final exams
 - Introduced Chinese culture to students
- Fall 2013 **Intern**, *Weave Media Project*, St. Lawrence University.
- Arranged and conducted interviews with journalists and notable figures
 - Created and edited videos using Final Cut Pro
 - Facilitated social-media outreach via Facebook and Twitter
- Summer 2012 **Teaching Assistant**, *New Star English Training Center*, Changsha, PRC.
- Subject: English
 - Interacted with students in class and helped teacher with translating or role-modeling
 - Checked homework and contacted parents
 - Led the communication between teacher/institution and parents/students

Conferences and Publications

Peer-Reviewed Publications:

1. He, S., **Ma, L.**, Baek, A.E., Vardanyan, A., et al. (2019). Host CYP27A1 expression is essential for ovarian cancer progression. *Endocrine-Related Cancer*. 26(7): 659–675.
2. Shahoei, S.H., Kim, Y.C., Cler, S.C., **Ma, L.**, et al. (2019). Small Heterodimer Partner regulates dichotomous T cell expansion by macrophages. *Endocrinology*. 160(7): 1573–1589.
3. **Ma, L.** and Nelson E.R. (2019). Oxysterols and nuclear receptors. *Molecular and Cellular Endocrinology*. 484: 42-51.

Abstracts Presented at Conferences:

1. Chen, J.J., **Ma, L.**, Wendt, M.K. and Nelson E.R. (2019). A cholesterol metabolite promotes reemergence of breast cancer cells from dormancy. 5th annual Midwest Tumor Microenvironment Meeting. Notre Dame, IN.
2. Chen, C., Chen, J.J., **Ma, L.**, Helferich, W.G., et al. (2019). Consumption of oil derived from frying bacon increases breast cancer metastasis. The American Association for Cancer Research Annual Meeting 2019. Atlanta, GA.
3. **Ma, L.**, Baek A.E. and Nelson E.R. (2019). 27-hydroxycholesterol acts on myeloid cells to inhibit T cell expansion. The Endocrine Society Annual Meeting 2019. New Orleans, LA.

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Abstract #5466. *Selected for Featured Poster and Outstanding Abstract Award.*

4. **Ma, L.**, Baek A.E. and Nelson E.R. (2018). Mechanisms by which 27-hydroxycholesterol promotes breast cancer metastasis. The American Association for Cancer Research Annual Meeting 2018. Chicago, IL. Abstract #2133. *Selected for AACR-Bristol Myers Squibb Oncology Scholar-in-Training Award.*
5. **Ma, L.**, Baek A.E. and Nelson E.R. (2018). Mechanisms by which 27-hydroxycholesterol promotes breast cancer metastasis. Annual Tissue Microenvironment (TiMe) Day 2018. Urbana, IL. *Selected for Outstanding Research Poster Award.*
6. **Ma, L.**, Baek A.E. and Nelson E.R. (2017). Mechanisms by which 27-hydroxycholesterol promotes breast cancer metastasis. Life Science Symposium. Notre Dame, IN. Abstract #31.
7. **Ma, L.** and Heckman K.L. (2016). Effects of Inonotus obliquus on LPS stimulated M1 macrophages: can Inonotus obliquus drive an M2 transition?". Festival of Science. Canton, NY.
8. **Ma, L.** and Heckman K.L. (2015). Investigation of immunomodulatory properties of cerium oxide nanoparticles. NY6 Undergraduate Research Conference. Hamilton, NY.

Activities and Service

- 2018 - **Board Member**, *Student Advising on Graduate Education (SAGE)*, University of Illinois at Urbana-Champaign.
- Provide varied perspectives that enhance the academic, professional, and social experience of graduate students at the university
 - Provide valuable input for Graduate College programs, such as Graduate Student Appreciation Week activities
- 2018 - **Committee Member**, *MIP Student Committee*, University of Illinois at Urbana Champaign.
- Organize Molecular and Integrative Physiology departmental functions and activities, such as the annual retreat
- Fall 2018 **Consultant**, *Illinois Business Consulting*, University of Illinois at Urbana-Champaign.
- Facilitated the improvement of operational efficiency in a governmental organization
- 2013 - 2015 **Active Participant**, *A.S.I.A Club*, St. Lawrence University.
- Co-organized and co-hosted the Asia Night and other events (e.g., Chinese New Year Gala, Kaleidoscope), as well as performed in those events and other school activities
 - Prepared fundraising campaigns to support events
- 2012 - 2014 **Member**, *Weave News*, St. Lawrence University.
- Reported under-reported stories after localizing them and doing research on them
 - Recruited new members and promote the Weave by talking with interested individuals and putting up posters

Languages and Skills

Programming Skills: R, SAS, Python

Languages: Chinese-Mandarin, English, Japanese

Certificates

- 2019 Professional Skills for Careers in Biosciences (PSCB).
2017 Completion of Computational Genomics Courses.

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