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

2019 - Present **Research Assistant**, *High-Performance Biological Computing (HPCBio)*, University of Illinois at Urbana-Champaign.

- Projects: HPCBio projects as well as projects affiliated with H3ABioNet, the bioinformatics infrastructure of the NIH-funded Human, Heredity, and Health in Africa (H3Africa) consortium
- Selected Skills: next-generation sequencing data analysis, machine learning and cloud computing

2016 - Present **Graduate Research**, *Nelson Lab*, University of Illinois at Urbana-Champaign.
- 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

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 & Fall 2018 **Teaching Assistant**, *University of Illinois at Urbana-Champaign*.
- 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

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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

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
- Coached tutees on a weekly basis on their understanding of calculus materials, including integrals, derivatives and limits
- Tutored up to seven students per semester to understand General Biology materials
- Prepared 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 AE, Vardanyan A, et al. (2019). Host CYP27A1 expression is essential for ovarian cancer progression. Endocrine-Related Cancer. 26(7): 659–675.
2. Shahoei SH, Kim YC, Cler SC, **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 ER. (2019). Oxysterols and nuclear receptors. Molecular and Cellular Endocrinology. 484: 42-51.

Abstracts Presented at Conferences:

1. **Ma L.**, Han C, Wang L, Baek AE, et al. (2019). 27-hydroxycholesterol acts on myeloid cells to inhibit both T cell expansion and cytotoxic activity. AACR Tumor Immunology and

Immunotherapy Conference. Boston, MA.

2. Chen JJ, **Ma L.**, Wendt MK. and Nelson ER. (2019). A cholesterol metabolite promotes reemergence of breast cancer cells from dormancy. 5th annual Midwest Tumor Microenvironment Meeting. Notre Dame, IN.
3. Chen C, Chen JJ, **Ma L**, Helferich WG, 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.
4. **Ma L**, Baek AE and Nelson ER. (2019). 27-hydroxycholesterol acts on myeloid cells to inhibit T cell expansion. The Endocrine Society Annual Meeting 2019. New Orleans, LA. Abstract #5466. *Selected for Featured Poster and Outstanding Abstract Award.*
5. **Ma L**, Baek AE and Nelson ER. (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.*
6. **Ma L**, Baek AE and Nelson ER. (2018). Mechanisms by which 27-hydroxycholesterol promotes breast cancer metastasis. Annual Tissue Microenvironment (TiMe) Day 2018. Urbana, IL. *Selected for Outstanding Research Poster Award.*
7. **Ma L**, Baek AE and Nelson ER. (2017). Mechanisms by which 27-hydroxycholesterol promotes breast cancer metastasis. Life Science Symposium. Notre Dame, IN. Abstract #31.
8. **Ma L**. and Heckman KL. (2016). Effects of Inonotus obliquus on LPS stimulated M1 macrophages: can Inonotus obliquus drive an M2 transition?". Festival of Science. Canton, NY.
9. **Ma L** and Heckman KL. (2015). Investigation of immunomodulatory properties of cerium oxide nanoparticles. NY6 Undergraduate Research Conference. Hamilton, NY.

Activities and Service

2018 - Present **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 - Present **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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