Jasmin Wong

#3309 - 6270 University Blvd.
Department of Zoology
University of British Columbia
Vancouver, BC V6T 1Z4

e-mail: jwong@zoology.ubc.ca
skype: jasmin-wong
Phone: +1 (778) 798-7222

Research Experience

Biological Materials and Mechanical Properties

- Measured the effect of wing morphing on local stiffness of in-situ wing feathers using an Instron electromechanical system, a servo-motor, and strain gauges in specimens and anesthetised birds.
- Measured changes in wing surface oscillatory displacement using a laser scanning vibrometer.
- Performed arterial cannulation to explore the effect of drug-induced smooth muscle activation on wing stiffness in anesthetised birds.
- Analysed feather asymmetry between bird species and its correlation with feather flutter using geometric morphometrics.
- Acquired and digitized kinematics from high speed videography of birds in flight.
- Evaluated the effectiveness of a tissue repair biomaterial after surgical scarring of a rat larynx using immunohistochemistry and imaging to quantify collagen.

Computational Modelling of Fluid-Solid Interactions

- Analyzed the effect of dynamically varying wing stiffness on flow patterns and aerodynamic performance using a fluid-structure model.
- Developed an algorithm to implement the effect of micro-scale morphologies on macro-scale fluid flow with minimal computational cost.
- Built 3D models from multi-camera images or CT scans.

Education

University of British Columbia
Ph.D. Candidate, Zoology, 2016-Present
PI: Prof. Douglas Altshuler
Fields: Aeroelastic Flutter, Wing Morphing, Dynamic Structures
Dissertation: Modulation of aeroelastic feather flutter during avian wing morphing

Hong Kong University of Science and Technology
M.Phil., Bioengineering, 2014-2016.
PI: Prof. Wenjing Ye, Prof. Hao Liu *(Chiba University)*
Fields: Multi-Scale Computational Fluid Dynamics, Blood Flow
Dissertation: The effect of endothelial cell morphology on wall shear stress during blood transport

McGill University
B.Sc., Physiology, 2009-2013.
PI: Prof. Luc Mongeau
Fields: Tissue Engineering, Mechanobiology

Online Courses
Aerodynamics *(EdX)*
Mechanical Behaviour of Materials *(EdX)*
Fundamentals of Fluid-Solid Interactions *(Coursera)*

Jasmin Wong

Teaching Experience

Teaching Assistant

- Graded examinations for an undergraduate level animal locomotion class with a focus on rewarding an understanding of concepts.
- Prepared course syllabus documents and ran a bioengineering seminar with motivated student participation.
- Privately tutored high school mathematics, often exploring different ways to understand difficult concepts.

Mentorship

- Taught an undergraduate volunteer anesthesia techniques and introduced surgical techniques due to their interest in a medical career.
- Trained a new graduate student in the required immunohistological techniques for their doctoral project.

Publications

Liu, H., Liang, F., **Wong, J.**, Fujiwara, T., Ye, W., Tsubota, K., Sugawara, M. (2015). Multi-scale modeling of hemodynamics in the cardiovascular system. Acta Mech. Sin. 31(4):446-464. doi: 10.1007/s10409-015-0416-7

(in progress) **Wong, J.**, Cao, Y., Fujiwara, T., Li, Q., Liu. H., Ye, W. The effect of endothelial cells on wall shear stress during blood transport

Presentations

19th Annual Conference of HKSTAM 2015
Hong Kong, 2015
Title: Effect of Endothelial Cell Morphology on Hemodynamic Forces in Blood Transport

Awards and Fellowships

Four Year Doctoral Fellowship
$18,200/year

Werner and Hildegaard Hesse Research Award in Ornithology
$6000

Languages and Skills

English, French, Cantonese (conversational)
C++, Java, Python, Matlab, R LaTeX
Machining
Electronic assembly
AutoCAD, Rhinoceros, Maya, Gmsh
ImageJ