



MSc. Defence

The impact of flight feather loss and exercise involving inclines on the main flight muscles, keel bone health and aerial descent of domestic laying hens

Grace Hong

Date: March 31st 2023 at 2:30pm

The MSc Defence for Grace Hong has been scheduled for March 31st 2023 at 2:30pm. The defence will be held online via Teams and in 141: [https://teams.microsoft.com/l/meetup-join/19%3ameeting\\_YmIxY2ZhNGQtYzIxZi00MGRhLThiMGYtOTg3NjE1ZDc3ZGFh%40thread.v2/0?context=%7b%22Tid%22%3a%22be62a12b-2cad-49a1-a5fa-85f4f3156a7d%22%2c%22Oid%22%3a%22fbd28915-dda5-478f-8ecb-a3682dcf0c3a%22%7d](https://teams.microsoft.com/l/meetup-join/19%3ameeting_YmIxY2ZhNGQtYzIxZi00MGRhLThiMGYtOTg3NjE1ZDc3ZGFh%40thread.v2/0?context=%7b%22Tid%22%3a%22be62a12b-2cad-49a1-a5fa-85f4f3156a7d%22%2c%22Oid%22%3a%22fbd28915-dda5-478f-8ecb-a3682dcf0c3a%22%7d)

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**The exam committee will consist of:**

Examining Chair: Dr. Vern Osborne

Advisor: Dr. Alexandra Harlander

Adv. Committee Member: Dr. Bret Tobalske

Additional Graduate Member: Dr. Christine Baes

**Abstract:**

Domestic chicken are bipedal birds that are capable of terrestrial and aerial locomotion. As flapping flight is energetically costly, chickens may use a combination of their hindlimbs and wings to locomote; however, little is known about the relationship between the keel bone, the flight muscles that anchor to it and the chickens' ability to navigate their environment. Therefore, this thesis investigated the effects of feather loss (Chapter 2) and exercise using inclines on flight muscle architecture, keel bone fractures (Chapter 3) and flight kinematics (Chapter 4). Altogether, the results of this thesis address gaps in knowledge on flight muscle architecture in laying hens. Although exercise did not influence flight muscle properties and subsequently had little effect on keel fracture prevalence, it did benefit the hindlimbs, producing faster take-off velocities and allowed white-feathered birds to decelerate faster, contributing to more efficient transitions to the air and safer landings.