MAXWELL Q COLLINS

✉ MAXQCOLLINS@GMAIL.COM

☎ +1-626-342-9729

HKU LABORATORY FOR SPACE RESEARCH

[HTTPS://WWW.LSR.HKU.HK/MEMBER/MAX-COLLINS/](https://www.lsr.hku.hk/member/max-collins/)

SKILLS

- Comprehensive understanding of computers (build and repair PCs)
- Coding experience in R, C++, Matlab, Java, Python, SQL, Git, Go and ML techniques
- 4+ years experience with Python
- Python, Fortran and Matlab coding experience in running climate models and statistical analysis and data visualization
- Skilled in detailed and careful lab work such as micropipetting and working with noxious and dangerous chemicals
- Proficient in French
- Knowledge of Mandarin, Japanese, and Filipino
- Certificate of Teaching
- Experience in high-demand and high-stakes work environments

EXPERIENCE

RESEARCH ASSISTANT
06/23 – Present

15 hrs/week

Edwin Kite, Ph.D.

- Adapting ROCKE-3D to model Paleomars climate simulations including updating the SOCRATES radiative scheme to represent possible cloud warming mechanisms

PHYSICAL SCIENTIST
10/2022 – Present

40 hrs/week

Environmental Protection Agency – Air Quality and Modeling Center - Assessment and Standards Division

- Design and update Emissions Inventory models, including the Motor Vehicle Emissions Simulator (MOVES), for onroad, nonroad and marine emissions in compliance with proposed national and state rulemakings

RESEARCH ASSISTANT
01/2021 – 06/2022

40 hrs/week

Jed Kaplan, Ph.D.

Climatic Transition from the Early to Late Holocene

- Compile literature of local and global paleoproxies to describe Holocene climate variability and using global climate models to understand possible feedback mechanisms and climate sensitivity.

RESEARCH ASSISTANT
03/2019 – 06/2019

20hrs/week

Daehyun Kim, Ph.D.

- Modeled changes in intertropical convergence zone on an aquaplanet based on changes in humidity and temperature profiles through Fortran and visualized using Python. Concluded with a research paper.

VOLUNTEER EXPERIENCE & LEADERSHIP ROLES

- Jewish Voice For Peace – Organizing for meetings and demonstrations
- AbGradCon 2022 – Planning committee for social media, outreach, and peripheral meetings
- University of Hong Kong (HKU) Postgraduate Student Association – 2021 - Present – Secretary of International Liaison Office – Increase cohesion and promote diversity and inclusion for the postgraduate student body
- HKU Queer Straight Alliance – 2021 - Present – Organize and promote events
- AbSciCon 2019 – Participated in mentorship program with Melissa Trainer, Deputy Principal Investigator (PI) for the Dragonfly mission to Saturn's moon Titan
- WxChallenge Weather Forecasting Group at UW – Fall 2018
- Atmospheric Department Grad/Undergrad Mentoring – Spring 2018 – Fall 2018 – Founder of departmental program to partner Atmos Sci grad students and undergrads
- American Meteorological Society Student Conference - Winter 2017 – represented UW AMS as a delegate
- International Forestry Student Association – Fall 2016 – Spring 2018 – Canadian American Regional Meeting (CARM) Organizing Committee and Secretary - documented and organized meetings, handled funding and logistics of CARM and hosted 50 students from all over NA, including UBC, Yale, and Michigan Tech
- Student Advisory Council – Fall 2017- Spring 2018 – Advocated for and represented the undergraduate body in the Department of Atmospheric Sciences and worked to improve research accessibility

RESEARCH ASSISTANT

06/2017 – 12/2018
40hrs/week
David Catling Ph.D., Jonathan Toner Ph.D.
Astrobiology lab at UW-Seattle focusing on Mars' habitability.

- Used custom-made isopiestic apparatuses and differential scanning calorimeter to study water activity, solubility and phase changes based on salts found at the Phoenix Lander Site. Used data to update thermodynamic equilibrium models in excel.

EDUCATION

ATMOSPHERIC SCIENCE: CLIMATE FOCUS

University of Washington – Seattle
Fall 2016 – December 2019
Degree: B.S.
Overall GPA 3.4

GRADUATE STUDENT

University of Hong Kong
Advisor: Dr. Jed Kaplan
Winter 2021 – Summer 2022
Updating the ROCKE-3D GCM to model the climatic system of Titan, boundary layer sensitivity tests and dune formation, as well as Earth's Holocene climate
Degree: Master of Philosophy, Earth Sciences

Teaching Assistant:

EASC1401 Blue Planet (~20hrs/week)
CCST 9018 Origins and Evolution of Life (~20hrs/week)

Presentations

- Astrobiology Graduate Convention – 2021
- 5th Planetary Data Workshop and 2nd Planetary Science Informatics & Data Analytics Meeting – 2021
- Rock, Ice, and Dust – 2021
- 52nd Lunar and Planetary Science Conference – 2021
- 53rd Lunar and Planetary Science Conference – 2022 (Poster)
- Lead introductory machine learning workshop – 2022
- 7th International Planetary Dunes Workshop – 2022

Awards

- Awarded Washington NASA Space Grant Consortium – Summer 2016
- Benjamin A. Gilman International Scholarship for Study Abroad at Yonsei University – 2017
- University of Hong Kong Postgraduate Scholarship

Publications

- **Collins, M**. and Kaplan, J., (2023) *The effects of seasonality and surface heterogeneity on dune-forming winds in Titan's sand seas* (in review)