Chloe M. Cheng

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ADS Publication List | linkedin.com/in/chloe-cheng-b31866203

Education

Leiden Observatory, PhD (Supervisor: Prof. Mariska Kriek) — Expected Aug/26
- **Thesis:** Uncovering the stellar populations of massive quiescent galaxies over cosmic time

University of Waterloo, MSc (Supervisor: Prof. Michael L. Balogh) — Oct/22
- **Thesis:** Testing the extremes of initial mass function variability using compact stellar systems

University of Toronto, Hon. BSc w/ Distinction (Supervisor: Prof. Jo Bovy) — Jun/20
- **Thesis:** Testing the chemical homogeneity of chemically-tagged dissolved birth clusters

Other Research Experience

Research Assistant, TRIUMF – Vancouver, CAN (Supervisor: Dr. Adam B. Garnsworthy) — May - Aug/19

NSERC USRA/Institute of Medical Science Research Student, Toronto Western Hospital/Krembil Research Institute – Toronto, CAN (Supervisor: Dr. Liang Zhang) — May - Aug/18

Publications

As First Author

- **Cheng, C. M.** et al. "Constraining the low-mass end of the stellar initial mass function in massive quiescent galaxies at $z \sim 0.7$". In prep.
- **Cheng, C. M.**, Slob, M., Kriek, M., Beverage, A. G., Barro, G., Bezanson, R., de Graaff, A., Förster Schreiber, N. M., Lorenz, B., Marchesini, D., Martín-Navarro, I., Muzzin, A., Newman, A. B., Price, S. H., Suess, K. A., van der Wel, A., van de Sande, J., van Dokkum, P. G., and Weisz, D. R. "Building up *JWST*-SUSPENSE: inside-out quenching at cosmic noon from age, Fe-, and Mg-abundance gradients". 2025, A&A, submitted. arXiv:2509.12316.
- **Cheng, C. M.**, Kriek, M., Beverage, A. G., Slob, M., Bezanson, R., Franx, M., Leja, J., Mancera Piña, P. E., Suess, K. A., van der Wel, A., van de Sande, J., van Dokkum, P. G. "Ages and metallicities of quiescent galaxies: confronting broadband (UVJ) colours with stellar absorption lines". 2025, MNRAS, 540, 1527, doi: 10.1093/mnras/staf806. arXiv:2505.08858.
- **Cheng, C. M.**, Kriek, M., Beverage, A. G., van der Wel, A., Bezanson, R., D'Eugenio, F., Franx, M., Mancera Piña, P. E., Nersesian, A., Slob, M., Suess, K. A., van Dokkum, P. G., Wu, P.-F., Gallazzi, A., & Zibetti, S. "Age and metal gradients in massive quiescent galaxies at $0.6 \lesssim z \lesssim 1.0$: implications for quenching and assembly histories". 2024, MNRAS, 532, 3604, doi: 10.1093/mnras/stae1739. arXiv:2407.10974.
- **Cheng, C. M.**, Villaume, A., Balogh, M. L., Brodie, J. P., Martín-Navarro, I., Romanowsky, A. J., & van Dokkum P. G. "Initial mass function variability from the integrated light of diverse stellar systems". 2023, MNRAS, 526, 4004, doi: 10.1093/mnras/stad2967. arXiv:2309.14415.
- **Cheng, C. M.**, Price-Jones, N., & Bovy, J. "Testing the chemical homogeneity of chemically tagged dissolved birth clusters". 2021, MNRAS, 506, 5573, doi: 10.1093/mnras/stab2106. arXiv:2010.09721.

As Co-Author

- Slob., M., Kriek, M., de Graaff, A., **Cheng, C. M.**, et al. "Fast Rotators at Cosmic Noon: Stellar Kinematics for 15 Quiescent Galaxies from JWST-SUSPENSE". 2025, A&A, in press. arXiv:2506.04310.
- Beverage, A. G., et al., incl. **Cheng, C. M.**. "Carbon and Iron Deficiencies in Quiescent Galaxies at $z = 1 - 3$ from JWST-SUSPENSE: Implications for the Formation Histories of Massive Galaxies". 2024, ApJ, 979, 249, doi: 10.3847/1538-4357/ad96b6. arXiv:2407.02556.
- Slob, M., et al., incl. **Cheng, C. M.**. "The JWST-SUSPENSE Ultradeep Spectroscopic Program: Survey Overview and Star-Formation Histories of Quiescent Galaxies at $1 < z < 3$". 2024, ApJ, 973, 131, doi: 10.3847/1538-4357/ad65ff. arXiv:2404.12432.
- Romanowsky, A. J., et al., incl. **Cheng, C. M.**. "Low-density star cluster formation: discovery of a young faint

fuzzy on the outskirts of the low-mass spiral galaxy NGC 247". 2023, MNRAS, 518, 3164. doi: 10.1093/mnras/stac2898. arXiv:2210.03220.

Non-Astronomy

- Rocchini, M., et al., incl. **Cheng, C.**. "First Evidence of Axial Shape Asymmetry and Configuration Coexistence in ^{74}Zn: Suggestion for a Northern Extension of the $N = 40$ Island of Inversion". 2023, Phys. Rev. Lett., 130, 122502, doi: 10.1103/PhysRevLett.130.122502. arXiv:2302.07394.
- Liu, H., et al. incl. **Cheng, C.**. "EEG features of spontaneous recurrent seizures in a mouse model of extended hippocampal kindling". 2021, Clinph, 132(9), e2, doi: 10.1016/j.clinph.2021.03.028.
- Liu, H., et al., incl. **Cheng, C.**. "Electrographic Features of Spontaneous Recurrent Seizures in a Mouse Model of Extended Hippocampal Kindling". 2021, TexCom, 2(1), doi: 10.1093/texcom/tgab004.
- MacLean, A. D., et al, incl. **Cheng, C.**. "High-precision branching ratio measurement and spin assignment implications for ^{62}Ga superallowed β decay". 2020, Phys Rev C, 102(5), doi: 10.1103/physrevc.102.054325. arXiv:2011.03857.
- Liu, H., et al. incl. **Cheng, C.**. "Impaired Spatial Learning and Memory in Middle-Aged Mice with Kindling-Induced Spontaneous Recurrent Seizures". 2019, Front. Pharmacol., 10, 1077, doi: 10.3389/fphar.2019.01077.
- Song, H., et al. incl. **Cheng, C.**. "Effects of Antiepileptic Drugs on Spontaneous Recurrent Seizures in a Novel Model of Extended Hippocampal Kindling in Mice". 2018, Front. Pharmacol., 9, 451, doi: 10.3389/fphar.2018.00451.

Talks

Invited

- *Lorentz Centre Workshop: Big Galaxies, Big Problems*. "Ages and metallicities of quiescent galaxies: confronting broadband (UVJ) colours with stellar absorption lines". Apr - May/25; Leiden, NL.
- *York University Lunch Talk*. "New clues to assembly history: Exploring age and metallicity gradients in quiescent galaxies over cosmic time with LEGA-C and JWST". Sept/24; Toronto, CAN.
- *University of Toronto TASTY Lunch Talk*. "New clues to assembly history: Exploring age and metallicity gradients in quiescent galaxies over cosmic time with LEGA-C and JWST". Sept/24; Toronto, CAN.
- *APOGEE Monthly Telecon*. "Testing the chemical homogeneity of chemically-tagged dissolved birth clusters". Nov/20.

Contributed

- *Cosmic Chemical Enrichment: A tale of stars and galaxies* at EAS 2025. "Quiescent Galaxy Evolution: Age/Metal Gradients and the IMF at $0.6 < z < 3.0$". Jun/25; Cork, IE.
- *Dancing in the Dark: When Galaxies Shape Galaxies*. "New clues to merger histories: age and metal gradients and the initial mass function in massive quiescent galaxies at $0.6 < z < 3.0$". Jun/25; Sexten, IT.
- *Massive Galaxies Across the Universe*. "Decoding Massive Quiescent Galaxy Evolution: Age and Elemental Abundance Gradients and the Initial Mass Function at $0.6 < z < 3.0$". Jun/25; Naples, IT.
- *RUBIES and Friends Meeting*. "Building up SUSPENSE: Clues to the assembly of massive quiescent galaxies at $0.6 < z < 2.2$ from age and metal gradients". May/25; Bergen, NL.
- *Observing and Simulating Galaxy Evolution in the Era of JWST*. "New clues to assembly history: Exploring age and metallicity gradients in quiescent galaxies over cosmic time with LEGA-C and JWST". Aug/24; Ascona, CH.
- *NOVA NW1 Autumn 2023 Meeting*. "Age and metal gradients in quiescent galaxies over cosmic time with LEGA-C and JWST". Nov/23; Leiden, NL.
- *A Life Devoted to Stellar Populations*. "Age and metal gradients in quiescent galaxies over cosmic time with LEGA-C and JWST". Oct/23; Puerto de la Cruz, Tenerife, Canary Islands.
- *SDSS 2020 Collaboration Meeting Lightning Talks*. "Testing the chemical homogeneity of open clusters". Jun/20.

Awards & Grants

- *Leids Kerkhoven-Bosscha Fonds (LKBF) Grant* (300EUR), subsidy number 25.1.100, May - Oct/25.
- *International Astronomical Union (IAU) Grant* (450EUR) for Symposium 396, Naples, IT, Jun/25.
- *2024 Student Paper Prize* (500CAD), Waterloo Centre for Astrophysics (WCA), University of Waterloo, Dec/24.
- *LKBF Grant* (600EUR), subsidy number 24.1.017, May - Oct/24.
- *LKBF Grant* (400EUR), subsidy number 23.2.009, Nov/23 - Apr/24. Declined.
- *IAU Grant* (320EUR) for Symposium 377, Kuala Lumpur, MY, Feb/23.
- *Science Graduate Award* (8332CAD), University of Waterloo, 20-22.
- *Marie Curie Graduate Award* (4100CAD), University of Waterloo, 20-22.
- *Undergraduate Student Research Award (USRA)* (5625CAD), Natural Sciences and Engineering Research Council (NSERC), University of Toronto/Toronto Western Hopsital/Krembil Research Institute, May - Aug/18.
- *President's Entrance Scholarship* (2000CAD), University of Toronto, Sept/16.

Observing Proposals

- **Co-PI** on a JWST Cycle 3 program (GO-5629, 40.24 hrs NIRSpec/MSA)
- Co-I on a Magellan program (3 nights LLAMAS)
- Co-I on a JWST Cycle 4 program (GO-8317, 7.6 hrs NIRSpec/MSA)
- Co-I on an ALMA program (42.9 hrs Bands 3 and 4)

Teaching

Student Supervision (Leiden Observatory, joint w/ Mariska Kriek)

- **Andreea Şuta**, 1st-year Master's Research Project. "Cosmic relics: tracing the evolution of low-metallicity quiescent galaxies from high to low redshift". — Oct/24 - Jul/25
- **Ying Wang**, 2nd-year Master's Research Thesis. "Low-metallicity quiescent galaxies in the low-redshift Universe". — Oct/23 - Jun/24

Teaching Assistant

- Galaxies & Cosmology (4072GALC5Y), Leiden University — Feb - Jun/23/24/25
- Stars (PHYS 375), University of Waterloo — Jan - Apr/22
- Electricity & Magnetism 2 (PHYS 342), University of Waterloo — Sept - Dec/21
- Physics 2 Laboratory (PHYS 112L), University of Waterloo — Jan - Apr/21
- Mechanics (PHYS 121), University of Waterloo — Sept - Dec/20

Service

Committees

- Member, Social Committee, Leiden Observatory — Apr/23 - Present
- Member, Borrel Committee, Leiden Observatory — Sept/23 - Sept/24
- Member, Equity, Diversity, & Inclusion Committee, Leiden Observatory — Sept/22 - Apr/24
- Social Media Coordinator and Representative, Graduate Student Committee, Canadian Astronomical Society (CASCA) — Sept/21 - Aug/22

Volunteering & Outreach

- **Seeing Stars Leiden**: Supervised an observing station for the public. — Sept/23
- **Canadian Conference for Undergraduate Women in Physics**, University of Toronto: Directed attendees and speakers. Led small-group lab tours. — Jan/20
- **Research Volunteer**, Toronto Western Hospital/Krembil Research Institute — May - Aug/17

Skills

- **Programming Languages**: Python • Bash shell • LaTeX • C++ • MATLAB • Fortran • R
- **Software**: alf • PypeIt • GALFIT • SourceExtractor • EAZY • FSPS • Bagpipes • apogee • astropy • SLURM
- **Languages**: English (native) • French (conversational) • Dutch (basic, A2)