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Affiliation

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EDUCATION

PhD in Physics (Concentration in Astronomy), *University of Victoria* May, 2022
Dissertation title: "Simulating the Universe: The evolution of massive galaxies"

Bachelor of Science (Physics Honours), *University of Victoria* May, 2015
Dissertation title: "Metallicity as a Tracer for Mixing"

PUBLICATIONS

S. Chapman, R. Hill, M. Aravena, M. Archipley, A. Babul, J. Burgoyne, R. Canning, C. De Breuck, A. Gonzalez, C. Hayward, S. Kim, M. Malkan, D. Marrone, V. McIntyre, E. Murphy, E. Pass, R. Perry, K. Phadke, **D. Rennehan**, C. Reuter, K. Rotermond, D. Scott, N. Seymour, M. Solimano, J. Spilker, A. Stark, N. Sulzenauer, N. Tothill, J. Vieira, D. Vizgan, G. Wang, A. Weiss. 2023

Brightest Cluster Galaxy Formation in the $z=4.3$ Protocluster SPT2349-56: Discovery of a Radio-Loud AGN.
arXiv: 2301.01375

R. Hill, S. Chapman, K. Phadke, M. Aravena, M. Archipley, M. Ashby, M. Bethermin, R. Canning, A. Gonzalez, T. Greve, G. Gururajan, C. Hayward, Y. Hezaveh, S. Jarugula, D. MacIntyre, D. Marrone, T. Miller, **D. Rennehan**, C. Reuter, K. Rotermond, D. Scott, J. Spilker, J. Vieira, G. Wang, A. Weiss. 2023.

Rapid build-up of the stellar content in the protocluster core SPT2349-56 at $z = 4.3$.
MNRAS, 512, 3, pp. 4352-4377.

A. Trudeau, J. Willis, **D. Rennehan**, R. Canning, E. Noordeh, A. Carnall. 2022.

The XXL Survey: Revealing the star formation history of a mature galaxy cluster at $z = 2$.
MNRAS, 515, 2, pp. 2529-2547.

S. L. Jung, **D. Rennehan**, V. Saeedzadeh, A. Babul, M. Tremmel, T. R. Quinn, S. I. Loubser, E. O'Sullivan, S. K. Yi. 2022.

Massive central galaxies of galaxy groups in the Romulus simulations: an overview of galaxy properties at $z = 0$.
MNRAS, 515, 1, pp. 22-47.

R. Hill, S. Chapman, K. Phadke, M. Aravena, M. Archipley, M. Ashby, M. Bethermin, R. Canning, A. Gonzalez, T. Greve, G. Gururajan, C. Hayward, Y. Hezaveh, S. Jarugula, D. MacIntyre, D. Marrone, T. Miller, **D. Rennehan**, C. Reuter, K. Rotermond, D. Scott, J. Spilker, J. Vieira, G. Wang, A. Weiß. 2022.

Rapid build-up of the stellar content in the protocluster core SPT2349-56 at $z = 4.3$. 2022.
MNRAS, 512, 3, pp. 4352-4377.

D. Rennehan. 2021.

Mixing matters.

MNRAS, 506, 2, pp. 2836–2852.

S. Lim, D. Scott, A. Babul, D. Barnes, S. Kay, I. McCarthy, **D. Rennehan**, M. Vogelsberger. 2020.

Is there enough star formation in simulated protoclusters?

MNRAS, 501, 2, pp. 1803–1822.

D. Rennehan, A. Babul, C. C. Hayward, C. Bottrell, M. H. Hani, S. C. Chapman. 2020.

Rapid coeval star formation and assembly of the most massive galaxies in the universe.

MNRAS, 493, pp. 4607-4621.

D. Rennehan, A. Babul, P. F. Hopkins, R. Davé, B. Moa. 2019.

Dynamic Localised Turbulent Diffusion and its Impact on the Galactic Ecosystem.

MNRAS, 483, pp. 3810-3831.

T. B. Miller, S. C. Chapman, M. Aravena, M. L. N. Ashby, C. C. Hayward, J. D. Vieira, A. Weiß, A. Babul, M. Béthermin, C. M. Bradford, M. Brodwin, J. E. Carlstrom, Chian-Chou Chen, D. J. M. Cunningham, C. De Breuck, A. H. Gonzalez, T. R. Greve, J. Harnett, Y. Hezaveh, K. Lacaille, K. C. Litke, J. Ma, M. Malkan, D. P. Marrone, W. Morningstar, E. J. Murphy, D. Narayanan, E. Pass, R. Perry, K. A. Phadke, **D. Rennehan**, K. M. Rotermund, J. Simpson, J. S. Spilker, J. Sreevani, A. A. Stark, M. L. Strandet & A. L. Strom. 2018.

A massive core for a cluster of galaxies at a redshift of 4.3.

Nature, 556, pp. 469-472.

A. Zehtabi-Oskuie, H. Jiang, B.R. Cyr, **D.W. Rennehan**, A.A. Al-Balushi and R. Gordon, 2013.

Double nanohole optical trapping: dynamics and protein-antibody co-trapping.

Lab on a Chip, 13(13), pp. 2563-2568.

AWARDS AND HONORS

NSERC CGS-D (Alexander Graham Bell Canada Graduate Scholarship)

2019 - 2022

Highly competitive national award for Canadian PhD students.

The R. M. Pearce Memorial Fellowship

2018

Competitive academic institutional scholarship for graduate students.

M.A. & D.E. Breckenridge Graduate Awards

2017

Competitive academic institutional scholarship for graduate students.

Melva J. Hanson Graduate Scholarship

2017

Competitive academic institutional scholarship for graduate students.

University of Victoria Graduate Fellowship

2015 - 2016

Competitive academic institutional funding award for graduate students.

University of Victoria Outstanding Graduate Entrance Award

2015

Competitive academic entrance monetary award.

Jamie Cassels Undergraduate Research Award 2014
Competitive funding award for undergraduate honors research.

NSERC Undergraduate Student Research Award 2012, 2014-15
Competitive institutional funding awards for a semester of undergraduate research, received on 3 separate occasions.

CONFERENCE PRESENTATIONS

Invited talk: *Rapid evolution of the most massive galaxies in the Universe.* 2022
Galaxy group meeting, Harvard CfA.

Invited talk: *Rapid evolution of the most massive galaxies in the Universe.* 2021
CIERA galaxy group meeting, Northwestern University.

Contributed talk: *Rapid assembly of the most massive galaxies in the universe.* 2021
Galaxy Cluster Formation II, held virtually. Contributed talk.

Contributed talk: *Rapid formation of the most massive galaxies in the universe.* 2021
Royal Astronomical Society, held virtually.

Contributed talk: *Rapid assembly of the most massive galaxies in the universe.* 2019
Canadian Astronomical Society: "Annual General Meeting" in Montreal, Canada. Oral presentation.

Invited talk: *Turbulent Diffusion and Gas Metallicity.* 2016
Banff International Research Station for Mathematical Innovation and Discovery: "Computing the Universe: At the Intersection of Computer Science and Cosmology" conference in Oaxaca, Mexico. Oral presentation.

COMMITTEES

Physics & Astronomy Graduate Student Association, Academic Representative 2018 - 2020
Organized various workshops at the University of Victoria relating to professional development. Acted as head of the "Software Plumbing" sub-committee, dedicated to increasing the software engineering capabilities of incoming graduate students.

Astronomy Research Centre Sub-Committee, Graduate Student Representative 2018 - 2019
Represented graduate students on the ARC (Astronomy Research Centre) Computing Resources Sub-Committee. The committee investigated the future outlook of computing resources for University of Victoria (and associated) researchers.

Physics & Astronomy Chair Search Committee, Graduate Student Representative 2018
Represented undergraduate and graduate students on the committee tasked to replace the Chair of the Physics & Astronomy department at the University of Victoria.

CASCA Graduate Student Committee, Vice-chair 2017 - 2019
Duties include, but not limited to, organizing the astronomy graduate student committee annual general meeting, inviting relevant speakers, and planning workshops.