

# Ian D. Roberts

Post-doctoral Research Associate, Leiden Observatory, 2020-present  
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galaxy evolution • galaxy groups and clusters • star formation quenching • multiwavelength

## Education:

PhD, McMaster University, Hamilton ON, Canada  
Thesis: Galaxy Clusters and Their Role in Galaxy Evolution  
Advisor: Dr. Laura Parker  
2016-2020

MSc, McMaster University, Hamilton ON, Canada  
Thesis: Galaxy Properties Across Diverse Halo Environments  
Advisor: Dr. Laura Parker  
2014-2016

BSc, Mount Allison University, Sackville NB, Canada  
Thesis: Simulation of Double-Peaked Meteor Light Curves  
Advisor: Dr. Bob Hawkes  
2010-2014

## Teaching:

Head teaching assistant, Introductory Physics, McMaster University, 2015-2020

Teaching assistant, McMaster University, 2014-2016

Courses including: Electricity and Magnetic Fields, Big Questions in Astronomy, Introductory Mechanics

Teaching assistant, Mount Allison University, 2011-2014

Courses including: General Physics, Solar System Astronomy, Stars Galaxies and the Universe

## Research Supervision:

- Federica Mauro (Masters), *SED Fitting in Coma Cluster Jellyfish Galaxies*, Leiden Observatory, 2021
- Maojin Lang (Masters), *Resolved Star Formation in Jellyfish Galaxies*, Leiden Observatory, 2021
- Shaojin Huang (Bachelors), *Galaxy Properties Between Close Cluster Pairs*, McMaster University, 2019

## Outreach and Service:

- Coordinator of the PhD Colloquia, Leiden Observatory, 2021-present
- Referee for Monthly Notices of the Royal Astronomical Society
- Manager of the William J McCallion Planetarium, 2016-2020
- Member of McMaster Sidewalk Astronomy, 2015-2020
- Presenter at William J McCallion Planetarium, 2014-2020

## Scholarships & Awards:

- Ontario Graduate Scholarship (Doctoral), \$15000
- Dawes Memorial Fellowship for Graduate Studies in Physics, \$2000
- NSERC Post Graduate Scholarship (Doctoral), \$105000 over 3yr
- Ontario Graduate Scholarship (Masters), \$15000
- NSERC Post Graduate Scholarship (Masters), \$17500

- Marjorie Young Bell Summer Research Grant, \$6250
- Mount Allison University Entrance Scholarship, \$32000 over 4yr

### Colloquia & Seminars:

- Leiden Observatory, *Fishing for Jellyfish: The Evolution of Galaxies in Dense Environments*, 2020
- McMaster University, *Quenching Low Mass Galaxies: Evidence for a Threshold ICM Density*, 2019
- Université de Montréal, *The Dependence of Galaxy Properties on Group Dynamical State*, 2017

### Observing Programs:

**CO-I** - Brown T., et al. (**Roberts I.D.**, co-I), ALMA Cycle 7, 2019.1.00763.L, Large Program, ~200 hr, *VERTICO: The Virgo Environment Traced in CO*.

**PI** - **Roberts I.D.**, Parker L.C., Hlavacek-Larrondo J., Edwards L.O.V., Gemini semester 2019A, GN-2019A-Q-311, 18.0 hr, *Mapping central emission in cool-core groups*.

**PI** - **Roberts I.D.**, Parker L.C., Hlavacek-Larrondo J., Edwards L.O.V., Gemini semester 2018A, GN-2018A-Q-211, 13.5 hr, *Mapping central emission in cool-core groups*.

### Refereed Publications:

9 papers as first author, 11 papers total, h-index: 7

11. **Roberts I.D.**, Parker L.C., Gwyn S., Hudson M., Carlberg R., McConnachie A., Cuillandre J.-C., et al. (+13 co-authors), *Ram Pressure Candidates in UNIONS*, 2021, MNRAS, submitted.
10. **Roberts I.D.**, van Weeren R.J., McGee S.L., Botteon A., Drabent A., Ignesti A., Rottgering H.J.A., Shimwell T.W., Tasse C., *LoTSS Jellyfish Galaxies in Low Redshift Clusters*, 2021, A&A, submitted.
9. **Roberts I.D.**, Parker L.C., *Ram pressure candidates in the Coma Cluster: Evidence for enhanced star formation*, 2020, MNRAS, 495, 554.
8. **Roberts I.D.**, Parker L.C., “*Observing*” *unrelaxed clusters in dark matter simulations*, 2019, MNRAS, 490, 773.
7. Demers M.L., Parker L.C., **Roberts I.D.**, *Smaller stellar disc scale lengths in rich environments*, 2019, MNRAS, 489, 2216.
6. **Roberts I.D.**, Parker L.C., Brown T., Joshi G.D., Hlavacek-Larrondo J., Wadsley J., *Quenching low-mass satellite galaxies: evidence for a threshold ICM density*, 2019, ApJ, 873, 42.
5. Evans, F.A., Parker L.C., **Roberts I.D.**, *Red Misfits in the Sloan Digital Sky Survey: Properties of Star-Forming Red Galaxies*, 2018, MNRAS, 476, 5284.
4. **Roberts I.D.**, Parker L.C., Hlavacek-Larrondo J., *Connecting optical and X-ray tracers of galaxy cluster relaxation*, 2018, MNRAS, 475, 4704.
3. **Roberts I.D.**, Parker L.C., *Evidence of pre-processing and a dependence on dynamical state for low-mass satellite galaxies*, 2017, MNRAS, 467, 3268.
2. **Roberts I.D.**, Parker L.C., Karunakaran A., *Comparing galaxy morphology and star-formation properties in X-ray bright and faint groups and clusters*, 2016, MNRAS, 455, 3628.
1. **Roberts I.D.**, Parker L.C., Joshi G.D., Evans F.A., *Mass segregation trends in SDSS galaxy groups*, 2015, MNRAS, 448, L1.

### In Proceedings:

1. **Roberts I.D.**, Hawkes R.L., Weryk R.J., Campbell-Brown M.D., Brown P.G., Stokan E., Subasinghe D., *Meteoroid structure and ablation implications from multiple maxima meteor light curves*, 2014, Proceedings of the Meteoroids Conference, ed: Jopek T.J., Rietmeijer F., Watanabe J., Williams I.P., 155

### **Contributed Talks:**

*Studying Ram Pressure Stripping with the Canada-France Imaging Survey*, 2021, UNIONS Collaboration Meeting, virtual meeting.

*Linking star formation quenching and ICM density*, 2020, Quenching and Transformation Throughout Cosmic Time, Aspen, United States.

*Quenching low-mass satellite galaxies: evidence for a threshold ICM density*, 2020, Meeting of the American Astronomical Society, Honolulu, United States.

*Quenching low-mass satellite galaxies: evidence for a threshold ICM density*, 2019, Meeting of the Canadian Astronomical Society, Montreal, Canada.

*Insights into cluster relaxation and galaxy quenching from X-ray obs. (at low- $z$ )*, 2018, GOGREEN collaboration meeting, Waterloo, Canada.

*Connecting optical and X-ray tracers of galaxy cluster relaxation*, 2018, Glenfiddling Galaxy Clusters workshop, Edinburgh, Scotland.

*A product of their Halo Environment: How galaxy properties depend on group X-ray luminosity and dynamical state*, 2016, Annual Meeting of the Canadian Astronomical Society, Winnipeg, Canada.

*Implications for meteoroid structure and ablation from multiple maxima meteor light curves*, 2013, International Meteor Conference, Poznan, Poland.

### **Contributed Posters:**

*Quenching low-mass satellite galaxies: evidence for a threshold ICM density*, 2018, Meeting of the Canadian Astronomical Society, Victoria, Canada.

*The dependence of galaxy properties on group X-ray luminosity and dynamics*, 2017, Galaxy Evolution Across Time, Paris, France.

*How galaxy properties depend on group X-ray luminosity and dynamical state*, 2016, CAASTRO: The Changing Face of Galaxies, Hobart, Tasmania AUS.

*How galaxy properties depend on group X-ray luminosity and dynamical state*, 2016, Great Lakes Cosmology Workshop, Hamilton, Canada.

*Effects of X-ray luminosity on galaxy star formation and morphology in SDSS groups and clusters*, 2015, Meeting of the Canadian Astronomical Society, Hamilton, Canada.

*Mass-segregation trends in SDSS galaxy groups*, 2015, Meeting of the Canadian Astronomical Society, Hamilton, Canada.

*Laser Ablation Techniques for Simulation of Hypervelocity Impact on Materials Relevant to the Space Industry*, 2012, IRM 10<sup>th</sup> Anniversary Symposium, The Future of Materials Research, Halifax, Canada.