

**Curriculum Vitae (2-page limit)****Drummond Fielding****Center for Computational Astrophysics, Flatiron Institute, [drummondfielding@gmail.com](mailto:drummondfielding@gmail.com)****Astronomy Department, University of California, Berkeley, [dfielding@berkeley.edu](mailto:dfielding@berkeley.edu)****Professional Preparation**

PhD, Astronomy, University of California, Berkeley, 2018

MS, Astronomy, University of California, Berkeley, 2014

BA, Physics &amp; Mathematics, Johns Hopkins University, 2012

**Appointments**

Flatiron Fellow, Flatiron Institute, Center for Computational Astrophysics	starting Oct 2018
Graduate Student Researcher, University of California, Berkeley	2017–2018
Berkeley Fellow, University of California, Berkeley	2015–2017
NSF Graduate Research Fellow, University of California, Berkeley	2012–2015

**Five Publications Most Relevant to This Proposal**

1. "The impact of star formation feedback on the circumgalactic medium", Fielding, D., et al. *MNRAS*, **466**, 3810 (2017)
2. "How supernovae launch galactic winds", Fielding, D., et al. *MNRAS*, **470**, L39 (2017)
3. "Numerical Simulations of Powerful Galactic Winds Driven by Clustered Supernovae", Fielding, D. & Quataert, E. *MNRAS*, *in press*, (2018)
4. "Supernova feedback in a local vertically stratified medium: interstellar turbulence and galactic winds", Martizzi, D., Fielding, D., et al. *MNRAS*, **459**, 2311 (2016)
5. "Simulations of Jet Heating in Galaxy Clusters: Successes and Numerical Challenges", Martizzi, D., Quataert, E., Faucher-Giguere, C.A., Fielding, D. *MNRAS*, *in press*, (2018)

**Research Interests and Expertise**

Co-PI Fielding's research interests are focused on understanding how the interplay of galactic winds and small scale physical processes in circumgalactic medium regulate galaxy formation. To study this process Fielding has investigated how galactic winds are launched by the collective effect of numerous supernovae, and how these winds expand into, stir, and heat the circumgalactic medium. Fielding's work has consisted primarily of designing controlled numerical experiments to isolate specific phenomena and address well-posed questions. This work has given Fielding extensive experience using hydrodynamical simulations, and, in particular, implementing additional physical processes to couple to the hydrodynamics such as radiative cooling, thermal conduction, turbulent driving, and supernova explosions. As a graduate student Fielding served as Co-I on accepted NSF Extreme Science and Engineering Discovery Environment (XSEDE) computational proposals "Conduction, Convection, and Thermal Instability in Hot Halos" (TG-AST140083) and "The Physics of Supernova Feedback: Global 3D Simulations of Galactic Disks" (TG-AST160020) that were awarded a total of 3.6 million cpu hours.

**Synergistic Activities**

1. Consultant / commissioning time user for the Berkeley Research Computing HPC Savio cluster
2. Public lecturer (e.g., presented on numerical astrophysics to the East Bay Astronomical Society, and taught astronomy course for 2nd and 3rd graders at North Oakland Community Charter School)
3. Referee for ApJ and MNRAS.

**Collaborators (past 5 years including name and current institution)**

Quataert, Eliot	University of California, Berkeley
Faucher-Giguere, Claude-Andre	Northwestern University
Martizzi, Davide	University of California, Santa Cruz

McKee, Christopher

Stern, Jonathan

Sharma, Prateek

White, Christopher J.

McCourt, Michael

Klein, Richard

Thompson, Todd A.

Kim, Chang-Goo

Ostriker, Eve

Prochaska, J. Xavier

Oh, Peng

Stone, James

Lecoanet, Daniel

University of California, Berkeley

Northwestern University

Indian Institute of Science

University of California, Santa Barbara

University of California, Santa Barbara

University of California, Berkeley

The Ohio State University

Princeton University

Princeton University

University of California, Santa Cruz

University of California, Santa Barbara

Princeton University

Princeton University