

# Aaron M. Geller

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## EDUCATION & EMPLOYMENT

### Northwestern University (NU) 2018 - present

Research Assistant Professor (2018 - present)  
Senior Interactive Visualization Specialist, with NUIT (2017 - present)  
NSF REU Site Director (2015 - present)  
NSF Astronomy and Astrophysics Postdoctoral Fellow (AAPF) (2013 - 2017)  
Lindheimer Postdoctoral Fellow (2010 - 2013)

### The Adler Planetarium 2015 - present

Astronomer (2018)  
Astronomer / NSF Astronomy and Astrophysics Postdoctoral Fellow (AAPF) (2015 - 2017)

### University of Chicago (UofC) 2013 - 2015

NSF Astronomy and Astrophysics Postdoctoral Fellow (AAPF)

### University of Wisconsin - Madison (UW) 2004 - 2010

PhD in Astronomy (2010)  
MS in Astronomy; Minor in Physics (2006)  
Grant Supported Researcher, Astronomy (R. Mathieu, Advisor; 2004 - 2010)

### University of Iowa (UI) 2000 - 2004

BS with Distinction in Astronomy (Honors), Physics (Honors), & Mathematics; Minor in Studio Art (2004)  
Grant Supported Researcher, Astronomy (S. Spangler, Advisor; 2002 - 2004)

### National Radio Astronomy Observatory, Green Bank 2003 Summer

NSF Research Experience for Undergraduates (T. Minter, Advisor)

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## TEACHING

### Formal Experience

Summer 2017 Led Visualization Summer School course at Northwestern for IDEAS program  
2015 - present Leading workshops in computer coding & website design, and facilitating panel discussion for REU students  
2013 - 2016 Developed and implemented high school and 100-level astronomy lesson plans with Andrzej Barski, a teacher at Lakeview Chicago Public High School, and Kai Cai, an instructor at Truman City College of Chicago  
Spring 2009 Lab Instructor for UW Astronomy 113 : Hands on the Universe - Astronomy Lab  
Led four lab sections per week (68 students)  
Fall 2004 Discussion Instructor for UW Astronomy 104 : Exploration of the Solar System  
Led six discussion sections per week (144 students)

### Science Communication & Community Outreach (Selected Events Since 2010)

2017 Created an online interactive, movie, and technical figure for LIGO BNS press release  
2017 - present Interviews on local TV, radio, print through Adler Planetarium on astronomy news  
2013 - present Creating visualizations for the Adler Planetarium Space Visualization Lab (SVL)  
2013 - present Leading Astronomy Conversations at the Adler Planetarium SVL (twice a month)

- 2011 - present Regular public lectures/discussions/events at Adler Planetarium in Chicago, IL
- 2016 Created and led full-dome planetarium show of  $N$ -body star clusters simulation at the Adler Planetarium and AMNH's Hayden Planetarium (for astronomers)
- 2015 Interviewed on Hubble Hangout Blue Stragglers: The Mystery of Born Again Stars  
<https://plus.google.com/events/caarf1mniimd0hsjo99ba473drk>
- 2015 Featured and on stage with the comedy troupe at the iO Theater in Chicago for the "Experts", a show featuring professional scientists and about science
- 2014 "Science Cafe" children's activity on Oct. 25, 2014 at the Chicago's Museum of Science and Industry
- 2011 "Science Cafe" lecture on Nov. 16, 2011 in Evanston, IL
- 2011 Interviewed on NPR's Science Friday on Oct. 21, 2011 about our 2011 Nature Letter  
<http://www.npr.org/2011/10/21/141591183/did-giant-stars-feed-blue-stragglers>

## MENTORING EXPERIENCE

- Director of NU CIERA's NSF Research Experience for Undergraduates (REU) site (2015 -)
  - Build the REU website, recruit students, match students with Faculty Mentors, manage student travel and accommodation, design and implement the assessment tools, organize the summer activities, and design and run the technical and professional development workshops.

### Graduate students:

- Joseph Glaser, Drexel University (2016 - present)
  - co-advisor, thesis committee member on exoplanets projects
  - his PhD advisor is S. McMillan, graduating in 2018/2019
- Emily Leiner, UW (2015 - present)
  - co-advisor on sub-subgiant projects
  - her PhD advisor is R. Mathieu, graduating in 2017/2018

### Undergraduate students:

- Ava Polzin, Northwestern (2017 - present)
- Joon Park, Northwestern (2016 - present)
- Josh Fuhrman, Carnegie Mellon + NU CIERA REU student (2016 - present)
- Sheila Dunne, Notre Dame + local high school (2015 Summer)
- Caroline Darin, NU (2012 - 2014)
- Nico Salzetta, NU (2012 Summer)
- Thomas Finzell, UW (2009 - 2010)
  - Co-advised Tom's Senior Thesis: "Modeling the Dynamical Formation of NGC 6819 - 3002 with a Genetic Algorithm"
  - Currently an Astronomy PhD candidate at Michigan State University
- Matthew Bailey, UW, Berea College (2008-2009)
  - UW REU, <http://www.astro.wisc.edu/~bailey/index.html>
  - Co-advised Matthew's Senior Thesis: "Investigating Blue Straggler Production Through Binary Star Evolution" at Berea College
- Natalie Gosnell, UW (2007 Summer)
  - REU, <http://www.astro.wisc.edu/~gosnell/reu.html>
  - PhD in Astronomy from UW in 2013
- Mike DiPompeo, UW (2006 - 2007)
  - Co-advised Mike's Senior Thesis: "Exploring Dynamical Formation Scenarios for an Interesting Binary in NGC 6819"
  - PhD in Astronomy from U. of Wyoming in 2013
- Meagan Morscher, UW (2006 Summer)
  - REU, <http://www.astro.wisc.edu/~morscher/index.html>
  - Currently an Astronomy PhD candidate at Northwestern University
- Sylvana Yelda, UW (2006 Summer)
  - REU, <http://www.astro.wisc.edu/~yelda/index.html>
  - PhD in Astronomy from UCLA in 2012

**SERVICE**

- 2016 - present Chair Elect for the Physics REU Directors Leadership Group, focussing on common student application and assessment procedures
- 2017 Judging coordinator for Northwestern's High School Project Showcase science research poster competition; managed grad. student judges, tallied scores, determined (high school student) winners.
- 2011 - present Referee for Monthly Notices of the Royal Astronomical Society, Nature The Astronomical Journal, The Astrophysical Journal, The Astrophysical Journal Letters
- 2012 - present Chambliss Judge for AAS conferences
- 2014 SOC for "Binary systems, their evolution and environments" conference, Sept. 2014 in in Ulaanbaatar, Mongolia  
<http://mongolia.csp.escience.cn/dct/page/1>
- 2011 - 2012 Organizer for CIERA's winter seminar series and Journal Club (astro-ph) meetings
- 2011 SOC/LOC for CIERA's inaugural "Future of Astronomy" conference  
<http://ciera.northwestern.edu/frontiers/>
- 2009 - 2010 WIYN Remote Observing Consultant, UW

**GRANTS & AWARDS AS PI***Research and Academic*

- 2015 HST Theory Grant, "Modeling the Origins of Sub-subgiant Stars"
- 2013 NSF Astronomy and Astrophysics Postdoctoral Fellowship (AAPF)
- 2010 Lindheimer Postdoctoral Fellowship
- 2009 NSF East Asia and Pacific Summer Institutes (EAPSI) Fellowship
- 2008 - 2009 Travel Grants from UW (2008, 2009), IAU (2009), AAS (2009)
- 2006, 2008 Wisconsin Space Grant
- 2004 Waldo Edward and Martha Althaus Smith Award
- 2004 John Goodricke Award
- 2000 - 2004 UI Presidential Scholarship

*Education*

- 2017 LSST Enabling Science Grant "Connecting LSST Undergraduate Internships with the CIERA REU Program"
- 2014 NSF REU Grant "Preparing a Diverse Workforce through Interdisciplinary Astrophysics Research" (Co-PI, Director)

*Visualization*

- 2017 1st Place and People's Choice Award in NU's Scientific Image Contest
- 2015 People's Choice Award and an Honorable Mention in NU's Scientific Image Contest
- 2015 1st place in the proposal category, and finalist in the finished works category in the 2015 NU's Data Visualization Challenge
- 2014 4th place in NU's Scientific Image Contest

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**APPROVED OBSERVING AND COMPUTING PROPOSALS**

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*Selected Proposals as Principal Investigator*

- “Modeling the Origins of Sub-subgiant Stars”  
– Cycle 22 HST Theory (2015)
- “Impacts of Clustered Birth Environments on Exoplanet Architectures”  
– NU Quest supercomputer (2014, 200,000 SUs)
- “The Solar-Type Hard-Binary Frequency and Distributions of Orbital Parameters in the Open Cluster M37”  
– WIYN 3.5m/Hydra (NOAO: 2013B, 2014A, 2014B, 10 x 1/2 nights), multi-object optical spectroscopy
- “ $N$ -body Simulations of Star Clusters”  
– Keeneland supercomputer; granted early access in 2011 for Graphics Processing Units (GPU) based  $N$ -body simulations
- “A Complete Radial-Velocity Survey of the Two Canonical Southern Open Clusters NGC 2516 and NGC 3532”  
– CTIO-4m (NOAO: 2011B, 6 nights), multi-object optical spectroscopy
- “A Study of Anomalous Stars & Binary Populations within Open Clusters: Tests of Theoretical Models”  
– WIYN-3.5m/Hydra (NOAO: 2007B-2010A, 46 nights, long term status ; UW: 2007B-2009B, 24 nights), multi-object optical spectroscopy

*Selected Proposals as Co-Investigator*

- “COS Spectroscopy of White Dwarf Companions to Blue Stragglers in NGC 188;  
PI: Mathieu, R. D.  
– HST (NASA GO: 2013, Cycle 21, 12 orbits), COS UV Spectroscopy
- “A New Insight into Open Cluster Internal Dynamics and Neutron Star Formation”;  
PI: Gosnell, N.  
– Chandra AO (Cycle 14) joint with HST; Imaging of qLMXB candidate in NGC 6819 (2013)
- “Synoptic grizY Observations Centered on the Young, high-Galactic Latitude Open Cluster Blanco 1”;  
PI: James, D.  
– DECam Science Verification 2012
- “X-ray Binary Candidates Along Omega Centauri’s Anomalous Subgiant Branch”;  
PI: Haggard, D.  
– Gemini South (NOAO: 2012A, 31 hours), multi-object optical spectroscopy
- “Improved Ages from Eclipsing Binaries in Open Star Clusters NGC 6791 and NGC 6819”;  
PI: Sandquist, E. L.  
– Kepler GO (Cycle 3); Photometry of eclipsing binaries (2011)
- “The Nature of the Binary Companions to the Blue Stragglers in the Old Open Cluster NGC 188”;  
PI: Mathieu, R. D.  
– HST (NASA GO: 2011, Cycle 19, 41 orbits), FUV photometry
- “An XMM-Newton Survey of Rich Open Clusters”;  
PI: Pooley, D.  
– XMM-Newton (ESA: 2007, 275 ks) X-ray imaging and spectroscopy

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**PUBLICATIONS**

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- 38 refereed publications (37 in astrophysics), 1 PhD thesis, 1 book chapter, 1 popular science article, 7 conf. proceedings, 28 conf. abstracts,
- from Google Scholar: 971 total citations (940 citations in astrophysics), h-index = 18, i10-index = 25

***Refereed Publications***

38. “Small-N collisional dynamics - III: The battle for the realm of not-so-small-N”, Leigh, N. W. C., **Geller, A. M.**, Shara, M. M., Garland, J., Clees-Baron, H. & Ahmed, A., 2017, MNRAS, 471, 1830
37. “On the Origin of Sub-subgiant Stars. III. Formation Frequencies”, **Geller, A. M.**, Leiner, E. M., Chatterjee, S., Leigh, N. W. C., Mathieu, R. D. & Sills, A., 2017, ApJ, 842, 1
36. “On the Origin of Sub-subgiant Stars II: Binary Mass Transfer, Envelope Stripping, and Magnetic Activity”, Leiner, E., Mathieu, R. D. & **Geller, A. M.**, 2017, ApJ, 840, 67
35. “On the Origin of Sub-subgiant Stars. I. Demographics”, **Geller, A. M.**, Leiner, E. M., Bellini, A., Gleisinger, R., Haggard, D., Kamann, S., Leigh, N. W. C., Mathieu, R. D., Sills, A., Watkins, L. L. & Zurek, D., 2017, ApJ, 840, 66
34. “The chaotic four-body problem in Newtonian gravity- I. Identical point-particles”, Leigh, N. W. C., Stone, N. C., **Geller, A. M.**, Shara, M. M., Muddu, H., Solano-Oropeza, D. & Thomas, Y., 2016, MNRAS, 463, 3311
33. “When does a star cluster become a multiple star system? - I. Lifetimes of equal-mass small-N systems”, Leigh, N. W. C., Shara, M. M. & **Geller, A. M.**, 2016, MNRAS, 459, 1242
32. “Formation of Black Hole Low-mass X-Ray Binaries in Hierarchical Triple Systems”, Naoz, S., Fragos, T., **Geller, A. M.**, Stephan, A. P., & Rasio, F. A., 2016, ApJL, 822, 24
31. “Determining the Age of the Kepler Open Cluster NGC 6819 With a New Triple System and Other Eclipsing Binary Stars”, Brewer, L. N., Sandquist, E. L., Mathieu, R. D., Milliman, K., **Geller, A. M.**, Jeffries, M. W., Jr., Orosz, J. A., Brogaard, K., Platais, I., Bruntt, H., Grundahl, F., Stello, D. & Frandsen, S., 2016, AJ, 151, 66
30. “Interrupted Binary Mass Transfer in Star Clusters”, Leigh, N. W. C., **Geller, A. M.** & Toonen, S., 2016, ApJ, 818, 21
29. “Formation of new stellar populations from gas accreted by massive young star clusters”, Li, C., de Grijs, R., Deng, L., **Geller, A. M.**, Xin, Y., Hu, Y., Faucher-Giguère, C.-A., 2016, Nature, 529, 502
28. “Implications for the Formation of Blue Straggler Stars from HST Ultraviolet Observations of NGC 188”, Gosnell, N. M., Mathieu, R. D., **Geller, A. M.**, Sills, A., Leigh, N. & Knigge, C., 2015, ApJ, 814, 163
27. “Stellar Radial Velocities in the Old Open Cluster M67 (NGC 2682). I. Memberships, Binaries, and Kinematics”, **Geller, A. M.**, Latham, D. W. & Mathieu, R. D., 2015, AJ, 150, 97
26. “Interrupted Stellar Encounters in Star Clusters”, **Geller, A. M.** & Leigh, N. W. C., 2015, ApJL, 808, 25

25. "A Highly Eccentric 3.9 Millisecond Binary Pulsar in the Globular Cluster NGC 6652", DeCesar, M. E., Ransom, S. M., Kaplan, D. L., Ray, P. S. & **Geller, A. M.**, 2015, ApJL, 807, 23
24. "WIYN Open Cluster Study. LXVI. Spectroscopic Binary Orbits in the Young Open Cluster M35 (NGC 2168)", Leiner, E. M., Mathieu, R. D., Gosnell, N. M. & **Geller, A. M.**, 2015, AJ, 150 10
23. "Small- $N$  collisional dynamics - II. Roaming the realm of not-so-small- $N$ ", Leigh, N. W. C. & **Geller, A. M.**, 2015, MNRAS, 450, 1724
22. "Different Dynamical Ages for the Two Young and Coeval LMC Star Clusters, NGC 1805 and NGC 1818, Imprinted on Their Binary Populations", **Geller, A. M.**, de Grijs, R., Li, C., & Hurley, J. R., 2015, ApH, 805, 11
21. "Bayesian Investigation of Isochrone Consistency Using the Old Open Cluster NGC 188", Hills, S., von Hippel, T., Courteau, S. & **Geller, A. M.**, 2015, AJ, 149, 94
20. "On the coexistence of stellar-mass and intermediate-mass black holes in globular clusters", Leigh, N. W. C., Lützgendorf, N., **Geller, A. M.**, Maccarone, T. J., Heinke, C. & Sesana, A., 2014, MNRAS, 444, 29
19. "WIYN Open Cluster Study. LX. Spectroscopic Binary Orbits in NGC 6819", Milliman, K. E., Mathieu, R. D., **Geller, A. M.** Gosnell, N. M., Meibom, S. & Platais, I., 2014, AJ, 148, 38
18. "Detection of white dwarf companions to blue stragglers: evidence for recent mass transfer", Gosnell, N. M., Mathieu, R. D., **Geller, A. M.**, Sills, A., Leigh, N., & Knigge, C., 2014, ApJ, 783, 8
17. "Consequences of Dynamical Disruption and Mass Segregation for the Binary Frequencies of Star Clusters", **Geller, A. M.**, de Grijs, R., Li, C. & Hurley, J., 2013, ApJ, 779, 30
16. "WOCS 40007: A Detached Eclipsing Binary near the Turnoff of the Open Cluster NGC 6819", Jeffries, M. W., Sandquist, E. L., Mathieu, R. D., **Geller, A. M.**, Orosz, J. A., Milliman, K. E., Brewer, L. N., Platais, I., Brogaard, K., Grundahl, F., Frandsen, S. Dotter, A. & Stello, D., 2013, AJ, 146, 58
15. "The Dynamical Significance of Triple Star Systems in Star Clusters", Leigh, N. W. C. & **Geller, A. M.**, 2013, MNRAS, 432, 2474
14. "A Long-Period Totally Eclipsing Binary Star at the Turnoff of the Open Cluster NGC 6819 Discovered with Kepler", Sandquist, E. L, Mathieu, R. D., Brogaard, K., Meibom, S., **Geller, A. M.**, Orosz, J. A., Milliman, K. E., Jeffries, M. W., Brewer, L. N., Platais, I., Grundahl, F., Bruntt, H., Frandsen, S. & Stello, D., 2013, ApJ, 762, 58
13. "Direct  $N$ -Body Modeling of the Old Open Cluster NGC 188: A Detailed Comparison of Theoretical and Observed Binary Star and Blue Straggler Populations", **Geller, A. M.**, Hurley, J. R & Mathieu, R. D., 2012, AJ, 145, 8
12. "Planets in Open Clusters Detectable by Kepler", Chatterjee, S., Ford, E. B., **Geller, A. M.** & Rasio, F. A., 2012, MNRAS, 427, 1587
11. "Small- $N$  collisional dynamics: pushing into the realm of not-so-small  $N$ ", Leigh, N. & **Geller, A. M.**, 2012, MNRAS, 425, 2369

10. "WIYN Open Cluster Study. XLVIII. The Hard-Binary Population of NGC 188", **Geller, A. M.** & Mathieu, R. D., 2012, *AJ*, 144, 54
9. "An Unexpected Discovery in the Rich Open Cluster NGC 6819 Using XMM-Newton", Gosnell, N. M., Pooley, D., **Geller, A. M.**, Kalirai, J. Mathieu, R. D., Frinchaboy, P. & Ramirez-Ruiz, E., 2012, *ApJ*, 745, 57
8. "A Mass Transfer Origin for Blue Stragglers in NGC188 as Revealed by Half-Solar-Mass Companions", **Geller, A. M.** & Mathieu, R. D., 2011, *Nature*, 487, 356
7. "WIYN Open Cluster Study. XXXVIII. Stellar Radial Velocities in the Young Open Cluster M35 (NGC 2168)", **Geller, A. M.**, Mathieu, R. D., Braden, E. K., Meibom, S., Platais, I. & Dolan, C. J., 2010, *AJ*, 129, 1383
6. "A Binary Star Fraction of 76 per cent and Unusual Orbit Parameters for the Blue Stragglers of NGC 188", Mathieu, R. D. & **Geller, A. M.**, 2009, *Nature*, 462, 1032
5. "WIYN Open Cluster Study. XXIV. Stellar Radial-Velocity Measurements in NGC 6819", Hole, K. T., **Geller, A. M.**, Mathieu, R. D., Meibom, S., Latham, D. W. & Platais, I., 2009, *AJ*, 138, 159
4. "WIYN Open Cluster Study. XXXVI. Spectroscopic Binary Orbits in NGC 188", **Geller, A. M.**, Mathieu, R. D., Harris, H. C. & McClure, R. D., 2009, *AJ*, 137, 3743
3. "Surprising Dissimilarities in a Newly Formed Pair of 'Identical Twin' Stars", Stassun, K. G., Mathieu, R. D., Cargile, P. A., Aarnio, A. N., Stempels, E. & **Geller, A. M.**, 2008, *Nature*, 453, 1079
2. "WIYN Open Cluster Study. XXXII. Stellar Radial Velocities in the Old Open Cluster NGC 188", **Geller, A. M.**, Mathieu, R. D., Harris, H. C. & McClure, R. D., 2008, *AJ*, 135, 2264
1. "Purification and characterization of an L-amino acid deaminase used to prepare unnatural amino acids", Pantaleone, D. P., **Geller, A. M.** & Taylor, P. P., 2001, *Journal of Molecular Catalysis B: Enzymatic*, Vol. 11, Issue 4, 795-803

### *PhD Thesis*

1. "Binary stars and blue stragglers in the old open cluster NGC 188", **Geller, A. M.**, 2010, University of Wisconsin - Madison, Advisor, Mathieu, R. D.

### *Book Chapters*

1. "The Blue Stragglers of the Old Open Cluster NGC 188", Mathieu, R. D. & **Geller, A. M.**, Chapter 3, in "Ecology of Blue Straggler Stars", H.M.J. Boffin, G. Carraro & G. Beccari (Eds), *Astrophysics and Space Science Library*, Springer (arXiv:1406.3467)

### *Popular Science Articles*

1. "Stellar Siblings Get Closer with Age", **Geller, A. M.**, *Nature News & Views*, 2017, 547, 41

### *Conference Proceedings*

7. "Blue straggler stars: lessons from open clusters", **Geller, A. M.**, *Memorie della Societa Astronomica Italiana*, 2016, 87, 505

6. “The dynamical importance of binary systems in young massive star clusters”, de Grijs, R., Li, C. & **Geller, A. M.**, Proceedings of the International Astronomical Union, IAU Symposium 316, Eds: C. Charbonnel & A. Nota, 2017, 316, 222
5. “Dynamical Processing of Stars and Planets Through Star Clusters”, **Geller, A. M.**, 2015, Proceedings of the Frank N. Bash Symposium 2015 (BASH2015). 18-20 October. The University of Texas at Austin, USA.
4. “Binary Stars in Open Clusters: Connecting Observations and Simulations”, **Geller, A. M.**, 2013, Proceedings of “Setting a new standard in the analysis of binary stars”, Eds.: K. Pavlovski, A. Tkachenko & G. Torres, EAS Publications Series, 2013, 64, 317
3. “Multiplicity of Cool Dwarfs”, Dupuy, T. J., Allen, P. R., Kraus, A. L., Biller, B., Blake, C. H., Davison, C., Deacon, N. R., Duchene, G., **Geller, A. M.**, King, R. R., Law, N. M., Nguyen, D. C., Reipurth, B., Winter, J. G. & Zhang, Z., in Proceedings of Cool Stars 17, Astronomische Nachrichten, 2012
2. “The Progeny of Stellar Dynamics and Stellar Evolution within an  $N$ -body Simulation of NGC 188”, **Geller, A. M.**, Hurley, J. R. & Mathieu, R. D. in Proceedings of IAU Symposium 266, Eds.: R. de Grijs & J. R. D. Lépine, 2010, 258
1. “Dynamics of the Open Cluster NGC 188: A Comparison to an  $N$ -body Simulation of M67”, **Geller, A. M.**, Mathieu, R. D., Harris, H. C. & McClure, R. D., in Proceedings of IAU Symposium 246, Eds.: E. Vesperini, M. Gierz & A. Sills, 2008, 111

### *Conference Abstracts*

28. “COS Spectroscopy of White Dwarf Companions to Blue Stragglers”, Gosnell, N. M., **Geller, A. M.**, Knigge, C., Mathieu, R. D., Sills, A., Leiner, E. & Leigh, N., 2017, AAS 229, 344.11
27. “Exploring Sources of Gravitational Waves From Star Cluster Dynamics”, Fuhrman, J., **Geller, A. M.**, Rodriguez, C. L. & Rasio, F. A., 2017, AAS 229, 247.06
26. “On The Origins Of Sub-Subgiants: Mass Transfer, Dynamical Encounters, And Magnetic Fields”, Leiner, E., **Geller, A. M.** & Mathieu, R., The 19th Cambridge Workshop on Cool Stars, Stellar Systems, and the Sun (CS19), Uppsala, Sweden, id.122
25. “Uncovered: Progenitors of globular clusters showing off their multiple stellar populations”, de Grijs, R., Li, C., Deng, L., **Geller, A. M.**, Xin, Y., Hu, Y., Faucher-Giguère, 2016, AAS 227, 240.04
24. “The Mass-Transfer Formation Frequency of Blue Straggler Stars in the Old Open Cluster NGC 188”, Gosnell, N. M., Mathieu, R. D., Sills, A., **Geller, A. M.**, Leigh, N. & Knigge, C., 2015, AAS 225, 342.15
23. “On the Origins of Sub-Subgiants: Mass Transfer, Dynamical Encounters, and Magnetic Fields”, Leiner, E., **Geller, A. M.** & Mathieu, R., in Frank N. Bash Symposium 2015 (BASH2015). 18-20 October. The University of Texas at Austin, USA
22. “Consequences of Dynamical Disruption and Mass Segregation for the Binary Frequencies of Star Clusters”, **Geller, A. M.**, 2014, in “Binary Systems, their Evolution and Environments”, in Ulaanbaatar, Mongolia, 2014
21. “Consequences of Dynamical Disruption and Mass Segregation for the Binary Frequencies of Star Clusters”, **Geller, A. M.**, de Grijs, R., Li, C. & Hurley, J., 2014, AAS 223, 442.26



20. "Spectroscopic Binary Orbits in the Young Open Cluster M35", Leiner, E., Mathieu, R. D. & **Geller, A. M.**, 2014, AAS 223, 442.15
19. "Probing the Dynamics of Open Star Clusters with WIYN/Hydra", **Geller, A. M.**, 2013, AAS 222, 105.02
18. "How Stellar Encounter Shape the Binary Populations of Open Clusters", **Geller, A. M.**, Mathieu, R. D. & Hurley, J. R. 2013, AAS 221, 331.04
17. "Detecting White Dwarf Companions of Blue Straggler Binaries in the Old Open Cluster NGC 188", Gosnell, N. M., Mathieu, R. D., **Geller, A. M.**, Knigge, C., Sills, A., & Leigh, N., 2013, AAS 221, 250.46
16. "A Detached Eclipsing Binary near the Turnoff of the Open Cluster NGC 6819 and Determining Age Using Kepler", Brewer, L., Sandquist, E. L., Mathieu, R. D., Milliman, K., **Geller, A. M.**, Jeffries, M., Orosz, J. A., Brogaard, K. F., Platais, I., Bruntt, H., Grundahl, F., Stello, D. & Frandsen, S., 2013, AAS 221, 250.36
15. "Prospect for Kepler Detecting Planets in Open Clusters", Chatterjee, S., Ford, E. B., **Geller, A. M.** & Rasio, F. A. AAS 221, 407.06
14. "Cluster Membership, Binarity and Stellar Rotation in the Young Open Cluster M37", **Geller, A. M.**, Meibom, S., Barnes, S., Mathieu, R. D., Hartman, J. & Holman, M., AAS, 220, 438.01
13. "Intriguing Sources from the XMM-Newton Survey of Rich Open Clusters", Gosnell, N. M., Pooley, D., **Geller, A. M.**, Mathieu, R. D., Kalirai, J., Frinchaboy, P. & Ramirez-Ruiz, E. 2012, AAS 220, 121.05
12. "WIYN Open Cluster Study: Orbital Solutions for Hard Binaries of NGC 6819", Milliman, K., Mathieu, R., **Geller, A. M.**, Gosnell, N. M. & Meibom, S. 2012, AAS, 219, 153.36
11. "Empirical Constraints on Common Envelope Evolution in Wide Binaries", **Geller, A. M.**, Hurley, J. R. & Mathieu, R. D. 2012, AAS, 219, 132.07
10. "Evidence for a Mass-Transfer Origin for the Long-Period Blue Straggler Binaries in the Old Open Cluster NGC 188", Mathieu, R. D. & **Geller, A. M.** 2011, BAAS, 218, 217.07
9. "Ages of Old Open Clusters in the Kepler Field from Detached Eclipsing Binaries", Sandquist, E. L., Brogaard, K., Grundahl, F., Jeffries, M., Mathieu, R., Shetrone, M., Orosz, J., Bruntt, H., Clausen, J. V., Dotter, A., Frandsen, S., **Geller, A.**, Stello, D., VandenBerg, D. & Williams, K. 2011, BAAS, 218, 311.04
8. "The Impact of Triple Stars on the Formation of the NGC 188 Blue Stragglers", **Geller, A. M.**, Hurley, J. R. & Mathieu, R. D., 2011, BAAS, 217, 327.02
7. "Two Detached Eclipsing Binaries near the Turnoff of the Open Cluster NGC 6819", Jeffries, M., Sandquist, E. L., Mathieu, R. D., **Geller, A. M.**, Orosz, J. A. & Shetrone, M. D., 2011, BAAS, 218, 152.34
6. "X-Ray Sources in the Rich Open Cluster NGC 6819", Gosnell, N. M., Pooley, D., Kalirai, J. S., **Geller, A. M.**, Mathieu, R. D., Frinchaboy, P. & Ramirez-Ruiz, E., 2011, BAAS, 218, 152.31

5. “Exploring Possible Origins of an Improbable Binary Star in the Open Cluster NGC 6819 Through Dynamical Exchange Simulations”, Finzell, T., **Geller, A. M.**, Gosnell, N. & Mathieu, R., 2011, BAAS, 218, 144.17
4. “An In-depth Dynamical Study of the Old Open Cluster NGC 188”, **Geller, A. M.** 2010, BAAS, 215, 308.01
3. “X-ray Sources of the Rich Open Cluster NGC 6819”, Gosnell, N., Frinchaboy, P., **Geller, A. M.**, Kalirai, J., Mathieu, R. D., Pooley, D & Ramirez-Ruiz, E. 2009, in “Chandra’s First Decade of Discovery”, Cambridge, MA, USA
2. “Dynamics of the Open Cluster NGC 188: A Comparison to an  $N$ -body Simulation of M67”, **Geller, A. M.**, Mathieu, R. D., Harris, H. C. & McClure, R. D. 2007, BAAS, 211, 835
1. “Investigating Dynamical Formation Scenarios for an Interesting Binary in Open Cluster NGC 6819”, Gosnell, N. M., DiPompeo, M. A., Braden, E. K., **Geller, A. M.** & Mathieu, R. D. 2007, BAAS, 211, 839

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**SELECTED CONFERENCE TALKS AND COLLOQUIA**

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- “The Lives of ‘Exotic’ Stars” (Invited), MODEST16-NYC, American Museum of Natural History, Sept. 2016, (35 min.)
- “Blue Straggler Stars: Lessons from Open Clusters” (Invited), Bologna, Italy, The Cosmic-Lab Conference, April 2016, (45 min.)
- “The Lives and Deaths of Stars Viewed by The Hubble Space Telescope” (Public), The Adler Planetarium, April, 2015 (30 min.) as part of the HST 25th Anniversary Celebration
- “ ‘Dynamical Processing’ of Stars and Planets Through Star Clusters” (Invited), Austin, TX, Frank N. Bash Symposium 2015, “New Horizons in Astronomy”, Oct. 2015 (45 min.), Also given at University of Illinois Urbana/Champaign (Feb. 2015); Illinois Institute of Technology (Sept. 2015); Northeastern Illinois University (Nov. 2015)
- “Consequences of Dynamical Disruption and Mass Segregation for the Binary Frequencies of Star Clusters”, Ulaanbaatar, Mongolia, “Binary systems, their evolution and environments” conference, Sept. 2014 (20 min.)
- “Binary Stars in Open Clusters: Connecting Observations and Simulations”, Leuven, Belgium, “Setting a new standard in the analysis of binary stars” conference, Oct. 2013 (20 min.)
- “The Dynamical Environments of Open Star Clusters”, Michigan State U.; Notre Dame; Indiana U.; University of Wisconsin - Milwaukee; Groningen, Netherlands; Potsdam, Germany, 2013-2014 (60 min.)
- “Blue Straggler Formation in Open Star Clusters”, (Invited) Santiago, Chile, “The Ecology of Blue Straggler Stars” conference, Nov. 2012 (40 min.)
- “Vampire Stars and the (Re)Birth of Blue Stragglers”, Adler Planetarium; Oct. 2012 (60 min.)
- “Neutron Star qLMXBs in Open Clusters?!” , Lorentz Center, Leiden, Netherlands, “Compact Binaries in Globular Clusters” conference, Sept. 2012 (20 min.)
- “Binary Stars in Open Clusters: Connecting Young and Old”, Barcelona, Spain, Cool Stars 17 splinter session “Multiplicity of Cool Dwarfs”, June 2012 (15 min.)
- “How Important are Binary Stars to the Dynamical Evolution of Open Clusters?”, Harvard-Smithsonian ITC, Apr. 2012 (60 min.)
- “Blue Stragglers and Binary Stars in Open Clusters”, ESA ESTEC, Netherlands; Leiden University, Netherlands, Apr. 2012 (60 min.)
- “Companions to the NGC 188 Blue Stragglers”, (Invited) Northwestern U., “The Future of Astronomy: Fellows at the Frontiers of Science” conference, Sept. 2011 (20 min.)
- “Binary Stars and Blue Stragglers in the Old Open Cluster NGC 188”, NAOC and KIAA in Beijing, China, MODEST-10 Conference, Aug. 2010 (30 min.)
- “The Progeny of Stellar Dynamics and Stellar Evolution within an  $N$ -body model of NGC 188”, Rio de Janeiro, Brazil, IAUS 266, Aug. 2009 (20 min.)

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**NATIONAL & INTERNATIONAL PRESS**

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*(Showing selected high impact websites)*

**For: “Formation of New Stellar Populations from Gas Accreted by Massive Young Star Clusters”, Li, C., de Grijs, R., Deng, L., Geller, A. M., Xin, Y., Hu, Y., Faucher-Giguère, C.-A., 2016, Nature, 529, 502**

- ABC: “Glittering globular clusters may pull gas from galaxies to make new stars”  
<http://www.abc.net.au/news/science/2016-01-28/globular-clusters-may-pull-gas-from-galaxies-to-make-new-stars/7117826>
- Space.com: “2nd Generation of Stars Can Rise from Stellar Clusters”  
<http://www.space.com/31750-star-formation-second-generation-stellar-clusters.html>
- Phys.org: “Stellar parenting: Making new stars by ‘adopting’ stray cosmic gases”  
<https://phys.org/news/2016-01-stellar-parenting-stars-stray-cosmic.html>
- Tech Times: “Stellar Drama: Globular Clusters ‘Adopt’ Baby Stars Rather Than Having ‘Biological Children’”  
<http://www.techtimes.com/articles/128598/20160128/stellar-drama-globular-clusters-adopt-baby-stars-rather-than-having-biological-children.htm>
- Shanghai Daily (China): “Study reveals why giant star clusters could be home to variously aged star populations”  
[http://www.shanghaidaily.com/article/article\\_xinhua.aspx?id=317879](http://www.shanghaidaily.com/article/article_xinhua.aspx?id=317879)
- Media INAF (Italy): “Adozioni stellari”  
<http://www.media.inaf.it/2016/01/27/adozioni-stellari/>
- WebIndia123 (India): “Giant star clusters adopt stray cosmic gases to make new stars”  
<http://news.webindia123.com/news/Articles/India/20160128/2780398.html>

**For: “A Mass Transfer Origin for Blue Stragglers in NGC188 as Revealed by Half-Solar-Mass Companions”, Geller, A. M. & Mathieu, R. D. 2011, Nature, 487, 356**

- MSNBC: “Vampire stars mystery may have been solved”  
[http://www.msnbc.msn.com/id/44964854/ns/technology\\_and\\_science-space/](http://www.msnbc.msn.com/id/44964854/ns/technology_and_science-space/)
- CNN: “Why these blue stars should(n’t) exist”  
<http://lightyears.blogs.cnn.com/2011/10/19/why-these-blue-stars-shouldnt-exist/>
- NPR: “Did Giant Stars Feed Blue Stragglers?”  
<http://www.npr.org/2011/10/21/141591183/did-giant-stars-feed-blue-stragglers>
- Space.com: “How Mysterious Vampire Stars Drain Life from Neighbors”  
<http://www.space.com/13326-mysterious-vampire-stars-blue-stragglers.html>
- Astronomy Magazine: “Blue stragglers: Astronomers discover how mysterious stars stay so young”  
[http://www.astronomy.com/~link.aspx?\\_id=ab4201d1-f536-4efb-a9e4-3dcd336e9a4d](http://www.astronomy.com/~link.aspx?_id=ab4201d1-f536-4efb-a9e4-3dcd336e9a4d)
- Media INAF (Italy): “Stelle che sembrano piú giovani”  
<http://www.media.inaf.it/2011/10/19/stelle-che-sembrano-piu-giovani/>
- SINC (Spain): “Las estrellas rezagadas azules reciben la masa de las compañeras”  
[http://www.agenciasinc.es/imagenes/inicio/\(imagen\)/86876](http://www.agenciasinc.es/imagenes/inicio/(imagen)/86876)

- Additional sites (links no longer active): Discovery: “Catching Up with the Blue Stragglers”  
Sky & Telescope Magazine: “Blue Stragglers’ Renewed by Stealing”  
Cosmos Magazine: “Stars that shouldn’t exist explained”  
UPI: “Mystery of age-defying blue stars solved”  
La Repubblica (Italy): “Mistero ‘vagabonde blu’ enigmatiche stelle bambine”  
Teleskopy (Poland): “Astronomowie odkrywają sekret młodości błękitnych maruderów”

**For: “A Binary Star Fraction of 76 per cent and Unusual Orbit Parameters for the Blue Stragglers of NGC 188”, Mathieu, R. D. & Geller, A. M. 2009, Nature, 462, 1032**

- Astronomy Magazine: “Stellar mosh pit resolves a mystery”  
<http://www.astronomy.com/en/News-Observing/News/2009/12/Stellar%20mosh%20pit%20resolves%20a%20mystery.aspx>
- Additional sites (links no longer active): Science Magazine “How Some Stars Stay Young”;  
USC (Ukraine): “Youthful Appearance of Stars Known as Blue Stragglers Explained”

**For: “Surprising Dissimilarities in a Newly Formed Pair of ‘Identical Twin’ Stars”, Stassun, K. G., Mathieu, R. D., Cargile, P. A., Aarnio, A. N., Stempels, E. & Geller, A. M. 2008, Nature, 453, 1079**

- ABC: “Orion twins show not all are identical”  
<http://www.abc.net.au/science/articles/2008/06/30/2289910.htm>
- Fox: “Twin Stars Born 500,000 Years Apart”  
<http://www.foxnews.com/story/0,2933,370244,00.html>
- USA Today: “Identical twin stars are a lesson in birth order”  
<http://content.usatoday.com/communities/sciencefair/post/2008/06/774473/1>
- Additional sites (links no longer active): Discovery: “Orion’s Twin Stars Have Their Differences”  
Science Magazine: “Twin Stars Not So Identical”;  
UPI: “Binary stars might not form simultaneously”