

Shannon Gutenkunst

shannonlg@arizona.edu

Education

- 1997–2001 University of California, San Diego, La Jolla, CA; BS Physics, *magna cum laude*
2002–2008 Cornell University, Ithaca, NY; PhD Physics
Dissertation title: “Tracing abundances in galaxies with the Spitzer Space Telescope Infrared Spectrograph”
Dissertation advisor: Prof. James R. Houck
2011–2012 Pima Community College, Tucson, AZ; Technical Writing and Communication Post-Degree Certificate
2018–2021 University of Arizona, Tucson, AZ; MS Statistics
Thesis title: “A simulation study analyzing how to manage missing items in the Fagerström Test for Nicotine Dependence”
Thesis advisor: Prof. Melanie L. Bell

Employment

- 2003–2006 **Graduate Student Teaching Assistant**, Astronomy and Physics Depts., Cornell University, Ithaca, NY
- Taught introductory astronomy to about 30 students for two summers; led sections and labs, as well as graded.
 - Mentored about 15 students and tutored others in introductory physics for two semesters.
- 2004–2008 **Graduate Student Researcher**, Astronomy Dept., Cornell University, Ithaca, NY
- Published two peer-reviewed technical papers and a dissertation; anonymous reviewers found the papers “clear and concise” and “clear and cogent,” suggesting only a few minor revisions.
 - Wrote a successful proposal for telescope time; planned telescope observing time and carried out the observations.
 - Gave talks about my research at Cornell University and presented posters on my work at two national conferences.
 - Analyzed complex astronomical data to learn how galaxies change over time.
- 2009–2012 **Freelance Scientific Editor**, Crimson Interactive Pvt. Ltd., Mumbai, India
- Copyediting to correct language errors related to grammar, word choice, and sentence construction.
 - Substantive editing to correct the structure, content, and language.
- 2021–current **Statistician**, Statistics Consulting Lab, Center for Biomedical Informatics & Biostatistics, University of Arizona, Tucson, AZ
- Statistical consulting: using R and R Markdown to create reproducible reports for clients that involve data cleaning and visualization, statistical analyses, and interpretation and communication of results.
 - Serving as an assistant instructor for the Statistical Consulting class (STAT 688B/EPID 613): leading consulting sessions with clients and giving students feedback on their reports for clients.

Academic Outreach and Service

- 2005–2008 Question Answerer for “Ask an Astronomer” at Cornell University
2005–2008 Graduate Women in Physics at Cornell University (Co-Webmaster, 2006–2007)
2006–2008 Astronomy Graduate Student Network at Cornell Univ. (Webmaster, 2006–2007)

Honors and Awards

- 1998 William W. Stout Memorial Scholarship, Univ. of California, San Diego
1999 Klara D. Eckart Scholarship, Univ. of California, San Diego
2000 Madge E. Lawhead Scholarship, Univ. of California, San Diego
2001 Special Recognition in Physics, Dept. of Physics at Univ. of California, San Diego
2002–2003 Fellowship for the first year of graduate school, Cornell University
2018 Distinguished Toastmaster Award, the highest award Toastmasters International bestows, for outstanding accomplishment in communication and leadership

Refereed Publications

- Pruet J, **Guiles S***, & Fuller GM (2002) Light-Element Synthesis in High-Entropy Relativistic Flows Associated with Gamma-Ray Bursts. *The Astrophysical Journal* 580:368
- Bernard-Salas J, Peeters E, Sloan GC, Cami J, **Guiles S***, & Houck JR (2006) The Spitzer IRS Spectrum of SMP LMC 11. *The Astrophysical Journal Letters* 652:L29
- Guiles S***, Bernard-Salas J, Pottasch SR, & Roellig TL (2007) The Spitzer IRS Infrared Spectrum and Abundances of the Planetary Nebula IC 2448. *The Astrophysical Journal* 660:1282
- Bernard-Salas J, Pottasch SR, **Gutenkunst S**, Morris PW, & Houck JR (2008) Neon and Sulfur Abundances of Planetary Nebulae in the Magellanic Clouds. *The Astrophysical Journal* 672:274
- Gutenkunst S**, Bernard-Salas J, Pottasch SR, Sloan GC, & Houck JR (2008) Chemical Abundances and Dust in Planetary Nebulae in the Galactic Bulge. *The Astrophysical Journal* 680:1206
- Bernard-Salas J, Peeter, E, Sloan GC, **Gutenkunst S**, Matsuura M, Tielens AGGM, Zijlstra AA, & Houck JR (2009) Unusual Dust Emission from Planetary Nebulae in the Magellanic Clouds. *The Astrophysical Journal* 699:1541
- Gutenkunst SL**, Vardy JL, Dhillon HM, Bell ML (2021) Correlates of cognitive impairment in adult cancer survivors who have received chemotherapy and report cognitive problems. *Supportive Care in Cancer* 29:1377. PMID: [32666213](https://pubmed.ncbi.nlm.nih.gov/32666213/); PMCID: PMC10109511. <https://doi.org/10.1007/s00520-020-05616-5>
- Gutenkunst SL**, & Bell ML (2022) Managing missing items in the Fagerström Test for Nicotine Dependence: a simulation study. *BioMed Central Medical Research Methodology* 22:145. PMID: [35596136](https://pubmed.ncbi.nlm.nih.gov/35596136/); PMCID: PMC9121580. <https://rdcu.be/cN1h0>
- Moreno Ramírez D, **Gutenkunst S**, Honan J, Ingram M, Quijada C, Chaires M, Sneed SJ, Sandoval F, Spitz R, Carvajal S, Billheimer D, Wolf AM, Beamer PI (2022) Thinking on your feet:

Beauty and auto small businesses maneuver the risks of the COVID-19 pandemic. *Frontiers in Public Health* 10: 921704. PMID: [36106169](https://pubmed.ncbi.nlm.nih.gov/36106169/); PMCID: PMC9465998. <https://www.frontiersin.org/articles/10.3389/fpubh.2022.921704/full>

Jung AM, Beitel SC, **Gutenkunst SL**, Billheimer D, Jahnke SA, Littau SR, White M, Hoppe-Jones C, Cherrington N, Burgess JL (2023) Excretion of polybrominated diphenyl ethers and AhR activation in breastmilk among firefighters. *Toxicological Sciences* 192(2):223. PMID: [36856729](https://pubmed.ncbi.nlm.nih.gov/36856729/); PMCID: PMC10109531. <https://doi.org/10.1093/toxsci/kfad017>

Moreno Ramírez D, **Gutenkunst S**, Lothrop N, Quijada C, Chaires M, Cortez I, Sandoval F, Camargo FJ, Gallardo EV, Torabzadeh E, Wagoner R, Lopez-Galvez N, Ingram M, Billheimer D, Wolf AM, Beamer PI (2023) What a mix! Volatile organic compounds and worker exposure in small business beauty salons in Tucson, Arizona. *Frontiers in Public Health* 11: 1300291. PMID: 38164445; PMCID: PMC10757921. <https://www.frontiersin.org/articles/10.3389/fpubh.2023.1300291>

Lothrop N, **Gutenkunst S**, Fimbres J, Quijada C, Chaires M, Cortez I, Sandoval F, Camargo FJ, Ramírez DM, Gallardo EV, Torabzadeh E, Wagoner R, Lopez-Galvez N, Ingram M, Carvajal S, Billheimer D, Wolf AM, Beamer PI. (2025) Characterizing full-shift worker exposures to VOCs in small-sized auto repair shops in the Tucson, Arizona, USA metropolitan area. *Sci Rep* 15, 20382. PMID: 40595322; PMCID: PMC12219875. <https://doi.org/10.1038/s41598-025-08546-6>

Gutenkunst SL, Lothrop N, Quijada C, Chaires M, Cortez I, Sandoval F, et al. (2026) Community health worker intervention to reduce worker exposure to volatile organic compounds in small business auto and beauty shops in a marginalized community: A cluster randomized controlled trial. *PLoS One* 21(4): e0346356. PMID: 42044132; PMCID: PMC13120284. <https://doi.org/10.1371/journal.pone.0346356>

Conferences

Guiles S*, Devost D, & Houck JR (2004) Poster: Infrared Line Ratios in Starburst Galaxies. *Bulletin of the American Astronomical Society* 36, 26.01

Guiles SL*, Devost D, Bernard-Salas J, & Houck JR (2007) Poster: Tracing Abundance Gradients in Galaxies with the Spitzer Space Telescope Infrared Spectrograph. *Bulletin of the American Astronomical Society* 39, 19.07

* Last name changed from Guiles to Gutenkunst in 2007.