

Summary

I am a data analyst and quantitatively oriented researcher with 11 years of experience, specializing in health and decision-making. I am also a programmer with 18 years of experience, including data management, system administration, and web development.

Education

Stony Brook University (Stony Brook, NY)

Doctor of Philosophy in experimental psychology (advisor: Christian Luhmann) 2016

Master of Arts in psychology 2013

Allegheny College (Meadville, PA)

Bachelor of Science, psychology and mathematics double major 2011

Valedictorian (class rank 1/589, GPA 4.0/4, *summa cum laude*)

Research

My research interests lie in social psychology, decision-making, health (particularly alcohol use), and sexuality. I use data-analytic methods from both statistics and machine learning, with an emphasis on predictive modeling. I'm also interested in open science: I make data, code, research notes, and working papers freely available on my website, Arfer.net.

Peer-reviewed journal articles

- Arfer, K. B.** (2023). Pattern-setting for improving risky decision-making. *Journal of the Experimental Analysis of Behavior*, *119*, 81–90. doi:10.1002/jeab.816
- Babinski, D. E., Pegg, S., West, M., **Arfer, K. B.**, & Kujawa, A. (2023). Borderline personality features and altered social feedback processing in emerging adults: An EEG study. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, *120*. doi:10.1016/j.pnpbp.2022.110648
- Hill, K., Dickey, L., Pegg, S., Dao, A., **Arfer, K. B.**, & Kujawa, A. (2023). Associations between parental conflict and social and monetary reward responsiveness in clinically depressed adolescents. *Research on Child and Adolescent Psychopathology*, *51*, 119–131. doi:10.1007/s10802-022-00949-7
- Gutiérrez-Avila, I., **Arfer, K. B.**, Carrión, D., Rush, J., Kloog, I., Naeger, A. R., Grutter, M., Páramo-Figueroa, V. H., Riojas-Rodríguez, H., & Just, A. C. (2022). Prediction of daily mean and one-hour maximum PM_{2.5} concentrations and applications in Central Mexico using satellite-based machine-learning models. *Journal of Exposure Science and Environmental Epidemiology*, *32*, 917–925. doi:10.1038/s41370-022-00471-4
- Pegg, S., Lytle, M., **Arfer, K. B.**, & Kujawa, A. (2022). The time course of reactivity to social acceptance and rejection feedback: An examination of event-related potentials and behavioral measures in a peer interaction task. *Psychophysiology*, *59*. doi:10.1111/psyp.14007
- Carrión, D., **Arfer, K. B.**, Rush, J., Dorman, M., Rowland, S. T., Kioumourtzoglou, M.-A., Kloog, I., & Just, A. C. (2021). A 1-km hourly air-temperature model for 13 northeastern U.S. states using remotely sensed and ground-based measurements. *Environmental Research*, *200*. doi:10.1016/j.envres.2021.111477
- Carrión, D., Colicino, E., Pedretti, N. F., **Arfer, K. B.**, Rush, J., DeFelice, N., & Just, A. C. (2021). Neighborhood-level disparities and subway utilization during the COVID-19 pandemic in New York City. *Nature Communications*, *12*. doi:10.1038/s41467-021-24088-7
- This study was covered by *Gothmaist*, WYNC, etc.

- Gutiérrez-Avila, I., **Arfer, K. B.**, Wong, S., Rush, J., Kloog, I., & Just, A. C. (2021). A spatiotemporal reconstruction of daily ambient temperature using satellite data in the Megalopolis of Central Mexico from 2003-2019. *International Journal of Climatology*, *41*, 4095–4111. doi:10.1002/joc.7060
- Pegg, S., **Arfer, K. B.**, & Kujawa, A. (2021). Altered reward responsiveness and depressive symptoms: An examination of social and monetary reward domains and interactions with rejection sensitivity. *Journal of Affective Disorders*, *282*, 717–725. doi:10.1016/j.jad.2020.12.093
- Just, A. C., **Arfer, K. B.**, Rush, J., Dorman, M., Shtein, A., Lyapustin, A., & Kloog I. (2020). Advancing methodologies for applying machine learning and evaluating spatiotemporal models of fine particulate matter (PM_{2.5}) using satellite data over large regions. *Atmospheric Environment*. doi:10.1016/j.atmosenv.2020.117649
- Kujawa, A., **Arfer, K. B.**, Finsaas, M. C., Kessel, E. M., Mumper, E., & Klein, D. N. (2020). Effects of maternal depression and mother-child relationship quality in early childhood on neural reactivity to rejection and peer stress in adolescence: A 9-year longitudinal study. *Clinical Psychological Science*, *8*, 657–672. doi:10.1177/2167702620902463
- Arfer, K. B.**, O'Connor, M. J., Tomlinson, M., & Rotheram-Borus, M. J. (2020). South African mothers' immediate and 5-year retrospective reports of drinking alcohol during pregnancy. *PLOS ONE*. doi:10.1371/journal.pone.0231518
- Rappaport, B. I., Hennefield, L., Kujawa, A., **Arfer, K. B.**, Kelly, D., Kappenman, E. S., Luby, J. L., & Barch, D. M. (2019). Peer victimization and dysfunctional reward processing: ERP and behavioral responses to social and monetary rewards. *Frontiers in Behavioral Neuroscience*, *13*. doi:10.3389/fnbeh.2019.00120
- Rotheram-Borus, M. J., **Arfer, K. B.**, Christodoulou, J., Comulada, W. S., Stewart, J., Tubert, J. E., & Tomlinson, M. (2019). The association of maternal alcohol use and paraprofessional home visiting with children's health: A randomized controlled trial. *Journal of Consulting and Clinical Psychology*, *87*, 551–562. doi:10.1037/ccp0000408
- Babinski, D. E., Kujawa, A., Kessel, E. M., **Arfer, K. B.**, & Klein, D. N. (2019). Sensitivity to peer feedback in young adolescents with symptoms of ADHD: Examination of neurophysiological and self-report measures. *Journal of Abnormal Child Psychology*, *47*, 605–617. doi:10.1007/s10802-018-0470-2
- Arfer, K. B.**, & Jones, J. J. (2019). American political-party affiliation as a predictor of usage of an adultery website. *Archives of Sexual Behavior*, *48*, 715–723. doi:10.1007/s10508-018-1244-1
- This study was covered by *The Guardian*, *Pacific Standard*, etc.
- Arfer, K. B.**, Tomlinson, M., Mayekiso, A., Bantjes, J., & Rotheram-Borus, M. J. (2018). Criterion validity of self-reports of alcohol, cannabis, and methamphetamine use among young men in Cape Town, South Africa. *International Journal of Mental Health and Addiction*, *16*, 45–52. doi:10.1007/s11469-017-9769-4
- Zingmond, D., **Arfer, K. B.**, Gildner, J., & Leibowitz, A. (2017). The cost of comorbidities in treatment for HIV/AIDS in California. *PLOS ONE*. doi:10.1371/journal.pone.0189392
- Kujawa, A., Kessel, E. M., Carroll, A., **Arfer, K. B.**, & Klein, D. N. (2017). Social processing in early adolescence: Associations between neurophysiological, self-report, and behavioral measures. *Biological Psychology*, *128*, 55–62. doi:10.1016/j.biopsycho.2017.07.001
- Ethridge, P., Kujawa, A., Dirks, M. A., **Arfer, K. B.**, Kessel, E. M., Klein, D. N., & Weinberg, A. (2017). Neural responses to social and monetary reward in early adolescence and emerging adulthood. *Psychophysiology*, *54*, 1786–1799. doi:10.1111/psyp.12957
- Rodriguez-Seijas, C., **Arfer, K. B.**, Thompson, R. G., Jr., Hasin, D. S., & Eaton, N. R. (2017). Sex-related substance use and the externalizing spectrum. *Drug and Alcohol Dependence*, *174*, 39–46. doi:10.1016/j.drugalcdep.2017.01.008
- Arfer, K. B.**, & Luhmann, C. C. (2017). Time-preference tests fail to predict behavior related to self-control. *Frontiers in Psychology*, *8*. doi:10.3389/fpsyg.2017.00150
- Arfer, K. B.**, Bixter, M. T., & Luhmann, C. C. (2015). Reputational concerns, not altruism, motivate restraint when gambling with other people's money. *Frontiers in Psychology*, *6*. doi:10.3389/fpsyg.2015.00848

- Rachlin, H., **Arfer, K. B.**, Safin, V., & Yen, M. (2015). The amount effect and marginal value. *Journal of the Experimental Analysis of Behavior*, *104*, 1–6. doi:10.1002/jeab.158
- Safin, V., **Arfer, K. B.**, & Rachlin, H. (2015). Reciprocation and altruism in social cooperation. *Behavioural Processes*, *116*, 12–16. doi:10.1016/j.beproc.2015.04.009
- Arfer, K. B.**, & Luhmann, C. C. (2015). The predictive accuracy of intertemporal-choice models. *British Journal of Mathematical and Statistical Psychology*, *68*, 326–341. doi:10.1111/bmsp.12049
- Rachlin, H., Safin, V., **Arfer, K. B.**, & Yen, M. (2015). The attraction of gambling. *Journal of the Experimental Analysis of Behavior*, *103*, 260–266. doi:10.1002/jeab.113
- Kujawa, A., **Arfer, K. B.**, Klein, D. N., & Proudfit, G. H. (2014). Electrocortical reactivity to social feedback in youth: A pilot study of the Island Getaway task. *Developmental Cognitive Neuroscience*, *10*, 140–147. doi:10.1016/j.dcn.2014.08.008

Conference presentations

- Pegg, S., Zhang, H., Dickey, L., Dao, A., **Arfer, K. B.**, & Kujawa, A. (2023, March). *Reduced reward responsiveness moderates the association between chronic stress and depressive symptoms in adolescents*. Presentation at the Society for Research in Child Development Biennial Meeting, Salt Lake City, UT.
- Arfer, K. B.**, Quinn, B., & Shoptaw, S. (2018, January 19). *Dose-response relationships of binge drinking, cannabis, inhaled nitrites (poppers), and methamphetamine with risky sex and viral load among men who have sex with men in Los Angeles*. Presentation at the CHIPTS HIV Next Generation Conference 2018, Los Angeles, CA.
- Arfer, K. B.**, & Luhmann, C. C. (2013, August 7). *The predictive accuracy of intertemporal-choice models*. Paper presented at the 46th Annual Meeting of the Society of Mathematical Psychology, Potsdam, Germany.

Posters

- Pegg, S., Dickey, L., Dao, A., **Arfer, K. B.**, & Kujawa, A. (2022, September 10). Social reward responsiveness moderates the effect of chronic stress on depressive symptoms in adolescents. Poster presented at the Society for Research in Psychopathology annual meeting, Philadelphia, PA.
- Gutiérrez-Avila, I., Carrión, D., **Arfer, K. B.**, Rush, J., Yitshak-Sade, M., Kloog, I., Colicino, E., & Just, A. C. (2021, August 24). *Daily particulate matter and temperature from satellite-hybrid models and 1.5 million deaths: A time-stratified case-crossover analysis in Central Mexico*. Poster presented at the 33rd Annual Conference of the International Society for Environmental Epidemiology, New York, NY.
- Pegg, S., **Arfer, K. B.**, & Kujawa, A. (2020, March). *Blunted neural responsiveness to social reward moderates the association between rejection sensitivity and depressive symptoms*. Poster presented at the 40th Annual Meeting of the Anxiety and Depression Association of American, San Antonio, TX.
- Pegg, S. L., **Arfer, K. B.**, & Kujawa, A. (2019, September 19). *Neurophysiological measures of social feedback processing predict real-world experience of emotions in social settings*. Poster presented at the 33rd Annual Meeting of the Society for Research in Psychopathology, Buffalo, NY.
- Pegg, S. L., **Arfer, K. B.**, & Kujawa, A. (2019, March 29). *Distinct dimensions of mood symptoms associated with altered social reward processing in clinically depressed adolescents*. Poster presented at the 39th Annual Meeting of the Anxiety and Depression Association of America, Chicago, IL.
- Arfer, K. B.**, Tomlinson, M., Mayekiso, A., Bantjes, J., van Heerden, A., & Rotheram-Borus, M. J. (2017, June 25). *Criterion validity of self-reports of alcohol, cannabis, and methamphetamine use among young men in Cape Town, South Africa*. Poster session presented at the 40th Annual Meeting of the Research Society on Alcoholism, Denver, CO.

- Ethridge, P., Kujawa, A., **Arfer, K. B.**, Kessel, K. M., Klein, D. N., & Weinberg, A. (2016, September 23). *Monetary and social reward in early adolescence and emerging adulthood*. Poster session presented at the 56th Annual Meeting of the Society for Psychophysiological Research, Minneapolis, MN.
- Gordon, K. K., McGrath, M. R., Castro, R., Anderson, L. J., Natoli, L. J., Cohen, A. C., **Arfer, K. B.**, & Klausner, J. K. (2016, September 22). *Comparing home-collected versus clinic-collected specimens for the detection of Chlamydia trachomatis and Neisseria gonorrhoeae in anatomic sites*. Poster session presented at the 2016 STD Prevention Conference, Atlanta, GA.
- Safin, V., **Arfer, K. B.**, & Rachlin, H. (2014, May 22). *Altruism and reciprocation in the prisoner's dilemma game*. Poster session presented at the 37th Annual Meeting of the Society for the Quantitative Analyses of Behavior, Chicago, IL.

Unpublished and self-published works

- Arfer, K. B.** (2021). The unpredictable Buridan's ass: Failure to predict decisions in a trivial decision-making task. doi:10.31234/osf.io/qu39a
- Arfer, K. B.** (2016). *Empirical sexual attitudes*. Los Angeles, CA: Author. Retrieved from <https://arfer.net/w/esa>
- Arfer, K. B.** (2016). *Predicting outcomes of interventions to increase social competence in children and adolescents* (PhD dissertation, Stony Brook University). Retrieved from <http://arfer.net/projects/pelt>

Work experience

- Biostatistician, Icahn School of Medicine, Mount Sinai Hospital** 2018 – present
- Programming and data analysis for studies of remote sensing of air pollution and temperature
- Postdoctoral scholar, Global Center for Children and Families, University of California, Los Angeles** 2016 – 2018
- Managed and analyzed data for 4 longitudinal public-health studies of over 1,000 participants each
 - Provided statistical consultation to faculty and postdoctoral fellows
 - Presented research to general audiences in presentations and poster sessions
- Teaching assistant and graduate student, Stony Brook University** 2011 – 2016
- Programmed web-based tasks and analyzed behavioral data
 - Presented research annually to a non-quantitative audience
 - Taught 2 courses on research writing with frequent one-on-one student interaction
 - Delivered guest lectures in statistics
- Tutor, Allegheny College** 2008 – 2010
- Tutored high-school and college students in mathematical subjects such as geometry, calculus, abstract algebra, and analysis

Skills

- **Data analysis:** ordinal and categorical data, multilevel and longitudinal data, zero-inflated data, predictive analysis, Bayesian methods, data visualization
- **Programming languages:** C, C++, Python, Perl, JavaScript, Lua, MATLAB, POSIX shell (see <http://arfer.net/code> for programs I've written)
- **Statistics and data software:** R, SPSS, SAS, Tableau, SQL databases
- **Documents:** MS Office (Word, Excel, PowerPoint) / LibreOffice, HTML, CSS, LaTeX
- **Misc. computer:** Web development, version control (Git), automated testing, Linux system administration

Ad-hoc reviewing

Environmental Research	2019, 2022
Basic and Applied Social Psychology	2016 – 2022
Personality and Individual Differences	2020, 2021
Archives of Sexual Behavior	2018 – 2020
Polish Psychological Bulletin	2017
AIDS and Behavior (special issue on alcohol and HIV)	2017
Drug and Alcohol Dependence	2016, 2017

Honors

Honorable Mention, NSF Graduate Research Fellowship Program	2012, 2013
Stony Brook University Graduate Council Fellowship	2011
Allegheny College Departmental Honors in Psychology	2011
Allegheny College Frederick H. Steen Prize for Excellence in Mathematics	2011
Phi Beta Kappa	2010
Psi Chi	2010
Allegheny College Outstanding Junior Major in Mathematics	2010
Nominee, Barry M. Goldwater Scholarship	2009
Allegheny College Trustee Scholarship	2007