Kodi B. Arfer

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http://arfer.net (email kodi at this domain)
ORCID 0000-0001-9945-857X

I am a data analyst and quantitatively oriented scientist with 15 years of experience, specializing in health and decision-making. I am also a programmer with 21 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 science (particularly social psychology, decision-making, health, and sexuality) and in earth science (particularly empirical models of atmospheric variables relevant to human health). 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., & Just, A. C. (2026). XIS-Humidity: A daily spatiotemporal machine-learning model for dew point in the contiguous United States. *Environmental Research Communications, 8*. doi:10.1088/2515-7620/ae5c6c

Just, A. C., **Arfer, K. B.**, Rush, J., & Kloog, I. (2025). XIS-Temperature: A daily spatiotemporal machine-learning model for air temperature in the contiguous United States. *Environmental Research, 270*. doi:10.1016/j.envres.2024.120731

Just, A. C., **Arfer, K. B.**, Rush, J., Lyapustin, A., & Kloog, I. (2025). XIS-$PM_{2.5}$: A daily spatiotemporal machine-learning model for $PM_{2.5}$ in the contiguous United States. *Environmental Research, 271*. doi:10.1016/j.envres.2025.120948

Arfer, K. B. (2024). Artiruno: A free-software tool for multi-criteria decision-making with verbal decision analysis. *Journal of Multi-Criteria Decision Analysis, 31*. doi:10.1002/mcda.1827

Rappaport, B. I., Kujawa, A., **Arfer, K. B.**, Pegg, S., Kelly, D., Jackson, J. J., Luby, J. L., & Barch, D. M. (2024). Behavioral and psychiatric correlates of brain responses to social feedback. *Psychophysiology, 61*. doi:10.1111/psyp.14413

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 *Gothamist*, 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. (2025). Beliefs about drunken sex and free will. `doi:10.31234/osf.io/r7dh4_v1`

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

Research scientist, Center for Epidemiologic Research, Brown University 2023 – present
(remote work from New York City)

Biostatistician, Icahn School of Medicine, Mount Sinai Hospital 2018 – present
(part-time since 2023)

- Designed and implemented longitudinal geospatial models of air pollution and temperature in the US and Mexico
- Managed and processed terabyte-scale public datasets
- Administered two high-performance Linux servers used for this research

Postdoctoral scholar, Global Center for Children and Families, 2016 – 2018
University of California, Los Angeles

- Managed and analyzed data for 4 longitudinal public-health studies with over 1,000 subjects 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

Volunteering

Maintainer, Hy programming language (`http://hylang.org`) 2016 – present
- Designed and implemented language features and fixed bugs
- Reviewed pull requests and managed issues
- Wrote documentation and provided user support

Ad-hoc reviewing

International Journal for Equity in Health	2025
PLOS One	2024
Basic and Applied Social Psychology	2016 – 2023
Environmental Research	2019, 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