

Arthur Berg, Ph.D.

Department of Public Health Sciences, A210
Penn State College of Medicine
90 Hope Drive, Suite 2200
Hershey, PA 17033-0855

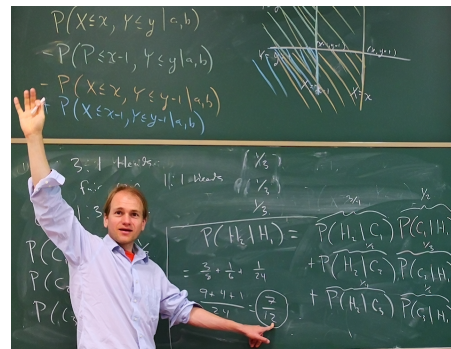
berg@psu.com 717-531-7178

@statisticalberg <https://www.linkedin.com/in/arthurberg>

<http://CV.ArthurBerg.com/> <https://github.com/arthurberg>

<https://orcid.org/0000-0002-4097-7348>

<https://pennstate.pure.elsevier.com/en/persons/arthur-berg>



Last update: 14th April 2026

Professional Experience

Current Academic and Leadership Appointments

- 2024 – ···· ◇ **Lead Biostatistician** for Pediatric Oncology Clinical Trials at Penn State
- 2024 – 2026 ◇ **Member** Penn State University Promotion and Tenure Review Committee
- 2024 – 2028 ◇ **Member** Penn State Cancer Institute Data Safety and Monitoring Committee
- 2022 – ···· ◇ **Professor (with tenure)** *Pennsylvania State University*, College of Medicine, Department of Public Health Sciences, Division of Biostatistics and Bioinformatics
Professor *Department of Surgery*
Professor *Department of Neurosurgery*
Professor *Department of Family and Community Medicine*
Professor *Department of Statistics*
- 2009 – ···· ◇ **Member** *Penn State Cancer Institute*
Member *Cancer Institute, Cancer Control Program*
Member *Huck Institutes of the Life Sciences*
Member *Bioinformatics and Genomics PhD Program Faculty*
Member *Biomedical Sciences PhD Program Faculty*

Past Academic and Leadership Appointments

- 2011 – 2024 ◇ **Director** *Biostatistics PhD Program*, Penn State College of Medicine
- 2019, 2022 (Su) ◇ **Guest Instructor** 数理学院, 北京化工大学 (Beijing University of Chemical Technology)
- 2013 – 2022 ◇ **Associate Professor (with tenure)** *Pennsylvania State University*, Department of Public Health Sciences, Division of Biostatistics and Bioinformatics
- 2019 (Su) ◇ **Faculty Instructor** *MathPath*, Grand Valley State University
- 2011 – 2015 ◇ **Leader** *Biomedical Informatics Program*, Penn State Clinical and Translational Science Institute
- 2011 – 2015 ◇ **Director** *Bioinformatics Core*, Penn State College of Medicine
- 2011 (Su) ◇ **Visiting Scholar** 统计科学中心, 北京大学 (Peking University)
- 2009 – 2013 ◇ **Assistant Professor (tenure-track)** *Pennsylvania State University*, Department of Public Health Sciences, Division of Biostatistics and Bioinformatics
- 2007 – 2009 ◇ **Assistant Professor (tenure-track)** *University of Florida*, Department of Statistics
- 2007 (Wi) ◇ **Associate Instructor** *University of California, San Diego*, Department of Mathematics
- 2005 – 2007 ◇ **Adjunct Instructor** *San Diego Miramar College*, Department of Mathematics
- 2002 – 2007 ◇ **Teaching Assistant** *University of California, San Diego*, Department of Mathematics
- 1999 – 2002 ◇ **Teaching Assistant** *University of Southern California*, Department of Mathematics
- 2001 – 2003 (Su) ◇ **Counselor** *Program in Mathematics for Young Scientists*, Boston University

Professional Experience (continued)

Current Editorial Board Positions

- 2024 – ···· ◇ Editorial Board Member for *International Chinese Language Education Communications* 《国际中文教育通讯》
- 2024 – ···· ◇ Associate Editor for *Statistics Innovation*
- 2024 – ···· ◇ Editorial Board Member for *Asian Journal of Statistics and Applications*

Music

- 2025/09 – ···· ◇ **Director of Music** *Trinity Evangelical Lutheran Church* in Lemoyne, PA
- 2025/01 – 2025/09 ◇ **Organist & Pianist** *St. Peter's Lutheran Church* in Highspire, PA
- 2025/01 – 2025/05 ◇ **Organist & Pianist** *Salem Lutheran Church* in Oberlin, PA
- 2020 – 2024 ◇ **Organist & Pianist** *Renewed in Grace Co-Op* (Trinity Lutheran Church in Steelton, PA & St. Peter's Lutheran Church in Highspire, PA)
- 2018 – 2020 ◇ **Choir Director, Organist & Pianist** *Trinity Lutheran Church* in Steelton, PA
- 2015 – 2018 ◇ **Pianist** (every other week) *Paxton Church of the Brethren* in Harrisburg, PA
- 1994 – 1998 ◇ **Pianist** (early services) *Our Saviour's Lutheran Church* in Long Beach, CA

Other

- ◇ **Expert Witness Services** Provided various biostatistical expert witness services on a number of medical malpractice cases. Efforts have included preparing expert witness testimony through written reports, oral deposition, and court appearance.
- ◇ **Independent Data Monitoring Services** Provided services as an independent biostatistician in analyzing and evaluating pharmaceutical clinical trial data on a number of pharmaceutical data monitoring committees.

Education

- 2002 – 2007 ◇ **Ph.D., Mathematics** *University of California, San Diego*
- 2002 – 2005 ◇ **M.S., Statistics** *University of California, San Diego*
- 1998 – 2002 ◇ **M.A., Mathematics** *University of Southern California*
- 1998 – 2002 ◇ **B.S., Mathematics** *University of Southern California*

Publications

- 193** Berg, A. (2025). Entropy-based sound-character mapping for chinese character learning. *International Journal of Chinese Language Teaching*, **6**: (2), 63–89.
[10.46451/ijclt.20250205](https://doi.org/10.46451/ijclt.20250205).
[Berg_2025_IJCLT.pdf](#)
This research represents an innovative interdisciplinary application of data science methods to Chinese language learning, leveraging entropy-based analysis to enhance phonological awareness, listening skills, and character recognition. Supplementary materials for this study are available at <https://www.arthurberg.com/entropy>.
- 192** Donato, Z., Levy, A., Sneij, A., LaVela, S., Berg, A., Shapiro, L., & Farkas, G. (2025). Grocery shopping behavior and eating behavior differ between persons with and without a spinal cord injury. *Topics in Spinal Cord Injury Rehabilitation*, **31**: (1), 66–76.
- 191** Farkas, G. J., Caldera, L. J., Hodgkiss, D. D., Mitchell, J. R., Pelaez, T. F., Cusnier, M. A., Cole, A. J., Daniel, S. G., Farrow, M. T., Gee, C. M., Kincaid-Sharp, E. A., Logan, A. M. G., McMillan, D. W., Nightingale, T. E., Perdue, B., Portes, P., Walson, F. T., Volmrich, A. M., Reynolds, J. M., ... Berg, A. (2025). Cardiometabolic risk in chronic spinal cord injury: A systematic review with meta-analysis and temporal and geographical trends. *Journal of clinical medicine*, **14**: (2872), 1–31.
- 190** Lato, A. T., Berg, A., Parascando, J. A., Phillips, S. F., Onks, C. A., & Loeffert, J. R. (2025). Enhancing knowledge and confidence in wilderness medicine through virtual education: Lessons from a national boot camp. *Cureus*, **17**: (2).

- 189 Yee, N. S., **Berg, A.**, Benson, A. B., Turk, A., Boland, P. M., & Peterson, C. (2025). A phase ii study of liposomal irinotecan in combination with oxaliplatin, leucovorin, and 5-fluorouracil (nalirifox) in locally advanced pancreatic carcinoma: Btrcr-gi5-067. *JCO Oncology Advances*.
- 188 Allen, E., Goldstein, E., Lennon, R., **Berg, A.**, Regner, C., Eiden, R., Symons Downs, D., Neiderhiser, J., & Zgierska, A. (2024). COVID-19 pandemic-related perceived loneliness as a potential risk factor for worse outcomes among people who are pregnant or postpartum. *Wisconsin Medical Journal*, **123**: (6), 515–520.
- 187 **Berg, A.** (2024a). Causal inference from high-dimensional static data in soil microbiota networks: Comment on "topological change of soil microbiota networks for forest resilience under global warming" by gong et al. *Physics of life reviews*, **51**: 281–282.
[10.1016/j.plrev.2024.10.012](https://doi.org/10.1016/j.plrev.2024.10.012).
[Berg_2024_PLREV.pdf](#)
 Authored a commentary in *Physics of Life Reviews* on advanced causal inference methods in soil microbiota networks, highlighting the innovative use of GLMY homology theory and idopNetworks to infer interactions from high-dimensional static data without predefined causal models, and discussing their implications for understanding forest resilience under global warming.
- 186 **Berg, A.** (2024b). Quantitative methods for precision medicine: Pharmacogenomics in action: Rongling wu, boca raton, fl: Chapman & hall/crc press [Book review]. *Journal of the American Statistical Association*, **119**: (546), 1690–1691.
[10.1080/01621459.2024.2303313](https://doi.org/10.1080/01621459.2024.2303313).
[Berg_2024_JASA.pdf](#)
 Published a review in *Journal of the American Statistical Association* on *Quantitative Methods for Precision Medicine: Pharmacogenomics in Action*, highlighting its innovative statistical genetics and pharmacogenomics approaches for advancing precision medicine.
- 185 Farkas, G. J., **Berg, A.**, Sneij, A., Dolbow, D. R., Gorgey, A. S., & Gater, D. R. (2024). The comparison of total energy and protein intake relative to estimated requirements in chronic spinal cord injury. *British Journal of Nutrition*, **131**: (3), 489–499.
[10.1017/S0007114523002088](https://doi.org/10.1017/S0007114523002088).
- 184 Hawila, N., & **Berg, A.** (2024). Bayesian joint modeling of interrater and intrarater reliability with multilevel data. *Asian Journal of Statistics and Applications*, **1**: (1), 85–99.
[10.47509/AJSA.2024.v01i01.06](https://doi.org/10.47509/AJSA.2024.v01i01.06).
[Hawila, Berg_2024_Asian-Journal-of-Statistics-and-Applications.pdf](#)
 In collaboration with my PhD student, Nour Hawila, we introduce three Bayesian models for jointly analyzing interrater and intrarater reliability in multilevel data. These models, implemented in Stan, provide improved reliability estimates and explore the properties of different agreement measures through comparisons of kappa estimates and marginal correlations, using simulations and real-world datasets. This project originated from an earlier project with Family & Community Medicine investigators that was published in *Sports Medicine*.
- 183 Healy, M. E., Messer, L. H., Stasinopoulos, M. G., Brewer, S. E., **Berg, A.**, & Oser, T. K. (2024). Understanding patient and health care provider perceptions of barriers and facilitators to diabetes care in immigrant and refugee populations. *Discover Public Health*, **21**: (88), 1–12.
[10.1186/s12982-024-00208-8](https://doi.org/10.1186/s12982-024-00208-8).
- 182 McGuire, D., Markus, H., Yang, L., Xu, J., Montgomery, A., **Berg, A.**, Li, Q., Carrel, L., Liu, D. J., & Jiang, B. (2024). Dissecting heritability, environmental risk, and air pollution causal effects using > 50 million individuals in marketscan. *Nature communications*, **15**: (1), 5357.
[10.1038/s41467-024-49566-6](https://doi.org/10.1038/s41467-024-49566-6).
- 181 Onks, C., Weaver, L., Latorre, J., Silvis, M., **Berg, A.**, Phillips, S., Loeffert, J., French, C., & Armstrong, A. (2024). The most effective corticosteroid dose in the treatment of glenohumeral osteoarthritis: Feasibility pilot and protocol for double blinded randomized controlled trial. *Osteoarthritis and Cartilage Open*, **6**: (3), 100484.
[10.1016/j.ocarto.2024.100484](https://doi.org/10.1016/j.ocarto.2024.100484).
- 180 Vangala, V., Chen, Y.-C., Dinavahi, S. S., Gowda, K., Lone, N. A., Herlyn, M., Drabick, J., Helm, K., Zhu, J., Neves, R. I., et al. (2024). Tumor heterogeneity shapes survival dynamics in drug-treated cells, revealing size-drifting subpopulations. *ACS Pharmacology & Translational Science*, **7**: (11), 3573–3584.

- 179 Darby, A., Parascando, J. A., Lipinski, M., Lipinski, C., Mendez-Miller, M., **Berg, A.**, Rabago, D., & Oser, T. K. (2023). Awareness and interest in osteopathic manipulative treatment in allopathic medical students. *Journal of Osteopathic Medicine*, **123**: (8), 379–384.
[10.1515/jom-2022-0232](https://doi.org/10.1515/jom-2022-0232).
- 178 Farkas, G. J., **Berg, A.**, Sneij, A., Dolbow, D. R., Gorgey, A. S., & Gater, D. R. (2023). The comparison of total energy and protein intake relative to estimated requirements in chronic spinal cord injury. *British Journal of Nutrition*, 1–11.
[10.1017/S0007114523002088](https://doi.org/10.1017/S0007114523002088).
 Journal Impact Factor (2022): 3.6.
- 177 Farkas, G. J., Cunningham, P. M., Sneij, A. M., Hayes, J. E., Nash, M. S., **Berg, A.**, Gater, D. R., & Rolls, B. J. (2023). Reasons for meal termination, eating frequency, and typical meal context differ between persons with and without a spinal cord injury. *Appetite*, **192**: (107110), 1–9.
[10.1016/j.appet.2023.107110](https://doi.org/10.1016/j.appet.2023.107110).
 Journal Impact Factor (2022): 5.4.
- 176 Hawila, N., & **Berg, A.** (2023). Exact-corrected confidence interval for risk difference in noninferiority binomial trials. *Biometrics*, **79**: (2), 1133–1144.
[10.1111/biom.13688](https://doi.org/10.1111/biom.13688).
[Hawila, Berg_2022_Biometrics.pdf](#)
 This is very interesting work in the area of noninferiority clinical trials. Working with my PhD student, we developed a novel confidence interval estimator for the risk difference that utilizes the noninferiority parameter. This exact-based confidence interval estimator is “more powerful” than Chan’s exact-based procedure. This paper has interesting theory and significant methodological advancements.
- 175 Karpa, K., Ward, J., Stegman, M., **Berg, A.**, & Leong, S. L. (2023). Ipex: A gamification tool for learner application of pharmacologic principles of opioid use, misuse, and addiction. *Pharmacology Research & Perspectives*, **11**: (5), e01141.
[10.1002/prp2.1141](https://doi.org/10.1002/prp2.1141).
- 174 Larsen, M., He, F., Kawasawa, Y. I., **Berg, A.**, Vgontzas, A. N., Liao, D., Bixler, E. O., & Fernandez-Mendoza, J. (2023). Objective and subjective measures of sleep initiation are differentially associated with dna methylation in adolescents. *Clinical Epigenetics*, **15**: 136.
[10.1186/s13148-023-01553-2](https://doi.org/10.1186/s13148-023-01553-2).
 Journal Impact Factor (2022, 5-year): 6.7.
- 173 Mankarious, M. M., Hughes, A. J., **Berg, A.**, Scow, J. S., Jeganathan, A. N., Kulaylat, A. S., & Deutsch, M. J. (2023). Survival outcomes of anal adenocarcinoma versus rectal adenocarcinoma: A retrospective cohort study. *Indian Journal of Gastroenterology*, **42**: 694–700.
[10.1007/s12664-023-01394-0](https://doi.org/10.1007/s12664-023-01394-0).
- 172 Satriale, F., Garman, J. C., Roy, S., Parascando, J., **Berg, A.**, & Oser, T. (2023). Understanding nutritional knowledge and experiences in families with a child newly diagnosed with type 1 diabetes. *Diabetes Spectrum*, **36**: (1), 52–58.
- 171 Walser, S. A., Costigan, H., Stuckey, H. L., **Berg, A.**, & Stephens, M. B. (2023). The opaque language of sexuality: Medical students’ and providers’ beliefs about virginity. *Archives of Sexual Behavior*, **52**: 2619–2638.
[10.1007/s10508-023-02578-7](https://doi.org/10.1007/s10508-023-02578-7).
- 170 Wang, H., Berger, K. N., Miller, E. L., Fu, W., Broglie, L., Goldman, F. D., Konig, H., Lim, S. J., **Berg, A.**, Talano, J.-A., Comito, M. A., Farag, S. S., & Pu, J. J. (2023). The impacts of total body irradiation on umbilical cord blood hematopoietic stem cell transplantation. *Therapeutic Advances in Hematology*, **14**: 1–13.
[10.1177/20406207231170708](https://doi.org/10.1177/20406207231170708).
 Journal Impact Factor (5-year): 3.7.
- 169 Batra, E. K., Palusci, V. J., & **Berg, A.** (2022). Factors associated with child maltreatment fatality among children with an open Child Protective Services case at death. *Child Abuse Review*, **31**: (e2734), 1–14.
[10.1002/car.2734](https://doi.org/10.1002/car.2734).

168 Dinavahi, S. S., Chen, Y.-C., Punnath, K., **Berg, A.**, Herlyn, M., Foroutan, M., Huntington, N. D., & Robertson, G. P. (2022). Targeting WEE1/AKT restores p53-dependent NK cell activation to induce immune checkpoint blockade responses in 'cold' melanoma. *Cancer Immunology Research*, **10**: (6), 757–769.
[10.1158/2326-6066.CIR-21-0587](https://doi.org/10.1158/2326-6066.CIR-21-0587).

Journal Impact Factor (2021): 11.2.

167 Dinavahi, S. S., Chen, Y.-C., Gowda, R., Dhanyamraju, P. K., Punnath, K., Desai, D., **Berg, A.**, Kimball, S. R., Amin, S., Yang, J., & Robertson, G. P. (2022). Targeting protein translation in melanoma by inhibiting EEF-2 kinase regulates cholesterol metabolism through SREBP2 to inhibit tumor development. *International Journal of Molecular Sciences*, **23**, 3481: (1-19).
[10.3390/ijms23073481](https://doi.org/10.3390/ijms23073481).

166 Dolbow, D. R., Farkas, G. J., **Berg, A.**, Welsch, M. A., Gorgey, A. S., & Gater, D. R. (2022). Fat to lean mass ratio in spinal cord injury: Possible interplay of components of body composition that may instigate systemic inflammation and metabolic syndrome. *The Journal of Spinal Cord Medicine*, **45**: (6), 833–839.
[10.1080/10790268.2022.2111900](https://doi.org/10.1080/10790268.2022.2111900).

165 Farkas, G. J., Swartz, A., Gorgey, A., **Berg, A.**, & Gater, D. (2022). Acute exercise improves glucose effectiveness but not insulin sensitivity in paraplegia. *Disability and Rehabilitation*, **44**: (17), 4656–4662.
[10.1080/09638288.2021.1913517](https://doi.org/10.1080/09638288.2021.1913517).

164 Lafferty, L., Wawrzyniak, J., Chambers, M., Pagliarulo, T., **Berg, A.**, Hawila, N., & Silvis, M. (2022). Clinical indoor running gait analysis may not approximate outdoor running gait based on novel drone technology. *Sports health*, **14**: (5), 710–716.
[10.1177/19417381211050931](https://doi.org/10.1177/19417381211050931).

163 Riley, T. D., Radico, J. A., Parascando, J., **Berg, A.**, & Oser, T. K. (2022). Challenges in effective faculty and provider recognition to enhance engagement. *Family Medicine*, **54**: (6), 461–465.
[10.22454/FamMed.2022.324428](https://doi.org/10.22454/FamMed.2022.324428).

162 Schlegel, D., Heron, C., **Berg, A.**, Parascando, J., & Silvis, M. (2022). Diagnoses per encounter by telephone, televideo, and in-office visits. *Journal of the American Board of Family Medicine*, **35**: (3), 491–496.

161 Tom, C., Jeganathan, N., Deutsch, M., Koltun, W., **Berg, A.**, & Scow, J. (2022). Characteristics and outcomes of right- versus left-sided early onset colorectal cancer. *Diseases of the Colon and Rectum*.
[10.1097/dcr.0000000000002273](https://doi.org/10.1097/dcr.0000000000002273).

160 **Berg, A.** (2021a). Bayesian explorations with dice. *Teaching Statistics*, **43**: 114–123.
[ArthurBerg/dice](https://github.com/ArthurBerg/dice).

[Berg_2021_Teaching-Statistics.pdf](#)

An interesting take on teaching Bayesian Statistics is presented using an R Shiny Application and trick dice. I used this model in my graduate-level Bayesian statistics class to show Kullback-Leibler divergence can be effective in certain Bayesian statistics applications. This article was also translated into German and published in *Stochastik in der Schule*.

159 **Berg, A.** (2021b). Bayesian modeling competitions for the classroom. *Colombian Journal of Statistics*, **44**: (2), 243–252.
[10.15446/rce.v44n2.89102](https://doi.org/10.15446/rce.v44n2.89102).

[Berg_2021_Colombian-Journal-of-Statistics.pdf](#)

Three educational and engaging competitions are described for students studying Bayesian statistics. These competitions are meant to inspire students to think creatively, challenge students to develop effective Bayesian models, and motivate students to pursue excellence in competition with their peers. All of these competitions have been tried out in my own graduate-level Bayesian Statistics course.

158 **Berg, A.** (2021c). Statistical analysis of the International Mathematical Olympiad. *The Mathematical Intelligencer*, **43**: (1), 105–112.
[10.1007/s00283-020-10015-z](https://doi.org/10.1007/s00283-020-10015-z).

[Berg_2021_The-Mathematical-Intelligencer.pdf](#)

A massive amount of scoring data is available on students participating in the IMO, and this paper provides a wealth of information spanning the contest itself, gender disparities, performances associated with different countries and over time, potential biases associated with a home-field advantage, and a host of other insights gleaned from this unique dataset. This work is to be presented at MathFest 2021.

- 157 **Berg, A.**, & Hawila, N. (2021a). Introducing Bayesian inference with the taxicab problem (A. Bilgin & H. McGillivray, Eds.). *Proceedings of the 10th Australian Conference on Teaching Statistics*, 55–60.
[NourHawila/taxicab](#).
[Berg, Hawila_2021_Proceedings-of-the-10th-Australian-Conference-on-Teaching-Statistics.pdf](#)
 This paper discusses a remarkably simple problem with an interesting history. After discussing the historical significance of this problem, we discuss how it can serve as a useful tool for introducing Bayesian statistical methods to tertiary students. A Shiny application was developed to accompany this paper.
- 156 **Berg, A.**, & Hawila, N. (2021b). Some teaching resources using R with illustrative examples exploring COVID-19 data. *Teaching Statistics*, **43**: S98–S109.
[ArthurBerg/Teaching_With_R](#).
[Berg, Hawila_2021_Teaching-Statistics.pdf](#)
 This is a rather long paper (6,000 words plus two supplementary documents), prepared with PhD graduate student Nour Hawila. After four rounds of substantive revisions we are quite excited about this work that advocates for the use of the R software platform in teaching statistics and data science, complete with interesting discussions of COVID-19 and race.
- 155 Chen, Y.-C., Dinavahi, S. S., Feng, Q., Gowda, R., Ramiseti, S., Xia, X., LaPenna, K. B., Chirasani, V. R., Cho, S. H., Hafenstein, S. L., Battu, M. B., **Berg, A.**, Sharma, A., Kirchhausen, T., Dokholyan, N., Amin, S., He, P., & Robertson, G. P. (2021). Activating Sphingosine-1-phosphate signaling in endothelial cells increases myosin light chain phosphorylation to decrease endothelial permeability thereby inhibiting cancer metastasis. *Cancer Letters*, **506**: 107–119.
[10.1016/j.canlet.2021.01.004](#).
 Journal Impact Factor (2019): 7.4.
- 154 Farkas, G. J., Gordon, P. S., Treweek, N., Gorgey, A. S., Dolbow, D. R., Tiozzo, E., **Berg, A.**, & Jr, D. R. G. (2021). Comparison of various indices in identifying insulin resistance and diabetes in chronic spinal cord injury. *Journal of Clinical Medicine*, **10**: (23), 5591: 1–16.
[10.3390/jcm10235591](#).
- 153 Farkas, G. J., Gorgey, A. S., Dolbow, D. R., **Berg, A.**, & Gater Jr, D. R. (2021). Energy expenditure, cardiorespiratory fitness, and body composition following arm cycling or functional electrical stimulation exercises in spinal cord injury: A 16-week randomized controlled trial. *Topics in Spinal Cord Injury Rehabilitation*, **27**: (1), 121–134.
[10.46292/sci20-00065](#).
- 152 Gater Jr, D. R., Farkas, G. J., Dolbow, D. R., **Berg, A.**, & Gorgey, A. S. (2021). Body composition and metabolic assessment after motor complete spinal cord injury: Development of a clinically relevant equation to estimate body fat. *Topics in Spinal Cord Injury Rehabilitation*, **27**: (1), 11–22.
[10.46292/sci20-00079](#).
- 151 Golla, U., Ehudin, M. A., Annageldiyev, C., Zeng, Z., Tukaramrao, D. B., Tarren, A., Date, A. A., Elcheva, I., **Berg, A.**, Amin, S., Jr, T. P. L., Kester, M., Desai, D., Dovat, S., Claxton, D., & Sharma, A. (2021). Dj4 targets the rho-associated protein kinase pathway and attenuates disease progression in preclinical murine models of acute myeloid leukemia. *Cancers*, **13**: (19), 4889.
[10.3390/cancers13194889](#).
- 150 Hawila, N., & **Berg, A.** (2021). Assessing the impact of COVID-19 on registered interventional clinical trials. *Clinical and Translational Science*, **14**: (3), 1147–1154.
[10.1111/cts.13034](#).
[Hawila, Berg_2021_Clinical-and-Translational-Science.pdf](#)
 This work received funding from Penn State CTSI. Biostatistics PhD student, Nour Hawila, presented this work at Penn State College of Medicine Graduate Research Forum and the Penn State Graduate Exhibition. This highly impactful research was featured on over 14 news outlets including *US News & World Report*, *Penn State News* (<https://news.psu.edu/story/653097/2021/04/07/research/clinical-trial-completion-rates-decline-during-covid-19-pandemic>), and *ABC 27* television news.
- 149 Kline, B. P., Weaver, T., Brinton Jr, D. L., Harris, L., Yochum, G. S., **Berg, A.**, & Koltun, W. A. (2021). Clinical and genetic factors impact time to surgical recurrence after ileocectomy for Crohn's disease. *Annals of Surgery*, **274**: (2), 346–351.
[10.1097/SLA.0000000000003660](#).

Journal Impact Factor (2018): 9.5.

- 148 Kline, B. P., Yochum, G. S., Brinton, D. L., Schieffer, K. M., Weaver, T., Harris, L., Deiling, S., **Berg, A.**, & Koltun, W. A. (2021). COLQ and ARHGAP15 are associated with diverticular disease and are expressed in the colon. *Journal of Surgical Research*, **267**: 397–403.
[10.1016/j.jss.2021.05.043](https://doi.org/10.1016/j.jss.2021.05.043).
- 147 Liao, J., **Berg, A.**, & McMurry, T. L. (2021). A robustified posterior for Bayesian inference on a large number of parallel effects. *The American Statistician*, **75**: (2), 145–151.
[10.1080/00031305.2019.1701549](https://doi.org/10.1080/00031305.2019.1701549).
[Liao, Berg, McMurry_2021_The-American-Statistician.pdf](#)
This paper details a novel robustified posterior distribution by decomposing the posterior into two parts (represented in equation 7 of the paper), in which one of the parts is robustified using its asymptotic limit that does not depend on the true underlying distribution.
- 146 Liao, J., Midya, V., & **Berg, A.** (2021). Connecting and contrasting the Bayes factor and a modified ROPE procedure for testing interval null hypotheses. *The American Statistician*, **75**: (3), 256–264.
[10.1080/00031305.2019.1701550](https://doi.org/10.1080/00031305.2019.1701550).
[Liao, Midya, Berg_2021_The-American-Statistician.pdf](#)
This paper promotes an interval null framework for Bayesian hypothesis testing and provides a very convenient way of calculating the Bayes factor. I presented a poster on this topic at the recent United States Conference on Teaching Statistics ([USCOTS 2019 Poster .pdf](#)) and discussed these ideas with Professor Kruschke at that meeting.
- 145 Liu, R., Onks, C., Petsavage-Thomas, J., Walker, E., **Berg, A.**, Silvis, M., & Dhawan, A. (2021). Prevalence of shoulder labral abnormalities on MRI in a non-athletic asymptomatic young adult population. *Skeletal Radiology*, **50**: (5), 921–925.
[10.1007/s00256-020-03629-z](https://doi.org/10.1007/s00256-020-03629-z).
- 144 Loeffert, J., Onks, C., Phillips, S., **Berg, A.**, & Rodgers, D. (2021). Wilderness medicine boot camp for primary care sports medicine fellows goes virtual: From uncertain times comes a novel approach to traditional in-person teaching. *Interdisciplinary Journal of Virtual Learning in Medical Sciences*, **12**: (2), 2–7.
[10.30476/IJVLMS.2021.89866.1083](https://doi.org/10.30476/IJVLMS.2021.89866.1083).
- 143 McGuire, D., Jiang, Y., Liu, M., Weissenkampen, J. D., Eckert, S., Yang, L., Chen, F., **Berg, A.**, Vrieze, S., Jiang, B., et al. (2021). Model-based assessment of replicability for genome-wide association meta-analysis. *Nature Communications*, **12**: (1964), 1–14.
[10.1038/s41467-021-21226-z](https://doi.org/10.1038/s41467-021-21226-z).
- 142 O'Donovan, A., Oser, S. M., Parascando, J., **Berg, A.**, Nease Jr, D. E., & Oser, T. K. (2021). Determining the perception and willingness of primary care providers to prescribe advanced diabetes technologies. *Journal of Patient-Centered Research and Reviews*, **8**: (3), 272–276.
[10.17294/2330-0698.1819](https://doi.org/10.17294/2330-0698.1819).
- 141 Partin, M., Sanchez, A., Poulson, J., **Berg, A.**, Parascando, J., & Ramirez, S. I. (2021). Social inequities between prenatal patients in family medicine and obstetrics and gynecology with similar outcomes. *The Journal of the American Board of Family Medicine*, **34**: (1), 181–188.
[10.3122/jabfm.2021.01.200279](https://doi.org/10.3122/jabfm.2021.01.200279).
- 140 Raca, G., Abdel-Azim, H., Yue, F., Broach, J., Payne, J. L., Reeves, M. E., Gowda, C., Schramm, J., Desai, D., Dovat, E., Hu, T., **Berg, A.**, Bhojwani, D., Payne, K., & Dovat, S. (2021). Increased incidence of IKZF1 deletions and IGH-CRLF2 translocations in B-ALL of Hispanic/Latino children—a novel health disparity. *Leukemia*, **35**: 2399–2402.
[10.1038/s41375-021-01133-4](https://doi.org/10.1038/s41375-021-01133-4).
Journal Impact Factor (2019): 8.7.
- 139 Radico, J., Oser, T. K., Fausnight, T. B., **Berg, A.**, Ouyang, A., & Leong, S. L. (2021). Factors that influence work family conflict for women faculty. *MedEdPublish*, **10**: (63), 1–13.
[10.15694/mep.2021.000063.1](https://doi.org/10.15694/mep.2021.000063.1).
- 138 Veldheer, S., Scartozzi, C., Bordner, C., Opara, C., Williams, B., Weaver, L., Rodriguez, D., **Berg, A.**, & Sciamanna, C. (2021). Impact of a prescription produce program on diabetes and cardiovascular risk outcomes. *Journal of Nutrition Education and Behavior*, **53**: (12), 1008–1017.
[10.1016/j.jneb.2021.07.005](https://doi.org/10.1016/j.jneb.2021.07.005).

- 137 **Berg, A.** (2020a). Assessing the impact of the NIH CTSA program on clinical trials registered with clinicaltrials.gov. *Clinical and Translational Science*, **13**: 818–825.
[10.1111/cts.12775](https://doi.org/10.1111/cts.12775).
[Berg_2020_Clinical-and-Translational-Science.pdf](#)
In this paper I investigated the impact of the CTSA program on translational research. This paper involves advanced Bayesian modeling with a large and complex dataset and a novel approach to statistical inference utilizing the posterior predictive distribution.
- 136 **Berg, A.** (2020b). Bayesian statistics in the classroom: Introducing shrinkage with basketball statistics and the internet movie database. *Teaching Statistics*, **42**: (2), 47–53.
[10.1111/test.12220](https://doi.org/10.1111/test.12220).
[Berg_2020_Teaching-Statistics.pdf](#)
This article promotes Bayesian intuition by introducing the concept of shrinkage with some motivational examples involving basketball statistics of Rudy Gobert and movie rankings from the Internet Movie Database.
- 135 **Berg, A.** (2020c). Statistical analysis of the Elo rating system in chess. *Chance*, **33**: (3), 31–38.
[10.1080/09332480.2020.1820249](https://doi.org/10.1080/09332480.2020.1820249).
[Berg_2020_Chance.pdf](#)
In this article I detail the mathematical and statistical framework for the Elo system, and then proceed to analyze the accuracy of the Elo system with real world data using two chess databases – one database containing chess games played by humans and another database containing chess games played by computers.
- 134 **Berg, A., Politis, D., Suaray, K., & Zeng, H.** (2020). Reduced bias nonparametric lifetime density and hazard estimation. *TEST*, **29**: 704–727.
[10.1007/s11749-019-00677-z](https://doi.org/10.1007/s11749-019-00677-z).
[Berg, Politis, Suaray, Zeng_2020_TEST.pdf](#)
This paper uses flat-top kernels for reduced bias estimation in censored density estimation and hazard function estimation. A tailored bandwidth selection algorithm also accompanies this kernel-based estimator.
- 133 Block, R., **Berg, A.**, Lennon, R. P., Miller, E. L., & Nunez-Smith, M. (2020). African American adherence to COVID-19 public health recommendations. *HLRP: Health Literacy Research and Practice*, **4**: (3), e166–e170.
[10.3928/24748307-20200707-01](https://doi.org/10.3928/24748307-20200707-01).
- 132 Dinavahi, S. S., Gowda, R., Gowda, K., Bazewicz, C. G., Chirasani, V. R., Battu, M. B., **Berg, A.**, Dokholyan, N. V., Amin, S., & Robertson, G. P. (2020). Development of a novel multi-isoform ALDH inhibitor effective as an antimelanoma agent. *Molecular Cancer Therapeutics*, **19**: (2), 447–459.
[10.1158/1535-7163.MCT-19-0360](https://doi.org/10.1158/1535-7163.MCT-19-0360).
Journal Impact Factor (5-Year): 5.37.
- 131 Farkas, G. J., Gordon, P. S., Swartz, A. M., **Berg, A.**, & Gater, D. R. (2020). Influence of mid and low paraplegia on cardiorespiratory fitness and energy expenditure. *Spinal Cord Series and Cases*, **6**: (1), 1–10.
[10.1038/s41394-020-00363-5](https://doi.org/10.1038/s41394-020-00363-5).
- 130 Kline, B. P., Weaver, T., Brinton Jr, D. L., Deiling, S., Yochum, G. S., **Berg, A.**, & Koltun, W. A. (2020). Clinical and genetic factors associated with complications after Crohn's ileocelectomy. *Diseases of the Colon & Rectum*, **63**: (3), 357–364.
[10.1097/DCR.0000000000001574](https://doi.org/10.1097/DCR.0000000000001574).
Journal Impact Factor (2018): 4.1.
- 129 Noel, O. F., **Berg, A.**, Onyango, N., & Mackay, D. R. (2020). Ethnic and gender diversity comparison between surgical patients and caring surgeons. *Plastic and Reconstructive Surgery Global Open*, **8**: (10), 1–7.
[10.1097/GOX.0000000000003198](https://doi.org/10.1097/GOX.0000000000003198).
- 128 Riley, T., Curry, W., Beck, M., **Berg, A.**, & Ruffin, M. (2020). Feasibility of nonanonymous burnout surveys in a large academic department. *Family Medicine*, **52**: (4), 278–281.
[10.22454/FamMed.2020.471855](https://doi.org/10.22454/FamMed.2020.471855).

- 127 Brunke-Reese, D., Ssentongo, P., Ssentongo, A. E., Phillips, B. E., Pauli, E. M., **Berg, A.**, Kelleher, S. L., & Soybel, D. I. (2019). The role of genetic variant rs13266634 in slc30a8/znt8 in postoperative hyperglycemia after major abdominal surgery. *The Journal of Clinical Endocrinology & Metabolism*, **104**: (9), 3877–3892.
doi.org/10.1210/jc.2018-02588.
Journal Impact Factor (2018): 5.6.
- 126 Farkas, G. J., Gorgey, A. S., Dolbow, D. R., **Berg, A.**, & Gater, D. R. (2019a). Caloric intake relative to total daily energy expenditure using a spinal cord injury-specific correction factor: An analysis by level of injury. *American Journal of Physical Medicine & Rehabilitation*, **98**: (11), 947–952.
[10.1097/PHM.0000000000001166](https://doi.org/10.1097/PHM.0000000000001166).
- 125 Farkas, G. J., Gorgey, A. S., Dolbow, D. R., **Berg, A.**, & Gater, D. R. (2019b). Sex dimorphism in the distribution of adipose tissue and its influence on proinflammatory adipokines and cardiometabolic profiles in motor complete spinal cord injury. *The Journal of Spinal Cord Medicine*, **42**: (4), 430–436.
[10.1080/10790268.2018.1436125](https://doi.org/10.1080/10790268.2018.1436125).
- 124 Farkas, G. J., Pitot, M. A., **Berg, A.**, & Gater, D. R. (2019b). Nutritional status in chronic spinal cord injury: A systematic review and meta-analysis. *Spinal Cord*, **57**: (1), 3–17.
[10.1038/s41393-018-0218-4](https://doi.org/10.1038/s41393-018-0218-4).
- 123 Gater Jr, D. R., Farkas, G. J., **Berg, A.**, & Castillo, C. (2019). Prevalence of metabolic syndrome in veterans with spinal cord injury. *The Journal of Spinal Cord Medicine*, **42**: (1), 86–93.
[10.1080/10790268.2017.1423266](https://doi.org/10.1080/10790268.2017.1423266).
- 122 He, F., **Berg, A.**, Kawasaki, Y. I., Bixler, E. O., Fernandez-Mendoza, J., Whitsel, E. A., & Liao, D. (2019). Association between DNA methylation in obesity-related genes and body mass index percentile in adolescents. *Scientific Reports*, **9**: (2079), 1–8.
[10.1038/s41598-019-38587-7](https://doi.org/10.1038/s41598-019-38587-7).
[He, Berg, Kawasaki_2019_Scientific-Reports.pdf](#)
I developed the novel methods involved in this manuscript and worked hand-in-hand with Fan He and Duanping Liao from start to finish of this paper. I also presented work related to this at the European Sleep Meeting in Bologna, Italy and in an Epidemiology seminar at Penn State.
- 121 Liao, J., & **Berg, A.** (2019). Sharpening Jensen's inequality. *The American Statistician*, **73**: (3), 278–281.
[10.1080/00031305.2017.1419145](https://doi.org/10.1080/00031305.2017.1419145).
[Liao, Berg_2019_The-American-Statistician.pdf](#)
In the midst of us working on an importance sampling paper (still under preparation), we identified an interesting formulation of Jensen's inequality that we subsequently carefully formalized and developed into this paper. The results are so elegant and fundamental that I have updated the Wikipedia pages for the entries on Jensen's inequality and the Rao-Blackwell Theorem based on this work. This work will be presented at the ANZSC 2021 conference.
- 120 Matthews, S. M., Eshelman, M. A., **Berg, A.**, Koltun, W. A., & Yochum, G. S. (2019). The Crohn's disease associated SNP rs6651252 impacts MYC gene expression in human colonic epithelial cells. *PLoS ONE*, **14**: (2).
[10.1371/journal.pone.0212850](https://doi.org/10.1371/journal.pone.0212850).
- 119 Oser, S. M., Stuckey, H. L., Parascando, J. A., McGinley, E. L., **Berg, A.**, & Oser, T. K. (2019). Glycated hemoglobin differences among blog-reading adults with type 1 diabetes compared with those who do not read blogs: Cross-sectional study. *JMIR diabetes*, **4**: (2), e13634.
[10.2196/13634](https://doi.org/10.2196/13634).
Journal Impact Factor (2015): 4.5.
- 118 Chen, P., Hallock, K. K., Mulvey, C. L., **Berg, A.**, & Cherian, V. T. (2018). The effect of elevated A1c on immediate postoperative complications: A prospective observational study. *Clinical Diabetes*, **36**: (2), 128–132.
[10.2337/cd17-0081](https://doi.org/10.2337/cd17-0081).
- 117 Dinavahi, S. S., Noory, M. A., Gowda, R., Drabick, J. J., **Berg, A.**, Neves, R. I., & Robertson, G. P. (2018). Moving synergistically acting drug combinations to the clinic by comparing sequential versus simultaneous drug administrations. *Molecular Pharmacology*, **93**: (3), 190–196.
[10.1124/mol.117.110759](https://doi.org/10.1124/mol.117.110759).

Journal Impact Factor (2018): 3.9.

- 116 Farkas, G. J., Gorgey, A. S., Dolbow, D. R., **Berg, A.**, & Gater, D. R. (2018). The influence of level of spinal cord injury on adipose tissue and its relationship to inflammatory adipokines and cardiometabolic profiles. *The Journal of Spinal Cord Medicine*, **41**: (4), 407–415.
[10.1080/10790268.2017.1357918](https://doi.org/10.1080/10790268.2017.1357918).
- 115 Hammett, E., Veldheer, S., Hrabovsky, S., Yingst, J., **Berg, A.**, Poole, E., Stauffer, D., & Foulds, J. (2018). TXT2STAYQUIT: Pilot randomized trial of brief automated smoking cessation texting intervention for inpatient smokers discharged from the hospital. *Journal of Hospital Medicine*, **13**: (7), 488–489.
[10.12788/jhm.2907](https://doi.org/10.12788/jhm.2907).
- 114 Sheehan, J. P., Grills, I., Chiang, V. L., Dong, H., **Berg, A.**, Warnick, R. E., Kondziolka, D., & Kavanagh, B. (2018). Quality of life outcomes for brain metastasis patients treated with stereotactic radiosurgery: Pre-procedural predictive factors from a prospective national registry. *Journal of Neurosurgery*, **131**: (6), 1848–1854.
- 113 Veldheer, S., Hrabovsky, S., Yingst, J., Sciamanna, C., **Berg, A.**, & Foulds, J. (2018). The use of self-directed relapse prevention booklets to assist in maintaining abstinence after a 6-week group smoking cessation treatment program: A randomized controlled trial. *Health Education & Behavior*, **45**: (2), 190–197.
[10.1177/1090198117710979](https://doi.org/10.1177/1090198117710979).
- 112 Yingst, J. M., Veldheer, S., Hrabovsky, S., Hammett, E., Nicholson, J., **Berg, A.**, & Foulds, J. (2018). Pilot randomized trial of an automated smoking cessation intervention via mobile phone text messages as an adjunct to varenicline in primary care. *Journal of Health Communication*, **23**: (4), 370–378.
[10.1080/10810730.2018.1453890](https://doi.org/10.1080/10810730.2018.1453890).
- 111 Andrew, R. E., Lauria, A., Puleo, F. J., **Berg, A.**, & Stewart Sr, D. B. (2017). Inpatient infliximab is ineffective at preventing colectomy for steroid refractory extensive colitis. *Journal of Surgical Research*, **219**: 18–24.
[10.1016/j.jss.2017.05.077](https://doi.org/10.1016/j.jss.2017.05.077).
- 110 Connelly, T. M., Choi, C. S., **Berg, A.**, Harris III, L., Coble, J., & Koltun, W. A. (2017). Diverticulitis and Crohn's disease have distinct but overlapping tumor necrosis superfamily 15 haplotypes. *Journal of Surgical Research*, **214**: 262–269.
[10.1016/j.jss.2017.02.030](https://doi.org/10.1016/j.jss.2017.02.030).
- 109 Crowell, K., Julian, K., Katzman, M., **Berg, A.**, Tinsley, A., Williams, E., Koltun, W., & Messaris, E. (2017). Compliance with clostridium difficile treatment guidelines: Effect on patient outcomes. *Epidemiology & Infection*, **145**: (11), 2185–2192.
[10.1017/S0950268817000644](https://doi.org/10.1017/S0950268817000644).
- 108 Wrafter, P. F., Connelly, T. M., Khan, J. S., Lucey, B. C., **Berg, A.**, Koltun, W., & Joyce, W. P. (2017). Diverticular disease is associated with benign intra-abdominal cystic disease. *Expert Review of Gastroenterology & Hepatology*, **11**: (5), 487–490.
[10.1080/17474124.2017.1294061](https://doi.org/10.1080/17474124.2017.1294061).

Journal Impact Factor (2018): 3.0.

- 107 Choi, C. S., **Berg, A.**, Sangster, W., Schieffer, K. M., Harris III, L. R., Deiling, S. M., & Koltun, W. A. (2016). Combined medical and surgical approach improves healing of septic perianal Crohn's disease. *Journal of the American College of Surgeons*, **223**: (3), 506–514.
[10.1016/j.jamcollsurg.2016.05.017](https://doi.org/10.1016/j.jamcollsurg.2016.05.017).

Journal Impact Factor (5-Year): 4.9.

- 106 Karamchandani, D. M., Lehman, H. L., Ohanessian, S. E., Massé, J., Welsh, P. A., Odze, R. D., Goldblum, J. R., **Berg, A.**, & Stairs, D. B. (2016). Increasing diagnostic accuracy to grade dysplasia in Barrett's esophagus using an immunohistochemical panel for CDX2, p120ctn, c-Myc and Jagged1. *Diagnostic Pathology*, **11**: (23), 1–13.
[10.1186/s13000-016-0473-7](https://doi.org/10.1186/s13000-016-0473-7).
- 105 Liao, J., Liao, D., & **Berg, A.** (2016). Calibrated Bayes factors in assessing genetic association models. *The American Statistician*, **70**: (3), 250–256.
[10.1080/00031305.2015.1109548](https://doi.org/10.1080/00031305.2015.1109548).

[Liao, Liao, Berg_2016_The-American-Statistician.pdf](#)

Calibrated Bayes methods have been extensively described by Prof Rod Little (U Mich), although concrete examples and specific implementations are largely unavailable. In this paper, Jason and I identified an elegant example in genetic association testing in which Bayesian calibration proves very powerful.

- 104 Ravi, S., Schilder, R. J., **Berg, A.**, & Kimball, S. R. (2016). Effects of age and hindlimb immobilization and remobilization on fast troponin T precursor mRNA alternative splicing in rat gastrocnemius muscle. *Applied Physiology, Nutrition, and Metabolism*, **41**: (2), 142–149.
[10.1139/apnm-2015-0381](#).
Journal Impact Factor (2018): 3.5.
- 103 Sangster, W., **Berg, A.**, Choi, C. S., Connelly, T. M., Chesnut III, C. H., Koltun, W. A., & Stewart Sr, D. B. (2016). Outcomes of early ileocelectomy after percutaneous drainage for perforated ileocolic Crohn's disease. *The American Journal of Surgery*, **212**: (4), 728–734.
[10.1016/j.amjsurg.2016.01.044](#).
- 102 Tagaram, H. R. S., Desai, D., Li, G., Liu, D., Rountree, C. B., Gowda, K., **Berg, A.**, Amin, S., Staveley-OCarroll, K. F., & Kimchi, E. T. (2016). A selenium containing inhibitor for the treatment of hepatocellular cancer. *Pharmaceuticals*, **9**: (18), 1–14.
[10.3390/ph9020018](#).
Journal Impact Factor (2018): 3.9.
- 101 Coble, J., Schilder, R. J., **Berg, A.**, Drummond, M. J., Rasmussen, B. B., & Kimball, S. R. (2015). Influence of ageing and essential amino acids on quantitative patterns of troponin T alternative splicing in human skeletal muscle. *Applied Physiology, Nutrition, and Metabolism*, **40**: (8), 788–796.
[10.1139/apnm-2014-0568](#).
Journal Impact Factor (2018): 3.5.
- 100 Connelly, T. M., **Berg, A.**, Harris, L. R., Tappouni, R., Brinton, D., Deiling, S., & Koltun, W. A. (2015). Surgical diverticulitis is not associated with defects in the expression of wound healing genes. *International Journal of Colorectal Disease*, **30**: (9), 1247–1254.
[10.1007/s00384-015-2263-1](#).
- 99 Connelly, T. M., **Berg, A.**, Harris III, L., Brinton, D., Deiling, S., & Koltun, W. A. (2015). Genetic determinants associated with early age of diagnosis of IBD. *Diseases of the Colon & Rectum*, **58**: (3), 321–327.
[10.1097/DCR.0000000000000274](#).
- 98 Foulds, J., Veldheer, S., Hrabovsky, S., Yingst, J., Sciamanna, C., Chen, G., Maccani, J. Z., & **Berg, A.** (2015). The effect of motivational lung age feedback on short-term quit rates in smokers seeking intensive group treatment: A randomized controlled pilot study. *Drug and Alcohol Dependence*, **153**: 271–277.
[10.1016/j.drugalcdep.2015.05.007](#).
Journal Impact Factor (2018): 3.5.
- 97 Goodson III, W. H., Lowe, L., Carpenter, D. O., Gilbertson, M., Manaf Ali, A., Lopez de Cerain Salsamendi, A., Lasfar, A., Carnero, A., Azqueta, A., Amedei, A., Charles, A., Collins, A., Ward, A., Salzberg, A., Colacci, A., Olsen, A.-K., **Berg, A.**, et al. (2015). Assessing the carcinogenic potential of low-dose exposures to chemical mixtures in the environment: The challenge ahead. *Carcinogenesis*, **36**: (Suppl 1), S254–S296.
[10.1093/carcin/bgv039](#).
Journal Impact Factor (5-Year): 4.7.
- 96 He, F., Bixler, E. O., **Berg, A.**, Kawasawa, Y. I., Vgontzas, A. N., Fernandez-Mendoza, J., Yanosky, J., & Liao, D. (2015). Habitual sleep variability, not sleep duration, is associated with caloric intake in adolescents. *Sleep Medicine*, **16**: (7), 856–861.
[10.1016/j.sleep.2015.03.004](#).
Journal Impact Factor (2018): 3.4.

- 95 He, F., Bixler, E. O., Liao, J., **Berg, A.**, Kawasawa, Y. I., Fernandez-Mendoza, J., Vgontzas, A. N., & Liao, D. (2015). Habitual sleep variability, mediated by nutrition intake, is associated with abdominal obesity in adolescents. *Sleep Medicine*, **16**: (12), 1489–1494.
[10.1016/j.sleep.2015.07.028](https://doi.org/10.1016/j.sleep.2015.07.028).
Journal Impact Factor (2018): 3.4.
- 94 He, F., Rodriguez-Colon, S., Fernandez-Mendoza, J., Vgontzas, A. N., Bixler, E. O., **Berg, A.**, Kawasawa, Y. I., Sawyer, M. D., & Liao, D. (2015). Abdominal obesity and metabolic syndrome burden in adolescents, A Penn State Children Cohort study. *Journal of Clinical Densitometry*, **18**: (1), 30–36.
[10.1016/j.jocd.2014.07.009](https://doi.org/10.1016/j.jocd.2014.07.009).
- 93 Modesto, J. L., Hull, A., Angstadt, A. Y., **Berg, A.**, Gallagher, C. J., Lazarus, P., & Muscat, J. E. (2015). NNK reduction pathway gene polymorphisms and risk of lung cancer. *Molecular Carcinogenesis*, **54**: (S1), E94–E102.
[10.1002/mc.22187](https://doi.org/10.1002/mc.22187).
Journal Impact Factor (2018): 3.4.
- 92 Robey, R. B., Weisz, J., Kuemmerle, N. B., Salzberg, A. C., **Berg, A.**, Brown, D. G., Kubik, L., Palorini, R., Al-Mulla, F., Al-Temaimi, R., et al. (2015). Metabolic reprogramming and dysregulated metabolism: Cause, consequence and/or enabler of environmental carcinogenesis? *Carcinogenesis*, **36**: (Suppl 1), S203–S231.
[10.1093/carcin/bgv037](https://doi.org/10.1093/carcin/bgv037).
Journal Impact Factor (2018): 4.0.
- 91 Sangster, W., Messaris, E., **Berg, A.**, & Stewart Sr, D. B. (2015). Single-site laparoscopic colorectal surgery provides similar clinical outcomes compared to standard laparoscopic surgery: An analysis of 626 patients. *Diseases of the Colon and Rectum*, **58**: (9), 862.
[10.1097/DCR.0000000000000435](https://doi.org/10.1097/DCR.0000000000000435).
Journal Impact Factor (2018): 4.1.
- 90 Tacosky, D. M., Alexander, D. N., Morse, M., Hajnal, A., **Berg, A.**, Levenson, R., & Grigson, P. S. (2015). Low expression of D2R and Wntless correlates with high motivation for heroin. *Behavioral Neuroscience*, **129**: (6), 744.
[10.1037/bne0000104](https://doi.org/10.1037/bne0000104).
- 89 Wilson, R. T., Bortner Jr, J. D., Roff, A., Das, A., Battaglioli, E. J., Richie Jr, J. P., Barnholtz-Sloan, J., Chinchilli, V. M., **Berg, A.**, Liu, G., et al. (2015). Genetic and environmental influences on plasma vitamin D binding protein concentrations. *Translational Research*, **165**: (6), 667–676.
[10.1016/j.trsl.2014.08.003](https://doi.org/10.1016/j.trsl.2014.08.003).
Journal Impact Factor (2018): 4.9.
- 88 Yee, N. S., Kazi, A. A., Li, Q., Yang, Z., **Berg, A.**, & Yee, R. K. (2015). Aberrant over-expression of TRPM7 ion channels in pancreatic cancer: Required for cancer cell invasion and implicated in tumor growth and metastasis. *Biology Open*, **4**: (4), 507–514.
[10.1242/bio.20137088](https://doi.org/10.1242/bio.20137088).
- 87 Amin, W., Tsui, F., Borromeo, C., Chuang, C. H., Espino, J. U., Ford, D., Hwang, W., Kapoor, W., Lehmann, H., Martich, G. D., et al. (2014). PaTH: Towards a learning health system in the Mid-Atlantic region. *Journal of the American Medical Informatics Association*, **21**: (4), 633–636.
[10.1136/amiajnl-2014-002759](https://doi.org/10.1136/amiajnl-2014-002759).
Journal Impact Factor (2018): 4.3.
- 86 Connelly, T. M., **Berg, A.**, Harris III, L. R., Brinton, D. L., Hegarty, J. P., Deiling, S. M., Stewart, D. B., & Koltun, W. A. (2014). Ulcerative colitis neoplasia is not associated with common inflammatory bowel disease single-nucleotide polymorphisms. *Surgery*, **156**: (2), 253–262.
[10.1016/j.surg.2014.03.017](https://doi.org/10.1016/j.surg.2014.03.017).
Journal Impact Factor (2018): 3.5.

- 85 Connelly, T. M., **Berg, A.**, Harris III, L. R., Hegarty, J. P., Ruggiero, F. M., Deiling, S. M., Brinton, D. L., & Koltun, W. A. (2014). T-cell activation Rho GTPase-activating protein expression varies with inflammation location and severity in Crohn's disease. *Journal of Surgical Research*, **190**: (2), 457–464.
[10.1016/j.jss.2014.01.019](https://doi.org/10.1016/j.jss.2014.01.019).
- 84 Connelly, T. M., **Berg, A.**, Hegarty, J. P., Deiling, S., Brinton, D., Poritz, L. S., & Koltun, W. A. (2014). The TNFSF15 gene single nucleotide polymorphism rs7848647 is associated with surgical diverticulitis. *Annals of Surgery*, **259**: (6), 1132–1137.
[10.1097/SLA.000000000000232](https://doi.org/10.1097/SLA.000000000000232).
Journal Impact Factor (2018): 9.5.
- 83 Connelly, T. M., Koltun, W. A., Sangster, W., **Berg, A.**, Hegarty, J. P., Harris III, L., Deiling, S., & Stewart, D. B. (2014). An interleukin-4 polymorphism is associated with susceptibility to Clostridium difficile infection in patients with inflammatory bowel disease: Results of a retrospective cohort study. *Surgery*, **156**: (4), 769–775.
Journal Impact Factor (2018): 3.5.
- 82 Connelly, T., **Berg, A.**, Harris, L., Hegarty, J., Deiling, S., Stewart, D., & Koltun, W. (2014). The expression of colonic TAGAP is affected by severity of Crohn's disease inflammation and the rs212388 allele. *Journal of Surgical Research*, **186**: (2), 499.
[10.1016/j.jss.2013.11.118](https://doi.org/10.1016/j.jss.2013.11.118).
- 81 Dennis, M. D., Coleman, C. S., **Berg, A.**, Jefferson, L. S., & Kimball, S. R. (2014). REDD1 enhances protein phosphatase 2A-mediated dephosphorylation of Akt to repress mTORC1 signaling. *Science Signaling*, **7**: (335), ra68–ra68.
[10.1126/scisignal.2005103](https://doi.org/10.1126/scisignal.2005103).
Journal Impact Factor (2018): 6.5.
- 80 Liao, J., McMurry, T., & **Berg, A.** (2014). Prior robust empirical Bayes inference for large-scale data by conditioning on rank with application to microarray data. *Biostatistics*, **15**: (1), 60–73.
[10.1093/biostatistics/kxt026](https://doi.org/10.1093/biostatistics/kxt026).
[Liao, McMurry, Berg_2014_Biostatistics.pdf](#)
This paper proposes a very interesting idea for robustifying Bayesian inference by cleverly conditioning on the ranks of the data. This novel approach can allow for a more robust Bayesian inference in certain applications, and we have provided extensive theoretical developments in this paper.
- 79 Mitchell, C., Hobcraft, J., McLanahan, S. S., Siegel, S. R., **Berg, A.**, Brooks-Gunn, J., Garfinkel, I., & Notterman, D. (2014). Social disadvantage, genetic sensitivity, and children's telomere length. *Proceedings of the National Academy of Sciences*, **111**: (16), 5944–5949.
[10.1073/pnas.1404293111](https://doi.org/10.1073/pnas.1404293111).
Journal Impact Factor (2018): 9.6.
- 78 Pogacnik, J. S., Messaris, E., Deiling, S. M., Connelly, T. M., **Berg, A.**, Stewart, D. B., McKenna, K. J., Poritz, L. S., & Koltun, W. A. (2014). Increased risk of incisional hernia after sigmoid colectomy for diverticulitis compared with colon cancer. *Journal of the American College of Surgeons*, **218**: (5), 920–928.
[10.1016/j.jamcollsurg.2014.01.050](https://doi.org/10.1016/j.jamcollsurg.2014.01.050).
Journal Impact Factor (2018): 4.5.
- 77 Richie, J. P., Das, A., Calcagnotto, A. M., Sinha, R., Neidig, W., Liao, J., Lengerich, E. J., **Berg, A.**, Hartman, T. J., Ciccarella, A., et al. (2014). Comparative effects of two different forms of selenium on oxidative stress biomarkers in healthy men: A randomized clinical trial. *Cancer Prevention Research*, **7**: (8), 796–804.
[10.1158/1940-6207.CAPR-14-0042](https://doi.org/10.1158/1940-6207.CAPR-14-0042).
Journal Impact Factor (2018): 3.9.
- 76 Rodríguez-Colón, S., He, F., Bixler, E. O., Fernandez-Mendoza, J., Vgontzas, A. N., **Berg, A.**, Kawasawa, Y. I., & Liao, D. (2014). The circadian pattern of cardiac autonomic modulation and obesity in adolescents. *Clinical Autonomic Research*, **24**: (6), 265–273.
[10.1007/s10286-014-0257-7](https://doi.org/10.1007/s10286-014-0257-7).

- 75 Sathyendra, V., Donahue, H. J., Vrana, K. E., **Berg, A.**, Fryzel, D., Gandhi, J., & Reid, J. S. (2014). Single nucleotide polymorphisms in osteogenic genes in atrophic delayed fracture-healing: A preliminary investigation. *Journal of Bone & Joint Surgery*, **96**: (15), 1242–1248.
[10.2106/JBJS.M.00453](https://doi.org/10.2106/JBJS.M.00453).
Journal Impact Factor (2018): 4.7.
- 74 Stewart, D. B., **Berg, A.**, & Hegarty, J. P. (2014). Single nucleotide polymorphisms of the tcdC gene and presence of the binary toxin gene predict recurrent episodes of Clostridium difficile infection. *Annals of Surgery*, **260**: (2), 299–304.
[10.1097/SLA.0000000000000469](https://doi.org/10.1097/SLA.0000000000000469).
Journal Impact Factor (2018): 9.2.
- 73 Stewart, D. B., **Berg, A.**, & Messaris, E. (2014). Single-site laparoscopic colorectal surgery provides similar lengths of hospital stay and similar costs compared with standard laparoscopy: Results of a retrospective cohort study. *Journal of Gastrointestinal Surgery*, **18**: (4), 774–781.
[10.1007/s11605-013-2438-4](https://doi.org/10.1007/s11605-013-2438-4).
- 72 Veldheer, S., Yingst, J., Foulds, G., Hrabovsky, S., **Berg, A.**, Sciamanna, C., & Foulds, J. (2014). Once bitten, twice shy: Concern about gaining weight after smoking cessation and its association with seeking treatment. *International Journal of Clinical Practice*, **68**: (3), 388–395.
[10.1111/ijcp.12332](https://doi.org/10.1111/ijcp.12332).
- 71 Yee, N. S., Li, Q., Kazi, A. A., Yang, Z., **Berg, A.**, & Yee, R. K. (2014). Aberrantly over-expressed TRPM8 channels in pancreatic adenocarcinoma: Correlation with tumor size/stage and requirement for cancer cells invasion. *Cells*, **3**: (2), 500–516.
[10.3390/cells3020500](https://doi.org/10.3390/cells3020500).
- 70 Zhang, L., Ren, X., Cheng, Y., Liu, X., Allen, J. E., Zhang, Y., Yuan, Y., Huang, S.-Y., Yang, W., **Berg, A.**, et al. (2014). The NFκB inhibitor, SN50, induces differentiation of glioma stem cells and suppresses their oncogenic phenotype. *Cancer Biology & Therapy*, **15**: (5), 602–611.
[10.4161/cbt.28158](https://doi.org/10.4161/cbt.28158).
- 69 Angstadt, A. Y., **Berg, A.**, Zhu, J., Miller, P., Hartman, T. J., Lesko, S. M., Muscat, J. E., Lazarus, P., & Gallagher, C. J. (2013). The effect of copy number variation in the phase II detoxification genes UGT2B17 and UGT2B28 on colorectal cancer risk. *Cancer*, **119**: (13), 2477–2485.
[10.1002/cncr.28009](https://doi.org/10.1002/cncr.28009).
Journal Impact Factor (2018): 6.1.
- 68 Ashmore, J. H., Lesko, S. M., Muscat, J. E., Gallagher, C. J., **Berg, A.**, Miller, P. E., Hartman, T. J., & Lazarus, P. (2013). Association of dietary and supplemental folate intake and polymorphisms in three FOCM pathway genes with colorectal cancer in a population-based case-control study. *Genes, Chromosomes and Cancer*, **52**: (10), 945–953.
[10.1002/gcc.22089](https://doi.org/10.1002/gcc.22089).
Journal Impact Factor (5-Year): 3.1.
- 67 Canfield, V. A., **Berg, A.**, Peckins, S., Wentzel, S. M., Ang, K. C., Oppenheimer, S., & Cheng, K. C. (2013). Molecular phylogeography of a human autosomal skin color locus under natural selection. *G3: Genes, Genomes, Genetics*, **3**: (11), 2059–2067.
[10.1534/g3.113.007484](https://doi.org/10.1534/g3.113.007484).
Journal Impact Factor (2018): 2.6.
- 66 Connelly, T. M., Koltun, W. A., **Berg, A.**, Hegarty, J. P., Brinton, D., Deiling, S., Poritz, L. S., & Stewart, D. B. (2013). A single nucleotide polymorphism in the STAT5 gene favors colonic as opposed to small-bowel inflammation in Crohn's disease. *Diseases of the Colon & Rectum*, **56**: (9), 1068–1074.
[10.1097/DCR.0b013e31829de128](https://doi.org/10.1097/DCR.0b013e31829de128).
Journal Impact Factor (2018): 4.1.
- 65 Foulds, J., Russ, C., Yu, C.-R., Zou, K. H., Galaznik, A., Franzon, M., **Berg, A.**, & Hughes, J. R. (2013). Effect of varenicline on individual nicotine withdrawal symptoms: A combined analysis of eight randomized, placebo-controlled trials. *Nicotine & Tobacco Research*, **15**: (11), 1849–1857.
[10.1093/ntr/ntt066](https://doi.org/10.1093/ntr/ntt066).

Journal Impact Factor (2018): 4.1.

- 64 Lin, Z., Hegarty, J. P., John, G., **Berg, A.**, Wang, Z., Sehgal, R., Pastor, D. M., Wang, Y., Harris, L. R., Poritz, L. S., et al. (2013). NOD2 mutations affect muramyl dipeptide stimulation of human B lymphocytes and interact with other IBD-associated genes. *Digestive Diseases and Sciences*, **58**: (9), 2599–2607.

[10.1007/s10620-013-2696-8](https://doi.org/10.1007/s10620-013-2696-8).

Journal Impact Factor (2018): 2.9.

- 63 Liu, G., Chen, G., Sinoway, L., & **Berg, A.** (2013). Assessing the impact of the NIH CTSA program on institutionally sponsored clinical trials. *Clinical and Translational Science*, **6**: (3), 196–200.

[10.1111/cts.12029](https://doi.org/10.1111/cts.12029).

[Liu, Chen, Sinoway_2013_Clinical-and-Translational-Science.pdf](#)

This analysis was conducted when I served as the Informatics Program Leader for Penn State's Clinical and Translational Science Award.

- 62 Masser, D. R., **Berg, A.**, & Freeman, W. M. (2013). Focused, high accuracy 5-methylcytosine quantitation with base resolution by benchtop next-generation sequencing. *Epigenetics & Chromatin*, **6**: (1), 33.

[10.1186/1756-8935-6-33](https://doi.org/10.1186/1756-8935-6-33).

Journal Impact Factor (5-Year): 5.2.

- 61 Poritz, L. S., Sehgal, R., **Berg, A.**, Laufenberg, L., Choi, C., & Williams, E. D. (2013). Chronic use of PPI and H₂ antagonists decreases the risk of pouchitis after IPAA for ulcerative colitis. *Journal of Gastrointestinal Surgery*, **17**: (6), 1027–1031.

[10.1007/s11605-013-2172-y](https://doi.org/10.1007/s11605-013-2172-y).

Journal Impact Factor (2015): 2.7.

- 60 Sharma, A., Madhunapantula, S. V., Gowda, R., **Berg, A.**, Neves, R. I., & Robertson, G. P. (2013). Identification of aurora kinase B and Wee1-like protein kinase as downstream targets of V600E-RAF in melanoma. *The American Journal of Pathology*, **182**: (4), 1151–1162.

[10.1016/j.ajpath.2012.12.019](https://doi.org/10.1016/j.ajpath.2012.12.019).

Journal Impact Factor (5-Year): 4.4.

- 59 Stewart, D. B., **Berg, A.**, & Hegarty, J. (2013). Predicting recurrence of *C. difficile* colitis using bacterial virulence factors: Binary toxin is the key. *Journal of Gastrointestinal Surgery*, **17**: (1), 118–125.

[10.1007/s11605-012-2056-6](https://doi.org/10.1007/s11605-012-2056-6).

Journal Impact Factor (2018): 2.7.

- 58 Sun, Y.-W., Guttenplan, J. B., Cooper, T., Krzeminski, J., Aliaga, C., Boyiri, T., Kosinska, W., Zhao, Z.-L., Chen, K.-M., **Berg, A.**, et al. (2013). Mechanisms underlying the varied mammary carcinogenicity of the environmental pollutant 6-nitrochrysene and its metabolites (-)-[R,R]- and (+)-[S,S]-1, 2-dihydroxy-1, 2-dihydro-6-nitrochrysene in the rat. *Chemical Research in Toxicology*, **26**: (4), 547–554.

[10.1021/tx300478z](https://doi.org/10.1021/tx300478z).

Journal Impact Factor (2018): 3.3.

- 57 Ang, K. C., Ngu, M. S., Reid, K. P., Teh, M. S., Aida, Z. S., Koh, D. X., **Berg, A.**, Oppenheimer, S., Salleh, H., Clyde, M. M., et al. (2012). Skin color variation in orang asli tribes of peninsular malaysia. *PLoS ONE*, **7**: (8).

[10.1371/journal.pone.0042752](https://doi.org/10.1371/journal.pone.0042752).

Journal Impact Factor (2018): 2.8.

- 56 Avella, D. M., Li, G., Schell, T. D., Liu, D., Zhang, S. S.-M., Lou, X., **Berg, A.**, Kimchi, E. T., Tagaram, H. R. S., Yang, Q., et al. (2012). Regression of established hepatocellular carcinoma is induced by chemoimmunotherapy in an orthotopic murine model. *Hepatology*, **55**: (1), 141–152.

[10.1002/hep.24652](https://doi.org/10.1002/hep.24652).

Journal Impact Factor (2018): 15.0.

- 55 **Berg, A.**, McMurry, T., & Politis, D. N. (2012). Testing time series linearity: Traditional and bootstrap methods. *Handbook of Statistics*, **30**: 27–42.

[10.1016/B978-0-444-53858-1.00002-8](https://doi.org/10.1016/B978-0-444-53858-1.00002-8).

 Berg, McMurry, Politis_2012_Handbook-of-Statistics.pdf

This is a survey of various linearity tests in time series analysis; note that this is linearity testing for stationary processes. A novel subsampling-based linearity test is also proposed and its asymptotic consistency is proven.

- 54 Clawson, G. A., Kimchi, E., Patrick, S. D., Xin, P., Harouaka, R., Zheng, S., **Berg, A.**, Schell, T., Staveley-OCarroll, K. F., Neves, R. I., et al. (2012). Circulating tumor cells in melanoma patients. *PLoS ONE*, **7**: (7).
 [10.1371/journal.pone.0041052](https://doi.org/10.1371/journal.pone.0041052).
Journal Impact Factor (2018): 2.8.
- 53 Connelly, T. M., Sehgal, R., **Berg, A.**, Hegarty, J. P., Deiling, S., Stewart, D. B., Poritz, L. S., & Koltun, W. A. (2012). Mutation in TAGAP is protective of anal sepsis in ileocolic Crohn's disease. *Diseases of the Colon & Rectum*, **55**: (11), 1145–1152.
 [10.1097/DCR.0b013e3182676931](https://doi.org/10.1097/DCR.0b013e3182676931).
Journal Impact Factor (2018): 4.1.
- 52 Foulds, J., Veldheer, S., & **Berg, A.** (2012). Electronic cigarettes: A response to Leelavathi and Das. *International Journal of Clinical Practice*, **66**: (4), 417–418.
 [10.1111/j.1742-1241.2011.02889.x](https://doi.org/10.1111/j.1742-1241.2011.02889.x).
- 51 Hou, L., Wang, L., **Berg, A.**, Qian, M., Zhu, Y., Li, F., & Deng, M. (2012). Comparison and evaluation of network clustering algorithms applied to genetic interaction networks. *Frontiers in Bioscience*, **4**: 2150–2161.
 [10.2741/532](https://doi.org/10.2741/532).
- 50 Popova, E. Y., Xu, X., DeWan, A. T., Salzberg, A. C., **Berg, A.**, Hoh, J., Zhang, S. S., & Barnstable, C. J. (2012). Stage and gene specific signatures defined by histones H3K4me2 and H3K27me3 accompany mammalian retina maturation in vivo. *PLoS ONE*, **7**: (10).
 [10.1371/journal.pone.0046867](https://doi.org/10.1371/journal.pone.0046867).
- 49 Rotramel, A., Poritz, L. S., Messaris, E., **Berg, A.**, & Stewart, D. B. (2012). PPI therapy and albumin are better predictors of recurrent Clostridium difficile colitis than choice of antibiotics. *Journal of Gastrointestinal Surgery*, **16**: (12), 2267–2273.
 [10.1007/s11605-012-2037-9](https://doi.org/10.1007/s11605-012-2037-9).
Journal Impact Factor (2018): 2.7.
- 48 Sehgal, R., **Berg, A.**, Polinski, J. I., Hegarty, J. P., Lin, Z., McKenna, K. J., Stewart, D. B., Poritz, L. S., & Koltun, W. A. (2012a). Genetic risk profiling and gene signature modeling to predict risk of complications after IPAA. *Diseases of the Colon & Rectum*, **55**: (3), 239–248.
 [10.1097/DCR.0b013e31823e2d18](https://doi.org/10.1097/DCR.0b013e31823e2d18).
- 47 Sehgal, R., **Berg, A.**, Polinski, J. I., Hegarty, J. P., Lin, Z., McKenna, K. J., Stewart, D. B., Poritz, L. S., & Koltun, W. A. (2012b). Mutations in IRGM are associated with more frequent need for surgery in patients with ileocolonic Crohn's disease. *Diseases of the Colon & Rectum*, **55**: (2), 115–121.
 [10.1097/DCR.0b013e31823ccea8](https://doi.org/10.1097/DCR.0b013e31823ccea8).
Journal Impact Factor (2018): 4.1.
- 46 Tsetskhladze, Z. R., Canfield, V. A., Ang, K. C., Wentzel, S. M., Reid, K. P., **Berg, A.**, Johnson, S. L., Kawakami, K., & Cheng, K. C. (2012). Functional assessment of human coding mutations affecting skin pigmentation using zebrafish. *PLoS ONE*, **7**: (10).
 [10.1371/journal.pone.0047398](https://doi.org/10.1371/journal.pone.0047398).
Journal Impact Factor (2018): 2.8.
- 45 Weisz, J., Shearer, D. A., Murata, E., Patrick, S. D., Han, B., **Berg, A.**, & Clawson, G. A. (2012). Identification of mammary epithelial cells subject to chronic oxidative stress in mammary epithelium of young women and teenagers living in USA: Implication for breast carcinogenesis. *Cancer Biology & Therapy*, **13**: (2), 101–113.
 [10.4161/cbt.13.2.18873](https://doi.org/10.4161/cbt.13.2.18873).
- 44 Yu, W., Hegarty, J. P., **Berg, A.**, Kelly, A. A., Wang, Y., Poritz, L. S., Franke, A., Schreiber, S., Koltun, W. A., & Lin, Z. (2012). PTPN2 is associated with Crohn's disease and its expression is regulated by NKX2-3. *Disease Markers*, **32**: (2), 83–91.
 [10.3233/DMA-2011-0867](https://doi.org/10.3233/DMA-2011-0867).
Journal Impact Factor (2018): 2.8.

- 43 **Berg, A.**, Li, N., Tong, C., Wang, Z., Berceci, S., & Wu, R. (2011). Functional mapping of expression quantitative trait loci that regulate oscillatory gene expression. *Methods Mol Biol*, **734**: 241–255.
[10.1007/978-1-61779-086-7_12](https://doi.org/10.1007/978-1-61779-086-7_12).
[Berg, Li, Tong_2011_Methods-Mol-Biol.pdf](#)
This paper models time-course gene expression with a robust Fourier series mean structure and ARMA autocovariance structure.
- 42 Cupp, J., Simmons, Z., **Berg, A.**, Felgoise, S. H., Walsh, S. M., & Stephens, H. E. (2011). Psychological health in patients with ALS is maintained as physical function declines. *Amyotrophic Lateral Sclerosis*, **12**: (4), 290–296.
[10.3109/17482968.2011.554555](https://doi.org/10.3109/17482968.2011.554555).
Journal Impact Factor (2018): 2.8.
- 41 Foulds, J., Veldheer, S., & **Berg, A.** (2011). Electronic cigarettes (e-cigs): Views of aficionados and clinical/public health perspectives. *International Journal of Clinical Practice*, **65**: (10), 1037–1042.
[10.1111/j.1742-1241.2011.02751.x](https://doi.org/10.1111/j.1742-1241.2011.02751.x).
Journal Impact Factor (2018): 2.6.
- 40 Fu, G., Luo, J., **Berg, A.**, Wang, Z., Li, J., Das, K., Li, R., & Wu, R. (2011). A dynamic model for functional mapping of biological rhythms. *Journal of Biological Dynamics*, **5**: (1), 84–101.
[10.1080/17513758.2010.491558](https://doi.org/10.1080/17513758.2010.491558).
- 39 John, G., Hegarty, J. P., Yu, W., **Berg, A.**, Pastor, D. M., Kelly, A. A., Wang, Y., Poritz, L. S., Schreiber, S., Koltun, W. A., et al. (2011). NKX2-3 variant rs11190140 is associated with IBD and alters binding of NFAT. *Molecular Genetics and Metabolism*, **104**: (1-2), 174–179.
[10.1016/j.ymgme.2011.06.023](https://doi.org/10.1016/j.ymgme.2011.06.023).
Journal Impact Factor (2018): 3.6.
- 38 Jones, N. R., Spratt, T. E., **Berg, A.**, Muscat, J. E., Lazarus, P., & Gallagher, C. J. (2011). Association studies of excision repair cross-complementation group 1 (ERCC1) haplotypes with lung and head and neck cancer risk in a Caucasian population. *Cancer Epidemiology*, **35**: (2), 175–181.
[10.1016/j.canep.2010.08.007](https://doi.org/10.1016/j.canep.2010.08.007).
Journal Impact Factor (2018): 5.1.
- 37 Lin, Z., Hegarty, J. P., **Berg, A.**, Wang, Z., Wang, Y., Wu, R., Kelly, A., Poritz, L., & Koltun, W. A. (2011). DLG5 P1371Q is associated with inflammatory bowel disease and complementary to R30Q in disease susceptibility. *Swiss Medical Weekly*, **141**: (w13290), 1–7.
[10.4414/smww.2011.13290](https://doi.org/10.4414/smww.2011.13290).
- 36 Lin, Z., John, G., Hegarty, J. P., **Berg, A.**, Yu, W., Wang, Y., Kelly, A. A., Peterson, B. Z., Poritz, L. S., Floros, J., et al. (2011). Genetic variants and monoallelic expression of surfactant protein-D in inflammatory bowel disease. *Annals of Human Genetics*, **75**: (5), 559–568.
[10.1111/j.1469-1809.2011.00662.x](https://doi.org/10.1111/j.1469-1809.2011.00662.x).
- 35 Poritz, L. S., Sehgal, R., Hartnett, K., **Berg, A.**, & Koltun, W. A. (2011). Tumor volume and percent positive lymph nodes as a predictor of 5-year survival in colorectal cancer. *Surgery*, **150**: (4), 649–655.
[10.1016/j.surg.2011.07.049](https://doi.org/10.1016/j.surg.2011.07.049).
Journal Impact Factor (2018): 3.5.
- 34 Ramesh, G., **Berg, A.**, & Jayakumar, C. (2011). Plasma netrin-1 is a diagnostic biomarker of human cancers. *Biomarkers*, **16**: (2), 172–180.
[10.3109/1354750X.2010.541564](https://doi.org/10.3109/1354750X.2010.541564).
- 33 Sehgal, R., **Berg, A.**, Figueroa, R., Poritz, L. S., McKenna, K. J., Stewart, D. B., & Koltun, W. A. (2011b). Risk factors for surgical site infections after colorectal resection in diabetic patients. *Journal of the American College of Surgeons*, **212**: (1), 29–34.
[10.1016/j.jamcollsurg.2010.09.011](https://doi.org/10.1016/j.jamcollsurg.2010.09.011).
Journal Impact Factor (2018): 4.5.

- 32 Sharma, A. K., Kline, C. L., **Berg, A.**, Amin, S., & Irby, R. B. (2011). The Akt inhibitor ISC-4 activates prostate apoptosis response protein-4 and reduces colon tumor growth in a nude mouse model. *Clinical Cancer Research*, **17**: (13), 4474–4483.
[10.1158/1078-0432.CCR-10-2370](https://doi.org/10.1158/1078-0432.CCR-10-2370).
- 31 Yu, W., Hegarty, J. P., **Berg, A.**, Chen, X., West, G., Kelly, A. A., Wang, Y., Poritz, L. S., Koltun, W. A., & Lin, Z. (2011). NKX2-3 transcriptional regulation of endothelin-1 and VEGF signaling in human intestinal microvascular endothelial cells. *PLoS ONE*, **6**: (5), e20454: 1–10.
[10.1371/journal.pone.0020454](https://doi.org/10.1371/journal.pone.0020454).
 Journal Impact Factor (2018): 2.8.
- 30 Ahn, K., Luo, J., **Berg, A.**, Keefe, D., & Wu, R. (2010). Functional mapping of drug response with pharmacodynamic–pharmacokinetic principles. *Trends in Pharmacological Sciences*, **31**: (7), 306–311.
[10.1016/j.tips.2010.04.004](https://doi.org/10.1016/j.tips.2010.04.004).
 Journal Impact Factor (2018): 11.5.
- 29 **Berg, A.**, He, Q., Shen, Y., Chen, Y., Huang, M., & Wu, R. (2010). Trilocus disequilibrium analysis of multiallelic markers in outcrossing populations. *Statistical Applications in Genetics and Molecular Biology*, **9**: (1), 1–22.
[10.2202/1544-6115.1528](https://doi.org/10.2202/1544-6115.1528).
[Berg, He, Shen_2010_Statistical-Applications-in-Genetics-and-Molecular-Biology.pdf](#)
 This paper develops a nice mathematical model for analyzing linkage disequilibrium in the presence of multiallelic markers.
- 28 **Berg, A.**, McMurry, T. L., & Politis, D. N. (2010). Subsampling p-values. *Statistics and Probability Letters*, **80**: 1358–1364.
[10.1016/j.spl.2010.04.018](https://doi.org/10.1016/j.spl.2010.04.018).
[Berg, McMurry, Politis_2010_Statistics-and-probability-letters.pdf](#)
 This paper explores theoretical and finite-sample properties of subsampling procedures that can be used to generate p-values in hypothesis testing.
- 27 **Berg, A.**, Paparoditis, E., & Politis, D. N. (2010). A bootstrap test for time series linearity. *Journal of Statistical Planning and Inference*, **140**: (12), 3841–3857.
[10.1016/j.jspi.2010.04.047](https://doi.org/10.1016/j.jspi.2010.04.047).
[Berg, Paparoditis, Politis_2010_Journal-of-Statistical-Planning-and-Inference.pdf](#)
 A bootstrap algorithm is proposed in this paper for testing Gaussianity and linearity in stationary time series, and consistency of the relevant bootstrap approximations is proven rigorously.
- 26 **Berg, A.**, & Suaray, K. (2010). Bootstrap bandwidth selection for a smooth survival function estimator from censored data. *Journal of Statistical Research*, **44**: (2), 207–217.
[Berg, Suaray_2010_Journal-of-Statistical-Research.pdf](#)
 In this paper we propose a new estimator for the survival function that uses the so-called Peterson representation of the survival function and establish its strong consistency. A bandwidth selection procedure based on Efron’s censored bootstrap accompanies the estimator.
- 25 Chen, G., Giambone, N. E., Dluzen, D. F., Muscat, J. E., **Berg, A.**, Gallagher, C. J., & Lazarus, P. (2010). Glucuronidation genotypes and nicotine metabolic phenotypes: Importance of functional UGT2B10 and UGT2B17 polymorphisms. *Cancer Research*, **70**: (19), 7543–7552.
[10.1158/0008-5472.CAN-09-4582](https://doi.org/10.1158/0008-5472.CAN-09-4582).
 Journal Impact Factor (5-Year): 9.1.
- 24 Drost, D. R., Benedict, C. I., **Berg, A.**, Novaes, E., Novaes, C. R., Yu, Q., Dervinis, C., Maia, J. M., Yap, J., Miles, B., et al. (2010). Diversification in the genetic architecture of gene expression and transcriptional networks in organ differentiation of populus. *Proceedings of the National Academy of Sciences*, **107**: (18), 8492–8497.
[10.1073/pnas.0914709107](https://doi.org/10.1073/pnas.0914709107).
 Journal Impact Factor (2018): 9.6.
- 23 Fu, G., **Berg, A.**, Das, K., Jiahan, L., Runze, L., & Wu, R. (2010). A statistical model for mapping morphological shape. *Theoretical Biology and Medical Modelling*, **7**: (28), 1–14.
[10.1186/1742-4682-7-28](https://doi.org/10.1186/1742-4682-7-28).

- 22 He, Q., **Berg, A.**, Li, Y., Vallejos, C. E., & Wu, R. (2010). Mapping genes for plant structure, development and evolution: Functional mapping meets ontology. *Trends in Genetics*, **26**: (1), 39–46.
[10.1016/j.tig.2009.11.004](https://doi.org/10.1016/j.tig.2009.11.004).
 Journal Impact Factor (2018): 10.6.
- 21 Kim, B.-R., McMurry, T., Zhao, W., Wu, R., & **Berg, A.** (2010). Wavelet-based functional clustering for patterns of high-dimensional dynamic gene expression. *Journal of Computational Biology*, **17**: (8), 1067–1080.
[10.1089/cmb.2009.0270](https://doi.org/10.1089/cmb.2009.0270).
[Kim, McMurry, Zhao_2010_Journal-of-Computational-Biology.pdf](#).
- 20 Li, N., McMurry, T., **Berg, A.**, Wang, Z., Berceli, S. A., & Wu, R. (2010). Functional clustering of periodic transcriptional profiles through ARMA(p, q). *PLoS ONE*, **5**: (4).
[10.1371/journal.pone.0009894](https://doi.org/10.1371/journal.pone.0009894).
 Journal Impact Factor (2018): 2.8.
- 19 Li, Y., **Berg, A.**, Wu, L. R., Wang, Z., Chen, G., & Wu, R. (2010). Modeling the aneuploidy control of cancer. *BMC Cancer*, **10**: (346), 1–9.
[10.1186/1471-2407-10-346](https://doi.org/10.1186/1471-2407-10-346).
 Journal Impact Factor (2018): 2.9.
- 18 Lin, M., **Berg, A.**, & Wu, R. (2010). Modeling the genetic etiology of pharmacokinetic–pharmacodynamic links with the ARMA process. *Journal of Biopharmaceutical Statistics*, **20**: (2), 351–372.
[10.1080/10543400903572795](https://doi.org/10.1080/10543400903572795).
- 17 Luo, J., **Berg, A.**, Ahn, K., Das, K., Li, J., Wang, Z., Li, Y., & Wu, R. (2010). Functional genomewide association studies of longitudinal traits. *Handbook of Adaptive Designs in Pharmaceutical and Clinical Development*, 402–415.
[10.1201/b10279-24](https://doi.org/10.1201/b10279-24).
- 16 Sehgal, R., **Berg, A.**, Hegarty, J. P., Kelly, A. A., Lin, Z., Poritz, L. S., & Koltun, W. A. (2010). NOD2/CARD15 mutations correlate with severe pouchitis after ileal pouch-anal anastomosis. *Diseases of the Colon & Rectum*, **53**: (11), 1487–1494.
[10.1007/DCR.0b013e3181f22635](https://doi.org/10.1007/DCR.0b013e3181f22635).
 Journal Impact Factor (2018): 4.1.
- 15 Abramson, I., & **Berg, A.** (2009). An occupancy problem arising in power law fitting. *Internet Mathematics*, **6**: (1), 19–28.
[10.1080/15427951.2009.10129178](https://doi.org/10.1080/15427951.2009.10129178).
[Abramson, Berg_2009_Internet-Mathematics.pdf](#)
 In this paper a truncation rule for estimating the degree of a power law is developed and consistency is proven. Of particular note in this paper are the interesting manipulations of the Riemann Zeta function to establish the proof of the main theorem.
- 14 **Berg, A.**, & Politis, D. (2009a). CDF and survival function estimation with infinite-order kernels. *Electronic Journal of Statistics*, **3**: 1436–1454.
[10.1214/09-EJS396](https://doi.org/10.1214/09-EJS396).
[Berg, Politis_2009_Electronic-Journal-of-Statistics.pdf](#)
 In this paper I build on the ideas of deficiency as originally introduced by Hodges and Lehman in their 1970 *Annals* paper by developing the concept of a deficiency rate and apply it in the context of CDF and survival function estimation with infinite-order kernels. Utilizing tools learned from my PhD studies in Mathematics, I embraced the mathematical theory of generalized functions to prove some of the theorems in this paper.
- 13 **Berg, A.**, & Politis, D. (2009b). Higher-order accurate polyspectral estimation with flat-top lag-windows. *Annals of the Institute of Statistical Mathematics*, **61**: (2), 477–498.
[10.1007/s10463-007-0154-0](https://doi.org/10.1007/s10463-007-0154-0).
[Berg, Politis_2009_Annals-of-the-Institute-of-Statistical-Mathematics.pdf](#)
 In this paper I developed the flat-top kernel methodology to polyspectral estimation and provide an accompanying bandwidth selection algorithm.

- 12 Cheng, Y., **Berg, A.**, Wu, S., Li, Y., & Wu, R. (2009). Computing genetic imprinting expressed by haplotypes. *Methods Mol Biol*, 189–212.
[10.1007/978-1-60761-247-6_11](https://doi.org/10.1007/978-1-60761-247-6_11).
 Journal Impact Factor (2018): 10.7.
- 11 He, Q., Shen, Y., Chen, Y., Zhou, Y., **Berg, A.**, Wu, R., & Huang, M. (2009). Development of 16 polymorphic simple sequence repeat markers for lycoris longituba from expressed sequence tags. *Molecular Ecology Resources*, 9: (1), 278–280.
[10.1111/j.1755-0998.2008.02322.x](https://doi.org/10.1111/j.1755-0998.2008.02322.x).
- 10 Hou, W., Liu, T., Li, Y., Li, Q., Li, J., Das, K., **Berg, A.**, & Wu, R. (2009). Multilocus genomics of outcrossing plant populations. *Theoretical Population Biology*, 76: (1), 68–76.
[10.1016/j.tpb.2009.04.005](https://doi.org/10.1016/j.tpb.2009.04.005).
- 9 Li, Y., **Berg, A.**, Chang, M. N., Du, P., Ahn, K., Mauger, D., Liao, D., & Wu, R. (2009). A statistical model for genetic mapping of viral infection by integrating epidemiological behavior. *Statistical Applications in Genetics and Molecular Biology*, 8: (1), 38: 1–22.
[10.2202/1544-6115.1475](https://doi.org/10.2202/1544-6115.1475).
- 8 Wen, S., Wang, C., **Berg, A.**, Li, Y., Chang, M. M., Fillingim, R. B., Wallace, M. R., Staud, R., Kaplan, L., & Wu, R. (2009). Modeling genetic imprinting effects of DNA sequences with multilocus polymorphism data. *Algorithms for Molecular Biology*, 4: (11), 1–11.
[10.1186/1748-7188-4-11](https://doi.org/10.1186/1748-7188-4-11).
- 7 Wu, R., **Berg, A.**, & Li, Q. (2009). Discussion: Why do we test multiple traits in genetic association studies? *Journal of the Korean Statistical Society*, 1: (38), 11–13.
[10.1016/j.jkss.2008.10.004](https://doi.org/10.1016/j.jkss.2008.10.004).
- 6 Wu, S., Yap, J. S., Li, Y., Li, Q., Fu, G., Li, J., Das, K., **Berg, A.**, Zeng, Y., & Wu, R. (2009). Network models for dissecting plant development by functional mapping. *Current Bioinformatics*, 4: (3), 183–187.
[10.2174/157489309789071093](https://doi.org/10.2174/157489309789071093).
- 5 **Berg, A.** (2008). Multivariate lag-windows and group representations. *Journal of Multivariate Analysis*, 99: (10), 2479–2496.
[10.1016/j.jmva.2008.02.038](https://doi.org/10.1016/j.jmva.2008.02.038).
[Berg_2008_Journal-of-Multivariate-Analysis.pdf](#)
 Professor Persi Diaconis wrote a popular book that uses group representations (from abstract algebra) in various probability and statistics applications. In this manuscript, I provide a new application of group representations to solving a problem that arises in time series analysis.
- 4 Brumback, B., & **Berg, A.** (2008). On effect-measure modification: Relationships among changes in the relative risk, odds ratio, and risk difference. *Statistics in Medicine*, 27: (18), 3453–3465.
[10.1002/sim.3246](https://doi.org/10.1002/sim.3246).
[Brumback,Berg_2008_Statistics-in-Medicine.pdf](#).
- 3 Kim, B.-R., Zhang, L., **Berg, A.**, Fan, J., & Wu, R. (2008). A computational approach to the functional clustering of periodic gene-expression profiles. *Genetics*, 180: (2), 821–834.
[10.1534/genetics.108.093690](https://doi.org/10.1534/genetics.108.093690).
- 2 Ma, C.-X., Yu, Q., **Berg, A.**, Drost, D., Novaes, E., Fu, G., Yap, J. S., Tan, A., Kirst, M., Cui, Y., et al. (2008). A statistical model for testing the pleiotropic control of phenotypic plasticity for a count trait. *Genetics*, 179: (1), 627–636.
[10.1534/genetics.107.081794](https://doi.org/10.1534/genetics.107.081794).
- 1 Kane, D. L., Kilb, D., **Berg, A.**, & Martynov, V. G. (2007). Quantifying the remote triggering capabilities of large earthquakes using data from the ANZA Seismic Network catalog (southern California). *Journal of Geophysical Research: Solid Earth*, B11302: (1–14).
[10.1029/2006JB004714](https://doi.org/10.1029/2006JB004714).

Presentations

- 2025 ◇ 基于熵值分析的汉语音形映射：通过语音分析提升语言学习 presentation at the [8th International Forum on Linguistics and Chinese Education](#) at Princeton held April 6-7 2025.
- 2025 ◇ Targepeutics DIPG Trial—Phase II Primary Endpoint presentation at the [Beat Childhood Cancer Annual Meeting](#) held in St. Petersburg March 5-7 2025.
- 2024 ◇ End of Induction Response Correlates with Clinical Outcomes In Patients with High-Risk Neuroblastoma oral presentation at the [Beat Childhood Cancer Annual Meeting](#) in February 2024.
- 2021 ◇ Statistical Analysis of the International Mathematical Olympiad oral presentation at the [Mathematical Association of America MathFest Conference](#) in August 2021.
- 2021 ◇ Introducing Bayesian Inference with the Taxicab Problem oral presentation at the [10th Australian Conference on Teaching Statistics \(OZCOTS 2021\)](#) in July 2021.
- 2021 ◇ Sharpening Jensen’s Inequality with Applications oral presentation at the [Australian Statistical Society and New Zealand Statistical Association Conference \(ANZSC 2021\)](#) in July 2021.
- 2020 ◇ Describing the Biostatistics Career. Zoom presentation to students at [Hershey Middle School](#) for their career day event on April 28, 2020.
- 2019 ◇ Probability, Statistics, and Bayesian Analysis. Summer short course presented to over 50 undergraduate students at [Beijing University of Chemical Technology](#) from July 1, 2019 – July 10, 2019.
- 2019 ◇ Introduction to R and Monte Carlo Simulation. Short course presented to very talented middle school students at the 2019 MathPath Summer Camp on the [Grand Valley State University](#) campus. July 21-28, 2019.
- 2019 ◇ AIME Problem Solving. Short course presented to very talented middle school students at the 2019 MathPath Summer Camp on the [Grand Valley State University](#) campus. July 21-28, 2019.
- 2019 ◇ Advancing The Bayesian New Statistics Paradigm with Interval Null Hypotheses: Moving from p-values to Posterior Probabilities and Bayes Factors. Poster presentation at [2019 United States Conference on Teaching Statistics](#) held at [Penn State](#) from May 16-18, 2019.
- 2018 ◇ A new look at Bayes factor and its implication on model selection. [Penn State Division of Biostatistics Seminar](#) on September 13, 2018. I worked with Dr. Jason Liao and PhD student Vishal Midya on this presentation but the seminar was led by Dr. Jason Liao.
- 2017 ◇ Reduced Bias in Nonparametric Censored Density and Hazard Estimation. 2017 Conference on Lifetime Data Science: Data Science, Precision Medicine and Risk Analysis with Lifetime Data held at the [University of Connecticut](#). <http://merlot.stat.uconn.edu/lida/>. May 25-27, 2017.
- 2017 ◇ Robustified Bayesian Inference. Penn State Division of Biostatistics Seminar at [Penn State Hershey](#) on April 27, 2017.
- 2016 ◇ Sleep disordered breathing is associated with DNA methylation of obesity-related genes in adolescents. Presentation at the European Sleep Research Annual Conference in [Bologna, Italy](#) from September 13 – 16, 2016.
- 2016 ◇ A Statistical Potpourri: Swarthmorean Proportions, Fourier Transforms, Group Representations, and More. Invited talk presented at [Swarthmore College](#), March 22, 2016.

Presentations (continued)

- 2016 ◇ [DNA Methylation and Obesity and Sleep Apnea](#). Penn State Division of Epidemiology Seminar at [Penn State Hershey](#) on September 21, 2016.
- 2016 ◇ [Bayesian approaches to clinical trial design](#). Penn State Neurosurgery Department Evidence-Based Medicine Seminar at [Penn State Hershey](#) on March 18, 2016.
- 2015 ◇ [Superkernels, Symmetry, and Survival](#). Penn State Division of Biostatistics & Bioinformatics Seminar at [Penn State Hershey](#) on October 15, 2015.
- 2014 ◇ [Design and Analysis of High-Throughput Genomic Data with Emphasis on DNA Methylation](#). Presentation at the School of Public Health in [Shanghai Jiaotong University](#), Shanghai, China from June 28 – 29, 2014.
- 2013 ◇ [The Brainchild of Bayes and Fisher: Empirical Bayes Methodology](#). Penn State Biostatistics & Bioinformatics Divisional Seminar at [Penn State Hershey](#) on November 20, 2013.
- 2013 ◇ [Medical Genetics](#). Introduction to Patient Oriented Research class presentation at [Penn State Hershey](#). September 13, 2013.
- 2013 ◇ [Biostatistics & Bioinformatics Research at Penn State](#). Presentation for the MD/PhD students at [Penn State Hershey](#). January 17, 2013.
- 2012 ◇ [Medical Genetics](#). Introduction to Patient Oriented Research class presentation at [Penn State Hershey](#). September 14, 2012.
- 2012 ◇ [Biostatistics & Bioinformatics at PSU College of Medicine](#). Public Health Sciences graduate student presentation at [Penn State Hershey](#). August 23, 2012.
- 2012 ◇ [Biomedical Informatics Program Update](#). Presentation to the CTSI External Advisory Board at [Penn State Hershey](#). April 17, 2012.
- 2012 ◇ [Reproducible Research for Biostatisticians](#). Public Health Sciences Seminar – Biostatistics & Bioinformatics Division at [Penn State Hershey](#). January 19, 2012.
- 2012 ◇ [Empirical Bayes Inference Made Robust: picking up where James-Stein left off](#). Invited talk presented at [Temple University](#), September 7, 2012.
- 2011 ◇ [Standing Between a Bayesian and a Frequentist: An Empirical Bayes Exploration of Movies, Baseball, and Long Beach Basketball](#). Invited talk presented at [California State University, Long Beach](#) (Long Beach, CA), March 2011.
- 2011 ◇ [Standing Between a Bayesian and a Frequentist: An Empirical Bayes Exploration of Movies, Baseball, and Williams College](#). Invited talk presented at [Williams College](#) (Williamstown, MA), January 2011.
- 2011 ◇ [Medical Genetics](#). Introduction to Patient Oriented Research class presentation at [Penn State Hershey](#). December 9, 2011.
- 2011 ◇ [The Design and Analysis of Laboratory-Based Investigations](#). Neurosurgery Journal Club presentation at [Penn State Hershey](#). March 25, 2011.
- 2010 ◇ [New Functional Clustering Methodology and Applications](#). Invited talk presented in the Statistics Department at [Peking University](#), Beijing, China, July, 2010.

Presentations (continued)

- 2010 ◇ [Multiple Estimation Bias Adjustment with Application to GWAS](#). Invited presenter at the Symposium of the Center for Computational Biology, [Beijing Forestry University](#), Beijing, China, July, 19, 2010.
- 2010 ◇ [A Bootstrap Test for Time Series Linearity](#). Invited talk at Conference on Resampling Methods and High Dimensional Data in [College Station, TX](#) March 24 – March 25, 2010.
- 2010 ◇ [Multiple Estimation Bias Adjustment with Application to GWAS](#). Invited talk presented at the [University of Arizona](#) (Tucson, AZ), October 2010.
- 2010 ◇ [Variety's the very spice of life, That gives it all its flavor](#). Invited talk presented at Student Colloquium Series in the Mathematics Department at [Bucknell University](#), Lewisburg, PA, March 2010.
- 2010 ◇ [The Art and Craft of Biostatistics in the Berg Lab](#). Invited presenter at the Penn State Cancer Institute Molecular Epidemiology Working Group Meeting at [Penn State Hershey](#), November 15, 2010.
- 2010 ◇ [Biostatistical collaborations with COM researchers](#). Presentation for College of Medicine incoming graduate students at [Penn State Hershey](#), August 16, 2010.
- 2010 ◇ [Statistical and Computational Pharmacogenomics](#). Presentation at the Center for Pharmacogenetics Workshop, [Pennsylvania State University](#), University Park, PA, March 2010.
- 2010 ◇ [Gene Expression Functional Clustering and Expression QTLs](#). Invited talk presented at the Statistics Department Seminar Series at [Pennsylvania State University](#), University Park, PA, February 2010.
- 2009 ◇ [Improving the Kaplan-Meier Estimator](#). Invited talk at the 2009 AMS Sectional Meeting on Recent Advances in Probability and Statistics at [Florida Atlantic University](#) in Boca Raton, FL October 30 – November 1, 2009.
- 2009 ◇ [A New Use of Group Representation Theory in Statistics](#). Contributed presenter at the 2009 AMS Sectional Meeting at [Penn State University](#) in University Park, PA October 24 – 25, 2009.
- 2009 ◇ [The First Summer International Workshop on Statistical & Computational Genetics](#). Invited short course instructor of this workshop at [Beijing Forestry University](#), Beijing, China, August 2009.
- 2008 ◇ [Linkage Disequilibria Analysis of Multilocus Multiallelic Markers in Outcrossing Populations](#). Invited presenter at the World Congress of Gene, [Guangzhou, China](#), December 2008.
- 2009 ◇ [Constructing Gene Expression Networks](#). Invited talk given at [Penn State University](#), Department of Public Health Sciences, Hershey, PA, April 2009.
- 2009 ◇ [Clustering Gene Expressions](#). Invited talk presented at the Population Sciences Program Quarterly Meeting at [Penn State Hershey](#), December 2009.
- 2009 ◇ [A Bootstrapped Linearity Test](#). Invited talk presented at Food and Resource Economics Seminar at [University of Florida](#), Gainesville, FL, March 2009.
- 2008 ◇ [Resampling the Bispectrum](#). Invited talk presented at the workshop on Bootstrap and Time Series in [Kaiserslautern, Germany](#), June 2008.
- 2008 ◇ [Nonparametric Function Estimation with Infinite-Order Kernels](#). Invited talk presented at SIAM-SEAS Special Session on Recent Developments on Empirical Likelihood and Nonparametric Statistics at the [University of Central Florida](#), March 2008.

Presentations (continued)

- 2008 ◇ [Nonparametric Estimation at a Semiparametric Rate](#). Invited presenter at the SRCOS conference on Modern Semiparametric Methods in Action in [Charleston, SC](#), June 2008.
- 2008 ◇ [An Epistatic Model for Mapping Phenotypic Plasticity of a Count Trait](#). Talk presented at ENAR, in [Arlington, VA](#), March 2008.
- 2008 ◇ [Nonparametric Estimation at a Nearly Parametric Rate](#). Invited talk presented at the UF/FSU Joint Colloquium at [Florida State University](#) in Tallahassee, FL, April 2008.
- 2008 ◇ [Recent Math Problems Arising in Statistics involving Generalized Functions, Group Representations, Inequalities, and the Riemann Zeta Function](#). Invited talk at the Applied Math Seminar in the Department of Mathematics at the [University of Florida](#), April 2008.
- 2008 ◇ [Resources for Statisticians](#). Invited speaker at the Statistics Student Seminar at the [University of Florida](#), Gainesville, FL, November 2008.
- 2007 ◇ [Density Estimation of IID, Dependent, and Censored Data](#). Presentations at [Cal Poly Pomona](#) (Pomona, CA) in March 2007.
- 2007 ◇ [Density Estimation of IID, Dependent, and Censored Data](#). Presentations at [Cal Poly](#) (San Luis Obispo, CA) in March 2007.
- 2007 ◇ [Nonparametric Function Estimation with Infinite-Order Kernels and Applications](#). Presentation at [University of Florida](#) in February 2007.
- 2007 ◇ [Nonparametric Function Estimation with Infinite-Order Kernels and Applications](#). Presentation at [Tulane](#) in February 2007.
- 2007 ◇ [Nonparametric Function Estimation with Infinite-Order Kernels and Applications](#). Presentation at [University of Nebraska, Lincoln](#) in February 2007.
- 2007 ◇ [Nonparametric Function Estimation with Infinite-Order Kernels and Applications](#). Presentation at [University of Nevada, Las Vegas](#) in February 2007.
- 2007 ◇ [A Statistical Journey through Historic Haverford](#). Presentation at [Haverford College](#), Haverford, PA, January 2007.
- 2007 ◇ [Linear Models with R: A demonstration](#). Talk presented for a linear models course at [University of California, San Diego](#) (La Jolla, CA), April 2007.
- 2006 ◇ [Density Estimation of IID, Dependent, and Censored Data via Flat-Top Kernels](#). Talk presented at the Conference on Current Research and Applications of Statistical Methodology – [San Diego](#) Chapter of the ASA, Second Annual One-Day Conference, November 17, 2006.

Other Statistical Conferences/Workshops/Short Courses Attended

- May 21-24, 2024 ◇ 8th International Workshop in Sequential Methodologies, Orem, UT
- April 26-27, 2024 ◇ 31st International Conference on Chinese Language Instruction at Princeton University
- June 28 – July 1, 2021 ◇ United States Conference on Teaching Statistics: Expanding Opportunities
- January 6-9, 2021 ◇ Joint Mathematics Meetings 2020
- August 3-6, 2016 ◇ MAA MathFest 2016, Columbus, OH

Other Statistical Conferences/Workshops/Short Courses Attended (continued)

- August 5-8, 2015 ◇ Centennial Celebration MAA MathFest 2015, Washington, DC
- July 13-17, 2015 ◇ "Event History & Survival Analysis" Statistical Horizons workshop in Philadelphia by Dr. Paul Allison
- June 19-20, 2015 ◇ "Longitudinal Data Analysis Using SAS" Statistical Horizons workshop in Boston by Dr. Paul Allison
- June 11-12, 2015 ◇ "Multilevel Modeling: A Second Course" Statistical Horizons workshop in Philadelphia by Dr. Kris Preacher
- May 1-2, 2015 ◇ "Causal Inference with Directed Graphs" Statistical Horizons workshop in Philadelphia by Dr. Felix Elwert
- March 27-28, 2015 ◇ "Multilevel Modeling" Statistical Horizons workshop in Philadelphia by Dr. Tenko Raykov
- November 14-15, 2014 ◇ "Applied Bayesian Data Analysis" Statistical Horizons workshop in Philadelphia by Dr. Shane Jensen
- November 11-15, 2013 ◇ Leadership Academy, Hershey, PA
- April 2012 ◇ ENAR 2012 Spring Meeting, Washington, DC
- April 2012 ◇ "Bayesian Adaptive Methods for Clinical Trials" (full-day ENAR workshop), Washington, DC
- March 2012 ◇ Translational Bioinformatics and Clinical Research Informatics Joint Summits, San Francisco, CA
- December 2011 ◇ "First Short Course on Next-Gen Sequencing: Technology and Statistical Methods", Birmingham, AL
- October 2011 ◇ Symposium on Large-Scale Inference, Silver Spring, MD
- July 2010 ◇ First Joint Biostatistics Symposium, Beijing Renmin University, Beijing, China
- July 2010 ◇ An International Conference in Honor of P.L. Hsu's 100th Birthday, Beijing, China
- April 2010 ◇ Frontiers in Mathematical Biology: NSF-NIH PIs Meeting 2010, Washington, DC
- April 2010 ◇ American Association for Cancer Research 101st Annual Meeting, Washington, DC
- February 2010 ◇ Penn State Cancer Institute Mini-Symposium, "Frontiers in the Interface between Statistics and Genetics", Hershey, PA (Co-organizer, Session Chair)
- January 2009 ◇ Winter Workshop on "Semiparametric Methodology", Gainesville, FL
- April 2008 ◇ Princeton Day of Statistics, Princeton, NJ
- April 2008 ◇ K-State Applied Statistics Conference, Manhattan, KS
- January 2008 ◇ Winter Workshop on "Bayesian Model Selection and Objective Methods", Gainesville, FL (Session Chair)
- August 2007 ◇ University of Florida College of Agricultural and Life Sciences Teaching Symposium

Graduate Committees/Directed Studies

PhD Committees

- 2021 ◇ Nour Hawila (PSU Biostatistics PhD Student), Advisor, Confidence intervals for noninferiority testing, Bayesian joint modeling of interrater and intrarater reliability, topics in biostatistical modeling and statistics education, graduated June 2023.
- 2020 ◇ Chenqi (Stacey) Fu (PSU Biostatistics PhD Student), Committee Member, Early Phase Clinical Trial Designs Based on Predictive Bayes Factor and Predictive Bayesian Model Averaging, expected graduation in 2023.
- 2020 ◇ Daniel McGuire (PSU Biostatistics PhD Student), Committee Member, Methods for assessing replicability in GWAS and analyzing large-scale Electronic Health Record datasets, graduated June 2021.
- 2020 ◇ Renan Sauteraud (PSU Biostatistics PhD Student), Committee Member, Statistical Methods for the Functional Genomic Analysis of the X Chromosome, graduated June 2021.
- 2020 ◇ Vishal Midya (PSU Biostatistics PhD Student), Co-advisor with Jason Liao, Frequentist and Bayesian hypothesis testing focusing on meaningful effect sizes, graduated in August 2020.
- 2013 ◇ Diana Tacosky (PSU MD/PHD Program), Committee Member, Applying a Candidate Gene Approach to Investigate the Molecular Changes that Accompany the Development of Addiction-Like Behaviors to Opioids in Rats. Defended September 16, 2013.

Graduate Committees/Directed Studies (continued)

- 2013 ◇ Joe Ashmore (PSU Nutritional Sciences), Committee Member, Dietary, Lifestyle, and Genetic Factors Influencing Colorectal Cancer Risk. Defended January 28, 2013.
- 2013 ◇ Joel Cobel (PSU Biomedical Sciences), Committee Member, Distal arthrogyposis type I and MyBPC1, presentation/exam on June 14, 2012, June 28, 2012, and January 24, 2013.
- 2011 ◇ Wei Sun (PSU Statistics), Committee Member, Feature Screening and Variable Selection in Ultra-High Dimensional Survival Data Analysis, advanced December 7, 2011.
- 2009 ◇ Xiaobo Li (UF Forestry and Statistics Co-PhD), Committee Member, Association Mapping for Wood Property Traits of Loblolly Pine using SNP Markers, defended May 18, 2009.
- 2009 ◇ Qin Li (UF Statistics), Committee Member, Statistical Models for Haplotyping Complex Inherited Diseases in Humans, defended July 2, 2009.
- 2009 ◇ Yao Li (UF Statistics), Committee Member, Statistical Designs and Algorithms for Modeling the Genetic Architecture of Cancer Susceptibility, defended July 1, 2009.
- 2009 ◇ Xinxin Zhang (UF Economics), Committee Member, Modeling Yield Loss and Catastrophic Risk in Florida Citrus Industry, advanced June 12, 2009.

Master's Committees

- 2008 ◇ Hong Li, (UF Statistics) Committee Chair, Sequencing Tumor Growth with HapMap, defended 12/25/08.
- 2008 ◇ Guifang Fu, (UF Statistics) Committee Chair, QTL Mapping on Shape, defended 11/24/08.
- 2008 ◇ Nasha Wang, (UF Statistics) Committee Chair, Functional Interval Mapping of Quantitative Trait Loci (QTL) in Tumor Cell Growth, defended 12/16/08.
- 2009 ◇ Shuguang Tan (UF Statistics) On L_1 Regularization Path Algorithm for GLMs, defended 6/11/09.
- 2008 ◇ Jiahan Li, (UF Statistics) A Statistical Model for Mapping Quantitative Trait Loci in Autotetraploids, defended 10/20/08.
- 2008 ◇ Liming Qu, (UF Statistics) Tolerance Interval and its application, defended 8/19/08.
- 2008 ◇ Sharon Wen, (UF Statistics) Detection of genetic imprinting effect expressed by multilocus haplotypes, defended 7/28/08.
- 2008 ◇ Hao Zheng, (UF Statistics) Treatments of Ties in the Sign Test, defended 7/22/08.
- 2008 ◇ Jiang Liu, (UF Statistics), Functional Mapping of Quantitative Trait Loci Regulating Pharmacokinetics and Pharmacodynamics by Using Fentanyl Addiction as an Example, defended 7/10/08.
- 2008 ◇ Anhui Huang (UF Soil & Water) Characterization of Arsenic Resistant Bacterial Communities in the Rhizosphere of an Arsenic Hyperaccumulator *Pteris Vittata* L., defended 10/31/08.

Directed Independent Studies/Internships

- 2019 ◇ Andy Chen (Hershey High School Student), Biostatistical Applications (Summer 2019)
- 2018 ◇ Jay Yang (Penn State Undergraduate), Biostatistical Applications (Summer 2018)
- 2018 ◇ Hui Zeng (Penn State, New Biostatistics PhD Student), Nonparametric Estimation in Survival Analysis (Summer 2018)
- 2013 ◇ Cong Xu (Penn State), Biostatistical Applications (Fall 2013)
- 2013 ◇ Mandi Feinberg (VCU senior), Bioinformatics Applications (Summer 2013)
- 2012 ◇ Allshine Chen (Penn State), Summer Internship (Summer 2012)
- 2010 ◇ Heather Connelly (Ursinus College senior), Earthquake Statistics (Summer 2010)
- 2009 ◇ Che-Shun Chang (UF Statistics Graduate Student), Regression and Multilevel/Hierarchical Models (Summer 2009)
- 2009 ◇ Steve Chung (UF Statistics Graduate Student), Applied Time Series Methods (Spring 2009)
- 2008 ◇ Alex Savenkov (UF Statistics Graduate Student), Time Series Analysis and Applications (Fall 2008)
- 2008 ◇ Yanqing Yan (UF Genetics Graduate Student), Functional Mapping of Quantitative Trait Loci (Fall 2008)
- 2008 ◇ Guifang Fu (UF Mathematics Graduate Student), Statistical Genetics of Quantitative Traits (Spring 2008)
- 2007 ◇ Yingxia Wan (UF Statistics Graduate Student), Subsampling the Bispectrum (Fall 2007)

Courses Taught

Penn State College of Medicine (Penn State Hershey)

- 2013 – 2024 (Spring) ◇ PHS 528: Bayesian Methods
- 2023 – 2024 (Spring) ◇ PHS 583: Asymptotic Tools
- 2011 – 2014 (Spring) ◇ PHS 525: Biostatistics for Lab Scientists

Penn State University (Main Campus)

- 2010 (Spring) ◇ PHS 516/STA 597E: Statistical Genetics (co-taught with Rongling Wu)

Beijing University of Chemical Technology

- 2022 (Summer) ◇ Bayesian Analysis and Statistical Rethinking (short course)
- 2019 (Summer) ◇ Probability, Statistics, and Bayesian Analysis (short course)

MathPath Summer Camp (at Grand Valley State University)

- 2019 (Summer) ◇ An Introduction to R and Monte Carlo Simulation (short course)
- 2019 (Summer) ◇ American Invitational Mathematics Examination Contest Preparation (short course)

University of Florida

- 2009 (Spring), 2008 (Fall) ◇ STA 5325/STA 4321: Introduction to Probability
- 2008 (Spring) ◇ STA 5856/STA 4853: Introduction to Time Series and Forecasting
- 2007 (Fall) ◇ STA 6857: Applied Time Series Analysis

University of California, San Diego

- 2007 (Winter) ◇ MATH 10B: Second Semester Calculus

San Diego Miramar College

- 2006 (Summer) ◇ MATH 252: Calculus with Analytic Geometry III
- 2006 (Spring) ◇ MATH 96: Intermediate Algebra and Geometry
- 2005 (Fall) ◇ MATH 119: Elementary Statistics