

BIOSTAT BULLETIN

UCLA Department of Biostatistics Quarterly Newsletter

Prepared by Emilie Campos, Caesar Li, and Ami Sheth on behalf of the Biostatistics Student Association

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MESSAGE FROM THE CHAIRS

Dear Students,

We wish you a very Happy New Year, and we hope your Winter quarter of 2021 is off to a good start.

The previous year presented us with unprecedented challenges that compelled us to confront turmoil and turbulence in our daily lives. While there are many reasons to feel optimistic about the new year, we are reminded that many of the challenges of 2020 still persist. Consistent with what numerous public health experts had foreseen, we continue to grapple with the significant surges in COVID-19 cases, and, unfortunately, deaths, across the country including, most pronouncedly, in our very own Los Angeles County. It is therefore of vital importance that all of us follow the public health guidelines being issued by state and local officials and the UCLA administration on a daily basis. While the development and delivery of COVID-19 vaccines are being cheered across the world, please continue to practice the recommended safety measures. We must be responsible out of consideration for our own health and that of our fellow citizens.

As if pandemic-related distress was not enough, it was enormously upsetting to witness the reprehensible events unfolding in our nation's capital with an attack on democracy itself. The peaceful transfer of power has been a hallmark of American government for more than two centuries, and beyond recognizing voting as a civic right, our instinct as statisticians is to view vote-counting as a scientific task that should not depend on personal political leanings. What Chancellor Block wrote to the campus community bears repeating: "At UCLA, we believe in the same set of values that sustains our country as a functioning republic: a commitment to treating one another with respect even when we disagree, to making decisions based on evidence, and to using rational debate in place of destructive violence. Guided by these values, our country will overcome this painful episode." By honoring these principles as individuals, we can all contribute to ensuring that the UCLA Department of Biostatistics lives up to a community ideal that we rightly expect in civic discourse.

While we are not oblivious of the many challenges that 2021 will throw at us, we remain immensely optimistic about the future. The profession you have chosen is more relevant than ever. Biostatisticians continue to perform cutting-edge research and contribute to society. Many students, faculty members, and alumni have actively participated in developing methods to enhance our understanding of COVID-19 and its spread. In line with efforts to eradicate disease, research by members of the Department of Biostatistics family has also contributed to formulating policies to eradicate social injustices. From designing clinical trials in pharmaceutical companies and helping technology companies address Big Data challenges to helping government agencies confront climate change, ambassadors affiliated with our department are at the forefront of solving problems in science, business and public health. And to this end, we are especially pleased at how research by our students continues to be recognized and rewarded through fellowships and grants from within UCLA and beyond. We are especially thankful to the BSA for their several initiatives including, but by no means limited to, this newsletter. These initiatives have helped enrich the student and faculty experience in our Department, and indeed, we look forward to reading the rest of the Winter 2021 Newsletter as a window into the wonderful activities unfolding in our midst. We reiterate our commitment to the well-being of our students and to supporting the BSA's initiatives, and we wish all of you the very best throughout the quarter.

Sudipto Banerjee, Chair
Thomas R. Belin, Vice Chair

AWARDS & HONORS

Congrats to ...



Sudipto Banerjee

- *Elected American Association for the Advancement of Science (AAAS) Fellow*
- *Elected President of the International Society for Bayesian Analysis (ISBA)*



Damla Senturk

- *Elected American Statistical Association (ASA) Fellow*

For "methodological contributions in semi-parametric modeling and functional data analysis, innovative applications in neuroscience and other allied disciplines, outstanding teaching and mentoring, and exemplary service to the profession".

GRANTS

And to ...

Crystal Shaw

- *NIH/NIA Ruth L. Kirschstein Predoctoral Individual National Research Service Award*

Fellowship granted to predoctoral individuals for research training in health-related areas. Crystal's project, entitled "Link, transport, integrate: a Bayesian data integration framework for scalable algorithmic dementia classification in population-representative studies", aims to enhance the use of population-representative studies to monitor trends and study disparities in Alzheimer's disease and related dementias.



UCLA BIOSTAT RESPONSE TO COVID

Xiong, D., Zhang, L., Watson, G. L., Sundin, P., Bufford, T., Zoller, J. A., ... Ramirez, C. M. (2020). Pseudo-likelihood based logistic regression for estimating COVID-19 infection and case fatality rates by gender, race, and age in California. *Epidemics*, 33, 100418. <https://doi.org/https://doi.org/10.1016/j.epidem.2020.100418>

Seven students and two faculty members collaborated on a method to estimate infection and case fatality rates using aggregated data.

BSA UPDATES

Happy New Year, fellow biostat students! We realize that 2021 started off with some unique challenges, but we are hopeful for the future and confident that we will come together as a community to support one another through these unprecedented times. We were encouraged by the online community students built through slack last quarter and by the online events that gave us an opportunity to connect virtually. We also appreciated the feedback students provided informally through those events. BSA's goal is first and foremost to create the best student experience in the department. To this end, we've added two board positions to better meet the needs of our MPH and first-year students! We are grateful to have Milan Filipovic (First-year student rep) and Lillian Chen (MPH student rep) join the BSA board.

To facilitate increased and open communication between biostat students and the BSA board, BSA will be hosting open board meetings once a month and posting all notes from our bi-weekly meetings. Please join the #bsa-feedback slack channel to stay up-to-date with our meeting announcements, zoom links for open meetings, and updated meeting notes. We want to hear from you so that we can better serve our student body! Our first open board meeting is Thursday January 21 @1pm-- we hope to see you there!

Lastly, we are excited to announce an increased focus on professional development events this quarter. Though we would all much rather meet in person, there are advantages to the online platform that have allowed us to plan events that would otherwise be more logistically challenging. Join the #events-biostats channel for all our event announcements. We wish you all the best for a happy, healthy, and productive quarter!

Emilie Campos and Crystal Shaw, BSA Co-Presidents

Additions to the BSA Board

In order to represent the needs and interests of all students in the department, two additional positions were created: 1st year rep and MPH rep. Therefore, we want to welcome:



Milan Filipovic, 1st Year Rep



Lillian Chen, MPH rep



Upcoming Events

To keep up-to-date with all of our events, please visit our website and subscribe to our Google Calendar: <https://ucla-bsa.netlify.app/>

Week 1:

Week 2:

- 1/13 -- Alumni Career Panel (Industry)
- 1/15 -- Trivia with a Twist

Week 3:

- 1/21 -- Open BSA Board Meeting
- 1/22 -- MS Thesis Info Session

Week 4:

Week 5:

- 2/1 -- Coffee with the Chairs

Week 6:

Week 7:

- 2/18 -- Open BSA Board Meeting
- TBD -- Alumni Career Panel (Academia)

Week 8:

- 2/26 -- Student + Faculty Social

Week 9:

- 3/5 -- Coffee with the Chairs

Week 10:

If you're interested in helping plan events or participating on committees, please attend one of our open board meetings!

RECENT PUBLICATIONS

This is just a sample of the great work put out by our department since October 2020.

Anderson, C. E., Whaley, S. E., **Crespi, C. M.**, Wang, M. C., & Chaparro, M. P. (2020). Every month matters: longitudinal associations between exclusive breastfeeding duration, child growth and obesity among WIC-participating children. *Journal of Epidemiology and Community Health*, 74(10), 785 LP - 791. <https://doi.org/10.1136/jech-2019-213574>

Baele, G., Gill, M. S., Bastide, P., Lemey, P., & **Suchard, M. A.** (2021). Markov-Modulated Continuous-Time Markov Chains to Identify Site- and Branch-Specific Evolutionary Variation in BEAST. *Systematic Biology*, 70(1), 181-189. <https://doi.org/10.1093/sysbio/syaa037>

Bainter, S. A., **Tibbe, T. D.**, Goodman, Z. T., & Poole, D. A. (2020). Child eyewitness researchers often bin age: Prevalence of the practice and recommendations for analyzing developmental trends. *Law and Human Behavior*, 44(4), 327-335.

Barnes, D. R., Rookus, M. A., McGuffog, L., Leslie, G., Mooij, T. M., Dennis, J., ... BRCA2, on behalf of the C. of I. of M. of B. and. (2020). Polygenic risk scores and breast and epithelial ovarian cancer risks for carriers of BRCA1 and BRCA2 pathogenic variants. *Genetics in Medicine*, 22(10), 1653-1666. <https://doi.org/10.1038/s41436-020-0862-x>

Bryant, L., Li, D., Cox, S. G., Marchione, D., Joiner, E. F., Wilson, K., ... Bhoj, E. J. (2020). Histone H3.3 beyond cancer: Germline mutations in Histone 3 Family 3A and 3B cause a previously unidentified neurodegenerative disorder in 46 patients. *Science Advances*, 6(49), eabc9207. <https://doi.org/10.1126/sciadv.abc9207>

Burn, E., You, S. C., Sena, A. G., Kostka, K., Abedtash, H., Abrahão, M. T. F., ... Ryan, P. (2020). Deep phenotyping of 34,128 adult patients hospitalised with COVID-19 in an international network study. *Nature Communications*, 11(1), 5009. <https://doi.org/10.1038/s41467-020-18849-z>

Chang, Anna Marie; Hollander, Judd E.; **Su, Erica; Weiss, Robert E.**; Yagapen, Annick N.; Malveau, Susan E.; Adler, David H.; Bastani, Aveh; Baugh, Christopher W.; Caterino, Jeffrey M.; Clark, Carol L.; Diercks, Deborah B.; Nicks, Bret A.; Nishijima, Daniel K.; Shah, Manish N.; Stiffler, Kirk A.; Storrow, Alan B.; Wilber, Scott T.; Sun, Benjamin C. (2020). The Accuracy of InterQual November 27, 2020, p. 6/52Criteria in Determining the Observation Versus Inpatient Status in Older Adults with Syncope. *Journal of Emergency Medicine*, 59(2), 193-200. <https://doi.org/10.1016/j.jemermed.2020.02.020>

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de Gainza, A., Morales, E., Salazar Vega, D. C., Mohammadzadeh, V., Yu, F., **Afifi, A.**, ... Caprioli, J. (2020). The Trajectory of Glaucoma Progression in 2-Dimensional Structural-Functional Space. *Ophthalmology. Glaucoma*, 3(6), 466-474. <https://doi.org/10.1016/j.ogla.2020.06.003>

Finley, A.O., Datta, A.O. and **Banerjee, S.** (In press). SpNNGP: An R Package for Nearest Neighbor Gaussian Process Models. *Journal of Statistical Software*.

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Guzman-Clark, J., Farmer, M. M., Wakefield, B. J., Viernes, B., Yefimova, M., **Lee, M. L.**, & Hahn, T. J. (2020). Why patients stop using their home telehealth technologies over time: Predictors of discontinuation in Veterans with heart failure. *Nursing Outlook*. <https://doi.org/https://doi.org/10.1016/j.outlook.2020.11.004>

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Guzman-Clark, J., Wakefield, B. J., Farmer, M. M., Yefimova, M., Viernes, B., **Lee, M. L.**, & Hahn, T. J. (2020). Adherence to the Use of Home Telehealth Technologies and Emergency Room Visits in Veterans with Heart Failure. *Telemedicine and E-Health*. <https://doi.org/10.1089/tmj.2020.0312>

Hayes-Larson E, Mobley TM, Gilmore-Bykovskiy A, **Shaw C**, Karlamanga A, Manly JJ, Mayeda ER. Racial/ethnic differences in health-related quality of life in persons with and without dementia. 2020. doi: 10.1111/jgs.16908

Hosseiny, M., Felker, E. R., Azadikhah, A., Suvannarerg, V., **Sayre, J.**, Ponzini, D., ... Raman, S. S. (2020). Efficacy of 3T Multiparametric MR Imaging followed by 3T in-Bore MR-Guided Biopsy for Detection of Clinically Significant Prostate Cancer Based on PI-RADSv2.1 Score. *Journal of Vascular and Interventional Radiology*, 31(10), 1619-1626. <https://doi.org/10.1016/j.jvir.2020.03.002>

Hung, T. K. W., Dong, T. S., Chen, Z., **Elashoff, D.**, **Sinsheimer, J. S.**, Jacobs, J. P., ... Gupta, A. (2020). Understanding the Heterogeneity of Obesity and the Relationship to the Brain-Gut Axis. *Nutrients*, 12(12), 3701. <https://doi.org/10.3390/nu12123701>

Huynh, T. B., Groth, C. P., Ramachandran, G., **Banerjee, S.**, Stenzel, M., Quick, H., ... Stewart, P. A. (2020). Estimates of Occupational Inhalation Exposures to Six Oil-Related Compounds on the Four Rig Vessels Responding to the Deepwater Horizon Oil Spill. *Annals of Work Exposures and Health*. <https://doi.org/10.1093/annweh/wxaa072>

Inoue, K., Nianogo, R., **Telesca, D.**, Goto, A., Khachadourian, V., Tsugawa, Y., ... Ritz, B. (2020). Low HbA1c levels and all-cause or cardiovascular mortality among people without diabetes: the US National Health and Nutrition Examination Survey 1999-2015. *International Journal of Epidemiology*. <https://doi.org/10.1093/ije/dyaa263>

Jin, X., Lee, Y., Yates, A. N., **Zhou, D. F.**, & Fiscus, J. (n.d.). NISTIR 8325 Media Forensics Challenge Image Provenance Evaluation and State-of-the-Art Analysis on Large-Scale Benchmark Datasets NISTIR 8325 Media Forensics Challenge Image Provenance Evaluation and State-of-the-Art Analysis on Large-Scale Benchmark Datasets.

Kageyama, S., Kadono, K., Hirao, H., Nakamura, K., Ito, T., **Gjertson, D. W.**, ... Zhai, Y. (9000). Ischemia-Reperfusion Injury in Allogeneic Liver Transplantation: A Role of CD4 T Cells in Early Allograft Injury. *Transplantation*, Online First. Retrieved from https://journals.lww.com/transplantjournal/Fulltext/9000/Ischemia_Reperfusion_Injury_in_Allogeneic_Liver.95504.aspx

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Karcher, M. D., Carvalho, L. M., **Suchard, M. A.**, Dudas, G., & Minin, V. N. (2020). Estimating effective population size changes from preferentially sampled genetic sequences. *PLOS Computational Biology*, 16(10), e1007774. Retrieved from <https://doi.org/10.1371/journal.pcbi.1007774>

Lane, J. C. E., Weaver, J., Kostka, K., Duarte-Salles, T., Abrahao, M. T. F., Alghoul, H., ... consortium, for the O.-C.-19. (2020). Risk of depression, suicide and psychosis with hydroxychloroquine treatment for rheumatoid arthritis: a multinational network cohort study. *Rheumatology*. <https://doi.org/10.1093/rheumatology/keaa771>

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This is just a sample of the great work put out by our department since October 2020.

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<https://doi.org/https://doi.org/10.1002/lipd.12261>

Lemey, P., Hong, S. L., Hill, V., Baele, G., Poletto, C., Colizza, V., ... **Suchard, M. A.** (2020). Accommodating individual travel history and unsampled diversity in Bayesian phylogeographic inference of SARS-CoV-2. *Nature Communications*, 11(1), 5110.

<https://doi.org/10.1038/s41467-020-18877-9>

Li, Michael Jonathan; **Su, Erica**; Garland Wendy H; Oksuzyan, Sona; Lee, Sung-Jae; Kao, Uyen H; **Weiss, Robert E**; Shoptaw, Steven J (2020). Stimulant use, housing instability, and depressive symptoms: Trajectories of HIV viral suppression in the context of coordinated case management and comorbid conditions. *JAIDS*, 84, 387-395. doi:10.1097/QAI.0000000000002351

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M., L. A., G., V. B., Frances, B., L., L. M., Monica, A.-R., Eric, C., ... Amytis, T. (2020). Factors Associated With Participation in the Chronic Disease Self-Management Program. *Stroke*, 51(10), 2910-2917. <https://doi.org/10.1161/STROKEAHA.119.028022>

Maxwell, A. E., Lucas-Wright, A., Chang, L. C., Santifer, R. E., & **Crespi, C. M.** (2020). Factors associated with colorectal cancer screening in a peer-counseling intervention study in partnership with African American churches. *Preventive Medicine Reports*, 20, 101280. <https://doi.org/https://doi.org/10.1016/j.pmedr.2020.101280>

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<https://doi.org/10.1007/s10552-020-01346-5>

Maxwell, A. E., Vargas, C., Santifer, R., Chang, L. C., **Crespi, C. M.**, & Lucas-Wright, A. (2020). Facilitators and Challenges to Health Promotion in Black and Latino Churches. *Journal of Racial and Ethnic Health Disparities*. <https://doi.org/10.1007/s40615-020-00929-x>

Mayeda, E. R., Mobley, T. M., **Weiss, R. E.**, Murchland, A. R., Berkman, L. F., & Sabbath, E. L. (2020). Association of work-family experience with mid- and late-life memory decline in US women. *Neurology*, 95(23), e3072 LP-e3080.

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Moore, Andrew B.; **Su, Erica**; **Weiss, Robert E.**; Yagapen, Annick N.; Malveau, Susan E.; Adler, David H.; Bastani, Aveh; Baugh, Christopher W.; Caterino, Jeffrey M.; Clark, Carol L.; Diercks, Deborah B.; Hollander, Judd E.; Nicks, Bret A.; Nishijima, Daniel K.; Shah, Manish N.; Stiffler, Kirk A.; Storrow, Alan B.; Wilber, Scott T.; Sun, Benjamin C. (2020). Frequency of abnormal and critical lab results in older patients presenting to the emergency department with syncope. *Academic Emergency Medicine*, to appear. url2019:10.1111/acem.1390

Morales, D. R., Conover, M. M., You, S. C., Pratt, N., Kostka, K., Duarte-Salles, T., ... **Suchard, M. A.** (2020). Renin-angiotensin system blockers and susceptibility to COVID-19: an international, open science, cohort analysis. *The Lancet Digital Health*.

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Nichols, T. C., Levy, H., Merricks, E. P., Raymer, R. A., & **Lee, M. L.** (2020). Preclinical evaluation of a next-generation, subcutaneously administered, coagulation factor IX variant, dalcinonacog alfa. *PLOS ONE*, 15(10), e0240896. Retrieved from

<https://doi.org/10.1371/journal.pone.0240896>

RECENT PUBLICATIONS

This is just a sample of the great work put out by our department since October 2020.

Parikh, N. R., Kishan, A. U., Kane, N., Diaz-Perez, S., Ganapathy, E., Nazarian, R., ... Nickols, N. G. (2020). Phase I Trial of Stereotactic Body Radiation Therapy Neoadjuvant to Radical Prostatectomy for Patients With High-Risk Prostate Cancer. *International Journal of Radiation Oncology, Biology, Physics*, 108(4), 930–935. <https://doi.org/10.1016/j.ijrobp.2020.06.010>

Peris, T. S., **Sugar, C. A.**, Rozenman, M. S., Walkup, J. T., Albano, A. M., Compton, S., ... Piacentini, J. (2021). Long-Term Service Use Among Youth Previously Treated for Anxiety Disorder. *Journal of the American Academy of Child & Adolescent Psychiatry*. <https://doi.org/10.1016/j.jaac.2020.07.911>

Polverari, G., Ceci, F., Passera, R., Crane, J., Du, L., Li, G., ... Federman, N. (2020). [18F]FDG PET/CT for evaluating early response to neoadjuvant chemotherapy in pediatric patients with sarcoma: a prospective single-center trial. *EJNMMI Research*, 10(1), 122. <https://doi.org/10.1186/s13550-020-00715-0>

Perruzi, M., **Banerjee, S.** and Finley, A.O. (in press). Highly Scalable Bayesian Geostatistical Modeling via Meshed Gaussian Processes on Partitioned Domains. *Journal of the American Statistical Association*.

Ramos, A. P., Flores, M. J., & Weiss, R. E. (2020). Leave no child behind: Using data from 1.7 million children from 67 developing countries to measure inequality within and between groups of births and to identify left behind populations. *PLOS ONE*, 15(10), e0238847. Retrieved from <https://doi.org/10.1371/journal.pone.0238847>

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Studwell, C. M., Kelley, E. G., Network, U. D., **Sinsheimer, J. S.**, Palmer, C. G. S., & LeBlanc, K. (2020). Family genetic result communication in rare and undiagnosed disease communities: Understanding the practice. *Journal of Genetic Counseling*, n/a(n/a). <https://doi.org/https://doi.org/10.1002/jgc4.1329>

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RECENT PUBLICATIONS

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Xiong, D., Zhang, L., Watson, G. L., Sundin, P., Bufford, T., Zoller, J. A., ... Ramirez, C. M. (2020). Pseudo-likelihood based logistic regression for estimating COVID-19 infection and case fatality rates by gender, race, and age in California. *Epidemics*, 33, 100418. <https://doi.org/https://doi.org/10.1016/j.epidem.2020.100418>

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