

CURRICULUM VITAE

Damien Lekkas, Ph.D.

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EDUCATION

- 2024 **Dartmouth College**
Ph.D., Quantitative Biomedical Sciences
Dissertation Advisor: Nicholas C. Jacobson, Ph.D.
Dissertation Title: *Misery's Company: Modeling the Public and Private Faces of Suicidal Thought and Behavior in the Digital Era*
- 2019 **University of the Sciences in Philadelphia**
M.S., Bioinformatics
Advisor: Zhijun Li, Ph.D.
- 2014 **University of Pennsylvania**
M.S., Anthropology
Thesis Advisor: Janet Monge, Ph.D.
Thesis Title: *Expressions of a Cranial Aperture*
- B.A., Physical Anthropology and Ecology & Evolutionary Biology
Minor in Cognitive Science
Advisors: Janet Monge, Ph.D. and Arthur E. Dunham, Ph.D.
Magna cum laude

ACADEMIC APPOINTMENTS

- Mar 2025 – **Research Assistant Professor**
Department of Medical Social Sciences, Feinberg School of Medicine, Northwestern University

RESEARCH INTERESTS

digital mental health; digital interventions; help-seeking behaviors; digital phenotyping; suicide; applied machine learning; natural language processing; network analysis; statistical modeling; longitudinal data; passive sensing; ecological momentary assessment

PUBLICATIONS

N = 42 published or in press (h-index: 17, i10-index: 23)

Dagger (†) denotes equal co-authorship; Underline denotes first or senior authorship

Peer-Reviewed Articles

2026

42. Langener, A.M., Price, G. D., Haddox, D., Heinz, M.V., Mackin, D.M., Nemesure, M.D., Collins, A.C., **Lekkas, D.**, Griffin, T.Z., Pillai, A., Nepal, S., Campbell, A.T., and Jacobson, N.C. (2026). Predicting weekly instability in depressive symptoms among individuals diagnosed with major depressive disorder using deep learning and passively-collected movement data. *Journal of Affective Disorders Reports*, 25. <https://doi.org/10.1016/j.jadr.2026.101102>
41. Bautista, K., Winer, E. S., Calafiore, C., Griffin, T. Z., **Lekkas, D.**, Heinz, M. V., Nemesure, M. D., Price, G. D., Pillai, A., Nepal, S., Mackin, D. M., Campbell, A. T., Jacobson, N. C., and Collins, A. C. (2026). The dynamics of loneliness: Longitudinal associations of anhedonia and dampening in a clinical sample of depressed individuals. *Journal of Affective Disorders*, 408. <https://doi.org/10.1016/j.jad.2026.121808>
40. Graham, A., Flynn, R.L., Rooper, I.R., Azubuike, C., Lipman, L.D., Ortega, A., Parsons, L.M., Miller, G.C., **Lekkas, D.**, and Wildes, J.E. (2026). Feasibility and preliminary efficacy of a guided self-help digital intervention for adults with food insecurity, recurrent binge eating, and type 2 diabetes mellitus: A pilot trial. *International Journal of Eating Disorders*. <https://doi.org/10.1002/eat.70087>
39. Thakur, H., Parkhurst, J.T., Schleider, J.L., and **Lekkas, D.** (2026). The application of minimal clinically important difference to adolescent mental health interventions: An analysis and discussion of current recommendations. *Child Psychiatry and Human Development*. <https://doi.org/10.1007/s10578-026-01996-7>
38. Lampe, E.W., Collins, A.C., Lee, A., Enbar-Salo, N., Griffin, T.Z., Pillai, A., Heinz, M.V., **Lekkas, D.**, Nemesure, M.D., Mackin, D.M., Nepal, S., Campbell, A.T., and Jacobson, N.C. (2026). Interindividual differences in digital phenotypes of major depressive disorder: A passive sensing study using smartphone and wearable sensor data. *Behavior Research and Therapy*, 199. <https://doi.org/10.1016/j.brat.2026.104986>
37. Langener, A.M., Haddox, D., Mackin, D.M., Price, G.D., **Lekkas, D.**, Collins, A.C., Griffin, T.Z., Heinz, M.V., Nemesure, M.D., Nepal, S., Pillai, A., Campbell, A.T., and Jacobson, N.C. (2026). Passive data do not improve prediction or detection of alcohol consumption beyond temporal patterns in major depression: A 90-day cross-validated study. *Addictive Behaviors*, 175. <https://doi.org/10.1016/j.addbeh.2026.108624>

2025

36. Collins, A.C.†, **Lekkas, D.**†, Heinz, M.V.†, Annor, J.E., Ruan, F., and Jacobson, N.C. (2025). ChatGPT as therapy: A statistical and network-based thematic profiling of shared experiences, attitudes, and beliefs on Reddit. *Journal of Psychiatric Research*, 191. <https://doi.org/10.1016/j.jpsychires.2025.09.057>
35. Haddox, D., Mackin, D., Griffin, T., Heinz, M.V., Nemesure, M.D., Collins, A.C., Price, G., **Lekkas, D.**, Pillai, A., Nepal, S., Campbell, A.T., and Jacobson, N.C. (2025). Psychometric properties and validity of

a mobile patient health questionnaire-9 (MPHQ-9) for ecological momentary assessment in depressed adults. *Psychological Assessment*, 38(3). <https://doi.org/10.1037/pas0001431>

34. **Lekkas, D.**, Collins, A., Heinz, M.V., Price, G.D., Griffin, T.Z., Pillai, A., Nepal, S., Campbell, A., and Jacobson, N.C. (2025). Acute suicidal ideation in context: Highlighting sentiment-based markers through the diary entries of a clinically depressed sample. *BMC Psychiatry*, 25. Article 650. <https://doi.org/10.1186/s12888-025-07108-4>
 33. Collins, A. C., **Lekkas, D.**, Nemesure, M. D., Griffin, T. Z., Price, G. D., Pillai, A., Nepal, S., Heinz, M. V., Campbell, A. T., & Jacobson, N. C. (2025). Semantic signals in self-reference: The detection and prediction of depressive symptoms from the daily diary entries of a sample with major depressive disorder. *Journal of Psychopathology and Clinical Science*, 134(5). <https://doi.org/10.1037/abn0001003>
 32. Gallagher, M., Collins, A.C., **Lekkas, D.**, Nemesure, M.D., Griffin, T.Z., Price, G.D., Heinz, M.V., Pillai A., Nepal, S., Mackin, D.M., Campbell. A.T., Winer, E.S., and Jacobson, N.C. (2025). Anhedonia in flux: Understanding the associations of emotion regulation and anxiety with anhedonia dynamics in a sample with major depressive disorder. *Journal of Affective Disorders*, 372. <https://doi.org/10.1016/j.jad.2024.11.059>
- 2024**
31. Heinz, M.V., **Lekkas, D.**, Abreu, V., Lee, C., Marsch, L., and Jacobson, N.C. (2024). Evaluating a mobile app's effects on depression and anxiety in medication-treated opioid use disorder. *npj Mental Health Research*, 3. Article 43. <https://doi.org/10.1038/s44184-024-00086-7>
 30. **Lekkas, D.** and Jacobson, N.C. (2024). Breaking the silence: Leveraging social interaction data to identify high-risk suicide users online using network analysis and machine learning. *Scientific Reports*, 14. Article 19395. <https://doi.org/10.1038/s41598-024-70282-0>
 29. Collins, A.C., **Lekkas, D.**, Struble, C.A., Trudeau, B.M., Jewett, A.D., Griffin, T.Z., Nemesure, M.D., Price, G.D., Heinz, M.V., Nepal, S., Pillai, A., Mackin, D.M., Campbell, A.T., Budney, A.J., & Jacobson, N.C. (2024). From mood to use: Using ecological momentary assessments to examine how anhedonia and depressed mood impact cannabis use in a depressed sample. *Psychiatry Research*, 339. <https://doi.org/10.1016/j.psychres.2024.116110>
 28. Gyorda, J.A., **Lekkas, D.**, and Jacobson, N.C. (2024). Screening for anxiety: Detecting longitudinal trends between passively-collected phone use and anxiety. *Digital Biomarkers*, 8(1): 181-193. <https://doi.org/10.1159/000540546>
 27. Kline, E., **Lekkas, D.**, Bryan, A., Nemesure, M.D., Griffin, T.Z., Collins A., Price, G.D., Heinz, M.V., Nepal, S., Pillai, A., Campbell, A., and Jacobson, N.C. (2024). The role of borderline personality disorder traits in predicting longitudinal variability of major depressive symptoms among a sample of depressed adults. *Journal of Affective Disorders*, 363: 492-500. <https://doi.org/10.1016/j.jad.2024.07.104>
 26. Klein, R.J., **Lekkas, D.**, Nguyen, N.D., and Jacobson, N.C. (2024). Comparing transdiagnostic risk factors: Predicting emergence of significant depressive, anxiety, and substance abuse symptoms among juvenile delinquents. *Child Psychiatry and Human Development*. <https://doi.org/10.1007/s10578-024-01682-6>

25. Nepal, S., Pillai, A., Wang, W., Griffin, T., Collins, A.C., Heinz, M., **Lekkas, D.**, Mirjafari, S., Nemesure, M., Price, G., Jacobson, N., and Campbell, A. (2024). MoodCapture: Depression detection using in-the-wild smartphone images. *Proceedings of the CHI Conference on Human Factors in Computing Systems*. Article 996. <https://doi.org/10.1145/3613904.3642680>
24. **Lekkas, D.**, Yom-Tov, E., Heinz, M.V., Gyorda, J.A.*, Nguyen, T., Barr, P.J., and Jacobson, N.C. (2024). The trajectories of online mental health information seeking: Modeling search behavior before and after completion of validated self-report screens. *Computers in Human Behavior*, 157. <https://doi.org/10.1016/j.chb.2024.108267>
23. Pillai, A., Nepal, S.K., Wang, W., Nemesure, M., Heinz, M., Price, G., **Lekkas, D.**, Collins, A.C., Griffin, T., Buck, B., Preum, S.M., Cohen, T., Jacobson, N.C., Ben-Zeev, D., and Campbell, A. (2024). Investigating generalizability of speech-based suicidal ideation detection using mobile phones. *Proc. ACM Interact. Mob. Wearable Ubiquitous Technol.* 7, 4, Article 174. <https://doi.org/10.1145/3631452>
22. Nemesure, M.D., Collins, A.C., Price, G.D., Griffin, T.Z., Pillai, A., Nepal, S., Heinz, M.V., **Lekkas, D.**, Campbell, A.T., and Jacobson, N.C. (2024). Depressive symptoms as a heterogeneous and constantly evolving dynamical system: Idiographic depressive symptom networks of rapid symptom changes among persons with major depressive disorder. *Journal of Psychopathology and Clinical Science*, 133(2). <https://doi.org/10.1037/abn0000884>

2023

21. **Lekkas, D.** and Jacobson, N.C. (2023). The hidden depths of suicidal discourse: Network analysis and natural language processing unmask uncensored expression. *Digital Health*, 9. <https://doi.org/10.1177/20552076231210714>
20. **Lekkas, D.**, Gyorda, J.A., Price, G.D., and Jacobson, N.C. (2023). Depression deconstructed: Wearables and passive digital phenotyping for analyzing individual symptoms. *Behaviour Research and Therapy*, 168. <https://doi.org/10.1016/j.brat.2023.104382>
19. Klein, R.J., Gyorda, J.A., **Lekkas, D.**, and Jacobson, N.C. (2023). Dysregulated emotion and trying substances in childhood: Insights from a large nationally representative cohort study. *Substance Use and Misuse*, 58(13). <https://doi.org/10.1080/10826084.2023.2223290>
18. Gyorda, J.A., **Lekkas, D.**, Price, G.D., and Jacobson, N.C. (2023). Evaluating the impact of mask mandates and political party affiliation on mental health online search behavior in the United States during the COVID-19 pandemic: A generalized additive mixed model framework. *Journal of Medical Internet Research*, 25. <https://doi.org/10.2196/40308>

2022

17. Yom-Tov, E., **Lekkas, D.**, Heinz, M.V., Nguyen, T., Barr, P.J., and Jacobson, N.C. (2022). Digitally filling the access gap in mental healthcare: An investigation of the association between rurality and online engagement with validated self-report screens across the United States. *Journal of Psychiatric Research*, 157. <https://doi.org/10.1016/j.jpsychires.2022.11.024>
16. **Lekkas, D.**, Gyorda, J.A., Moen, E.L., and Jacobson, N.C. (2022). Using passive sensor data to probe associations of social structure with changes in personality: A synthesis of network analysis and machine learning. *PLOS ONE*, 17(11): e0277516. <https://doi.org/10.1371/journal.pone.0277516>

15. **Lekkas, D.**, Gyorda, J.A., and Jacobson, N.C. (2022). A machine learning investigation into the temporal dynamics of physical activity-mediated emotional regulation in adolescents with anorexia nervosa and healthy controls. *European Eating Disorders Review*, 31(1). <https://doi.org/10.1002/erv.2949>
14. Nemesure, M., Streltsov, N., Schommer, L., **Lekkas, D.**, Jacobson, N.C., and Bujarski, K. (2022). Predictive modeling of suicidal ideation in patients with epilepsy. *Epilepsia*, 63(9). <https://doi.org/10.1111/epi.17324>
13. **Lekkas, D.**, Gyorda, J.A., Price, G.D., Wortzman, Z.*, and Jacobson, NC. (2022). Using the COVID-19 pandemic to assess the influence of news affect on online mental health-related search behavior across the United States: Integrated sentiment analysis and the circumplex model of affect. *Journal of Medical Internet Research*, 24(1). <https://doi.org/10.2196/32731>
12. **Lekkas, D.**, Price, G., and Jacobson NC. (2022). Using smartphone app use and lagged-ensemble machine learning for the prediction of work fatigue and boredom. *Computers in Human Behavior*, 127. <https://doi.org/10.1016/j.chb.2021.107029>

2021

11. **Lekkas, D.**, Price, G., McFadden J.*, and Jacobson, NC. (2021). The application of machine learning to online mindfulness intervention data: A primer and empirical example in compliance assessment. *Mindfulness*, 12. <https://doi.org/10.1007/s12671-021-01723-4>
10. **Lekkas, D.**, Klein, RJ., and Jacobson NC. (2021). Predicting acute suicidal ideation on Instagram using ensemble machine learning models. *Internet Interventions*, 25. <https://doi.org/10.1016/j.invent.2021.100424>
9. Yom-Tov, E., **Lekkas, D.**, and Jacobson, N.C. (2021). Association of COVID19-induced anosmia and ageusia with depression and suicidal ideation. *Journal of Affective Disorders Reports*, 5. <https://doi.org/10.1016/j.jadr.2021.100156>
8. **Lekkas, D.** and Jacobson, N.C. (2021). Using artificial intelligence and longitudinal location data to differentiate persons who develop posttraumatic stress disorder following childhood trauma. *Scientific Reports*, 11. Article 10303. <https://doi.org/10.1038/s41598-021-89768-2>

2020

7. Jacobson, N.C., **Lekkas, D.**, Huang, R., and Thomas, N. (2020). Deep learning paired with wearable passive sensing data predict deterioration in anxiety disorder symptoms across 17-18 years. *Journal of Affective Disorders*, 282. <https://doi.org/10.1016/j.jad.2020.12.086>
6. Jacobson, N.C., Yom-Tov, E., **Lekkas, D.**, Heinz, M.V., Liu, L., and Barr, P. (2020). Impact of online mental health screening tools on help-seeking, care receipt, and suicidal ideation and suicidal intent: Evidence from internet search behavior in a large cohort. *Journal of Psychiatric Research*, 145. <https://doi.org/10.1016/j.jpsychires.2020.11.010>
5. Jacobson, N.C., **Lekkas, D.**, Price, G., Heinz, M.V., Song, M., O'Malley, AJ., and Barr, P. (2020). Flattening the mental health curve: COVID-19 stay-at-home orders result in alterations in mental health search behavior in the United States. *JMIR Mental Health*, 7(6). <https://doi.org/10.2196/19347>

4. Gao, Z., Ducos, P., Ye, H., Zauberman, J., Sriram, A., Yang, X., Wang, Z., Mitchell, M., **Lekkas, D.**, Brisson, D., and Johnson, A.T.C. (2020). Graphene transistor arrays functionalized with genetically engineered antibody fragments for Lyme disease diagnosis. *2D Materials*, 7(2).
<https://doi.org/10.1088/2053-1583/ab5dce>

2019

3. Sarantopoulou, D., Tang, S.Y., Ricciotti, E., Lahens, N.F., **Lekkas, D.**, Schug, J., Guo, X.S., Paschos, G.K., FitzGerald, G.A., Pack, A.I., and Grant, G. (2019). Comparative evaluation of RNA-Seq library preparation methods for strand-specificity and low input. *Scientific Reports*, 9.
<https://doi.org/10.1038/s41598-019-49889-1>
2. **Lekkas, D.** and Paschos, G.K. (2019). The circadian clock control of adipose tissue physiology and metabolism. *Autonomic Neuroscience: Basic & Clinical*, 219: 66-70.
<https://doi.org/10.1016/j.autneu.2019.05.001>
1. Paschos, G.K., Tang, S.Y., Theken, K.N., Li, X., Verginadis, I., **Lekkas, D.**, Herman, L., Yan, W., Lawson, J., and FitzGerald, G.A. (2018). Cold-induced browning of inguinal white adipose tissue is independent of adipose tissue cyclooxygenase-2. *Cell Reports*, 24(4): 809-814.
<https://doi.org/10.1016/j.celrep.2018.06.082>

TEACHING

Dartmouth College

- | | |
|------|--|
| 2023 | Teaching Assistant, Longitudinal Data Analysis (QBS 126), Graduate course (1 term) |
| 2021 | Teaching Assistant, Bioinformatics I (QBS 146), Graduate course (1 term) |

University of Pennsylvania

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|-------------|---|
| 2013 – 2019 | Instructor, Comparative Vertebrate Anatomy Lab (BIOL 336), Undergraduate course (7 terms) |
| 2016 | Teaching Assistant, Statistics for Biologists (BIOL 446), Undergraduate course (1 term) |
| | Teaching Assistant, Vertebrate Physiology (BIOL 215), Undergraduate course (1 term) |
| | Teaching Assistant, Humans and the Environment (BIOL 140/440), Undergraduate/graduate course (1 term) |
| 2015 | Teaching Assistant, Evolutionary Biology (BIOL 230), undergraduate course (1 term) |
| 2014 | Teaching Assistant, Organismal Biology Lab (BIOL 124), undergraduate course (1 term) |