# Daniel R. Schonhaut, PhD

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## Education

**University of Pennsylvania** *Philadelphia, PA*
PH.D. NEUROSCIENCE (ADVISOR: MICHAEL J. KAHANA, COMPUTATIONAL MEMORY LAB) *2016 - 2022*
- NSF Graduate Research Fellow

**University of California, Los Angeles** *Los Angeles, CA*
B.A. POLITICAL SCIENCE, PSYCHOLOGY *2008 - 2012*
- *Summa Cum Laude* (GPA: 3.97)
- Highest Honors in Political Science

## Professional

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|---|---|
| 2022- | **Staff Research Scientist**, Memory and Aging Center, University of California, San Francisco |
| 2014-2016 | **Research Analyst**, Department of Neurology, University of California, San Francisco |
| 2012-2013 | **Reporter**, Los Angeles Times |
| 2008-2012 | **Reporter, Assistant News Editor, News Editor**, Daily Bruin, University of California, Los Angeles |

## Awards & Fellowships

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|---|---|---|
| 2024 | **Poster award finalist**, Alzheimer's Association International Conference | |
| | **Travel grant**, Human Amyloid Imaging Conference | *$1,000* |
| 2023 | **Travel grant**, Human Amyloid Imaging Conference | *$1,000* |
| 2018-2022 | **Graduate Research Fellowship**, National Science Foundation | *$135,000* |
| 2016 | **Best poster**, Northern California Alzheimer's Researchers' Symposium | *$1,000* |
| | **Best poster**, Musculoskeletal and Neurodegenerative Diseases Symposium | |
| | **Travel grant**, Alzheimer's Imaging Consortium | |
| | **Travel grant**, Degeneration and Regeneration in Musculoskeletal and Neurodegenerative Diseases Symposium | |
| | **Travel grant**, Human Amyloid Imaging Conference | |
| 2015 | **Blue Ribbon highlight poster**, International Congress of Parkinson's Disease and Movement Disorders | $\leq$ *$1,000* |
| | **Travel grant**, Alzheimer's Association International Conference | |
| 2012 | **Phi Beta Kappa**, University of California, Los Angeles | |
| | **Highest Honors, Political Science**, University of California, Los Angeles | |

## Skills

PROGRAMMING
- Python (NumPy, Pandas, PyTorch, Sklearn, SciPy, Seaborn, Statsmodels, SQLite3), R, SQL, Linux, MATLAB, C#

ANALYTICAL
- Statistics, A/B testing, Time series, Longitudinal modeling, Graph theory, Machine Learning, Deep Learning/AI

## Publications

**Schonhaut, D.R.**, Rao, A.M., Ramayya, A.G., Solomon, E.A., Herweg, N.A., Fried, I & Kahana, M.J. (2024). MTL neurons phase-lock to human hippocampal theta. *eLife*. doi: 10.7554/eLife.85753

**Schonhaut, D.R.**, Aghajan, Z.M., Kahana, M.J. & Fried, I. (2023). A neural code for time and space in the human brain. *Cell Rep*, 42(11):113238. doi: 10.1016/j.celrep.2023.113238

**Schonhaut, D.R.** (2023). Time, space, and rhythm across neurons in the human medial temporal lobe and prefrontal cortex. ProQuest. doi: 20.500.14332/58959

**Schonhaut, D.R.**, McMillan, C.T., Spina, S., Dickerson, B.C., Siderowf, A., Devous, M.D., Tsai, R., Winer, J., Russell, D.S., Litvan, I., Roberson, E.D., Seeley, W.W., Grinberg, L.T., Kramer, J.H., Pressman, P., Nasrallah, I., Baker, S.L., Gomperts, S.N., Johnson, K.A., Grossman, M., Jagust, W.J., Boxer, A.L. & Rabinovici, G.D. (2017). $^{18}$F-flortaucipir tau PET distinguishes established progressive supranuclear palsy from controls and Parkinson's disease: A multicenter study. *Ann Neurol*, 82(4): 622-634. doi: 10.1002/ana.25060

**Schonhaut, D.R.** & Rabinovici, G.D. "Neuroimaging advances in Alzheimer's disease" in Lehner, T., Miller, B.L. & State, M.W. (Eds.), *Genomics, Circuits, and Pathways in Clinical Neuropsychiatry*. Philadelphia: Elsevier, 2016. ISBN: 978-0-12-800105-9

Ossenkoppele, R.*, **Schonhaut, D.R.**\*, Schöll, M., Lockhart, S.N., Ayakta, N., Lazaris, A., Cantwell, A., Baker, S.L., O'Neil, J.P., Gorno-Tempini, M.L., Miller, B.L., Jagust, W.J. & Rabinovici, G.D. *Equal contribution*. (2016). Tau patterns mirror clinical and neuroanatomical variability in Alzheimer's disease: An [$^{18}$F]AV1451 PET study. *Brain*. doi: 10.1093/brain/aww027

Sakon, J.J., Halpern, D.J., **Schonhaut, D.R.** & Kahana, M.J. (2024). Human hippocampal ripples signal encoding of episodic memories. *J Neurosci*. doi: 10.1523/JNEUROSCI.0111-23.2023

Herweg, N.A., Kunz, L., **Schonhaut, D.R.**, Brandt, A., Wanda, P.A., Sharan, A.D., Sperling, M.R., Schulze-Bonhage, A. & Kahana, M.J. (2023). A learned map for places and concepts in the human medial temporal lobe. *J Neurosci*, 43(19): 3538-3547. doi: 10.1523/JNEUROSCI.0181-22.2023

Iaccarino, L., La Joie, R., Edwards, L., Strom, A., **Schonhaut, D.R.**, Ossenkoppele, R., Pham, J., Mellinger, T., Janabi, M., Baker, S.L, Soleimani-Meigooni, D., Rosen, H.J., Miller, B.L., Jagust, W.J. & Rabinovici, G.D. (2021). Spatial relationships between molecular pathology and neurodegeneration in the Alzheimer's disease continuum. *Cereb Cortex*, 31(1): 1-14. doi: 10.1093/cercor/bhaa184

Betzel, R.F., Medaglia, J.D., Kahn, A.E., Soffer, J., **Schonhaut, D.R.** & Bassett, D.S. (2019). Structural, geometric and genetic factors predict interregional brain connectivity patterns probed by electrocorticography. *Nat Biomed Eng*, 3(11): 902-916. doi: 10.1038/s41551-019-0404-5

Ossenkoppele, R., Iaccarino, L., **Schonhaut, D.R.**, Brown, J.A., La Joie, R., O'Neil, J.P., Janabi, M., Baker, S.L, Kramer, J.H., Gorno-Tempini, M.L., Miller, B.L., Rosen, H.J., Seeley, W.W., Jagust, W.J. & Rabinovici, G.D. (2019). Tau covariance patterns in Alzheimer's disease patients match intrinsic connectivity networks in the healthy brain. *Neuroimage Clin*, 23:101848. doi: 10.1016/j.nicl.2019.101848

Winer, J., Maass, A., Pressman, P., Stiver, J., **Schonhaut, D.R.**, Baker, S.L., Kramer, J.H., Rabinovici, G.D. & Jagust, W.J. (2018). Associations between tau, $\beta$-amyloid, and cognition in Parkinson disease. *JAMA Neurol*, 75(2): 227-235. doi: 10.1001/jamaneurol.2017.3713

Bejanin, A., **Schonhaut, D.R.**, La Joie, R., Kramer, J.H., Baker, S.L., Sosa, N., Ayakta, N., Cantwell, A., Janabi, M., Lauriola, M., O'Neil, J.P., Gorno-Tempini, M.L., Miller, Z.A., Rosen, H.J., Miller, B.L., Jagust, W.J. & Rabinovici, G.D. (2017). Tau pathology and neurodegeneration contribute to cognitive impairment in Alzheimer's disease. *Brain*, 140(12): 3286-3300. doi: 10.1093/brain/awx243

Iaccarino, L., Tammewar, G., Ayakta, N., Baker, S.L., Bejanin, A., Boxer, A.L., Gorno-Tempini, M.L., Janabi, M., Kramer, J.H., Lazaris, A., Lockhart, S.N., Miller, B.L., Miller, Z., O'Neil, J.P., Ossenkoppele, R., Rosen, H.J., **Schonhaut, D.R.**, Jagust, W.J. & Rabinovici, G.D. (2017). Local and distant relationships between amyloid, tau and neurodegeneration in Alzheimer's disease. *Neuroimage Clin*, 17: 452-464. doi: 10.1016/j.nicl.2017.09.016

Spina, S., **Schonhaut, D.R.**, Boeve, B.F., Seeley, W.W., Ossenkoppele, R., O'Neil, J.P., Lazaris, A., Rosen, H.J., Perry, D.C., Miller, B.L., Dickson, D.W., Parisi, J.E., Jagust, W.J., Murray, M.E. & Rabinovici, G.D. (2017). Frontotemporal dementia with the V337M *MAPT* mutation: Tau-PET and pathology correlations. *Neurology*, 88(8): 758-766. doi: 10.1212/WNL.0000000000003636

Baker, S.L., Lockhart, S.N., Price, J.C., He, M., Huesman, R.H., **Schonhaut, D.R.**, Faria, J., Rabinovici, G.D. & Jagust, W.J. (2017). Reference tissue-based kinetic evaluation of $^{18}$F-AV-1451 for tau imaging. *J Nucl Med*, 58(2): 332-338. doi: 10.2967/jnumed.116.175273

Schöll, M.*, Lockhart, S.N.*, **Schonhaut, D.R.**, O'Neil, J.P., Janabi, M., Ossenkoppele, R., Baker, S.L., Vogel, J., Faria, J., Schwimmer, H., Rabinovici, G.D. & Jagust, W.J. *Equal contribution*. (2016). PET imaging of tau deposition in the aging human brain. *Neuron*, 89(5): 971-982. doi: 10.1016/j.neuron.2016.01.028

Ossenkoppele, R., **Schonhaut, D.R.**, Baker, S.L., O'Neil, J.P., Janabi, M., Ghosh, P.M., Santos, M., Miller, Z.A., Bettcher, B.M., Gorno-Tempini, M.L., Miller, B.L., Jagust, W.J. & Rabinovici, G.D. (2015). Tau, amyloid, and hypometabolism in a patient with posterior cortical atrophy. *Ann Neurol*, 77(2): 338-342. doi: 10.1002/ana.24321

Moreno, F., Rabinovici, G.D., Karydas, A., Miller, Z., Chan Hsu, S., Legati, A., Fong, J., **Schonhaut, D.R.**, Esselmann, H., Watson, C., Stephens, M.L., Kramer, J.H., Wiltfang, J., Seeley, W.W., Miller, B.L., Coppola, G. & Grinberg, L.T. (2015). A novel mutation P112H in the TARDBP gene associated with frontotemporal lobar degeneration and abundant neuritic amyloid plaques without motor neuron disease. *Acta Neuropathol Commun*, 3: 19. doi: 10.1186/s40478-015-0190-6

## Presentations

### TALKS

| | | |
|---|---|---|
| 2024 | Human Amyloid Imaging Conference | *Miami, FL* |
| 2023 | Alzheimer's Association International Conference | *Amsterdam, Netherlands* |
| 2022 | Context and Episodic Memory Symposium | *Philadelphia, PA* |
| 2021 | Memory: It's About Time | *Virtual* |
| 2019 | Society for Neuroscience Annual Meeting | *Chicago, IL* |
| 2016 | American Academy of Neurology Annual Meeting | *Vancouver, Canada* |
| | Human Amyloid Imaging Conference | *Miami, FL* |
| 2015 | Alzheimer's Association International Conference | *Washington, D.C.* |

### POSTERS

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|---|---|---|
| 2020 | Cognitive Neuroscience Society Annual Meeting | *Virtual* |
| 2017 | Society for Neuroscience Annual Meeting | *Washington, D.C.* |
| 2016 | Musculoskeletal and Neurodegenerative Diseases | *Malmö, Sweden* |
| | Alzheimer's Association International Conference | *Toronto, Canada* |
| | Northern California Alzheimer's Researchers' Symposium | *Davis, CA* |
| 2015 | Alzheimer's Disease Center Research Symposium | *Davis, CA* |
| | Alzheimer's Imaging Consortium | *Miami, FL* |
| | International Congress of Parkinson's Disease and Movement Disorders | *San Diego, CA* |

### GUEST LAB MEETINGS

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|---|---|---|
| 2021 | Ueli Rutishauser lab, California Institute of Technology | *Los Angeles, CA* |
| | Electrocorticography Research Group, University of Pennsylvania | *Philadelphia, PA* |
| 2020 | Marc Howard lab, Boston University | *Boston, MA* |
| | Cog Fog meeting, University of California, Los Angeles | *Los Angeles, CA* |
| 2019 | Itzhak Fried lab, University of California, Los Angeles | *Los Angeles, CA* |
| | György Buzsáki lab, New York University | *New York, NY* |
| 2016 | Henrik Zetterberg lab, University of Gothenburg | *Gothenburg, Sweden* |
| | Philip Scheltens lab, VU University Medical Center | *Amsterdam, Netherlands* |

## Teaching

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|---|---|---|
| 2019 | **Introduction to Neurobiology**, Teaching Assistant | *University of Pennsylvania* |

## Mentoring

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| 2023- | **Marlene Lin**, Master's student in biostatistics, UCSF |
| 2023- | **Xiuxiu Zhang, MS in bioengineering**, Staff Research Assistant, UCSF |
| 2023- | **Piyush Maiti, MS in bioengineering**, Staff Research Assistant, UCSF |
| 2022- | **Jhony Mejia-Perez, BS**, Staff Research Assistant, UCSF |
| 2022- | **Claire Yballa, BA**, Clinical Research Coordinator, UCSF |
| 2021-2022 | **Brandon S. Katerman, BA**, Staff Research Assistant, University of Pennsylvania |
| 2020-2021 | **Jason Chou, BS**, Staff Research Assistant, University of Pennsylvania |
| 2019-2020 | **Connor A. Keane, BS**, Staff Programmer, University of Pennsylvania |
| 2014-2016 | **Stacey Jou**, Undergraduate Researcher, University of California, Berkeley |
| 2015 | **Sasha Ashall**, Undergraduate Researcher, University of California, Berkeley |

## Service

### Outreach

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| 2017-2019 | **Philadelphia Science Festival**, Event lead, Neuroscience Graduate Group |
| 2016-2019 | **Science outreach in West Philadelphia high schools**, Guest instructor |

### Peer Review

- Alzheimer's and Dementia
- Biological Psychiatry
- eLife
- JAMA Neurology
- Journal of Alzheimer's Disease
- Nature Communications
- Science