



Sydney Covitz

Ph.D. Student in Bioengineering, admitted Autumn 2023

Publications

PUBLICATIONS

- **Reproducible Brain Charts: An open data resource for mapping brain development and its associations with mental health.** *Neuron*
Shafiei, G., Esper, N. B., Hoffmann, M. S., Ai, L., Chen, A. A., Cluce, J., Covitz, S., Giavasis, S., Lane, C., Mehta, K., Moore, T. M., Salo, T., Tapera, et al
2025
- **Video-Based Biomechanical Analysis Captures Disease-Specific Movement Signatures of Different Neuromuscular Diseases.** *NEJM AI*
Ruth, P. S., Uhlrich, S. D., de Monts, C., Falisse, A., Muccini, J., Covitz, S., Vogt-Domke, S., Day, J., Duong, T., Delp, S. L.
2025; 2 (9)
- **Curation of BIDS (CuBIDS): A workflow and software package for streamlining reproducible curation of large BIDS datasets** *NEUROIMAGE*
Covitz, S., Tapera, T. M., Adebimpe, A., Alexander-Bloch, A. F., Bertolero, M. A., Feczko, E., Franco, A. R., Gur, R. E., Gur, R. C., Hendrickson, T., Houghton, A., Mehta, K., Murtha, et al
2022; 263: 119609
- **Video-based biomechanical analysis captures disease-specific movement signatures of different neuromuscular diseases.** *bioRxiv : the preprint server for biology*
Ruth, P. S., Uhlrich, S. D., de Monts, C., Falisse, A., Muccini, J., Covitz, S., Vogt-Domke, S., Day, J., Duong, T., Delp, S. L.
2025
- **Human thalamocortical structural connectivity develops in line with a hierarchical axis of cortical plasticity.** *Nature neuroscience*
Sydnor, V. J., Bagautdinova, J., Larsen, B., Arcaro, M. J., Barch, D. M., Bassett, D. S., Alexander-Bloch, A. F., Cook, P. A., Covitz, S., Franco, A. R., Gur, R. E., Gur, R. C., Mackey, et al
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- **Generalizable Links Between Borderline Personality Traits and Functional Connectivity.** *Biological psychiatry*
Shafiei, G., Keller, A. S., Bertolero, M., Shanmugan, S., Bassett, D. S., Chen, A. A., Covitz, S., Houghton, A., Luo, A., Mehta, K., Salo, T., Shinohara, R. T., Fair, et al
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- **A network control theory pipeline for studying the dynamics of the structural connectome.** *Nature protocols*
Parkes, L., Kim, J. Z., Stiso, J., Brynildsen, J. K., Cieslak, M., Covitz, S., Gur, R. E., Gur, R. C., Pasqualetti, F., Shinohara, R. T., Zhou, D., Satterthwaite, T. D., Bassett, et al
2024
- **Mapping the Relationship of White Matter Lesions to Depression in Multiple Sclerosis.** *Biological psychiatry*
Baller, E. B., Sweeney, E. M., Cieslak, M., Robert-Fitzgerald, T., Covitz, S. C., Martin, M. L., Schindler, M. K., Bar-Or, A., Elahi, A., Larsen, B. S., Manning, A. R., Markowitz, C. E., Perrone, et al
2024; 95 (12): 1072-1080
- **A sensorimotor-association axis of thalamocortical connection development.** *bioRxiv : the preprint server for biology*
Sydnor, V. J., Bagautdinova, J., Larsen, B., Arcaro, M. J., Barch, D. M., Bassett, D. S., Alexander-Bloch, A. F., Cook, P. A., Covitz, S., Franco, A. R., Gur, R. E., Gur, R. C., Mackey, et al

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- **BABS in Action: Merging Reproducibility and Scalability for Large-Scale Neuroimaging Analysis With BIDS Apps**
Zhao, C., Chen, Y., Jarecka, D., Ghosh, S., Cieslak, M., Satterthwaite, T. D.
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- **Functional connectivity development along the sensorimotor-association axis enhances the cortical hierarchy.** *Nature communications*
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- **ModelArray: An R package for statistical analysis of fixel-wise data.** *NeuroImage*
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- **Depression as a Disease of White Matter Network Disruption: Characterizing the Relationship Between White Matter Lesions and Depression in Patients With Multiple Sclerosis**
Baller, E., Sweeney, E., Bar-Or, A., Cieslak, M., Covitz, S., Detre, J., Elahi, A., Manning, A., Markowitz, C., Martin, M., Perrone, C., Rautman, V., Robert-Fitzgerald, et al
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- **Intrinsic activity development unfolds along a sensorimotor-association cortical axis in youth.** *Nature neuroscience*
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- **Development of top-down cortical propagations in youth.** *Neuron*
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- **Depression as a Disease of White Matter Network Disruption: Characterizing the Relationship Between White Matter Lesions and Depression in Patients With Multiple Sclerosis**
Baller, E., Cieslak, M., Robert-Fitzgerald, T., Covitz, S., Martin, M., Schindler, M., Baror, A., Elahi, A., Fox, M., Manning, A., Markowitz, C., Mirkovic, N., Perrone, et al
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- **An analysis-ready and quality controlled resource for pediatric brain white-matter research.** *Scientific data*
Richie-Halford, A., Cieslak, M., Ai, L., Caffarra, S., Covitz, S., Franco, A. R., Karipidis, I. I., Kruper, J., Milham, M., Avelar-Pereira, B., Roy, E., Sydnor, V. J., Yeatman, et al
2022; 9 (1): 616
- **ASLPrep: a platform for processing of arterial spin labeled MRI and quantification of regional brain perfusion.** *Nature methods*
Adebimpe, A., Bertolero, M., Dolui, S., Cieslak, M., Murtha, K., Baller, E. B., Boeve, B., Boxer, A., Butler, E. R., Cook, P., Colcombe, S., Covitz, S., Davatzikos, et al
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