

Joanna Mattis, MD, PhD
Assistant Professor of Neurology
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Ann Arbor, MI 48109-2200
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Education and Training

Education

05/2006	BS, Molecular, Cellular, and Developmental Biology, Yale University, New Haven, United States
05/2006	MS, Molecular, Cellular, and Developmental Biology, Yale University, New Haven, United States
08/2007	M Phil, Physiology, Development, and Neuroscience, University of Cambridge, Cambridge, United Kingdom
08/2013	PhD, Neuroscience, Stanford University, Stanford, United States
06/2015	MD, Medicine, Stanford University, Stanford, United States

Postdoctoral Training

06/2015-06/2016	Internship, Internal Medicine, University of Pennsylvania, Philadelphia, PA
07/2016-06/2019	Residency, Neurology, University of Pennsylvania, Philadelphia, PA
07/2020-06/2021	Clinical Fellow, Epilepsy, University of Pennsylvania, Philadelphia, PA

Certification And Licensure

Certification

12/2019-Present	American Board of Psychiatry and Neurology, Psychiatry and Neurology
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Licensure

06/2015-12/2022	Pennsylvania, Medical License
03/2022-Present	Michigan, Medical License

Work Experience

Academic Appointment

06/2022-Present	Assistant Professor, Neurology, University of Michigan, Ann Arbor, MI
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Clinical Appointments

07/2019-06/2020	Instructor, Neurology, University of Pennsylvania, Philadelphia, PA
07/2021-06/2022	Instructor, Neurology, University of Pennsylvania, Philadelphia, PA

Grants

Current Grants

Taubman Institute Emerging Scholar Award; Kenneth Eisenberg Emerging Scholar PI
University of Michigan
2024-2028
\$200,000

Neurotransmitter switching: An epilepsy pathomechanism hiding in plain sight?:

PI

Michigan Medicine: Research Scouts

6/2023-6/2025

\$40,000

K08NS121464: Cortico-hippocampal circuit dysfunction in an Scn1a mouse model of epilepsy:

PI

NIH-DHHS-US

07/2022 - 06/2026

\$788,867

Past Grants

Harnessing neuromodulation to target peri-ictal dysfunction in epilepsy:

PI

Citizens United for Research i

10/2022 - 09/2023

\$100,000

R25 NS065745-11: Research Education Grant for Fellows in Neurology:

Senior/key personnel (Principal Investigator: John Detre)

NIH NINDS

07/2019 - 06/2020

\$0

R25 NS065745: Research Education Grant for Residents in Neurology: Resident

Funded by

NIH NINDS

07/2018 - 06/2019

\$0

N/A: Women's Committee at the Children's Hospital of Philadelphia: Resident

Funded by

Children's Hospital of Philadelphia

06/2018 - 06/2019

\$50,000

Honors and Awards

National

2005

Rhodes Scholarship, Rhodes Trust, Finalist

2005

Scholarship for Academic Excellence, Big Y

2006 - 2007

Winston Churchill Foundation Scholarship, Winston Churchill Foundation

2020

Fellow, American Epilepsy Society

2020

Young Investigator Award, American Epilepsy Society

2021

Grass Foundation Young Investigator Award, American Epilepsy Society

Institutional

2004

Mellon Research Grant, Yale University

2004

Richter Summer Fellowship, Yale University

2005	Alan S. Tetelman Traveling Fellowship, Yale University
2005	Science and Engineering Research Presentation Travel Prize, Yale University
2006	First Prize, Poster for Intensive Research, Yale University, Undergraduate Research Symposium
2007 - 2015	Medical Scientist Training Program Scholarship, Stanford University
2010 - 2013	Bio-X Graduate Student Fellowship, Stanford University
2011	Bio-X Graduate Student Travel Award, Stanford University
2023	UMMS Research Scouts Award (40K), University of Michigan
2024 - 2028	Taubman Institute Emerging Scholar Award, University of Michigan, Appointed as the Kenneth Eisenberg Emerging Scholar

Departmental

2006	Edgar J. Boell Prize for Excellence in Biology, Yale University
2019	Marc A. Dichter Award for Excellence in Translational Research, University of Pennsylvania, Neurology

Study Sections, Editorial Boards, Journal & Abstract Review

Study Sections

Institutional

2023	University of Michigan, Physician Scientist Career Development: Negotiations Panel, United States, (Ad Hoc)
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Editorial Boards / Journal & Abstract Reviews

Journal Review

2021 - present	Brain
2022 - present	Journal of Clinical Investigation
2022 - present	Journal of Neuroscience
2022 - present	Annals of Neurology
2023 - present	Epilepsia Open
2023 - present	Cell Reports
2023 - present	Nature Communications
2024 - present	Epilepsia
2024 - present	Molecular Psychiatry

Teaching

Mentorship

Resident

07/2021-06/2022	Jessica Little, University of Pennsylvania, Neurology, Neurology Faculty Mentor
06/2023-Present	Lindsay Stoyka, University of Michigan, Neurology, Neurology Faculty Mentor

Clinical Fellow

12/2022-12/2022	Samantha Allen, UCSF, Neurology, Faculty Mentor for the American Epilepsy Society (AES) Fellows Program
12/2022-12/2022	Alexandra Parashos, Medical University of South Carolina, Neurology, Faculty Mentor for the American Epilepsy Society (AES) Fellows Program

Postdoctoral Fellow

02/2023-Present Limei Zhu, University of Michigan, Neurology, Postdoctoral fellow in the Mattis lab
06/2023-Present Meiling Zhao, University of Michigan, Neurology, Postdoctoral fellow in the Mattis lab; Awarded Dravet Syndrome Foundation Postdoctoral Fellowship (effective January 2024)

Graduate Student

01/2023-Present Krystal Santiago-Colon, University of Michigan, PIBS grad student in the Mattis lab; July 2023 - Recipient of the Pharmacological Sciences Training Program (PSTP) T32
01/2023-03/2023 Jacob Reeves, University of Michigan, NGP rotation grad student in the Mattis lab
02/2023-Present Chandni Rana, University of Michigan, Neurology, NGP grad student in the Mattis lab; July 2023 -Recipient of the Neural Engineering Training Program (NETP) T32

Undergraduate Student

08/2010-05/2013 Minsuk Hyun, Stanford University, Mentor within the Deisseroth lab; Awarded multiple grants and Stanford's Firestone Medal for excellence in undergrad research
01/2019-05/2021 Jina Yom, University of Pennsylvania, Mentor within Goldberg lab
06/2019-08/2019 Anushree Aneja, University of Pennsylvania, Penn Undergraduate Research Mentorship (PURM) summer program
06/2020-08/2020 Eitan Goodman, University of Pennsylvania, MindCORE Step-Ahead Mentorship Program (STAMP)
06/2020-08/2020 Camryn Kozuch, University of Pennsylvania, MindCORE Step-Ahead Mentorship Program (STAMP)
06/2020-08/2020 Jo Ann Sun, University of Pennsylvania, MindCORE Step-Ahead Mentorship Program (STAMP)
08/2022-Present Rida Qureshi, University of Michigan, Undergrad in the Mattis lab; awarded a U@MNI undergraduate research fellowship (2023-2024)
08/2022-Present Nagham Eldroubi, University of Michigan, Undergrad in the Mattis lab
01/2023-Present Juan Disla, University of Michigan, Undergrad in the Mattis lab
01/2023-Present Yiannos Demetriou, University of Michigan, Undergrad in the Mattis lab
06/2023-08/2023 Kamie Mueller, University of Michigan, Undergrad in the Mattis lab
06/2023-09/2023 Shahriar Ahmad Akhavan Tafti, University of Michigan, Undergrad in the Mattis lab; Received the Internship Stipend Award and Hough Foundation Grant from Kalamazoo College, which supports research in the Mattis lab
09/2023-Present Isabella Plati, University of Michigan, Undergrad in Mattis lab
10/2023-Present Anam Noor, University of Michigan, Undergrad in the Mattis lab

Research Staff

07/2021-06/2022 Evan Jiang, University of Pennsylvania, Technician within Goldberg lab
07/2022-Present Joseph Barden, University of Michigan, Neurology, Staff member in the Mattis lab
07/2022-07/2023 Julia Kravchenko, University of Michigan, Neurology, Staff member in the Mattis lab
09/2023-Present Katherine Reaume, University of Michigan, Research Laboratory Technician in the Mattis lab

Highschool Student

07/2023-08/2023 Jade Zhang, University of Michigan, Neurology, High school student in the Mattis lab

Teaching Activity

Institutional

01/2009-03/2009	NBIO 206 course, "The Nervous System", Stanford University, Neuroscience, Teaching Assistant
01/2010-03/2010	NBIO 206 course, "The Nervous System", Stanford University, Neuroscience, Teaching Assistant
02/2019-02/2019	Neurology residency, "AEDs and EEG", University of Pennsylvania, Neurology, Lecturer
12/2020-12/2020	Epilepsy division, "Generalized Epilepsy", University of Pennsylvania, Neurology, Lecturer
01/2021-01/2021	Epilepsy division, "Reflex Epilepsy", University of Pennsylvania, Neurology, Lecturer
04/2021-04/2021	Epilepsy division, "Epilepsy and the Brainstem", University of Pennsylvania, Neurology, Lecturer
05/2022-05/2022	Epilepsy division, "Epilepsy and Headache", University of Pennsylvania, Neurology, Lecturer
04/2023-04/2023	Neuroscience 616: Translational Neuroscience, University of Michigan, Neurology, Lecturer
04/2023-04/2023	Neurosci 616 Journal Club, University of Michigan, Neurology, Leader
09/2023-09/2023	Epilepsy for Medical Student Teaching Session, University of Michigan
10/2023-Present	Quality Improvement Lecture, University of Michigan, Neurology, Faculty Guest

Dissertation Committees

10/2022-Present	Alvin Chiu, University of Michigan, Neurology, Committee Member
01/2023-Present	Bailey Masser, University of Michigan, Neurology, Committee Member
01/2024-01/2024	Susie Yu Feng, Neuroscience; External examiner for a thesis defense, Icahn School of Medicine at Mount Sinai, Neuroscience Program, Committee Member

Memberships in Professional Societies

2009 - 2013	Member, Society for Neuroscience
2016 - Present	Member, American Epilepsy Society
2021 - Present	Member, American Neurological Association
2023 - Present	Member, American Physiological Society

Committee/Service

National

2023 - 2025	Early Career Grant Committee, American Epilepsy Society (AES), Member
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Departmental

2017 - 2019	Grand Rounds Committee, University of Pennsylvania, Member
2023 - present	Department of Neurology Grand Rounds Task Force, University of Michigan, Member

Institutional

2021 - 2022	FOCUS on Health & Leadership for Women (FOCUS), Section for Women Residents & Fellows, University of Pennsylvania, Member
2021 - 2022	Inclusion, Diversity, Anti-Racism, and Equity (IDARE) Recruitment and Retention

Committee, University of Pennsylvania, Member

- 2022 - present Neuroscience Graduate Program (NGP) Admissions Committee, University of Michigan, Member
- 2023 Mentoring Others Results in Excellence (MORE), University of Michigan, Member
- 2024 - present MORE, Workshop: Getting Your Mentoring Relationship Off to a Good Start, University of Michigan, Member

Scholarly Activities

Presentations

Extramural Invited Presentation

Speaker

1. An analysis of new and existing opsins for scientific application, **Mattis J**, European Biophysics Conference, European Biophysical Societies Association, 08/2011, Budapest, Hungary
2. Shining light on epilepsy: cortico-hippocampal circuit dysfunction in a mouse model of Dravet Syndrome, **Mattis J**, Department of Neurology Grand Rounds, University of Utah, 07/2020, Salt Lake City, UT
3. Shining light on epilepsy: cortico-hippocampal circuit dysfunction in a mouse model of Dravet Syndrome, **Mattis J**, Epilepsy Research Seminar, Yale Comprehensive Epilepsy Center, 11/2020, New Haven, CT
4. Shining light on epilepsy: cortico-hippocampal circuit dysfunction in a mouse model of Dravet Syndrome, **Mattis J**, Platform presentation at annual AES, American Epilepsy Society, 12/2020, Virtual
5. Cortico-hippocampal circuit dysfunction in a mouse model of Dravet Syndrome, **Mattis J**, NextGen Epilepsy Seminar Series - Virtual, University of California Irvine, 02/2021, Irvine, CA
6. Shining light on epilepsy: cortico-hippocampal circuit dysfunction in a mouse model of Dravet Syndrome, **Mattis J**, Department of Neurobiology Research Seminar, University of Utah, 09/2021, Salt Lake City, UT
7. Cortico-hippocampal circuit dysfunction in a mouse model of Dravet Syndrome, **Mattis J**, Emerging Scholar Lecture Series, American Neurological Association, 10/2021, Virtual
8. Shining light on epilepsy: cortico-hippocampal circuit dysfunction in a mouse model of Dravet Syndrome, **Mattis J**, Department of Neurology, Neurology Research Seminar, University of Michigan, 10/2021, Ann Arbor
9. Shining light on epilepsy: Cortico-hippocampal circuit dysfunction in a mouse model of Dravet Syndrome, **Mattis J**, Neuroscience Chalk Talk, Children's Hospital of Philadelphia (CHOP), 11/2021, Philadelphia, PA
10. Shining light on epilepsy: Cortico-hippocampal circuit dysfunction in a mouse model of Dravet Syndrome, **Mattis J**, Department of Neurology Grand Rounds, Yale University, 11/2021, New Haven, CT
11. Modulating cortico-hippocampal circuit dysfunction in a mouse model of Dravet Syndrome, **Mattis J**, Platform presentation, American Epilepsy Society, 12/2021, Chicago, IL
12. Shining light on epilepsy: Cortico-hippocampal circuit dysfunction in a mouse model of Dravet syndrome, **Mattis J**, Dravet Syndrome Foundation (DSF) Research Roundtable, 12/2022, Nashville, TN
13. Personal journey stories from successful researchers, **Mattis J**, American Academy of Neurology, 04/2023, Boston, MA
14. Shining light on epilepsy: Circuit dissection and manipulation in preclinical mouse models, **Mattis J**, Park City Epilepsy Meeting, University of Utah, 10/2023, Salt Lake City, UT
15. Shining light on epilepsy: Circuit dissection and manipulation in preclinical mouse models, **Mattis J**, Interdisciplinary Lecture Series in Neuroscience, Division of Neurology, Ann and Robert H. Lurie Children's Hospital of Chicago, 11/2023, Virtual
16. Circuit dissection and manipulation in preclinical mouse models, **Mattis J**, Shuman and Cai Lab Seminar, Department of Neuroscience, Icahn School of Medicine at Mount Sinai, 01/2024, New York, NY

17. Shining light on epilepsy: Circuit dissection and manipulation in preclinical mouse models, **Mattis J**, Wayne State University Neurology Grand Rounds, Wayne State University, 02/2024, Detroit, MI

Intramural Invited Presentation

Speaker

1. Optogenetics: controlling neural activity with light, **Mattis J**, Stanford Bioengineering Colloquium, Stanford University, 12/2011, Stanford, CA
2. Viral and molecular tools to constrain gene delivery in the brain, **Mattis J**, Stanford Bio-X Fellows Symposium, Stanford University, 06/2013, Stanford, CA
3. Morbidity and Mortality, **Mattis J**, Grand Rounds lecture to Penn Neurology department, University of Pennsylvania, 01/2018, Philadelphia, PA
4. Shedding light on epilepsy: Treating seizures via optogenetic activation of the Locus Coeruleus, **Mattis J**, Women's Committee, Children's Hospital of Philadelphia (CHOP), 05/2018, Philadelphia, PA
5. Cortico-hippocampal circuit dissection in a mouse model of Dravet Syndrome, **Mattis J**, Grand Rounds lecture to Neurology department, University of Pennsylvania, 01/2019, Philadelphia, PA
6. Cortico-hippocampal circuit dissection in a mouse model of Dravet Syndrome, **Mattis J**, Neurobiology Seminar, Children's Hospital of Philadelphia (CHOP), 06/2019, Philadelphia, PA
7. Cortico-hippocampal circuit dysfunction in a mouse model of Dravet Syndrome, **Mattis J**, Neuroscience Chalk Talk, Children's Hospital of Philadelphia (CHOP), 02/2020, Philadelphia, PA
8. Shining light on epilepsy: Cortico-hippocampal circuit dysfunction in a mouse model of Dravet Syndrome, **Mattis J**, Neurology Seminar and Chalk Talk, Hospital of the University of Pennsylvania, 12/2021, Philadelphia, PA
9. Shining light on epilepsy: Circuit dissection and manipulation in preclinical mouse models, **Mattis J**, Department of Neurology Grand Rounds, University of Michigan, 07/2022, Ann Arbor, MI
10. Shining light on epilepsy: Circuit dissection and manipulation in preclinical mouse models, **Mattis J**, Kresge Hearing Research Institute HBCS Seminar, University of Michigan, 10/2023, Ann Arbor, MI
11. Neural Engineering Training Program (NETP) Seminar, **Mattis J**, University of Michigan, 10/2023, Ann Arbor, MI

Publications/Scholarship

(Co-First Author *; Corresponding author **; Co-Last author ***)

Peer-Reviewed

Journal Article

1. Trommershäuser J, **Mattis J**, Maloney LT, Landy MS: Limits to human movement planning with delayed and unpredictable onset of needed information. *Exp Brain Res.*175(2): 276-284, 11/2006. PM16736179
2. Zhang F, Prigge M, Beyrière F, Tsunoda SP, **Mattis J**, Yizhar O, Hegemann P, Deisseroth K: Red-shifted optogenetic excitation: a tool for fast neural control derived from *Volvox carteri*. *Nat Neurosci.*11(6): 631-633, 06/2008. PM18432196
3. Onkal R, **Mattis JH**, Fraser SP, Diss JK J, Shao D, Okuse K, Djamgoz MB A: Alternative splicing of Nav1.5: an electrophysiological comparison of 'neonatal' and 'adult' isoforms and critical involvement of a lysine residue. *J Cell Physiol.*216(3): 716-726, 09/2008. PM18393272
4. Paspalas CD, Perley CC, Venkitaramani DV, Goebel-Goody SM, Zhang Y, Kurup P, **Mattis JH**, Lombroso PJ: Major vault protein is expressed along the nucleus-neurite axis and associates with mRNAs in cortical neurons. *Cereb Cortex.*19(7): 1666-1677, 07/2009. PM19029061
5. Gradinaru V, Zhang F, Ramakrishnan C, **Mattis J**, Prakash R, Diester I, Goshen I, Thompson KR, Deisseroth K: Molecular and cellular approaches for diversifying and extending optogenetics. *Cell.*141(1): 154-165, 04/2010. PM20303157
6. Berndt A, Schoenenberger P, **Mattis J**, Tye KM, Deisseroth K, Hegemann P, Oertner TG: High-efficiency channelrhodopsins for fast neuronal stimulation at low light levels. *Proceedings of the National*

Academy of Sciences of the United States of America.108(18): 7595-7600, 05/2011. PM21504945

7. **Mattis J**, Tye KM, Ferenczi EA, Ramakrishnan C, O'Shea DJ, Prakash R, Gunaydin LA, Hyun M, Fenno LE, Gradinaru V, Yizhar O, Deisseroth K: Principles for applying optogenetic tools derived from direct comparative analysis of microbial opsins. *Nature Methods*.9(2): 159-172, 02/2012. PM22179551
8. Kim S-Y, Adhikari A, Lee SY, Marshel JH, Kim CK, Mallory CS, Lo M, Pak S, **Mattis J**, Lim BK, Malenka RC, Warden MR, Neve R, Tye KM, Deisseroth K: Diverging neural pathways assemble a behavioural state from separable features in anxiety. *Nature*.496(7444): 219-223, 04/2013. PM23515158
9. Chung K, Wallace J, Kim S-Y, Kalyanasundaram S, Andalman AS, Davidson TJ, Mirzabekov JJ, Zalocusky KA, **Mattis J**, Denisin AK, Pak S, Bernstein H, Ramakrishnan C, Grosenick L, Gradinaru V, Deisseroth K: Structural and molecular interrogation of intact biological systems. *Nature*.497(7449): 332-337, 05/2013. PM23575631
10. Stamatakis AM, Jennings JH, Ung RL, Blair GA, Weinberg RJ, Neve RL, Boyce F, **Mattis J**, Ramakrishnan C, Deisseroth K, Stuber GD: A unique population of ventral tegmental area neurons inhibits the lateral habenula to promote reward. *Neuron*.80(4): 1039-1053, 11/2013. PM24267654
11. Fenno LE, **Mattis J***, Ramakrishnan C, Hyun M, Lee SY, He M, Tucciarone J, Selimbeyoglu A, Berndt A, Grosenick L, Zalocusky KA, Bernstein H, Swanson H, Perry C, Diester I, Boyce FM, Bass CE, Neve R, Huang ZJ, Deisseroth K: Targeting cells with single vectors using multiple-feature Boolean logic. *Nat Methods*.11(7): 763-772, 07/2014. PM24908100
12. **Mattis J**, Brill J, Evans S, Lerner TN, Davidson TJ, Hyun M, Ramakrishnan C, Deisseroth K, Huguenard JR: Frequency-dependent, cell type-divergent signaling in the hippocamposeptal projection. *J Neurosci*.34(35): 11769-11780, 08/2014. PM25164672
13. Brill J, **Mattis J**, Deisseroth K, Huguenard JR: LSPS/Optogenetics to Improve Synaptic Connectivity Mapping: Unmasking the Role of Basket Cell-Mediated Feedforward Inhibition. *eNeuro*.3(4)01/2016. PM27517089
14. Ferenczi EA, Vierock J, Atsuta-Tsunoda K, Tsunoda SP, Ramakrishnan C, Gorini C, Thompson K, Lee SY, Berndt A, Perry C, Minniberger S, Vogt A, **Mattis J**, Prakash R, Delp S, Deisseroth K, Hegemann P: Optogenetic approaches addressing extracellular modulation of neural excitability. *Sci Rep*.6: 23947, 04/2016. PM27045897
15. Hofmann G, Balgooyen L, **Mattis J**, Deisseroth K, Buckmaster PS: Hilar somatostatin interneuron loss reduces dentate gyrus inhibition in a mouse model of temporal lobe epilepsy. *Epilepsia*.57(6): 977-983, 06/2016. PM27030321
16. Conrad EC, Siegler JE, **Mattis J**, Schnure N, Messé SR: Clinical Reasoning: A young woman with progressive headache and pancytopenia. *Neurology*.88(14): e132-e136, 04/2017. PM28373374
17. Fenno LE, **Mattis J**, Ramakrishnan C, Deisseroth K: A Guide to Creating and Testing New INTRSECT Constructs. *Curr Protoc Neurosci*.80: 4.39.1-4.39.24, 07/2017. PM28678399
18. Gazea M, Furdan S, Sere P, Oesch L, Molnár B, Di Giovanni G, Fenno LE, Ramakrishnan C, **Mattis J**, Deisseroth K, Dymecki SM, Adamantidis AR, Lőrincz ML: Reciprocal Lateral Hypothalamic and Raphe GABAergic Projections Promote Wakefulness. *J Neurosci*.41(22): 4840-4849, 06/2021. PM33888606
19. **Mattis J**, Somarowthu A, Goff KM, Jiang E, Yom J, Sotuyo N, MCGarry LM, Feng H, Kaneko K, Goldberg EM: Corticohippocampal circuit dysfunction in a mouse model of Dravet syndrome. *Elife*.1102/2022. PM35212623
20. Kravchenko JA, Goldberg EM, **Mattis J**: Optogenetic and chemogenetic manipulation of seizure threshold in mice. *STAR Protocols*.4(1): 102019-102019, 03/2023. PM36640370

Abstract/Posters

1. **Mattis J**, Rutchkina I, Mills E, Bennett A, Lombroso PJ: Characterization of Major Vault Protein in the Central Nervous System, Abstract, Society for Neuroscience, Washington, DC, 2005
2. **Mattis J**, Onkal R, Fraser SP, Diss J, Djamgoz MB A: 'Neonatal' vs. 'adult' splice variants of Nav1.5: An electrophysiological comparison, Abstract, Physiological Society Meeting at University College London, London, England, 2006
3. Tsai HC, Zhang F, **Mattis J**, Meltzer L, Bernstein H, Deisseroth K: DIO: doublefloxed inverse ORF

- Cre-dependent Adeno-associated viral vectors for cell-specific gene expression in the rodent brain, Abstract, Society for Neuroscience, Washington, DC, 2008
4. Zhang F, Prigge M, Tsunoda S, **Mattis J**, Yizhar O, Hegemann P, Deisseroth K: Expression and function in mammalian brain tissue of a red-shifted channelrhodopsin from the green alga *Volvox carteri*, Abstract, Society for Neuroscience, Washington, DC, 2008
 5. Diester I, **Mattis J**, Squire R, Zhang F, Deisseroth K: Optogenetic toolbox for circuit-specific targeting, Abstract, Society for Neuroscience, Chicago, IL, 2009
 6. Gunaydin LA, Yizhar O, Berndt A, Sohal V, **Mattis J**, Fenno L, Ramakrishnan C, Hegemann P, Deisseroth K: Increasing the fidelity of optogenetic control with an expanded panel of channelrhodopsin kinetic variants, Abstract, Society for Neuroscience, San Diego, CA, 2010
 7. **Mattis J**, Ramakrishnan C, Diester I, Squire R, Zhang F, Deisseroth K: Expanding the toolbox for targeting genetically- and topologically-defined components of neural circuits, Abstract, Society for Neuroscience, San Diego, CA, 2010
 8. Brill J, **Mattis J**, Deisseroth K, Huguenard JR: Optogenetic approaches for cell-type specific connectivity mapping, Abstract, Society for Neuroscience, Washington, DC, 2011
 9. Diester I, Bernstein H, **Mattis J**, Zalocusky K, Ramakrishnan C, Bass C, Shenoy KV, Deisseroth K: Optogenetic projection targeting with AAV5 in non-human primates, Abstract, Society for Neuroscience, Washington, DC, 2011
 10. Ferenczi E, **Mattis J**, Ramakrishnan C, Tye K, O'Shea D, Yizhar O, Deisseroth K: Stability of optogenetic tool deactivation kinetics under varying stimulation conditions, Abstract, Society for Neuroscience, Washington, DC, 2011
 11. **Mattis J**, Tye KM, Ramakrishnan C, O'Shea DJ, Gunaydin LA, Ferenczi EA, Hyun M, Fenno LE, Gradinaru V, Yizhar O, Deisseroth K: Principles for optogenetics derived from direct comparative analysis of microbial opsins, Abstract, Society for Neuroscience, Washington, DC, 2011
 12. Chung K, Kim S, Zalocusky KA, **Mattis J**, Gradinaru V, Kalyanasundaram S, Pak SM, Ramakrishnan C, Mirzabekov JJ, Deisseroth K: Clarity: Technology for rapid, whole, intact-brain imaging with molecular phenotyping, Abstract, Society for Neuroscience, New Orleans, LA, 2012
 13. Fenno LE, **Mattis J**, Hyun M, Ramakrishnan C, Lee SY, Selimbeyoglu A, Zalocusky KA, He M, Tucciarone J, Berndt A, Perry C, Bernstein H, Bass CE, Neve RL, Huang J, Deisseroth K: Viral strategies for expression of genetically encoded tools in multiply defined neuron populations, Abstract, Society for Neuroscience, New Orleans, LA, 2013
 14. Ferenczi E, Berndt A, Lee SY, Ramakrishnan C, **Mattis J**, Prakash R, Deisseroth K: The role of the extracellular ionic milieu in modulating neuronal excitability as revealed by optogenetic and electrical stimulation, Abstract, Society for Neuroscience, San Diego, CA, 2013
 15. Stamatakis AM, Ung RL, Blair A, Weinberg RJ, Neve RL, Boyce F, **Mattis J**, Ramakrishnan C, Deisseroth K, Stuber GD: VTA dopaminergic neurons release GABA in the lateral habenula to promote reward, Abstract, Society for Neuroscience, San Diego, CA, 2013
 16. Davidson TJ, Anderson EB, Lerner TN, Ramakrishnan C, **Mattis J**, Grosenick LM, Kauver V, Frank LM, Deisseroth K: Subsecond cholinergic dynamics underlying hippocampal network state in freely-behaving rats, Abstract, Society for Neuroscience, Washington, DC, 2014
 17. **Mattis J**, Conrad E, Goldberg E: Cortico-hippocampal dysfunction in a mouse model of Dravet syndrome, Abstract, American Epilepsy Society, Baltimore, MD, 2019
 18. **Mattis J**, Somarowthu A, Goff K, Yom J, Sotuyo N, McGarry L, Feng H, Kaneko K, Goldberg E: Cortico-hippocampal circuit dysfunction in a mouse model of Dravet syndrome, Abstract, American Epilepsy Society, Virtual due to Covid, 2020
 19. **Mattis J**, Somarowthu A, Goff K, Yom J, Sotuyo N, McGarry L, Feng H, Kaneko K, Goldberg E: Cortico-hippocampal circuit dysfunction in a mouse model of Dravet syndrome, Abstract, American Neurological Association, Virtual due to Covid, 2021
 20. **Mattis J**, Somarowthu A, Goff K, Yom J, Sotuyo N, McGarry L, Feng H, Kaneko K, Goldberg E: Modulating cortico-hippocampal circuit dysfunction in a mouse model of Dravet syndrome, Abstract, American Epilepsy Society, Chicago, IL, 2021
 21. **Mattis J**, Somarowthu A, Goff K, Jiang E, Yom J, Sotuyo N, Feng H, Kaneko K, Goldberg E:

Modulating cortico-hippocampal circuit dysfunction in a mouse model of Dravet syndrome, Abstract,
Mechanisms of Epilepsy and Neuronal Synchronization Gordon Research Conference, Barcelona, Spain,
2022