Benjamin R. Kanter, PhD

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CURRENT POSITION

Researcher, 2023-
Kavli Institute for Systems Neuroscience
Norwegian University of Science and Technology (NTNU)
Supervisors: Edvard I. Moser, PhD and May-Britt Moser, PhD

EDUCATION AND TRAINING

Kavli Institute for Systems Neuroscience
Norwegian University of Science and Technology (NTNU)
Postdoctoral Fellow, 2020-2023
Supervisors: Edvard I. Moser, PhD and May-Britt Moser, PhD

PhD in Medicine (Neuroscience), 2015-2019
Supervisor: Clifford G. Kentros, PhD

University of Oregon (UO)
MS in Biology (Neuroscience), 2012-2015
Supervisor: Clifford G. Kentros, PhD

Ernest Gallo Clinic and Research Center
University of California, San Francisco (UCSF)
Staff Research Associate, 2010-2012
Supervisor: Robert O. Messing, MD

Boston University (BU)
BA in Neuroscience, 2010
Undergraduate Researcher 2008-2010
Supervisor: Howard B. Eichenbaum, PhD

PUBLICATIONS

(Google Scholar: https://scholar.google.no/citations?hl=en&user=BeuN-EQAAAAJ)

10. **Kanter BR**, Lykken CM, Asumbisa K, Nguyen TTP, & Kentros CG. Distinct remapping in CA3 and CA1 elicited by depolarization of medial entorhinal cortex layer II. *Manuscript.*

9. Lykken C, **Kanter BR**, Dickinson J, Asumbisa K, Chadney OMT, & Kentros CG. Grid field firing rate changes control the predictability and stability of hippocampal remapping. *Manuscript.*

8. **Kanter BR**, Moser EI, & Witter MP. 'Entorhinal cortex', in ***The Hippocampus Book, 2nd edition.*** *In press.*

7. **Kanter BR**, Lykken CM, Moser EI, & Moser MB (2022). Neuroscience in the 21st century: circuits, computation, and behaviour. ***The Lancet Neurology*** 21(1):19-21. Go to article

6. **Kanter BR**, Lykken CM, Avesar D, Weible A, Dickinson J, Dunn B, Borgesius NZ, Roudi Y, & Kentros CG (2017). A novel mechanism for the grid-to-place cell transformation revealed by depolarization of medial entorhinal cortex layer II. ***Neuron*** 93(6): 1480-1492. Go to article

5. Lee AM, **Kanter BR**, Wang D, Lim JP, Zou ME, Qiu C, McMahon T, Dadgar J, Fischbach-Weiss SC, & Messing RO (2013). Prkcz null mice show normal learning and memory. ***Nature*** 493(7432): 416-419. Go to article

4. Maiya R, McMahon T, Wang D, **Kanter B**, Gandhi D, Chapman HL, & Messing RO (2016). Selective chemical genetic inhibition of protein kinase C epsilon reduces ethanol consumption in mice. ***Neuropharmacology*** 107: 40-48. Go to article

3. DeVito LM, Balu DT, **Kanter BR**, Lykken C, Basu AC, Coyle JT, & Eichenbaum H (2011). Serine racemase deletion disrupts memory for order and alters cortical dendritic morphology. ***Genes, Brain and Behavior*** 10(2): 210-222. Go to article

2. DeVito LM*, Lykken C*, **Kanter BR**, & Eichenbaum H (2010). Prefrontal cortex: role in acquisition of overlapping associations and transitive inference. ***Learning & Memory*** 17(3): 161-167. *equal contribution. Go to article

1. DeVito LM, **Kanter BR**, & Eichenbaum H (2010). The contribution of the hippocampus to memory expression in transitive inference in mice. ***Hippocampus*** 20(1): 208-217. Go to article

AWARDS AND HONORS

- Best Oral Presentation: Norwegian National PhD Conference in Neuroscience 2015
- Undergraduate Research Opportunities Program Award (BU, Spring 2010)
- Undergraduate Research Opportunities Program Award (BU, Summer 2009)
- Undergraduate Research Opportunities Program Award (BU, Spring 2009)

TEACHING, SERVICE, AND OUTREACH

- Coordinator and lecturer for Neural Networks (NTNU, Master's level, 2023-)
- Co-coordinator and lecturer for Neural Networks (NTNU, Master's level, 2020-2022)

- Lecturer for Behavioural and Cognitive Neuroscience (NTNU, Master's level, 2020-2021)
- Lecturer for Sensory and Motor Neuroscience (NTNU, Master's level, 2017-2021)
- Creator and lecturer for MATLAB Club (NTNU, all levels, 2017-2018)
- Creator and lecturer for Data Analysis Club (NTNU, all levels, 2018)
- Lecturer for Sensory Physiology (UO, Bachelor's level, 2013)
- Graduate Teaching Fellow (UO, Bachelor's level, 2012-2013)
    - Sensory Physiology; Developmental Biology; General Biology I: Cells
- Supervisor for 1 Master's student and 2 research associates (NTNU, 2015-2019)
- Supervisor for 1 research associate and 2 undergraduates (UO, 2013-2015)

- Representative for Kavli Institute postdocs & researchers (NTNU, 2022-)
- Director of Kavli Institute Journal Club (NTNU, 2019-)
- Co-creator and organizer for Young Reseachers Journal Club (NTNU, pre-doctoral level, 2017-2020)
- Examiner for 2 Master's theses and 1 Master's midway evaluation (NTNU)
- Deputy Dean for 1 PhD public defense (NTNU)
- Peer review service: Nature, Cell, Current Biology, Neuron, Nature Neuroscience, Nature Communications, Journal of Neuroscience

- Organizer for Trondheim Science Week (NTNU, 2018)
- Contributing writer to Massive Science Consortium

INVITED TALKS/SEMINARS

- Timing Research Forum 3, Lisbon, Portugal, 2023
- Christmas Workshop on CNS Function, Damage, and Repair, Trondheim, Norway, 2018
- Christmas Workshop on CNS Function, Damage, and Repair, Trondheim, Norway, 2017
- National PhD Conference in Neuroscience, Sotra, Norway, 2015
- University of Oregon, Institute of Neuroscience Retreat, 2014

PUBLISHED ABSTRACTS

13. **Kanter BR**, Lykken CM, Moser MB, & Moser EI (2023). Event structure sculpts lateral entorhinal dynamics. Society for Neuroscience Annual Meeting, Washington, DC.

12. Lykken CM, **Kanter BR**, Nagelhus A, Guardamagna M, Moser MB, & Moser EI (2023). Independent realignment of grid cell modules during hippocampal remapping. Society for Neuroscience Annual Meeting, Washington, DC.

11. Lykken CM, Nagelhus A, **Kanter BR**, Moser MB, & Moser EI (2022). Functional independence of grid cell modules during hippocampal remapping. FENS Forum, Paris, France.

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10. **Kanter BR**, Lykken CM, Moser MB, & Moser EI (2022). Event structure sculpts lateral entorhinal dynamics. FENS Forum, Paris, France.

9. Kveim VA*, **Kanter BR***, Lykken C, & Kentros CG (2018). The effect of recent experience on hippocampal remapping and spatial memory impairment. Society for Neuroscience Annual Meeting, San Diego, CA. *equal contribution.

8. Lykken C, **Kanter BR**, Dickinson J, Asumbisa K, & Kentros CG (2018). The relationship between the relative firing rates of individual grid fields and hippocampal remapping. Society for Neuroscience Annual Meeting, San Diego, CA.

7. **Kanter BR**, Lykken CM, Weible A, Dickinson J, Dunn B, Borgesius NZ, & Kentros CG (2016). Transgenic depolarization of medial entorhinal cortex layer II neurons reveals a potential novel mechanism of the grid-to-place cell transformation. Norwegian National PhD Conference in Neuroscience, Oslo, Norway.

6. **Kanter BR**, Nguyen TTP, & Kentros CG (2015). Transgenic activation of medial entorhinal cortex similarly alters spatial firing properties of CA3 and CA1 place cells. Society for Neuroscience Annual Meeting, Chicago, IL.

5. Lykken C, Estrada N, **Kanter B**, & Kentros C (2015). Transgenic activation of MEC LII results in similar changes in the firing properties of CA1 place cells across distinct environments. Society for Neuroscience Annual Meeting, Chicago, IL.

4. Lykken C, Estrada N, **Kanter B**, & Kentros C (2015). Transgenic activation of MEC LII results in similar changes in the firing properties of CA1 place cells across distinct environments. Norwegian National PhD Conference in Neuroscience, Sotra, Norway.

3. **Kanter BR**, Zeng L, Wang V, Messing RO, & Newton PM (2012). Protein kinase C-epsilon in the infralimbic cortex mediates the extinction of Pavlovian conditioned responses. Society for Neuroscience Annual Meeting, New Orleans, LA.

2. Lee AM, **Kanter BR**, Lim JP, Zou M, Qui C, Dadgar J, McMahon T, & Messing RO (2012). Intact learning and memory in mice that lack protein kinase M zeta. Society for Neuroscience Annual Meeting, New Orleans, LA.

1. Lykken C*, DeVito LM*, **Kanter BR**, & Eichenbaum H (2009). Medial prefrontal lesions impair the acquisition of overlapping olfactory discriminations and transitive inference performance. Society for Neuroscience Annual Meeting, Chicago, IL. *equal contribution.

PROFESSIONAL MEMBERSHIPS

- Federation of European Neuroscience Societies: 2022-
- Norwegian Neuroscience Society: 2015-
- Norwegian Research School in Neuroscience: 2015-
- Society for Neuroscience: 2009-

REFERENCES

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