

Marc M. Himmelberg, PhD

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RESEARCH TRAINING

2024– current	Research Scientist	New York University, Department of Psychology and Center for Neural Science (New York City, USA) Advisors: Jonathan Winawer & Marisa Carrasco
2019– 2024	Postdoctoral Research Associate	New York University, Department of Psychology and Center for Neural Science (New York City, USA) Advisors: Jonathan Winawer & Marisa Carrasco
2018	Visiting Scholar (3 months)	Lundbeck A/S, Drug R&D (Copenhagen, DK) Host: Kenneth Vielsted Christensen
2017	Visiting Scholar (4 months)	University Medical Center Groningen, Department of Ophthalmology (Groningen, NL) Host: Frans Cornelissen

EDUCATION

2015– 2019	Ph.D.	PhD in Cognitive Neuroscience and Neuroimaging University of York, Department of Psychology (York, UK) Marie Skłodowska-Curie Early-Stage Research Fellow Advisor: Alex Wade
2014	B.Psych (Hons)	Western Sydney University, School of Psychology (Sydney, AU) Honours Class I, University Medal and APS Prize. GPA: 6.58/7 Advisor: Tamara Watson
2010	B.A.	University of Sydney, Faculty of Arts and Sciences (Sydney, AU)
2007	HSC	Trinity Grammar School (Sydney, AU)

PUBLICATIONS

Hanning, N.M., **Himmelberg, M.M.** & Carrasco, M. (2024). Presaccadic attention depends on eye movement direction and is related to V1 cortical magnification. *Journal of Neuroscience*, 44(12).

Himmelberg, M.M., Winawer, J. & Carrasco, M. (2023). Polar angle asymmetries in visual perception and neural architecture. *Trends in Neurosciences*, 46(6).

Himmelberg, M.M., Tünçok, E., Gomez, J., Grill-Spector, K., Carrasco, M.* & Winawer, J.* (2023). Comparing retinotopic maps of children and adults reveals a late-stage change in how V1 samples the visual field. *Nature Communications*, 14:1561.

Jigo, M., Tavdy, D., **Himmelberg, M.M.** & Carrasco, M. (2023). Cortical magnification underlies differences across but not around the visual field. *eLife*, 12:e84205.

Himmelberg, M.M., Gardner, J.L. & Winawer, J. (2022). What has vision science taught us about functional MRI? *NeuroImage*, 261, 119536.

Himmelberg, M.M., Winawer, J.* & Carrasco, M.* (2022). Linking individual differences in human primary visual cortex to contrast sensitivity around the visual field. *Nature Communications*, 13:3309.

Hanning, N.M., **Himmelberg, M.M.** & Carrasco, M. (2022). Presaccadic attention enhances contrast sensitivity, but not at the upper vertical meridian, *iScience*, 25(2).

Himmelberg, M.M.*, Kurzawski, J.*, Benson, N.C., Pelli, D.G., Carrasco, M. & Winawer, J. (2021). Cross-dataset reproducibility of human retinotopic maps, *NeuroImage*, 224.

Himmelberg, M.M.*, Segala, F.G*, Maloney, R.T., Harris, J.M. & Wade, A.R. (2020). Decoding neural responses to motion-in-depth using EEG, *Front. Neurosci*, 14:581706.

Himmelberg, M.M., Winawer, J. & Carrasco, M. (2020). Stimulus-dependent contrast sensitivity asymmetries around the visual field, *Journal of Vision*, 20(18), 1-19.

Østergaard, F.G., **Himmelberg, M.M.**, Laursen, B., Siebner, H.R., Wade, A.R. & Christensen, K.V. (2020). Classification of α -synuclein-related changes in the AAV α -synuclein rat model of Parkinson's disease using electrophysiological measurements of visual processing, *Scientific Reports*, 10:11869.

Himmelberg, M.M. & Wade, A.R. (2019). Eccentricity-dependent temporal contrast tuning in human visual cortex measured using fMRI, *NeuroImage*, 184, 462-474.

Himmelberg, M.M., West, R.J.H, Elliott, C.J.H. & Wade, A.R. (2018). Abnormal visual gain control & excitotoxicity in early-onset Parkinson's disease *Drosophila* models, *Journal of Neurophysiology*, 119(3), 957-970.

Himmelberg, M.M., West, R.J.H, Wade, A.R. & Elliott, C.J.H (2018). A perceptual plus in Parkinson's disease, *Movement Disorders*, 33(2), 248.

PREPRINTS

Himmelberg, M.M., Kwak, Y., Carrasco, M. & Winawer, J. (2025). Unpacking the V1 map: Differential covariation of visual properties across spatial dimensions. *bioRxiv*.

INVITED TALKS

Nov 2024 York Neuroimaging Center, University of York, UK

Sept 2023 Japanese Meeting for Human Brain Imaging, Tamagawa University, Tokyo, Japan

Sept 2023 Center for Information and Neural Networks (CiNet), Osaka, Japan

July 2023 Child Vision Lab, UCL, London (Online)

CONFERENCE PRESENTATIONS (first author only)

- 2024 Himmelberg, M.M., Kwak, Y., Carrasco, M. & Winawer, J. Covariation in the surface area of human primary visual cortex and cortical spatial frequency tuning. *Vision Sciences Society*, St Pete Beach, Florida (Poster).
- 2023 Himmelberg, M.M., Tünçok, E., Gomez, J., Grill-Spector, K., Carrasco, M. & Winawer, J. Comparing retinotopic maps of children and adults reveals a late-stage change in how V1 samples the visual field. *Vision Sciences Society*, St. Pete Beach, Florida (Talk).
- 2022 Himmelberg, M.M., Winawer, J. & Carrasco, M. Linking cortical magnification in human primary visual cortex with contrast sensitivity. *Vision Sciences Society*, St. Pete Beach, Florida (Talk).
- 2021 Himmelberg, M.M, Carrasco, M. & Winawer, J. Cortical magnification in human V1 correlates with contrast sensitivity measurements around the visual field. *European Conference on Visual Perception* (Poster, Online).
- 2021 Himmelberg, M.M., Kurzawski, J., Benson, N.C., Pelli, D.G., Carrasco, M. & Winawer, J. Cross-dataset reproducibility of population receptive field estimates and retinotopic map structure, *Vision Sciences Society* (Poster, Online).
- 2019 Himmelberg, M.M. & Wade, A.R. Using vision to study Parkinson's disease. *University of York Centre for Future Health Research Impact Conference*, York, UK (Poster).
- 2018 Himmelberg, M.M. & Wade, A.R. fMRI measurements of neural temporal contrast sensitivity across population receptive field eccentricity & size. *Vision Sciences Society*, St. Pete Beach, Florida (Poster).
- 2017 Himmelberg, M.M. & Wade, A.R. Measuring temporal contrast sensitivity across the visual field and visual cortex using fMRI. *Optical Society of America Fall Vision Meeting*, Washington D.C. (Talk).

RESEARCH FUNDING and SCHOLARSHIPS

2024	NYU Center for Brain Imaging Research Development Grant	\$6000 USD
2022	NYU Center for Brain Imaging Research Development Grant	\$5000 USD
2019	Helmsley Interdisciplinary Fellowship to attend CSHL	\$1500 USD
2018	EUROGRANT Business Start-Up for 'ClassiFLY'	\$2275 USD
2015–2018	Marie Skłodowska-Curie Actions ITN PhD Fellowship	\$203,613 USD

AWARDS and HONOURS

- 2015 Western Sydney University Medal for Outstanding Scholarship
- 2014 Australian Psychological Society Prize – 1st place rank B.Psych (Hons)
- 2014 Western Sydney University Dean's Merit List
- 2012 Western Sydney University Dean's Merit List

MENTORSHIP

2022–2023	Daniel Tavdy	New York University (Undergraduate student, Psychology)
2020–2022	Ekin Tünçok	New York University (Graduate student, Psychology)
2018–2019	Federico Segala	University of York (Master's student, Natural Sciences)

TEACHING

- 2016–2019 University of York, Department of Psychology
Graduate Teaching Assistant
- Natural Sciences: Perception
 - Research Design and Statistics
 - Perception and Cognition
 - Mini-projects supervision
- 2018 York NeuroImaging Center, University of York
Developed and taught Retinotopic mapping using fMRI workshop series (3 days)
Material available: <http://marchimmelberg.com/teaching.html>

REVIEWER FOR

Journals

Brain Structure and Function | Communications Psychology | eLife | Eye and Vision | Frontiers in Neuroscience | Human Brain Mapping | Imaging Neuroscience | iScience | Journal of Experimental Psychology: General | Journal of Neuroscience | Journal of Vision | MethodsX | Nature Communications | Neuropsychologica | PLOS Computational Biology | Scientific Reports

Funding Agencies

Agence Nationale de la Recherche (ANR, France)

DEPARTMENTAL and COMMUNITY SERVICE

- 2022–2024 New York University, Neuroscience Institute
Neuroscience Institute Postdoctoral Committee, *Member*
- 2023, 2024 New York University, Center for Brain Imaging
Demonstrating MRI for high school students on NYU-STEM summer camp
- 2015–2019 NextGenVis Innovative Training Network
Junior Research Board, *Chair*
- 2016–2019 University of York, Department of Psychology
PhD Representative
- 2016–2019 University of York, Department of Psychology
Early Career Researchers (ECR) Committee, *Member*
- 2016 University of York, Kings Manor
Computational Modelling of the Human Visual System, *Symposium organiser and host*

PUBLIC DATASETS and SOFTWARE

- Stanford Child and Adult Checkerboard Retinotopy Dataset (<https://openneuro.org/datasets/ds004440>)
- MRI, fMRI, and population receptive field (pRF) solution data from 25 children (ages 5-12) and 24 adults (ages 23+)

Human Connectome Project (HCP) Retinotopy Dataset pRFs reanalyzed using Vistasoft (<https://osf.io/e6vqk/>)

- Vistasoft pRF solution data from 181 adults

New York University (NYU) Retinotopy Dataset (<https://openneuro.org/datasets/ds003787>)

- MRI, fMRI, and pRF solution data from 44 adults

EEG responses to Motion-in-Depth Dataset (<https://osf.io/2nzyw/>)

- EEG recordings from 10 adults

PROFESSIONAL DEVELOPMENT, WORKSHOPS, and SUMMER SCHOOLS

- 2024 New York University, Neuroscience Institute
Developing Your Research Vision (5 sessions)
- 2021 New York University, Arthur L. Carter Journalism Institute
Scientific Communication Workshops (6 sessions)
- 2019 Cold Spring Harbor Laboratory, Huntington, NY
Summer School: A Platform for Linking Circuits, Behavior and Perception (2 weeks)
- 2018 Bangor University, UK
Summer School: Visceral Minds Neuroanatomy (1 week)
- 2018 Hadassah Medical Center, Jerusalem, ISR
Scientific Grant Writing Course (3 days)
- 2017 Maastricht University, Maastricht, NL
BrainVoyager: Advanced Brain Imaging and Analysis (2 days)
- 2017 Phillips Research Global Headquarters, Eindhoven, NL
EUROGRANT Scientific Entrepreneurial Course (5 days)
- 2016 Utrecht University, Utrecht, NL
fMRI population receptive field mapping and computational modelling workshop (3 days)

MEDIA and PRESS COVERAGE

The Ophthalmologist: The Brain Behind Vision (Interview)

NIH News Release: Neuroscientists Find New Factors Behind Better Vision (News Release)

PROFESSIONAL MEMBERSHIPS

- 2019–current Vision Sciences Society
- 2019–current New York Academy of Sciences
- 2021 Society for Neuroscience
- 2015–2017 British Psychological Society

REFERENCES

Prof. Jonathan Winawer

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Prof. Marisa Carrasco

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Prof. Alex Wade

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