Aurélie Calabrèse, PhD

Born on 01/25/1985 - French

aurelie.calabrese@inria.fr - www.aureliecalabrese.com
Google Scholar: citations: 286 - h-index: 8

Visual neuroscience - Neuro-ophthalmology - Translational research
Reading - Visual impairment - Plasticity - Aging - Rehabilitation
Eye-tracking - fMRI - Psychophysics

EDUCATION & RESEARCH EXPERIENCE

2019-current	**Starting Research Position,** Inria Sophia Antipolis - Méditer., Côte d'Azur Univ. (France). Biovision Project Team
2017-2019	**Postdoctoral Research Associate,** Aix-Marseille University (France). Laboratoire de Psychologie Cognitive (CNRS - UMR 7290). Advisor: Eric Castet.
2011-2016	**Postdoctoral Research Associate,** University of Minnesota, Psychology (USA). Minnesota Laboratory for Low-Vision Research. Advisor: Gordon E. Legge.
2011	**Ph.D. degree in Cognitive Neurosciences,** University of the Mediterranean (France). Institut de Neurosciences Cognitives de la Méditerranée (CNRS - UMR 6193). Advisor: Eric Castet.
2007	**Master degree in Cognitive Neurosciences,** University of the Mediterranean (France).
2005	**Bachelor of Science degree in Biology,** University of the Mediterranean (France).

FUNDING

"Improving reading performance of AMD patients through optimized oculo-motor patterns"
Fondation de France, Berthe Fouassier grant (neuro-ophthalmology) - *Renewal*
Role: Principal investigator
Total Costs: 71,100 € 2018/04 - 2019/06

"Improving reading performance of AMD patients through optimized oculo-motor patterns"
Fondation de France, Berthe Fouassier grant (neuro-ophthalmology)
Role: Principal investigator
Total Costs: 67,200 € 2017/04 - 2018/02

"Psychophysics of Reading - Normal and Low Vision",
NIH grant
Role: Consultant
Total Costs: $10,000 2016/08 - 2017/02

"Validation of the E-MNREAD: MNREAD Reading Acuity Test implemented on an iPad3",
UMN Psychology Department grant
Role: Principal investigator
Total Costs: $1,000 2015/01

"Travel grant for the 9th International Low Vision Conference - Vision 2008 - Montreal, Canada",
International Society for Low Vision Research and Rehabilitation (ISLRR)
Total Costs: $1,250 2008/07

"Désorganisation fonctionnelle des systèmes oculomoteur et visuo-attentionnel chez les patients basse vision"
French Ministry of Research & Technology
PhD fellowship
Total Costs: 67,900 € 2007/11 - 2010/10

PUBLICATIONS (Peer-Reviewed Articles)

0. Wu, H.-Y., **Calabrèse, A.,** Kornprobst, P. (under review) Towards Accessible News Reading Design for Low Vision in Virtual Reality. https://hal.inria.fr/hal-02321739

0. Sauvan, L., Stolowy, N., Aguilar, C., François, T., Gala, N., Matonti, F., Castet, E., **Calabrèse, A.** (under review) Reading with maculopathy: the inhibitory effect of word neighborhood size is modulated by word predictability and reading proficiency. https://hal.inria.fr/hal-02920126

1. Ryan, E.H., Lam, L., Pulido, C.P., Bennett, S.R., **Calabrèse, A.** (2020) Reading Speed as an Objective Measure of Improvement Following Vitrectomy for Symptomatic Vitreous Opacities. *Ophthalmic Surgery, Lasers and Imaging Retina*, 51(8): 456-466. https://doi.org/10.3928/23258160-20200804-06

2. Sauvan, L., Stolowy, N., Aguilar, C., François, T., Gala, N., Matonti, F., Castet, E., **Calabrèse, A.** (2020) Text Simplification to Help Individuals With Low Vision to Read More Fluently. *Workshop Tools and Resources to Empower People with Reading Difficulties (READI) at International conference on Language Resources and Evaluation* (LREC 2020), oral presentation, pp. 27-32. Marseille, France. https://www.aclweb.org/anthology/2020.readi-1.5/

3. Baskaran, K., Macedo, A.F., He, Y., Moreno, L., Silva, M., Mansfield, J.S., **Calabrèse, A.** (2019) Scoring Reading Parameters: an Inter-Rater Reliability Study Using the MNREAD Chart. *PLoS ONE, 14*(6): e0216775. https://doi.org/10.1371/journal.pone.0216775

4. Stolowy, N.*, **Calabrèse, A.*,** Sauvan, L., Aguilar, C., François, T., Gala, N., Matonti, F., Castet, E. (2019) The Influence of Word Frequency on Word Reading Speed when Individuals with Macular Diseases Read Text. *Vision Research,* 155, 1-10 https://doi.org/10.1016/j.visres.2018.12.002
* joint first authors

5. Xiong, Y-Z., **Calabrèse, A.**, Cheong, A., Legge, G.E. (2018). Reading Acuity as a Predictor of Low-Vision Reading Performance. *Investigative Ophthalmology & Visual Science, 59*(12), 4798-4803. http://dx.doi.org/10.1167/iovs.18-24716

6. **Calabrèse, A.,** Aguilar, C., Faure, G., Matonti, F., Hoffart, L., Castet, E. (2018). A Vision Enhancement System to improve Face Recognition with Central Vision Loss. *Optometry and Vision Science, 95*(9), 738–746. http://doi.org/10.1097/OPX.0000000000001263

7. Gupta, A., Mesik, J., Engel, S.A., Smith, R., Schatza, M., **Calabrèse, A.**, van Kuijk, F.J., Erdman, A.G., Legge, G.E. (2018). Beneficial Effects of Spatial Remapping for Reading With Simulated Central Field Loss. *Investigative Ophthalmology & Visual Science*, *59*(2), 1105–1112. http://doi.org/10.1167/iovs.16-21404

8. **Calabrèse, A.,** To, L., He, Y., Berkholtz, E., Rafian, P., & Legge, G. E. (2018). Comparing Performance on the MNREAD iPad Application with the MNREAD Acuity Chart. *Journal of Vision*, *18*(1), 8. http://doi.org/10.1167/18.1.8

9. **Calabrèse, A.,** Liu, T., & Legge, G. E. (2017). Does Vertical Reading Help People with Macular Degeneration: An Exploratory Study. *PLoS ONE*, *12*(1), e0170743. http://doi.org/10.1371/journal.pone.0170743

10. **Calabrèse, A.,** Cheong, A., Cheung, S-H., He, Y., Kwon, M., Mansfield, J.S., Subramanian, A., Yu D., Legge, G.E. (2016). Baseline MNREAD Measures for Normally Sighted Subjects From Childhood to Old Age. *Investigative Ophthalmology & Visual Science*, *57*(8), 3836–3843. http://doi.org/10.1167/iovs.16-19580

11. **Calabrèse, A.**, Bernard, J.-B., Faure, G., Hoffart, L., Castet, E. (2016). Clustering of Eye Fixations: A New Oculomotor Determinant of Reading Speed in Maculopathy. *Investigative Ophthalmology & Visual Science*, 57(7), 3192-3202. http://doi.org/10.1167/iovs.16-19318

12. **Calabrèse, A.,** Owsley, C., McGwin, G., & Legge, G. E. (2016). Development of a Reading Accessibility Index Using the MNREAD Acuity Chart. *JAMA Ophthalmology*, *134*(4), 398–405. http://doi.org/10.1001/jamaophthalmol.2015.6097

13. Bernard, J.-B., **Calabrèse, A.,** Castet, E. (2014). Role of Syllable Segmentation Processes in Peripheral Word Recognition. *Vision Research,* 105, 226-232. http://doi.org/10.1016/j.visres.2014.10.018

14. **Calabrèse, A.**, Bernard, J.-B., Faure, G., Hoffart, L., Castet, E. (2014). Eye Movements and Reading Speed in Macular Disease: The Shrinking Perceptual Span Hypothesis Requires and Is Supported by a Mediation Analysis. *Investigative Ophthalmology & Visual Science*, 55(6), 3638-3645. http://doi.org/10.1167/iovs.13-13408

15. **Calabrèse, A.,** Bernard J.-B., Hoffart L., Faure G., Barouch F., Conrath J., Castet E. (2011). Wet versus Dry Age-Related Macular Degeneration in Patients with Central Field Loss: Different Effects on Maximum Reading Speed. *Investigative Ophthalmology & Visual Science,* 52(5), 2417-2424. http://doi.org/10.1167/iovs.09-5056

16. **Calabrèse, A.**, Bernard, J.-B., Hoffart, L., Faure, G., Barouch, F., Conrath, J., Castet, E. (2010). Small Effect of Interline Spacing on Maximal Reading Speed in Low-Vision Patients with Central Field Loss Irrespective of Scotoma Size. *Investigative Ophthalmology & Visual Science,* 51(2), 1247-1254. http://doi.org/10.1167/iovs.09-3682

17. Scherlen, A.-C., Bernard, J.-B., **Calabrèse, A.,** Castet, E. (2008) Page Mode Reading with Simulated Scotomas: Oculo-motor Patterns. *Vision Research,* 48(18), 1870-1878. http://doi.org/10.1016/j.visres.2008.06.005

SOFTWARE

1. mnreadR, an R package to analyze MNREAD data (2020) – *Version 2.1*
Calabrèse A., Mansfield J.S., Legge G.E.
https://CRAN.R-project.org/package=mnreadR

2. MNREAD iPad App ©2017 – *Version 1.5*
Legge G.E., **Calabrèse A**., To L., Mansfield J.S., Bigelow C.
Apple App Store - https://itunes.apple.com/us/app/mnread/id1196638274?ls=1&mt=8

MANUALS

1. mnreadR package - reference manual (2018)
   Calabrèse A.

2. MNREAD App - user guide (2017)
   Calabrèse A.

PATENTS

1. MNREAD App for iOS (2015)
   Legge G.E., **Calabrèse A**., To L., Mansfield J.S., Bigelow C. University of Minnesota

2. T-SOLAIRE: a reading test software for low vision patients (2008)
   Castet E., Bernard J.-B., **Calabrèse A**. French Software Agency (Protection DI 01951-01)

WORK IN PROGRESS

Beylerian, M., Aguilar, C., François, T., Gala, N., Matonti, F., Castet, E., **Calabrèse, A.** (in preparation) Assessing Text Complexity for Patients with Maculopathies using OLD20 as a Sensitive Measure of Orthographic Neighborhood.

Calabrèse, A., Macedo, A.F., Hernandez-Moreno, L., Queirós, T., Baskaran, K. (submitted) Normative Data for Reading Performance in Children from Grade 2 to 10

Calabrèse, A., Legge, G.E. (in preparation) mnreadR, an R package to analyze MNREAD data.

Castet, E., Pocheau, C., Aguilar, C., **Calabrèse, A.**, (in preparation) Distribution of Fixations During Natural Reading with Central Field Loss.

Liu, T., **Calabrèse, A.,** Legge, G.E. (submitted for publication) Designing Adaptable Training Procedures to Improve Reading with Central Vision Loss.

Calabrèse, A., Crossland, M.D., To, L., Legge, G.E. (in preparation) Age Effects on Reading Parameters in Children and Adults with Vision Impairment Assessed with the MNREAD iPad App.

Calabrèse, A., Yu, D., He, S., Legge, G.E. (in preparation) Retinotopic Properties of the Visual Word Form Area.

CONFERENCE ABSTRACTS (Posters & Oral Presentations)

1. Wu, H.-Y., **Calabrèse, A.,** Kornprobst, P. News Reading Design using Virtual Reality to Improve Accessibility for Low-Vision. *To be presented at Vision2020, Dublin, Ireland.*

2. **Calabrèse, A.,** Denis-Noel, A., Benzi Tobar, M., Wu, H.-Y., Matonti, F., Kornprobst, P., Castet, E. Can patients with central field loss perform head pointing in a virtual reality environment? *To be presented at Vision2020, Dublin, Ireland.*

3. **Calabrèse, A.,** Aguilar, C., Matonti, F., Conrath, J., Devin, F., Castet, E. A Vision Enhancement System to Improve Face Recognition with Central Field Loss. *Poster presented at MaculArt Meeting 2019, Paris, France.*

4. **Calabrèse, A.,** Sauvan, L., Aguilar, C., Castet E. The Influence of Word Neighborhood Size on Word Reading Speed when Individuals with Macular Diseases Read Text. *Poster presented at ARVO 2019, Vancouver, USA.*

5. Stolowy, N., **Calabrèse, A.,** Sauvan, L., Aguilar, C., Francois, T., Gala, N., Matonti, F., Denis, D., Castet, E. La simplification de texte pour les patients malvoyants atteints de maculopathie bilaterale: l'effet de la fréquence des mots sur la vitesse de lecture. *Oral presentation given during the SFO meeting 2018, Paris, France.*

6. **Calabrèse, A.,** Aguilar, C., Castet, E. A Vision Enhancement System to Improve Face Recognition with Central Field Loss. *Oral presentation given during the GDR Vision meeting 2017, Lille, France.*

7. **Calabrèse, A.,** Castet, E. Apprehending reading deficits of AMD individuals through an oculomotor pattern investigation. *Oral presentation given at Vision 2017, The Hague, The Netherlands*.

8. Crossland, M. D., **Calabrèse, A.**, To, L., Legge, G.E. Age effects on reading parameters in children and adults with vision impairment assessed with the MNREAD iPad app. *Oral presentation given at Vision 2017, The Hague, The Netherlands*.

9. Baskaran, K., **Calabrèse, A.**, Castet, E., Moreno, L., Silva, M., Macedo, A. F. Scoring reading parameters: an inter-rater reliability study using the MNREAD test. *Oral presentation given at Vision 2017, The Hague, The Netherlands*.

10. **Calabrèse, A.** Preferred retinal locus and reading. *Oral presentation given at ARVO 2017, Baltimore, USA.*

11. **Calabrèse, A.,** Aguilar, C., Castet, E. A Vision Enhancement System to help AMD patients with Face Recognition. *Invest. Ophthalmol. Vis. Sci. 2017*; 58(8):4711.

12. Xiong, Y., Boucher, J., **Calabrèse, A.,** Lei, Q., Legge, G.E. Simulating the Effect of Acuity Reduction on Reading Performance. *Invest. Ophthalmol. Vis. Sci*. 2017; 58(8):3276.

13. **Calabrèse, A.,** Legge, G.E. Baseline MNREAD measures for normally sighted subjects across age. *Invest. Ophthalmol. Vis. Sci.* 2016; 57(12):1949.

14. Gupta, A., Engel, S., Van Kuijk, E. J., **Calabrèse, A.,** Sanders, J., Erdman, A., Legge, G.E. Evaluating Reading Performance with a Head Mounted Aid for Central Visual Field Loss. *Invest. Ophthalmol. Vis. Sci.* 2016;57(12):4430.

15. **Calabrèse, A.,** Cheung, S.H., Yang, Y., Qin, Y., McGwin, G., Owsley, C., Legge, G.E. Development of a Reading Accessibility Index using the MNREAD acuity chart. *Invest. Ophthalmol. Vis. Sci. June 2015, Vol.56, E-Abstract 4788.*

16. **Calabrèse, A.,** Gamam S., Mansfield J.S., Legge G.E. Implementing the MNREAD Reading Acuity Test on an iPad3. *Invest Ophthalmol. Vis. Sci. 2014;55: E-Abstract 5601.*

17. **Calabrèse, A.,** Legge G.E., Bigelow C.A. Implementing the MNREAD Reading Acuity Test on an iPad3. *Visibility, Envision University, 2013, Vol. 7, Issue 4 - Abstract*

18. **Calabrèse, A.,** Liu T., He S., Legge G.E. Reading Speed in Peripheral Vision Improves with Practice: Investigation of the Involved Cortical Sites. *J. Vis. July 24, 2013 13(9):918-Abstract*

19. **Calabrèse, A.,** Liu T., He Y., He S., Legge G.E. Improving Reading Speed in Peripheral Vision with Perceptual Learning: A Behavioral and fMRI Investigation. *J. Vis. August 13, 2012 12(9):704-Abstract.*

20. **Calabrèse, A.,** Aguilar C., Hoffart L., Faure G., Conrath J., Castet E. Oculo-motor patterns induced by

reading in peripheral vision. *J. Vis. September 23, 2011 11(11): 514 - Abstract*

21. Calabrèse, A., Bernard J.B., Hoffart L., Faure G., Barouch F., Conrath J., Castet E. Wet *vs.* dry age-related macular degeneration in patients with central field loss : different effects on Maximum Reading Speed. *Invest. Ophthalmol. Vis. Sci. 2010 51: E-Abstract 3063.*

22. **Calabrèse, A.,** Bernard J.B., Faure G., Barouch F., Hoffart L., Conrath J., Castet E. Use of different PRL strategies during reading with AMD patients. *Invest. Ophthalmol. Vis. Sci. 2009 50: E-Abstract 724.*

23. **Calabrèse, A.,** Bernard J.B., Faure G., Barouch F., Hoffart L., Conrath J., Castet E. Effect of vertical interline spacing on reading speed in low vision patients with central scotomas. *Abstract in the Proceedings of Vision 2008 - The 9th International Conference on Low Vision; Montreal, Canada.*

PROFESSIONAL ACTIVITIES & AFFILIATIONS

Professional roles	Scientific and Pedagogical Committee of the 'DS4H' graduate school (Côte d'Azur Univ.) Research panel for the real estate project of the Sophia Inria center (Bearing Point)
Membership	Low Vision Research Group (LVRG) committee Association for Research in Vision and Ophthalmology (ARVO) Vision Sciences Society (VSS)
Peer reviewing (IF)	Scientific Reports (4.644) Investigative Ophthalmology and Vision Science (3.683) PLoS ONE (3.344) Acta Ophthalmologica (3.206) Ophthalmic and Physiological Optics (2.885) Translational Vision Science and Technology (2.399) Graefe's Archive for Clinical and Experimental Ophthalmology (2.396) Journal of Vision (2.141) Optometry and Vision Science (1.882) Clinical Ophthalmology (1.04) Graefe's Archive for Clinical and Experimental Ophthalmology (2.396)

CONSULTING

2017-2019	**Research consultant,** jCyte - *Treating retinitis pigmentosa* (USA). *http://jcyte.com/*
2016-2017	**Research consultant,** University of Minnesota, Psychology (USA). Minnesota Laboratory for Low-Vision Research.

TEACHING & MENTORING

Teaching	**Invited lecturer – Reading and low vision** (Spring 2017) – *8h* *Institute of Vision Sciences - ISV Formation (Saint-Etienne, France)* **Invited lecturer – Retina and visual pathways** (Spring 2017) – *8h* *Institute of Vision Sciences - ISV Formation (Saint-Etienne, France)* **Instructor - Psy 4036: Perceptual Issues in Visual Impairment** (Fall 2012) – *64h* *Psychology - University of Minnesota (Minneapolis, USA)* Topics include:

- Prevalence of low-vision and blindness
- Three dimensions of vision loss (acuity, contrast sensitivity and visual field)
- Vision and aging
- Brain adaptation to vision loss
- Reading and low vision
- Adaptive technology for reading, Braille reading
- Adaptive technology for computer access
- Navigational technology (ranging from canes to GPS)

Mentoring

2 Ph.D. students

Nilsu Atilgan (ongoing)
Psychology - University of Minnesota (2015-2016)
Project: *Impact of line length on reading performance for normal vision and simulated low vision.*
Role: Co-advisor (25%*)*

Anshul Gupta (defended)
Mechanical engineering - University of Minnesota (2014-2016)
Project: *Evaluating reading performance with a head mounted aid for central visual field loss.*
Role: Advisor (25%*)*

9 Master students

Arthur Doglio (ongoing)
M2 Computer science - Université Côte d'Azur (2019-2020)
Project: Automated MNREAD sentence generator.
Role: Co-advisor (35%)

Severine Dours (defended)
M1 Santé, Sciences et Techniques de Réadapatation - Université de Lyon (2019-2020)
Project: Réalité virtuelle et déficience visuelle : Approche expérimentale d'une action de visée avec la tête chez le sujet atteint de dégénérescence maculaire liée à l'âge
Role: Co-advisor (70%)

Marie Bossard (defended)
M2 Neuroscience - Aix-Marseille University (2018-2019)
Project: Stratégie visuo-attentionnelle chez des sujets sains avec scotome central simulé et effet du perceptual learning sur la rétention des performances.
Role: Co-advisor (90%)

Celine Pocheau (defended)
M2 Neuroscience - Aix-Marseille University (2017-2018)
Project: Etude de l'influence de la position du « Prefered Retinel Locus » (PRL) sur les performances de lecture chez des sujets sains avec simulation de scotome maculaire.
Role: Co-advisor (90%)

Marie Beylerian (defended)
M2 Neuroscience - Aix-Marseille University (2017-2018)
Project: Évaluation de l'effet de la fréquence et du voisinage orthographique sur la vitesse de lecture de patients déficients visuels atteints de scotome central bilateral.
Role: Co-advisor (50%)

Marie Bossard (defended)
M1 Neuroscience - Aix-Marseille University (2017-2018)
Project: Simulation de scotome maculaire chez des sujets sains et influence de la position de la preferred retinal locus sur les performances de lecture.
Role: Co-advisor (50%)

Lauren Sauvan (defended)
M2 Neuroscience - Aix-Marseille University (2016-2017)
Project: Le voisinage orthographique est-il une composante importante de la complexité lexicale dans le but de la simplification de texte pour les patients présentant une perte de vision centrale?
Role: Co-advisor (75%)

Natacha Stolowy (defended)
M2 Neuroscience - Aix-Marseille University (2016-2017)
Project: Effets de la fréquence sur la durée de traitement des mots dans une tâche de lecture naturelle chez les patients présentant une maculopathie bilatérale.
Role: Co-advisor (75%)

Mélanie Ordines (defended)
M2 Science, Technology & Clinical Res. - Aix-Marseille University (2010)
Project: *Comparaison de deux tests d'évaluation des performances de lecture chez les patients basse vision.*
Role: Co-advisor (50%)

3 undergraduate students

Elizabeth Berkhotlz (Undergraduate student)
Psychology - University of Minnesota (2015-2016)
Project: *MNREAD acuity chart: test-retest reliability of the printed chart and iPad versions.*
Role: Advisor (100%*)*

Safa Gamam (Undergraduate student)
Psychology - University of Minnesota (2013-2014)
Project: *Validating an iPad 3 implementation of the MNREAD reading acuity test.*
Role: Advisor (100%*)*

Rachel Wallace (Undergraduate student)
Psychology - University of Minnesota (2013)
Project: *Designing an iPad version of the MNREAD reading acuity chart.*
Role: Advisor (100%*)*

COMPETENCES

Technical skills	**fMRI** - AFNI, BrainVoyagerQX **Eye-Tracking** - Eyelink II, Eyelink 1000, Data Viewer **Ophthalmic devices** - Microperimeter-MP1, IOL Master **Statistics & Programming** - R, Matlab, PsychToolbox
Language	**English** - Fluent **French** - Mother language **Italian** - Elementary notions