

# Emma E.M. Stewart, PhD

## CURRICULUM VITAE

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| Office Address       | Emma E.M. Stewart<br>Justus-Liebig University Giessen<br>Department of Psychology<br>Otto-Behaghel-Str. 10<br>35394 Giessen (Germany)   | Phone: Phone:+49 (0)641 99 26232<br>Email: emma.e.m.stewart@gmail.com<br>Web: www.emmaemstewart.com |
| Personal information | DOB: 24.11.1986<br>Nationality: Australia, United Kingdom, Canada   |   |
| Research interests   | Visual perception; Eye-movements; Perceptual confidence and metacognition; Peripheral and foveal vision; Perception of 3D object structure; Uncertainty and inference in perception and oculomotor planning   |   |
| Research methods     | Psychophysics; Eye-tracking; Computational modelling; Multi-level statistical modelling   |   |
| Education            | <hr/> <b>2016</b> <b>PhD in Medicine (Psychology). University of Adelaide, Australia</b><br><i>Thesis:</i> A journey through time and space: the spatiotemporal profile of attention relative to saccade and reach.<br><i>Supervisors:</i> Prof Anna Ma-Wyatt and A/Prof Nicholas Burns<br><b>2013</b> <b>Bachelor of Laws. University of Adelaide, Australia</b><br><b>2009</b> <b>Bachelor of Health Sciences (Honours, 1<sup>st</sup> class). University of Adelaide, Australia</b><br><i>Thesis:</i> How much visual information is enough? The effects of degrading the amount of visual information available during a reach.<br><i>Supervisor:</i> Prof Anna Ma-Wyatt<br><b>2008</b> <b>Bachelor of Arts (Psychology). University of Adelaide, Australia</b><br>Including international exchange to McGill University, Canada (Jan-Dec, 2008)<br><b>2008</b> <b>Diploma of Languages (French). University of Adelaide, Australia</b><br>Including Cpéderf French language training program, France (Jan-Feb, 2007) |   |
| Academic track       | <hr/> <b>2021 - present</b> <b>Justus-Liebig-Universität Giessen, Germany.</b><br>Principal investigator (German Research Council Project Grant 460533638)<br><i>Lab head:</i> Prof. Dr. Roland Fleming<br><b>2016-2021</b> <b>Philipps-University Marburg, Germany.</b><br>Post-doctoral research scientist.<br><i>Lab head:</i> Prof. Dr. Alexander Schütz<br><b>2015-2016</b> <b>Research Assistant. School of Medicine, University of Adelaide, Australia.</b>  |   |
| Funding              | <hr/> <b>2021- 2024</b> <b>Deutsche Forschungsgemeinschaft (German Research Council; DFG), research grant (temporary position as principal investigator). Grant number 460533638</b><br><i>Title:</i> Do inferences drawn from object properties influence saccade planning and perceptual updating?      340,342 Euro  |   |

Honours and awards

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|------------------|--|------------------|
| <b>2020</b>      | <b>FoVea (Females of Vision et al) Travel &amp; Networking award</b> | 1600 USD         |
| <b>2010-2015</b> | <b>Australian Postgraduate Award</b>                                 | 24,000 AUD/ year |
| <b>2012</b>      | <b>Faculty of Health Sciences Postgraduate Travel Award</b>          | 1500 AUD         |
| <b>2011</b>      | <b>Walter and Dorothy Duncan Trust Travel Grant</b>                  | 750 AUD          |

**LIST OF PUBLICATIONS**

Review papers (peer-reviewed)

1. **Stewart, E.E.M.**, Valsecchi, M., & Schütz, A.C. (2020). A review of interactions between peripheral and foveal vision. *Journal of Vision*, 20(12), 2.

Journal Articles (peer-reviewed)

2. **Stewart, E. E. M.**, Hartmann, F. T., Morgenstern, Y., Storrs, K. R., Maiello, G., & Fleming, R. W. (2022). Mental object rotation based on two-dimensional visual representations. *Current Biology*, 32(21), R1224–R1225.
3. Short, C. E., Crutzen, R., **Stewart, E. E. M.**, O’Rielly, J., Dry, M., Skuse, A., ... & Vincent, A. (2022). Exploring the Interplay Between Message Format, Need for Cognition and Personal Relevance on Processing Messages About Physical Activity: a Two-Arm Randomized Experimental Trial. *International Journal of Behavioral Medicine*, 1-14.
4. Goettker, A., and **Stewart, E.E.M.** (2022). Serial dependence for oculomotor control depends on early sensory signals, *Current Biology*. 32(13), 2956-2961.
5. **Stewart, E.E.M.**, Ludwig, C.J.H., & Schütz, A.C. (2022). Humans represent the precision and utility of information acquired across fixations. *Scientific Reports*. 12, 2411.
6. **Stewart, E.E.M.**, Hübner, C., & Schütz, A.C. (2020). Stronger saccadic suppression of displacement and blanking effect in children. *Journal of Vision*, 20(10), 13.
7. **Stewart, E.E.M.**, & Schütz, A.C. (2019). Transsaccadic integration benefits are not limited to the saccade target. *Journal of neurophysiology*, 122 (4), 1491-1501.
8. **Stewart, E.E.M.**, Verghese, P., & Ma-Wyatt, A. (2019). The spatial and temporal properties of attentional selectivity for saccades and reaches. *Journal of Vision*, 19(9):12.
9. **Stewart, E.E.M.**, & Schütz, A.C. (2019). Trans-saccadic integration is dominated by early, independent noise. *Journal of Vision*, 19(6):17.
10. **Stewart, E.E.M.**, & Schütz, A.C. (2018). Optimal trans-saccadic integration relies on visual working memory. *Vision research*, 153, 70-81.
11. **Stewart, E.E.M.**, & Schütz, A.C. (2018). Attention modulates trans-saccadic integration. *Vision research*, 142, 1-10.
12. **Stewart, E.E.M.**, & Ma-Wyatt, A. (2017). The profile of attention differs between locations orthogonal to and in line with reach direction. *Attention, Perception & Psychophysics*, 79(8), 2412-2423.
13. **Stewart, E.E.M.**, & Ma-Wyatt, A. (2015). The spatiotemporal characteristics of the attentional shift relative to a reach. *Journal of Vision* 15(5):10.

Conference talks

1. **Stewart, E.E.M.**, Ludwig, C., & Schütz, A.C. (2021). Humans retain a representation of information acquired across fixations. *EPC (The Australasian Experimental Psychology Society Conference), Australia*.
2. **Stewart, E.E.M.**, & Schütz, A.C. (2019). On the relationship between fixations and perceptual confidence. *European Conference on Eye Movements, Alicante, Spain*.
3. **Stewart, E.E.M.**, & Schütz, A.C. (2018). Mechanisms underlying transsaccadic integration. *German Conference of Experimental Psychologists (TeaP), Marburg, Germany*.
4. **Stewart, E.E.M.** & Ma-Wyatt, A (2014). The spatiotemporal characteristics of the attentional shift relative to a goal directed movement. *Australasian Neuroscience Society Meeting – ANS Vision Satellite Meeting*.

Conference posters

1. **Stewart, E.E.M.**, Wagner, I., Schütz, A.C., & Fleming, R.W. (2022). 3D object viewpoint discriminability influences target-selection for saccades. *European Conference on Eye Movements (ECEM), Leicester, UK*.
2. **Stewart, E.E.M.**, Hartmann, F.T., & Fleming, R.W. (2022). Viewpoint similarity of 3D objects predicted by image-plane position shifts. *Vision Sciences Society Meeting (VSS), Florida, USA*.
3. **Stewart, E.E.M.**, & Schütz, A.C. (2021). Updating across saccades depends on

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- eccentricity and predictability. *Journal of Vision*, 21(9), 2038.
4. **Stewart, E.E.M.**, Ludwig, C., & Schütz, A.C. (2020). Humans are more confident for items they have fixated before. *Journal of Vision*, 20(11), 246.
  5. **Stewart, E.E.M.**, & Schütz, A.C. (2019). Transsaccadic integration occurs across the visual field. *Journal of Vision*, 19(10), 238b.
  6. **Stewart, E.E.M.**, & Schütz, A.C. (2018). The time-course of trans-saccadic integration. *Journal of Vision*, 18(10), 1004.
  7. **Stewart, E.E.M.**, & Schütz, A.C. (2017). Visual working memory aids trans-saccadic integration. *European Conference on Eye Movements, Wuppertal, Germany*
  8. **Stewart, E.E.M.**, & Schütz, A. C. (2017). Distracting attention impairs trans-saccadic integration. *Journal of Vision*, 17(10), 1163.
  9. **Stewart, E.E.M.** & Ma-Wyatt, A. (2012). The temporal profile of attention in a reaching task shifts with a concurrent reach. *Journal of Vision*, 12(9), 419.
  10. **Stewart, E.E.M.** & Ma-Wyatt, A. (2011). Target visibility throughout the reach affects overall movement performance. *Australian Journal of Psychology, EPC Conference Proceedings*.
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Invited research visits      **10.2019-**      **University of Bristol, Department of Psychological Sciences**, United Kingdom.  
    **12.2019**      *Lab head: Dr. Casimir Ludwig*

## TEACHING COMPETENCE AND EXPERIENCE

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|                                     |                  |  |
|-------------------------------------|------------------|--|
| Justus-Liebig University<br>Giessen | <b>2022</b>      | <b>Seminar: Sensation and perception</b><br>Ad-hoc lecturer (5 sessions, 120 min each, bachelor level)   |
| Philipps-University<br>Marburg      | <b>2020-2021</b> | <b>Seminar: Visual Perception</b><br>Lecturer (12 sessions, 120 min each, bachelor level, online)  |
|                                     | <b>2020-2021</b> | <b>Experimental practical course</b><br>Teaching support (creating experimental materials and analyses)  |
| University of Adelaide              | <b>2015</b>      | <b>Lecture on key concepts in cognitive psychology</b><br>Guest lecturer, South Australian Psychiatry Training Committee (2 hours, graduate level)<br><b>Foundations of Perception and Cognition</b><br>Tutorial instructor (16 sessions, 60 min each, second year)                  |
|                                     | <b>2014</b>      | <b>Perception and Cognition</b><br>Tutorial instructor (16 sessions, 60 min each, third year)<br><b>Foundations of Perception and Cognition</b><br>Tutorial instructor (16 sessions, 60 min each, second year)<br><b>Ad-hoc marking: Doing research in Psychology (first year)</b>   |
|                                     | <b>2013</b>      | <b>Perception and Cognition</b><br>Tutorial instructor (10 sessions, 60 min each, third year)<br><b>Foundations of Perception and Cognition</b><br>Tutorial instructor (16 sessions, 60 min each, second year)<br><b>Ad-hoc marking: Research methods in Psychology (first year)</b> |
|                                     | <b>2012</b>      | <b>Perception and Cognition</b><br>Tutorial instructor (16 sessions, 60 min each, third year)<br><b>Foundations of Perception and Cognition</b><br>Tutorial instructor (16 sessions, 60 min each, second year)<br><b>Ad-hoc marking: Research methods in Psychology (first year)</b> |
|                                     | <b>2011</b>      | <b>Foundations of Perception and Cognition</b><br>Tutorial instructor (16 sessions, 60 min each, second year)  |
|                                     | <b>2010</b>      | <b>Foundations of Health and Lifespan Development</b><br>Tutorial instructor (16 sessions, 60 min each, second year)<br><b>Individual differences, Personality and Assessment</b><br>Tutorial instructor (16 sessions, 60 min each, third year)                                      |

## SUPERVISION

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| Bachelor thesis<br>co-supervision<br>(Equivalent Australian<br>honours) | <b>2022</b>  | <b>Sven Schmidt</b> , undergraduate, Justus-Liebig University Giessen, Germany            |
|   | <b>2021</b>  | <b>Max Pohl</b> , undergraduate, Justus-Liebig University Giessen, Germany                |
|   | <b>2019</b>  | <b>Josefine Tuppi</b> , undergraduate, Philipps-University Marburg, Germany               |
|   | <b>2019</b>  | <b>Sascha Brusius</b> , undergraduate, Philipps-University Marburg, Germany               |
| Master's thesis<br>co-supervision                                       | <b>2019</b>  | <b>Nino Sharvashidze</b> , master's student, Philipps-University Marburg, Germany         |
| Research assistants   | <b>2022</b>  | <b>Kieran Pang</b> , graduate from Justus-Liebig University Giessen, Germany              |
|   | <b>2022</b>  | <b>Emilio Gärtner</b> , graduate from Justus-Liebig University Giessen, Germany           |
|   | <b>2022</b>  | <b>Rukiye Nihal Saglam</b> , undergraduate from Justus-Liebig University Giessen, Germany |
|   | <b>21-22</b>   | <b>Andre Gomes</b> , undergraduate from Justus-Liebig University Giessen, Germany         |
|   | <b>21-22</b>   | <b>Pauline Karle</b> , undergraduate from Justus-Liebig University Giessen, Germany       |
|   | <b>18-19</b>   | <b>Hannah Walter</b> , undergraduate from Philipps-University Marburg, Germany            |
|   | <b>18-20</b>   | <b>Lena Weinart</b> , undergraduate from Philipps-University Marburg, Germany             |
| <b>16-17</b>  | <b>Andreas Wilms</b> , undergraduate from Philipps-University Marburg, Germany |   |

## PROFESSIONAL SERVICES

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| Organisation of<br>conferences, workshops,<br>symposia, and events | <b>2023</b>                   | <b>Uncertainty in sensory processing and action control<br/>Three-day workshop at Castle Rauischholzhausen.</b><br>Organiser, together with Alexander Goettker and Bianca Balteratu  |
|  | <b>2022</b>                   | <b>How we make saccades: selection, control, integration</b><br>Symposium at the Vision Sciences Society Conference (VSS), Florida, USA<br>Organiser, together with Bianca Balteratu |
|  | <b>2018</b>                   | <b>Perceptual stability</b><br>Symposium at the German Conference of Experimental Psychologists (TeaP),<br>Marburg, Germany<br>Organiser, together with Alexander Schütz             |
|  | <b>2012-2016</b>              | <b>Brain and Cognition Unit Seminar Co-ordinator</b><br>School of Psychology, University of Adelaide   |
|  | <b>2014-2015</b>              | <b>Tri-University Distinguished Guest Speaker Dinner</b><br>Joint event between University of Adelaide, Flinders University, and Uni SA<br>Organising committee                      |
|  | <b>2013</b>                   | <b>40th Australasian Experimental Psychology Conference (EPC)</b><br>Student representative on the organising committee  |
|  | Committee work and<br>service | <b>2022-2023</b>   |
| <b>2013-2015</b>   |                               | <b>President and founder, Health Sciences Postgraduate Association</b><br>Faculty of Health Sciences, University of Adelaide, Australia  |
| <b>2013-2015</b>   |                               | <b>Higher Degrees Committee (Committee member)</b><br>Faculty of Health Sciences, University of Adelaide, Australia  |
| <b>2011-2015</b>   |                               | <b>Higher Degrees by Research Committee (Student Representative)</b><br>School of Psychology, University of Adelaide   |
| <b>2011-2015</b>   |                               | <b>Research Committee (Committee member)</b><br>School of Psychology, University of Adelaide   |
| Peer-reviewing<br>(manuscripts)                                    |                               | Journal of Vision; Nature Scientific Reports; Cortex; Nature Scientific Data; Journal of<br>Experimental Psychology (General); Biological Cybernetics                                |

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Peer-reviewing  
(conferences)

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European Conference on Eye Movements (ECEM) 2017, 2019; German Conference of Experimental Psychologists (TeaP), 2017.

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Editorial work

Feature Editor: Journal of Vision special issue "Uncertainty in sensory processing and action control"

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Public outreach

**2013**      **I'm a scientist, get me out of here! Australia (Runner-up)**  
Science communication competition, aimed at promoting science to middle school children.

**2011-2012**      **School of Psychology Representative, University of Adelaide Open Day**