Olivier White, Ir, PhD, HDR

Associate Professor
Civil Engineer in Computing Science
PhD in Computational Motor Control/Neuroscience
« Habilitation à Diriger les Recherches »
Scientific Consultant

Université de Bourgogne-Franche Comté

INSERM - U1093 Cognition, Action, and Sensorimotor Plasticity
Campus Universitaire, BP 27877
F-21078 Dijon, France

Born on August 5th 1977
Married, 2 children
Website: http://olivierwhite.weebly.com
E-mail: olivier.white@gmail.com
Telephone: +33 6 12 08 06 54

Research Interests Keywords

Motor control and learning, behavioral neuroscience, dexterous manipulation, upper limb movements, bimanual control, internal models, motor imagery, eye movements, perception, cognitive psychology, altered gravity, robotics, fractal analysis, fMRI, virtual reality, haptics, peer review.

Education

Qualif	French Qualification for the Neuroscience Section	2020
HDR	Habilitation ("*From basic motor control to applications*"), Université de Bourgogne, **France**	2017
PhD	Neuroscience and applied mathematics, Louvain School of Engineering, **Belgium**	2007
MAA	Applied Mathematics, biological systems modeling, Louvain School of Engineering, **Belgium**	2006
MSc	Master in Computing Engineering, Louvain School of Engineering, **Belgium** (1st class, *summa cum laude*)	2000
BSc	Engineering, Louvain School of Engineering, **Belgium**	1997

Professional and Research Activities

2020 –	**Visiting Lecturer** International Space University, Strasbourg, FR
2019 –	**Visiting Lecturer** Engineering School (ESTP - Ecole Spéciale des Travaux Publics), Dijon, FR
2018 – 2019	**Visiting Lecturer** King's College London, UK
2017 –	**Honorary Senior Lecturer** School of Health Sciences, University of East Anglia, UK
2012 – 2016	**Scientific Director of the Cognition and Movement Pole** uB-Filiale/Welience, FR
2011	**Visiting Research Scientist** UCLondon, UK
2010 –	**Associate Professor** Unit INSERM 1093 Cognition, Action, and Sensorimotor Plasticity, Université de Bourgogne, FR
2010 –	**Scientific Consultant** Coordination of International Peer Review Panels, scientific advices
2009 – 2010	**Science Officer** Space Sciences Unit, European Science Foundation, FR
2007 – 2009	**Post-Doctoral Research Fellow**

	Bangor University (Host: J. Diedrichsen), UK
2002 – 2007	**Research Assistant (PhD Student)** Louvain School of Engineering and Institute of Neuroscience, Université catholique de Louvain, BE "*The role of gravity in dexterous manipulation: a driving force rather than a perturbation*" Advisors: Profs P. Lefèvre (Ir) and J.L. Thonnard (MD).
2000 – 2002	**Research Engineer** Physical Rehabilitation and Neurophysiology Laboratory, Université catholique de Louvain, BE

Research Summary

My research interests, in the broad field of neuroscience, are centred on **motor control and learning** using various techniques and from different theoretical view angles, therefore fostering many multidisciplinary collaborations.

To understand how the brain controls actions as diverse as reaching movements, dextrous manipulation or locomotion, the central nervous system must be challenged. By adopting 3D virtual reality and haptic devices or even gravitational changes (centrifuges, parabolic flights, ISS), I demonstrate the flexibility of our brain to adapt behaviour in many environments, including those never experienced. These investigations raise basic questions such as what are the relevant sensory information that drive learning, how do we generalize and consolidate motor skills, why do we choose one specific motor strategy among an infinite repertoire, how does inherent variability in the perception-action chain benefit control?

I address these questions using regular techniques (motion tracking systems, force measurements, accelerometry, electromyography and fMRI) but also parabolic flights, human centrifuges and advanced modeling approaches (optimal control, stochastic resonance and fractal analyses).

My goal is to build a thriving research laboratory that uses multiple approaches, including behavioural, neuroimaging and mathematical methods, to better understand how the brain plans and execute movements with the hope to develop applications. I am pursuing this endeavour through collaborations and by actively involving Msc and PhD students.

Research Grants (only >10,000 €)

Year	Details	Award
2021-	**Dry Immersion – co-Investigator** PhD Fellowship. *« Adaptation to gravity: a model of cognition-action interaction"*	100,000 €
2021-	**Dry Immersion – co-Investigator** *The pathophysiology, risk, and clinical presentation of Venous Thromboembolisms during dry immersion: motor control aspects*	Access to Dry Immersion facility
2021-	**BedRest – co-Investigator** *The pathophysiology, risk, and clinical presentation of Venous Thromboembolismsduring head-down tilt bed rest: effects of supplemental daily centrifugal artificial gravity with or without exercise in normoxia or hypoxia in relation to body morphology factors*	Access to Bedrest facility
2019-2022	**ISITE – Principal Investigator** PhD Fellowship. *"Chaos and optimal variability in voluntary human movements"*	100,000 €
2019-2022	**ISITE – co-Investigator** *Gravity force integration into the motor command of arm movements (GravitArm)*	150,000 €
2018-2019	**Centre National d'Etudes Spatiales (CNES)** Parabolic flight Campaign 142	Access to Zerog aircraft
2018-2021	**Centre National d'Etudes Spatiales (CNES) and Université de Bourgogne** PhD Fellowship, "*Improving motor performances in altered gravity*"	100,000 €
2015-2016	**Chaire d'excellence Programme** Motor control and learning	30,000 €
2014-2016	**Centre National d'Etudes Spatiales (CNES)** Coherent multimodal sensory information allow switching between gravitoinertial contexts	70,000 €
2014-2015	**European Space Agency** Delta-G Topical Team	20,000 €
2013	**Université de Bourgogne**	17,000 €

	Neural correlate of gravity (fMRI-compatible devices)	
2012-2014	**Fonds européen de développement régional (EU) and Région Bourgogne** Neural correlate of gravity (research engineer to set up fMRI plateform)	65,000 €
2010	**Fonds européen de développement régional (EU)** Haptic system to quantify motor control (Phantom Premium 3.0, Sensable)	70,000 €
2010-2014	**Chaire d'excellence Programme** Motor control and learning	75,000 €

Academic Prizes, Awards, Honours

September 2021	Prime d'Excellence en Recherche (4 years)
October 2019	ACAPS Best poster presentation award (presented by my PhD student, M. Barbiero)
September 2018	Prime d'Excellence en Recherche (4 years)
September 2015	Chaire d'Excellence renewed (2 years)
September 2010	Chaire d'Excellence (5 years)
April 2008	Neural Control of Movement Scholarship Program Award
June 2005	ESA International Society of Gravitational Physiology best presentation award

Engineering and Methological skills

Experimental development for the Space environment	Design and implementation of experimental platforms for real-time data acquisition in altered gravity (centrifuge/parabolic flights/ISS). Requires mechanical construction of frames, conception of electrical circuits, programming fault-tolerant software, synchronization of systems.
Parabolic flights	Managed 7 ESA parabolic flight campaigns (2002-2005) and one CNES parabolic flight campaign (2019).
Human centrifuge	Managed two centrifuge campaigns (Sweden 2013; France 2016).
International Space Station	Scientific contribution to the development of a proposal in response to the 2004 International Life Science Research Announcement selected for flight in the International Space Station (outstanding review score, 92 %). Experiment flying (2018).
fMRI	Setting up access to a MRI scanner (3T) dedicated to research. Developed fMRI research with MRI-compatible devices (screen, stim box).
Virtual reality	Development of experiments in virtual environments. Involves real-time programming (C++/OpenGL), controlling one or two robotic devices (Phantom 3.0), force transducers and stereoscopic 3D displays.
Mathematics	Biomechanical modelling and numerical methods. More specific methods: Optimal feedback control, Bayesian statistics, fractal analysis, artificial neural network, classification, deep learning.
Programming	Matlab, Octave, C/C++, Python and other computer languages. Windows and Linux OS.
Research methods	Eye movement recording (Chronos, Tobii), Motion capture system, EMG, psychophysics, accelerometry, force measurements, haptics.

International Collaborations

I have experience in working in a multidisciplinary research setting and I have established several national and international collaborations. Most of them are still ongoing and resulted in publications.
I have lead and participated in several successful team projects, including collaborations with N. Goswami (Medical University of Graz, **Austria [Ref 31, 32, 34, 40, 44]**); A. Karniel and I. Nisky (Ben Gurion University of the Negev; **Israel, [Ref 29]**); JL. Thonnard, P. Lefèvre, F. Crèvecoeur and E. Olivier (Institute of Neuroscience and Center for applied mathematics, Université catholique de Louvain, **Belgium, [Ref 1-4, 6, 9, 13, 16, 22, 28]**); F. Dierick (Haute Ecole Louvain en Hainaut, N. Boulanger and F. Buisseret (Physics of the Universe, Fields and Gravitation Unit, University of Mons, **Belgium, [Ref 14, 26, 33, 36, 38, 39, 41]**); Bill Paloski (NASA Research Programme, **USA, [Ref 22]**); L. Fadiga (Istituto Italiano di Tecnologia, **Italy, [Ref 21]**); M. Davare (Department of Movement Sciences, KU Leuven, **Belgium, [Ref 19]**); J. Diedrichsen (Control and Computational Neuroscience, Brain and Mind Institute, University of Western Ontario, **Canada, [Ref 12, 18]**); A. Wing (School of Psychology, University of Birmingham, **UK, [Ref 4, 16, 13]**); RM Bracewell (School of Psychology, Bangor University, **UK, [Ref 10, 13, 16]**); A. Smith (Physiology departmenty, University of Montreal, **Canada, [Ref 4, 9]**); G. Blohm (Centre for Neuroscience Studies, Queens University, **Canada, [Ref 42, 43, 45]**); J. Babic (Neuromechanics and Biorobotics Lab, "Jožef Stefan" Institute, **Slovenia, [Ref 42, 43, 45, 32]**); C. Trenado (Leibniz Research Centre for Working Environment and Human Factors, TU Dortmund, **Germany, [Ref 32]**); L. Bringoux (Movement Science Institute, Aix Marseille University, **France, [Ref 35]**); J. Hermsdörfer (Human movement science, TU Munich, **Germany, [Ref 28]**); E. Ferrè (Department of Psychology, Royal Holloway University of London, **UK**).

Invited Talks

2020	Lecturer	International Space University, FR
2019	Lecturer	ESA/ELGRA Summer School, ESA Academy, BE
2018	Keynote lecture	Warsaw International Medical Congress, PL
2018	Department Seminar	University of Rome, IT
2018	Keynote lecture	Brain week, Nice, FR
2016	Department Seminar	Université catholique de Louvain. Brussels, BE
2016	Department Seminar	University of East Anglia. Norwich, UK
2016	Department Seminar	KULeuven, BE

Meeting Organisation

2022	**Ethics of digital technology in Health.** (with Regional Health Agency and Ethics Committees, TBD, FR) Exchanges around ethics and new digital technologies applied to health
2019	**Fractals and complexity** (5 participants, Mons, BE) Brainstorming on a PhD proposal (funded) to understand the role of noise in the motor system
2013	**ESA Delta G Topical Team** (15 participants, Linköping, SE) Two experiments with the large radius human centrifuge
2012	**ESA Delta G Topical Team** (15 participants, Dijon, FR) Brainstorming on human motor adaptation in variable hyper-g
2012	**THESEUS Roadmap Launch Event** (70 participants, ESF, CNES, Paris, FR) Presentation of the main findings (showstoppers to traveling to Mars)
2009	**THESEUS Expert Group Workshop** (100 participants, ESF, TU) Refining findings for the 5 Life Science Expert groups
2009	**THESEUS Opening Workshop** (150 participants, ESF, Sasbachwalden, DE) Brainstorming per expert group
2001	Dexterous **ESA Topical Team** (30 participants, UCL, Brussels, BE) Dynamics of Prehension in Microgravity and its Application to Robotics and Prosthetics

Memberships

2018-to present	Federation of European Neuroscience Society (**FENS)**
2014-to present	American Psychological Association (**APA**)
2013-to present	Neural Control of Movements (**NCM**)
2012-to present	European Low Gravity Research Association (**ELGRA**)
2007-to present	Neural Control of Movement (**NCM**)
2005-to present	Society for Neuroscience (**SfN**)

Administrative responsibilities

2022	**Co-PI of the "Ethics of digital technology in Health" workshop** Provides recommendation for future thoughts about development of digital technologies applied to Health. (Number of members not yet known).
2020 to 2022	**Coordinator of the ESA Neuroscience working group** Provides recommendation for future research in space neuroscience (7 expert members).
2020 to 2021	**Member of « Conseil d'Orientation de l'Espace de Réflexion Ethique Régional »** (Université de Bourgogne). Provides advices on ethical problems. Gave birth to a counselling center (24/7) that provides support for COVID-19-related issues.
2019 to 2021	**Working group on English lectures** (Université de Bourgogne). Member of a working group to identify potential of existing or new lectures in English in all topics in the framework of the construction of a European University (FORTHEM). (6 meetings per year and a 2-day workshop).
2019 to 2020	Practical organization of **Parabolic flight** campaigns. Prepare, develop and implement parabolic flight campaigns (incl ethics approval) in collaboration with international partners. Involves several meetings per year in Bordeaux (Novespace) and Paris (CNES) and participation to the campaign (2 weeks in Bordeaux).
2019 to present	Member of the **IT committee**. Decide the strategy related to IT in the Department (support material to teaching, infrastructure etc).
2018 to present	**International scientific coordinator** (mandated by our lab director. C. Papaxanthis). Monitoring international coordination actions to identify funding and other opportunities for the laboratory.
2017 to present	**Coordinator of the computer science lectures** in Bsc 1. Responsible for the practical organization and follow up of lectures in basic computer science for 450 Bsc 1 students: definition of pedagogic objectives, coordination of pedagogic interventions, organization of students and lecturers schedules and organization of the exams.
2016 to present	Statutory member of the **National Ethics Committee** (biostatistics expert – CPP EST 1). Meetings twice a month to decide whether ethics approval is granted to ca 10 applications in the wide medical domain (from Phase I clinical studies to observational studies).
2015 to present	**Coordination of projects for space** between INSERM, ESA and CNES. Meet with representatives of INSERM, ESA and CNES to structure future concerted responses to research announcements (4 meetings per year).

2014 to 2019	Representative of the Health and Learning sectors to the **University Platforms Committee**. Meeting 3 times a year to decide on the strategic orientations of platforms at the university level.
2011 to present	Regular participation to **selection committees** of accociate professor and professors (sports sciences, psychology, engineering).
2010 to present	Coordinator of **peer review missions with the European Science Foundation**. Coordination of the procedures that allow selection of scientific projects (research, chairs, PhD fellowships, post doc fellowships, research units) in a very large national and international context. Involves finding experts and panel members, defining evaluation criteria, checking conflicts of interest, conducting panel meetings (3 times a year, gathering ca 100 panel members) and quality checks of the assessments. So far, I contributed to the evaluation of more than 10,000 research projects for many partners: Université de Lille, University of Naples, ESA, Louvain Bionics, Université du Luxembourg, University of Torino, Compagnia di San Paolo, AXA Research Fund, FCT, Université de Bordeaux, Université de Lorraine, Ghent University, FWO, Grand Est Region, Science Offensive action, Universita of Piemonte Orientale, University of Antwerp, Université d'Aix Marseille, EuroPlanet, University of Bologna, Shota Rustaveli National Science Foundation, Graphene flagship.
2010 to 2020	Member of the Life Science CNES group.
2009 to 2012	Rapporteur of the Integrated Systems Physiology Cluster of THESEUS (Neurophysiology Expert Group).

Editorships

Topic Editor	Biology MDPI Special Issue "Variability in Human Motor Control"
Topic Editor	Frontiers in Physiology (Research Topic: "Gravitational Physiology, Aging and Medicine")
Associated Editor	Frontiers in Neurology
Associated Editor	Human Neuroscience

Member of the editorial board of *Clinical Interventions in Aging* (IF 3) since 02/2021.

Journal Reviewing

Current Biology, Cortex, Experimental Brain Research, Frontiers in Physiology, Frontiers in Human Neuroscience, PlosONE, Neuroscience Letters, Scientific Reports, Nature Publishing Group Microgravity, Journal of Neuroscience, Journal of Neurophysiology, Neuroscience, Journal of Neuroscience Methods, Human Movement Science, IEEE Transactions on haptics.

Grant Reviewing

National Research Council (NRC, CA), Fonds Wetenschappelijk Onderzoek (FWO, BE), The Fund for Scientific Research (FNRS, BE), German-Israël Foundation (DE, IL), European Science Foundation (ESF, FR), AXA philanthropic funds, Shota Rustaveli National Science Foundation (Georgia), European Space Agency (ESA) and various national funds.

PhD Student Supervision

Participation to Jury theses at Université de Marseille (FR), Université catholique de Louvain (BE), KULeuven (BE).
Supervision of 5 Bsc students and 5 Msc students per year. Msc work often results in scientific publications.

Denis Barbusse:	Region/French fellowship	
	Start date: 1 September 2021	Defence date:
	Project: *Adaptation to gravity: a model of cognition-action interaction*	

Victor Dehouck:	Region/French fellowship	
	Start date: 1 September 2019	Defence date:
	Project: *Chaos and optimal variability in voluntary human movements*	

Boulanger N, Buisseret F, Dehouck V, Dierick F, White O. Motor strategies and adiabatic invariants: The case of rhythmic motion in parabolic flights. Phys Rev E. 2021. 10.1103/PhysRevE.104.024403.

Boulanger N, Buisseret F, Dehouck V, Dierick F, White O. Adiabatic invariants drive rhythmic human motion in variable gravity. Phys Rev E, 2020. doi:10.1103/PhysRevE.102.062403.

Marie Barbiero:	Region/CNES fellowship	
	Start date: 1 September 2018	Defence date: 7 March 2022
	Project: *Improving motor performance in altered gravity*	

Rannaud Monany, D., Barbiero, M., Lebon, F., Babič, J., Blohm, G., Nozaki, D., & White, O. (2022). Motor imagery helps updating internal models during microgravity exposure. Journal of Neurophysiology.

Kunavar, T., Jamšek, M., Barbiero, M., Blohm, G., Nozaki, D., Papaxanthis, C., Babič, J & White, O. (2021). Effects of Local Gravity Compensation on Motor Control During Altered Environmental Gravity. Frontiers in Neural Circuits, 15, 750267.

Rousseau C, Barbiero M, Pozzo T, Papaxanthis C, White O. Actual and Imagined Movements Reveal a Dual Role of the Insular Cortex for Motor Control. Cereb Cortex, 2020. doi:10.1093/cercor/bhaa376.

White O, Barbiero M*, Goswami N. The effects of varying gravito-inertial stressors on grip strength and hemodynamic responses in men and women. Eur J Appl Physiol. (*equal contribution). 2019.*

White O, Karniel A, Papaxanthis C, Barbiero M, Nisky I. Switching in feedforward control of grip force during tool-mediated interaction with elastic force fields. Frontiers in Neurorobotics. 18. 2018.

Barbiero M, Rousseau C, Papaxanthis C, White O. Coherent multimodal sensory information allows switching between gravitoinertial contexts. Frontiers in Physiology. 8:290. 2017.

Célia Rousseau:	Region/EU fellowship	
	Start date: 1 September 2012	Defense date: 1st September 2016
	Project: *The role of gravity in motor learning: fMRI approach and modeling*	

Dr. Célia Rousseau pursued her career with a post doc in Dr. Eran Dayan's neuroinformatics lab (NC, USA) to work on clinical fMRI in Parkinson patients. Very sadly, Célia dramatically passed away during her post doc.

Rousseau C, Barbiero M, Pozzo T, Papaxanthis C, White O. Actual and Imagined Movements Reveal a Dual Role of the Insular Cortex for Motor Control. Cereb Cortex, 2020. doi:10.1093/cercor/bhaa376.

Barbiero M, Rousseau C, Papaxanthis C, White O. Coherent multimodal sensory information allows switching between gravitoinertial contexts. Frontiers in Physiology. 8:290. 2017.

Rousseau C, Papaxanthis C, Gaveau J, Pozzo T, White O. Initial information prior to movement onset influences kinematics of upward arm pointing movements. J Neurophysiol. 2016.

Rousseau C, Fautrelle L, Papaxanthis C, Fadiga L, Pozzo T, White O. Direction-dependent activation of the insular cortex during vertical and horizontal hand movements. Neuroscience. 325:10–19. 2016.

Teaching Experience

I have developed a broad portfolio of teaching experience gained during research positions in different contexts. I also mix different fields in my teaching approach (e.g.: engineering, neuroscience). This includes face to face coaching, small-group supervisions (10), medium (40) and large lecture groups (200+) as well as the supervision of research projects at undergraduate and postgraduate levels. Teaching load ca 310h/year. Specifically:

2022 –	**Artificial Intelligence, Big Data and Industry 4.0** Msc, new Engineering diploma (le CNAM – Conservatoire National des Arts et Métiers)
2020 –	**Analyses of large data sets by programming** (python, matlab) All public – short training
2019 –	**Algorithmics, numerical programming, signal processing, and deep learning** (Python) Msc, Engineering school (ESTP), France
2018 – 2019	**Descriptive Statistics** Bsc, BSc Sports Sciences, University of Athens, Greece
2018 –	**Space Physiology and Health** Msc, MSc in Life Science in Space, King's College London, UK
2018 –	**Course Coordinator for Computer Science** Bsc, BSc in Sports Sciences, Université de Bourgogne, France
2018 –	**Mathematics** Bsc, BSc in Sports Sciences, Université de Bourgogne, France
2017 –	**Biomechanics** Bsc, BSc in Sports Sciences, Université de Bourgogne, France
2017 – 2019	**English** Bsc, BSc in Sports Sciences, Université de Bourgogne, France
2016 –	**Advanced Statistics** Msc, MSc in Sports Sciences, Université de Bourgogne, France
2016 –	**Matlab Programming and Data Analysis** Msc, MSc in Sports Sciences, Université de Bourgogne, France
2015 –	**Research Methodology and Scientific Communication** Msc, MSc in Sports Sciences, Université de Bourgogne, France
2014 –	Basic **Computer Science (Office suite)** Bsc, BSc in Sports Sciences, Université de Bourgogne, France
2012 –	**Computational Motor Control and Neuroscience** Msc, MSc in Engineering, Paris Tech, France
2014 – 2015	**Artificial Neural Networks and Matlab** Msc, MSc in Psychology, Université de Lille 3, France
2010 –	**Motor Control and Neuroscience** Msc, BSc in Sports Sciences, Université de Bourgogne, France Msc, MSc in Cognitive Psychology, Université de Bourgogne, France Msc, MSc in Psychology, Université de Lille 3, France
2007 – 2009	**Matlab class** and hands on linked to fMRI lectures. Msc in Psychology, Bangor University, UK

Public Engagement

I have disseminated my research to the broader public through participation at public events and interaction with the media. Specifically:

2021 Responsible for promoting interest of secondary school pupils in Science and Math in secondary schools. (Grant).
2020 Founding member of a **counselling center related to COVID-19**-related issues.
2019 Invited lecturer at the **"ESA Summer School"**, Redu, Belgium.
Demonstration of the importance of multidisciplinarity in space research to a well-trained European Msc student audience.
2018 **Invited talk at the "Semaine du Cerveau"**, Nice, France.
The illustration to a large audience of how the brain uses gravity to perform actions.
2017 **What is a researcher's life like?** Several high schools in France.
Description of a typical researcher trajectory to high school pupils. The goal is to open their minds on this exciting career and provide concrete facts and figures.
2017 **Demonstrator of experiments during open house**
Invite external people to test funny experiments using advanced technologies.

Hobbies and Interests

Sports	Cycled across France (**bicycle and tandem**) and **across the USA** (6000 km from Washington DC to San Francisco CA in 47 days). Wrote and published the novel: "*L'Amérique à 12 vitesses*". Runner.
Scouting	Member of a Boy Scout troop from 1990 to 1994 and cook during two camps.
Miscellaneous	Space Exploration, mineralogy, chemistry, fundamental physics.
Social	President of the "Association des Parents d'élèves" at the local school (2 years, 280 families), math coach, first aid worker.

Publications (*most recent first –up to date list and PDF are on http://olivierwhite.weebly.com*)

Upcoming

Michel C, Amoura S, **White O**. Visuo-motor rotation influences representational acuity but not space representation. Under review.

White O. Visual and auditory information shed light on savings mechanism. biorXiv.

Published

45. Rannaud Monany, D., Barbiero, M., Lebon, F., Babič, J., Blohm, G., Nozaki, D., & **White, O**. (2022). Motor imagery helps updating internal models during microgravity exposure. Journal of Neurophysiology.

44. Brix, B., **White, O**., Ure, C., Apich, G., Simon, P., Roessler, A., & Goswami, N. (2021). Hemodynamic Responses in Lower Limb Lymphedema Patients Undergoing Physical Therapy. Biology, 10(7), 642.

43. Jamšek, M., Kunavar, T., Blohm, G., Nozaki, D., Papaxanthis, C., **White, O**., & Babič, J. (2021). Effects of Simulated Microgravity and Hypergravity Conditions on Arm Movements in Normogravity. Frontiers in Neural Circuits, 15, 750176.

42. Kunavar, T., Jamšek, M., Barbiero, M., Blohm, G., Nozaki, D., Papaxanthis, C., Babič, J & **White, O**. (2021). Effects of Local Gravity Compensation on Motor Control During Altered Environmental Gravity. Frontiers in Neural Circuits, 15, 750267.

41. Boulanger N, Buisseret F, Dehouck V, Dierick F, **White O**. Motor strategies and adiabatic invariants: The case of rhythmic motion in parabolic flights. Phys Rev E. 2021. 10.1103/PhysRevE.104.024403.

40. Goswami N, **White O**, Blaber A, Evans J, Van Loon J, Clement G. Human Physiology Adaptation to Altered Gravity Environments. Acta Astronautica. 189:216-221. 2021.

39. Dierick F, Brismée JM, **White O**, Bouché O, Périchon C, Filoni N, Barvaux V, Buisseret F. Fine adaptive control of precision grip without maximum pinch strength changes after median nerve mobilization. Sci Reports. 11. 2021.

38. Dierick F, Vandevoorde C, Chantraine F, **White O**, Buisseret F. Benefits of nonlinear analysis indices of walking stride interval in the evaluation of neurodegenerative diseases. Hum Mov Sci, 2021. doi:10.1016/j.humov.2020.102741.

37. Rousseau C, Barbiero M, Pozzo T, Papaxanthis C, **White O**. Actual and Imagined Movements Reveal a Dual Role of the Insular Cortex for Motor Control. Cereb Cortex, 2020. doi:10.1093/cercor/bhaa376.

36. Boulanger N, Buisseret F, Dehouck V, Dierick F, **White O**. Adiabatic invariants drive rhythmic human motion in variable gravity. Phys Rev E, 2020. doi:10.1103/PhysRevE.102.062403.

35. **White O**, Gaveau J, Bringoux L, Crevecoeur F. The gravitational imprint on sensorimotor planning and control. J Neurophysiol. 2020 Jul 1;124(1):4-19. doi: 10.1152/jn.00381.2019.

34. Goswami N, Loon JJWA Van, Roessler A, Blaber AP, **White O**. Editorial: Gravitational Physiology, Aging and Medicine. Front. Physiol. 10: 1–3, 2019.

33. Boulanger F, Buisseret F, Dierick F, **White O**. Higher-derivative harmonic oscillators: stability of classical dynamics and adiabatic invariants. Eur. Phys. J. C. 2019. 79: 60.

32. **White O**, Babic J, Trenado C, Johannsen L, Goswami N. The promise of stochastic resonance in falls prevention. Front. Physiol. https://doi.org/10.3389/fphys.2018.01865. 2019.

31. **White O***, Barbiero M*, Goswami N. The effects of varying gravito-inertial stressors on grip strength and hemodynamic responses in men and women. Eur J Appl Physiol. (*equal contribution). 2019.

30. Michel C, Bonnetain L, Amoura S, **White O**. Force field adaptation does not alter space representation. Sci Reports. 8. 2018.

29. **White O**, Karniel A, Papaxanthis C, Barbiero M, Nisky I. Switching in feedforward control of grip force during tool-mediated interaction with elastic force fields. Frontiers in Neurorobotics. 18. 2018.

28. **White O**, Thonnard JL, Lefèvre P Hermsdörfer J. Grip Force Adjustments Reflect Prediction of Dynamic Consequences in Varying Gravitoinertial Fields. Frontiers in Physiology. 9:131. 2018.

27. Barbiero M, Rousseau C, Papaxanthis C, **White O**. Coherent multimodal sensory information allows switching between gravitoinertial contexts. Frontiers in Physiology. 8:290. 2017.

26. Dierick F, Nivard A-L, **White O**, Buisseret F. Changing Complexity and Autocorrelations of Long Time Series Stride Interval With Walking Direction and Vestibular Stimulation. PlosONE. 2017.

25. Aubert A, Larina I, Momken I, Blanc S, **White O**, Prisk GK, Linnarsson D. Towards human exploration of space: the THESEUS review series on cardiovascular, respiratory, and renal research priorities. npj Microgravity. 2016.

24. Rousseau C, Papaxanthis C, Gaveau J, Pozzo T, **White O**. Initial information prior to movement onset influences kinematics of upward arm pointing movements. J Neurophysiol. 2016.

23. **White O** & French R. Pupil diameter may reflect motor control and learning. J Mot. Behaviour. 2895:1-9. 2016.

22. **White O**, Clément G, Fortrat JO, Pavy-LeTraon A, Thonnard JL, Blanc S, Wuyts F, Paloski W. Towards human exploration of space: the THESEUS review series on neurophysiology research priorities. npj Microgravity. 2016.

21. Rousseau C, Fautrelle L, Papaxanthis C, Fadiga L, Pozzo T, **White O**. Direction-dependent activation of the insular cortex during vertical and horizontal hand movements. Neuroscience. 325:10–19. 2016.

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Conference Presentations

Oral Presentation (competitively selected in open call - selected)

White O. (2017). When perturbations improve motor control: Hints from stochastic resonance. NeuroRehabilitation and neural repair. Maastricht, NL.

White O, Lefèvre P, Van Loon J, Thonnard JL, Hermsdörfer J. (2014). Anticipatory grip force between 1 and 3g.
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White O. (2013). The grip force controller differentiates the inertial and gravitational components of the load. Human In Space symposium. Cologne, DE.

White O and Blanc Stéphane. (2012). THESEUS: Cluster 1: Integrated Systems Physiology. THESEUS Launch conference, CNES, Paris, France.

White O & Diedrichsen J. (2008 and 2009). Responsibility assignments in redundant systems. Workshop, Université catholique de Louvain, Belgium.
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Midlands and Wales Motor Meeting, University of Cambridge, UK.

White O, Bleyenheuft Y, Ronsse R, Smith A, Lefèvre P, Thonnard JL. (2007). Altered gravity highlights Central Pattern Generators mechanisms. 4th European Congress "Medicine in Space and in Extreme Environments", Berlin, Germany. And Midlands and Wales Motor Meeting, School of Psychology, Bangor University, UK.

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Poster Presentation (selected)

Rannaud Monany D, Barbiero M, Lebon, Babič J, Blohm G, Nozaki D, **White O**. Better live your dreams than dream your life: impact of microgravity on internal models. FENS 2020 (virtual).

Barbiero M, Goswami N, **White O**. (2019) The Effects of Varying Gravito-inertial Stressors on Grip Strength and Hemodynamic Responses Across Gender. Human Spaceflight, Toulouse, FR.

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White O, Pozzo T, Paizis C, Papaxanthis C. (2011). Motor learning by mental training and observation. Society for Neuroscience 41st annual meeting. Washington DC, USA.

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