Curriculum vitae John van Opstal

Personal details

Title(s), name:	Prof. dr. A.J. (John) Van Opstal (♂)			
Date and place of birth:	26-03-1957 in Zevenbergen (someone had to 😂)			
Nationality:	Dutch			
Webpage:	http://www.mbfys.ru.nl/~johnvo			
E-mail:	j.vanopstal@donders.ru.nl			

Master's

University::	Radboud University Nijmegen, MSc (Physics)
Date:	November 10, 1983
Main subject:	Biophysics

PhD

University:	Radboud University Nijmegen,		
	Dept. of Medical Physics and Biophysics		
Date:	March 10, 1989		
Supervisor ('Promotor'):	Prof. dr. C.C.A.M. (Stan) Gielen, and		
	dr. J.A.M. (Jan) Van Gisbergen		
Title of thesis:	"An experimental and theoretical analysis		
	of the primate saccadic system."		

Doctorate 2

College of Higher Education:	Katholieke Leergangen Tilburg Spanish MO-B (first-grade teaching qualification)	
Date:	December 21, 1985	

Work experience since graduating

1989-1990	Postdoc (1.0 fte) at Neurology Department of the University of Zürich, Switzerland (fixed-term).
1990-1995	Assistant professor (UD) at Dept. Medical Physics and Biophysics, RUN (tenured term): Acquired and supervised two PhD students in this period (Frens, RUN, and
1995-2005	Goossens, ALW). Associate professor (UHD) at Dept. Medical Physics and Biophysics,
1995-2005	KUN (tenured term).
	Acquired and supervised five PhD students (Hofman, ALW, Zwiers, RUN,
	Van Wanrooij (Human Frontiers Science Program), Vliegen (MaGW), and
	Van Wetter, ALW) and one Postdoc (dr. Versnel, ALW).
1998-2001	Principal coordinator of a Human Frontiers Research Grant (involving an
	international collaboration between five laboratories from Nijmegen (1),
	Canada (1) and the USA (3).
1999-2004	Chair of the Physics teaching committee, responsible for the quality of the
	physics curriculum.
2005-2010	Appointed full professor in Systems Biophysics
2005-2010	Acquired prestigious Vici grant (€1.34M), as well as a European Research

	Grant (Marie-Curie, €300k), a NeuroCognition Grant from NWO (€420k). Appointed two postdocs (dr Van der Willigen and dr Van Wanrooij) and three PhD students (drs P Bremen, drs. R. Massoudi and drs T van Grootel)
2010-now	Department head and Chair Biophysics at the Faculty of Science. Since Nov 1, 2018, director of the Donders Centre for Neuroscience at the Science Faculty (4 departments, total of 100-120 fte).
	I obtained several Open Competition grants at NWO; in 2013 I received a FP7 Marie-Curie grant for IDP project <i>HealthPAC</i> (€3.5M for 14 PhD students at the Donders Institute). I further participated in two other ITN grants (2 PhDs, 1 postdoc: NETT and iCARE). I co-organized a Gordon Conference in 2013, and international scientific meetings (Vestibular meeting in Amsterdam 2014; Gordon Conference on Eye movements in Massachussetts 2015, and yearly summerschools for <i>HealthPAC</i> . In Nov. 2015 our STW Perspective Project NeuroCIMT was awarded (€4M, of which € 600k for my group). March 16, 2016 I was awarded the prestigious ERC Advanced Grant (€ 2.5M) for my Multisensory gaze-control project " <i>ORIENT</i> ". In April 2016 my book on the Auditory System was published. In Feb 2022 my co-edited book of David A Robinson's life work on the Oculomotor System appeared. Per September 2017, I became a selected member of the <i>Academia Europaea</i> .

Man-years of research since PhD

35 years

Brief summary of my research over the last five years.

The main research topics in the lab are *Human sound-localization and plasticity*; *Sound processing in the behaving monkey*, *Multisensory integration*, and the *Role of monkey Superior Colliculus in saccadic eye-head gaze shifts*.

This research has been very successful, with many papers in high-rated journals like Science, Nature Neuroscience, J. Neurophysiology, and J. Neuroscience (see below).

An important focus has been *plasticity* in human sound localization. Studies have been performed with congenitally blind subjects, with monaurally deaf subjects, as well as with visually and auditory normal subjects who underwent specific auditory (swapped ears, ear moulds) or visual manipulations (distorting glasses). Our studies have clearly shown that the (adult!) human auditory system maintains a surprisingly high degree of plasticity, and that different non-acoustic signals play a role in calibrating sound-localization. These signals include information about eye position, head orientation, as well as visual input. The relative weighting of these signals, however, is unknown, nor is the underlying neural mechanism.

Our recordings in trained rhesus monkeys showed that the midbrain Inferior Colliculus (IC) receives a signal about eye position (and presumably also of head movements). Such signals are needed to enable the formation of a stable representation of sound locations in *space*, irrespective of intervening eye- and/or head movements.

We have pursued this research line on trained, *head-unrestrained monkeys* making orienting eye-head movements to sounds, while we recorded from single cells in the midbrain Inferior and Superior Colliculus (VICI), as well as in auditory cortex (Marie-Curie grant). The former neural structures are crucial for the generation of coordinated eye-, head- and body movements, but have so far been studied in head-restrained animals only. The latter structure is thought to be involved in the planning and selection of these responses and may also incorporate the mechanisms for updating of the difference reference frames.

By (reversibly) interfering with the system (applying ear plugs, ear molds, optical means, microstimulation, local inactivation in IC and SC, etc.) the behavioural consequences, as well as neural correlates of adaptation, will be studied in detail.

A second research line has been devoted to unravel the neural code underlying the generation of rapid eye movements by neurons in the midbrain SC. Based on recordings from over 150 single-units, we have proposed a neural model that explains the generation of saccadic eye movements in great detail ('from single spikes to full behaviour'). This research has recently been extended to eye-head coordination in the head-unrestrained monkey in collaboration with prof Edward Freedman (Univ Rochester, New York); the model's major properties have been confirmed by other groups, e.g. from Western University in Ontario, and Penn-State Univ. in the USA.

A recent third research line concerns the representation and processing of sounds at subcortical (IC) and cortical levels (primary auditory cortex, and core). We are currently recording in the primary auditory cortex of a rhesus monkey that is trained in a signal-detection task. Our findings indicate that task-related aspects strongly modulate the acoustic response properties of cortical neurons, without affecting their spectro-temporal receptive fields. The modulations can be modeled by assuming a low-frequency top-down modulation that multiplicatively interacts with the high-frequency phase-locked stimulus-evoked (bottom-up) activity.

A fourth line of research is clinical. In collaboration with the Department of Otolaryngology (profs. Snik and Mylanus) we have acquired substantial funds (from Oticon, DK, Advanced Bionics, CH, and Cochlear, B) to study the effects of boneanchored hearing aids, air-transducing hearing aids and cochlear implants on binaural and bimodal processing. In future work we aim to explore the neural plasticity involved in adapting to these devices, and to develop optimal fitting procedures and prospective diagnostics for individual patients (NeuroCIMT project). We include combined Near-Infrared Spectroscopy with EEG to perform neuro-imaging in patients with hearing devices that an otherwise not be tested in fMRI scanners.

I also collaborated with prof Jan Buitelaar (psychiatry). We published a joint paper on sound-localisation behaviour of autistic individuals.

With my ERC Advanced Grant (per Jan 2017) I started a new, fifth research line into the exciting field of robotics, in which we aim to develop a humanoid audio-visualmotor eye-head system that is governed by the same principles as the primate gazecontrol system. A tight collaboration has been initiated with prof. Alexandre Bernardino and his Visual Robotics group from the Instituto Técnico Superior of the Universidad de Lisboa, where several master students, a PhD student and a postdoc work on our humanoid 3D eye-head motor-control system. See website https://www.mbfys.ru.nl/~johnvo/OrientWeb/orient.html for more information. In May 2023 I obtained a €1.3M grant from NWO-TTW Open Technology (OTP) called "*OtoControl-2.0: The next step*", in which we will measure objective data using 15 different standardised paradigms from >150 CI users from 6 different clinical centers in the Netherlands, Germany, and Denmark. On January 17, 2024 we held our KickOff meeting in Nijmegen

(see <u>https://www.mbfys.ru.nl/~johnvo/OtoControl2-0/KickOff</u> for more information).

International activities

From 1989-	Postdoctoral research in collaboration with Profs. Hepp and Henn at					
1990:	the Neurology Dept. in Zürich, Switzerland.					
Summer of	Extended research visit at the Neurology Dept. in Zürich. The					
1991:	postdoctoral research on the <i>neural control of three-dimensional eye</i>					
	<i>movements</i> has been very successful, yielding six research papers in					
	high-rated journals (Science, J. Neuroscience, J. Neurophysiology),					
1000 0001	book chapters and conference proceedings (see below).					
1998-2001:	Coordinator of a Human Frontiers Research Grant (0174-1998/B),					
	together with Prof. D. Munoz (Kingston, Ont., Canada), Prof. A.					
	Meredith (Richmond, Va, USA), Prof. Behan (Madison, Wi, USA),					
	and Prof. G. Paige (Rochester, NY, USA). The project involved					
	numerous short-term (about a week) to longer-term (up to six weeks)					
	visits to and from the labs of the participants. Results are described					
	in recent papers in the J. Neurophysiology (Corneil et al., 2002) and					
	Nature Neuroscience (Zwiers et al., 2003).					
1999-2004:	Dutch representative at the COST B10 European network on 'Brain					
	damage Repair', involving a number of visits (one day) and meetings					
	(up to 3 days) to Brussels and Paris.					
Sept. 1998:	Co-organizer of a 'Summerschool on Eye Movements' in Leuven,					
	Belgium, together with dr. P. de Graaf from the KU Leuven.					
2002-2004:	NATO research grant on 'eye-eyelid coordination' (in collaboration					
	with dr. F. van der Werf, UvA, Amsterdam, Prof. Trontelj, Ljubjlana,					
	Slovenia, and Prof. G. Evinger, NY, USA). This grant involves brief					
	(up to two weeks) research visits to and from each others' labs.					
April 2002:	Co-organizer of an International Symposium on 'Multisensory					
	Interactions Subserving Orienting Behavior' in Naples, Florida,					
	together with Prof. G. Paige (Rochester, NY, USA). About 100					
	participants attended this meeting. We were able to acquire two					
	supportive grants from NASA and the NIH, to cover the expenses of					
	all speakers and 15 PhD's and postdocs (US\$60k).					
May-Sept	Sabbatical visits at the University of Rochester and Pittsburgh					
2009	University to collaborate with prof Freedman and prof Ghandi					
Sept 2011	Co-organizer of an international Autumn School on Perception and					
	Action in Groesbeek, NL.					
July 2013	Co-organizer Gordon Conference on Eye Movements (Stonehill					
	College, MA, USA)					
	Member of the board of the Society for the Neural Control of					
	Movement (NCM)					
April 2014	Co-organizer of Vestibular Satellite meeting of the NCM in					
	Amsterdam					
Oct 2014	Organizer international Kick-Off meeting for HealthPAC project					

	Organizer international Winter School for HealthPAC (January 2015)				
July 2015	Organizer (co-chair) of the Gordon Conference on Eye Movements				
-	(Bentley College, MA, USA)				
	Co-Organizer international Summer School for HealthPAC/COSMO				

Prof. Van Opstal has been invited to present his work at local seminars and conferences in Toronto (Can), Kingston (Can), Rochester (NY, USA), Richmond (Va, USA), Oldenburg (D), Sevilla (E), Paris, Oxford, Manchester, Magdeburg (D), Zürich (CH), Tübingen (D). He has also been invited to participate as a lecturer in Winter Schools (Bochum, Utrecht, Lunteren) and Summer Schools (Leuven, Oldenburg, Groesbeek).

He is a regular reviewer of papers for practically all Systems Neuroscience journals, including Science and Nature, and is regularly asked to review large grant proposals, such as for the National Science Foundation (USA), and the Human Frontiers Science Program.

The Media. On several occasions, articles about my work (e.g. my plasticity studies) have appeared in the popular press (in national newspapers: De Telegraaf, Algemeen Dagblad, De Volkskrant, the NRC, as well as in popular science journals, like The Scientist).

Prof. Van Opstal has given several live interviews on the Dutch radio (to be found on his website), as well as on the BBC World Service, as a result of the appearance of his papers in Nature Neuroscience, and the Journal of Neuroscience.

In the summer of 2005, he was asked to contribute to the popular Dutch TV's children's programme '*Het Klokhuis*', for which most scenes were shot in his laboratory on August 11. The programme is entirely dedicated to spatial hearing (title: '*Waarom hebben we twee oren?' or, in English: 'Why do we have two ears?''*). The program was broadcasted in the spring of 2006, and is still repeated on Dutch television in half-year intervals. Another television appearance was at the VPRO science program 'Hoe?Zo!' in 2009, about auditory plasticity ('Owl-ears'). A more recent TV appearance on Gelderland TV (March 2017) revolved around the vestibular system and the new vestibular setup in his lab. In Dec. 2018 he performed on dutch TV in the National Science Quiz on a topic related to pitch perception. Our recent paper on auditory pursuit (eNeuro, 2021) has received press attention as well, including appearance in the Australian Breakfast Radio show of Melbourne.

Other academic activities

Current Teaching:

Prof. Van Opstal teaches at the Faculty of Science (curriculum of Physics and Biology) and at the Faculty of the Humanities (Master programme Cognitive Neuroscience). He was up until recently responsible for nine yearly courses, reaching over 200 students per year:

- (i) Introduction Neuroscience (physics, 1st yr, 3 ECTS, 40-50 students),
- (ii) Neurophysics 1 (Physics, 2nd yr, 3 ECTS, 25-30 students),
- (iii) Psychophysics 1 (Physics, 2nd yr, 3 ECTS, 10 students),
- (iv) Neurobiophysics (Biology, 3rd yr, 6 ECTS, 30-40 students),

- (v) Auditory Perception and Technology (Master physics, 3 ECTS, 10 students).
- (vi) Methods in Neuroscience (Master physics, 3 ECTS, 30 students)
- (vii) Psychophysics 2 (Master Physics, 6 ECTS, 10 students)
- (viii) Optimising Cognitive Function (Master SMI, 3 ECTS, 30 students)
- (ix) Systematic Reviews in Neuroscience (Master neuroscience, 6 ECTS, 30-40 students)
- (x) Neurobiophysics (Physics, master, 3 ECTS, 25 students)
- (xi) Physics and Mathematics of Complex Biological Systems (Science, bachelor, 3 ECTS, 15 students).

At present, he teaches courses (iii), (iv), (vii), (x) and (xi) and coordinates the Master's specialisation *Neurophysics* of the Physics and Astronomy master's program.

Management:

- Prof. Van Opstal was the faculty's coordinator of the recent International Visitation of the Physics Curriculum (November 2001, June 2010). He was responsible for the coordination and preparation of the internal review report for the committee: 'Onderwijsvisitatierapport t.b.v. de Opleiding Natuur- en Sterrenkunde, RUN, 1995-2000'. He also acted as host for the international committee and organized their visit to Nijmegen.
- Prof. Van Opstal has acted as Chairman of the Physics Curriculum Committee of the Physics Faculty for a period of four years (1999-2003). He has been a member of that committee since 1996.
- He is also a member of the faculty's Public Relations committee, that aims to coordinate and promote the publication of research results of groups within the faculty in the national press.
- Prof. van Opstal acted as the central coordinator of the Science Curriculum (Natuurwetenschappen) from 2005-2010.
- Prof. van Opstal is currently a member of the Exam Committee and the Teaching Committee of the Molecular Sciences curriculum
- Prof. van Opstal is chairman of the Radboud Honours Programme of the Science Faculty.
- Prof. van Opstal is the coordinator of the large-scale international Marie-Curie project HealthPAC.
- Prof. van Opstal is the head of the Department of Biophysics since Sept. 2010 (about 30-35 fte).
- Since Nov 2018 Prof van Opstal is the Director of the Donders Centre for Neuroscience at the Science Faculty (~120 fte). His term ends Dec 31, 2022.

Other: Prof. Van Opstal has acted as an external expert at PhD exams of Universities in Oxford (UK), Germany: Aachen, Munich, Oldenburg), Belgium (Leuven), USA (Rochester, Pittsburgh), and Canada (Kingston, Toronto), Paris (Univ. René Descartes).

He is a member of the Editorial Board of the *Journal of Neurohysiology*, and of the open-access journal *Frontiers in Neuroscience*.

Scholarships and prizes since 1999: Research Grants:

The Nijmegen lab received US\$ 191k, and appointed one PhD student (drs. Van Wanrooij).NATO"Eye-eyelid coordination" (2002-2004). This grant involved US\$ 20,0 grant:to be spent on visits to and from the participating labs (Nijmegen, Amsterdam, Ljubljana, New York).EC-grant:Marie-Curie Host Fellowships for Early Stage Research Training (EST (2005-2008). This grant, about €1.7M, with about €170k for Nijmegen PhD, drs. P. Bremen) had been obtained from the EC to initiate a European collaboration on monkey sensory processing, and involved 1 labs within seven European countries (Germany (four universities), France, UK, Netherlands, Belgium, Switzerland, and Italy (each one institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded).VICIThe most prestigious grant in the Dutch funding system, amounting € 1.34M for five years (three PhD students, and two postdocs).IDP grantLarge single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)!STWMulti-partner technological grant (NeuroCIMT, € 4M, coordinated by grant TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 6004 2016-2021).ERC AdGORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022).		Sounds" (1999-2002). One postdoc (dr. H. Versnel), about €200k				
MaGW: "Het waarnemen van en het bewegen naar auditieve doelen" (Programma subsidie) (2000-2004). One PhD student (drs. J. Vliegen), about €200k ALW: "Neural Interactions and the Effect of Head Orientation on Responses the Inferior Colliculus of the Behaving Monkey" (2002-2006). One PhD student (drs. S. van Wetter). About €200k HFSP: Principal coordinator of a project concerning five labs from Canada (n=1), the USA (n=3) and the Netherlands (n=1). Title: "Multisensory Interactions Subserving Orienting Behaviour" (1998-2001). A total amount of US\$ 700k was awarded for the five lab The Nijmegen lab received US\$ 191k, and appointed one PhD student (drs. Van Wanrooij). NATO "Eye-eyelid coordination" (2002-2004). This grant involved US\$ 20,0 to be spent on visits to and from the participating labs (Nijmegen, Amsterdam, Ljubljana, New York). EC-grant: Marie-Curie Host Fellowships for Early Stage Research Training (EST (2005-2008). This grant, about €1.7M, with about €170k for Nijmegen PhD, drs. P. Bremen) had been obtained from the EC to initiate a European collaboration on monkey sensory processing, and involved 11 labs within seven European countries (Germany (four universities), France, UK, Netherlands, Belgium, Switzerland, and Italy (each one institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded). VICI The most prestigious grant in the Dutch funding system, announting € 1.34M for five years (three PhD students, and two postdoes). IDP grant Large single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applica	MaGW:					
 (Programma subsidie) (2000-2004). One PhD student (drs. J. Vliegen), about €200k ALW: "Neural Interactions and the Effect of Head Orientation on Responses the Inferior Colliculus of the Behaving Monkey" (2002-2006). One PhD student (drs. S. van Wetter). About €200k HFSP: Principal coordinator of a project concerning five labs from Canada (n=1), the USA (n=3) and the Netherlands (n=1). Title: "Multisensory Interactions Subserving Orienting Behaviour" (1998-2001). A total amount of USS 700k was awarded for the five lab The Nijmegen lab received US\$ 191k, and appointed one PhD student (drs. Van Wanrooij). NATO "Eye-eyelid coordination" (2002-2004). This grant involved US\$ 20,0 to be spent on visits to and from the participating labs (Nijmegen, Amsterdam, Ljubljana, New York). EC-grant: Marie-Curie Host Fellowships for Early Stage Research Training (EST (2005-2008). This grant, about €1.7M, with about €170k for Nijmegen PhD, drs. P. Bremen) had been obtained from the EC to initiate a European collaboration on monkey sensory processing, and involved 10 labs within seven European countries (Germany (four universities)), France, UK, Netherlands, Belgium, Switzerland, and Italy (each one institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded). VICI The most prestigious grant in the Dutch funding system, amounting € 1.34M for five years (three PhD students, and two postdoes). IDP grant Large single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)! STW Multi-partner technological grant (NeuroCIMT, € 4M, coordinated by 7U Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 6004 2016-2021). ERC AdG ORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most pre		"Het waarnemen van en het bewegen naar auditieve doelen"				
(2000-2004). One PhD student (drs. J. Vliegen), about €200kALW:"Neural Interactions and the Effect of Head Orientation on Responses the Inferior Colliculus of the Behaving Monkey" (2002-2006). One PhD student (drs. S. van Wetter). About €200kHFSP:Principal coordinator of a project concerning five labs from Canada (n=1), the USA (n=3) and the Netherlands (n=1). Title: "Multisensory Interactions Subserving Orienting Behaviour" (1998-2001). A total amount of US\$ 700k was awarded for the five lab The Nijmegen lab received US\$ 191k, and appointed one PhD student (drs. Van Wanrooij).NATO"Eye-eyelid coordination" (2002-2004). This grant involved US\$ 20,0 grant: to be spent on visits to and from the participating labs (Nijmegen, Amsterdam, Ljubljana, New York).EC-grant:Marie-Curie Host Fellowships for Early Stage Research Training (EST (2005-2008). This grant, about €1.7M, with about €170k for Nijmegen PhD, drs. P. Bremen) had been obtained from the EC to initiate a European collaboration on monkey sensory processing, and involved It labs within seven European countries (Germany (four universities), France, UK, Netherlands, Belgium, Switzerland, and Italy (each one institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded).VICIThe most prestigious grant in the Dutch funding system, amounting € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)!STWMulti-partner technological grant (NeuroCIMT, € 4M, coordinated by grant TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 6004 2016-2021).ERC AdGORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The mos		9				
 ALW: "Neural Interactions and the Effect of Head Orientation on Responses the Inferior Colliculus of the Behaving Monkey" (2002-2006). One PhD student (drs. S. van Wetter). About €200k HFSP: Principal coordinator of a project concerning five labs from Canada (n=1), the USA (n=3) and the Netherlands (n=1). Title: "Multisensory Interactions Subserving Orienting Behaviour" (1998-2001). A total amount of US\$ 700k was awarded for the five lab The Nijmegen lab received US\$ 191k, and appointed one PhD student (drs. Van Wanrooij). NATO "Eye-eyelid coordination" (2002-2004). This grant involved US\$ 20,0 to be spent on visits to and from the participating labs (Nijmegen, Amsterdam, Ljubljana, New York). EC-grant: Marie-Curie Host Fellowships for Early Stage Research Training (EST (2005-2008). This grant, about €1.7M, with about €170k for Nijmegen PhD, drs. P. Bremen) had been obtained from the EC to initiate a European collaboration on monkey sensory processing, and involved 11 labs within seven European countries (Germany (four universities), France, UK, Netherlands, Belgium, Switzerland, and Italy (each one institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded). VICI The most prestigious grant in the Dutch funding system, amounting € 1.34M for five years (three PhD students, and two postdocs). IDP grant Large single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)! STW Multi-partner technological grant (NeuroCIMT, € 4M, coordinated by Tu U Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 6004 2016-2021). ERC AdG ORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022). 						
the Inferior Colliculus of the Behaving Monkey" (2002-2006). One PhD student (drs. S. van Wetter). About €200k HFSP: Principal coordinator of a project concerning five labs from Canada (n=1), the USA (n=3) and the Netherlands (n=1). Title: "Multisensory Interactions Subserving Orienting Behaviour" (1998-2001). A total amount of US\$ 700k was awarded for the five lab The Nijmegen lab received US\$ 191k, and appointed one PhD student (drs. Van Wanrooij). NATO "Eye-eyelid coordination" (2002-2004). This grant involved US\$ 20,0 to be spent on visits to and from the participating labs (Nijmegen, Amsterdam, Ljubljana, New York). EC-grant: Marie-Curie Host Fellowships for Early Stage Research Training (EST (2005-2008). This grant, about €1.7M, with about €170k for Nijmegen PhD, drs. P. Bremen) had been obtained from the EC to initiate a European collaboration on monkey sensory processing, and involved 11 labs within seven European countries (Germany (four universities), France, UK, Netherlands, Belgium, Switzerland, and Italy (each one institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded). VICI The most prestigious grant in the Dutch funding system, amounting € 1.34M for five years (three PhD students, and two postdocs). IDP grant Large single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)! STW Multi-partner technological grant (NeuroCIMT, € 4M, coordinated by TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 6004 2016-2021). ERC AdG ORI	ALW:					
Colliculus of the Behaving Monkey" (2002-2006). One PhD student (drs. S. van Wetter). About €200kHFSP:Principal coordinator of a project concerning five labs from Canada (n=1), the USA (n=3) and the Netherlands (n=1). Title: "Multisensory Interactions Subserving Orienting Behaviour" (1998-2001). A total amount of US\$ 700k was awarded for the five lab The Nijmegen lab received US\$ 191k, and appointed one PhD student (drs. Van Wanrooij).NATO"Eye-eyelid coordination" (2002-2004). This grant involved US\$ 20,0 to be spent on visits to and from the participating labs (Nijmegen, Amsterdam, Ljubljana, New York).EC-grant:Marie-Curie Host Fellowships for Early Stage Research Training (EST (2005-2008). This grant, about €1.7M, with about €170k for Nijmegen PhD, drs. P. Bremen) had been obtained from the EC to initiate a European collaboration on monkey sensory processing, and involved 11 labs within seven European countries (Germany (four universities), France, UK, Netherlands, Belgium, Switzerland, and Italy (each one institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded).VICIThe most prestigious grant in the Dutch funding system, amounting € 1.34M for five years (three PhD students, and two postdocs).IDP grantLarge single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)!STWMulti-partner technological grant (NeuroCIMT, € 4M, coordinated by TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 6004 2016-2021).ERC AdGORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal researc						
 (drs. S. van Wetter). About €200k HFSP: Principal coordinator of a project concerning five labs from Canada (n=1), the USA (n=3) and the Netherlands (n=1). Title: "Multisensory Interactions Subserving Orienting Behaviour" (1998-2001). A total amount of US\$ 700k was awarded for the five lab The Nijmegen lab received US\$ 191k, and appointed one PhD student (drs. Van Wanrooij). NATO "Eye-eyelid coordination" (2002-2004). This grant involved US\$ 20,0 to be spent on visits to and from the participating labs (Nijmegen, Amsterdam, Ljubljana, New York). EC-grant: Marie-Curie Host Fellowships for Early Stage Research Training (EST (2005-2008). This grant, about €1.7M, with about €170k for Nijmegen PhD, drs. P. Bremen) had been obtained from the EC to initiate a European collaboration on monkey sensory processing, and involved 1 labs within seven European countries (Germany (four universities), France, UK, Netherlands, Belgium, Switzerland, and Italy (each one institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded). VICI The most prestigious grant in the Dutch funding system, amounting € 1.34M for five years (three PhD students, and two postdocs). IDP grant Large single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)! STW Multi-partner technological grant (NeuroCIMT, € 4M, coordinated by grant TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 6004 2016-2021). ERC AdG ORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022). 						
 (n=1), the USA (n=3) and the Netherlands (n=1). Title: "Multisensory Interactions Subserving Orienting Behaviour" (1998-2001). A total amount of US\$ 700k was awarded for the five lab The Nijmegen lab received US\$ 191k, and appointed one PhD student (drs. Van Wanrooij). NATO "Eye-eyelid coordination" (2002-2004). This grant involved US\$ 20,0 grant: to be spent on visits to and from the participating labs (Nijmegen, Amsterdam, Ljubljana, New York). EC-grant: Marie-Curie Host Fellowships for Early Stage Research Training (EST (2005-2008). This grant, about €1.7M, with about €170k for Nijmegen PhD, drs. P. Bremen) had been obtained from the EC to initiate a European collaboration on monkey sensory processing, and involved 11 labs within seven European countries (Germany (four universities), France, UK, Netherlands, Belgium, Switzerland, and Italy (each one institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded). VICI The most prestigious grant in the Dutch funding system, amounting € 1.34M for five years (three PhD students, and two postdocs). IDP grant Large single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)! STW Multi-partner technological grant (NeuroCIMT, € 4M, coordinated by grant TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 600 2016-2021). ERC AdG ORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022). 						
 Title: "Multisensory Interactions Subserving Orienting Behaviour" (1998-2001). A total amount of US\$ 700k was awarded for the five lab The Nijmegen lab received US\$ 191k, and appointed one PhD student (drs. Van Wanrooij). NATO grant: (be spent on visits to and from the participating labs (Nijmegen, Amsterdam, Ljubljana, New York). EC-grant: Marie-Curie Host Fellowships for Early Stage Research Training (EST (2005-2008). This grant, about €1.7M, with about €170k for Nijmegen PhD, drs. P. Bremen) had been obtained from the EC to initiate a European collaboration on monkey sensory processing, and involved 10 labs within seven European countries (Germany (four universities), France, UK, Netherlands, Belgium, Switzerland, and Italy (each one institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded). VICI The most prestigious grant in the Dutch funding system, amounting € grant 1.34M for five years (three PhD students, and two postdocs). IDP grant Large single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)! STW Multi-partner technological grant (NeuroCIMT, € 4M, coordinated by grant TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 6004 2016-2021). ERC AdG ORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022). 	HFSP:	Principal coordinator of a project concerning five labs from Canada				
 (1998-2001). A total amount of US\$ 700k was awarded for the five lab The Nijmegen lab received US\$ 191k, and appointed one PhD student (drs. Van Wanrooij). NATO <i>"Eye-eyelid coordination"</i> (2002-2004). This grant involved US\$ 20,0 grant: to be spent on visits to and from the participating labs (Nijmegen, Amsterdam, Ljubljana, New York). EC-grant: Marie-Curie Host Fellowships for Early Stage Research Training (EST (2005-2008). This grant, about €1.7M, with about €170k for Nijmegen PhD, drs. P. Bremen) had been obtained from the EC to initiate a European collaboration on monkey sensory processing, and involved 10 labs within seven European countries (Germany (four universities), France, UK, Netherlands, Belgium, Switzerland, and Italy (each one institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded). VICI The most prestigious grant in the Dutch funding system, amounting € grant 1.34M for five years (three PhD students, and two postdocs). IDP grant Large single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)! STW Multi-partner technological grant (NeuroCIMT, € 4M, coordinated by grant TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 6004 2016-2021). ERC AdG ORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022). 		(n=1), the USA $(n=3)$ and the Netherlands $(n=1)$.				
The Nijmegen lab received US\$ 191k, and appointed one PhD student (drs. Van Wanrooij).NATO"Eye-eyelid coordination" (2002-2004). This grant involved US\$ 20,0 grant:to be spent on visits to and from the participating labs (Nijmegen, Amsterdam, Ljubljana, New York).EC-grant:Marie-Curie Host Fellowships for Early Stage Research Training (EST (2005-2008). This grant, about €1.7M, with about €170k for Nijmegen PhD, drs. P. Bremen) had been obtained from the EC to initiate a European collaboration on monkey sensory processing, and involved 1 labs within seven European countries (Germany (four universities), France, UK, Netherlands, Belgium, Switzerland, and Italy (each one institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded).VICIThe most prestigious grant in the Dutch funding system, amounting € 1.34M for five years (three PhD students, and two postdocs).IDP grantLarge single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)!STWMulti-partner technological grant (NeuroCIMT, € 4M, coordinated by grant TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 6004 2016-2021).ERC AdGORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022).		Title: "Multisensory Interactions Subserving Orienting Behaviour"				
(drs. Van Wanrooij).NATO"Eye-eyelid coordination" (2002-2004). This grant involved US\$ 20,0grant:to be spent on visits to and from the participating labs (Nijmegen, Amsterdam, Ljubljana, New York).EC-grant:Marie-Curie Host Fellowships for Early Stage Research Training (EST (2005-2008). This grant, about €1.7M, with about €170k for Nijmegen PhD, drs. P. Bremen) had been obtained from the EC to initiate a European collaboration on monkey sensory processing, and involved 1 labs within seven European countries (Germany (four universities), France, UK, Netherlands, Belgium, Switzerland, and Italy (each one institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded).VICIThe most prestigious grant in the Dutch funding system, amounting € grant1.34M for five years (three PhD students, and two postdocs).IDP grantLarge single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)!STWMulti-partner technological grant (NeuroCIMT, € 4M, coordinated by grantTU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 6004 2016-2021).ERC AdGORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022).		(1998-2001). A total amount of US\$ 700k was awarded for the five labs.				
NATO"Eye-eyelid coordination" (2002-2004). This grant involved US\$ 20,0 grant:to be spent on visits to and from the participating labs (Nijmegen, Amsterdam, Ljubljana, New York).EC-grant:Marie-Curie Host Fellowships for Early Stage Research Training (EST (2005-2008). This grant, about €1.7M, with about €170k for Nijmegen PhD, drs. P. Bremen) had been obtained from the EC to initiate a European collaboration on monkey sensory processing, and involved 14 labs within seven European countries (Germany (four universities), France, UK, Netherlands, Belgium, Switzerland, and Italy (each one institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded).VICIThe most prestigious grant in the Dutch funding system, amounting € 1.34M for five years (three PhD students, and two postdocs).IDP grantLarge single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)!STWMulti-partner technological grant (NeuroCIMT, € 4M, coordinated by grantTU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 6004 2016-2021).ERC AdGORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022).		The Nijmegen lab received US\$ 191k, and appointed one PhD student				
grant:to be spent on visits to and from the participating labs (Nijmegen, Amsterdam, Ljubljana, New York).EC-grant:Marie-Curie Host Fellowships for Early Stage Research Training (EST (2005-2008). This grant, about €1.7M, with about €170k for Nijmegen PhD, drs. P. Bremen) had been obtained from the EC to initiate a European collaboration on monkey sensory processing, and involved 10 labs within seven European countries (Germany (four universities), France, UK, Netherlands, Belgium, Switzerland, and Italy (each one institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded).VICIThe most prestigious grant in the Dutch funding system, amounting € grantIDP grantLarge single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)!STWMulti-partner technological grant (NeuroCIMT, € 4M, coordinated by 2016-2021).ERC AdGORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022).						
Amsterdam, Ljubljana, New York).EC-grant:Marie-Curie Host Fellowships for Early Stage Research Training (EST (2005-2008). This grant, about €1.7M, with about €170k for Nijmegen PhD, drs. P. Bremen) had been obtained from the EC to initiate a European collaboration on monkey sensory processing, and involved 1 labs within seven European countries (Germany (four universities), France, UK, Netherlands, Belgium, Switzerland, and Italy (each one institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded).VICIThe most prestigious grant in the Dutch funding system, amounting € 1.34M for five years (three PhD students, and two postdocs).IDP grantLarge single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)!STWMulti-partner technological grant (NeuroCIMT, € 4M, coordinated by TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 6004 2016-2021).ERC AdGORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022).	NATO	"Eye-eyelid coordination" (2002-2004). This grant involved US\$ 20,000				
EC-grant:Marie-Curie Host Fellowships for Early Stage Research Training (EST (2005-2008). This grant, about €1.7M, with about €170k for Nijmegen PhD, drs. P. Bremen) had been obtained from the EC to initiate a European collaboration on monkey sensory processing, and involved 14 labs within seven European countries (Germany (four universities), France, UK, Netherlands, Belgium, Switzerland, and Italy (each one institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded).VICIThe most prestigious grant in the Dutch funding system, amounting € 1.34M for five years (three PhD students, and two postdocs).IDP grantLarge single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)!STWMulti-partner technological grant (NeuroCIMT, € 4M, coordinated by 2016-2021).ERC AdGORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022).	grant:					
 (2005-2008). This grant, about €1.7M, with about €170k for Nijmegen PhD, drs. P. Bremen) had been obtained from the EC to initiate a European collaboration on monkey sensory processing, and involved 1 labs within seven European countries (Germany (four universities), France, UK, Netherlands, Belgium, Switzerland, and Italy (each one institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded). VICI The most prestigious grant in the Dutch funding system, amounting € grant 1.34M for five years (three PhD students, and two postdocs). IDP grant Large single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)! STW Multi-partner technological grant (NeuroCIMT, € 4M, coordinated by grant TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 600k 2016-2021). ERC AdG ORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022). 						
 PhD, drs. P. Bremen) had been obtained from the EC to initiate a European collaboration on monkey sensory processing, and involved 1 labs within seven European countries (Germany (four universities), France, UK, Netherlands, Belgium, Switzerland, and Italy (each one institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded). VICI The most prestigious grant in the Dutch funding system, amounting € grant 1.34M for five years (three PhD students, and two postdocs). IDP grant Large single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)! STW Multi-partner technological grant (NeuroCIMT, € 4M, coordinated by grant TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 600k 2016-2021). ERC AdG ORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022). 	EC-grant:					
 European collaboration on monkey sensory processing, and involved 14 labs within seven European countries (Germany (four universities), France, UK, Netherlands, Belgium, Switzerland, and Italy (each one institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded). VICI The most prestigious grant in the Dutch funding system, amounting € grant 1.34M for five years (three PhD students, and two postdocs). IDP grant Large single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)! STW Multi-partner technological grant (NeuroCIMT, € 4M, coordinated by TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 6004 2016-2021). ERC AdG ORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022). 						
 labs within seven European countries (Germany (four universities), France, UK, Netherlands, Belgium, Switzerland, and Italy (each one institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded). VICI The most prestigious grant in the Dutch funding system, amounting € grant 1.34M for five years (three PhD students, and two postdocs). IDP grant Large single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)! STW Multi-partner technological grant (NeuroCIMT, € 4M, coordinated by TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 600k 2016-2021). ERC AdG ORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022). 						
 France, UK, Netherlands, Belgium, Switzerland, and Italy (each one institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded). VICI The most prestigious grant in the Dutch funding system, amounting € grant 1.34M for five years (three PhD students, and two postdocs). IDP grant Large single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)! STW Multi-partner technological grant (NeuroCIMT, € 4M, coordinated by TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 600k 2016-2021). ERC AdG ORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022). 		1 1 1 0				
institute)). The grant was obtained within the EC's sixth framework (only 6% out of 867 submissions was awarded).VICIThe most prestigious grant in the Dutch funding system, amounting € 1.34M for five years (three PhD students, and two postdocs).IDP grantLarge single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)!STWMulti-partner technological grant (NeuroCIMT, € 4M, coordinated by TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 600H 2016-2021).ERC AdGORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022).						
(only 6% out of 867 submissions was awarded).VICIThe most prestigious grant in the Dutch funding system, amounting € 1.34M for five years (three PhD students, and two postdocs).IDP grantLarge single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)!STWMulti-partner technological grant (NeuroCIMT, € 4M, coordinated by TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 600k 2016-2021).ERC AdGORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022).						
 VICI The most prestigious grant in the Dutch funding system, amounting € grant 1.34M for five years (three PhD students, and two postdocs). IDP grant Large single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)! STW Multi-partner technological grant (NeuroCIMT, € 4M, coordinated by TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 600H 2016-2021). ERC AdG ORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022). 						
grant1.34M for five years (three PhD students, and two postdocs).IDP grantLarge single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)!STWMulti-partner technological grant (NeuroCIMT, € 4M, coordinated by TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 600k 2016-2021).ERC AdGORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022).	MOI					
 IDP grant Large single-partner IDP grant of the Marie-Curie programme of the E € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)! STW Multi-partner technological grant (NeuroCIMT, € 4M, coordinated by TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 600k 2016-2021). ERC AdG ORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022). 						
 € 3.5M to appoint 14 PhD students (2014-2017). Only 1.1% funding chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)! STW Multi-partner technological grant (NeuroCIMT, € 4M, coordinated by TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 600k 2016-2021). ERC AdG ORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022). 	0					
chance for this grant type (134 ITNs / 1350 applications, only 15 IDP)!STWMulti-partner technological grant (NeuroCIMT, € 4M, coordinated by TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 600k 2016-2021).ERC AdGORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022).	IDP grant					
STW grantMulti-partner technological grant (NeuroCIMT, € 4M, coordinated by TU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 600k 2016-2021).ERC AdGORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022).						
grantTU Delft), with my subproject OtoControl for 1 Phd, 1 postdoc (€ 600k 2016-2021).ERC AdGORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022).	STW/					
2016-2021).ERC AdGORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022).						
ERC AdG ORIENT (€ 2.5M) on eye-head gaze control in complex multisensory environments. The most prestigious personal research grant in the EU (2017-2022).	gram					
environments. The most prestigious personal research grant in the EU (2017-2022).	FRC AdG					
(2017-2022).						
	TTW	OtoControl-2.0: The Next Step, on optimising the fitting of the CI.				
	Brunt					

Further research grants since 2006:					
Funding	Total	Amount	Duration	title	Main or co-
agency &	amount	for group	(start – end)		applicant
name of the	(Euros)				
grant					
NWO –	€ 500k	€ 250k	2006-2010	Role of auditory cortex in	Co (with prof.
cognition				object formation.	Formisano, UM)
FP6-Marie	€ 2.5M	€ 170k	2006-2010	SensoPrim	co (10 PhD's,
Curie EST		(1 PhD)			Europe)
DCN	€ 100k	€ 100k*	2010-2011	Understanding and improving sound- localization in the hearing impaired	co (with Snik, ENT dept.)
Oticon (Dk)	€ 210k	€210k*	2010-2012	Bone-Anchored Hearing Aids	co (with Snik, ENT dept.)
ENT dept	€ 63k	€ 63k*	2010	Near-Infrared	co
ENT dept	COSK	COJK	2010	Spectroscopy: application to CI patients	0
RU	€ 200k	€ 200k	2007-2011	Mechanisms of dynamic spatial orientation	main
Advanced Bio- nics-Phonak (CH)	€ 239	€ 239*	2012-2015	Bimodal Hearing with Cochlear Implant and a Hearing aid	co (with Snik, ENT dept.)
ENT dept.	€ 140k	€140k*	2012-2013	Hearing Implant Lab investment (postdoc, 2 yr)	со
KNAW	€ 23k	€23k	2011	Visiting Professor grant for prof Martha Flanders	main
NWO-MaGW	€ 210k	€ 210k	2012-2015	Role of primate auditory cortex in sound-source identification	main
NWO-ALW	€ 274k	€ 274k	2012-2015	Role of midbrain superior colliculus in orienting in complex audiovisual scenes.	Main
NWO-MagW Talent	€ 180k	€ 180k	2012-2015	Updating prior information in audiovisual orienting.	Main
FP7-Marie Curie ITN (NETT)	€ 5.5M (main: Univ. Nottingham)	€ 260k (1 PhD)	2012-2015	Computational modeling of the audiomotor system with spiking neurons.	Co (17 PhDs, 3 postdocs)
FP7-Marie- Curie IDP (HealthPAC)	€ 3.5M	€ 2.0M	2014-2017	Perception and Action in Health and Disease	Main, 14 PhDs (6 in my group)
FP7-Marie- Curie ITN (iCARE)	€ 5.4M (main: Univ. Leuven)	€ 380k	2014-2017	Auditory rehabilitation in children	Co (1 PhD and 1 postdoc in my group)
STW NeuroCIMT	€ 4.0M	€ 600k	2016-2021	OtoControl	Co (1 PhD and 1 postdoc)
ERC AdG	€ 2.523M	€ 2.523M	2017-2022	ORIENT	3 postdocs, 2 PhD, 1 techni- cian, 0.2 staff
TTW-OTP	€ 1.3M	€ 920k	2024-2029	OtoControl-2.0	2 postdocs, myself

List of publications

Publications (h-factor March 2023: 54) (source: Google Scholar)
Total number of citations: 8800
All publications can be found on my webpage at
http://www.mbfys.ru.nl/~johnvo/papers.htm
<i>Top 10 publications since 2003 in journals within the top 10% of their field:</i>
M.P. Zwiers, A.J. Van Opstal and G.D. Paige
Plasticity in human sound localization induced by compressed spatial vision.
<i>Nature Neuroscience</i> , 6: 175-181, 2003 IF 15.9
M.M. Van Wanrooij and A.J. Van Opstal
Contribution of head shadow and pinna cues to chronic monaural sound
localization. Journal of Neuroscience, 24: 4163-4171, 2004 IF. 8.0
M.P. Zwiers, H. Versnel and A.J. Van Opstal
Involvement of monkey Inferior Colliculus in spatial hearing.
Journal of Neuroscience, 24: 4145-4156, 2004 IF. 8.0
J. Vliegen, T.J. Van Grootel and A.J. Van Opstal
Dynamic sound localization during rapid eye-head gaze shifts.
<i>Journal of Neuroscience</i> , 24: 9291-9302, 2004 IF. 8.0
M.M. Van Wanrooij and A.J. Van Opstal
Relearning sound localization with a new ear.
Journal of Neuroscience, 25: 5413-5424, 2005 IF. 8.0
H. Versnel, M.P. Zwiers and A.J. van Opstal
Spectrotemporal response properties of Inferior Colliculus neurons in alert monkey. <i>Journal of Neuroscience</i> , 29: 9725-9739, 2009 IF 8.0
P. Bremen, M.M. Van Wanrooij, and A.J. Van Opstal
Pinna Cues Determine Orienting Response Modes to Synchronous Sounds in
Elevation. <i>Journal of Neuroscience</i> , 30:194-204, 2010 IF 8.0
D.C.P.B.M. Van Barneveld, A.C.M. Kiemeneij, and A.J. van Opstal
Absence of spatial updating when the visuomotor system is unsure about
stimulus motion. <i>Journal of Neuroscience</i> , 31: 10558-10568, 2011 IF: 8.0
T.J. van Grootel, M.M. Van Wanrooij, and A.J. van Opsta
Influence of static eye and head position on tone-evoked gaze shifts.
Journal of Neuroscience, 31: 17497-17504, 2011 IF: 8.0
H.H.L.M. Goossens and A.J. Van Opstal
Optimal control of saccades by spatial-temporal activity patterns in monkey
Superior Colliculus. <i>PloS Cumpational Biology</i> , in press, 2012 IF: 6.0

PhD students and postdocs in the lab

List of graduated PhD students supervised by John van Opstal

	Name PhD student	Graduati on	Institute	Current position
1	Maarten Frens	1996	Radboud Univ Nijmegen	Professor of Neurophysiology Erasmus Univ. Rotterdam, NL
2	Jeroen Goossens	1999*	Radboud Univ Nijmegen	Assistant prof. neurophysio- logy RUN; Vidi grant
3	Paul Hofman	2001	Radboud Univ Nijmegen	Visual Technology at Philips

4	Marcel Zwiers	2003	Radboud Univ Nijmegen	NatLab Eindhoven, NL Research Fellow at Donders Inst., RUN; Veni grant
5	Marc van Wanrooij	2005	Radboud Univ Nijmegen	Assist. Prof. Biophysics
6	Joyce Vliegen	2006	Radboud Univ Nijmegen	ICT at revenue service, NL
7	Peter Bremen	2010	Radboud Univ Nijmegen	Assist. Prof. Erasmus Univ.
8	Tom van Grootel	2011	Radboud Univ Nijmegen	Postdoc Tübingen, Ger
9	Denise vBarneveld	2012	Radboud Univ Nijmegen	Audiology U Maastricht
10	Joke Kalisvaart	2013	Radboud UMC	Postdoc
11	Jacob Duijnhouwer	2013	Radboud Univ Nijmegen	Postdoc USA
12	Yoolla Massoudi	2014	Radbout Univ Nijmegen	Business ICT
13	Artem Platonov	2014	Radboud Univ Nijmegen	Postdoc
14	David Arnoldussen	2015	Radboud Univ Nijmegen	Postdoc
15	Lidwien Veugen	2017	Radboud Univ Nijmegen	Business sector
16	Sigrid Dupan	2018	Radboud Univ Nijmegen	Postdoc UK
17	Sebastian Ausili	2019	Radboud Univ Nijmegen	Postdoc USA
18	Bahadir Kasap	2019	Radboud Univ Nijmegen	Business ICT
19	Rachel Ege	2019	Radboud Univ Nijmegen	Mother
20	Anna Geuzebroek	2019	Radboud Univ Nijmegen	Postdoc
21	Karlijn Wouterse	2019	Radboud Univ Nijmegen	Postdoc
22	Bahram Zonooz	2020	Radboud Univ Nijmegen	Industry
23	Snandan Sharma	2021	Radboud Univ Nijmegen	Postdoc
24	Katharina Vogt	2021	Radboud Univ Nijmegen	Entrepreneuse
25	Luuk van de Rijt	2021	Radboud Univ Nijmegen	ENT doctor
26	Andrea Bertana	2021	Radboud Univ Nijmegen	-
27	Joris Elshout	2021	Radboudumc	
28	Guus van Bentum	2023	Radboud Univ Nijmegen	HAN teacher
29	Arth. Alishbayli	2024	Radboud Univ Nijmegen	postdoc

*Summa Cum Laude

Postdocs supervised by John van Opstal

	1 v			
	Name postdoc	Period	Institute	Current position
1	Huib Versnel	1999-2002	Radboud	Audiologist Utrecht Univ
2	Marcel Zwiers	2005-2006	Radboud	Res. fellow Donders Inst.
3	Rob vd Willigen	2005-2011	Radboud	Teacher Rotterdam School
4	Marc v Wanrooij	2008-2013	Radboud	See below
5	Martijn Agterberg	2009-2013	Radboud	Research associate
6	David Magezi	2012-2014	Radboud	Postdoc Erasmus
7	Peter Bremen	2014-2016	Radboud	Assistant professor
8	Anja Roye	2014-2015	Radboud	Entrepreneur
9	Marc v Wanrooij	2014-2017	Radboud	Assistant Professor
10	Yoolla Massoudi	2013-2015	Radboud	Postdoc Cambridge
11	Lei Wang	2017-2020	Radboud	Postdoc Otocontrol
12	Annemiek	2017-2021	Radboud	Postdoc Orient/ Manager DI
	Barsingerhorn			graduate school
14	Francesca Rocchi	2019-2020	Radboud	Postdoc UK
15	Arizoo Alizadeh	2019-2022	Radboud	Postdoc Orient
16	Alais Bernas	2020-2022	Radboud	Postdoc Orient
17	Reza Javanmard	2020-2022	ITS Lisboa	a Postdoc Orient

18	Guus van Bentum	2020-2022	Radboud	Teacher HAN
19	Snandan Sharma	2022-2024	Radboud	Postdoc DCN

PhD students currently supervised by John van Opstal

	Name PhD student	Expected graduation	Institute
29	Elisabeth Noordanus	Apr 2024	Radboud University Nijmegen
30	Jesse Heckman	-	Radboud University Nijmegen
31	Jasper van der Heijdt	-	Radboud University Nijmegen
32	Akhil John	Sept 2024	Inst. Técnico Superior Lisboa
33	Ignacio Calderón	Dec 2024	Radboud University Nijmegen
34	Nikki Tromp	Dec 2024	Radboud University Nijmegen
35	Enrico Migliorini	Dec 2024	Radboud University Nijmegen
36	Loes Beckers	Dec 2024	Radboud University Nijmegen

PhD students for whom John van Opstal will act as promotor (HealthPAC)

	Name PhD student	Expected graduation	Institute
37	Leslie Guadrón	Apr 2024	Radboud UMC
38	Sonal Sengupta	Apr 2024	Radboud UMC

Full publication list

(updated until November 2018)

1984

 Van Gisbergen J.A.M., Van Opstal A.J. Parameterization of saccadic velocity profiles. *Theoretical and Applied Aspects of Eye Movement Research*, Gale AG and Johnson F (Eds), Elsevier Publ, North Holland, pp. 87-94, 1984.

1985

- 2. Van Gisbergen J.A.M., Van Opstal A.J., Schoenmakers J.J.M. Experimental test of two models for the generation of oblique saccades. *Exp. Brain Res.* 57: 321-336, 1985
- 3. Van Opstal A.J., Van Gisbergen J.A.M., Eggermont J.J. Reconstruction of neural control signals for saccades based on an inverse method. *Vision Res.* 25: 789-801, 1985

- 4. Van Gisbergen J.A.M., Van Opstal A.J., Roebroek J.G.H. Stimulus-induced midflight modification of saccade trajectories. In: *Eye Movements: From physiology to cognition.* Eds. J.K. O'Regan, A. Levy-Schoen. Elsevier, pp. 27-36, 1987
- 5. Van Gisbergen J.A.M., Van Opstal A.J., Tax A.A.M. Collicular ensemble coding of saccades based on vector summation. *Neuroscience* 21: 541-555, 1987 *NCit:* 194
- Van Opstal A.J., Van Gisbergen J.A.M. Nonhomogeneity anisotropy in the topographical organization of the motor colliculus and saccade endpoint scatter. In: *Proceedings of the Fourth European Conference on Eye Movements, Vol.1.* G. Luer en U. Lass (eds.) C.J. Hogrefe, Göttingen, pp.114-116, 1987
- 7. Van Opstal A.J., Van Gisbergen J.A.M. Skewness of saccadic velocity profiles: a unifying parameter for normal and slow

- Van Gisbergen J.A.M., Van Opstal A.J. Models of saccadic control. In: *The neurobiology of saccadic eye movements*. Wurtz RH en Goldberg ME (eds), Elsevier, Amsterdam p. 69-101, 1989
 Van Opstal A.J., Van Gisbergen J.A.M.
- A model for collicular efferent mechanisms underlying the generation of saccades. Brain, Behavior and Evolution 33: 90-94, 1989
- Van Opstal A.J., Van Gisbergen J.A.M.
 A nonlinear model for collicular spatial interactions underlying the metrical properties of electrically elicited saccades. *Biological Cybernetics* 60: 171-183, 1989 *NCit:* 142
- Van Opstal A.J., Van Gisbergen J.A.M.
 Scatter in the metrics of saccades and properties of the collicular motor map. Vision Research 29: 1183-1196, 1989

1990

- Van Opstal A.J., Van Gisbergen J.A.M. Comparison of saccades evoked by visual stimulation and collicular electrical stimulation in the alert monkey. *Experimental Brain Research* 79: 299-312, 1990
- Van Opstal A.J., Van Gisbergen J.A.M.
 Role of monkey superior colliculus in saccade averaging. Experimental Brain Research 79: 143-149, 1990
- 14. Smit A.C., Van Opstal A.J., Van Gisbergen J.A.M. Component stretching in fast and slow oblique saccades in the human. *Experimental Brain Research* 81: 325-334, 1990

1991

- Van Gisbergen J.A.M., Van Opstal A.J., Minken A.W.H. Current views on the visuomotor interface of the saccadic system. In: *Representations of Vision* A. Gorea (Ed.), Cambridge University Press, pp 201-215, 1991.
- Van Opstal A.J., Hepp K., Hess B.J.M., Strauman D., Henn V. Two-, rather than three-dimensional representation of saccades in monkey superior colliculus. *Science* 252: 1313-1315, 1991. *NCit: 98*

1992

- Henn V., Straumann D., Hess B.J.M., Van Opstal A.J., Hepp K. The generation of torsional and vertical rapid eye movements in the rostral interstitial nucleus of the MLF (riMLF). In: *Vestibular and brain stem control of eye, head and body movements*. Eds. H. Shimazu, Y. Shinoda. Japan Sci Soc. Press, Tokyo, 177-182, 1992.
- Hepp K., Henn V., Hess B.J.M., Van Opstal A.J., Straumann D. Is Listing's law implemented in the spatial or the temporal saccade generator? In: *Vestibular and brain stem control of eye, head and body movements.* Eds. H. Shimazu, Y. Shinoda. Japan Scientific Soc. Press, Tokyo, 197-200, 1992.
- Hess B.J.M., Van Opstal A.J., Straumann D., Hepp K. Calibration of three-dimensional eye position using search-coil signals in the rhesus monkey. *Vision Research* 32: 1647-1654, 1992 *NCit:* 106

- Hepp K., Van Opstal A.J., Straumann D., Hess B.J.M., Henn V. Monkey superior colliculus represents rapid eye movements in a two-dimensional motor map. *Journal of Neurophysiology* 69: 965-979, 1993
- Krommenhoek K.P., Van Opstal A.J., Gielen C.C.A.M., Van Gisbergen J.A.M. Remapping of neural activity in the motor colliculus: A Neural network study. *Vision Res.* 33: 1287-1298, 1993

- 22. Minken A.W.H., Van Opstal A.J., Van Gisbergen J.A.M. Three-dimensional analysis of strongly curved saccades elicited by double-step stimuli. *Experimental Brain Research* 93: 521-533, 1993
- Van Opstal A.J., Hepp K., Hess B.J.M., Straumann D., Henn V. Experimental test of two models for the role of monkey superior colliculus in 3D saccade generation. In: *Multisensory control of Movement.* A. Berthoz (ed.). Oxford University Press., pp 240-254, 1993
- 24. Van Opstal A.J.

Representation of eye position in three dimensions. In: *Multisensory control of Movement*. A. Berthoz (ed.), Oxford University Press. pp 30-43, 1993

25. Van Opstal A.J., Kappen H.J. A two-dimensional ensemble coding model for spatial-temporal transformation of saccades in monkey superior colliculus. *Network* 4: 19-38, 1993

26. Van Opstal A.J., Kappen H.J. Neural representation of saccadic eye movements in monkey superior colliculus. In: *Proceedings on the International Conference on Artificial Neural Networks ICANN'93.* Springer Verlag, 86-94, 1993

1994

27. M.A. Frens, A.J. Van Opstal

Auditory-evoked saccades in two dimensions: Dynamical characteristics, Influence of eye position, and Sound source spectrum. In: *Information Processing Underlying Gaze Control* J. Delgado-Garcia, P. Vidal, E. Godaux (Eds.), New York, Pergamon, pp. 329-339, 1994

28. M.A. Frens, A.J. Van Opstal Transfer of short-term adaptation in human saccadic eye movements. *Experimental Brain Research*, 100: 293-306, 1994 *NCit: 148*

 A.J. Van Opstal Nonlinearities in the saccadic system and efferent feedback to the collicular motor map. In: *Information Processing Underlying Gaze Control.* J. Delgado-Garcia, P. Vidal, E. Godaux (Eds.), New York, Pergamon, pp. 139-149, 1994

1995

- M.A. Frens, A.J. Van Opstal, R.F. Van der Willigen Spatial and temporal factors determine audio-visual interactions in human saccadic eye movements. *Perception and Psychophysics* 57: 802-816, 1995 *NCit:* 295
- 31. J.A.M. Van Gisbergen, A.J. Van Opstal The collicular contribution to visuo-motor transformations viewed from a modeling perspective. In: *Handbook of Brain Theory and Neural Networks*. M. Arbib (Ed.), 1995
- 32. A.J. Van Opstal, K. Hepp, Y. Suzuki, V. Henn
 Influence of eye position on activity in monkey superior colliculus.
 Journal of Neurophysiology 74: 1593-1610, 1995
 NCit: 119
- A.J. Van Opstal, K. Hepp A novel interpretation for the collicular role in saccade generation. *Biological Cybernetics*, 73: 431-445, 1995
- K.P. Krommenhoek, A.J. Van Opstal, J.A.M. Van Gisbergen An analysis of craniocentric and oculocentric coding stages in a neural network model of the saccadic system. *Neural Networks*, 1995
- 35. M.A. Frens, A.J. Van Opstal A quantitative study of auditory-evoked saccadic eye movements in two dimensions. *Experimental Brain Research*, 107: 103-117, 1995
- A.J. Van Opstal, P.M. Hofman, H.H.L.M. Goossens
 A quantitative model of primate auditory-evoked orienting in two dimensions.
 In: Proceedings of the International Conference on Brain Processes, Theories and Models. R. Moreno Diaz, J. Mira-Mira (eds.). MIT Press, Cambridge MA, pp. 284-293, 1995

1996

37. A.J. Van Opstal, K. Hepp, Y. Suzuki, V.Henn

Role of Monkey Nucleus Reticularis Tegmenti Pontis in the Stabilization of Listing's Plane.

Journal of Neuroscience, 16(22): 7284-7296, 1996

38. A.J. Van Opstal, M.A. Frens

Task-dependence of saccade-related activity in monkey superior colliculus: implications for models of the saccadic system. In: *Extra-geniculostriate mechanisms underlying visually-guided orientation behavior.* M. Norita, and B.E. Stein (eds.), *Progress Brain Research,* Vol. 112, Ch 13, pp. 177-191, 1996

- 39. A.J. Van Opstal Book review of: J.A. Scott Kelso:
 "Dynamic Patterns: The Self-Organization of brain and Behavior" Journal of Cognitive Neuroscience, 8: 432-433, 1996
- 40. A.J. Van Opstal Niet-commutatieve kinematica voor de sturing van oogbewegingen. (in dutch) Nederlands Tijdschrift voor Natuurkunde, 62/19: 391-394, 1996
- 41. K.P. Krommenhoek, A.J. Van Opstal, and J.A.M. Van Gisbergen, An analysis of craniocentric and oculocentric coding stages in a neural network model of the saccadic system. *Neural Networks*, 9: 1497-1511, 1996

1997

- 42. A.J. Van Opstal, K. Hepp, Y. Suzuki, V.Henn Three-, rather than two-dimensional burst generation for spontaneous saccadic eye movements. In: *Three-dimensional kinematics of eye-, head-, and limb movements.*M. Fetter, D. Tweed, and H. Misslisch (eds.) Harwood Publ., Amsterdam, pp. 72-83, 1997
- 43. K. Hepp, A.J. Van Opstal, Y. Suzuki, D. Straumann, B.J.M. Hess, V. Henn Listing's law: visual, motor, or visuomotor?
 In: *Three-dimensional kinematics of eye-, head-, and limb movements*. M. Fetter, D. Tweed, H. Misslisch (eds.) Harwood Publ., Amsterdam, pp. 33-42, 1997
- 44. M.A. Frens and A.J. Van Opstal Monkey superior colliculus activity during short-term saccadic adaptation.
 Brain Research Bulletin, 43: 473-483, 1997
 NCit: 109
- 45. H.H.L.M. Goossens and A.J. Van Opstal Human eye-head coordination in two dimensions under different sensorimotor conditions. *Experimental Brain Research,* 114: 542-560, 1997 *NCit: 201*
- 46. H.H.L.M. Goossens and A.J. Van Opstal Local feedback signals are not distorted by prior eye movements: evidence from visuallyevoked double-saccades. *Journal of Neurophysiology*, 78, 533-538, 1997
- P.M. Hofman and A.J. Van Opstal Identification of spectral features as sound localization cues in the external ear acoustics. *In: Biological and Artificial Computation. From Neuroscience to Technology. Eds. J. Mira, R. Moreno-Diaz, J. Cabestany*, Berlin, Springer, 1997.

1998

- 48. P.M. Hofman and A.J. Van Opstal Spectro-temporal factors in two-dimensional human sound localization. *Journal of the Acoustical Society of America*, 103, 2634-2648, 1998 NCit: 179
- 49. M.A. Frens and A.J. Van Opstal Visual-auditory interactions modulate saccade-related activity in monkey superior colliculus. *Brain Research Bulletin,* 46, 211-224, 1998 *NCit: 111*
- 50. P.M. Hofman, J.G.A. Van Riswick, and A.J. Van Opstal Relearning Sound Localization with New Ears. *Nature Neuroscience, 1:* 417-421, 1998 *NCit:* 375

- 51. H.H.L.M. Goossens and A.J. Van Opstal Influence of head position on the spatial representation of acoustic targets. *Journal of Neurophysiology,* 81, 2720-2736, 1999.
- 52. F. Van der Werf, J.A. Otto, A.J. Van Opstal, M. Aramideh, and B.W.O. De Visser Retrograde tracing studies of the levator palpebrae superioris muscle in the monkey. *Investigative Ophthalmology and Visual Science*, 40: 4482-4485, 1999.

- 53. H.H.L.M. Goossens and A.J. Van Opstal Blink-perturbed saccades in monkey. I. Behavioral analysis. *Journal of Neurophysiology*, 83, 3411-3429, 2000.
- 54. H.H.L.M. Goossens and A.J. Van Opstal, Blink-perturbed saccades in monkey. II. Superior Colliculus activity. *Journal of Neurophysiology*, 83, 3430-3452, 2000.
- 55. M.P. Zwiers, A.J. Van Opstal and J.R.M. Cruysberg Robustness of 2D sound localization in the blind.
 In: Proceedings of the 12th International Symposium on Hearing. - Physiological and psychophysical bases of auditory function.
 Shaker Publishing, Maastricht, pp. 244-251, 2000.

NCit: 139

2001

- 56. M.P. Zwiers, A.J. Van Opstal and J.R.M. Cruysberg A Spatial Hearing Deficit in Early-Blind Humans. *Journal of Neuroscience*, 21:RC421, 1-5, 2001.
- 57. M.P. Zwiers, A.J. Van Opstal and J.R.M. Cruysberg Two-Dimensional Sound-Localization Behavior of Early-Blind Humans. *Experimental Brain Research*, 140: 206-222, 2001

2002

- P.M. Hofman, M.S.M.G. Vlaming, P.J.J. Termeer and A.J. Van Opstal A Method to Induce Swapped Binaural Hearing. *Journal of Neuroscience Methods*, 113: 167-179, 2002.
- 59. A.J. Van Opstal The Gaze Control System. In: *Models of Neural Networks, Vol. IV. Early Vision and Attention.* L.J. Van Hemmen, J.D. Cowan, and E. Domany (eds.) Chapter 2, pp. 47-95. Springer Verlag, Heidelberg, Germany, 2002.
- 60. P.M. Hofman and A.J. Van Opstal Bayesian reconstruction of sound localization cues from responses to random spectra. *Biological Cybernetics*, 86: 305-316, 2002.
- 61. B.D. Corneil, M. Van Wanrooij, D.P. Munoz, and A.J. Van Opstal Auditory-visual interactions subserving goal-directed saccades in a complex scene. *Journal of Neurophysiology*, 88: 438-454, 2002. *NCit: 132*
- 62. H. Versnel, M.P. Zwiers and A.J. Van Opstal Spectro-temporal response fields in the inferior colliculus of awake monkey. In: *Proceedings of the 3rd European Congress of Acoustics.*, Special Issue of the *Journal Revista de Acustica*, Vol. 33, ISBN: 84-87985-06-8, 2002.

2003

- 63. M.P. Zwiers, A.J. Van Opstal and G.D. Paige Plasticity in Human Sound Localization Induced by Compressed Spatial Vision. *Nature Neuroscience*, 6: 175-181, 2003. *NCit: 100*
- 64. P.M. Hofman and A.J. Van Opstal Binaural weighting of pinna cues in human sound localization. *Experimental Brain Research*, 148: 458-470, 2003

65.	J. Vliegen and A.J. Van Opstal
	The influence of duration and level on human sound localization.
	Journal of the Acoustical Society of America, 115: 1705-1713
66.	A.J. Van Opstal and T. Van Esch
	Estimating spectral cues underlying human sound localization.
	In: NAG Journaal 2003, on CD.
67.	A.J. Van Opstal and D.P. Munoz
	Auditory-visual interactions subserving primate gaze orienting.

- In: The Handbook of Multisensory Processes.
- G. Calvert, C. Spence and B. Stein (eds.), Chapter 23, pp. 373-394(MIT Press, 2004).

- M.M. Van Wanrooij and A.J. Van Opstal Contribution of head shadow and pinna cues to chronic monaural sound localization. *Journal of Neuroscience*, 24: 4163-4171 *NCit: 117*
- 69. M.P. Zwiers, H. Versnel and A.J. Van Opstal Involvement of monkey inferior colliculus in spatial hearing. *Journal of Neuroscience*, 24: 4145-4156
- J. Vliegen, T.J. Van Grootel and A.J. Van Opstal Dynamic sound localization during rapid eye-head gaze shifts. *Journal of Neuroscience*, 24: 9291-9302

- 71. M.M. Van Wanrooij and A.J. Van Opstal Relearning Sound Localization with a New Ear. *Journal of Neuroscience*, 25: 5413-5424
- 72. A.H. Bell, M.A. Meredith, A.J. Van Opstal, and D.P. Munoz Crossmodal Integration in the Primate Superior Colliculus Underlying the Preparation and Initiation of Saccadic Eye Movements. *Journal of Neurophysiology*, 93: 3659-3673
- 73. J. Vliegen, T.J. Van Grootel and A.J. Van Opstal Gaze Orienting in Dynamic Visual Double Steps. *Journal of Neurophysiology*, 94: 4300-4313

2006

- 74. H.H.L.M. Goossens and A.J. Van Opstal Dynamic Ensemble Coding of Saccades in the Monkey Superior Colliculus. *Journal of Neurophysiology*, 95: 2326-2341
- 75. A.H. Bell, M.A. Meredith, A.J. Van Opstal, and D.P. Munoz Stimulus Intensity modifies Saccadic Reaction Time and Visual Response Latency in the Superior Colliculus. *Experimental Brain Research*, 174: 53-59 *NCit: 101*

2007

- 76. P. Bremen, R.F. van der Willigen, and A.J. van Opstal Using double-magnetic induction to measure head-unrestrained gaze shifts. I. Theory and validation. *Journal of Neuroscience Methods*, 160: 75-84, 2007
- M.M. Van Wanrooij and A.J. Van Opstal Sound Localization under Perturbed Binaural Hearing. *Journal of Neurophysiology*, 97: 715-726, 2007
- K. Riecke, A.J. Van Opstal, R. Goebel, and E. Formisano Hearing Illusory Sounds in Noise: Sensory-perceptual Transformations in Auditory Cortex. *Journal of Neuroscience*, 27: 12684-12689.
- 79. P. Bremen, R.F. van der Willigen, and A.J. van Opstal Applying Double Magnetic Induction to Measure Two-Dimensional Head-Unrestrained Gaze Shifts in Human Subjects. *Journal of Neurophysiology*, 98: 3759-3769.

- L. Riecke, A.J. Van Opstal, and E. Formisano A parametric investigation of the auditory continuity illusion. *Perception and Psychophysics* 70: 1-12
- 81. A.J. van Opstal and H.H.L.M. Goossens Linear Ensemble Coding in Midbrain Superior Colliculus Specifies the Saccade Kinematics. *Biological Cybernetics*, 98: 561-577
- S.M.C.I. van Wetter and A.J. van Opstal Experimental test of visuomotor updating models that explain perisaccadic mislocalization. *Journal of Vision*, 8 (14)8: 1-22
- S.M.C.I. van Wetter and A.J. van Opstal Perisaccadic mislocalization of visual targets by head-free gaze shifts: visual of motor? *Journal of Neurophysiology*, 100: 1848-1867

- H. Versnel, M.P. Zwiers and A.J. van Opstal Spectrotemporal response properties of inferior colliculus neurons in alert monkey. *Journal of Neuroscience*, 29: 9725-9739, 2009.
- 85. T.J. van Grootel and A.J. van Opstal Human sound-localization behavior after multiple changes in eye position. *European Journal of Neuroscience,* 29: 2233-2246, 2009.
- M.M. Van Wanrooij, A.H. Bell, D.P. Munoz, and A.J. Van Opstal The effect of spatial-temporal audiovisual disparities on saccades in a complex scene. *Experimental Brain Research*, 198: 425-437, 2009

- P. Bremen, M.M. Van Wanrooij, and A.J. Van Opstal Pinna Cues Determine Orienting Response Modes to Synchronous Sounds in Elevation. *Journal of Neuroscience*, 30:194-204, 2010.
- D.C.P.B.M. Van Barneveld and A.J. Van Opstal Eye position determines audio-vestibular interactions during whole-body rotation. *European Journal of Neuroscience*, 31: 920-930, 2010.
- 89. M.M. Van Wanrooij, P. Bremen and A.J. Van Opstal Acquired Prior Knowledge Modulates Audiovisual Integration. *European Journal of Neuroscience*, 31: 1763-1771, 2010.
- 90. T.J. van Grootel and A.J. van Opstal Human sound-localization behavior accounts for ocular drift. *Journal of Neurophysiology*, 103: 1927-1936, 2010.
- 91. H.H.L.M. Goossens and A.J. Van Opstal Differential effects of reflex blinks on saccade perturbations in humans. *Journal of Neurophysiology*, 103: 1685-1695, 2010
- 92. P. Bremen, R.F. Van der Willigen, M.M. Van Wanrooij, D.F. Schaling, M.B. Martens, T.J. Van Grootel, and A.J. Van Opstal Applying double-magnetic induction to measure head-unrestrained gaze shifts: calibration and validation in the monkey. *Biological Cybernetics* 103: 415-432, 2010.

2011

- 93. M.J.H. Agterberg, A.F.M. Snik, M.K.S. Hol, T.E.M. Van Esch, C.W.R.J. Cremers, M.M. Van Wanrooij and A.J. Van Opstal Improved horizontal directional hearing in Baha users with acquired unilateral conductive hearing loss. J Association Research Otolaryngology (JARO) 12: 1-11, 2011.
- 94. M.J.H. Agterberg, M.K.S. Hol, C.W.R.J. Cremers, E. Mylanus, A.J. Van Opstal, A. Snik Conductive hearing loss and bone conduction devices: Restored binaural hearing? *Adv. Otorhinolaryngology* 71: 84-91, 2011.
- 95. T.J. van Grootel, M.M. Van Wanrooij, and A.J. van Opstal Influence of static eye and head position on tone-evoked gaze shifts. *Journal of Neuroscience*, 31: 17497-17504, 2011.
- 96. D.C.P.B.M. Van Barneveld, T.J. Van Grootel, B. Alberts, and A.J. van Opstal The effect of head roll on perceived auditory zenith. *Experimental Brain Research* 213: 235-243, 2011.
- 97. D.C.P.B.M. Van Barneveld, A.C.M. Kiemeneij, and A.J. van Opstal Absence of spatial updating when the visuomotor system is unsure about stimulus motion. *Journal of Neuroscience*, 31: 10558-10568, 2011.
- 98. R.F. Van der Willigen, H.H.L.M. Goossens and A.J. Van Opstal Linear visuomotor transformations in midbrain Superior Colliculus control saccadic eye movements. *The Journal of Integrative Neuroscience*, 10: 277-301, 2011
- 99. D.C.P.B.M. Van Barneveld, F. Binkhorst, and A.J. van Opstal Failure to compensate for vestibularly-evoked passive head rotations in human sound localization? *European Journal of Neuroscience* 34: 1149-1160, 2011

2012

100. M.J.H. Agterberg, A.F.M. Snik, M.K.S. Hol, M.M. Van Wanrooij, and A.J. Van Opstal Contribution of monaural and binaural cues to sound localization in patients with unilateral conductive hearing loss: improved directional hearing with a bone-conduction device. *Hearing Research* 286: 9-18, 2012

- 101. H.A. Katnani, A.J. van Opstal, and N.J. Gandhi A test of spatial-temporal decoding mechanisms in the superior colliculus. *Journal of Neurophysiology* 107: 2442-2452, 2012
- 102. H.H.L.M. Goossens and A.J. Van Opstal Optimal control of saccades by spatial-temporal activity patterns in monkey Superior Colliculus. *PLoS Computational Biology* 8(5): e1002508.
- 104. G. Bezgin, V.A. Vakorin, A.J. Van Opstal, A.R. McIntosh, R. Bakker Hundreds of brain maps in one atlas: registering coordinate-independent primate neuroanatomical data to a standard brain. *Neuroimage* 62: 67-76, 2012
- 103. T.J. van Grootel, R.F. Van der Willigen, and A.J. van Opstal Experimental Test of Spatial Updating Models for Monkey Eye-Head Gaze Shifts. *PLoS One*, 7(10): e:47606 *doi:* 10.1371/journalpone.0047606
- 105. H.A. Katnani, U. Jagadisan, A.J. van Opstal, and N.J. Gandhi Analysis of stimulation-evoked saccades perturbed by blinks. *PLoS One*, 7(12) e:51843

- 106. R.J. Otte, M.J.H. Agterberg, M.M. Van Wanrooij, A.F.M. Snik, and A.J. Van Opstal: Age-related hearing loss and ear morphology affect vertical, but not horizontal, soundlocalization performance. *JARO*, 14: 261-273 (2013)
- 107. E. Visser, M.P. Zwiers, C.C. Kan, L. Hoekstra, A.J. Van Opstal and J.K. Buitelaar Deficient spatial sound processing suggests abnormal brainstem connectivity in autism spectrum disorders. *Journal of Psychiatry and Neuroscience* 38: 398-406 (2013)
- 108. R. Massoudi, M.M. Van Wanrooij, S.M.C.I. Van Wetter, H. Versnel, and A.J. Van Opstal Stable bottom-up processing during dynamic top-down modulations in monkey primary auditory cortex. *Eur J Neuroscience* 37: 1830-1842, 2013
- 109. T. Borra, H. Versnel, C. Kemner, A.J. Van Opstal, and R. Van Ee An octave effect in auditory attention. *PNAS* 110: 15225-15230 (2013)
- 110. A.J. Van Opstal Involvement of the inferior colliculus in a binaural spatial illusion. (Commentary on *Rajala et al.*) *Eur J Neurosci* 38: 3054-3055

2014

- 111. R. Massoudi, M.M. Van Wanrooij, S.M.C.I. Van Wetter, H. Versnel, and A.J. Van Opstal Task-related preparatory modulations multiply with acoustic processing in monkey auditory cortex. *Eur J Neuroscience* 39: 1538-1550 (2014)
- 112. G. Bezgin, K. Rybacki, A.J. Van Opstal, R. Bakker, K. Shen, V.A. Vakorin, A.R. McIntosh and R. Kötter Auditory-prefrontal axonal connectivity in the macaque cortex: quantitative assessment of processing streams. *Brain and Language*135: 73-84 (2014)
- 113. M.J.H. Agterberg, M.K.S. Hol, M.M. Van Wanrooij, A.J. Van Opstal, A.F.M. Snik Single-sided deafness and directional hearing: contribution of spectral cues and highfrequency hearing loss in the hearing ear. *Frontiers in Neuroscience* 8:188

2015

114. R. Massoudi, M.M. Van Wanrooij, H. Versnel, and A.J. Van Opstal Spectral-temporal response properties of Auditory Cortex neurons in awake monkey. *PLoS One* 10(2): e0116118 (2015)

2016

115. A.J. van Opstal

"The Auditory System and Human Sound Localization Behavior." Elsevier Publishers, Academic Press, Amsterdam, the Netherlands, 431 pages, ISBN 978-0-12-801529-2 (2016)

- 116. L.C.E. Veugen, J. Chalupper, A.F.M. Snik, A.J. Van Opstal, and L.H.M. Mens Matching Automatic Gain Control Across Devices in Bimodal Cochlear Implant Users. *Ear and Hearing*, 37: 260-270, 2016
- 117. L.P.H. van de Rijt, A.J. Van Opstal, E.A.M. Mylanus, L.V. Straatman, H.Y. Hu, A.F.M.

Snik, M.M. Van Wanrooij

Auditory cortex activation to audiovisual speech in normal-hearing and cochlear implant users measured with functional near-infrared spectroscopy. *Frontiers in Human Neuroscience*, 2016

- 118. L.C.E. Veugen, J. Chalupper, A.F.M. Snik, A.J. Van Opstal, and L.H.M. Mens Frequency-Dependent Loudness Balancing in Bimodal Cochlear Implant Users. *Acta Otolaryngology* 136: 775-781, 2016.
- 119. L.C.E. Veugen, M.M.E. Hendrikse, M.M. Van Wanrooij, M.J.H. Agterberg, J. Chalupper, L.H.M. Mens, A.F.M. Snik, and A.J. Van Opstal Horizontal Sound Localization in Cochlear Implant Users with a Contralateral Hearing Aid. *Hearing Research*, 336: 72-82, 2016

2017/

120. B.P. Hartel, M.J.H. Agterberg, A.F. Snik, A.J. Van Opstal, A.J. Bosman, and R.J.E. Pennings

Hearing aid fitting for visual and hearing impaired patients with Usher Syndrome type IIa. *Clinical Otolaryngology*, In Press, doi: 10.1111/coa.12775.

- 121. B. Kasap and A.J. Van Opstal A spiking neural network model of the midbrain superior colliculus that generates saccadic motor commands. *Biological Cybernetics*, Accepted, 2017
- 122. A.J. Van Opstal, J. Vliegen, and T. Van Esch Reconstructing spectral cues for sound localization from responses to rippled noise stimuli. *PloS One* 12(3): e0174185.
- 123. L.C.E. Veugen, J. Chalupper, L.H.M. Mens, A.F.M. Snik, and A.J. Van Opstal Effect of Extreme Adaptive Frequency Compression in Bimodal Listeners on Sound Localization and Speech Perception. *Cochlear Implants International, Accepted*

- 124. B. Kasap and A.J. Van Opstal Dynamic parallelism for spike propagation in GPU accelerated spiking neural network simulations. *Neurocomputation https://doi.org/10.1016/j.neucom.2018.04.007*
- 125. G.C. Van Bentum, A.J. Van Opstal, C. C.M.van Aartrijk and M.M Van Wanrooij Level-weighted response averaging in elevation to synchronous amplitude-modulated sounds. *Journal of the Acoustical Society of America*, > 142: 3094-3103, 2017
- 126. M.J.H. Agterberg, A.F. M. Snik, R.M.G. Van de Goor, M.K.S. Hol, and A.J. Van Opstal Sound-localization performance of patients with single-sided deafness is not affected when listening with a bone-conduction device. *Hearing Research, Accepted*
- 127. B. Kasap and A.J. Van Opstal A model for auditory-visual evoked eye-head gaze shifts in dynamic multi-steps. *Journal of Neurophysiology*, 119: 1796-1808, 2018 https://doi.org/10.1152/jn.00502.2017
- 128. R. Ege, A.J. van Opstal, P. Bremen and M.M. Van Wanrooij Testing the precedence effect in the median plane reveals backward spatial masking of sound. *Scientific Reports (Nature), Accepted*
- 129. P. Bremen, R. Massoudi, M.M. Van Wanrooij, and A.J. van Opstal Audio-Visual Integration in a Redundant Target Paradigm: A Comparison between Rhesus Macaque and Man. *Accepted Frontiers Behavioural Neuroscience*
- 130. B. Zonooz, E. Arani, K.P. Kšrding, P.A.T.R. Aalbers, T. Celikel, and A.J. Van Opstal Spectral weighting underlies perceived sound elevation. *Accepted Scientific Reports (Nature), November, 2018*
- 131. S.A. Ausili, B. Backus M.J. Agterberg, A.J. Van Opstal, and M.M. Van Wanrooij Sound localization in real-time vocoder simulations with normal-hearing listeners. *Accepted Trends in Hearing, November 2018*
- 132. R. Ege, A.J. van Opstal, and M.M. Van Wanrooij Accuracy-precision trade-off in human sound localisation. Accepted Scientific Reports (Nature), November 2018
- 133. B. Zonooz, J. Brus, E. Arani, and A.J. Van Opstal Localising weakly-informative sound spectra: learning and generalisation in the human auditory system. *Accepted Scientific Reports (Nature), November 2018*

- 134. L.P.H. Van de Rijt, E. Mylanus, A.J. Van Opstal. and M.M. Van Wanrooij Listening enhancement by lip-reading deteriorates for low acoustic signal-to-noise ratios. *Revised for PLoS One*
- 135. R. Ege, A.J. van Opstal, and M.M. Van Wanrooij Experience shapes human sound-localisation behaviour. *Accepted ENeuro (SfN)*
- 136. L.C.E. Veugen, A.J. Van Opstal, D. Louvet, and M.M. Van Wanrooij. Reaction times to monaural and binaural spectrotemporal modulations: normal hearing and simulated impaired hearing. *Submit Hearing Res*.
- 137. L.C.E. Veugen, A.J. Van Opstal, J. Chalupper, and M.M. Van Wanrooij. Spectral-temporal sensitivity of bimodal cochlear implant users. *Submit JARO*.
- 138. B. Kasap and A.J. Van Opstal Micro-stimulation in a spiking neural network model of the midbrain superior colliculus. *Accepted Progress in Brain Research, Vol. 248*
- 139. B. Kasap and A.J. Van Opstal Maps and sensorimotor transformations for eye-head gaze shifts: Role of the midbrain superior colliculus. Accepted Progress in Brain Research, Vol 248
- 140. A.J. Van Opstal 200 years Franciscus Cornelis Donders. *Strabismus* 6: 1-4 2018
- 141. G.C. Van Bentum, A.J. Van Opstal, and M.M Van Wanrooij Spatiotemporal factors influence the precedence effect in sound localization. *Journal of Neurophysiology, submit*
- 142. S. Sharma, L.H.M. Mens, A.F.M. Snik, A.J. van Opstal, and M.M. Van Wanrooij. The combined use of a cochlear implant with hearing preservation and hearing aids perturbs sound localization but enhances speech perception - a case report. *Ear and Hearing, submitted.*
- 143. S. Sharma, M.M. Van Wanrooij, A.J. Van Opstal, J. Chalupper, L.H.M. Mens, and W. Nogueira.
 Mild frequency compression in bimodal cochlear implant listeners benefits audibility and affects spatial hearing. *Submit to PeerJ*
- 144. M.M. Van Wanrooij, A.H. Bell, B.D. Corneil, D.P. Munoz and A.J. van Opstal Dynamic probabilistic control of visual, auditory and audiovisual saccades. *Submit J Neuroscience*
- 145. B. Zonooz, M.M. Van Wanrooij, and A.J. van Opstal Adaptive reweighting of binaural sound-localization cues in response to chronic unilateral ear plugging. *Submit to J. Neurophysiology*
- 146. R.F. van der Willigen, A.M.M. Fransen, A.J. van Opstal and H. Versnel Equivalent Spectrotemporal Sound Processing in Monkey and Human. *Submit to Current Biology*