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Sessions-At-A-Glance: 6th NASA Symposium on The Role of the Vestibular Organs in the Exploration of Space

N1.1 **Micro-gravity and artificial gravity: Two challenges to neuro-vestibular adaptation.** Laurence R. Young

N1.2 **The role of NASA in the exploration of the vestibular organs.** F.E. Guedry, Jr.

N1.3 **A historical review of vestibular and sensory-motor research in space flight.** Millard F. Reschke

N1.4 **Ashton Graybiel's Contributions To Our Knowledge of Spatial Orientation.** James R. Lackner

N2.1 **The role of space in the exploration of vestibular organs.** Muriel D. Ross

N2.2 **Alterations in the ultrastructure of adult rat cerebellar nodulus during adaptation to spaceflight and re-adaptation to earth.** G.R. Holstein and G.P. Martinelli

N2.3 **Effects of 2G exposure on c-Fos expression in the *het* mouse hypothalamus.** Charles A. Fuller

N2.5 **The many facets of the otolith – a review.** Andrew H Clarke

N2.6 **Neuronal fos activity mapping and video-oculography during cross-coupling stimuli in the gerbil.** Galen D. Kaufman

N2.7 **A promising model to investigate the development of firing pattern in the central vestibular system in** microgravity. **Kenna D. Peusner**

N2.8 **Would you want your baby's ears to develop in space?** M. L. Wiederhold, J.L. Harrison

N3.1 **Principles of human gravity orientation and their consequences for weightlessness.** H. Mittelstaedt

N3.3 **Influence of Rotational Cues on Tilt and Translation Responses.** Daniel M. Merfeld

N3.4 **Analysis of Spatial Disorientation Mishaps in the US Navy.** BJ McGrath, FE Guedry, & AH Rupert

N3.5 **Perceptual disturbances predicted in zero-*g* through three-dimensional modeling.** Jan E. Holly

N3.6 **Qualitative model of otolith-ocular asymmetry in experiments with vertical eccentric rotation.** Alexander V. Kondrachuk

N4.1 **Neurophysiological studies of vestibular responses observed during space flight and upon return to earth.** Manning J. Correia

N4.3 **Vestibular suppression during space flight.** Douglas Watt

N4.5 **The readaptation of utricular nerve afferents to earth's 1g following exposure to microgravity.** R. Boyle, S.M. Highstein, A.F. Mensinger.

N4.6 **Effects of varying linear acceleration on the vestibular-evoked myogenic potential (VEMP).** David Solomon, Vinay Singh, Romesh Khumbani and Adam Jenkins

N4.7 **Effects of gravity deprivation on the development of vestibuloocular reflex and fictive swimming in lower vertebrates (*Xenopus laevis, Oreochromis mossambicus*).** Eberhard Horn and Sybille Böser

N4.8 **The neurobiology for a sense of direction: an update from on the ground, upside down, and space-bound.** Jeffrey S. Taube, Jeffrey L. Calton, Robert W. Stackman, Charles M. Oman, Megan S. Steven

N5.1 **Main results of Russian experimental program on the "MIR" station.** Inessa B. Kozlovskaya, Anatoly I. Grigoriev

N5.2 **Assessment of neurologic function following short duration spaceflight utilizing a standardized rating scale.** J. B. Clark

N5.4 **Space motion sickness symptomatology: 20 years' experience of NASA's space shutttle program.** James Locke

N5.5 **Neurovestibular effects of long-duration spaceflight: a summary of Mir phase 1 experiences.** Jason T. Richards, Jonathan B. Clark, Charles M. Oman, Thomas H. Marshburn

N5.6 **Development of improved motion sickness management in the NASA reduced gravity parabolic flight KC-135 ("Vomit Comet") program .** James Locke

N5.7 **Neurovestibular symptoms following space flight.** Kira Bacal, Roger Billica, and Sheryl Bishop

N6.1 **Human spatial orientation and navigation in weightlessness.** Charles M. Oman

N6.2 **Spatial perception changes associated with space flight: implications for adaptation to altered inertial environments.** D. E. Parker

N6.3 **Reference frames involved in navigation inside of 3D-complex environments.** Manuel Vidal, Michel-Ange Amorim, and Alain Berthoz

N6.4 **Spatial orientation of the vestibulo-ocular reflex (VOR) in microgravity: Results from the Neurolab STS-90 and Cosmos 2044 and 2229 missions.** Steven T. Moore, Gilles Clement, Mingjai Dai[,], Theodore Raphan and Bernard Cohen[,]

N6.5 **Effects of parabolic flight zero-gravity on looming linear vection .** Andrew Liu, Kevin Duda, Charles M. Oman, and Alan Natapoff

N6.6 **Relative role of visual and non-visual cues in judging the direction of 'up': experiments in the York tumbled room facility.** L R Harris, H L Jenkin, R T Dyde, J. Kaiserman, M R Jenkin.

N6.7 **Identifying head-trunk and lower limb contributions to gaze stabilization during locomotion .** Mulavara P. Ajitkumar; Jacob J. Bloomberg

N6.8 **Foot nystagmus: a tool for controlling spatial orientation during locomotion?** G. Melvill Jones, W.A. Fletcher, K.W. Weber, E.W. Block, G.M. Earhart, F.B. Horak

N7.1 **An adaptable neural interface: the key to successful encounters of the environmental kind?** Geoffrey Melvill Jones

N7.3 **Sensory-motor balance control deficits following space flight.** William H. Paloski

N7.4 **Adaptation to artificial gravity.** James R. Lackner and Paul DiZio

N7.5 **Adaptation to vertiginous vestibular stimulation.** Mingjia Dai[,], Theodore Raphan[,], Bernard Cohen[,]

N7.6 **Effect of repeated long-duration exposures to a virtual environment on simulator sickness and postural disturbance .** H.B.L. Duh[,], M.Lahav, D.L. Harm, D.E. Parker[,], L.C. Taylor

N7.7 **Gravity and perceptual stability during head movement.** P. Jaekl, M. Jenkin, J. Zacher, L.R. Harris

N7.8 **Vertical skew due to varying gravitoinertial forces: a possible consequence of otolith asymmetry.** F Karmali, S Ramat, M Shelhamer

N8.1 **Post-spaceflight orthostatic intolerance: possible relationship to microgravity-induced plasticity in the vestibular system.** B.J. Yates

N8.2 **Changes in g help define the otolith system.** Charles H. Markham and Shirley G. Diamond

N8.4 **Role of vestibular system in cerebrovascular response to parabolic flight.** J.M. Serrador, S.J. Wood, T.D. Wilson and T.T. Schlegel

N8.5 **The role of "extra-vestibular" inputs in maintaining spatial orientation .** Michael E. Hoffer, Kim Gottshall, Peter Weisskopf, Robert J. Moore, Richard D. Kopke, Derin Wester, Carey Balaban

N8.6 **Motion trajectory prediction cues alleviated simulator sickness during passive travel though a virtual environment.** J.J.W.Lin, H.Abi-Rached, T.A.Furness, D.E.Parker

N9.3 **Review of countermeasures for spatial orientation disturbances and space motion sickness in the U.S. and Russian space programs.** Deborah L. Harm

N9.4 **Update on the status of rehabilitative countermeasures.** Helen S. Cohen

N9.5 **Contextual adaptation as a spaceflight neurovestibular countermeasure.** Mark Shelhamer

N9.6 **A concept for balance training in space - A pilot study.** Lars I.E. Oddsson & Conrad Wall III

N9.7 **Pharmaceutical countermeasures for space motion sickness and their effect on the otolith and canals.** F.L.Wuyts, G.Pauwels, M.Hoppenbrouwers, P.Van de Heyning, J.Dornhoffer

NP1.1 **Chlorpheniramine for motion sickness.** Jay C. Buckey, Jr., Donna Alvarenga, Bernard Cole, James R. Rigas.

NP1.2 **Effects of histamine depletion on acute responses of rats to 2G.** Patrick M. Fuller

NP1.3 **Postural responses increase complexity with visual-vestibular discordance.** E.A. Keshner and R.V. Kenyon.

NP1.4 **Mechanical sensitivity and growth of otoliths.** Alexander V. Kondrachuk

NP1.5 **Otolith ocular counterrolling differs in static vs. dynamic stimulation.** Charles H Markham and Shirley G. Diamond

NP1.6 **Variable practice to facilitate motor learning for countermeasures.** Helen S. Cohen, Jacob J. Bloomberg, Ajitkumar Mulavara, Carrie Roller

NP1.7 **Voluntary head movements and vestibulo-postural responses related to short spaceflight.** F. Hlavacka, O. Dzurkova, and L.N. Kornilova

NP1.8 **"Spacecraft in miniature": a tool for the acquisition of mental representations of large environments.** Jessica J. Márquez, Charles M. Oman, Andrew M. Liu, Andrew C. Beall

NP1.9 **Dynamic visual acuity during locomotion using far and near targets.** Brian T. Peters, and Jacob J. Bloomberg

NP1.10 **Motion trajectory prediction cues alleviated simulator sickness during passive travel though a virtual environment.** J.J.W.Lin, H.Abi-Rached, T.A.Furness, D.E.Parker

NP1.11 **The role of visual inputs in adaptation to short-radius centrifugation.** Erika L Brown