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Physiologie
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Statut universitaire / University status
Chercheure adjointe
Physiologie
Faculté de médecine
Université de Montréal

Appartenance à d'autres groupes / Affiliation with other groups
Society for Neuroscience
Neural Control of Movement society
Canadian Association for Neuroscience
Institute of Electrical and Electronics Engineers (IEEE)
IEEE Engineering in Medicine and biology Society
Membre du Groupe de recherche sur le système nerveux central (GRSNC) - FRSQ
Canadian Action and Perception Network (CAPNET)

Formation / Training
B.Sc., Queen's University, Electrical Engineering, 1987-1991
M.Sc., McGill University, Electrical Engineering (Transfer to Ph.D.), 1993-1996
Ph.D., McGill University, Biomedical Engineering, 1996-2000
Postdoctorale, Washington University, Dept. of Anatomy and Neurobiology, 2000-2005
Attachée de recherche, Université de Montréal, Dépt. de physiologie, 2005-2007

Orientations de la recherche
• Base neuronale de contrôle sensorimoteur
• Contributions sensorielles à l'estimation du mouvement dans l'espace
• Apprentissage de tâches motrices et changement de comportement en fonction du contexte sensoriel
• Modèles computationnels des systèmes neuronaux

Principaux projets en cours:
• Mécanismes neuronaux de compensation des perturbations dynamiques dans le cortex cérébral et de l'apprentissage de nouvelles tâches motrices
• Bases neuronales de la détection du mouvement dans l'espace: transformation des systèmes de référence et intégration sensorielle
• Modèles computationnels des contributions visuelles et vestibulaires à l'évaluation spatiale des mouvements dans les trois dimensions

Research orientations
• Neural basis for sensorimotor control
• Sensory contributions to spatial self-motion estimation
• Motor skill learning and modulation of behavioral performance with sensory context
• Computational modeling of neural systems

Current research projects:
• Neural mechanisms for motor skill learning and compensation for novel dynamic environments in cerebral cortex
• Neural basis for spatial self-motion estimation: reference frame transformations and sensory integration
• Development of computational models for integrating visual and vestibular signals to estimate spatial self-motion in three-

Publications choisies/Selected publications

Green A.M. and Angelaki D.E. Resolution of sensory ambiguities for gaze stabilization requires a second neural integrator. J. Neurosci. 23: 9265-9275, 2003.

Angelaki, D.E., Shaikh A.G., Green A.M., and Dickman J.D. Neurons compute internal models of the physical laws of motion. Nature 430: 560-564, 2004.

Green, A.M. and Angelaki, D.E. An integrative neural network for detecting inertial motion and head orientation. J. Neurophysiol. 92: 905-925, 2004.

Green, A.M., Shaikh, A.G. and Angelaki, D.E. Sensory vestibular contributions to constructing internal models of self-motion, J. Neural Eng., 2: 164-179, 2005.

Green, A.M., Meng, H. and Angelaki, D.E. A reevaluation of the inverse dynamic model for eye movements, J. Neurosci., 27: 1346-1355, 2007.

Yakusheva TA, Shaikh AG, Green AM, Blazquez PM, Dickman, JD and Angelaki DE. Purkinje cells in posterior cerebellar vermis encode motion in an inertial reference frame, Neuron, 54: 973-985, 2007.

Ajemian, R., Green, A., Bullock, D., Sergio, L., Kalaska, J., and Grossberg, S. Assessing the Function of Motor Cortex: Single-Neuron Models of how Neural Response is Modulated by Limb Biomechanics, Neuron, 53: 414-428, 2008.

Green A.M. and Angelaki D.E. Internal models and neural computation in the vestibular system. Exp. Brain Res., 200: 197-222, 2010.

Green A.M. and Angelaki D.E. Multisensory integration: resolving sensory ambiguities to build novel representations, Current Opinion in Neurobiology 20: 353-360, 2010.

Green AM and Kalaska JF. Learning to move machines with the mind. Trends Neurosci 34: 61-75, 2011.