

Juryrapport

Enza Zaden Afstudeerprijs voor Biologie 2019

D. (Demi Brizee) MD MSc, Erasmus Universiteit Rotterdam
Activity-Dependence of Parvalbumin Interneuron Myelination

Sommige wetenschappers beschouwen de 21^{ste} eeuw als het tijdperk van de biologie, net zoals de 20^{ste} eeuw door velen gezien wordt als de eeuw van de natuurkunde. Toch was er tot voor kort nog geen prijs voor het beste masteronderzoekverslag in de biologie, hier bij de KHMW. Daarom zijn we ontzettend blij dat Enza Zaden gevestigd in Enkhuizen zich bereid verklaard heeft dit initiatief voor de komende jaren te ondersteunen.

Onlangs vergaderde de jury over de inzendingen, en koos unaniem één verslag als het beste. En dat verslag is geschreven door Demi Brizee die hierin rapporteert over haar onderzoek. De laudatio is in het Engels geschreven is, maar dat vindt Demi vast niet erg. Dit oordeelde de jury:

Demi examined how the brain's myelination, and in particular around the group of inhibitory neurons, is influenced by neuron activity. Interestingly, she found that GABAergic interneuron myelination could be manipulated by chemogenetically-induced activity *in vivo*, which was unexpectedly predominantly mediated by axonal morphological plasticity. In large part due to Demi's speed in acquiring novel techniques, meticulous and hard work, as well as a strong feeling for aesthetics in figure generation, this resulted in a beautiful paper published in the *Journal of Neuroscience*, for which Demi holds a shared first authorship. The significance of that work in the discipline is illustrated by the fact that it was showcased in 'This Week in The Journal'. Although it was published in April 2018, it already attracted 14 citations on Google Scholar. This shows the impact her work already had on the discipline.

Demi's work, in essence an examination of very fundamental biology, could hold great potential for a wide range of neurological disorders. For example, disorders such as multiple sclerosis, amyotrophic lateral sclerosis, autism spectrum disorder, and schizophrenia all contain pathophysiology of cortical myelination (the brain's white matter), and the myelination of GABAergic interneurons as well as their activity-dependence could reveal interesting new avenues for diagnosis and potential treatments.

In addition to the paper referred to above, she is a co-author on another publication and on a third one that is currently under review. Demi and her thesis work are exceptional, and the jury was delighted to assign the 2019 Enza Zaden Award to Demi Brizee and wishes her all the best for a bright scientific future.

Prof. dr. ir. C.J.N. (Cees) Buisman, hoogleraar biologische kringlooptechnologie Wageningen Universiteit, directeur Wetsus

Prof. dr. J.T. (Hans) Lambers, em. hoogleraar Plant Biology The University of Western Australia, distinguished professor China Agricultural University

De jury vergaderde op 16 oktober 2019 onder leiding van Dr. W. Bijleveld, directeur KHMW. Daarnaast waren ter vergadering aanwezig Prof. dr. A.P. IJzerman, secretaris natuurwetenschappen en Drs S. van Manen, secretaris.