



## ISN SYMPOSIUM REPORT

### Linus Pauling Institute International Conference 2019

#### *Bioactives, Botanicals, and Redox Mechanisms*

CH2M Hill Alumni Center, Oregon State University – Corvallis, OR, USA – August 14-16, 2019

*Conference Organizers: Richard van Breemen and Maria Clara Franco, Oregon State University*

The ISN Symposia, “New Therapeutic Targets and Approaches in Neurological Diseases”, was presented on August 15, 2019 from 8:30 am – 11:50 am, and chaired by Alvaro Estevez (ISN Member) from Oregon State University.

In total, 161 people attended the conference, hailing from 55 different institutions, and 9 different countries.

The symposium started with a short presentation (with the provided slides) by Dr. Estevez introducing the International Society for Neurochemistry and explaining the benefits of ISN membership. Afterwards, the speakers for this symposium presented their findings.

A brief synopsis follows:

**Larry Sherman**, from Oregon Health and Science University presented *Modified Flavonoids for the Promotion of Nervous System Repair in Neurodegenerative Disease*. Dr. Sherman reported the identification of a modified flavonoid that can inhibit hyaluronidase action. This inhibition facilitates the differentiation of oligodendrocyte precursor cells, which may have important implication for the development of treatments for multiple sclerosis and other demyelinating conditions.

**Lee Martin**, from Johns Hopkins Medicine, spoke on the topic of *Modeling Human Neurodegeneration and Neuronal Cell Death*. Dr. Martin showed that the cellular and molecular mechanisms of responsible for neurodegeneration in animal and animal derived cell are distinctly different from human cells. The pathways activated in equivalent cell types generated from human induced pluripotent stem cells more closely resemble human disease.

**Seema Tiwari-Woodruff**, from the University of California – Riverside, presented *Therapeutic Intervention to induce Immunomodulation, Remyelination and Neuroprotection: The Magic Bullet*. Dr. Tiwari-Woodruff reported on the promising therapeutic activity of selective estrogen receptor beta ligands for the treatment of multiple sclerosis. The results presented show that a single agonist affected all aspects of the disease by downregulating activity of the pathogenic mechanism while enhancing the reparation of the damage.

**Tilman Grune**, from the German Institute of Human Nutrition at the University of Potsdam gave a presentation entitled *Maintenance of Proteostasis by Bioactive Compounds: Implication for Neurodegenerative and Age-Related Diseases*. Dr. Grune reported on the detrimental alterations of proteasome and autophagy activity with aging and it reversal by inhibition of the mTOR pathway by rapamycin.

**Douglas Feinstein**, from the University of Illinois at Chicago, talked about *Vitamin K in the Nervous System*. Although Dr. Feinstein delineates some of the roles that vitamin K may play in mitigating oxidative stress in the nervous system, he also talked about the potential side-effects of vitamin K analogues. These poisons are implicated in neuropathology due to severe vitamin K deficiencies.

**Jeremy Spencer**, from the University of Reading, presented *The Impact of Flavonoid Intake on Human Neurocognitive Function: The Role of the Vascular System*. Dr. Spencer described the effects of flavonoid and flavonoid-rich food intake on human executive function and episodic memory. Possible mechanisms for these effects were also discussed, including changes in peripheral and cerebrovascular blood flow.

### **Comments about the ISN Symposium:**

“The ISN symposium highlighted a variety of natural agents that may impact several neurologic diseases.”

– Jennifer Ryan, ND, National University of Natural Medicine

“Great talks on a topic of personal interest but with which I am rather unfamiliar.”

– Stefan Gafner, PhD, American Botanical Council

“I met people outside my area of expertise at this meeting. [As a result,] I plan to collaborate and potentially enter into new areas of research – It is very unlikely that I would have met them at any other meetings that I usually attend.”

– Siva Kolluri, PhD, Oregon State University

“This session was thoughtfully planned and executed perfectly by Drs van Breeman and Franco.”

– Lee Martin, PhD, Johns Hopkins Medicine

“I thought this was the best session of the whole conference.”

– Allan Butterfield, PhD, University of Kentucky

“These were outstanding presentations and exciting research that many attendees enjoyed immensely.”

– Adrian Gombart, PhD, Oregon State University

“Good diversity of disorders and approaches covered.”

– Fiona Harrison, PhD, Vanderbilt University



**Budget**

<u>ISN Facility Fees</u>	<u>Total Cost</u>	<u>ISN Funded</u>	
Venue Cost*	\$2,839.00	\$2,839.00	
Audio Visual	\$730.00	\$730.00	
	<b>\$3,569.00</b>	<b>\$3,569.00</b>	

**\*Does not include food**

**Speaker Travel for ISN Symposium (Actual Cost)**

<u>Speaker Name</u>	<u>Airfare</u>	<u>Ground Transport</u>	<u>Lodging</u>	<u>Conference Registration</u>	<u>Total Cost</u>	<u>ISN Funded</u>
Larry Sherman		\$93.84	\$186.63	\$350.00	\$630.47	\$630.47
Lee Martin	\$870.00	\$167.00	\$836.42	\$350.00	\$2,223.42	\$1800.53
Seema Tiwari-Woodruff	\$341.00	\$179.70	\$632.72	\$350.00	\$1,503.42	\$0
Tilman Grune	\$439.76	\$174.08	\$316.36	\$350.00	\$1,280.20	\$0
Douglas Feinstein	\$883.00	\$228.79	\$632.72	\$350.00	\$2,094.51	\$0
Jeremy Spencer			\$474.54	\$350.00	\$ 824.54	\$0
					\$ 8,556.56	<b>\$ 2,431.00</b>
				<b>Grand Total</b>	<b>\$12,125.56</b>	<b>\$6000.00</b>

