***BRAIN BEE COMPETITION***

Dr. Norbert Myslinski is a member of the University of Maryland’s Department of Neural Pain Sciences in Baltimore. He has devoted his professional life to teach about the human brain around the world. He founded the Brain Bee 1998 and fostered its growth into a successful global initiative. In 2016, Dr. Myslinski was awarded the SfN Science Educator Award supported by the Dana Foundation.
Other awards include the best All-Round Student Award from high school, Distinguished Military Graduate from college, the top Founder’s Day Award for Public Service from the University of Maryland at Baltimore, the Neuroscience Education Award from the Society for Neuroscience, Alumni of the Year Awards from Saint Mary’s High School and Canisius College, and Best Teacher of the Year Award. He was President of the Baltimore Chapter of the Society for Neuroscience. He has appeared dozens of times on television and radio, and has been cited hundreds of times in the press world-wide.

The IBB has grown from a grassroots effort to a successful global educational and outreach initiative, thanks to extraordinary volunteer

***International Competition Overview***

The Brain Bee World Championship is designed to be a high-level and friendly academic competition. The material draws from university and medical school course content and requires thoughtful preparation. All participants are expected to support one another throughout the experience, during and between contest sections.
The IBB organizers reserve the right to amend the details of the competition at any stage.

***Competition Sections***

Upon arrival to the competition, student participants will receive extended and updated rules for each competition section. At the start of each section, the neuroscientist judges will provide an overview of the rules. Official timekeepers will oversee that all questions are complete within the allotted times.
For example, during the Neuroanatomy Section, students will rotate every 90 seconds between table stations, each with one brain and one affiliated question. During the Live Question and Answer Section, different questions may be allotted different lengths of time, which will be clearly stated during the event.
Responses will be graded as correct or incorrect: no partial credit will be granted. Incomplete answers are counted as zero points.

**Neuroanatomy**

During the Neuroanatomy Section, students should be prepared to name any structure presented in Chapter 1 of the "Neuroscience Essentials" publication and provide a general function for each, if presented in Chapter 1. No list/word bank will be provided during the competition.

**Diagnosis**

The Patient Diagnosis Section consists of 10 videos of patients, each with one of the possible neurological disorders listed below. The video will portray motor and/or other visual symptoms of the patient (without sound), and a brief written history, as told by the patient, will be provided. Each disorder will be presented in a common form (no rare forms of the disorders).

After watching each video and reading the patient history, students should request the results of two of the available clinical, laboratory, or imaging tests, listed below. The appropriate results for the tests will be provided immediately, for example, "Normal", "Abnormal", "Enlarged Lateral Ventricles", "Tumor detected in the Occipital Lobe", "Defective Huntingtin gene", or other result, depending on the neurological disorder and the requested test. The task then is to diagnose the most likely disorder, with the list of possible disorders and tests provided. Students are given 5 minutes total per diagnosis.

**Histology**

There will be microscope slides, each with a thin section of any of the following human tissues. Students should be prepared to identify the following structures and substructures by name. The following list will be provided during the competition. Students should research these structures using internet resources.

* Cerebellum: Purkinje Cell Layer, Granule Cell Layer, White Matter, Molecular Layer
* Cochlea
* Cortex: Gray Matter, White Matter, Pyramidal Neurons
* Hippocampus: Dentate Gyrus, CA1, CA2, CA3, Subiculum
* Basal Ganglia: Caudate Nucleus, Putamen, Globus Pallidus, Anterior Commissure, Internal Capsule, Ependyma
* Skin: Pacinian Corpuscle, Meissner’s Corpuscle, dermal papilla
* Peripheral Nerve: Endoneurium, Perineurium, Epineurium, Nerve Fascicle
* Retina: Ganglion Cells, Bipolar Cells, Photoreceptors, Pigmented Epithelium, Choroid
* Spinal Cord: Central Canal, Gray Matter, White Matter, Lateral Horn, Dorsal Horn, Ventral Horn, Ventral Median Fissure, Dorsal Median Sulcus
* Taste Bud: Taste Pore, Neuroepithelial Cells, Basal/Stem Cells, Microvill