The Science and Engineering Division of the National Federation of the Blind and the National Association of Blind Students are presenting a joint Zoom conference on how blind college and graduate students, and blind professionals, are succeeding in courses and Careers to do with science, technology, engineering, and mathematics. The Zoom conference link will be the standard NABS Zoom link shown at the bottom of this message. The call will occur at 8 PM EST through 9 PM EST on Sunday, February 26, 2023.

Topics will be of interest for blind students in middle school, high school, college and graduate school and professionals. Parents of blind school-aged children and educators are also welcome.

Currently, the scheduled speakers, topics, talk descriptions, and speaker introductions, are:

# **Opening Remarks:** Trisha Kulkarni, president National Association of Blind Students, and John Miller, president Science and Engineering Division (8 PM EST)

# **Speaker:** Ken Perry (8:15 PM EST)

**Title:** Producing Hardware as A Blind Engineer

**Description:** APH released the Submersible Audio Light Sensor (SALS) at the end of last year, which is a Bluetooth light sensor probe for detecting opacity of Chemical liquids. SALS is the brain child of the blind chemist Dr. Cary Supalo. Cary worked with a sighted engineer to create the original prototypes which were standalone boxes. From that point, Ken Perry, a Blind Senior Software and Hardware engineer, stepped in to re-imagine the SALS device as a Bluetooth probe connected to IOS and Android. This talk will walk the path from Snap circuits, bread board and Arduino, and finally to NRF bare metal chip, and programming and design of the hardware.

**Speaker Introduction:** Ken Perry has been working in Access Technology for 31 years and has been doing electronics for longer. Ken began with electronics early in life by helping his dad with anything he was allowed to. By the time he was eight, he was the de facto tube tester for his fathers at home TV repair shop. When he was nine, he helped his father build their first Color TV a Zenith kit. Ken joined the Air Force right out of High school following his father's footsteps as an Air force Electronics tech, until fait redirected his steps into Disability retirement. With his newfound adjusted vision on life, Ken returned to college and after listening to the VA counselors he was told that he wouldn’t be able to do electronics. He took his electronics knowledge and used it to earn a bachelor’s in software engineering. In 2012 he began working with Orbit Research to Develop the Orion TI-84 Talking Graphing calculator. Then In 2013, His wife and family bought him a Robotics kit and Snap Circuits kit that with his help they created accessible instructions for which he passed on to APH to create the four accessible Snap Circuit kits. He has worked with Orbit research on designs like orbit Reader, Graphiti, and with Independent Science on designing the SALS probe. This year APH will be releasing another one of his projects which is the Accessible Arduino kit with tactile schematics and 16 starter projects.

# **Speaker:** Annemiek van Leendert (8:30 PM EST)

**Title:** Support for reading mathematical expressions in Braille

**Description:** I will give a presentation about my PhD research. The main question that guided this research was: How can Braille readers improve reading and understanding of mathematical expressions? I have studied this question from different angles. The emphasis was on research into tactile perception, the professionalization of mathematics teachers and the representation of mathematical expressions in Braille. In this presentation, I will focus on tactile perception. I will show how finger-tracking technology has helped me understand the finger movements of Braille readers while reading mathematical expressions.

**Speaker Introduction:** My name is Annemiek van Leendert. I am educated as a teacher of mathematics and physics. I have been working for more than 30 years at Koninklijke Visio, an organization in the Netherlands that provides care and education to people with a visual impairment. My expertise is mathematics for Braille readers. In 2021, I successfully defended my PhD dissertation. The title of my thesis is Improving Reading and Comprehending Mathematical Expressions in Braille.

# **Speaker:** Diego Vicioso (8:45 PM EST)

**Title:** Getting Through Stem Without Braille

**Description:** LateX and document conversion programs can be used to replace braille, but the learning curve is steep. Over the last two years, I have tried to collect my different experiences and bundle them into a format that’s easy to understand.

**Speaker Introduction:** I come from a country where it is almost impossible to learn braille or the nemeth code. I will try to provide descriptions of what has worked for me, and what hasn’t.

If you have any questions, please contact Louis Maher (713-444-7838, ljmaher03@outlook.com).

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# Join Zoom Meeting:

February 26, 2023, 8 PM EST

Zoom Links

<https://zoom.us/j/4678833687#success>

Meeting ID: 467 883 3687

One tap mobile

+13017158592,,4678833687# US (Germantown)

13126266799,,4678833687# US (Chicago)