Two divisions of the National Federation of the Blind, namely: The Science and Engineering Division (SED) and the National Association of Blind Students (NABS), are presenting a joint Zoom conference on how blind college and graduate students, and blind professionals, are succeeding in courses and careers in 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 9:10 PM EST on Sunday, January 26, 2025.

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:** Lauren Altman, president, National Association of Blind Students (nabs.president@gmail.com), and John Miller, president, Science and Engineering Division (Johnmillerphd@hotmail.com) (8 PM)

# **Speaker:** Kevin Currin (kwcurrin@email.unc.edu) (8:10 PM)

**Title:** Data Analysis Using Rmarkdown, Including Tables And Chart Sonification

**Abstract:** Many STEM careers require the generation and analysis of large numbers of tables, graphs, numerical results, and other types of data. Organizing all of these data types into interactive HTML-based reports can greatly improve the efficiency and accessibility of data analysis. In this talk, I will demonstrate how to combine R, a commonly used statistical package, with Rmarkdown to generate interactive HTML reports. I will show how multiple tables and graphs can be combined with text-based output, like notes and numerical results. I will also demonstrate incorporating two JavaScript libraries into these reports to allow for interactive tables and sonified graphs. The first is the datatable library, which allows for dynamic sorting of tables from within the HTML report. The second is chart2music, which allows graphs to be explored dynamically with audio output. In summary, I hope this presentation will be useful to students and professionals who are looking for ways to increase the efficiency and accessibility of data analysis.

**Speaker Introduction:** Dr.Kevin Currin is a Research Assistant Professor in the Department of Genetics at the University of North Carolina at Chapel Hill. He received a PhD in Bioinformatics and Computational Biology from the University of North Carolina in 2020. He uses computational approaches, such as statistical data analysis and computer programming, to study human genetics and epigenetics. Kevin also has an interest in data sonification and has been working to incorporate sonification into his research.

**Questions: (**8:30 PM)

# **Speaker:** Ned Lindholm (eflindholm@gmail.com) (8:35 PM)

**Title:** Adapting Experimental Chemistry using Secondary Methods

**Abstract:** Students in Laboratory Chemistry courses are taught to focus on the primary objective of the experiment, designed to illustrate a specific concept outlined in their lectures. However, all chemical reactions are complex systems where a multitude of natural phenomena play out. It is through these secondary effects used in conjunction with existing adaptive technologies, that I believe innovation in accessibility for blind students can be discovered in experimental chemistry.

**Speaker Introduction:** Dr. Edwin “Ned” Lindholm earned his bachelor's degree in chemistry from North Dakota State University and his Ph D in Physical Chemistry from the University of Utah. His work experience includes technical research for NASA and Subject Matter expert Instruction for the Department of Defense. Since losing his vision, he has continued his career as an Adjunct Instructor in the Chemistry Department at Salt Lake Community College. He currently serves as 2nd Vice President of the Salt Lake Chapter and on the Board of Directors of the Utah State Affiliate of the National Federation of the Blind.

**Questions: (**8:55 PM)

# Closing Remarks: Lauren Altman and John Miller (9:05 PM)

# **Adjourn:** (9:10 PM)

# **Division Contact Information** If you wish to learn more about NABS, including how to become a member, go to:

"<https://www.nabslink.org/>".

If you wish to join the SED, go to:

"<http://www.nfb.org/divisiondues>".

Dues for NABS and SED are $5 per division per year.

NFB divisions' fiscal years start on January 1 and end on December 31 of the same year.

Individuals may join the NABS and SED e-mail discussion groups at "<https://www.nfbnet.org/>".

# **Adjourn** (9:10 PM)

If you have any questions about the mechanics of the seminar, please contact Louis Maher (713-444-7838, [ljmaher03@outlook.com](mailto:ljmaher03@outlook.com)).

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# Join Zoom Meeting:

January 26, 2025, 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)