





Reaching Students with Disabilities

October 27, 2018

9:30am – 3:30 pm The Science Center (Room 4102) CUNY Graduate Center 365 Fifth Avenue New York, NY 10016

Funding for this program was provided by an American Chemical Society Innovative Programs Grant to the New York Section.

9:30 **Registration and Coffee**

9:50 Welcome

10:00 **Understanding Students with Disabilities Rights in the Laboratory:** Section 504 and the Americans with Disabilities Act

Joseph Zesski, Program Manager, Northeast ADA Center, Cornell University, Ithaca, NY 94952

ABSTRACT

In the postsecondary environment, students with disabilities have rights under Section 504 of the Rehabilitation Act of 1973 and under the Americans with Disabilities Act. The intent of these laws is to provide individuals with disabilities equal access and equal opportunity. This may mean that reasonable accommodations must be made, alternate strategies for teaching and for lab participation be developed, or physical alterations to the lab and classroom be implemented. This presentation will review Section 504 and the ADA, how the regulations for these laws can apply to the laboratory, and discuss the rights and responsibilities of academic institutions and students with disabilities.

10:25 Accessible Laboratory Environment: Improved Safety for Persons with Disabilities

Janet S. Baum, AIA, ACS, Fellow of Division of Chemical Health and Safety, Harvard University, T.H. Chan School of Public Health, Program Co-Director and Instructor, Department of Executive and Professional Continuing Education, Boston, Massachusetts.

ABSTRACT

New laboratory science buildings are designed and constructed to provide accessibility into the building for persons with disabilities, but only some buildings provide laboratory facilities for education, testing, and research that are safe for use by persons with disabilities.

Americans with Disabilities Act of 1990 has mandated standards for access and use of buildings in 2010 ADA Standards for Accessible Design and the *Guide to the ADA Standards*, published by and enforced by the U.S. Dept. of Justice. Older laboratory buildings can be adapted, modified, and renovated to meet ADA Standards for general accessibility that meet ADA Standards. It is also possible to reconstruct some older laboratory spaces that would improve safety for persons with disabilities.

In addition, the U.S. Department of Labor, Occupational Health and Safety Administration (OSHA), as well as national, state, and municipal building codes develop and enforce other accessibility requirements for buildings used by the public and workers. Academic and research institutes (example: Yang-Tan Institute on Employment and Disability and Northeast ADA Center at Cornell University), certain professional organizations (example: American Chemical Society), and laboratory design guidelines and "Universal Design" books provide information and

resources for laboratory managers, educators, laboratory staff and occupants.

This presentation will inform you of the essential aspects of the <u>ADA</u> <u>Standards for Accessible Design</u> that provide a safe environment in laboratory science buildings and accessibility within laboratory spaces. This presentation will discuss specific safety considerations that persons with disabilities may require: laboratory layout, egress, access to lab safety equipment and devices, laboratory furniture, and workstations. These issues are of great importance in laboratories that use chemicals and other hazardous materials and/or perform operations and experiments that may be hazardous.

10:50 Unseen Advantage

Dr. Mona Minkara, Department of Chemistry and Chemical Theory Center, University of Minnesota, 207 Pleasant Street SE, Minneapolis, MN 55455 **ABSTRACT**

Underrepresented in science, technology, engineering, and math (STEM) fields, those with disabilities are frequently discouraged from research. But, by its very nature of innovation, chemistry will always call for people with new and novel perspectives. These include perspectives that persons with disabilities are uniquely poised to provide. As a blind computational chemist, I have faced unique challenges and have had to develop new methods and techniques to overcome them. In this session, I will go into detail about these challenges and share a story of when I used my own "out-of-the-box" methods to discover *Helicobacter pylori* urease features that my sighted counterparts missed. I do this to add to the toolbox of other scientists with a disability and illustrate the advantages of welcoming new voices and perspectives into the chemistry community.

11:15 The Dyslexic Advantage

Dr. Amie Norton, Postdoctoral Researcher, Bowling Green State University, Bowling Green, OH

ABSTRACT

Dyslexia causes reading difficulty; someone who has dyslexia thinks in a different way. This presentation will walk us through the difficulty of dyslexia, keeping in mind that each case of dyslexia is different. It will also consider the differences in the dyslexia brain and the unique way of thinking that leads to dyslexics being natural problem solvers. Understanding different ways of thinking can help us to come up with strategies in the classroom to assist dyslexics in learning. Seeing the unique abilities that dyslexics have to offer can help to take the stereotypical sting out of the word dyslexic and lead to a new and bright future of seeing dyslexia not as a curse but as a gift with some challenges to overcome.

11:40 **Techniques to Accommodate Invisible Disabilities and Improve** Inclusion in the Classroom

Missy Postlewaite, Undergraduate Chemistry Major, Department of Chemistry, University of Delaware, Newark, DE **ABSTRACT**

The term "invisible disability" is an umbrella term that captures a spectrum of disabilities. An invisible disability, or hidden disability, is a disability that is not immediately apparent to others. This includes chronic illness, epilepsy, attention deficit, autism spectrum, mental illness, sleep disorders, and countless other medical conditions. Every disability is different and comes in ranges of severity. Techniques that work for one individual may not work for another. This presentation gives a starting point for accommodations for individuals with hidden disabilities.

Making and enforcing rules for persons with disabilities only goes so far. A more effective technique is inspiring a change in attitude. Changing someone's outlook is very difficult. Promoting a cultural change in the classroom is an effective way to improve things for students with disabilities.

12:05 American Chemical Society Safety Resources

Dr. Marta Gmurczyk, Safety Programs Manager, Scientific Advancement Division, American Chemical Society, 1155 16th Street, NW, Washington, DC 20036

ABSTRACT

Safety in academic chemistry laboratories is a major concern of the ACS Committee on Chemical Safety. This presentation will give a brief overview of safety resources available through the committee.

12:15 Lunch (provided)

1:00 <u>Talking LabQuest: Data Collection for Students with Visual</u> <u>Impairments</u>

Ashley Neybert, Curriculum and Sales Specialist, Independence Science, 3000 Kent Avenue, West Lafayette, IN

ABSTRACT

Several short demonstrations will be displayed along with the history of Sci-Voice Talking LabQuest, a talking data logger to allow blind and visually impaired students to collect, access, and review laboratory data without the need of a human reader.

1:25 The Safety and Practicality of Working in the Laboratory with Disabilities: Best Practices and Preparative Methods to Maximize Success for Students with Disabilities

Dr. Henry Wedler, Co-founder and CEO, Senspoint Design, 805 West Street, Petaluma, CA 94952

ABSTRACT

The laboratory space is often thought of as dangerous and impractical for students with disabilities. There are many strategies, some easier than one might think, to make the teaching laboratory safe for students with disabilities and everyone around them.

In this presentation, best practices for students with disabilities, focusing particularly on students with visual disabilities, will be detailed. These best practices often begin with properly preparing for laboratory experiments and making sure students have a working understanding of their lab station and how to operate all safety systems in the laboratory. Finally, working with service animals in the laboratory space will be addressed.

1:50 Individuals with Disabilities – A Personal Narrative

Dr. Lee W. Hoffman, ACS Committee on Chemists with Disabilities (CWD); Chair, CWD Subdivision of Division of Professional Relations; Director, Philadelphia Section ACS; Assistant Teaching Professor, Department of Chemistry, College of Arts and Science, Drexel University, PA 19104 **ABSTRACT**

During high school, I lived through a life-changing moment not visible to others. After completing a Master's degree in Chemistry, I underwent a battery of tests, after which a (highly qualified) individual told me the PhD I so much desired simply was not attainable, so I changed my career path. I eventually became involved with the American Chemical Society's Committee on Chemists With Disabilities (CWD), and completed my PhD in Chemistry in 2010. I am now working for Drexel University in Philadelphia. My training has been anything but "traditional". During my career, I have worked with many students coming from a wide variety of backgrounds, having a broad scope of educational and career goals, and coping with a variety of issues. One goal has been maintained – the (eventual) success of the individual. During this talk I will discuss some personal experiences I have and how that has changed my viewpoint when/in working with others.

2:15 <u>A "Bond" Not Broken With Blindness: The importance of</u> <u>Accommodation and Encouraging Students with Disabilities to</u> <u>Pursue Careers in the Sciences</u>

Deanna Greco, Undergraduate Biochemistry major, Department of Chemistry, The Catholic University of America, Washington, DC

ABSTRACT

Obstacles are not limitations unless they are allowed to obstruct the path. Furthermore, individuals who are committed to achieving goals and not accepting society's perceived limitations generally are more enthusiastic about the subjects in which they face challenges. This is true for most students with disabilities, especially those interested in pursuing STEM related careers. Although tremendous strides have been made in accommodating and including students with disabilities, there remain a significant number of students who, due to insufficient accommodations, lack of encouragement, and/or personal doubt, refrain from entering STEM degree programs. Acknowledging the fact that the mission of educators is to expand the minds of students and help them cultivate their passions, it is critical that those with disabilities (and those who have experience working with students with disabilities) inform the broader scientific community of the best practices for supporting the learning styles of all types of students.

Primarily focusing on accommodations for students who are blind or have low vision, this presentation seeks to raise awareness about the innumerable adaptations that can be made to enhance the learning experience for individuals with disabilities. Providing a glance into my life as a legally blind biochemistry student, I will touch on the following topics: reasonable accommodations for both lecture and lab and which worked best for me, the importance of office hours and supportive professors, the role of a guide dog (if applicable), and lastly, some programs and technologies that are available to aid students with disabilities. By sharing my experiences and knowledge about some common accommodations for blind and low vision students, I am hopeful that educators will be more equipped to aid students with disabilities, and ultimately, demonstrate to students that they can in fact pursue their dreams.

2:40 Accommodating Students Who Are Deaf or Hard of Hearing in the Laboratory

Joseph Zesski, Program Manager, Northeast ADA Center, Cornell University, 201 Dolgen Hall, Ithaca, NY 94952 **ABSTRACT**

For students with hearing related disabilities, barriers to success in the laboratory can include a variety of challenges. Students may have difficulty with communicating with professors, with other students, or lab partners. The arrangement of the laboratory may pose an obstacle to the student's full awareness of the environment. And the preconceptions and misperceptions of faculty and students can hinder the integration of a student who is deaf or hard of hearing. This presentation will review communication barriers, environmental design, and the attitude of others and offer strategies for accommodating these students to ensure their equal and effective participation in the laboratory.

3:05 <u>Service Dogs in the Academic Chemistry Laboratory: Some</u> <u>Considerations</u>

Dr. Patricia Redden, ACS Fellow, Fellow Division of Chemical Health and Safety, Chemistry Department, Saint Peter's University, 2641 Kennedy Boulevard, Jersey City, NJ 07306

ABSTRACT

The use of service dogs by individuals with a wide variety of disabilities is increasing, and the dog's presence in the chemistry laboratory raises sometimes competing issues of compliance with the Americans with Disabilities Act (ADA), the needs of the dog's partner, and concerns about the safety of the dog and of other individuals in the laboratory. There may also be a question about whether the dog is truly a service dog and therefore falls under the ADA rules. This presentation addresses these issues and gives some guidelines for discussion with the dog's partner about the feasibility of having a service dog present in the laboratory and the steps needed to ensure safety for all, humans and canines alike.

3:30 Concluding Remarks

Materials on the Flash Drive:

- Conference Schedule and Abstracts

- <u>Teaching Chemistry to Students with Disabilities: A Manual for High</u> <u>Schools, Colleges, and Graduate Programs,</u> Edition 4.1, Todd Pagano, Annemarie Ross and members of the ACS Committee on Chemists with Disabilities, American Chemical Society, 2015

- <u>Guidelines for Chemical Laboratory Safety in Academic Institutions</u>, Kirk Hunter and W.H."Jack" Breazeale, Co-Chairs, and members of the ACS Committee on Chemical Safety Task Force for Safety Education Guidelines, American Chemical Society, 2016

- <u>Guidelines for Chemical Laboratory Safety in Secondary Schools,</u> Kirk Hunter and W.H."Jack" Breazeale, Co-Chairs, and members of the ACS Committee on Chemical Safety Task Force for Safety Education Guidelines, American Chemical Society, 2016

- informational flyer for <u>Accessibility in the Laboratory</u>, ACS Symposium Series Volume 1272, Ellen Sweet, Wendy Strobel Gower and Carl E. Heltzel Editors, ACS Division of Chemical Health and Safety sponsors, 2018

- information flyer for Sci-Voice Talking LabQuest 2, Independence Science