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4. Social Workers: For additional information regarding standards and indicators for cultural competence, please review the NASW resource: Standards and Indicators for Cultural Competence in Social Work Practice
5. Need Help? Select the “Help” option in the member dashboard to access FAQs or contact us.

## How to print Handouts

### On a Mac

- Open PDF in Preview
- Click File
- Click Print
- Click dropdown menu on the right “preview”
- Click layout
- Choose # of pages per sheet from dropdown menu
- Checkmark Black & White if wanted.

### On a PC

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- Click Print
- Choose # of pages per sheet from dropdown menu
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# Apps for Access : Bridging Deaf-Hearing Communication

in partnership with RIT/ National Technical  
Institute for the Deaf

Bonnie L. Bastian, M.S., CCC-SLP



# Bonnie L. Bastian, M.S., CCC-SLP

- Bonnie is a speech-language pathologist and educator at Rochester Institute of Technology's National Technical Institute for the Deaf (NTID). Since 2009, she has partnered with D/deaf and hard-of-hearing college students to enhance their academic, personal, and professional communication strategies, skills, and successes. Fluent in American Sign Language and holding specialty certification to work with deaf and hard of hearing individuals, Bonnie integrates communication and educational technologies to promote accessibility throughout her clinical, instructional, and research endeavors.

# Learning Outcomes

After this course, participants will be able to:

- Describe how ADA and HIPAA laws protect deaf communicators regardless of preferred communication modality.
- List at least two applications that can be used to augment communication accessibility between deaf and hearing communication partners.
- Explain at least two ethical considerations that should guide one's use of automatic speech recognition tools within various communication environments.

# Disclosures

- **Presenter Disclosure:** *Financial:* Bonnie Bastian is an employee of Rochester Institute of Technology's National Technical Institute for the Deaf. *Non-financial:* Bonnie has no relevant non-financial relationships to disclose.
- **Content Disclosure:** This learning event does not focus exclusively on any specific product or service.
- **Sponsor Disclosure:** There is no external sponsor for this course.

# Limitations/Risks

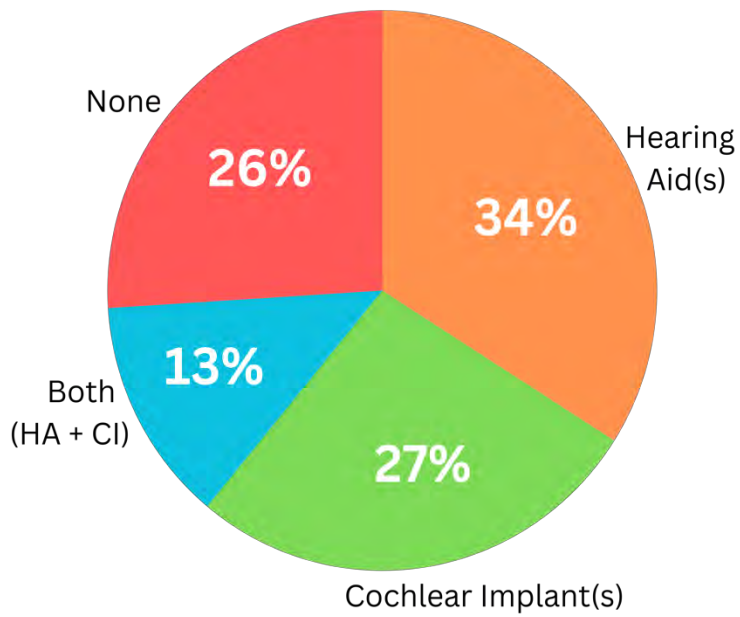
- The applicability and accuracy of the course content may vary by the clinical, geographical, and cultural context; you should evaluate the course accordingly.
- As healthcare is rapidly evolving, new findings may change the validity of the information presented in this course. Providers should always consult the latest research and guidelines from professional associations.
- The interventions discussed in this course may be limited in generalizability, requiring practitioners to consider specific individual and population factors.
- The course may not cover all possible risk factors, diagnostic methods, or treatment options, and complex cases may require additional considerations.
- Healthcare providers should apply cultural competence and sensitivity to ensure effective and respectful care based on their patients' diverse needs.
- Providers should always evaluate the limitations of diagnostic and screening tools, considering their potential for false results as well as any ethical implications.
- It is the responsibility of course participants to critically evaluate the evidence from multiple sources to guide professional practice.

# About NTID

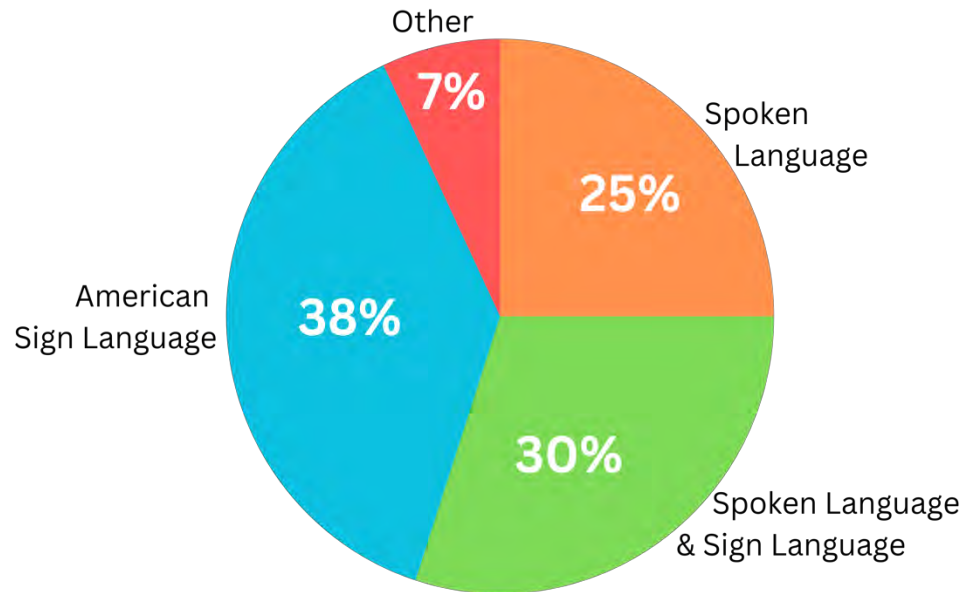
- The **National Technical Institute for the Deaf (NTID)** is one of the nine colleges of the **Rochester Institute of Technology (RIT)** in Rochester, New York.
- NTID was established by U.S. Congress in 1965 to provide higher education opportunities for deaf and hard-of-hearing students.

# About NTID Students

## Listening Technology Use



## Communication Modes



# About NTID Au.D.s & SLPs

- ***ASHA-certified Audiologists and Speech Language Pathologists at NTID provide on-campus audiological and speech-language services to members of the RIT and NTID Community. Our primary mission is to serve and support the diverse communication needs and communication skill development for our deaf and hard of hearing college students.***
- ***Our Au.D.s and SLPs are fluent in American Sign Language and prioritize matching each student and client's language and communication modalities.***

# Our Services

## Audiology Center

- Hearing tests
- Consultations
- FM/Roger loans
- Speechreading and/or listening training
- Cochlear implant mapping
- Hearing aid and cochlear implant adjustments, troubleshooting, repairs, and upgrades

## Speech & Language Center

- Speech intelligibility
- Grammar and technical/professional vocabulary and practice
- Communication strategies for work-related interactions/job interviews
- Presentation skill development and practice
- Use of mobile applications as communication tools

# Apps as Back-Up Plan

- High stakes conversations should *always* employ a qualified interpreter or human captionist, matched with an individual's preferred/most reliable communication modality
- Apps can be useful for supplementing communication accessibility, especially when stakes are lower
  - While awaiting the arrival of an interpreter
  - When English is not the preferred/most reliable language, and translation is beneficial

# Scenarios for App Use

- When signing is not the preferred/most reliable language
- Audiology Clinic
  - To maintain access to conversation during appointments
- Speech-language sessions
  - To practice self-advocacy for accessible conversations
  - To practice speech intelligibility
- Classroom
  - To add live captions on slides & uncaptioned video/audio content
  - To facilitate small group interactions
- Life
  - To supplement access during social interactions, job interviews, work meetings, phone calls, impromptu dialogues in public

# The Legal “App”lications



- Do not discriminate against someone due to their disability (ADA law\*)



*Communication mismatch cannot lead to a canceled appointment*

- Safeguard protected health information (HIPAA law\*)



*Consider privacy settings, data transfer/storage, permissions prior to app use*

# Americans with Disabilities Act (ADA)

- ADA Guidance: Communicating Effectively with People with Disabilities\*
- ADA Requirements: Effective Communication\*
- Match your solution to the person & the circumstance
  - Nature, Length, Complexity, Context
  - Person/Companion's Usual Communication Method(s)

# Ethical Considerations

- Safeguard Protected Health Information (PHI)
  - Audio files, transcription files, custom vocabulary
- Be informed (read the fine print)
  - Privacy & security
  - Data sharing with third-parties
- Consider risk vs. benefit for:
  - Cloud-based vs. Local data processing & storage
- Get consent (explain purpose, rationale for use, risks)
- Be alert: Monitor accuracy
  - Automatic Speech Recognition (ASR) will not = 100%
  - Word error rate deemed “acceptable” varies

# Automatic Speech Recognition (ASR)

- Phone Captions
  - Presentation Captions
  - Browser Captions
  - System Captions
- 
- Among many third-party apps & apps-to-come

# ASR: iPhones

- **Live Captions\*** [iPhone 11 and later]



\*Link available in Resources handout

Video: Rochester Institute of Technology, used with permission via Bonnie Bastian

# ASR: Android Phones

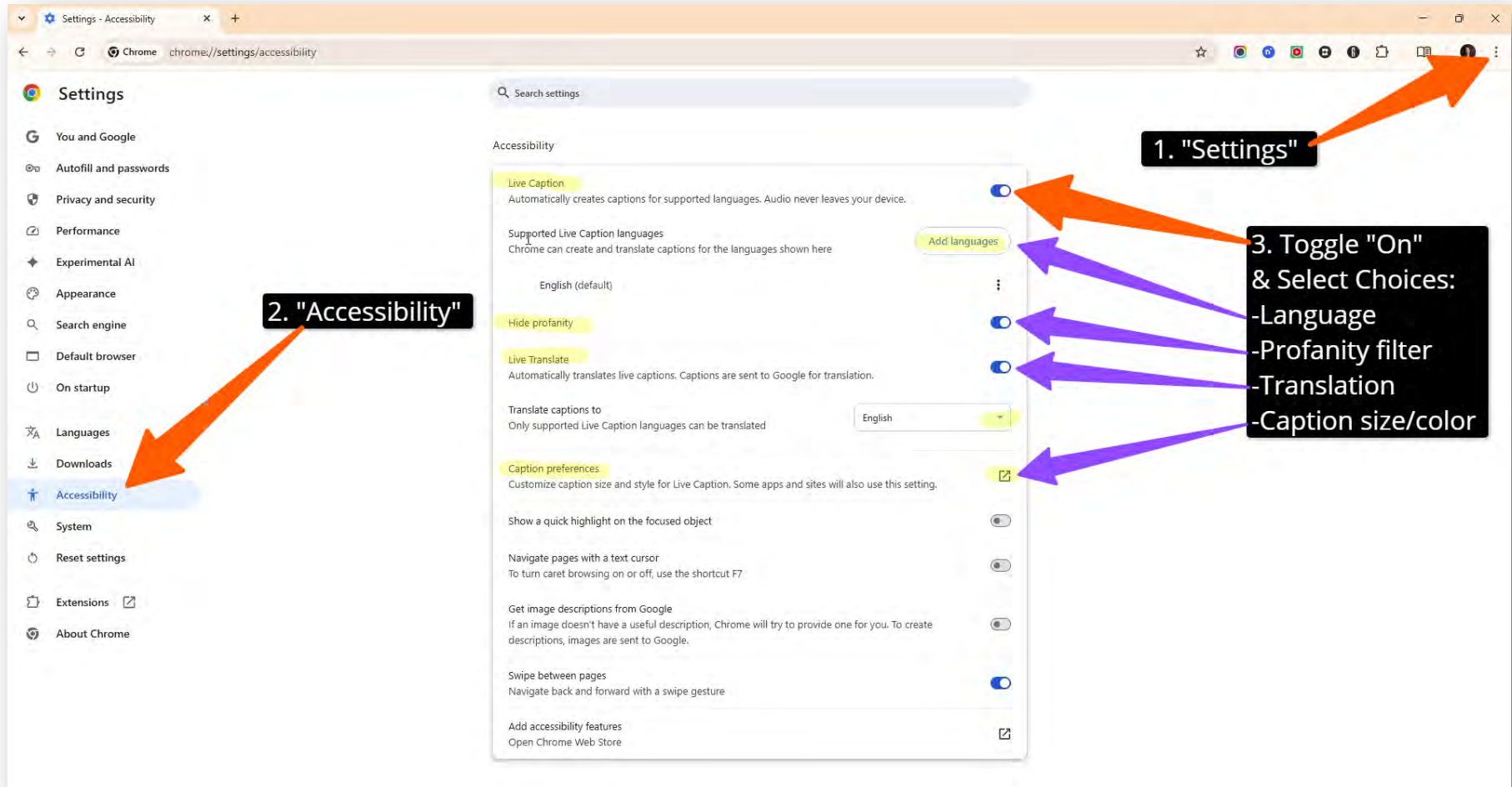
- **Live Transcribe\***
  - Pre-installed on Pixel & Galaxy\*, some others
  - Standalone app downloadable from Google Play store
  - Captures speech & sound
  - Can also add typed responses
  - Can download language(s) for use offline
  - Transcription history on/off; deletes after 3 days; can copy-paste to export
- **HIPAA Compliance?**  
*Notice “Use limitations” disclaimer*

\*Links available in Resources handout

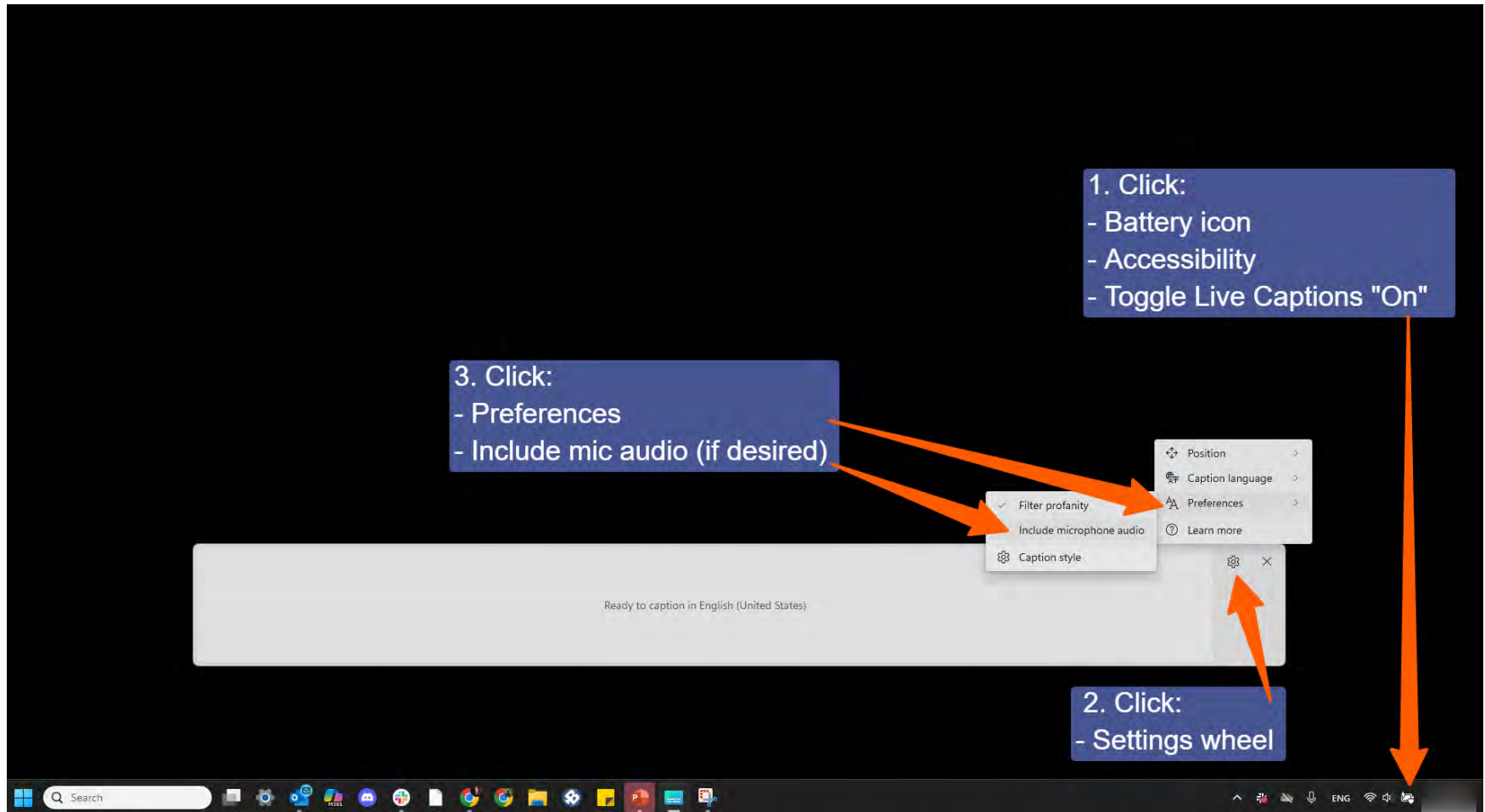
# ASR: Android Phones (continued)

- Live Caption\* (as of Pixel 2)
- Expressive Captions\* (as of Android 14)
  - Example: “Let’s give it up for the technology that’s available today! [applause] These resources are AMAZING!”
- Can type responses during phone calls (as of Pixel 6)
- Accessibility Shortcuts\* are also possible

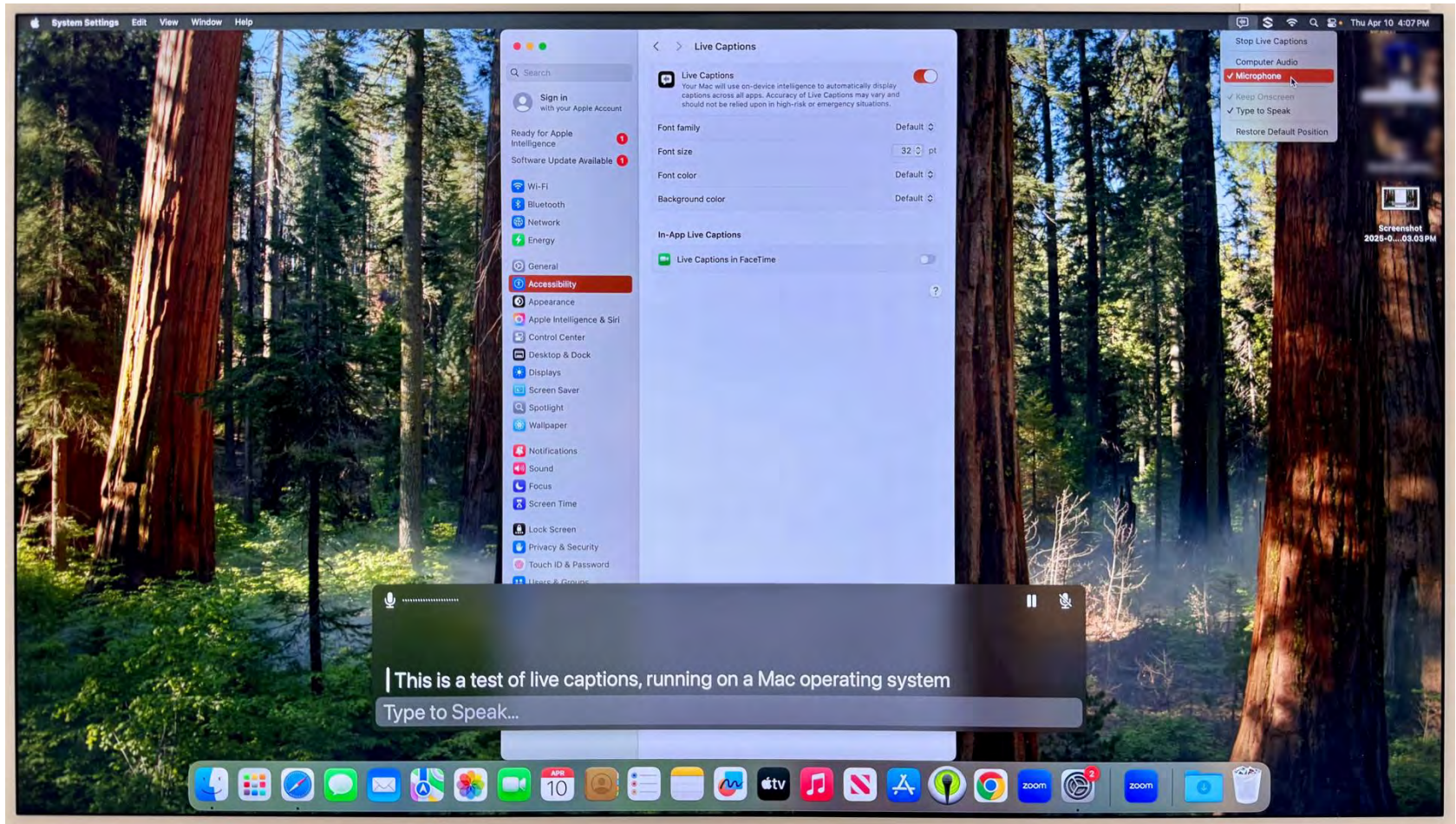
# Browser Captions: Google Chrome Live Captions\*



# System Captions: Windows 11 Live Captions\*



# System Captions: Mac OS Live Captions\*



\*Link available in Resources handout

Image source: Presenter Bastian

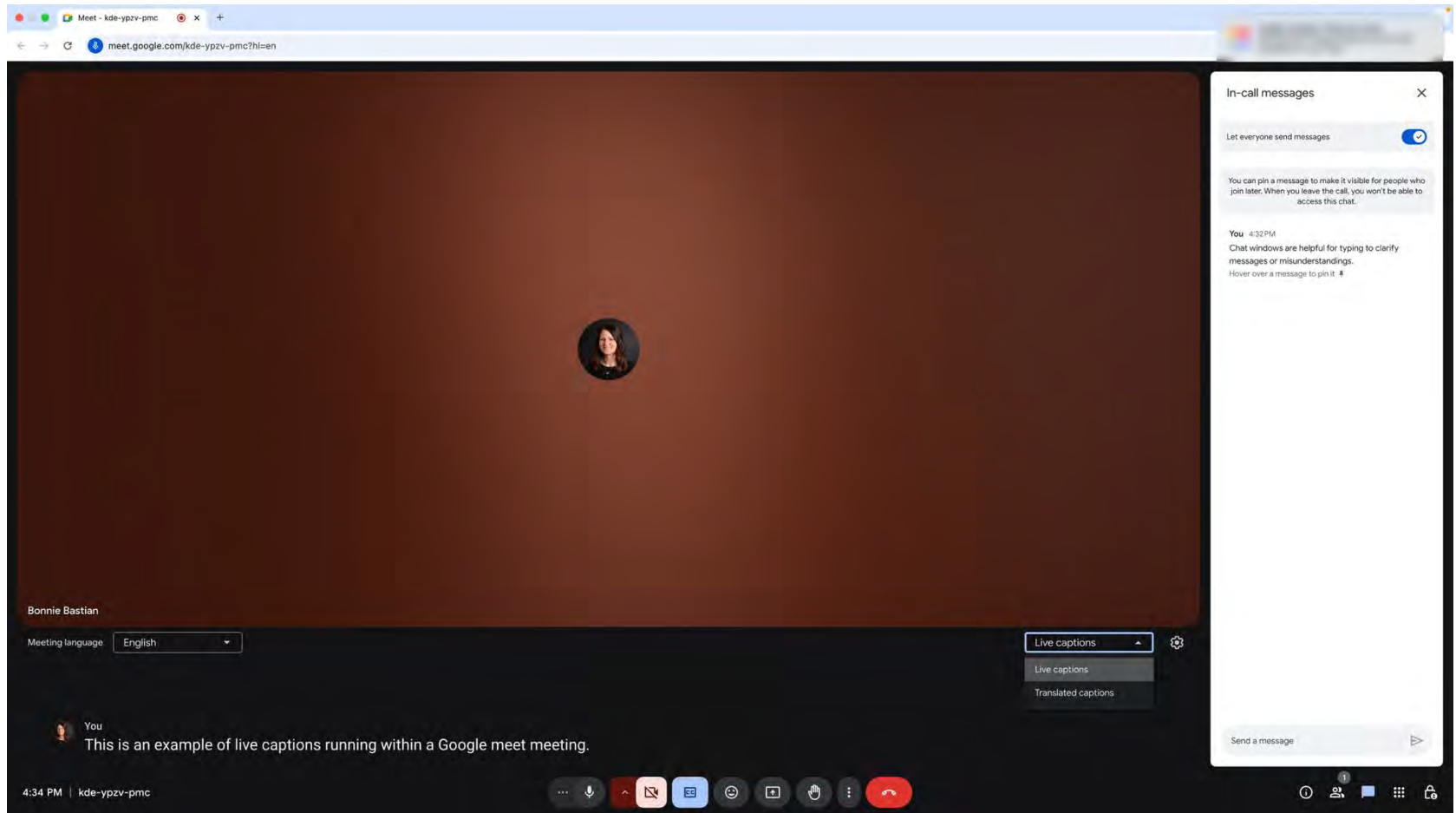
# ASR: Presentation Slides

- **Consider Readability**
  - Punctuation, size, color
  - Number of lines at a time
  - Pace, lag time
- **Google Slides\***
- **Microsoft 365: Live Presentations\*** in PowerPoint
  - Captions or Subtitle translations available
  - Simultaneous, personalized language translations
  - Possible support strategy for Low Vision

# Video / Phone Calls

- **Caption Phones with Captioning Service**
  - No cost to qualifying users
  - ASR (most), human transcriptionist (some), or both
  - Landline phones &/or apps
- **Google Meet**
- **Microsoft Teams**
- **Zoom**
- High stakes calls should *always* employ a qualified interpreter or human captionist, matched with an individual's preferred/most reliable communication modality.

# Video Calls: Google Meet\*



\*Link available in Resources handout

Image source: Presenter Bastian

# Video Calls: Microsoft Teams\*

The screenshot shows a Microsoft Teams meeting window titled "Meeting with Bonnie Bastian". The interface includes a top toolbar with icons for Chat, People, Content, Feedback, and a "More" menu. A blue callout box labeled "1. In a call, Click:" lists the steps: "... More", "Language and speech", and "Show live captions". Orange arrows point from these steps to the "More" menu, the "Language and speech" option, and the "Show live captions" button respectively. Below the main video area, a blue callout box labeled "2. Then click on Settings wheel to customize Caption styles" has orange arrows pointing to the settings wheel icon and the "Caption styles" option in the bottom right corner. The "Caption styles" panel is open on the right, showing options for Font colors, Background colors, Font size (set to Large), Height (set to Medium), and Position (set to At bottom). At the bottom of the screen, a chat bubble from "Bonnie Bastian" says "This is a preview of live captions within Microsoft Teams."

1. In a call, Click:

- ... More
- Language and speech
- Show live captions

2. Then click on Settings wheel to customize Caption styles

Meeting with Bonnie Bastian

07:49

Chat People Content Feedback More

Meeting info

Video effects and settings

Audio settings

Language and speech

Settings

Show live captions

Caption styles

Font colors

Background colors

Font size

Large

Height

Medium

Position

At bottom

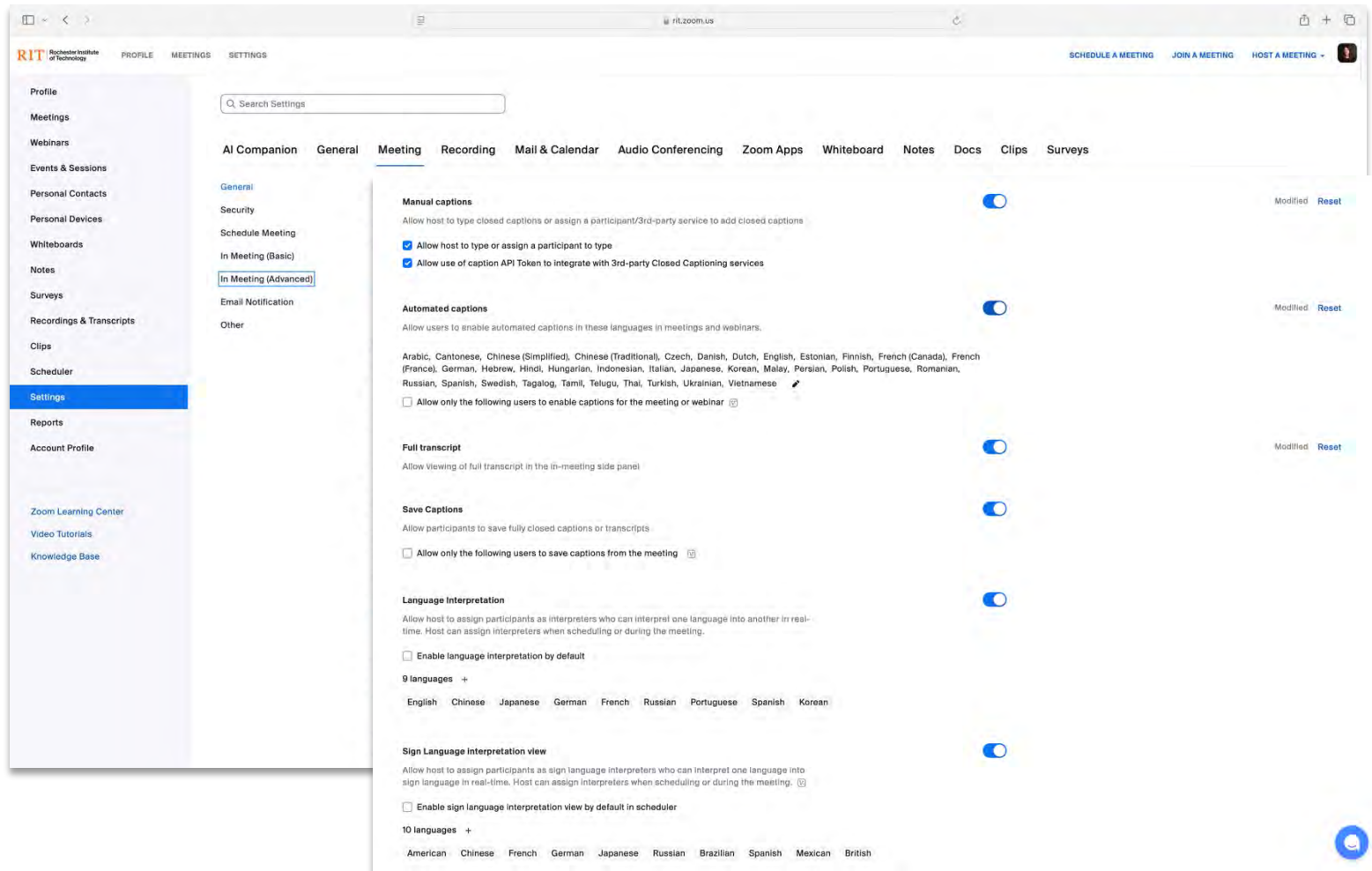
Bonnie Bastian

This is a preview of live captions within Microsoft Teams.

Language settings

Caption styles

# Video Calls: Zoom\*



\*Link available in Resources handout

Image source: Presenter Bastian

# ASR Tips: Accuracy Boosters

- Microphone quality & proximity
- Monitored speaking pace
- Reduced/eliminated background noise
- Reliable internet connection
- Profanity filters (as appropriate)
- Helpful features to look for within ASR:
  - Punctuation
  - Readable pace
  - Ability to scroll back in time or to save transcripts
  - Speaker identification markers

# Modifying Language in Reports/Materials

- Translation Tools
- Reading Level Conversion
- Microsoft Immersive Reader\* (Edge browser\*)
- Artificial Intelligence (A.I.) Large Language Models
- *Reminder: Remove patient identification first*

# Next Steps

- Explore, perpetually
- Equip
  - Help ensure your students/clients know their accessibility options
  - Practice how to introduce/seek permission for use of accessibility tools with a new conversation partner
- Enhance
  - Share ideas, needs, update requests with developers

# Future Tech Solutions

- Research at NTID\*
  - *Representation matters* – Who is on the research & development team?
- Augmented Reality (AR) glasses:
  - Automatic Speech Recognition (ASR) captioning
  - Video Remote Interpreting (VRI)
- Sign Language Recognition software & products
- Haptics
  - Vibrotactile feedback via wearable devices, in response to environmental sounds or speech

# Q&A

[bonnie.bastian@rit.edu](mailto:bonnie.bastian@rit.edu)

# Survey: Please provide feedback

A secondary mission of RIT/NTID is preparing professionals to work with the deaf/hard of hearing population. Your completion of this 5-question survey will help us monitor our impact and bring you the content you want and need!

**Course Title:** Apps for Access: Bridging Deaf-Hearing Communication

**Survey Link:**

[https://rit.az1.qualtrics.com/jfe/form/SV\\_3jSsLz8ViyPZDsqq](https://rit.az1.qualtrics.com/jfe/form/SV_3jSsLz8ViyPZDsqq)



# Congratulations!

- You completed the course and can move on to the exam!
- From your account:
  - Go to pending Courses
  - Choose take exam