

# Learning to Zoom

*Installation and functional training to learn, work, and collaborate remotely.*

Written by Jordan Mohr

## Learning Objectives

After reading this handout, students should be able to:

- Download and install the Zoom client.
- Log in to Zoom using their UD account.
- Configure their microphone and video camera (if applicable) and other settings.
- Connect to a Zoom Meeting.
- Use participant signals to communicate with the host.
- Use the chat to ask questions.
- Use the breakout room functions to facilitate peer-to-peer learning.
- Use annotations to participate in screen sharing.
- Host your own Zoom meetings for collaborating on your own.

## Introduction

*What is the bright side of this experience?*

We recognize that these are extraordinary circumstances, but we want to remain optimistic and use this as an opportunity to learn new skills and broaden your horizons. **Business leaders and future employers are increasingly citing** transferable “soft skills”, such as **adaptability, critical thinking,** and the **abilities to work in teams and to contextually develop and apply knowledge**, as among the **most desirable traits when hiring employees**, even over “hard skills” like laboratory techniques and content knowledge<sup>1,2</sup>. This trend is expected to continue as the demands of the workforce evolve. Essentially, employers want employees that can adapt to their business’s specific needs and are willing to teach them the specifics once they arrive.

Let’s view the current circumstances as an opportunity to grow our adaptability and develop our “soft skills”. In 2016, 43% of employees reported working remotely with some frequency and that work-from-home flexibility plays “a major role in an employee’s decisions to take or leave a job<sup>4</sup>. In other words, **you or someone you work with will inevitably work remotely**. Thus, knowing how to work and collaborate remotely will better prepare you for the workforce and may become a valuable skill that you can list on your resume and/or graduate/professional school applications.

You already have some experience working with remote collaboration technology via Google Docs. We will continue to work with Google Docs and will now incorporate a common teleconferencing technology to the mix - Zoom. **We will be using Zoom to teach lab, studio, and lecture**. Zoom allows large scale video conferencing with advanced features for audience participation. It is used by many educational institutions (and businesses) because of these functions - hand raising, group chats, reactions, breakout rooms, screen sharing, annotations, recording, and more! We will discuss each of these aspects as they pertain to you in our course.

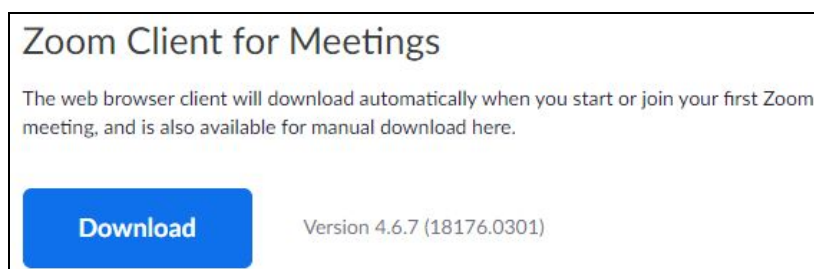
## Downloading and Installing the Zoom Client for Meetings

We recommend downloading and installing the Zoom client directly to your computer and while this handbook features screenshots from the Windows client, the Mac client has an identical interface. UDeploy ([udeploy.udel.edu](http://udeploy.udel.edu)) has instructions on how to install Zoom.

There are two ways to download and Install Zoom:

1. Join an ongoing Zoom meeting, which will ask you to download the client.
2. Manually install the client prior to joining a meeting.

Since we want to troubleshoot any issues before you need to join a meeting, we will install the client manually. Go to [zoom.us/download](https://zoom.us/download) and click the download link for “Zoom Client for Meetings”.



*Figure 1. Download button for zoom. Version number may differ.*

This will download the appropriate installer for your Operating System (a .exe installer for Windows or a .pkg installer for Mac). Run either installer and follow the prompts to install Zoom on your system. **Follow the login instructions in this handout immediately after downloading zoom.**

## iOS/Android/Web Clients

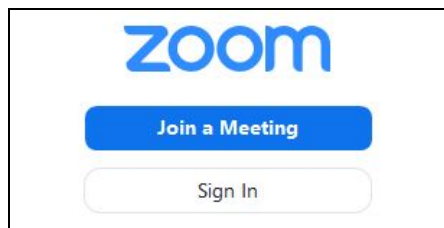
The mobile (iOS/Android) clients offer similar functionality as the computer clients, but may have different layouts and it may be more difficult to manage using Canvas, Google Docs, and Zoom simultaneously on a single mobile device. However, the mobile apps **are not compatible with Zoom polls**. If your instructors are using Zoom polls, then you **must** attend using a desktop (Windows/Mac/Linux) client in order to participate in the polls.

The web client has additional limitations - it also cannot participate in polls and it cannot use annotations when screen sharing nor can it record meetings.

## Logging in to Zoom with your UD Account

You **must login with your UD Account** so that you can fully participate in your instructor's preparations. Some activities, like pre-made breakout rooms, require the instructor to prepare the rooms ahead of time using your UD email. If you do not login, you will connect as a guest user and will need to be manually added to your breakout room.

The first time you run the Zoom client, you should see the following window:



**Figure 2.** Zoom window after launching zoom. Click the “Sign In” button.

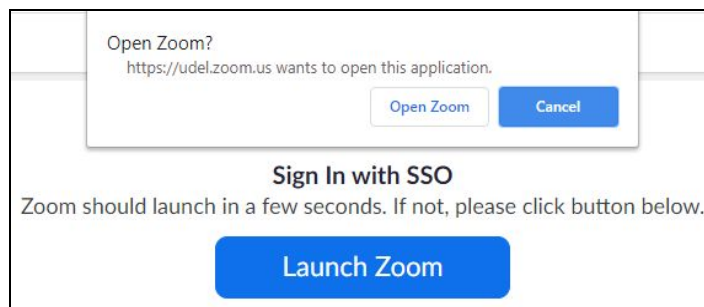
Click “Sign In” to go to the login screen and select the option on the right “Sign in with SSO” and type in “udel” for the company domain SSO. Alternatively, you can use “Sign in with Google”.

**Figure 3.** Zoom client sign in window (left), SSO Company Domain (right).

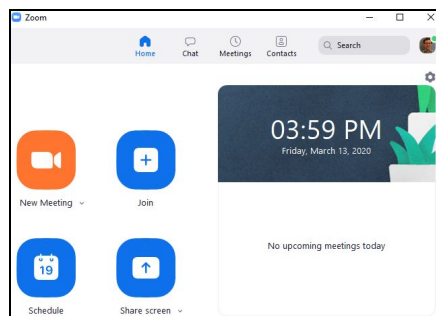
This will bring you to the UD (CAS) login portal if you are not signed in to your UD account.

**Figure 4.** Login to the UD (CAS) to login into your UD account.

After you sign in, you will receive a prompt to launch the Zoom application.



**Figure 5.** Finishing SSO sign-in. Click “Open Zoom” to open zoom with your credentials. Zoom will launch and go to the home screen. You should only have to login like this once.



**Figure 6.** Zoom client home screen. The clock and meeting reminder space will not show up if the Zoom window is very small. You can enlarge your window if you want to see this.

## Configuring Zoom (audio/video setup and other settings)

You should setup and test your audio and video after launching zoom. You may also want to adjust some of the other settings now (or later once you have a feel for the program). Access your settings by hitting the gear icon on the home screen.

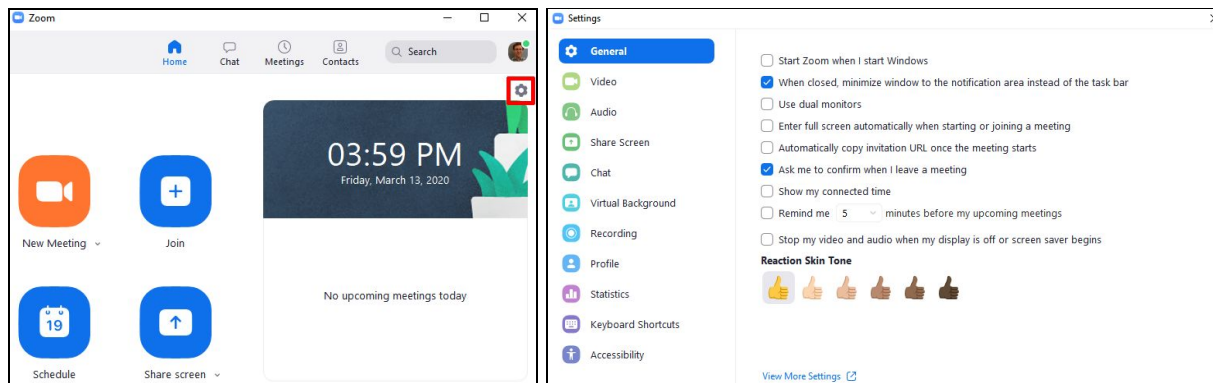


Figure 7. Click the gear icon on the home screen (left) to access the settings (right).

## Setting up and testing your microphone (and speakers)

Go to the audio tab in the settings page to set up your microphone and speakers.

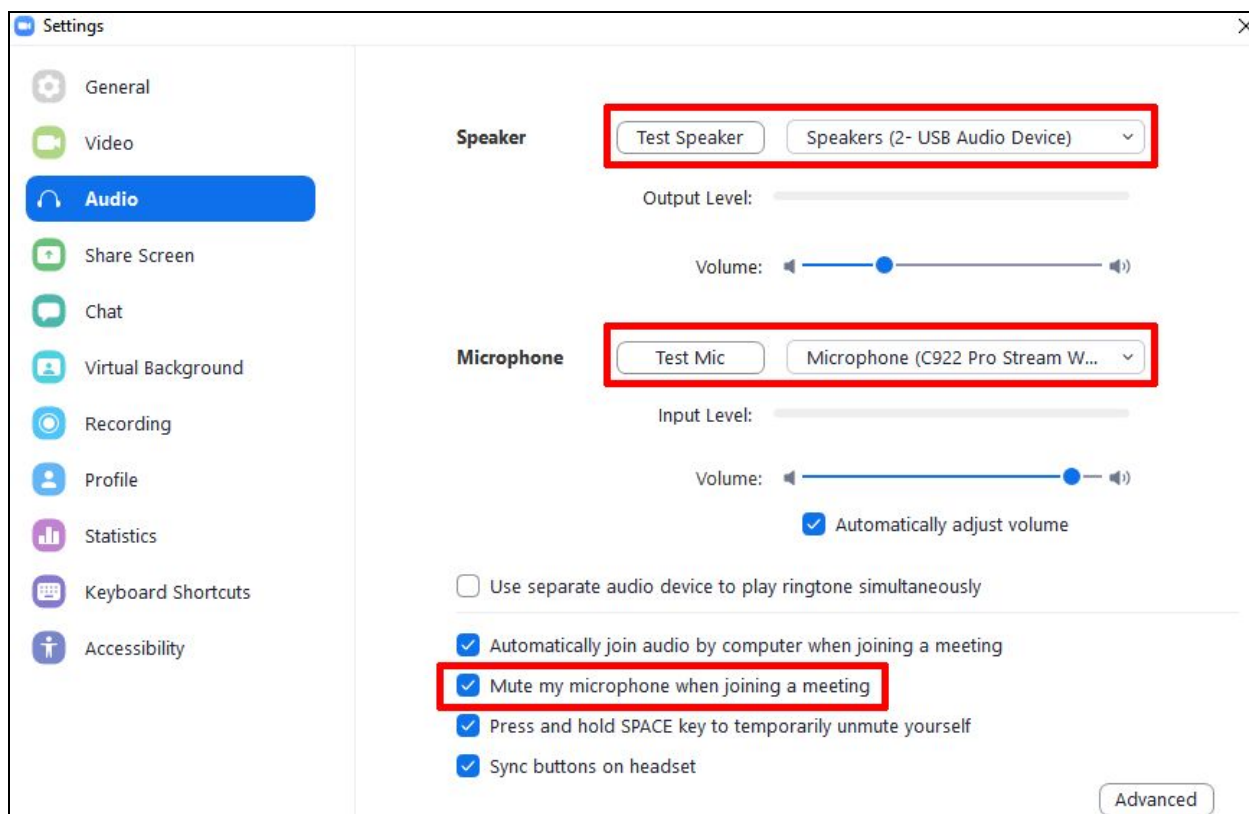


Figure 8. Audio settings tab in Zoom client.

Use the drop down menus (Fig. 8, top red boxes) to select your microphone and speaker from the available devices. The “same as system” option will use whatever device is currently

designated as the default system device. If this option doesn't work for you, try selecting other devices from the list until you find one that does work. We recommend turning on "Mute my microphone when joining a meeting" (bottom red box). Generally speaking, it is good practice to mute your microphone when you are not talking.

**To test your speaker**, click the "Test Speaker" button to play the test "Meeting Dialing" noise. The "Output level" bar underneath should flash colors as the test sound plays (corresponding to how loud the sound is).

### Troubleshooting the Speakers:

- If you cannot hear the test sound...
  - Make sure your computer is not muted.
  - If your computer is unmuted, try increasing the volume using the volume control bar below the "Output level" bar, and/or using the system sound.
  - Try selecting a different speaker from the available device menu.

**To test your microphone**, click the "Test Mic" button. The "Test Mic" button will turn into a "Recording" button and your microphone will start recording audio. Speak into the microphone for a few seconds and then hit the "Recording" button again. The button will then change to a "Playing" button and your audio will be played back to you. While recording and playing back, the "Input level" bar will flash colors based on how loud the audio it picks up is.

### Troubleshooting the Microphone:

If you do not hear any audio during the playback...

- "Input level" bar did not flash while recording and playing back - Zoom did not hear any sound. Check that your microphone is not muted (either physically or in your system settings). If your microphone is not muted, then try another microphone from the available device menu.
- "Input level" bar flashes while recording and playing back - Zoom recorded a sound. Check that your speakers are not muted or raise your microphone volume.

## Setting up and testing your video

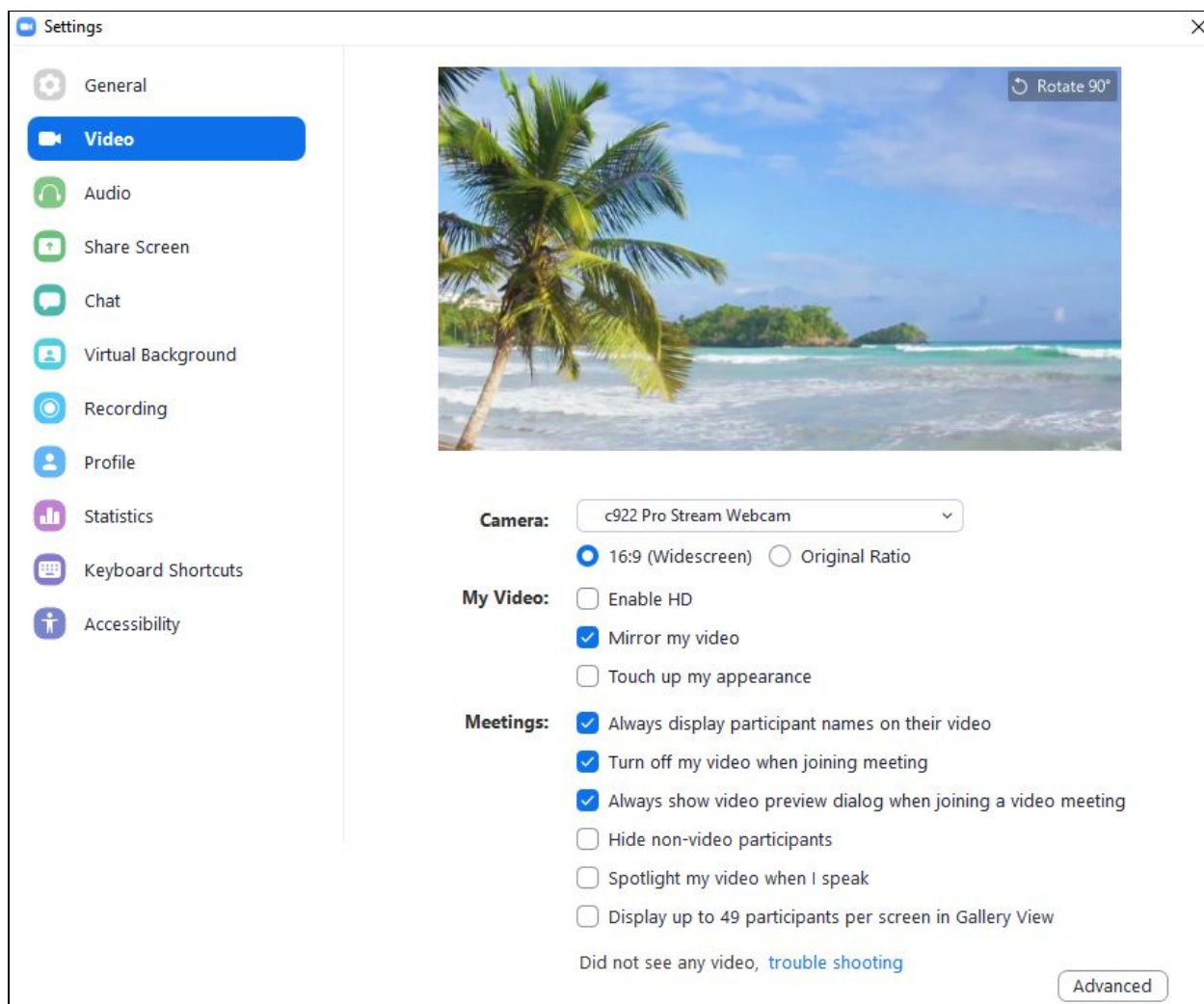
It is **not required** for you to have or use a webcam with zoom. We understand if you have personal reasons or technical reasons for not wanting to do so - like not having sufficient bandwidth to stream video.

To setup up your video, go to the video tab in the settings page (Fig. 9) and select your camera device from the available camera devices. You should immediately see the camera recording in appear (Fig. 9 - beach photo box). You do not need to enable HD in the video settings.

### Troubleshooting your video

If you do not see any video after selecting your camera...

- Try selecting a different camera from the list.
- Make sure your camera is not physically blocked or covered.
- Check to see if your video camera has a separate application on your computer that may be overriding it in zoom.



*Figure 9. Video settings tab in Zoom client.*

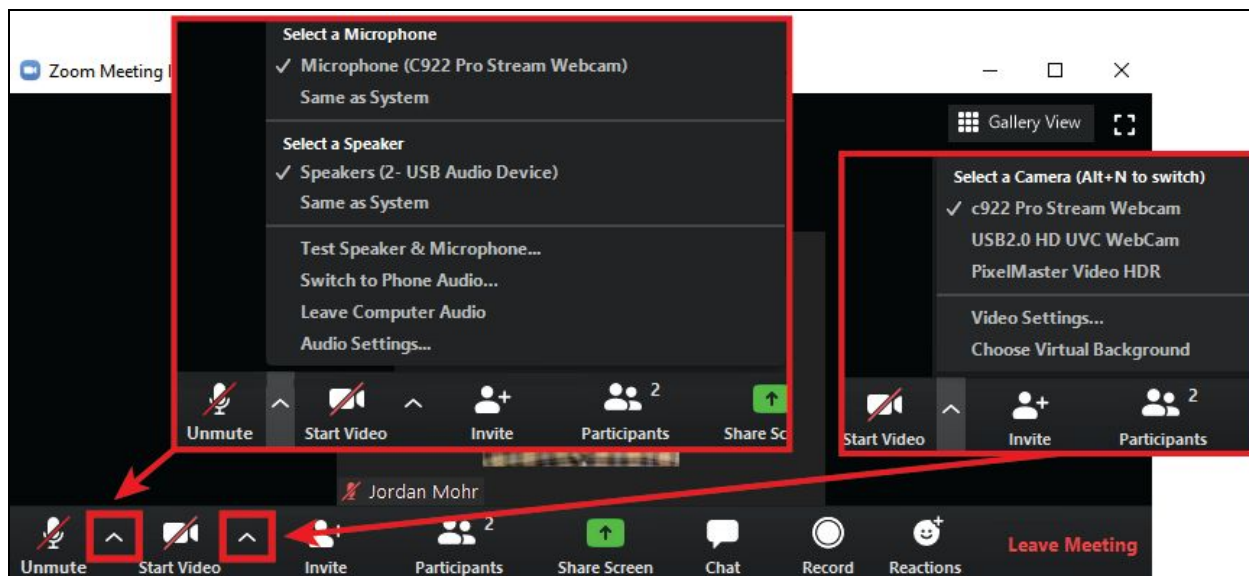
## Other Settings

Take a few minutes to check the other settings available on Zoom. While you do not need to change any now, you may find a few that you might want to change after you become more familiar with the software. Here are a few settings to consider:

- (Video) Turn off my video when joining meeting
- (Audio) Automatically join audio by computer when joining a meeting
- (Audio) Mute my microphone when joining a meeting
- (Share Screen) Scale to fit shared content to Zoom window
- (Chat) Show unread message badge (1) for channels
- (Chat) Move messages with new replies to the bottom of the chat
- (Virtual Background) - Consider a virtual background if you don't want people to see the space you're zooming from. Be sensible and do not pick a distracting background.
- (Accessibility) Always show meeting controls
- (Accessibility) Chat display size

## Changing your Audio/Video Device with the Meeting Control Bar

If you have already joined a meeting, you can use the control bar to change your audio and visual devices using the arrows next to your mute and video buttons.



**Figure 10.** Quick access to audio and video devices and settings via the control bar.

You can also use these shortcuts to access the audio and video settings described previously.



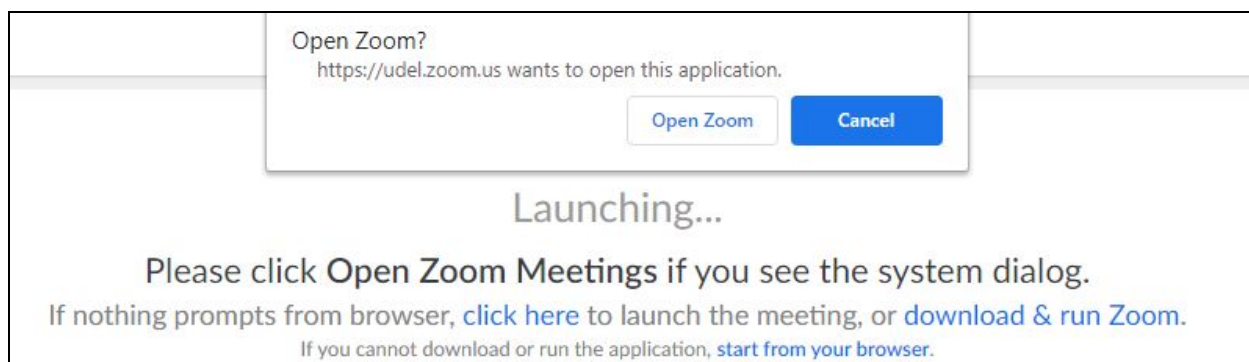
## Connecting to a Zoom Meeting

There are two ways to connect to a zoom meeting:

1. Automatically using a link
2. Manually using the meeting ID

### Connecting to a Zoom meeting with a link

Clicking a zoom invite link should open your web browser and ask you to Open Zoom.

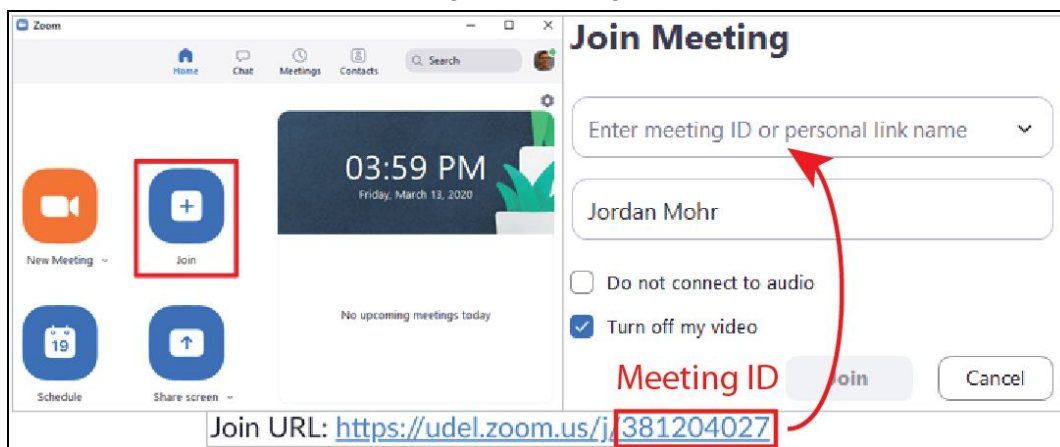


*Figure 11. Open Zoom prompt after clicking a Zoom meeting link.*

Click "Open Zoom" and your Zoom Client will open and automatically connect you to the meeting.

### Manually connecting to a Zoom meeting with the Meeting ID

In the event that the above method does not work, you can manually join a meeting using the join button in the Zoom client and entering the Meeting ID.



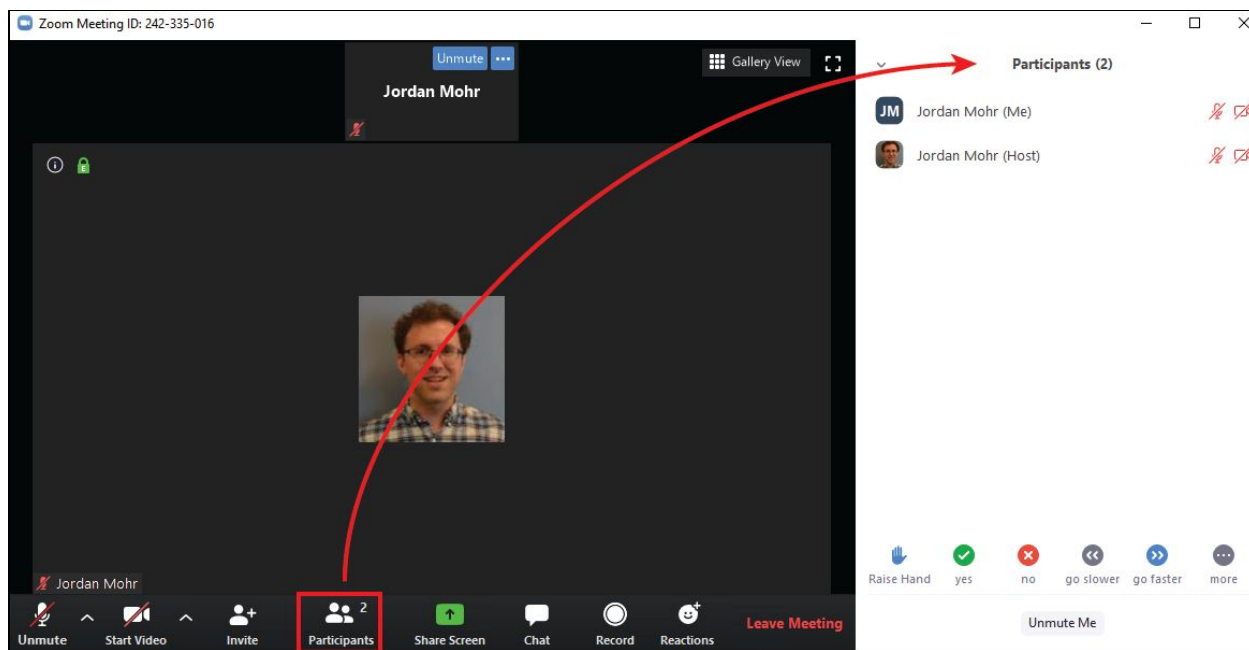
*Figure 12. Join button on Zoom client's home screen (left) and join meeting window (right). The Meeting ID is the last 9 digits of the join URL (bottom). Copy the digits into the join meeting window to connect.*

## Using Participant Signals to Communicate with the Host

Zoom has a variety of built-in features to allow participants to signal their needs to the host.

### Accessing the Participants Panel

These signals can be accessed through the participants panel.



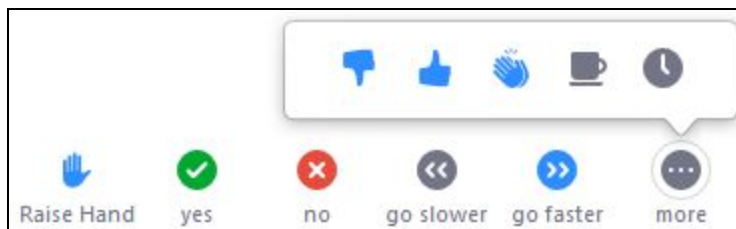
**Figure 13.** Click the “Participants” button (box) on your control bar to open the participants panel (arrow).

The participants panel has several functions:

1. It lists all current participants. By default, it will list your name first, the hosts second, then all the unmuted participants, and lastly all the muted participants.
2. It shows the status and signals of all participants to the right of each participant’s name.
3. It contains the signal controls you use to signal the host.











### Using Signals (Nonverbal Feedback Icons)

There are 10 signals that participants can use through the participants panel. They allow participants to answer questions and express their feelings about the content and the pacing (Zoom does **not** keep a record of participant signals). Your host can remove or reset participant signals if they need to, but they cannot add signals to participants.



**Figure 14.** Participant signals (the nonverbal feedback icons) as they appear in the participant panel. Click the “more” icon to access more signals (shown).

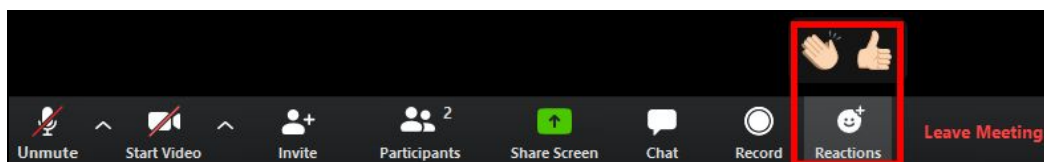
The signals are:

- |   |   |  |
|---|---|--|
| 1.  - Raise Hand | 5.  - Go Faster. | 8.  - Clap.         |
| 2.  - Yes.       | 6.  - Dislike.   | 9.  - Need a break. |
| 3.  - No.        | 7.  - Like.      | 10.  - Away.        |
| 4.  - Go Slower. |   |  |

Use signals to indicate to your instructor when you have questions, if you feel they should change the pace of the lecture, or to respond to content in the lecture. You can also indicate if you need a break or are away from your device.


## Using Reactions

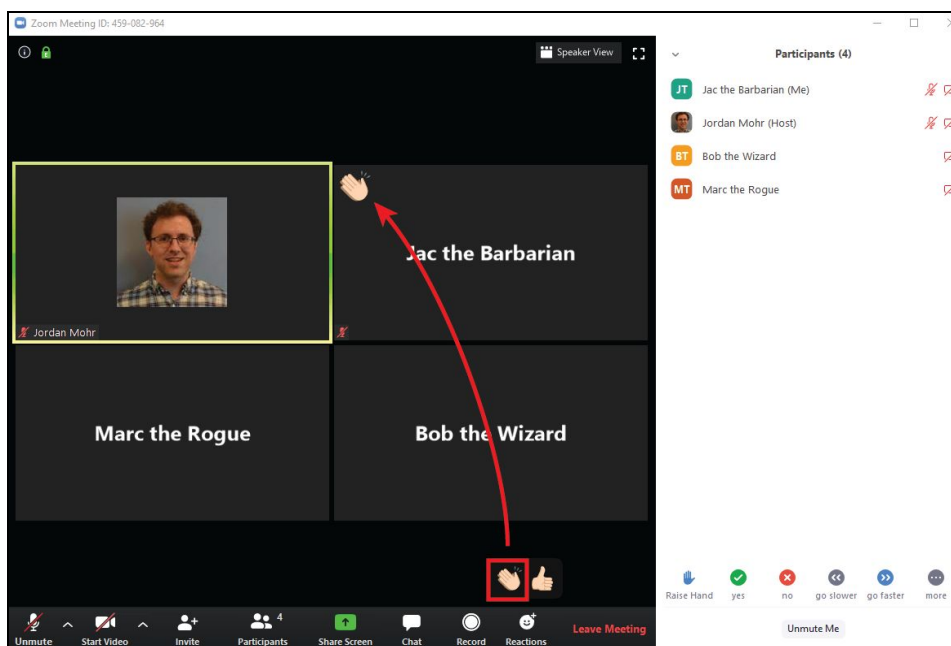
Another way to interact with your host is with Reactions. Reactions create a short animation on your video or participant feed to visually cue your host.



*Figure 15. Click Reactions on your control bar to send reactions.*

There are two reactions available:

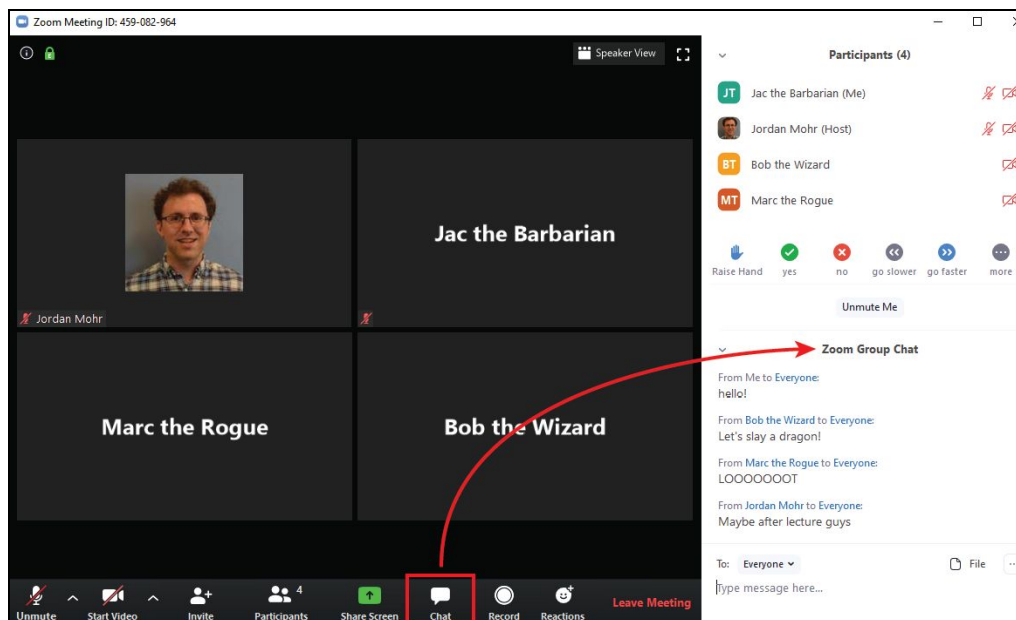
- |   |   |
|---|---|
| 1.  - Clap | 2.  - Thumbs up |
|---|---|



*Figure 16. Selecting a reaction will show it on your participant window (arrow) for 5 seconds.*

## Using the Chat

Zoom has a built in messaging app which you can access with the chat button. If you have the participants window open, this will open the chat below it.



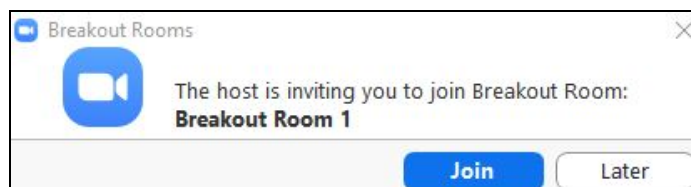
**Figure 17.** Using the chat button (box) to access the chat panel (arrow). Note that you can have both the chat and participants panel open at the same time.

You can use the chat to message everyone, the host, or other individuals in your meeting. The host controls the chat settings and can decide with whom, if anyone, participants can communicate. You can also share files and save the chat for later.

The chat is a good place to ask questions to your class or answer your classmates questions. You can also use the chat to ask questions directly to your host.

## Participating via Breakout Rooms

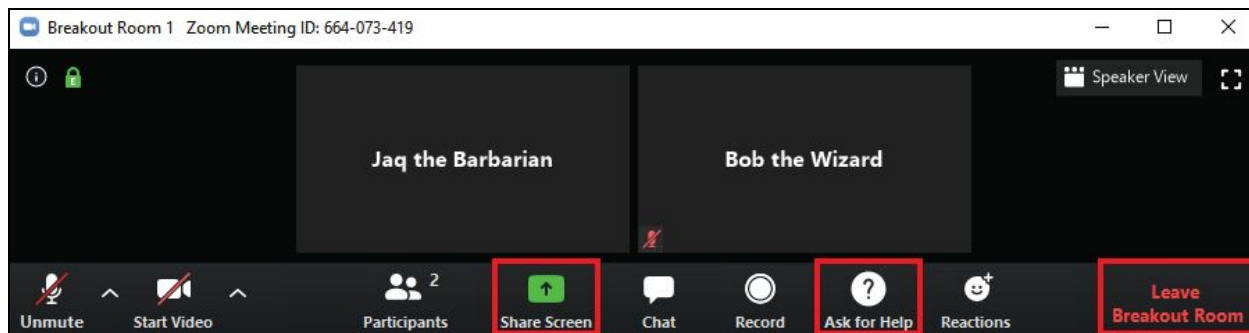
We will use “Breakout Rooms” to facilitate group work, which function like mini-zoom meetings. The host can automatically assign students to breakout rooms. The host can choose to send this as an invitation (Fig. 18) or can automatically move all participants into the breakout rooms. Note that only the host can make breakout rooms, not participants.



*Figure 18. Breakout room invitation.*

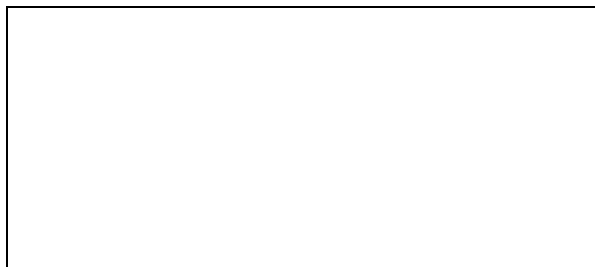
Breakout rooms are relatively private - participants are only able to see and communicate with the other members of their breakout room and the host cannot see them without joining their room. Additionally, if the host is recording the meeting, it will not record the breakout rooms. Participants can record their breakout rooms if participant recording is enabled by the host.

Most of the meeting controls from the main session are available in the breakout room, including audio, video, and screen sharing all function in the breakout room and users can even “Ask for Help”, which will call the host into their breakout room. Participants may freely switch between their breakout room and the main session, if the host allows it.



*Figure 19. Breakout Room and breakout room control panel. Note the Share Screen, Ask for Help, and Leave Breakout Room buttons (boxes).*

The host can broadcast messages to all breakout rooms, for instance to tell participants to move on to the next step of a task or to warn them the rooms will be closed soon. The host can also immediately close the breakout rooms or provide a timer to further warn people that rooms are closing soon.



*Figure 20. Breakout room closing warning. Press “Return to Main Session” to return to the main meeting.*

## Screen Sharing

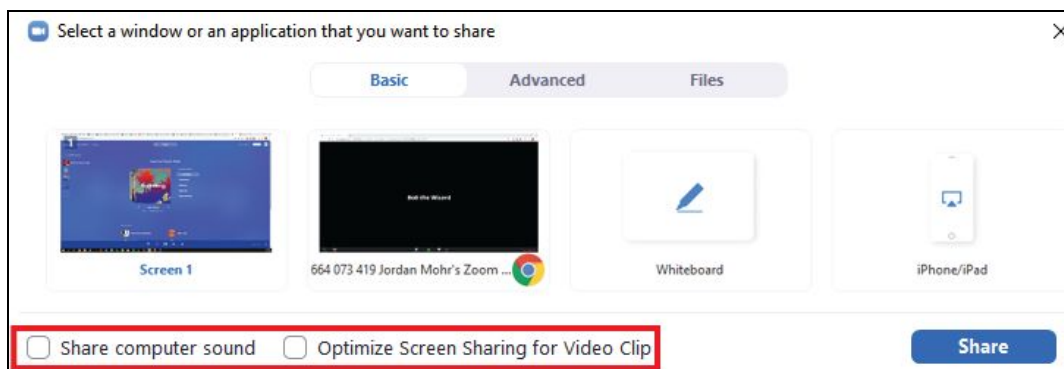
Depending on the purpose of the Breakout Room, you (or others) may want to share your screen to facilitate group work. Click “Share Screen” to open the share screen window (Fig. 20).

The basic tab in the share screen window allows you to share either:

1. Your entire computer screen.
2. A specific application window - like a pdf viewer, Google Chrome, etc.
3. Whiteboard - A free drawing space provided by Zoom.
4. An iPhone or iPad - you probably will not use this feature.

Just click on the option you want to share and the other members of your room will see your screen or window as it appears on your computer!

For our group work and collaborations, you will probably not need to use the “Advanced” and “Files” sharing tabs.



**Figure 21.** The share screen window. Check the “Share computer sound” and “Optimize Screen Sharing for Video Clip” options (red box) if you plan to share sound and/or video.

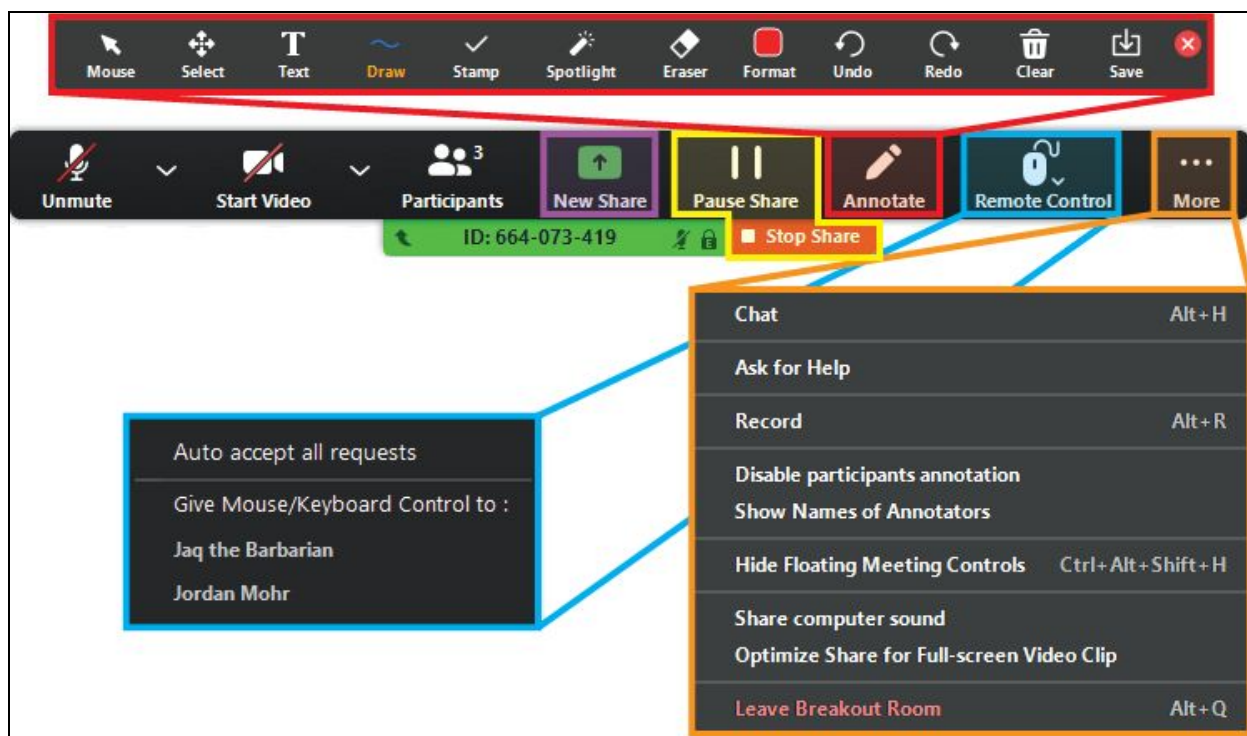
## Managing and Annotating your Screen Share

Sharing your screen will open the Screen Share Control Bar (Fig. 22). This bar contains a variety of tools to manipulate your Screen Share and manage how participants interact with it.

You can move the Screen Share control panel to anywhere on your screen by clicking and dragging anywhere on it. People viewing your screen share cannot see the control panel, so do not worry about it obstructing their vision.

The “New Share”, “Pause Share”, and “Stop Share” buttons allow you to manage your Screen Share by starting, pausing, or stopping your Screen Share.

The “Annotate” button will open the annotation control panel, which contains a variety of text, drawing, highlighting, and other annotation tools and allows you to draw directly on your screen share. This is useful when presenting or trying to direct the attention of your viewers. The “Clear” button allows you to clear all annotations, or only a specific user's annotations (details in the next section on how to annotate other screen shares). The annotate button is not available on the Zoom Web client.



**Figure 22.** Screen Share control panel with highlighted and expanded buttons. Start a new Screen Share (purple box), pause or stop the current Screen Share (yellow box), annotate your Screen Share (red boxes), manage remote control (blue box), and extra options (orange box).

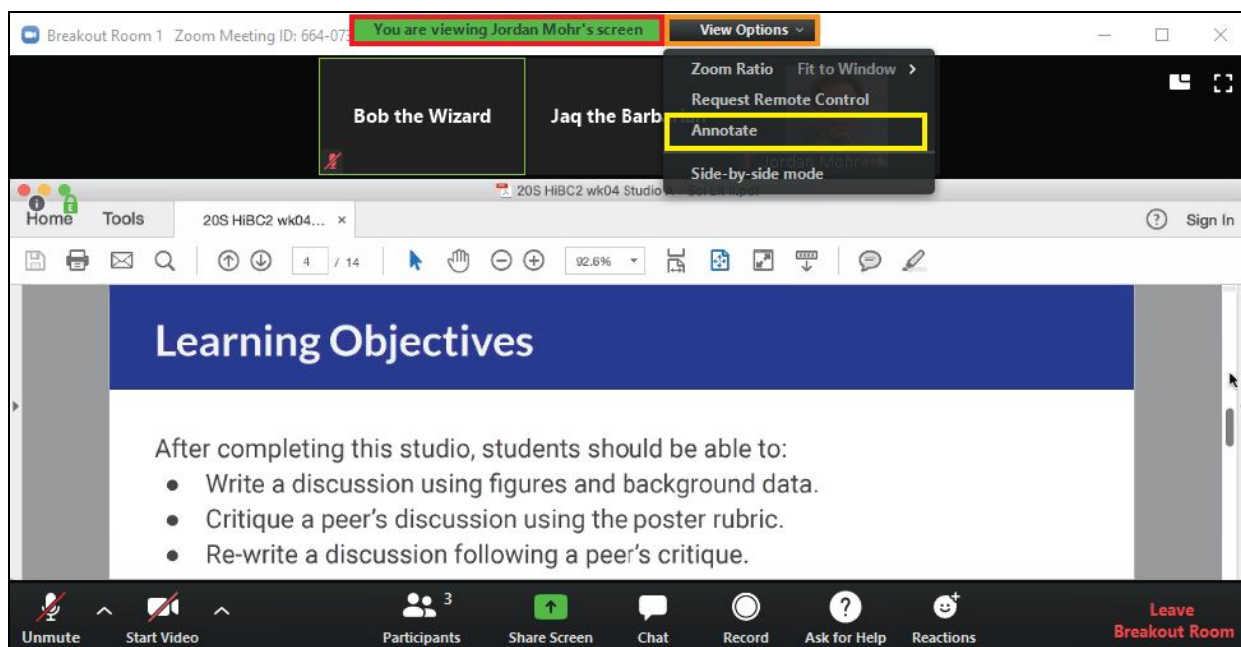
The “Remote Control” button allows you to give users control over the screen you’re sharing. Be careful when using this button as it gives them control over your mouse and keyboard. This is useful if you need the other party to show you how to do something.

The “More” button contains all of the original breakout room controls and a few options for managing your Screen Share. Notably, you can prevent participants from annotating your screen or show the names of participants as they annotate your screen (more details below on participant annotations). You can also turn on the “Share computer sound” and “Optimize Share for [Full-screen] Video Clip” options if needed.

## Annotating Someone Else’s Screen Share

Zoom allows participants to annotate active screen shares (unless the host has disabled this feature, you are using the Zoom web client, or the screen is being shared by someone on the Zoom web client).

You can annotate someone’s Screen Share by clicking the “View Options” button on the View Screen control panel and selecting “Annotate” (Fig. 23). This will open the annotation control panel, which has the same functionality as when you annotate your own Screen Share. If you do not want participants to annotate your own screen share, turn off this feature using the “Disable participants annotation” in the “More” button of the Share Screen control panel (Fig. 22).



**Figure 23.** Accessing participant annotations on a shared screen. The View Screen control panel shows the current host (red box). The view options button (orange box) will allow you to annotate the shared screen (yellow box) if enabled.



## Hosting a Zoom Meeting

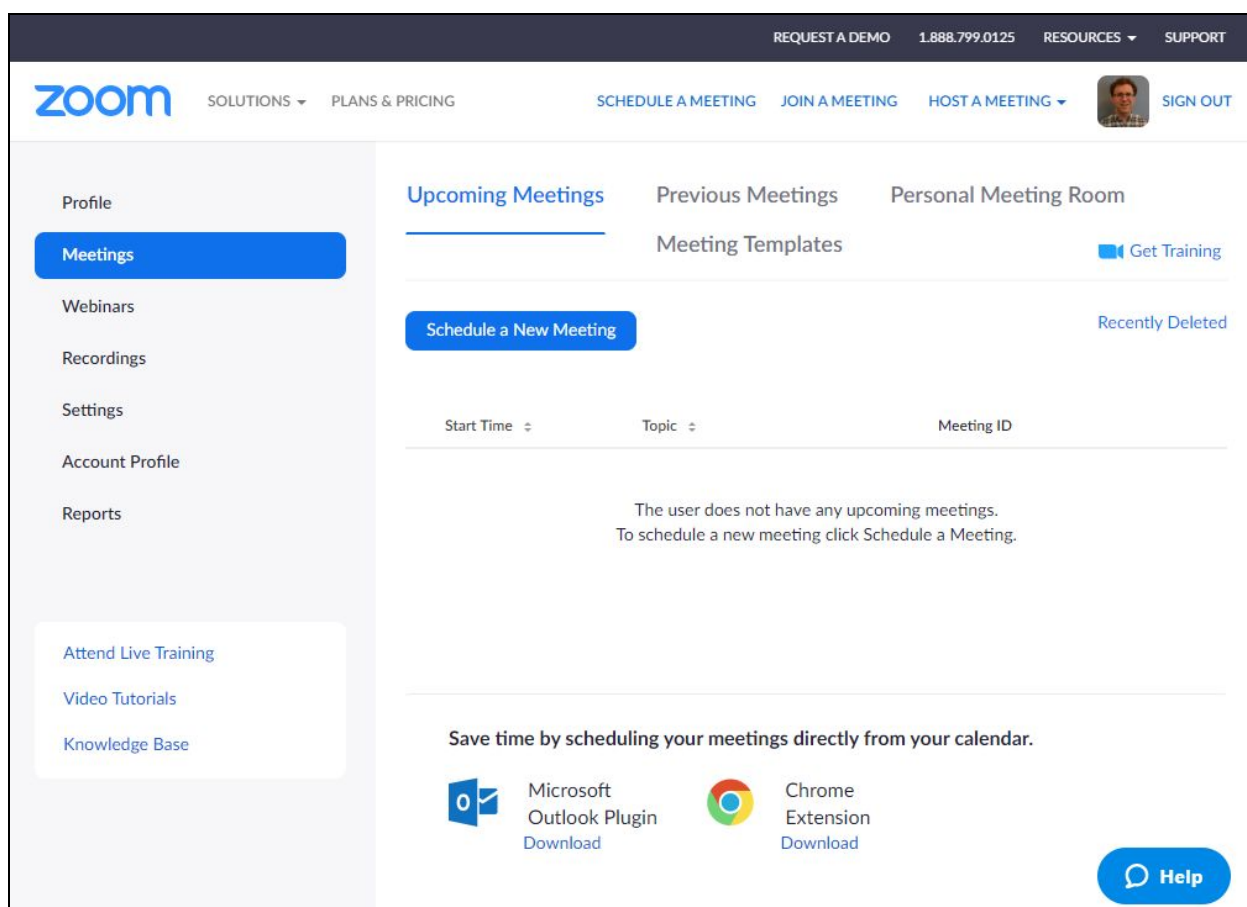
There are two methods to host a Zoom meeting:

1. Schedule a meeting in advance.
2. Inviting participants to an active meeting.

## Scheduling a Meeting

You can schedule meetings from either the Zoom client using the “Schedule” button or from their website, <https://www.zoom.us/meeting>. We recommend using the website to schedule meetings because it offers additional options for hosting the meeting and managing your account.

To schedule a meeting, go to <https://www.zoom.us/meeting> and login with “Sign in with Google”. Alternatively, you can go to the zoom.us homepage, sign in, go to “My Account” and go to your “Meetings” page.



The screenshot displays the Zoom web interface for managing meetings. The top navigation bar includes links for 'REQUEST A DEMO', '1.888.799.0125', 'RESOURCES', and 'SUPPORT'. The main navigation menu on the left lists 'Profile', 'Meetings' (highlighted), 'Webinars', 'Recordings', 'Settings', 'Account Profile', and 'Reports'. The 'Meetings' section is active, showing tabs for 'Upcoming Meetings', 'Previous Meetings', and 'Personal Meeting Room'. A 'Schedule a New Meeting' button is visible. Below this, there are input fields for 'Start Time', 'Topic', and 'Meeting ID'. A message indicates that the user has no upcoming meetings and provides a link to 'Schedule a Meeting'. At the bottom, there are links for 'Microsoft Outlook Plugin Download' and 'Chrome Extension Download', along with a 'Help' button.

**Figure 24.** Zoom meetings webpage. Click “Schedule a New Meeting” to schedule your meeting.

Click “Schedule a New Meeting” to continue. The meeting schedule features are similar to making events in Google Calendar. You can set a topic, a description, the date and time, a predicted duration, the time zone, and you can even schedule it to recur regularly or require participants to register beforehand.

The screenshot displays the Zoom web client interface for scheduling a meeting. The top navigation bar includes links for 'REQUEST A DEMO', '1.888.799.0125', 'RESOURCES', and 'SUPPORT'. The main navigation menu on the left includes 'Profile', 'Meetings', 'Webinars', 'Recordings', 'Settings', 'Account Profile', and 'Reports'. The 'Meetings' section is active, showing the 'Schedule a Meeting' form.

The 'Schedule a Meeting' form includes the following fields and options:

- Topic:** A text input field containing 'My Meeting'.
- Description (Optional):** A text input field with the placeholder 'Enter your meeting description'.
- When:** A date picker set to '03/17/2020', a time picker set to '10:00', and a dropdown menu set to 'PM'.
- Duration:** A dropdown menu set to '1' hour and '0' minutes.
- Time Zone:** A dropdown menu set to '(GMT-4:00) Eastern Time (US and Canada)'. There is a checkbox for 'Recurring meeting' which is currently unchecked.
- Registration:** A checkbox for 'Required' which is currently unchecked.
- Meeting ID:** Radio buttons for 'Generate Automatically' (selected) and 'Personal Meeting ID 302-867-5309'.
- Meeting Password:** A checkbox for 'Require meeting password' which is currently unchecked.
- Video:** Radio buttons for 'Host' (selected) and 'Participant', each with 'on' and 'off' options. 'Host' is set to 'off' and 'Participant' is set to 'off'.
- Audio:** Radio buttons for 'Telephone', 'Computer Audio', and 'Both' (selected). There is a link for 'Dial from United States of America' and an 'Edit' link.
- Meeting Options:** A list of checkboxes:
  - 'Enable join before host' (unchecked)
  - 'Mute participants upon entry' (checked)
  - 'Enable waiting room' (unchecked)
  - 'Only authenticated users can join' (unchecked)
  - 'Breakout Room pre-assign' (unchecked)
  - 'Record the meeting automatically' (checked)
- Alternative Hosts:** A text input field with the placeholder 'Example: mary@company.com, peter@school.' and radio buttons for 'On the local computer' and 'In the cloud' (selected).

At the bottom of the form are 'Save' and 'Cancel' buttons.

*Figure 25. Zoom “Schedule a Meeting” options on the web client.*

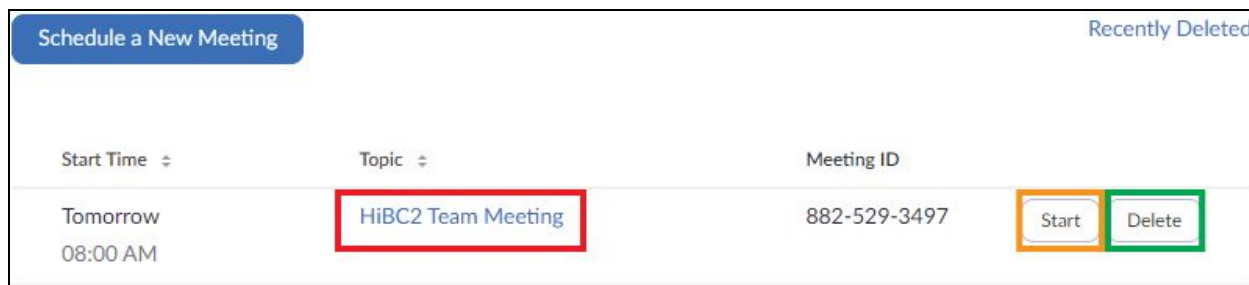
In addition to the regular schedule options, Zoom meetings have a few other features:

- **Meeting ID** - Every Zoom meeting has a meeting ID. The “Generate Automatically” feature creates a unique, single use meeting ID for that meeting. Use your personal ID if you want to use the same invite link every time.
- **Password** - Set a password for participants.
- **Video** - As far as I can tell, this doesn’t do anything.
- **Audio** - Forces participants to connect with the specified type of audio. Leave it as both to be safe.
- **Join before host** - Participants can join before the host.
- **Mute participants upon entry** - This is a good one to keep on by default to prevent disruptions when participants join.
- **Enable waiting room** - Participants will be put in a waiting room prior to the meeting start.
- **Only authenticated users can join** - Participants must log in with their Zoom credentials in order to join, they cannot join as a “Guest”
- **Breakout Room pre-assign** - Use a csv file to pre-generate breakout rooms.

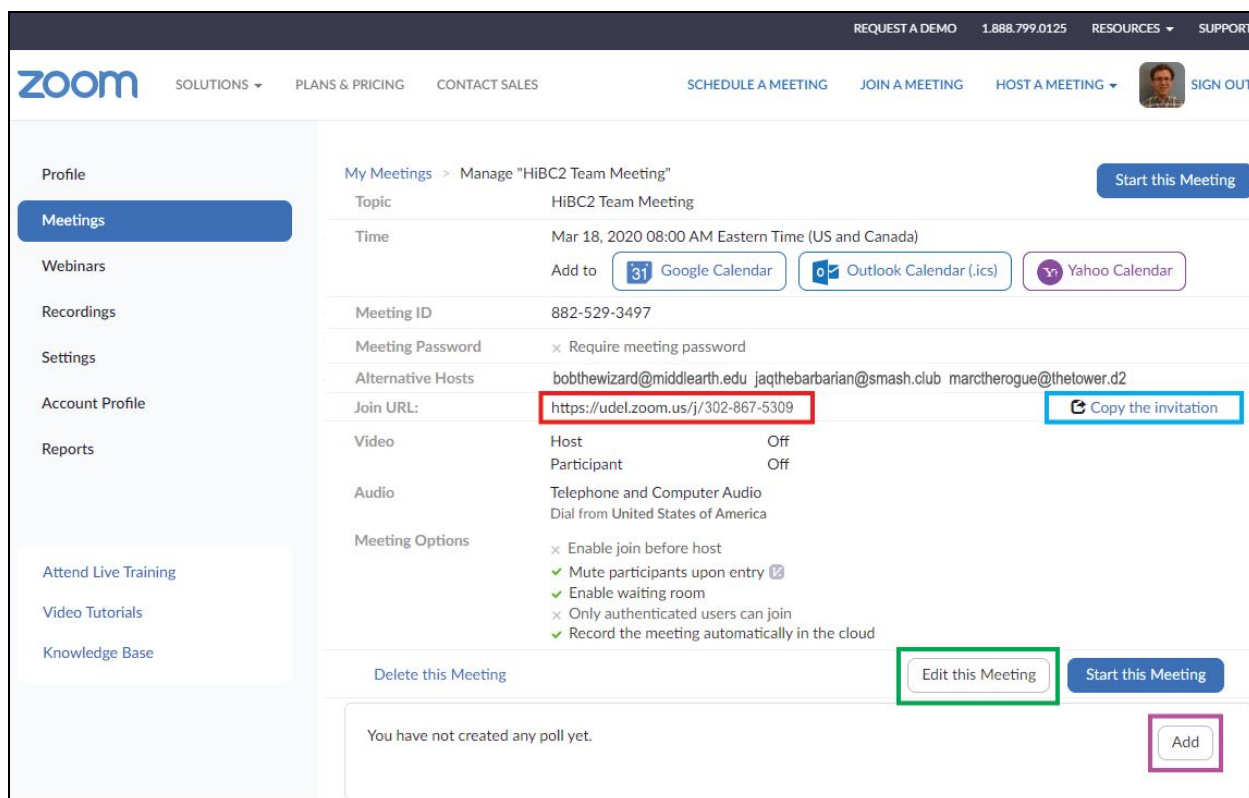
- **Record the meeting automatically** - Meeting will record as soon as the host joins. You can save the recording either locally or to the cloud. I recommend saving it to the cloud to save on disk space, since videos can take up a lot of space. You can access cloud recordings through your Recordings page at <https://www.zoom.us/recording>.
- **Alternative Hosts** - Alternative hosts can start the meeting for you.

## Viewing and Editing a Scheduled Meeting

You can return to your Meetings page at <https://www.zoom.us/meeting> after you've scheduled it to edit, start, or delete a meeting. Click the Meeting's topic to view its details.



**Figure 26.** View a Zoom Meeting's details by clicking its Topic in your Scheduled Meetings list (red box), start a meeting by click start (orange box), or delete an existing meeting by clicking deleting (green box).

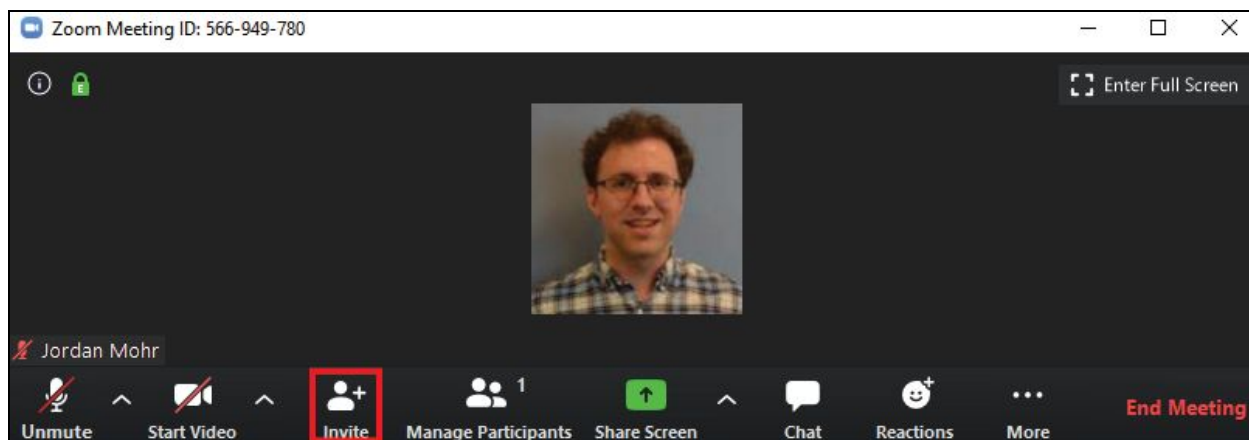


**Figure 27.** Zoom meeting details. The Join URL (red box) is visible on this page. Zoom also generates an invitation text to use in emails that can be copied by clicking "Copy this invitation" (blue box). Click "Edit this Meeting" (green box) if you need to make any edits. This page is also where you can add and edit polls to your meeting (purple box).

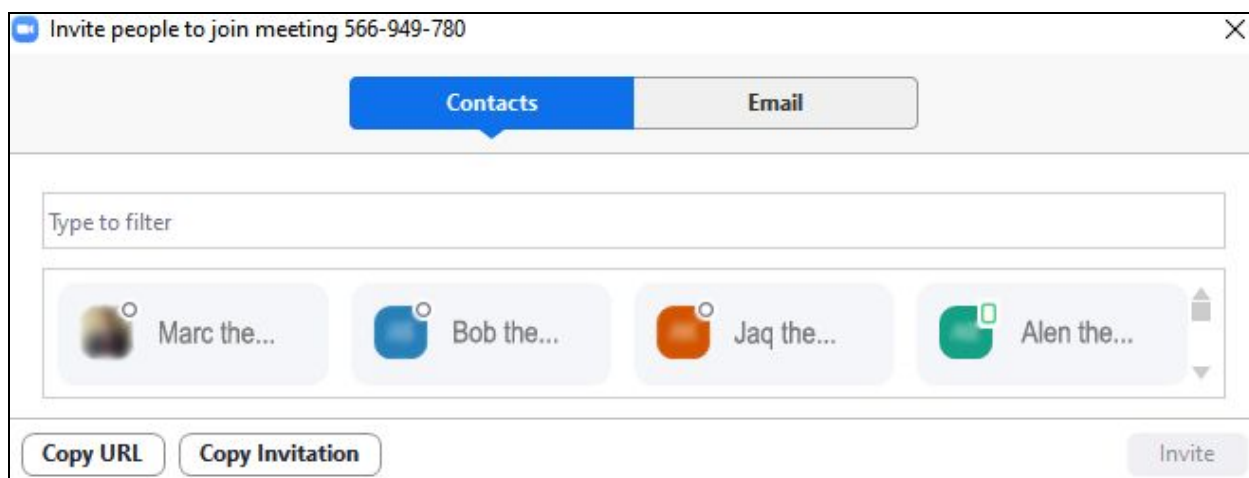
You can invite people to a scheduled meeting by sending them the “Join URL” (Fig. 27 red box) ahead of time, emailing the invitation (Fig. 27 Blue box), or adding it your Google, Outlook, or Yahoo Calendar and inviting your participants using your Calendar’s invitations.

## Inviting Participants to a Live Meeting

You can invite guests to an in-progress meeting from the client, with a few caveats.



**Figure 28.** Use the “Invite” button on your control panel to invite guests to a meeting in progress.



**Figure 29.** The Invite people menu. Note the contacts, Email, Copy URL, and Copy Invitation buttons.

You can invite people to your meeting:

- Directly using the **Contacts** page. By default, this includes everybody with a UD email. They will only receive this invitation if they have the Zoom client open when it is sent.
- By **Email** - Send them an email with an invitation.
- With **Copy URL/Invitation** - Copy the “Join URL” or the default Zoom invitation method to send via another means of communication.

## Closing Statement

Please take some time prior to your first meeting to familiarize yourself with Zoom and the features discussed here. Please reach out to your instructor if you have any difficulty installing or using Zoom. We realize this will be a bit of an adjustment, but we hope that this experience with remote conferencing technology will become a valuable tool for your transition into working professionals.

## References

1. Rayner, G. & Papakonstantinou, T. Employer perspectives of the current and future value of STEM graduate skills and attributes: An Australian study. *J. Teach. Learn. Grad. Employab.* 6, 100 (2015).
2. Lumina Foundation & Gallup. *What America Needs to Know About Higher Education Redesign.* (2014).
3. Gallup. *State of the American Workplace Report.* (2017).
4. Lister, K. *Latest Telecommuting/Mobile Work/Remote Work Statistics.* GlobalWorkplaceAnalytics.com (2020). Accessed 13 March 2020. Available at: <https://globalworkplaceanalytics.com/telecommuting-statistics>.