

Creating Areas for Students to take Zoom Calls in Duke University Libraries

Recommendations

In order of most recommended to least recommended:

1. Designate a public area as a communal Zoom space for students to take phone or Zoom calls. Perkins LL2 seems like the best space to do so due to the general noise in the environment, followed by Bostock LL1. We could then potentially outfit the space with furniture designed to create a sense of privacy as student needs deem it necessary.
2. Provide outreach and/or signage that indicates where students can or are currently taking Zoom calls in DUL.
3. Consider adding machines that create white noise in public areas to make Zoom calls less distracting.
4. Convert some of our smaller group study rooms or other existing library spaces, such as the “Meetup” spaces in the Edge or an unused copy room on Perkins 1, to individual study rooms specifically for taking Zoom calls.
5. Convert some of the graduate study carrels that are either in noisy spaces or isolated from the remaining carrels to individual study rooms specifically for taking Zoom calls.

Background

Hybrid-remote working and learning environments have become common in the past few years due to the COVID-19 pandemic, including on Duke’s campus. Although the university has resumed in-person classes, there are still quite a few online classes hosted on Zoom, meaning students have to transition between online and in-person classes in a relatively short period of time. Currently, students take Zoom calls in public areas of the Duke University Libraries (DUL), but this solution is not ideal. In our Biennial 2023 Student Satisfaction Survey, our second-most requested service for undergraduate students and top-most requested service for masters and doctoral students was private rooms to conduct video calls from a laptop. At the moment, DUL has no individual private rooms for Zoom calls; we have group study rooms that, if available or reserved, can be used for this purpose, as well as individual study carrels for graduate students, which are private study spaces that are not designed for noisy use.

According to [this article](#) by O’Hara, Black, and Lipson (2006) about mobile phone video calls in public, there are quite a few reasons why students might want more privacy for their Zoom calls. People talk louder on video calls than phone calls, so other people can hear their side of the conversation more

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clearly, which is both an invasion of the caller's privacy and an irritant to the people nearby. People are also often embarrassed to have others watch and hear their conversations, so they may wish to head to a private space to prevent others from eavesdropping. People don't like how much the camera shows of their background. Some callers might not want the call recipients knowing too much about where they are, while others might be aware that call recipients could find people moving and talking in the background distracting. There are also societal norms in place that make having a private conversation in public something that "ought" to be avoided, particularly in a traditionally quiet area like a library. For all of these reasons, students may prefer to have their calls in private, and we don't have designated spaces for them to do so.

The primary question we hoped to answer through this environmental scan was:

How can we design library spaces to support student needs to participate in Zoom meetings while in DUL?

Potential Solutions

After researching what other universities are doing and reviewing the spaces we have, a practicum student working with the AUXS department staff has come up with five different options that could potentially solve the problem. We began by developing quick solutions utilizing the private spaces we already have and slowly progressed to more creative solutions using our public spaces. Each option includes a description of what it is, pros and cons for using it (including expense and ease of creation), and some examples of how it could be implemented at DUL.

Option 1: Convert current group study rooms or other existing library spaces to "Zoom Rooms."

- Description:
 - DUL already has a lot of group study rooms that students often use for privacy. We could designate a few of them to be individual, single-occupant study rooms or "Zoom rooms" to limit the competition between individuals and groups trying to use the rooms.
- Pros:
 - Private spaces for students to take calls.
 - Already in existence, so there's no need for expensive renovations.
 - Designated individual rooms means less competition between individuals and groups trying to use the rooms.
- Cons:
 - Most of the group study rooms are designed to accommodate multiple students, so limiting them to use by individuals is not a great use of space.
 - The rooms aren't designed to be soundproof. Zoom calls can be noisy, particularly if students don't use headphones or lower the volume of their voice, so they ought to go on a noisy floor to avoid disturbing students on a quiet floor.

- This option would reduce the number of designated spaces for groups to study. Students already report that there are too few group study spaces, so reducing that number further could be frustrating, even though it's in service of another demonstrated need.
- Examples of how we could implement it:
 - Categorize every study room by size and re-label them as individual, small group study, or large group study spaces.
 - [UNCG](#) does this, and students can select the size of study room when making a reservation. They do appear to have more small study rooms than DUL does, though.
 - DUL has a few study rooms that might be physically small enough to be used as individual rooms.
 - Perkins 130 and B09 are both interview rooms, so they are already designed for solo calls. It would be easy to convert them into Zoom rooms, but then interviewees would have to compete for spaces with Zoom participants, who far outnumber them. We would have to put some system in place to prevent students from reserving the room too often, too far in advance, or for too many hours at a time.
 - Perkins 219 is a relatively small study room that could potentially be used as an individual study room. It is right next to the Prayer and Meditation Room and across the hall from quiet carrels, so any noise from Zoom calls could disturb patrons in the surrounding areas, but it is also near an event space, so it's already expected that there would be some noise there.
 - Perkins B13 (and potentially B10 and B12) are group study rooms on LL2 that could be small enough to convert into individual study rooms. B11 in the center is too large.
 - Identify spaces not currently being used as study rooms that might work for Zoom rooms
 - The "Meetup" spaces in the Edge are small rooms that have no doors and are open to the noise of the rest of the Edge. Based on anecdotal evidence from the AUXS department, students prefer the Edge to be a quiet space, even though it was designed for collaboration, but if we were to put doors and ceilings on these rooms and make them reservable, they could very easily serve as Zoom rooms. We could also test using them as is to see how students react to the noise.
 - Perkins 131 is currently a copy room with no door, although as of mid-August 2024 the copier has been moved out in favor of housekeeping equipment. If this room isn't getting enough use, we could possibly permanently move the copier out into the library and put a door on the room to use it as an individual study space.
 - Put up a partition/divider in larger study rooms to enable multiple students to use the space.
 - While this may provide visual privacy for students and address a concern with converting a large space to an individual space, it will not provide any sound privacy from the other students in the study room. If a student needs to speak in their Zoom call or doesn't have headphones, they will be distracting the others using the same space, perhaps even more than they would in a noisier area of the library.

Option 2: Convert some of the graduate study carrels to “Zoom Rooms.”

- Description:
 - DUL has quite a few graduate study carrels, or single-occupant rooms that allow graduate students a place to store materials and study with minimal distractions.
 - Example: [Yale’s Bass Library](#) has many individual study rooms similar in size to the carrels that they do advertise as [being usable for Zoom calls](#).
- Pros:
 - Inexpensive, since we would be using what we already have.
 - These rooms are designed for single person use, so it would be an appropriate amount of space to designate for this purpose.
- Cons:
 - Carrels are already in high demand. Reducing the number of carrels available could be frustrating for students, even though it’s in service of another demonstrated need.
 - However, DUL does also have an issue of low carrel use with no way to identify if the carrels are getting used or not.
 - The rooms are currently locked, and the key to the room is given to the student or faculty member assigned to the room. If these spaces were converted to individual study rooms, we could leave them unlocked for easy student access, but that would make it easy for those without a reservation to take them and cause conflicts when the person with the reservation arrives. We could require students to check out a key to prove their reservation, but that would provide more work and logistical problems for the library staff.
 - These rooms are on considerate or quiet floors and aren’t designed to be soundproof. If a student is talking or doesn’t use headphones for their Zoom call, this could be disturbing for other students on the floor and in carrels. We would have to be mindful of which carrels we’re selecting to be used and only select ones close to the stacks or an entryway.
 - These rooms are on higher floors in the library, making them more difficult for students to access quickly.
- Examples of how we could implement it:
 - There are four carrels on Perkins 2 that seem like a distanced, small enough grouping to potentially release for Zoom use. On the other hand, floor 2, while labeled as a “considerate” (not “absolute quiet”) floor, may actually be quieter than floor 3, and the carrels are right around the corner from the Prayer and Meditation room, which needs quiet out of respect for the students in it. The Perkins 2 carrels are next to an event space and across the hall from a group study room, though, so chances are they get a fair amount of noise anyways.
 - Because Perkins 3 already has some noise problems due to a stairwell, group meeting rooms nearby, and an open floor plan that encourages noise, it might be a good idea to turn the group of 10 carrels (318 A-D, K-M, T-V) closest to the connector to Bostock into Zoom rooms. This would guarantee privacy for the students on the calls, but it could cause noise complaints from the nearby silent carrels or from the open study space if the floor is to

remain silent. We might also have problems releasing that many carrels, and taking any less than those would then cause noise problems for the remaining carrels. For example, we could take 6 (K-M and T-V) rather than 10, but then the remaining 4 (A-D) across the hall would have noise to contend with.

Option 3: Provide outreach and/or signage that indicates where students can take Zoom calls in DUL.

- Description:
 - When academic libraries had to adapt quickly to the sudden shift to online only classes during the COVID-19 pandemic, many chose to quickly list what areas of the library were acceptable to take Zoom calls in, based on pre-existing noise level policies. These lists would then be posted on the library's website as a new policy, on social media, and potentially as signs within the library.
 - Most outreach also tells students they must have headphones in (and where they can check out headphones) and that they should use low voices.
 - Some tell students that they can book study rooms for Zoom calls if needed.
 - Example: The [UW Bothell and Cascadia College](#) has a list of libraries and spaces where students can take Zoom calls at various noise levels, both with their own equipment and with equipment provided by the college.
- Pros:
 - Inexpensive.
 - Very quick change that can be implemented almost immediately.
 - No need to reserve a room.
- Cons:
 - How do we make sure students see this information?
 - How do we enforce the headphones rule?
 - What happens if we tell students they can book study rooms for Zoom calls? Will this affect student usage of the rooms at all? Will it prevent groups from using group study rooms?
 - Not private for those who need a quiet or private space.
- Examples of how we could implement it:
 - Providing outreach and signage is something we need to do regardless of which option we choose. The point of this as a separate option is to provide the option to change literally nothing about the library and just inform students of where others are taking their Zoom calls already, such as the lobby areas of Perkins 1. However, this might be too small of a solution for the problem.

Option 4: Designate a public area as a communal Zoom space and potentially outfit the space with furniture designed to create a sense of privacy.

- Description:

- Take a floor, area of a floor, or specific communal study room and designate it as a space for Zoom calls.
- Example: [Texas A&M](#) has a “Zoom Zone” on one floor of the library.
- Merely designating the space as a communal Zoom space may not be enough. Our literature review turned up a lot of articles pointing out the same problem, but none with solutions for it. We asked the ARL-Assess ListServ if any of them had any suggestions, and the overwhelming consensus was to purchase furniture designed to create a sense of privacy in an open space. This furniture fell into three categories:
- The “Phone Booth” pod
 - These are basically small mobile rooms that are completely enclosed and provide sound dampening features to give people a private place to work in an open office. Some brands mentioned or recommended were [Pillar](#), [Framery](#), and [SnapCab](#). The prices start from \$7,000-\$13,000 a booth and can get much higher, depending on the features added and the brand. While potentially expensive, this solution can’t be completely ruled out, as [The Divinity Library actually already has two Zoom pods](#), which seem to be [Room Phone Booths](#).
- The carrel-style booth or pod
 - While DUL’s carrels may be enclosed rooms, many other purchasable carrels are more like single-seater booths or cubicles that are not entirely enclosed but still give a sense of privacy. These may or may not have sound dampening abilities. Some brands mentioned or recommended are [Agati](#) and [Steelcase’s Brody WorkLounge](#). Agati’s products can be as expensive as the phone booths, while the Brody WorkLounge starts at around \$3,000 (at least, it did in 2015). Similar options are available in The Link. Someone also mentioned fitting less expensive carrels with acoustic panels, which could be a cheaper alternative to these products.
- Mobile dividers
 - A couple of people mentioned leaving out a bunch of mobile dividers or partitions that students can use to create their own semi-private spaces. These dividers can come with sound dampening abilities. Some brands mentioned or recommended were [Demco](#) and [Uline](#). These products tend to be around \$600-\$2000, so they would be the most cost-effective option of the three furniture items.
- Pros:
 - If just designating the space:
 - Eliminates the need for individual rooms.
 - Works with what we have, so no expensive renovations needed.
 - A quick solution that can be implemented nearly immediately.
 - If adding furniture for privacy:
 - Not as expensive as renovations.
 - Can give students varying levels of privacy, depending on the furniture purchased.
 - Allows us to use open spaces for individual study rather than taking up group study rooms.

- Cons:
 - If just designating the space:
 - Not private, so not ideal for interviews or for meetings which disclose private or confidential information.
 - Not soundproof, so noise can be distracting.
 - If the seating arrangement is too open, it could prove distracting for the student, as they can see and hear people moving about the room and having their own conversations in class.
 - If adding furniture for privacy:
 - The more private you get, the more expensive the furniture is. This solution could cost quite a bit depending on which type of furniture the library gets and how much of it.
 - Can't provide complete privacy.
 - "Phone booths" would have to be locked, so students would have to go get a key.
 - Where would we put the furniture? What area of the library are we willing to rearrange?
 - We do still have to take noise levels into account.
 - I don't know how many of the previous solutions are ADA compliant, but the cheaper versions of phone booths are not, and I doubt people with severe mobility impairments could use the carrel-style booths either.
- Examples of how we could implement it:
 - The Edge looks like a fantastic space for coworking, as it has many isolated work spots within an open space, but for some reason it tends to be a quiet area, and students don't really appreciate too much noise. We can try to rebrand it, but if the students want that area to be quiet, it will be quiet, so we might as well reassess and go where the noise levels are higher.
 - The only study space on Perkins LL2 is a small strip right outside the interview and group study rooms. We could turn that whole section into a "Zoom Zone" to match the noise level of the study rooms (and potentially deal with the complaints about disruptive groups commonly utilizing the space). It is both open enough for students to find a space while also completely enclosed by stacks, which dampen noise in the surrounding areas. There is existing white noise from the air handling in the ceiling, so students may feel less self-conscious speaking on their call since their voices will be masked by the noise. As far as furniture goes, phone booths would be the most private spaces to take a call, but they're more expensive and larger, so we'd be able to fit less of them. If we could fill the space with the three-sided chairs (Figure 1) that are in the Link or the [Prospect Solo](#) desks (Figure 2) that are in the Edge and Perkins 3, then I think we'd have a great "private" space in an open area.
 - Bostock LL1 also has a small, open study space next to and within the maps and newspaper storage. The only spaces nearby are staff offices and classrooms, which aren't necessarily silent either and can be closed off from the study space, so they shouldn't pose a problem

- noise-wise. Once again, we can outfit the room with new, more private furniture, as well as potentially a white noise machine, to turn the space into a Zoom zone.
- Perkins 3 near the bridge to Bostock is intended to be moderately (but not absolutely) quiet, but it often has problems with noise due to a stairwell, group meeting rooms nearby, and an open floor plan that encourages noise. We could turn that open space into a Zoom zone and outfit it with furniture that provides privacy, much like the plan for LL2. The big difference between the two, however, is that Perkins 3 has other study areas on the floor that are quiet areas, and there aren't a ton of book stacks to mask or dampen the noise. If the carrels are not also converted into Zoom rooms, then the noise from the Zoom zone would disturb the people studying in those spaces, as well.



Figure 1: Single-occupancy privacy booth in The Link.



Figure 2: Prospect Solo privacy desks on Perkins 3.

Option 5: Look into ways to create white noise in public areas to make Zoom calls less distracting.

- Description:
 - According to [this article](#) by Ghasemi et al. (2023), White noise can be effective in masking noise levels in open working spaces. If there is a way to add white noise to specific areas of the library, maybe via a machine, it could give students a stronger sense of privacy while on a call in public.
 - [Office Privacy](#) lists some small ones in the range of \$60-\$330, while [Pure Resonance Audio](#) lists a sound system in the range of \$1,400.
- Pros:
 - Can use public spaces, so not as expensive as renovations.
 - Students feel less distracted by others and will probably not be as worried about being as distracting too others.
- Cons:
 - How many small ones would we need? Would it be more cost effective to get a large system? How much space would a system cover?
 - Still not a private space for confidential or private calls.
- Examples of how we could implement it:
 - Perkins LL2 already has this to some extent due to the air handling in that study space, so we could just lean into it and use the space as is without any white noise adjustments.

- We could also add white noise machines to Perkins 3 or Bostock LL1, although it would probably only be effective in Bostock LL1, since that study space is much smaller.
- We may also want to investigate other types of sound machines that might work better. Rubenstein Library installed sound machines into their reading room, and after some testing, they chose brown or pink noise machines rather than white noise machines.

References (Articles Only)

- Ghasemi, S., Fasih-Ramandi, F., Monazzam, M. R., & Khodakarim, S. (2023). White Noise and Its Potential Applications in Occupational Health: A Review. *Iranian journal of public health*, 52(3), 488–499. <https://doi.org/10.18502/ijph.v52i3.12132>
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