

# MOVING IDEAS WITHOUT MOVING PEOPLE

HOW TO E-CONFERENCE AT THE UNIVERSITY OF ALBERTA



## **Moving Ideas Without Moving People: How to e-conference at the University of Alberta.**

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The **Kule Institute for Advanced Study (KIAS)** is a major endowed research institute based at the University of Alberta. KIAS supports interdisciplinary and collaborative research in the social sciences, humanities and fine arts, focusing on research with the potential for national or international recognition.

The **Around the World Conference** is a KIAS experiment that brings together research dialogues without the environmental cost of traditional conferences. Institutes and researchers are invited to participate either through presenting online or by joining in the discussion on other digital platforms. The conference is live-streamed world-wide and archived after the event.

**2018** [Sustainable Research](#)

**2015** [Big Data](#)

**2017** [Digital Media in a Post-Truth Era](#)

**2014** [Privacy and Surveillance](#)

**2016** [Libraries, Archives & Public Life](#)

**2013** [Technology and Culture](#)

The **Office of Sustainability** is the hub of the University of Alberta's campus sustainability initiative. Led by the Chief Sustainability Officer, it provides institutional leadership, campus-wide communications, and change programming to integrate sustainability values into the work and studies of people across all five campuses.

## **SUSTAINABILITY PLAN 2016–2020**

**Goal 3.2:** Establish the university as an innovative leader in addressing climate change and making progress on reducing the university's greenhouse gas emissions to 17 per cent below 2005 levels by 2020.

Learn more at:

**[sustainability.ualberta.ca/plan](https://sustainability.ualberta.ca/plan)**

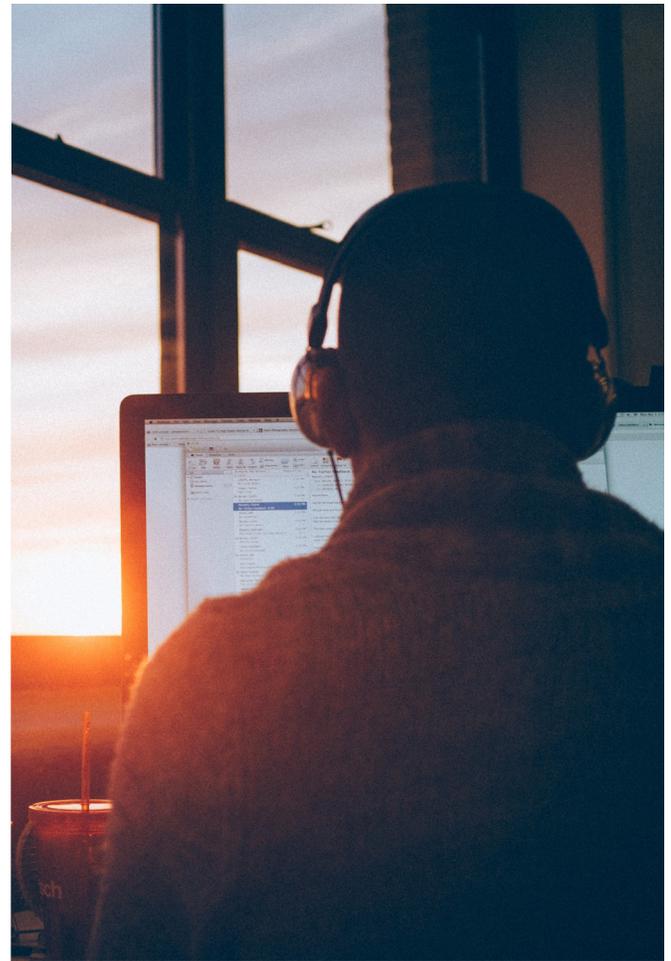
## The Argument

Thanks to email and the web, the modern academy is global and connected, with research collaborators in cities and continents half the world apart. Now, with today's video-streaming, we can pull someone into the room from almost anywhere in the world and have a real-time conversation. Skype was founded in 2003 and YouTube in 2005—we've come a long way in 15 years. Today's video-streaming technology is fast, proven and remarkably reliable.

The University of Alberta has invested significantly in expertise and equipment to make video-conferencing seamless. With our services, you can bring new voices into the conversation, reach scholars in remote locations and share findings as soon as they're discovered. You can extend the value of a conference over a longer period of time, and deepen the inquiry at focused moments.

You can do all of this while also cutting your carbon footprint tremendously.

E-conferencing is about our responsibility to the climate, but also about pushing the "conference" format forward to produce stronger scholarly results. Read on to learn how you can participate at the University of Alberta.



## Carbon footprint of air travel

Because climate change is primarily driven by the burning of fossil fuels, air travel is an industry with significant responsibility for climate change. The International Civil Aviation Organization has studied these impacts for the Intergovernmental Panel on Climate Change (both United Nations agencies). They estimate that aviation contributes 2% of all global greenhouse gas emissions.

*Because air travel is dominated by travelers from the industrialized world, and because air traffic is projected to double in 15 years, it is an area where significant action is both possible and required.*

### First world problem

Of course, this slice of the world's carbon footprint is dominated by flyers from North America and Europe—comprising 15% of the world population but 50% of all airline passengers (ICAO 2016). And within these countries, it is a smaller minority still who makes the most flights: 55% of Americans haven't flown once in the last year, while 20% have made three or more trips (Gallup 2015).

In Canada, this minority of travelers is having a significant impact on Canada's ability to meet climate change commitments. Since 1990, national emissions from domestic flights have flat lined—but emissions to international destinations has grown 85% (NIR Table 3-3).

Because air travel is dominated by travelers from North America and Europe, and because air traffic is projected to double in 15 years, it is an area where significant action is both possible and required. We at the University of Alberta who currently make three or more return flights a year can be a key part of this change.

### The inconvenient future

Comparing the emissions per passenger-kilometer travelled for different modes shows that flying isn't necessarily less efficient than driving (AR-5 figure 8.6). The problem is that you could never drive to Australia, but air travel makes it routine to cover incredibly vast distances. A single flight can quickly overshadow all your other efforts to reduce emissions. In fact, one return flight to Europe produces more greenhouse gas emissions than can be saved by living carless for an entire year (Wynes & Nicholas, 2017).

As climate change worsens, [this convenience is going to degrade](#). Higher temperatures will mean many flights can only take off at night. Fuel economy will further reduce how much luggage we can take on board. Delays will become more routine as thunderstorms and flooding become more common.

Flying is one way to connect with colleagues, but soon it won't be the most convenient. Turning to e-conferencing now can help you reap the benefits of conferencing, while helping to keep the climate cooler and safer.

## How do our greenhouse gas emissions add up when flying from Edmonton?

Return flight from Edmonton to:	Metric tons of CO <sub>2</sub> e	Equivalent To:
Vancouver YVR	0.12	Driving 473 km in an average passenger vehicle.
Toronto YYZ	0.29	Burning 144 kg of coal.
Paris CDG	1.05	Approximately 2 months of household electricity use.
Nairobi WIL	1.97	The carbon sequestered by 2.3 acres of forest for one year.

Figures compare an economy class return flight, CO<sub>2</sub> equivalent emissions per passenger.

Flights calculated using [calculator.carbonfootprint.com](http://calculator.carbonfootprint.com)

Equivalents calculated using [epa.gov/energy/greenhouse-gas-equivalencies-calculator](http://epa.gov/energy/greenhouse-gas-equivalencies-calculator)



*Air travel is so convenient that it seems reasonable to fly across continent to attend a one-day workshop, give a 45 minute talk, or have a quick meeting and return home.*

*We will soon need to rethink this convenience.*

## The importance of conferencing in the academic career

Conferences bring people together for sustained conversation on complex issues. Conferences give academics the opportunity to make their presence known, both socially and cognitively. For these reasons, attending conferences has become vital to advancing one's academic career.

The personal motivation to attend and/or host conferences tends to change as an academic's career progresses.

- 👤 Early career:** Graduate students, post-doctoral fellows and pre-tenured professors travel in order to build their research networks and gain access to resources. Presenting papers at conferences and workshops is key to establishing a place in their fields.
- 👤 Mid-career:** Newly or soon-to-be tenured professors continue to conference in order to broaden their research networks. Presenting papers sustains their reputation in the field. Moreover, these academics often take leadership roles in journals and society conferences. Hosting conferences can be a way to leave their mark on the society and be recognized as a leader in their fields.
- 👤 Advanced career:** Senior academics are more likely to be invited to give keynote presentations at conferences, especially large regional or larger gatherings. The offer to give a keynote is a significant recognition by their peers, and unlikely to be turned down.

At all stages of their careers, we see that conferencing plays a key role in providing academics with social and cognitive presence. We still have these needs, even as we need to fly less.

For this reason, we are not simply advocating a reduction in air travel—we are calling to develop the e-conference as an emerging format that can both enhance cognitive presence, maintain essential social relationships, and reduce the academy's overall carbon footprint.

Academics are frequently faced with value decisions, and today more and more academics are making decisions about the conferences they attend based on the format of the conference (Fox et al, 2009; Gremillet, 2008; Kalmus, 2017).



***Even as we learn to fly less, we need venues that continue to provide and enhance social and cognitive presence.***

## What can e-conferencing do for the academy?

The University of Alberta is already demonstrating that conferences can successfully be designed to allow for—and give real recognition to scholars for—delivering digital presentations and contributing to online scholarly exchange. [Around the World](#) is an e-conference series hosted annually by the [Kule Institute for Advanced Study](#) (KIAS) since 2013 in an attempt to model an affordable, accessible and environmentally-friendly forum for research dialogue.

*“We really have to come up with alternative forms of dialogue that do not involve putting bodies in planes in order to have a conversation. There’s a place for face-to-face meetings, but we need alternatives. The Kule Institute intends to be one of the outfits that experiments with these alternatives.”*

*—Geoffrey Rockwell, director of KIAS.*

By launching an annual series, KIAS has smoothed the way for other University of Alberta initiatives to make significant use of e-conferencing. The event’s scale and intensity meant two technical teams were brought in to work together. The Arts Resource Centre (ARC) and Information Services & Technology (IST) teams have learned from the repeated experience, developing stronger processes and upgrading their equipment and repertoire. *Around the World* challenged them by adopting new formats each year, spurring further learning on tech support. After five years, these teams are well positioned to provide e-conferencing on a regular basis.

### More global, more diverse and less costly

KIAS’ experience with *Around the World* and other events such as the [RIDRU conference](#) have highlighted several key benefits to e-conferencing.

**Connecting remote locations:** From 2013-17, *Around the World* brought together 200 researchers from Australia, Brazil, China, Israel, Japan and Nigeria—as well as Europe and North America. Many of these voices couldn’t afford the time or cost of flying to Edmonton for a traditional conference.

**Including diverse voices:** Aside from established academics, the format also welcomed voices from graduate students and from outside the traditional academy. For scholars outside the industrialized West or in conflict areas, e-conferencing can provide a venue to share their perspectives when air travel isn’t a viable option. It is even possible to include field research reports, allowing scholars to share truly cutting-edge findings.

**Global audience:** Live-streamed presentations can continue to live online. In many cases, they were designed and filmed for an online audience. The work of these scholars has the chance to find a global audience long after the conference has ended.

**Cost effective:** Calculating the financial and environmental cost of 200 flights avoided by *Around the World*, KIAS estimates that \$200,000 has been saved in flight costs and over 300 metric tons of greenhouse gas emissions avoided. These are the savings from changing just one annual gathering to an e-conference format.

## Planning an e-conference

Before you have the technology all set up, the real preparation for an e-conference is in the human element. The danger to an e-conference is that people won't take it as seriously as a fly-in conference. From presenters to organizers to attendees, there is lots we can do on the social side to guarantee the event's success.

### Prepare the presenters

Videoconferencing can be just as engaging as seeing an in-person lecture. But a good presentation can suffer if attention isn't paid to how it looks on screen. And your attendees will blame the technology more readily than if it had been in person.

The solution is to ensure speakers take their e-conference presentation as seriously as they would an in-person keynote. Provide speakers with a set of guidelines that include suggestions, such as:

- If broadcasting from your own computer, carefully choose a location for your presentation. Ensure it isn't noisy (not your kitchen, and not a busy café). Choose a background that will be neutral, so that people focus on you and not your bookshelf.
- Dress up. Whether in business attire or not, it will help you get into the mind space.
- Arrive at the venue 30 minutes ahead of time and clear your schedule. Don't work on something else right until the presentation starts.
- If broadcasting from your own computer, close all other distractions (email, messages, etc.)
- Additional guidelines for handling tech are provided on page 12.

### Maximize human interaction

A live audience in front of the presenter is an invaluable asset. Talking to an in-person audience will help the presenter feel more natural, instead of focusing on the blinking red light of their camera. You can expect the presenter to project more personality, giving a more engaging presentation and boosting interaction from the other end of the broadcast too.

While it is advantageous to use asynchronous commenting for Q&A (see page 13), if the speaker will be taking questions during their live broadcast, it is helpful to have a host manage the Q&A. This gives the audience a surrogate, improving retention of the online audience and improving the Q&A by bundling questions together.

<b>One of the key motivations for attending conferences is to network and build career potentials. How can we recreate these benefits in an online environment?</b>	
Incorporate collaborative online activities, such as writing a Wiki or website. These activities can be organized as preparatory work, or they can take place during the event and continue afterward.	 Google Sites  MediaWiki
Make intentional use of the comments section on a livestream. Have a facilitator manage the discussion, giving viewers the opportunity to demonstrate their engagement with the topic and to network with panelist and other viewers.	 YouTube Live  Twitter  Adobe Connect
Use a collaboration or social networking tool that enables conference participants to craft their profile. This allows participants to present themselves professionally and to connect their career persona to the online discussion.	 Google+  Slack  Meetup

## Choose a format—or invent your own!

Both live presentations and pre-taped videos can be used with any of the following delivery modes.

1. **Traditional conference:** a live audience interacts in-person with presenters.
2. **Live streaming:** a single camera captures a presentation and broadcasts to the world. There may be a live audience interacting with presenters.
3. **Video conference:** interaction is between two or more locations connected over video stream.
4. **Hybrids:** may combine aspects of all three of the options above. Hybrids can be very technically complex and require careful planning.

## Comparing live streaming and video conferencing

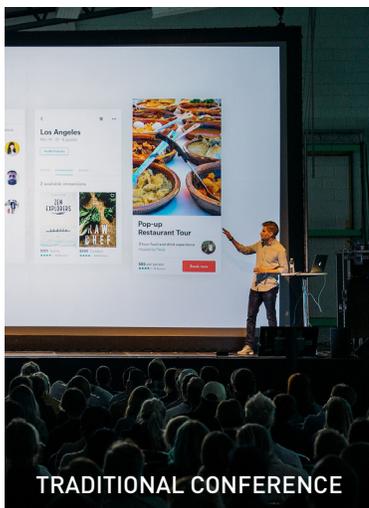
**Live streaming** includes YouTube Live, Facebook Live, Vimeo Live, IBM Ustream and Livestream. These services broadcast a one-way video feed to a worldwide online audience. There is no limit to the number or geographic location of this audience. Unlike video conferencing, interaction is possible using messaging or comments on the livestream, but not by two-way voice or video.

Because the video stream isn't interactive, live streaming can incorporate a slight delay and provide higher quality video. Most of these services will also provide low bandwidth versions so that viewers can tune in on a tablet or smartphone. After broadcasting, most services save your video and you can choose to keep it private or to publish it for later viewers to watch.

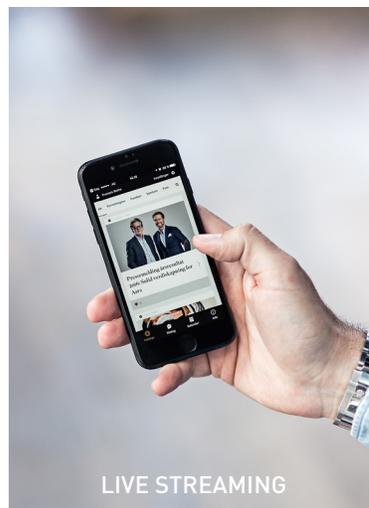
**Video conferencing** includes Skype, Google Hangouts, LifeSize, Zoom and BlueJeans. Video conferencing enables conversation between two or more screens, including meeting spaces and individual computers. Live, real-time interaction between presenters and participants is possible. The maximum number of participants varies. Free services can reliably handle 2–4 participants, but may have trouble if they are on different continents. Paid services can handle 10–25 participants or more without trouble.

Since video conferencing is interactive, it is typically more technically advanced than live streaming. Dedicated video conferencing facilities using subscription services can help mitigate the technical challenge. These facilities tend to have more dependable connections and their picture quality can be close to HD, which is important if the feed is being projected onto a large screen (for an auditorium audience, for instance).

1 speaker, few viewers, here



1 speaker, many viewers, anywhere



2+ interactive participants or groups



## Factors to consider when selecting a delivery mode

Factors	Considerations
<b>Desired interaction</b>	<p>Do you want interaction between fellow presenters? If your e-conference panelists are in different locations, you will need to set up simultaneous <b>video conferencing</b>.</p> <p>Do you want interaction between presenters and the audience? If <b>live streaming</b> a pre-recorded talk, presenters can be present on chat, comments or social media to answer audience questions.</p>
<b>Working meetings vs. presentations</b>	<p>A working meeting can be very successful if all locations can access professional-grade <b>video conferencing</b> meeting rooms.</p> <p>As an option for working meetings, consider running a “screen share” or “webinar” which enables hands-on demonstrations and knowledge transfer. They can also make it easier to move between giving presentations to holding constructive conversations.</p>
<b>Number of presenters</b>	<p>For larger panels, it can be best to position the camera and microphone on a single seat and have speakers rotate through. The viewer experience will be much worse trying to capture a wide shot on the whole group, and their conversation will not be adequately picked up by a single microphone.</p> <p>It is possible (and exciting) to stream in presenters from multiple different locations. The more different streams you are trying to combine, however, the greater the impact will be on your bandwidth. If you don't have the right technical set-up, split them up or use pre-recorded presentations instead.</p>
<b>Location of presenters</b>	<p>If presenters are located across a wide range of time-zones, it could be advantageous to choose <b>live streaming</b> with a number of pre-recorded presentations included.</p> <p>For example, live presentations from Europe, North America and Asia are difficult to coordinate unless one of the regions submits a pre-record.</p>

### Experiment with e-conferencing for a variety of formats

- Keynote presentations
- Panel presentations
- Round table discussions
- Interview-style Q&A
- Creative performances
- Workshops
- e-Posters

# Funding your experiment in e-conferencing

## Budgeting for an e-conference

The cost for your e-conference can be estimated based on your event's specific technical needs and scale. For an estimate, get in touch with one of the IT providers listed on the following pages, and let them know:

- How many event hours you require technical support.
- How many different locations will be involved.
- How you are planning to deliver your content:
  - » Video conference limited between 2-6 locations
  - » Live-streaming broadcast to the world
  - » Combination of both video conference and stream broadcast

Once you have an estimate, you can make a case for the cost of an e-conference as compared to the cost of running a traditional conference. To strengthen your case, you might calculate the cost of flying all of the participants to one location. For example, KIAS is able to stream and archive research talks from over 40 participants from around the world for the same cost as it would take to fly 5 participants to Edmonton (based on an estimate of \$2,500 for flight, accommodation, ground transport and per diem).

## Funding at UAlberta

Support for innovation in e-conferencing may be made possible by applying for the following grants.

### **KULE DIALOGUE GRANTS (KIAS)** [🔗 ualberta.ca/kule-institute](https://ualberta.ca/kule-institute)

KIAS supports research in the social sciences, humanities and arts. Applicants must be full-time continuing faculty members or other academic staff eligible to hold CIHR, NSERC or SSHRC research funding at the University of Alberta. Kule Dialogue Grants support research meetings, networking, outreach, and conferences to help researchers organize, present or disseminate research. Projects may also be selected for their potential to build research capacity at the university. Up to \$2,000 can be approved on a short track, and grants over \$2,000 are possible with approval by the KIAS Research Committee.

### **SUSTAINABILITY ENHANCEMENT FUND** [🔗 ualberta.ca/sustainability](https://ualberta.ca/sustainability)

The SEF supports collaborative projects that improve the university's operational performance, foster campus engagement, and/or demonstrate the viability of best practices and technologies. Awards range from \$2,000 up to \$50,000 per project. Letters of interest are considered on a monthly basis.

### **GREEN GRANTS** [🔗 ualberta.ca/sustainability](https://ualberta.ca/sustainability)

Green Grants are offered to support projects that produce measurable benefits and results at the University of Alberta. Awards range up to \$2,000 and can be requested at any time of the year, with four weeks lead time. Any staff or student may apply for a green grant. Any student applications not associated with a registered student organization must have a faculty sponsor. Faculty and staff applications must have a sponsor at or above the director or departmental chair level.

## Technical preparations to ensure your success

**All conferences have tech mishaps.** If you've organized a conference of any size, you already know the importance of good technical support. Whether a wireless mic fails, or a PowerPoint presentation won't play, you already need to rely on having an expert available to ensure technology runs smoothly.

For an e-conference, the specific types of mishaps are different, but the same attention to detail and technical support is required. Your approach should follow two principles:

### 1. Prepare ahead of time to make sure everything is tested and ready to go.

	Tech setup for individual presenters	The problem with alternatives
<b>Connection</b>	Connect to the internet on the strongest connection possible. A wired, Ethernet connection on a strong backbone (at a university, for instance) is best.	A presenter on WiFi is on a slower connection than Ethernet and the signal will degrade depending on how many devices are competing for space on the network. Worse, a WiFi signal suffers from interference from other wireless devices and could even drop out.
<b>Microphone</b>	Use a professional microphone with echo cancelling and filters to minimize room noise.	A laptop or tablet's built-in microphone is designed to pick up sounds generously. The sound quality will have contain more room echo; it will pick up bumps to the device; and it could potentially create an echo from the laptop's speakers.
<b>Headphones</b>	The presenters need an appropriate sound source, either a properly positioned PA (if in a video-casting studio) or unobtrusive headphones (if streaming independently). A headset with built-in microphone can also work well.  Using headphones is also helpful psychologically, to reduce distractions and help focus on the video presentation.	If the presenter's sound source feeds back into the microphones, it can cause echoes or harsh feedback.
<b>Camera</b>	A high quality, external camera can zoom or go widescreen, depending on the size of the presenting group.	When the viewers cannot get a clear picture of the presenter, it is harder to focus on the presentation.
<b>Muting</b>	Microphones should be able to be easily switched ON and OFF. This is important for panels or for presentations with a Q&A from the live audience.	Incidental noise from the other panelists can distract viewers from the presentation. Questioners can interrupt the panel unless their mic is turned OFF.
<b>Test Call</b>	Do a test call and optimize the video settings accordingly.	Don't be caught off-guard by a weak connection or uncooperative software.

*“We’re trying to model how people from around the world can interact. We’ve got some of the best computer and network support for a faculty of arts that I know of anywhere in the world.”*

*—Geoffrey Rockwell, director of KIAS.*

## 2. Have a back-up in place in case of failure

	Issues that arise	Plan B solutions
<b>Time Zones</b>	<p>Video-streaming across time zones means your presenters will sometimes mistake the time they are meant to appear.</p> <p>Likewise, an online audience can be difficult to harness if the time zone difference is too great.</p>	<p>Be ready to juggle the schedule if you need to fill time. This is more easily accomplished if your program mixes pre-taped and live presentations.</p> <p>Have a set of shorter videos ready to play if there is a technical issue (e.g. grad student presentations, thank you videos, or packaged slideshows).</p>
<b>Streaming Lag &amp; Dropped Connections</b>	<p>A video stream that is crystal clear during testing can later fail.</p>	<p>Have more than one platform ready to go. Switching providers can sometimes do the trick, even if your internet connection is the same. As a last resort, ensure you can reach presenters by phone so you can continue without video.</p>
<b>Missed Deliveries</b>	<p>If your conference is using pre-recorded video, you won’t need to worry about streaming lag. But you might still find that an upload or courier is late, and there is no video to play.</p>	<p>Schedule deliveries as early as possible. Don’t rely on someone uploading their video hours before their time slot.</p> <p>Be ready to juggle the schedule if you need to fill time. Ensure you have a way to communicate transparently to viewers in other time zones too—you might want to cut the conference short, but that might be the only timeslot that some viewers can attend.</p>
<b>Conversation Platforms</b>	<p>It can be difficult to set up a Q&amp;A channel to allow remote locations and online audiences to communicate with presenters. Audio and text chat may fail, suffer from a poor connection, or become unwieldy.</p>	<p>Don’t rely exclusively on live conversation platforms. Asynchronous solutions, such as comments on a blog or on a social media hashtag (e.g. Twitter), allow you to receive questions and respond to them in a more structured way.</p>

## Finding technical support at the University of Alberta

There are a number of technical supports teams on and off campus to help with e-conferences. Check with your faculty's resource center, if available, or get in touch with IST.

### INFORMATION SERVICES AND TECHNOLOGY

**Phone:** 780-492-9400

**Email:** [ist@ualberta.ca](mailto:ist@ualberta.ca)

IST's videoconferencing suite allows you to bring your meetings closer through clear voice and video. You can reserve a location, consult experts on design and equipment setup, and request assistance for configuration of equipment and installation of mobile equipment. Technical assistance is available for using Adobe Connect; limited support is available for non-standard applications including Skype, WebX, GoToMeeting and MeetMe.

Services are available to academic staff, support staff, students, and with approval may be extended to requests from outside the university. To book training, resources or equipment, please connect at least one week in advance so that IST can determine analyst and equipment availability.

### FACULTY OF ARTS

**Phone:** 780-492-5278

**Email:** [kamal.ranaweera@ualberta.ca](mailto:kamal.ranaweera@ualberta.ca)

**Location:** 450B Arts and Convocation Hall

The Arts Resource Centre provides state-of-the-art digital solutions for initiatives across all disciplines of the Faculty of Arts. The ARC has several video conferencing solutions that can be used for meetings, distance lectures and conferences. ARC can liaise between you and other audio-visual providers to ensure smooth event delivery.

### FACULTY OF AGRICULTURAL, LIFE & ENVIRONMENTAL SCIENCES

**Phone:** 780-492-7220

**Email:** [brett.finch@ualberta.ca](mailto:brett.finch@ualberta.ca)

ALESTech offers a variety of services and resources to help faculty and staff in the Faculty of Agricultural, Life & Environmental Sciences. This includes Skype for Business and Polycom Video Conferencing, and Adobe Connect. For international conferencing, please get in contact 3 (or more) weeks in advance. For conferencing within North America, 2 weeks advance notice is sufficient.

### ALBERTA SCHOOL OF BUSINESS

**Phone:** 780-492-1522

**Email:** [nadine.badry@ualberta.ca](mailto:nadine.badry@ualberta.ca)

**Location:** 3-25 Alberta School of Business (Conference Facilities and Building Manager)

The Stollery Executive Development Centre occupies the fifth floor of the Alberta School of Business. Alongside a boardroom and other breakout spaces, the Eric Geddes Decision Lab is a SMART classroom equipped for videoconferencing.

## FACULTY OF EDUCATION

**Phone:** 780-492-3563

**Email:** [techined@ualberta.ca](mailto:techined@ualberta.ca)

Technologies in Education operates two video conference rooms on the third floor of Education North. Rooms are available for bookings across the university and other agencies who require assistance with teaching and learning.

## FACULTY OF MEDICINE & DENTISTRY

**Phone:** 780-492-9731

**Website:** [servicedesk.med.ualberta.ca](http://servicedesk.med.ualberta.ca)

**Location:** OJ1.18 WC Mackenzie Health Sciences Centre

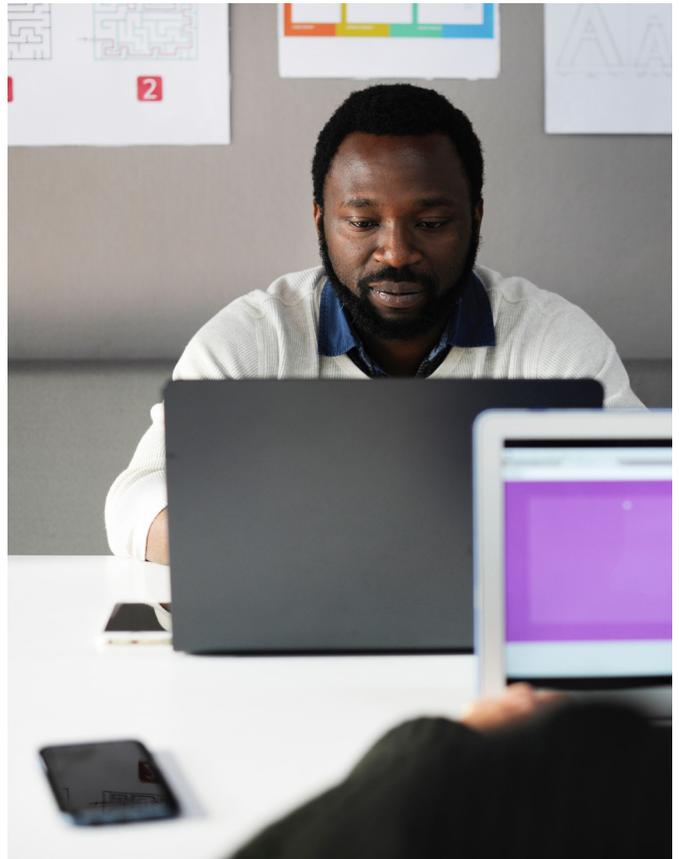
MedIT provides a full range of information technology services, including support for video conferencing using Skype for Business. To learn more, contact the Service Desk.

## REHABILITATION MEDICINE

**Phone:** 780-492-0389

**Email:** [lester.lim@ualberta.ca](mailto:lester.lim@ualberta.ca)

The Rehabilitation Medicine Technology Group has helped make this faculty a leader in the application of information and communication technologies for teaching and community care. With campuses in Edmonton, Camrose and Calgary, students learn through a mixture of face-to-face and real-time video casting on 60" screens. To learn more, contact the Technical Support Help Desk.





# PEOPLE, PLANET & PROSPERITY

[UALBERTA.CA/SUSTAINABILITY](http://UALBERTA.CA/SUSTAINABILITY)