

Blending Realities

A person wearing a VR headset and holding a controller, standing in a room with a large window. The person is looking upwards and to the right, holding the controller high in their right hand. The background is a bright, slightly blurred indoor space with a large window.

**The Future of Co-Creation across
Virtual and Physical Worlds at the
Canadian Centre for eXtended
Realities (CCXR)**

**or...
How to Make the
Metaverse a Better-verse!**

David Leach
Digital Storytelling &
Social Simulation Lab
University of Victoria
dleach@uvic.ca



HOW MIGHT YOU USE AN INTERACTIVE
GAME AND/OR A SMARTPHONE APP TO...

- HELP YOUR ORGANIZATION?
- TELL YOUR STORY?
- EDUCATE ABOUT A VITAL ISSUE?

- THINK, DISCUSS, LIST (10 MINS.)
- SHARE (10 MINS.)

 University
of Victoria



Canadian Centre for eXtended Realities (CCXR)

WHAT Integrated motion capture, spatial audio and virtual location labs/studios

WHERE Vancouver Island Technology Park (VITP), Saanich, BC

WHEN ~2023

WHO Fine Arts & Engineering & Computer Science, University of Victoria (UVic)

WHY 6 research/creative streams

HOW Canadian Foundation for Innovation (CFI) funding... and you!



What — Infrastructure

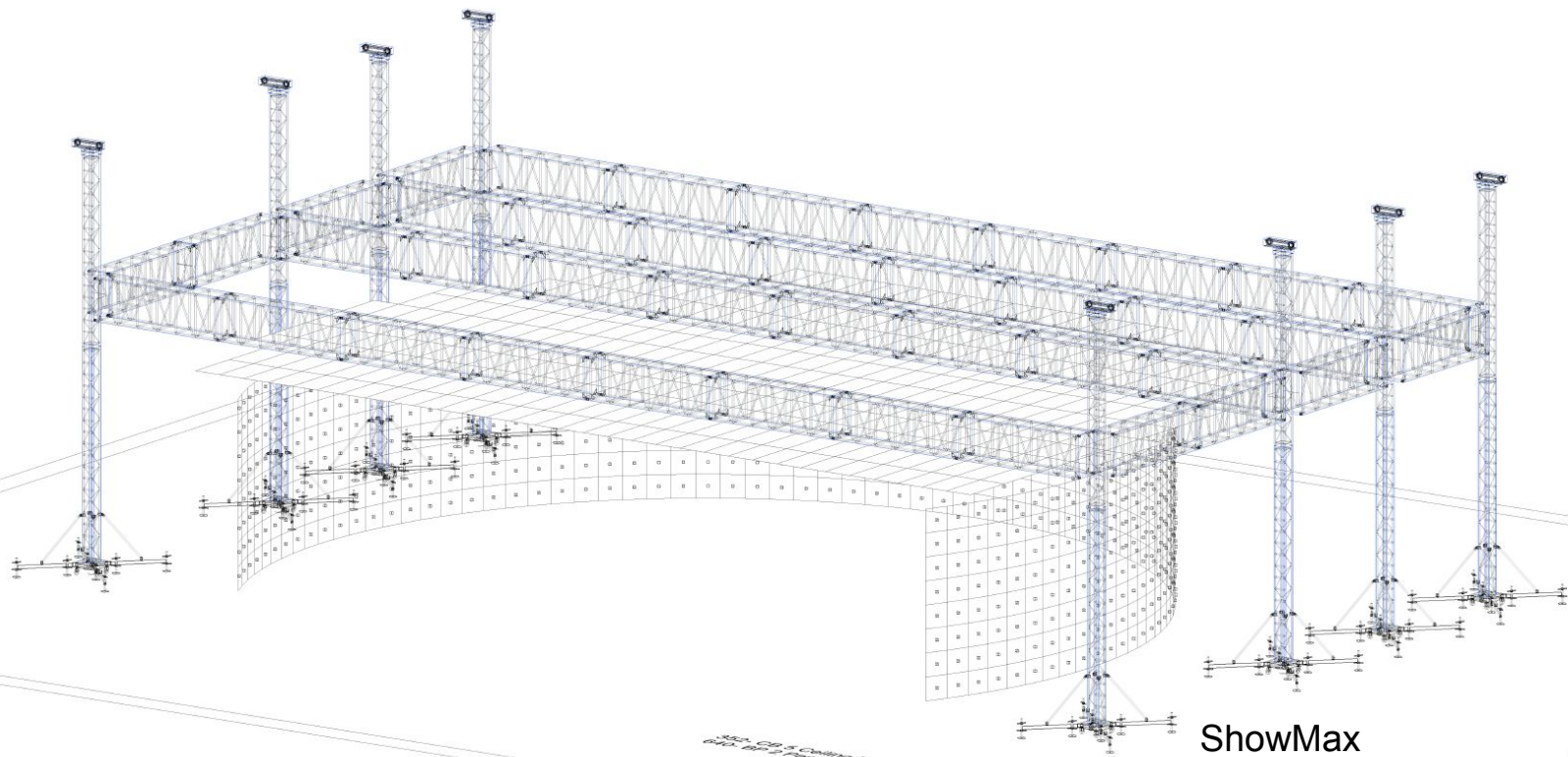
XR research and digital arts facility:

- Virtual Location Studio
- Motion Capture Studio
- Spatial Audio Studio
- Fabrication Workshop, Demo / Rehearsal Space
- Administrative Offices
- BCNet Advanced Network



ShowMax

What — Virtual Location Studio



What — Virtual Location Studio



The Mandalorian

What — Motion Capture Studio



VICON

What — Spatial Audio Studio



Creative Research Technology Lab

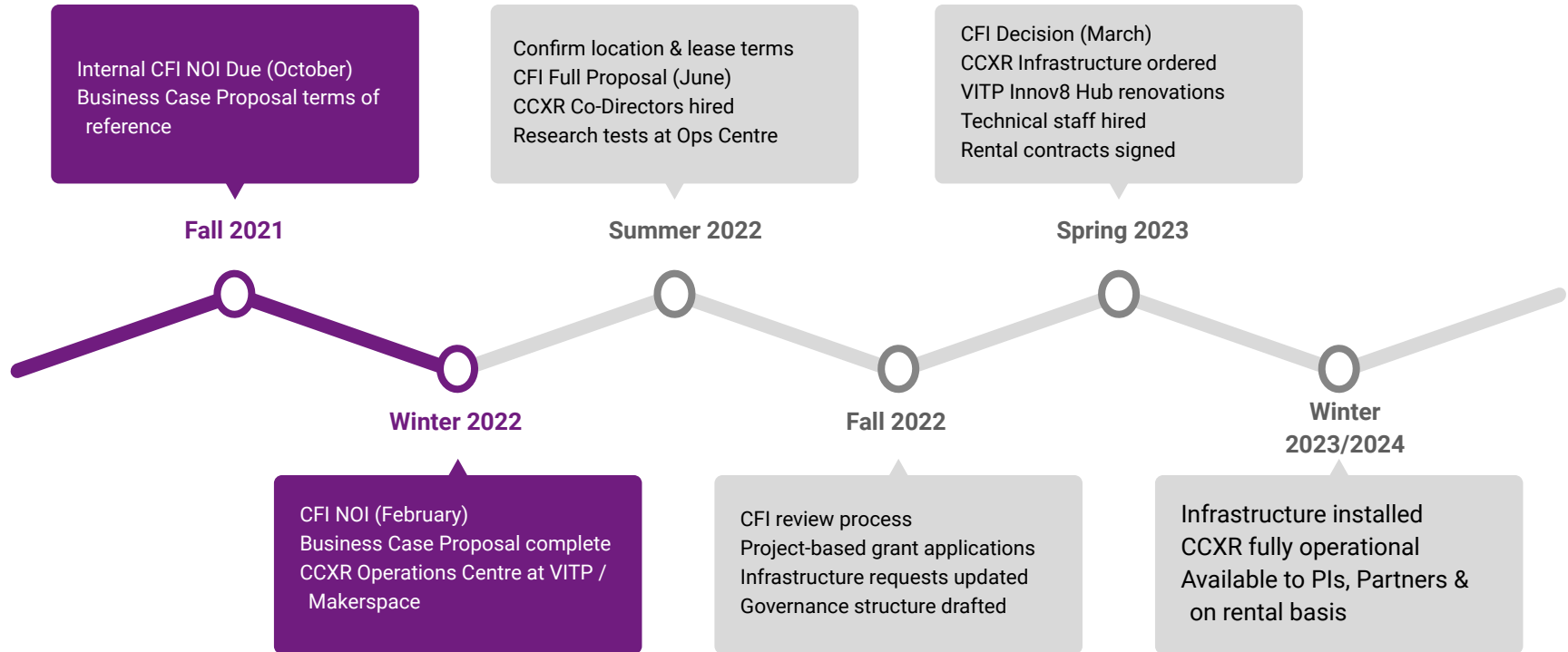
Where — Location

Vancouver Island Technology Park (VITP)

- Innov8 Hub or new building
- BCNet high-speed connection
- Existing tech start-ups
- Camosun College & future soundstage
- Victoria Makerspace



When — Timeline



Who — UVic Team

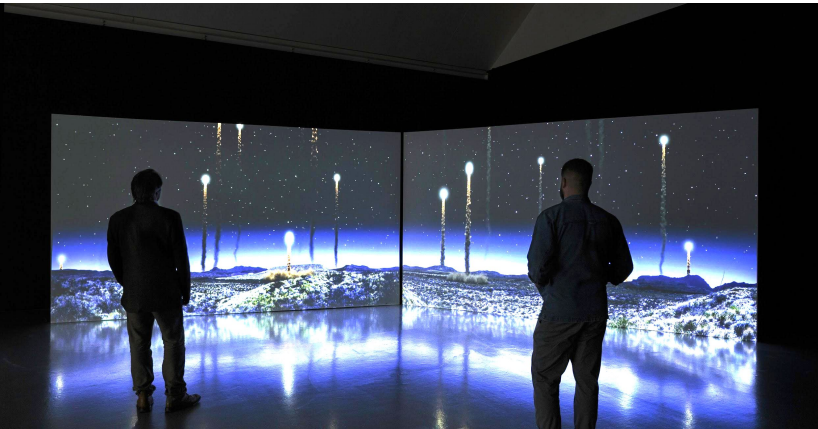
Fine Arts

David Leach
Carey Newman
Mo Bradley
Kevin Kerr
Kirk McNally
Kelly Richardson

Engineering & Computer Science

Brandon Haworth
Sowmya Somanath
Yvonne Coady

George Tzanetakis



Research & Creation Labs

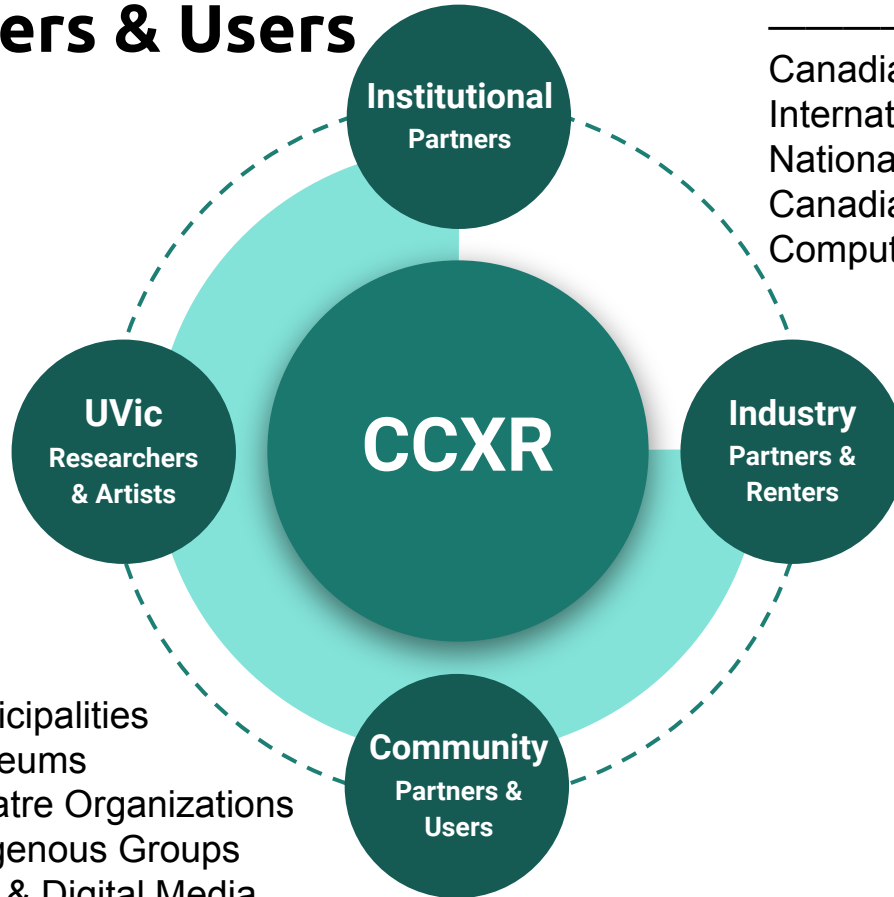
Digital Storytelling & Social Simulation Lab
Hi-Def Story Incubator Lab
Creative Research Technology (CReaTe) Lab
Graphics, Artificial Intelligence, Design, & Games Lab
MOD(ularity) Squad
Creative Experiences Lab

Who — Partners & Users

Fine Arts & Engineering

Education
Digital Humanities
Psychology
Technology & Society
Business
Oceans Network Canada
Biomedical Engineering
PICS
Research centres

Municipalities
Museums
Theatre Organizations
Indigenous Groups
Film & Digital Media
Malahat Studios



Camosun College (film studio)

Canadian Universities / Colleges
International Universities
National Research Council
Canadian Coast Guard
Compute Canada

Digital River Entertainment
ShowMax
Powerland
Unreal / Epic
Microsoft
Valve / HTC Vive

Film Studios
TV Streaming Services
VR/XR Production
Video Game Studios
Architectural Design Firms
Ed-tech Companies

Who — Institutional Partners

Potential institutional collaborations:

- Camosun College
 - UBC Emerging Media Lab (Vancouver)
 - Basically Good Media Lab, Emily Carr (Vancouver)
 - SFU iSpace (Vancouver)
 - Centre for Digital Media (Vancouver)
 - Vancouver Film School
 - En'owkin, Indigenous Education Centre (Penticton)
 - VIU (Vancouver Island University)
 - BCNet
-
- Spatial Technologies Applied Research & Training Centre, Lethbridge College (Alberta)
 - Computational Arts, York University (Ontario)
 - HyperLab, Carleton (Ontario)
 - UHN: Toronto Rehabilitation Institute (Ontario)
 - Rutgers (New Jersey)
 - Northeastern University (Maine/Boston/Vancouver)
 - Centre for Creative and Immersive Extended Realities, University of Portsmouth (UK)



Who — Community & Industry Partners

Potential industry and creative collaborations:

- CineVic
 - VIATEC
 - Victoria Makerspace
 - Royal BC Museum
 - HoloLabs, XR for theme parks
 - Electric Company Theatre, VR/AR drama
 - Kim Harvey, Indigenous theatre producer
 - Cloudhead Games, VR games & remote work
 - On This Spot, AR historical walking tours
-
- Malahat Film Studios
 - Microsoft Spatial Computing
 - Unity Software Inc.
 - Unreal Engine / Epic Games
 - DigiBC



Kim Harvey, *Kamloopa*

Why — Research Goals



1. How can we improve the latency, fidelity and diversity of **simulated human behaviours**?
2. How can we enhance the recording, editing, broadcast and reception of **spatial audio**?
3. How can we integrate **360° cinematic A/V**, embodied **presence** and interactive **agency**?
4. How can we **co-create, rehearse and broadcast** digital productions, performances and communication to **remote audiences**?
5. How can we evaluate the perceptual **awareness**, psychological **engagement** and emotional **immersion** of diverse XR audiences?
6. How can we design **decolonized virtual spaces**?

How can digital environments be better engineered, integrated and networked to deepen the psychological immersion and positive social interactivity of XR experiences to connect diverse audiences?



Why — Impacts and Benefits

CCXR Arts & Innovation Hub

Health

- Biomechanical rehab
- Accessibility design
- Empathy & wellness apps
- VR safety/rescue training tools
- Develop XR ethics protocols

Innovation

- Soft/hardware development
- XR advances
- Access to leading tech
- Interdisciplinary collaboration w/ engineers, artists, industry



Economic

- Digital/XR start-ups
- Film & TV industry
- HQP training
- Arts-culture productions
- Support services

Environmental

- Reduced film location shoots
- Advanced VR conferencing
- Reduced travel via remote co-creation & performances
- Digital simulations for design

Social / Cultural

- Artists access to new tech
- Cultural preservation
- Indigenous access / protocol
- XR for education
- Remote access to arts

***How* — A Tale of Two Metaverse Metaphors**



Canadian Pacific Railway (CPR) of XR

An aerial photograph of a tropical archipelago. The scene is dominated by numerous small, rounded islands of varying sizes, all covered in dense, vibrant green tropical forest. The water is a deep, clear blue, with some shallower areas appearing lighter turquoise. The islands are scattered across the frame, with a larger, more prominent island in the foreground. The sky is bright blue with scattered white clouds. The overall atmosphere is serene and idyllic.

How — A Tale of Two Metaverse Metaphors

Archipelago of XR

CCXR

**Canadian Centre(s)
for eXtended Realities**

... and you



Thanks!