CLOWDR

Conferences **L**ocated **O**nline **W**ith **D**igital **R**esources

Virtual conference platform

Jonathan Bell, Crista Lopes and Benjamin Pierce

Physical Conference Recipe

Paper Presentations
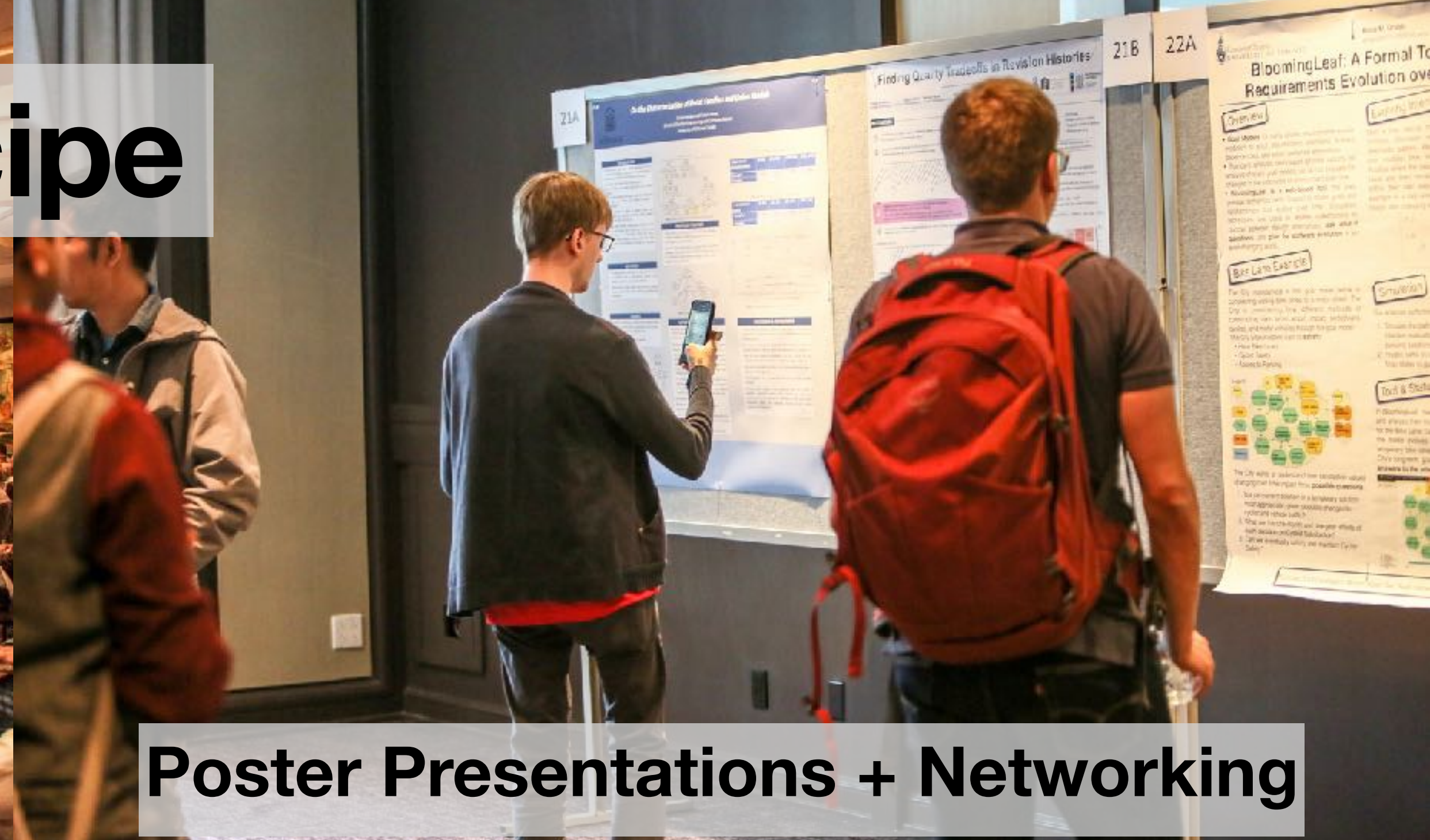
Poster Presentations + Networking

Snacking + Networking
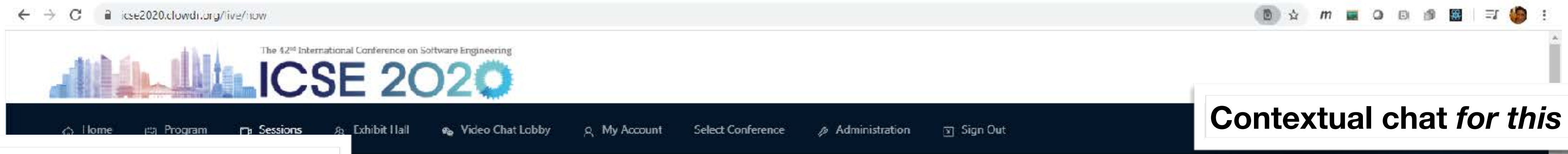
Tourism + Networking

Academic Communities Meeting Virtually

A socio-technical problem with unique academic challenges

- Technology:

  - How to provide opportunities to discover who else is attending and interact?

  - How to organize all of the synchronous and asynchronous video in one place?

  - How to organize chat around the technical program?

- Social:

  - What is the barrier to introducing yourself?

  - When should you be online?

  - Cameras on/off?

  - How to have casual interactions?

  - How to keep the discussion going after the conference?

CLOWDR: A Successful Beta Deployment @ ICSE
~1500 logged on to the platform overall

Contextual chat *for this room*

10 most recent participants to join this room

Globally-available direct messaging
1-click to video chat

We are in the Lobby: overview of all 3 live rooms with sessions right now

Hallway Track

Watching talks

10 most recent participants to join this room. Still see all 169 by expanding

Contextual Chat

Globally-available direct messaging

Chat centered around the program
NOT centered around slack's interface!

Slack-based conference (NOT Clowdr)

CLOWDR: Each paper/poster gets its own chat channel, cross-linked to program/authors/live sessions, can be archived.

Hallway & Posters Tracks

Participants can make their own public/private vid

ACM Student Research Competition

Studying and Suggesting Loggi...
Zhenhao Li

An Automated Framew...
Zihe Song

An Empirical Study on the Evolu...
Dong Jae Kim

Efficient test execution in...
Cristian Augusto

Important: participants can see where others are

Same for posters!

Hallway & Posters Tracks
364 users used this; 146 spent over 20 mins, 77 over 1 hour, total: 250 hours!

Deployment costs and infrastructure

- Conference maintains complete ownership of the data. App is open source.

- Frontend: react, "almost" no backend - ParsePlatform, we used hosting from Back4App

  - <$100, could have chosen a cheaper plan. Replicated across multiple continents, good fault tolerance story. Installation easily shared among multiple conferences

- Program - imported from conf.researchr.org, can make live edits

- Video:

  - Live sessions - Zoom, YouTube, IQYI

  - Breakout sessions - Twilio (Unlimited rooms, less than 1 cent/min/person

  - Chat - Twilio (Unlimited channels, $0.02/active user/month)

- $500 free credits available from Twilio for non-profits impacted by COVID-19. Total deployment cost to ICSE was ~$100 (just hosting).

Backend load during ICSE (~1500 participants)

Server capacity (80 req/sec)

Actual load (spikes ~30 req/sec)
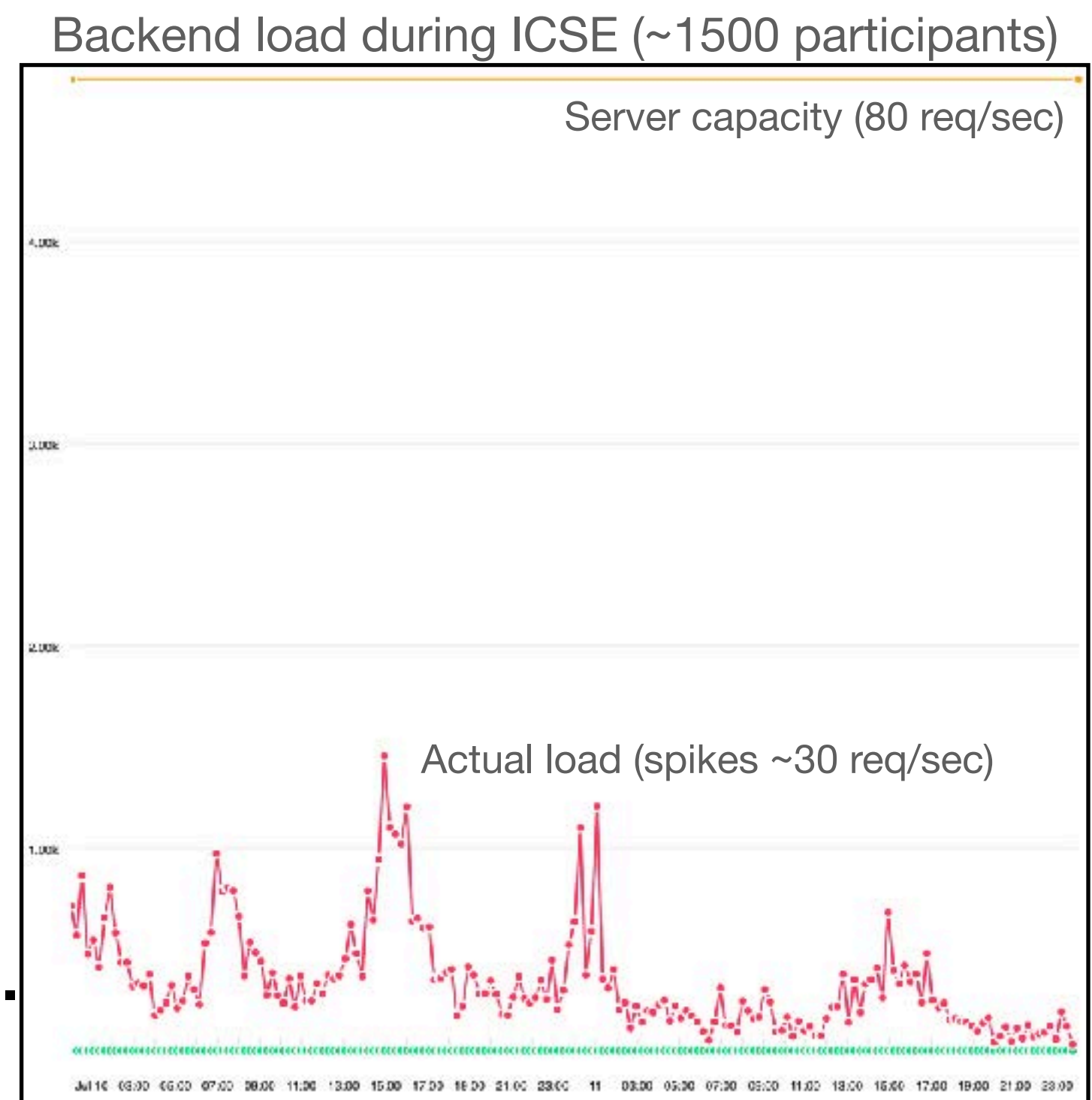
Open technical problems
HUGE feature wishlist, looking for contributors!

clowdr-app / **clowdr-web-app**

⊙ Unwatch ▾ 1   ☆ Star   ⑂ Fork

<> Code   ⊙ Issues **38**   ⫚ Pull requests **1**   ⊙ Actions   ▦ Projects   📖 Wiki   ⊙ Security

Filters ▾   ⌕ is:

⊕ Milestones

⊙ **38 Open**   ✓ 4 C

How do best mix P2P video + chat + content?

☐ Author ▾   Label ▾   Projects ▾   Milestones ▾   Assignee ▾   Sort ▾

☐ ⊙ **Add push-to-talk to video chats**
    #74 opened 2 days ago by jon-bell

☐ ⊙ **Posters / Poster "UI card" images**
    #71 opened 3 days ago by bcpierce00

☐ ⊙ **Zoom-hosted chat rooms**
    #70 opened 3 days ago by bcpierce00

☐ ⊙ **Pie in the sky / Push notifications for messages**
    #69 opened 3 days ago by bcpierce00

☐ ⊙ **Pie in the sky / Watch parties**
    #68 opened 3 days ago by bcpierce00

☐ ⊙ **Pie in the sky / Add emotes on live rooms**
    #67 opened 3 days ago by bcpierce00

☐ ⊙ **Emoji nits**
    #66 opened 3 days ago by bcpierce00   ▤ 0 of 2

☐ ⊙ **Admin / user-defined flairs**
    #65 opened 3 days ago by bcpierce00

☐ ⊙ **User-created public channels**
    #64 opened 3 days ago by bcpierce00

☐ ⊙ **Admin / Add profile field for hobbies**

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clowdr-app / **clowdr-web-app**

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<> Code   ⊙ Issues **38**   ⫚ Pull requests **1**   ⊙ Actions   ▦ Projects   📖 Wiki   ⊙ Security   ⩙ Insights

Pulse

Contributors

Community

Traffic

Commits

Code frequency

Dependency graph

Network

Forks

People

May 17, 2020 – Jul 17, 2020

Contributions: Commits ▾

Contributions to master, excluding merge commits

80

60

40

20

0
May 17   May 24   May 31   Jun 07   Jun 14   Jun 21   Jun 28   Jul 05   Jul 12

crista   #1
165 commits 6,550 ++ 2,520 --

jon-bell   #2
101 commits 59,819 ++ 28,351 --

40

May 17   Jun 07   Jun 28

40

20

May 17   Jun 07   Jun 28

bingfeizh   #3
18 commits 32,963 ++ 64,051 --

anniejingchen   #4
14 commits 724 ++ 169 --

Open social problems

How do we encourage casual conversation?

Demo (Time Permitting) - https://icse2020.clowdr.org
Get access to try it yourself: welcome@clowdr.org
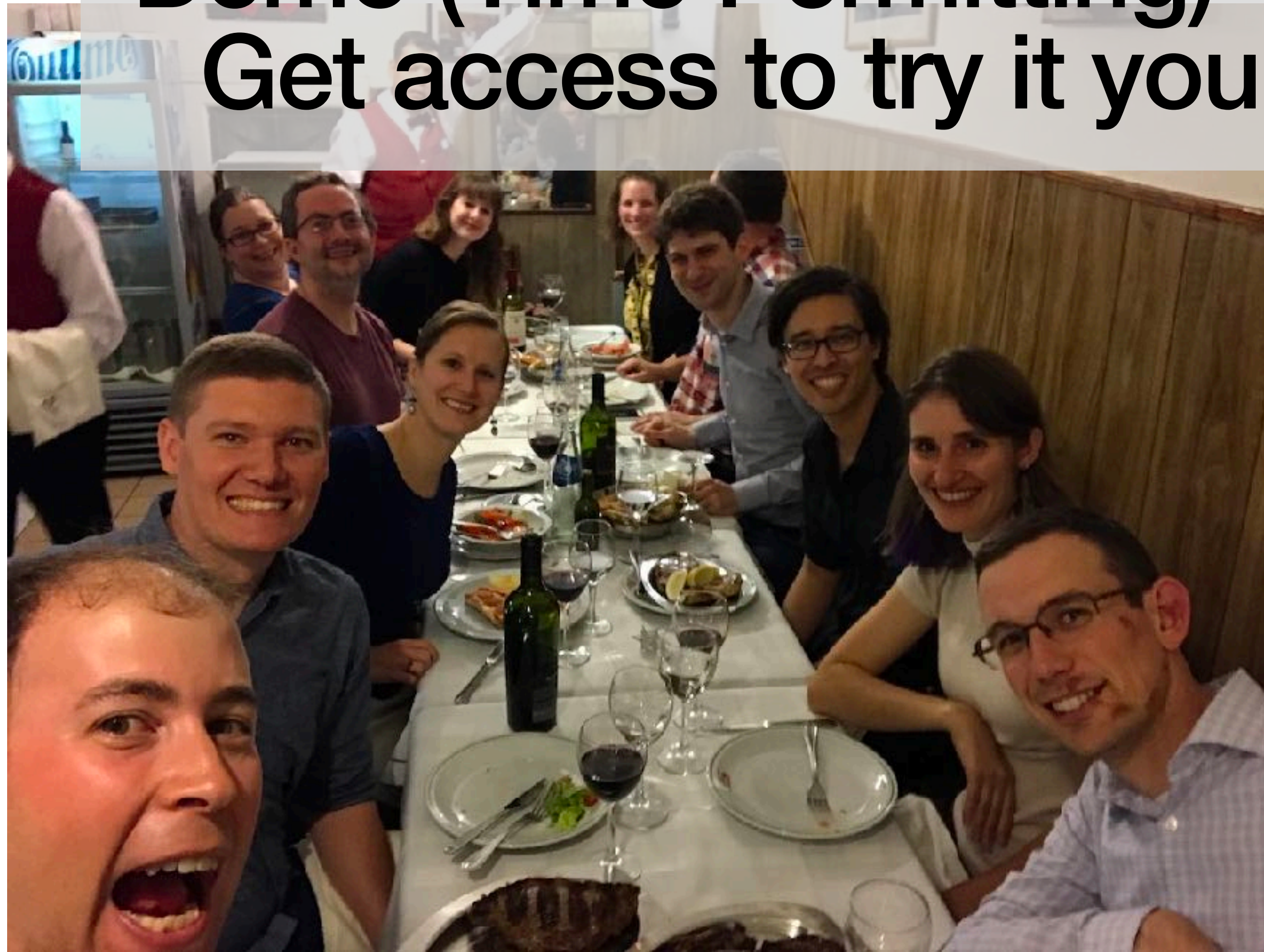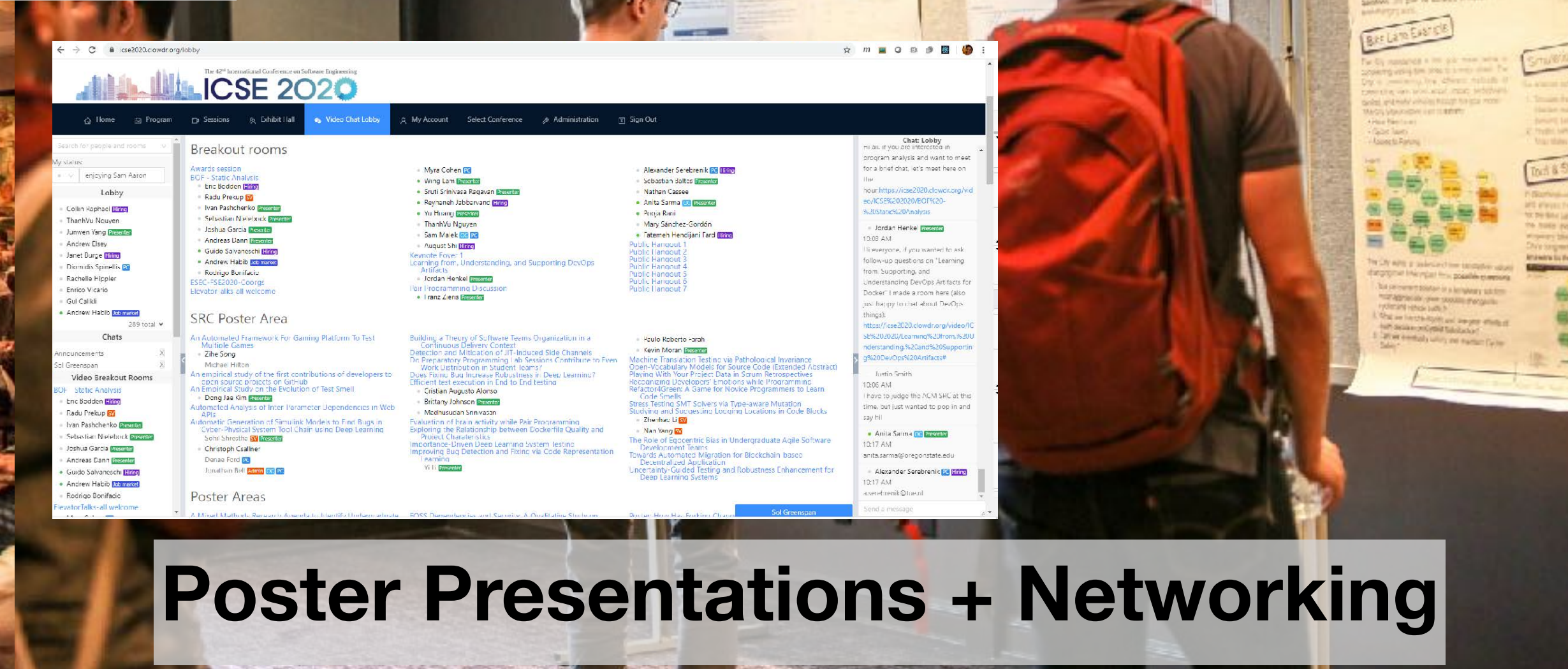
2017: Buenos Aires
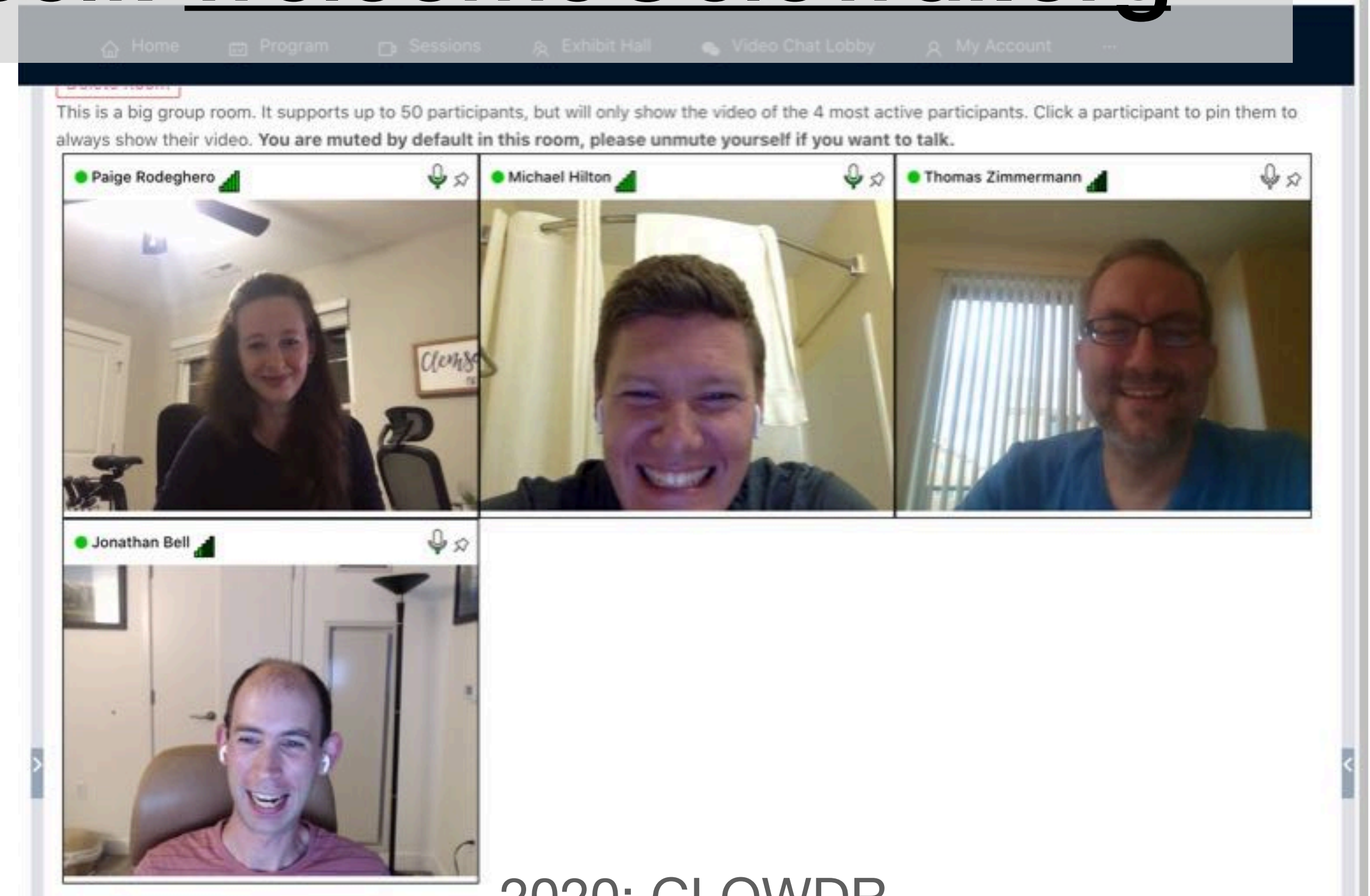
2020: CLOWDR

Physical Conference Recipe

Paper Presentations

Poster Presentations + Networking

Snacking + Networking

Tourism + Networking