



vMAX: Virtual Missions and Exoplanets Webinar Series, Part 2



VIRTUAL MISSIONS
AND EXOPLANETS

Webinar Series

Part 2: Technical Overview



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(Re)-introduction to vMAX

What

- One-week summer workshop, 5 days, 6hrs/day (flexible)

Who

- Middle school students

How

- Combination real & virtual world engagement, plus NASA data

Why

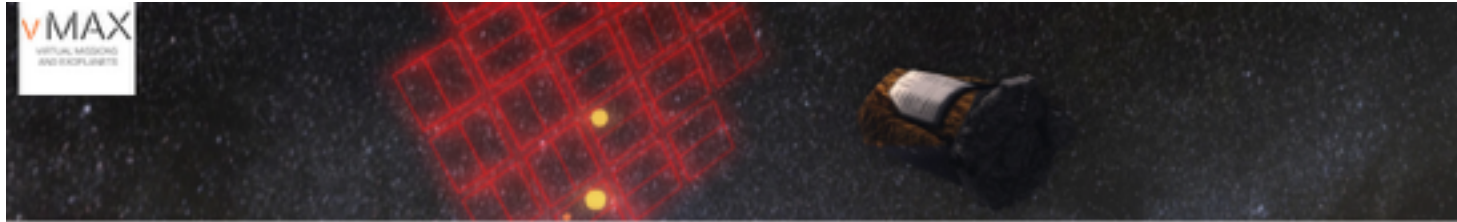
- Engage students in the mysteries of exoplanetary systems

(Re)-introduction to the vMAX Virtual World



- Immersive 3D simulations of exoplanetary systems and detection methods, explored via avatar
- Interaction in a protected virtual learning environment
- Collaborative environment for students and teachers

Video Tutorials: vMAX YouTube Channel








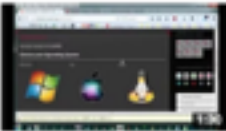


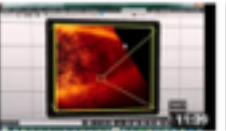




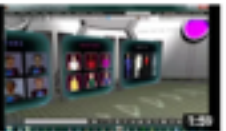


The banner image for the vMAX YouTube channel features a dark space background. On the left, there is a red grid pattern with several yellow dots. On the right, a small, dark, cylindrical object, possibly a satellite or probe, is shown in flight.

vMAX
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vmax simulation Subscribe

Uploads Date added (newest) Grid

Thumbnail	Title	Views	Time
	Virtual World Fly-Through	38 views • 1 week ago	6:56
	15 - Video Tutorial: Configure MySQL for OpenSim	5 views • 1 week ago	12:40
	14 - Video Tutorial: Install MySQL	6 views • 1 week ago	6:29
	13 - Video Tutorial: Load the vMAX CAR File	8 views • 1 week ago	5:26
	12 - Video Tutorial: Running Firestorm with OpenSim	18 views • 1 week ago	4:22
	11 - Video Tutorial: Configure for port 9000	3 views • 1 week ago	9:06
	10 - Video Tutorial: Install Firestorm	13 views • 1 week ago	5:00
	9 - Video Tutorial: Install and Download Firestorm	13 views • 1 week ago	1:56
	8 - Video Tutorial: Install OpenSim	14 views • 1 week ago	5:49
	7 - Video Tutorial: Installation and Setup Overview	6 views • 1 week ago	3:32
	5 - Video Tutorial: Lab Experiments	3 views • 1 week ago	11:39
	6 - Video Tutorial: Cleanroom and Satellite Launch	4 views • 1 week ago	6:00
	4 - Video Tutorial: Visualization studio - part 2	3 views • 1 week ago	5:47
	3 - Video Tutorial: Visualization Studio - part 1	3 views • 1 week ago	7:54
	2 - Video Tutorial: Moving and editing avatar	7 views • 1 week ago	7:28
	1 - Video Tutorial: vMAX Introduction	25 views • 1 week ago	1:59

Video Tutorial: vMAX Introduction



Navigating the vMAX Virtual World

- Methods to move around the virtual world
- Selecting/customizing your avatar
- Attaching mission patches
- Interacting with 3D simulations
- Class management in the virtual world



Video tutorial links will be provided at the end of this presentation.



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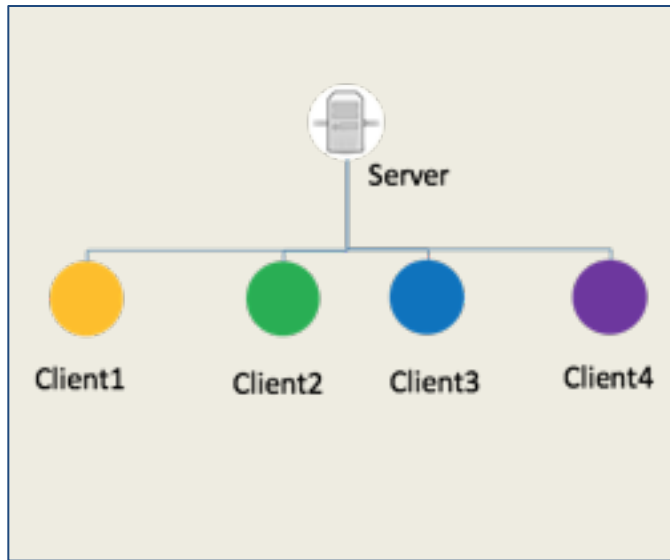
System Requirements and Installation

Poll



What's your level of technical expertise?

OpenSim Server and Firestorm Client



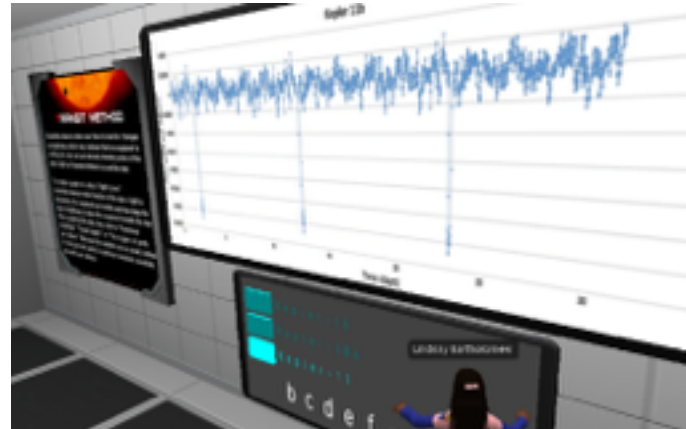
To run the vMAX virtual world with many students connecting, you need one server and as many client (student) computers.

- In this webinar, we will conduct a simpler installation to get started, where we will run and view the world in the same computer.
- The steps to achieve the configuration above will be provided in a series of resource videos.

Server Requirements

Assuming you have 20-25 student users:

- CPU: Dual-core is minimum, 4 preferred
- RAM: 8Gb
- Bandwidth: 500 kbit per simultaneously logged in avatar (if you plan on 20 users, $500 \text{ kbit} * 20 = 10\text{Mb/sec}$)
- Network latency: Should get pings between client and server that are better than 350 milliseconds



Client Requirements for Mac

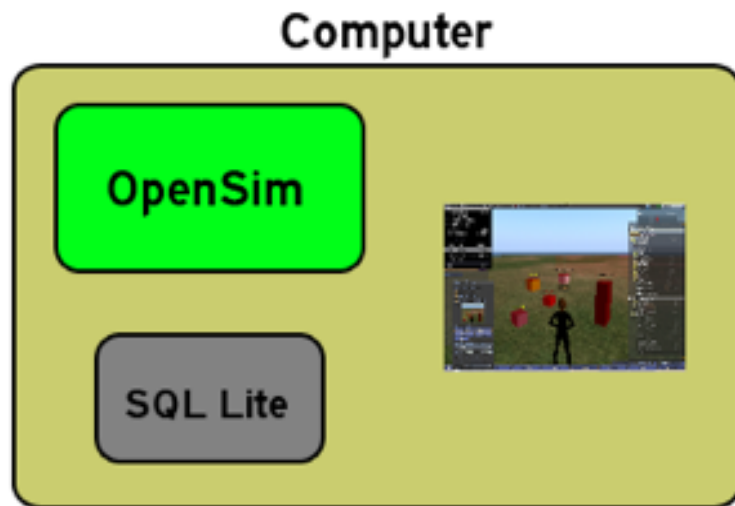
Mac OS X	Minimum Requirements	Recommended
Internet Connection*:	Cable or DSL	Cable or DSL
Operating System:	Mac OS X 10.7 or better	<u>the</u> latest release of 10.9
Computer Processor:	1.5 GHz Intel based Mac	2 GHz Intel Core 2 Duo or above
Computer Memory:	1 GB or more	3 GB or more
Screen Resolution:	1024x768 pixels	1024x768 pixels or higher
Graphics Card**:	<ul style="list-style-type: none">• ATI Radeon 9200 and above• OR NVIDIA GeForce 2, GeForce 4	<ul style="list-style-type: none">• ATI: 4850, 4870• OR NVIDIA: 9800

Client Requirements for Windows

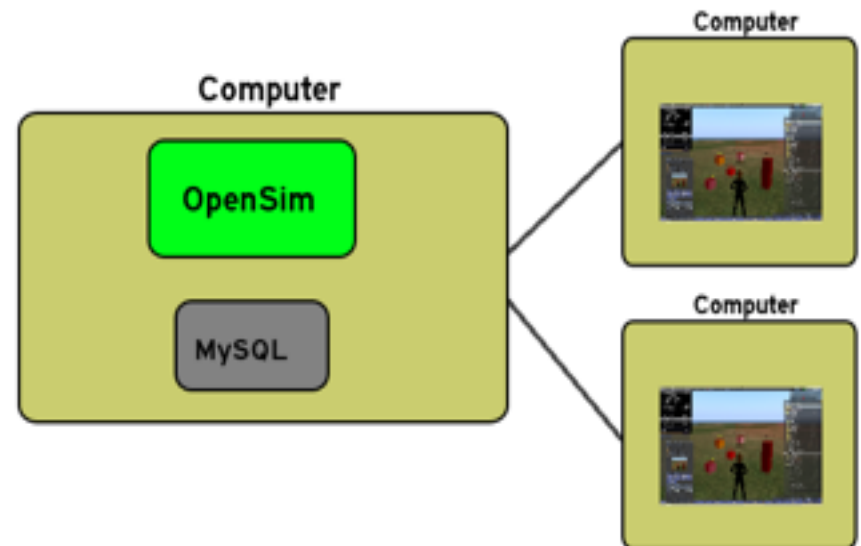
Windows	Minimum Requirements	Recommended
Internet Connection*:	Cable or DSL	Cable or DSL
Operating System***:	Vista, Windows 7 or Windows 8	Vista, Windows 7 or Windows 8.1
Computer Processor:	CPU with SSE2 support, including Intel Pentium 4, Pentium M, Core or Atom, AMD Athlon 64 or later.	2-GHz (Vista) 32-bit (x86) or better
Computer Memory:	1 GB or more	3 GB or more
Screen Resolution:	1024x768 pixels	1024x768 pixels or higher
Graphics Card for Vista Windows 7 or Windows 8 (requires latest drivers)**:	<ul style="list-style-type: none"> • NVIDIA GeForce 6600 or better • OR ATI Radeon 9500 or better • OR Intel 945 chipset 	NVIDIA Graphics cards 9000 Series: <ul style="list-style-type: none"> • 9600, 9800 200 Series: <ul style="list-style-type: none"> • 275 GTX, 295 GTX ATI Graphics Cards 4000 Series: <ul style="list-style-type: none"> • 4850, 4870, 4890 5000 Series: <ul style="list-style-type: none"> • 5850, 5870, 5970

Local vs. Server Installation

Local Installation



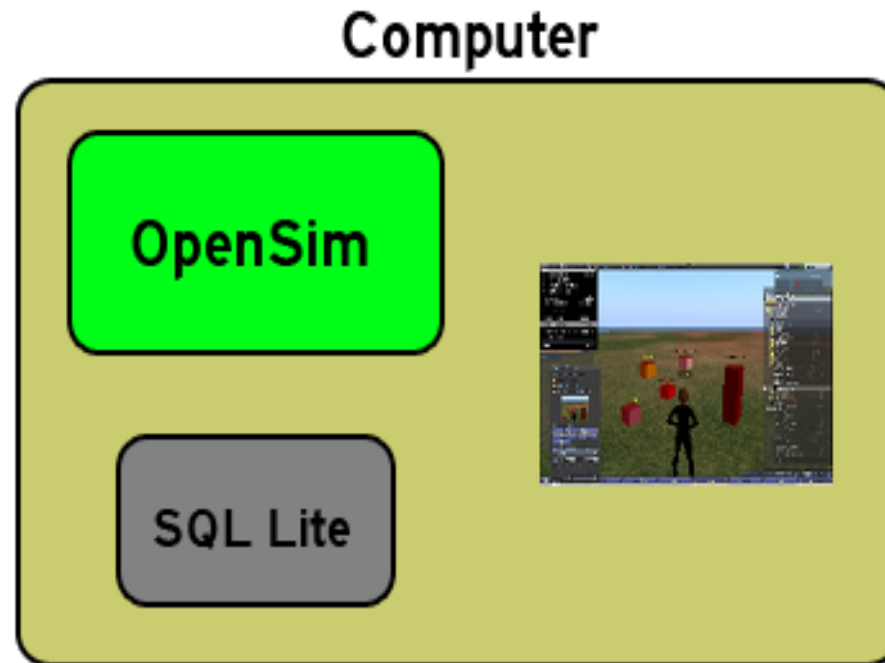
Server Installation



Local Installation

From only one computer you will be able to:

- Run the program that creates and contains the virtual world (OpenSim)
- Use the browser that lets you navigate in the virtual world (Firestorm)



Video Tutorial: Install OpenSim

- Go to <http://opensimulator.org/wiki/Download>
- Download current release binary package (e.g., opensim-0.8.2.1.zip)
- Unzip into a folder
- Download and install OpenSim and run OpenSim on your system
- Create an OpenSim administrator account



Steps to Download Firestorm

- Go to <http://www.firestormviewer.org/>
- Chose the Downloads tab
- Select your Operating System
- Download Firestorm for OpenSim



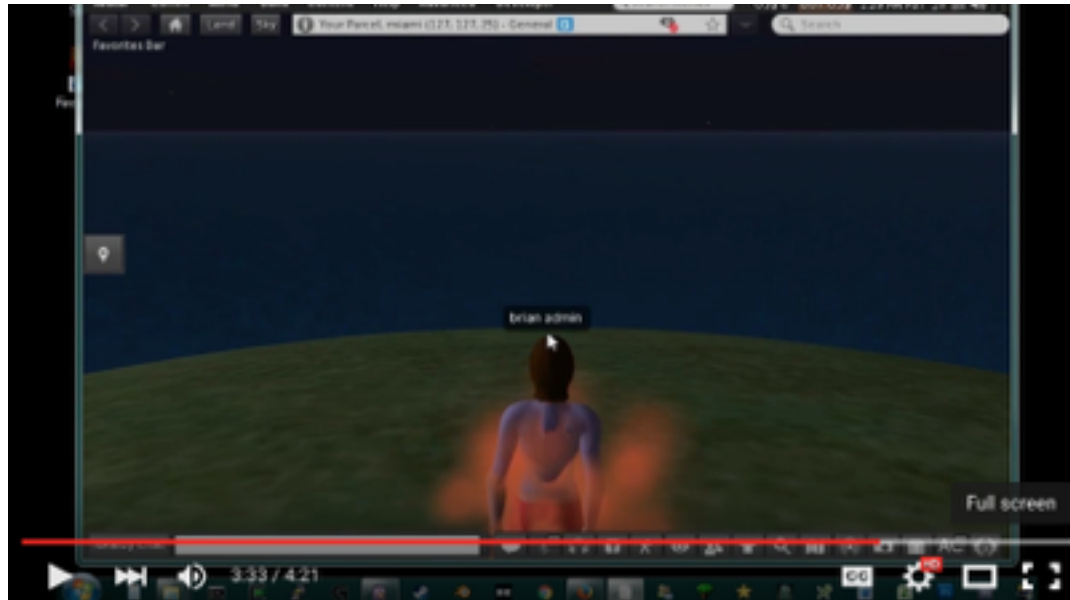
Steps to Install Firestorm

- Click on the Firestorm Installer you downloaded
- Save Firestorm to your applications folder
- Agree to license agreement
- Allow a few minutes for installation



Video Tutorial: Running Firestorm with OpenSim

- Run OpenSim
- Open Firestorm
- Under “Viewer” go to “Preferences”
- Go to the “Advanced” tab on the left, and allow other grids
- Go to “OpenSim” tab on the left and add the grid localhost:9000
- Log in to Firestorm to connect to a virtual world



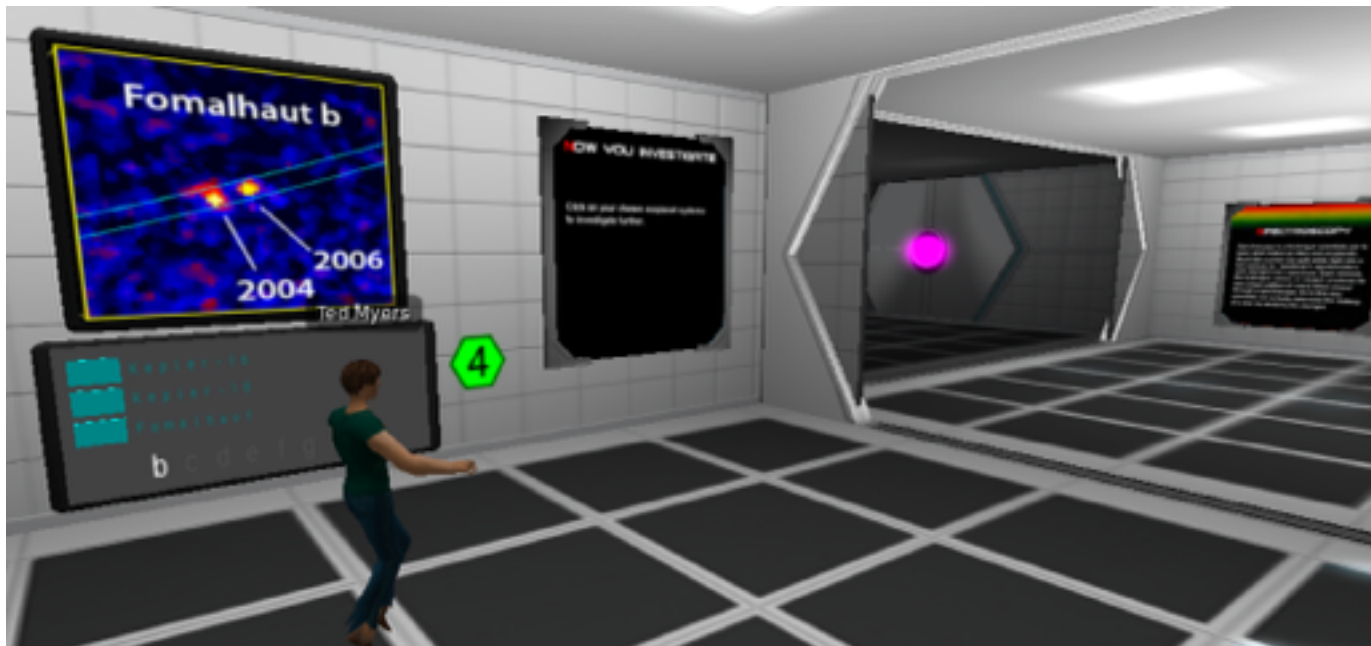
Video Tutorial: Load the vMAX OAR File

- Download OAR file (separate Adobe file to be provided)
- Save the OAR file on your computer
- Load the vMAX project (OAR file) into OpenSim
- Run the vMAX project files in OpenSim
- Login and view vMAX virtual world using Firestorm



Import/Export OAR File Commands

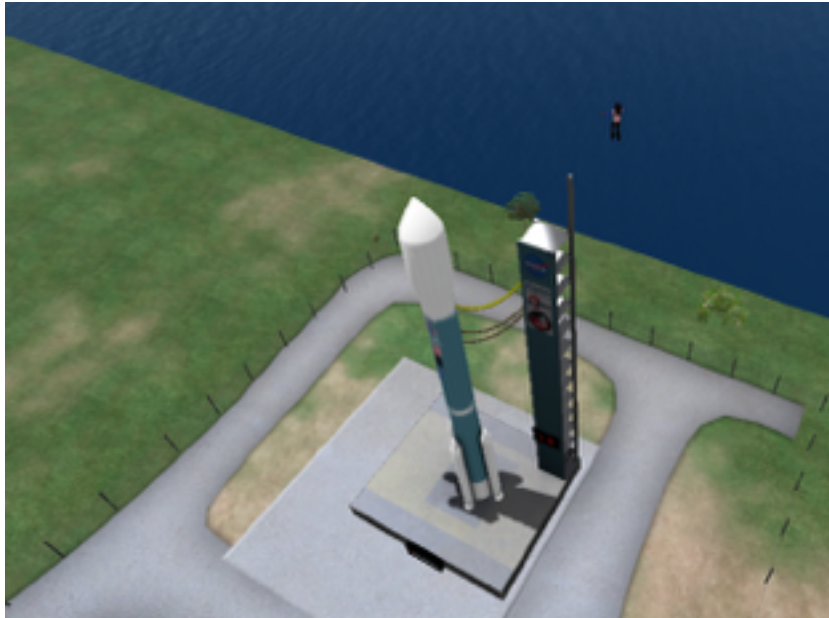
- OAR files hold all the land and assets for the virtual world
- OAR files do not save user accounts or user inventory
- Load OAR: `c:\temp\vmx.oar`
- Save OAR (to back up changes): `c:\temp\vmx2.oar`



Local Installation Process Completed!

You can now:

- Run Opensim on your computer
- View the vMAX virtual world on your computer using Firestorm





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Class Management and Facilitating Communication in the Virtual World

Username and Passwords

- Unique and easily identifiable by student name
- Identifiable according to each institution (if you have partners)



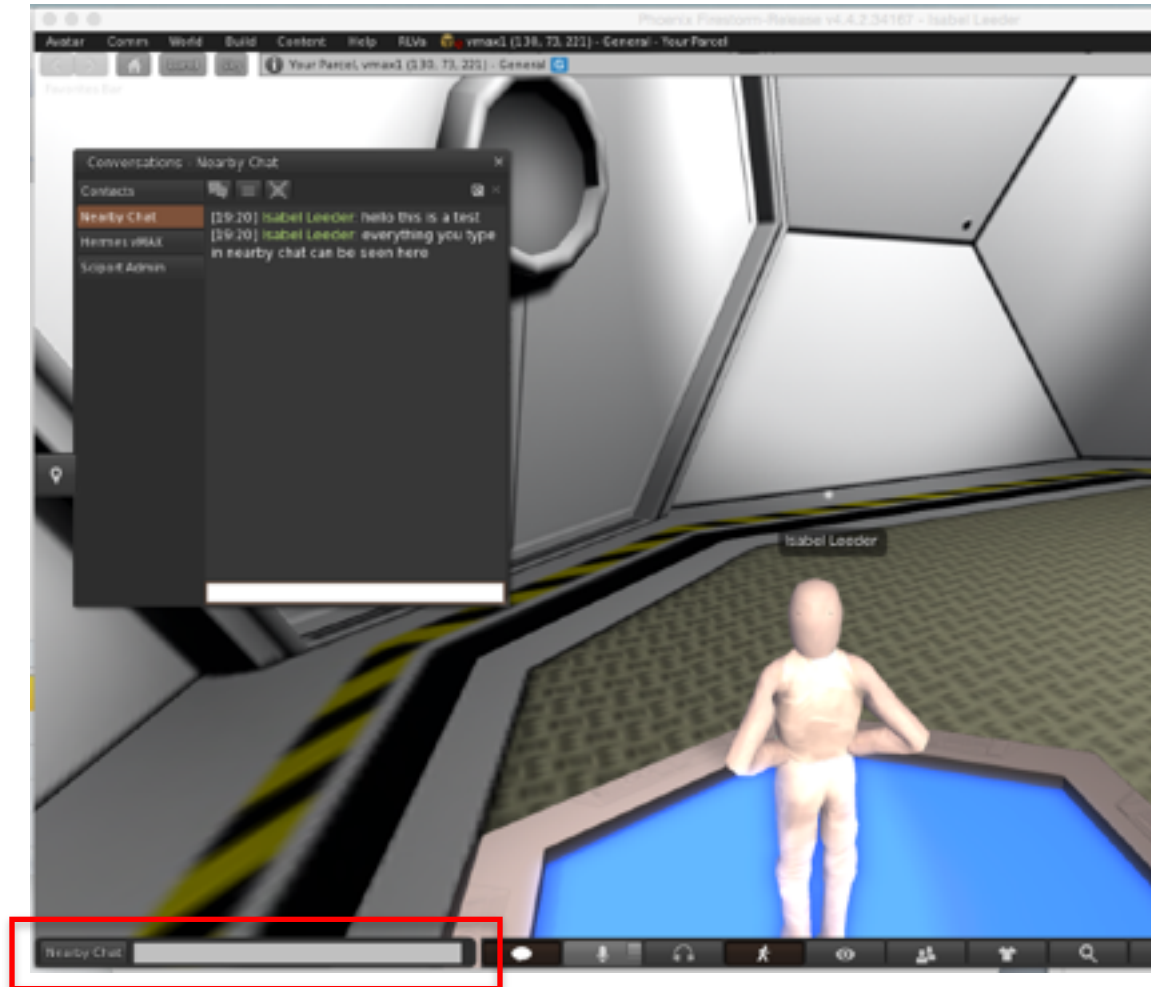
Controlling the Camera Angle

“Eye” icon (lower task bar) controls camera without moving avatars



Nearby Chat

- Chat box is visible to anyone logged into the virtual world
- Clicking on “Nearby Chat” opens a window to view chat history



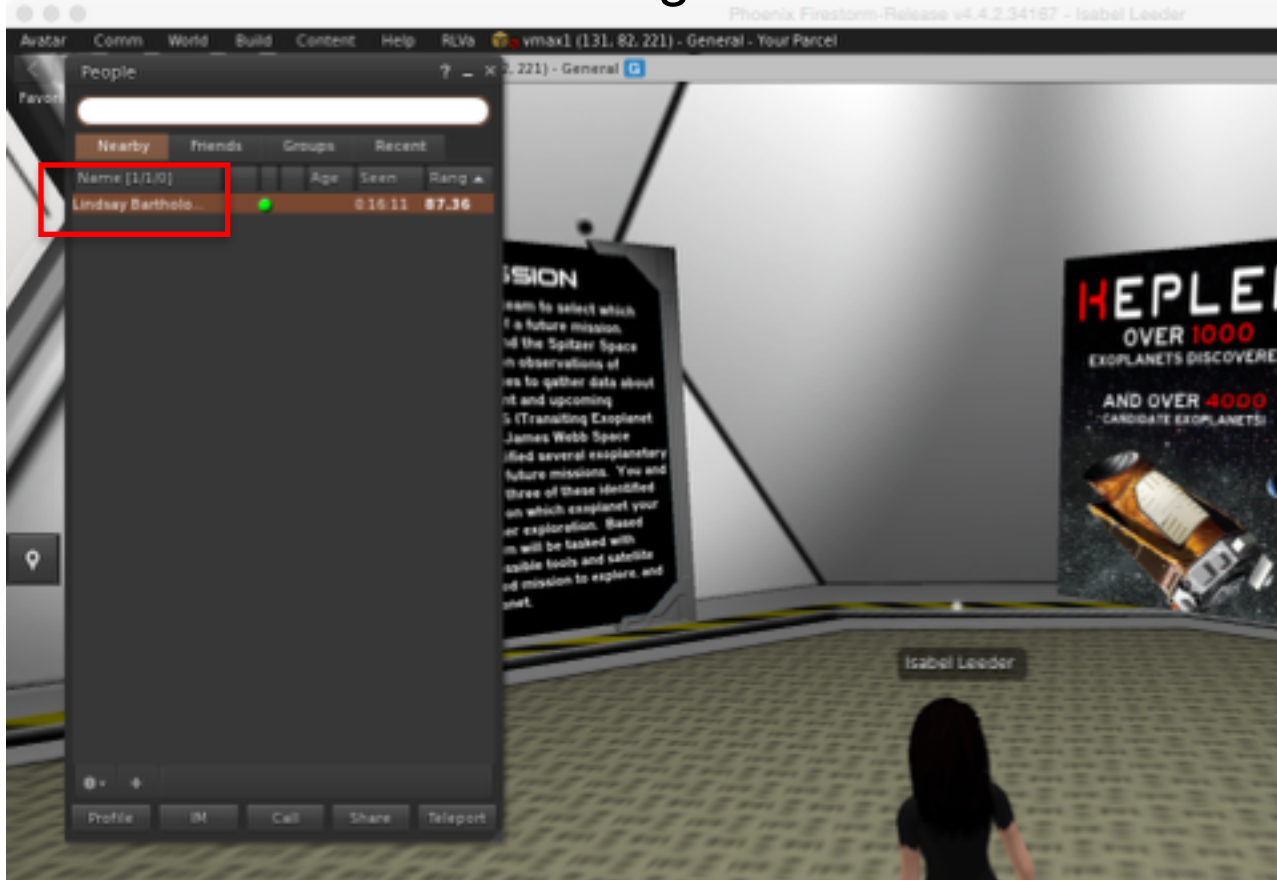
Class Management Tools

Many of these may be found in the “World” tab.



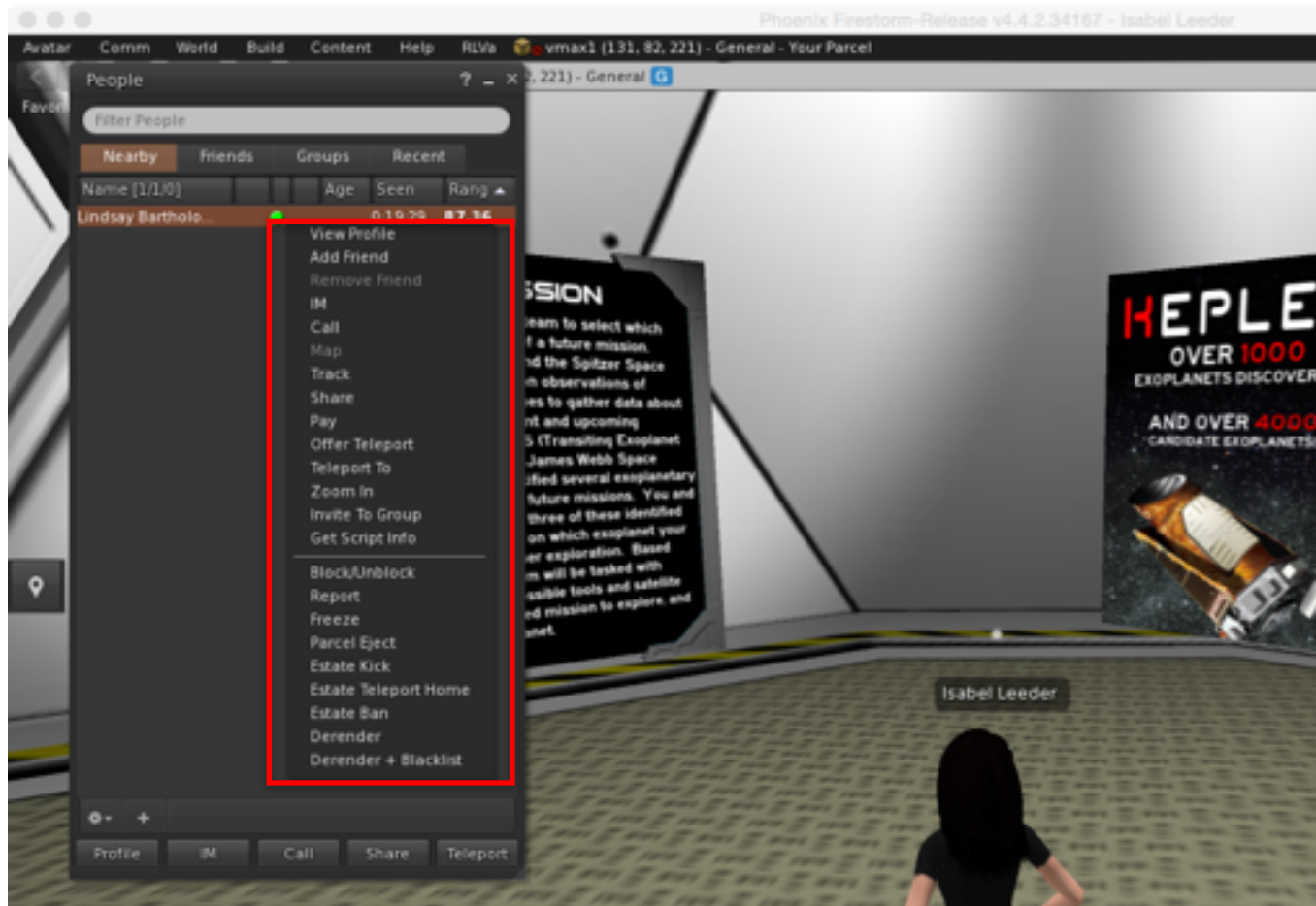
Finding Your Students' Avatars

- “Nearby Avatars” shows which avatars logged in and where they are
- Double-click an avatar's name to get a camera view of that avatar



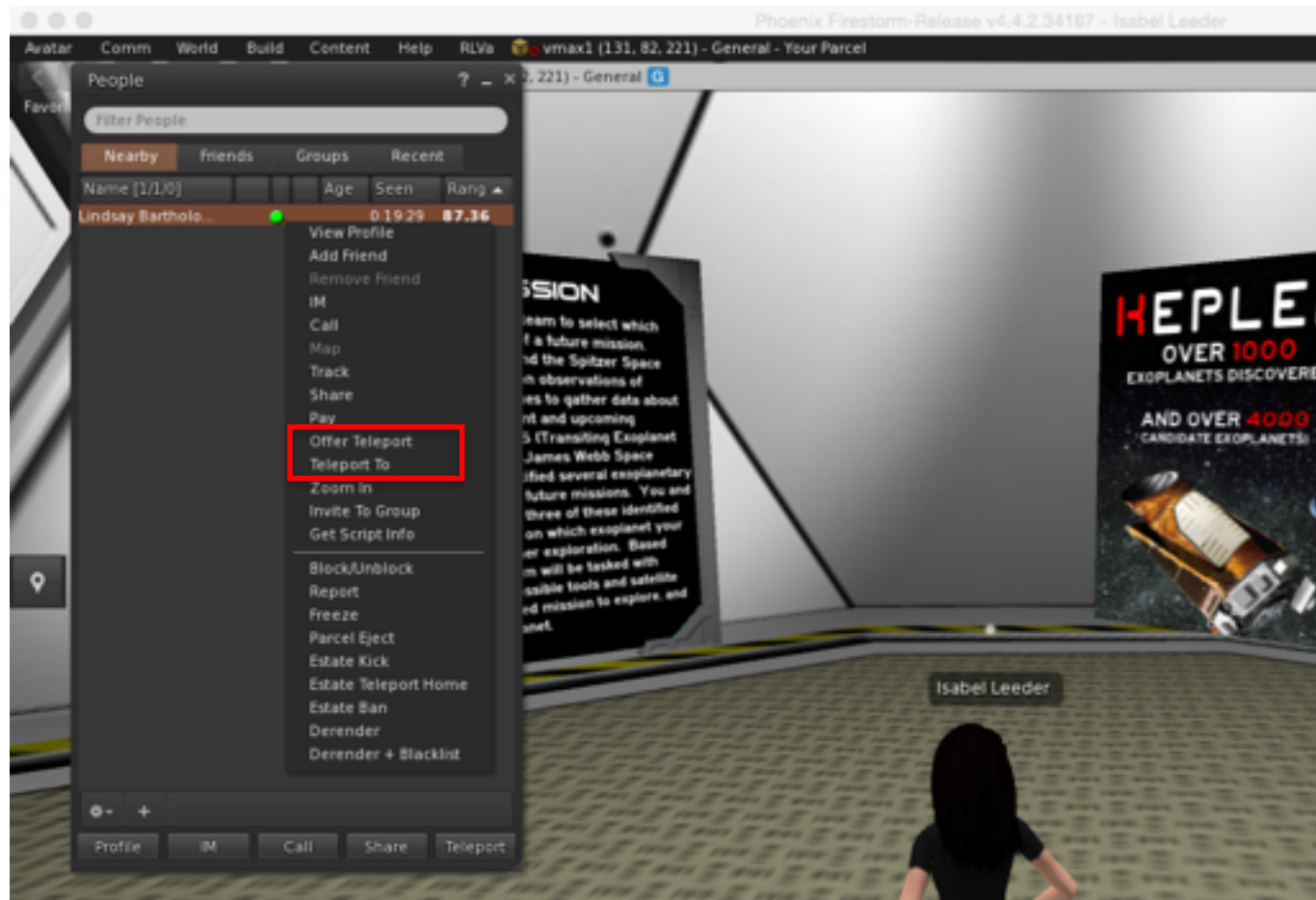
Nearby Avatar Options

Right-click on a nearby avatar for a variety of options.



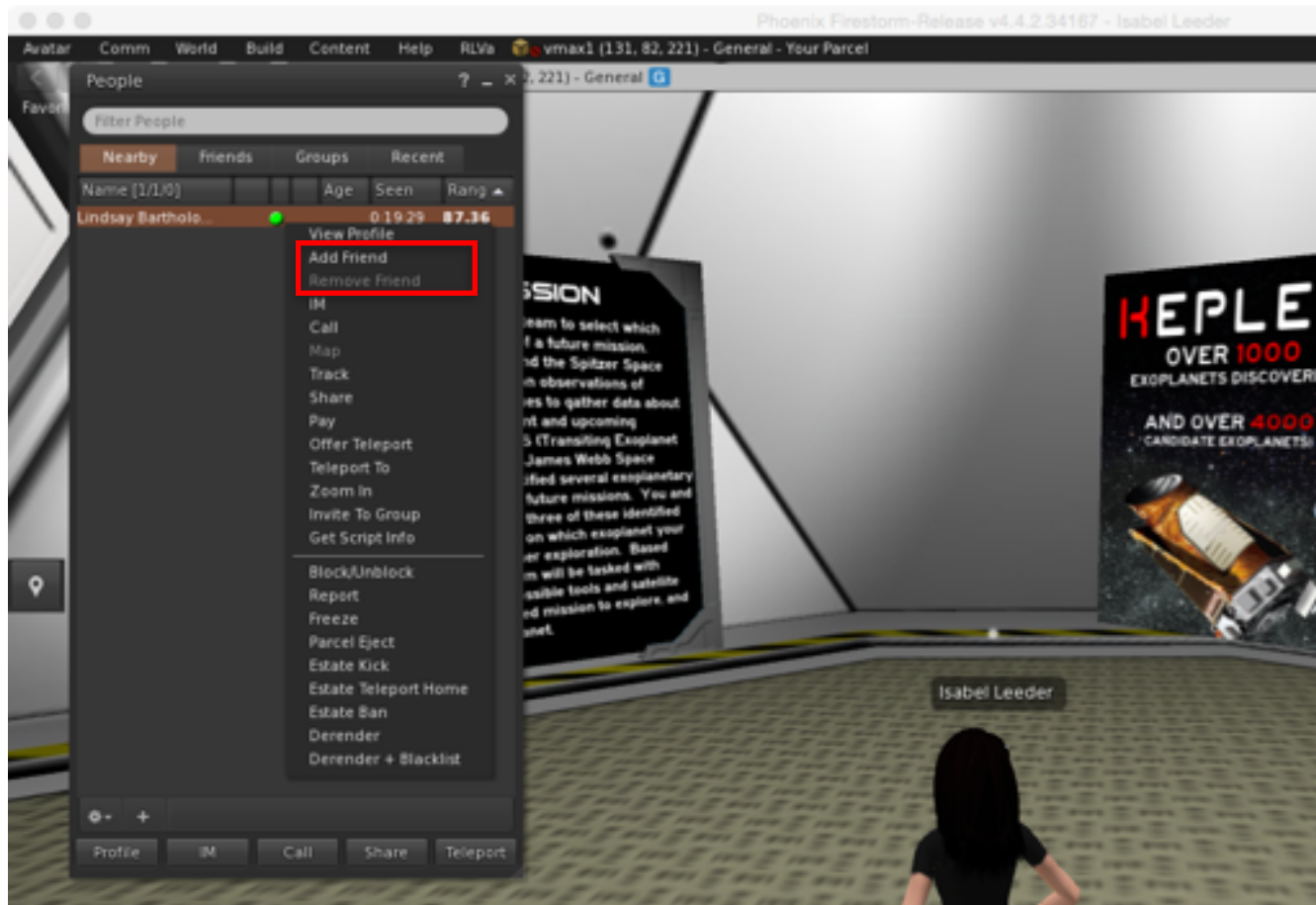
Teleporting/Offering to Teleport

Use when an avatar is stuck or lost, or when students are asked to gather in the same place



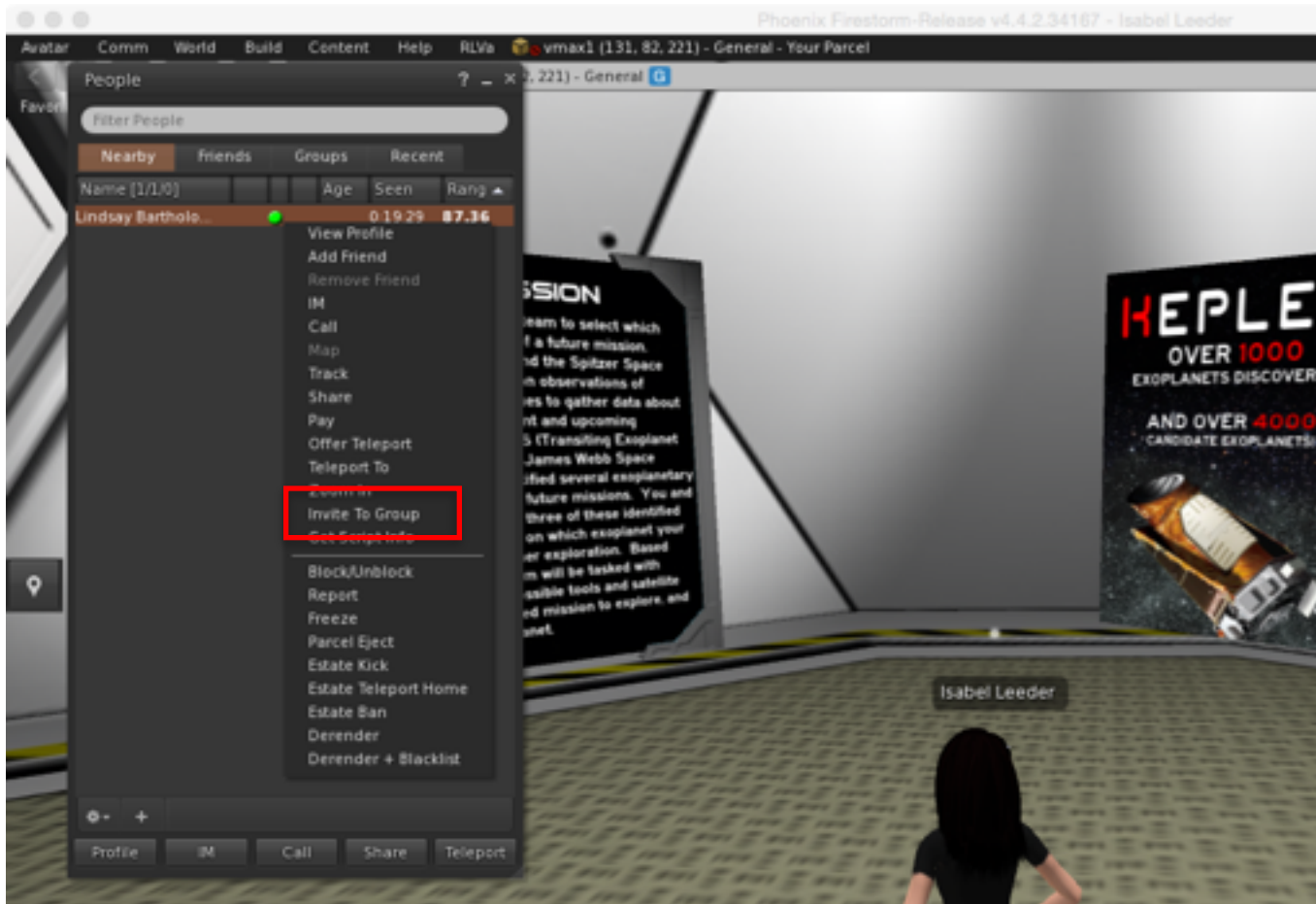
Friend Requests

Provides notifications when avatars have logged in, which helps facilitates large groups, especially with remote partners



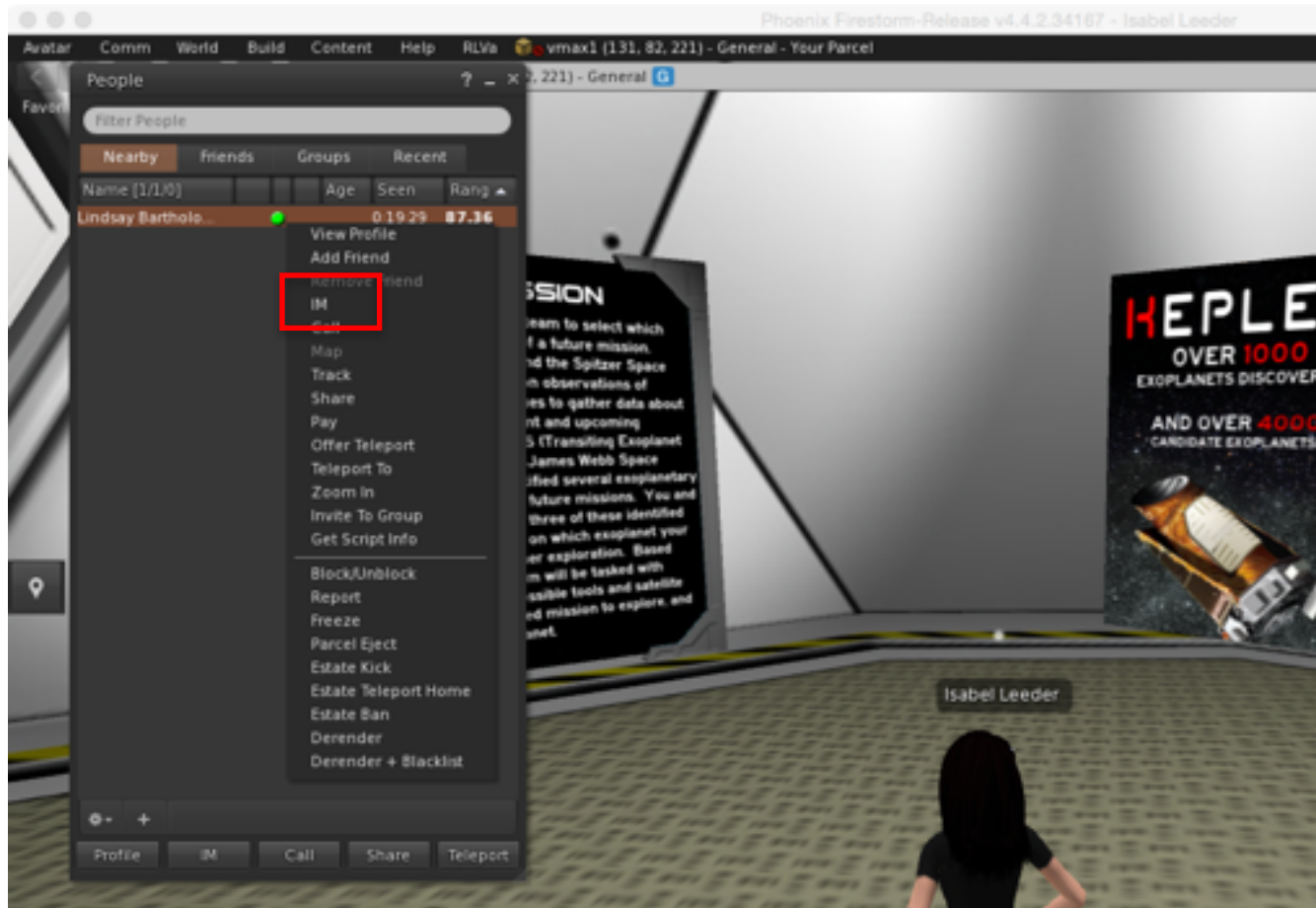
Group Invitations

Helps students working together on long-term projects find each other and collaborate in the virtual world



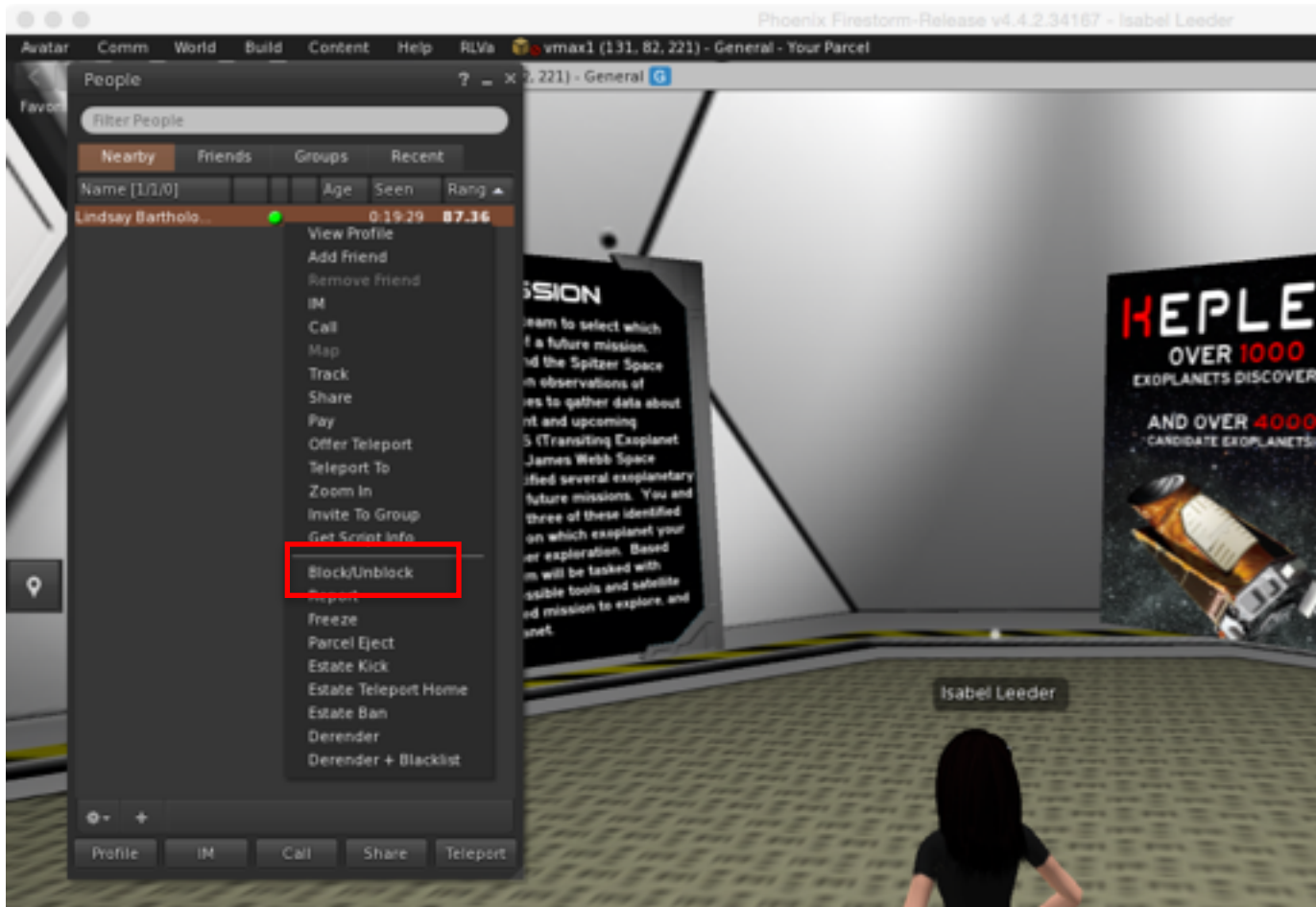
Instant Messaging

Allows students to work together without having chat viewed by others (administrators need to log in as the student to view IM history)



Blocking

Removes an avatar from the virtual world (can only be done by an administrator, as a last resort)





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Broadening Participation

Ways to Broaden Participation

- Go from local installation to server installation with multiple users (see video tutorials at end of presentation)
- Identify opportunities to partner (formal and informal education) to facilitate collaboration between sites





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Any Questions

?



Contacts

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Aimee Weber Studio
Brian Mobbs: brian@aimeeweber.com

Resources

vMAX Curriculum
www.miamisci.org/vmax (soon located at www.frostsscience.org)

Video Tutorials
https://www.youtube.com/channel/UCs_U6SkDRmyYlaKDv1LFmLg/videos?shelf_id=0&sort=dd&view=0