



The Computation Moonshot

A competition designed to teach students about science and distributed computing by using their computers to contribute directly to scientific research



Computation Moonshot

Teacher Setup Guide

Welcome to the Computation Moonshot!

This guide will walk you through how to:

1. Install and setup BOINC
2. Sign up for World Community Grid
3. Start contributing computation cycles to BOINC
4. Create a Team
5. Register your school for the competition
6. Set up basic BOINC settings

Installing BOINC 1 of 8

1. Go to <https://boinc.berkeley.edu/>
2. Click “download BOINC” underneath where it says “Join Science United”



Compute for Science

- BOINC lets you help cutting-edge science research using your computer. The BOINC app, running on your computer, downloads scientific computing jobs and runs them invisibly in the background. It's easy and safe.
- About 30 science projects use BOINC. They investigate diseases, study climate change, discover pulsars, and do many other types of scientific research.
- The BOINC and Science United projects are located at the University of California, Berkeley and are supported by the National Science Foundation.



START COMPUTING!

To contribute to science areas (biomedicine, physics, astronomy, and so on) use [Science United](#). Your computer will help current and future projects in those areas.

[Join Science United](#)

[or download BOINC](#) or I choose specific projects.

Learn

[Science projects](#)
[Science publication](#)
[User manual](#)
[Add-ons](#)
[Web resources](#)

[Computing power](#) · [C](#)

Scientists: [Comput](#)
Programmers: [BOI](#)
[Contact](#) · [Papers](#) · [G](#)

News

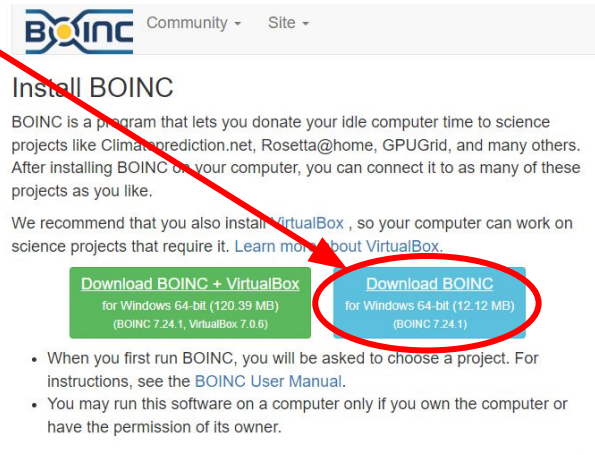
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Einstein@home l
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Installing BOINC 2 of 8

1. Click “download BOINC” for windows 64-bit



BOINC Community - Site -

Install BOINC

BOINC is a program that lets you donate your idle computer time to science projects like Climateprediction.net, Rosetta@home, GPUGrid, and many others. After installing BOINC on your computer, you can connect it to as many of these projects as you like.

We recommend that you also install [VirtualBox](#), so your computer can work on science projects that require it. [Learn more about VirtualBox.](#)

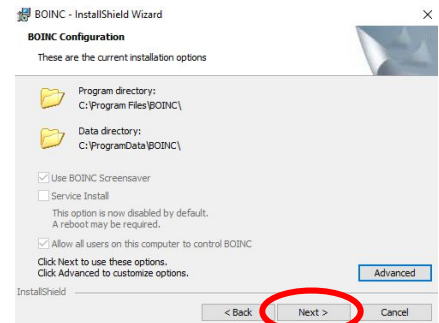
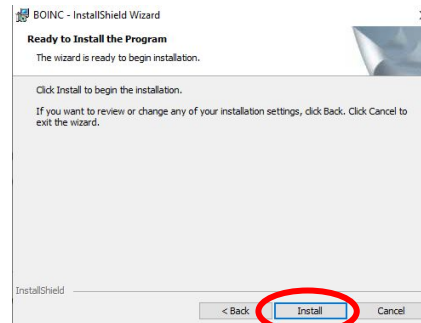
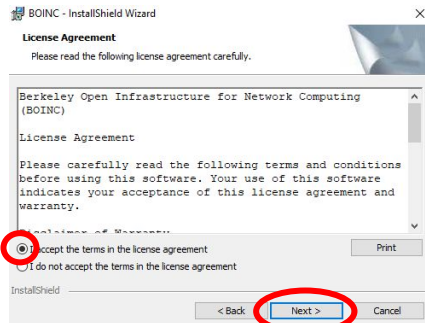
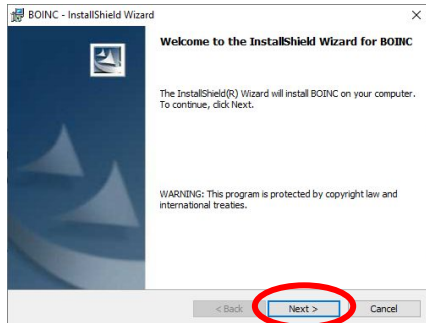
[Download BOINC + VirtualBox](#)
for Windows 64-bit (120.39 MB)
(BOINC 7.24.1, VirtualBox 7.0.6)

[Download BOINC](#)
for Windows 64-bit (12.12 MB)
(BOINC 7.24.1)

- When you first run BOINC, you will be asked to choose a project. For instructions, see the [BOINC User Manual](#).
- You may run this software on a computer only if you own the computer or have the permission of its owner.

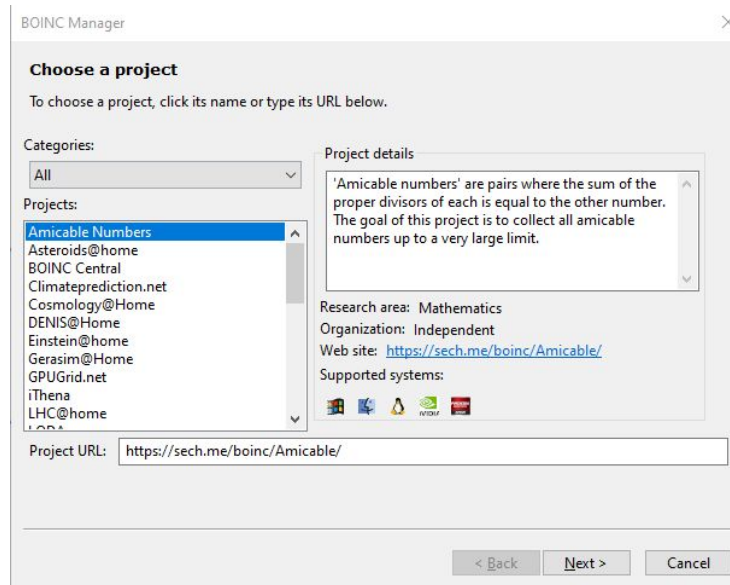
Installing BOINC 3 of 8

1. BOINC will download
2. Once it's downloaded, run the installer and follow the instructions
3. Launch the BOINC manager when completed



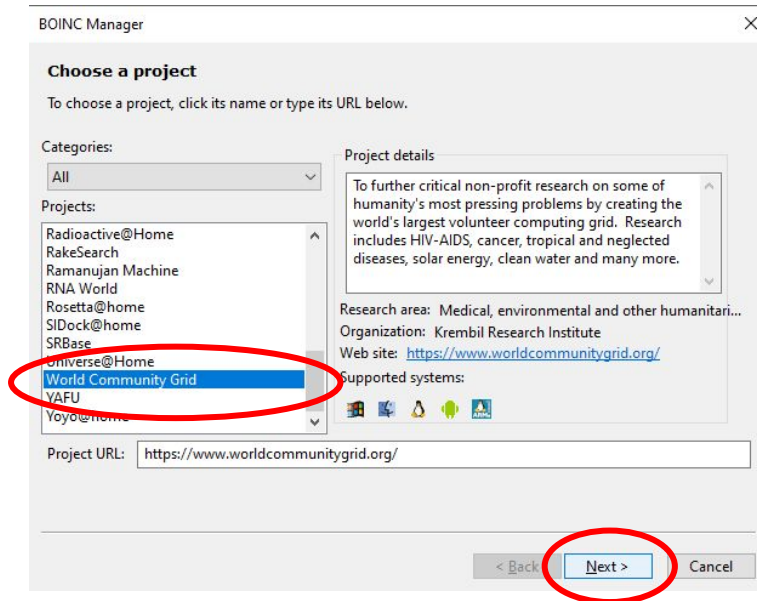
Installing BOINC 4 of 8

1. BOINC will open and you will be shown the “Choose a Project” screen.



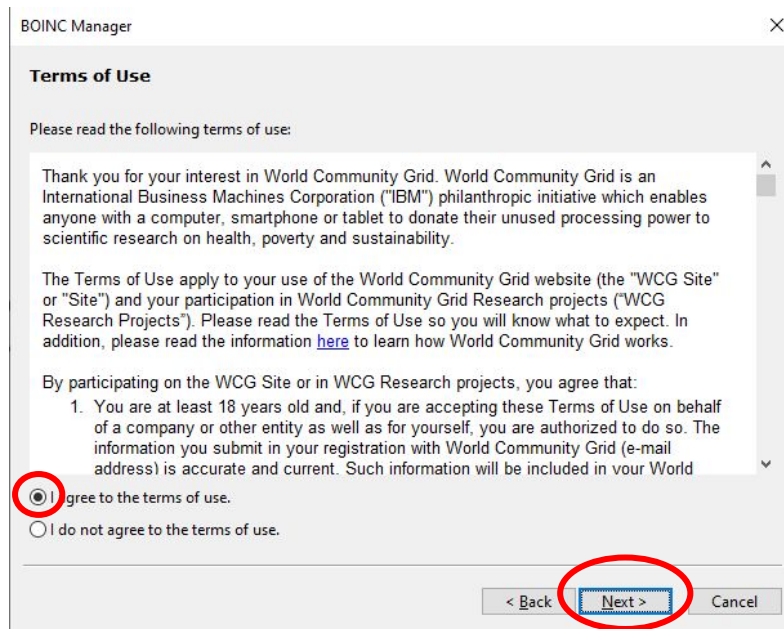
Installing BOINC 5 of 8

1. Scroll down until you see “World Community Grid”, and select it
2. Click “Next”



Installing BOINC 6 of 8

1. Read and agree to the terms of service
2. Click "Next"



BOINC Manager

Terms of Use

Please read the following terms of use:

Thank you for your interest in World Community Grid. World Community Grid is an International Business Machines Corporation ("IBM") philanthropic initiative which enables anyone with a computer, smartphone or tablet to donate their unused processing power to scientific research on health, poverty and sustainability.

The Terms of Use apply to your use of the World Community Grid website (the "WCG Site" or "Site") and your participation in World Community Grid Research projects ("WCG Research Projects"). Please read the Terms of Use so you will know what to expect. In addition, please read the information [here](#) to learn how World Community Grid works.

By participating on the WCG Site or in WCG Research projects, you agree that:

1. You are at least 18 years old and, if you are accepting these Terms of Use on behalf of a company or other entity as well as for yourself, you are authorized to do so. The information you submit in your registration with World Community Grid (e-mail address) is accurate and current. Such information will be included in your World

I agree to the terms of use.

I do not agree to the terms of use.

< Back Next > Cancel

Installing BOINC 7 of 8

1. Select “No, new user”
2. Create an account by entering an e-mail and choosing a password
3. Click “Next”

BOINC Manager

Identify your account at World Community Grid

Are you already running this project?

No, new user Yes, existing user

Email address:

Choose a password:

Confirm password:

minimum length 8

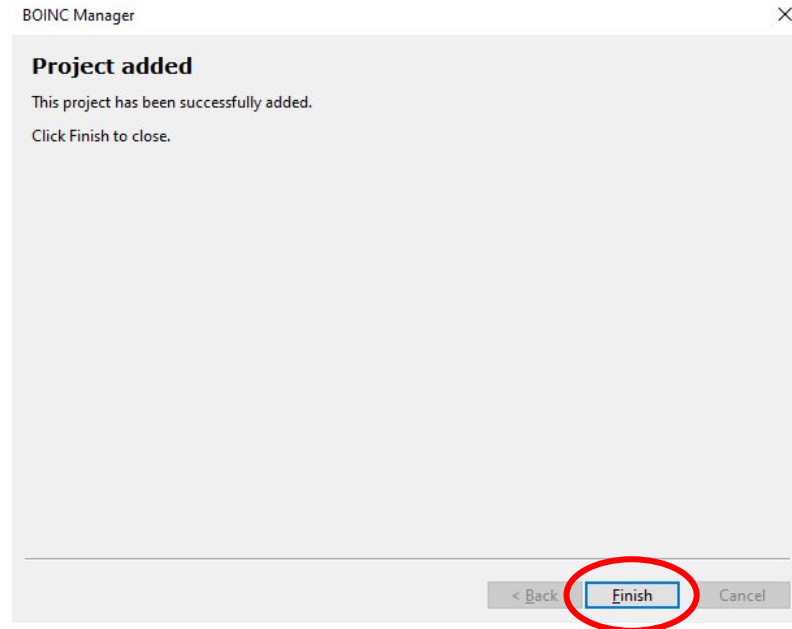
[Forgot your password?](#)

< Back **Next >** Cancel



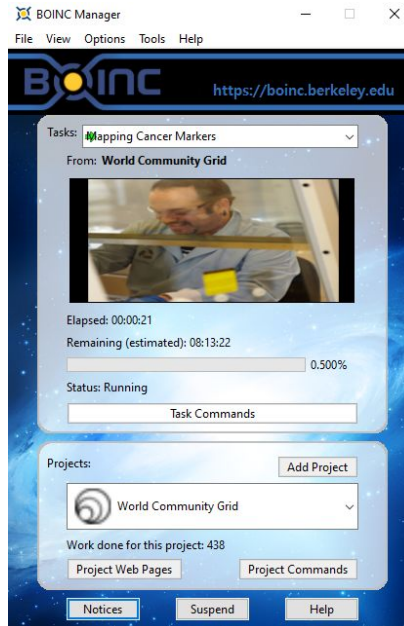
Installing BOINC 8 of 8

1. Success!
2. Click “Finish” to complete installation.



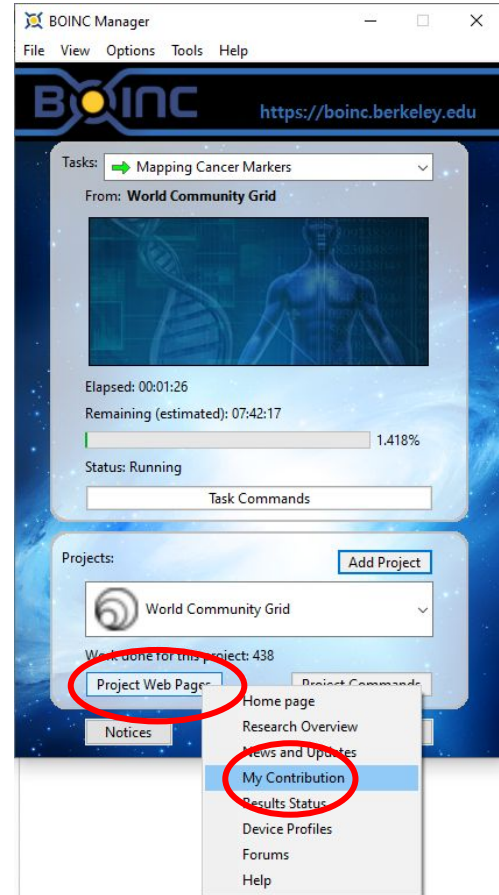


Your computer is now contributing to scientific research!



Creating your school's team 1 of 7

1. Click "Project Web Pages"
2. Click "My Contribution" from the menu that appears





Creating your school's team 2 of 7

1. Enter your account email and password to log in.

Log in

Don't have an account? [Join](#)

Email address

contact@thesciencecommons.org

Password

[Forgot password?](#)

.....



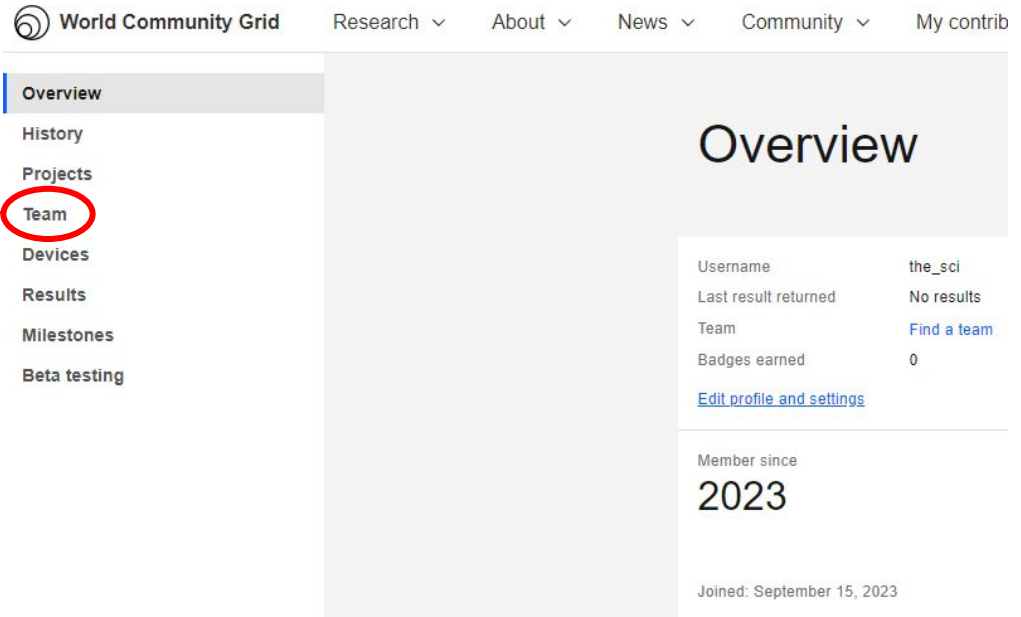
Remember me

Login



Creating your school's team 3 of 7

1. Click "Team"



World Community Grid

Research ▾ About ▾ News ▾ Community ▾ My contrib

- Overview
- History
- Projects
- Team**
- Devices
- Results
- Milestones
- Beta testing

Overview

Username	the_sci
Last result returned	No results
Team	Find a team
Badges earned	0

[Edit profile and settings](#)

Member since

2023

Joined: September 15, 2023



Creating your school's team 4 of 7

1. Click “create your own team”

Find a Team

Keyword search: (Max. 1,000 records returned)

Team:

Contains:

Type:

Country:

Find a Team that starts with a Letter/Number

[A](#) | [B](#) | [C](#) | [D](#) | [E](#) | [F](#) | [G](#) | [H](#) | [I](#) | [J](#) | [K](#) | [L](#) | [M](#) | [N](#)
[O](#) | [P](#) | [Q](#) | [R](#) | [S](#) | [T](#) | [U](#) | [V](#) | [W](#) | [X](#) | [Y](#) | [Z](#)
[0](#) | [1](#) | [2](#) | [3](#) | [4](#) | [5](#) | [6](#) | [7](#) | [8](#) | [9](#)

Note: World Community Grid has no responsibility for the content of any team URL. If you find a URL that may be [objectionable](#) to our community, please notify World Community Grid from the [Contact Us](#) page.

Create your own team

Can't find a team you want to join? You can [create your own team](#).



Creating your school's team 5 of 7

1. Input the information to create your team!
2. Click Save

Create a new Team

Many companies, schools, not-for-profits and other groups have established teams to track their pooled contributions and compete to be the top team on World Community Grid! Please [check out the existing teams!](#) You may find one that you would like to join.

Team Name:

Note: World Community Grid will reject/remove Team Names that we consider [objectionable](#) to our community.

Note: You will be listed as the Team Captain. As team captain, other members of your team may wish to contact you. It is your responsibility to facilitate such communications. World Community Grid has provided a [forum](#) for team communications.

Country:

Type:

Description:

Note: World Community Grid will reject/remove text that we consider [objectionable](#) to our community.

Home Page:

Home Page must begin with https://

Note: World Community Grid has no responsibility for any content of the URL that is entered here. In addition, World Community Grid will reject/remove URLs that we consider [objectionable](#) to our community.

Save



Creating your school's team 6 of 7

1. Follow the instructions asking you to go to your profile page

My team

✓ Your team has been successfully created.

As the captain of your new team, we ask that you opt-in to receive E-mails from your team members by going to your [profile](#) page. If you would like to provide an alternate E-mail address for receiving E-mails from your team, you can do that on the My Profile page as well.



Creating your school's team 7 of 7

1. Tick the “Team E-mail” box
2. Change any other settings you desire
3. Put in your password
4. Click “Save”

Profile

Please enter your new or updated information in the fields below, then enter your current password and click "save".

Username: [Is this name available?](#)
Note: Please choose something other than your real name. Also, World Community Grid will reject/remove Usernames which we consider [objectionable](#) to our community.

E-mail Address:

Team E-mail: Team members can send E-mail to team captains who have decided to accept these messages. Uncheck the box if you do not want to receive E-mail from your team members.

Team E-mail Address:
If you would like to receive Team E-mails at an address that is different from the one above, you can enter that here. Leave this blank to have Team E-mails sent to the primary address above.

Country:
Note: Your country needs you! Your results, points and run time will be counted in your country's stats.


Current Password:



Creating your school's team

1. Done! Anyone can now join your school's team and contribute to science with you!

Profile

 Your member profile has been successfully updated.

Tweaking BOINC Settings 1 of 3

1. Open the BOINC Manager
2. Click “Options”
3. Click “Computing preferences”
4. Let BOINC communicate with the server (this might take a moment)



Tweaking BOINC Settings 2 of 3

1. Change any settings you desire! When in doubt, keep default settings.

If your computer is running slowly while BOINC is working on science, consider ticking “Suspend when computer is in use”

You can also change the percentage of CPU time BOINC will use to increase the amount of science you due, or reduce it. The higher that percentage, the slower your computer will go when BOINC is running.

You can also set BOINC to contribute to science only at certain times of the day!

BOINC - Computing Preferences

Using web-based preferences from <http://www.worldcommunitygrid.org/>
Set values and click Save to use local preferences instead.

For additional settings, select Computing Preferences in the Advanced View.

Suspend when computer is on battery

Suspend when computer is in use

'In use' means mouse/keyboard input in last minutes

Use at most % of CPU time

Compute only between and

Transfer files only between and

Use no more than GB of disk space

Save Cancel



Tweaking BOINC Settings 3 of 3

1. After you click “Save”, click “Yes”

Confirmation

Changing to use the local preferences defined on this page. This will override your web-based preferences, even if you subsequently make changes there. Do you want to proceed?



Registering for the Competition

1. Fill out the competition registration form

[Competition Registration Form](#)



BOINC FAQ

Does crunching actually accomplish anything?

Absolutely! BOINC has resulted in the publication of hundreds of scientific papers, the production of new drugs and vaccines, and produces several ever-growing databases of stellar objects (black holes, pulsars, etc). It's worth noting that while some of BOINC's work is directed at producing particular "products of science" such as new drugs, much of it falls under the realm of "foundational science" for example finding binding sites for a protein which are then used to tailor specific drugs to match. Or testing a variety of hypothesis as to why a subatomic particle behaves a certain way. Foundational science is particularly hard to fund as VC and angel investors see no way to make a return on it, yet it is critical to the advancement of science.



BOINC FAQ

Can I crunch on multiple computers?

Absolutely! Just make sure you use the same email address and password for all your machines so that all the credit gets pooled together under one account.



BOINC FAQ

Will crunching hurt my computer or shorten its lifespan?

The short answer for desktop computers is no. Crunching will not harm your computer, computers after all are designed to compute! While crunching does utilize your CPU/GPU heavily, the reality is that every other component in your computer will likely fail first (your hard drive, OS, etc) or become obsolete before your CPU/GPU dies. Many computers crunch for a decade plus with no issues, at which point they make most sense to replace from an energy perspective alone.

Laptops, on the other hand, are often built with insufficient heat exhaustion and can quickly overheat at full load. Heat will also shorten your battery life significantly. Set BOINC to only use 50% of your CPU power and not to use your GPU to keep heat manageable.



BOINC FAQ

Will crunching make my electricity bill skyrocket?

No. Most of a computer's energy usage is simply due to it being on, not being run at "full blast". A standard desktop or laptop might draw 90W at full usage, a 20" Box Fan would draw around the same. This might cost you \$2-\$10 per month. Assuming you already keep your computer on for 12 hours a day, running BOINC 24/7 would cost you an additional \$1-\$5/month, depending on your electric rates.



BOINC FAQ

What about my internet connection? Will BOINC use all my capacity?

No. Each project is responsible for deciding how much bandwidth their workunits require, and they are all cognizant of people with bandwidth caps. Chances are you won't notice BOINC's impact at all. If you want to limit bandwidth usage, set BOINC to be allowed more disk space to store files (prevents having to re-download when switching projects). You can also set time of day restrictions and speed restrictions to avoid impacting other uses such as zoom.



Congratulations!

You're all set up!

Now help your students sign up for WCG and have them join your team!

Reach out with any questions by contacting us at contact@thesciencecommons.org

Learn more about BOINC settings at the resource provided below: