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

Students, Family,
and Friends 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. Join your school's team
5. Invite your family friends to contribute to science and help your school win
6. Set up basic BOINC settings

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

1. Click "download BOINC" for windows 64-bit

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
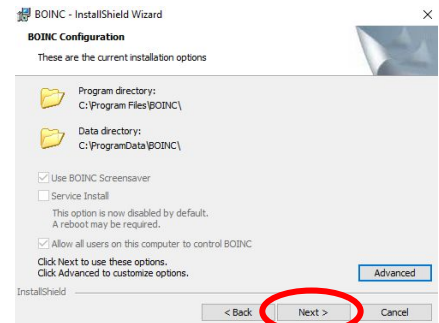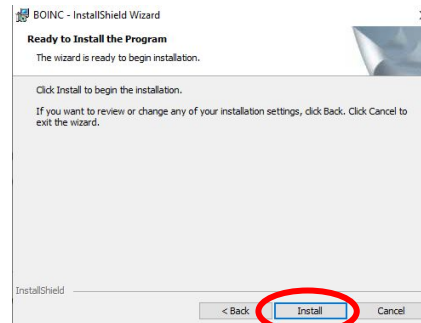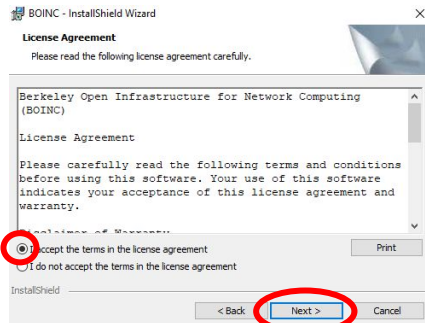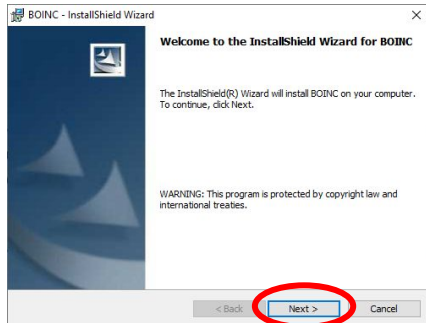
1. BOINC will open and you will be shown the "Choose a Project" screen.
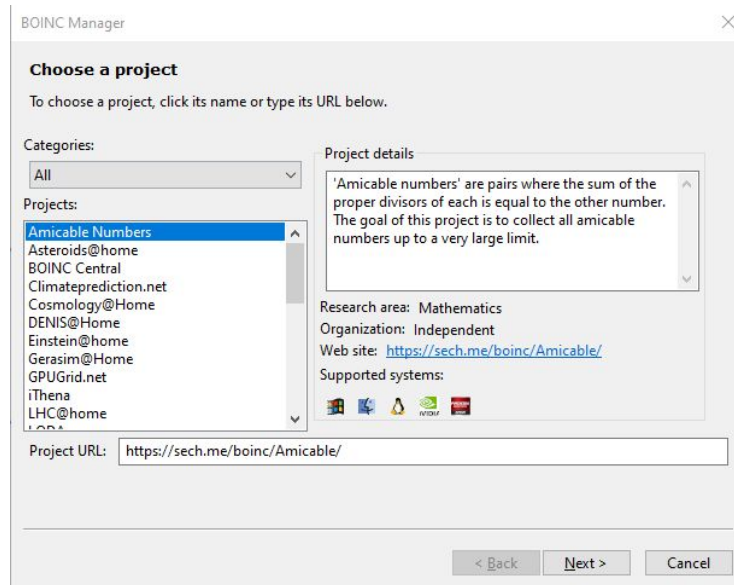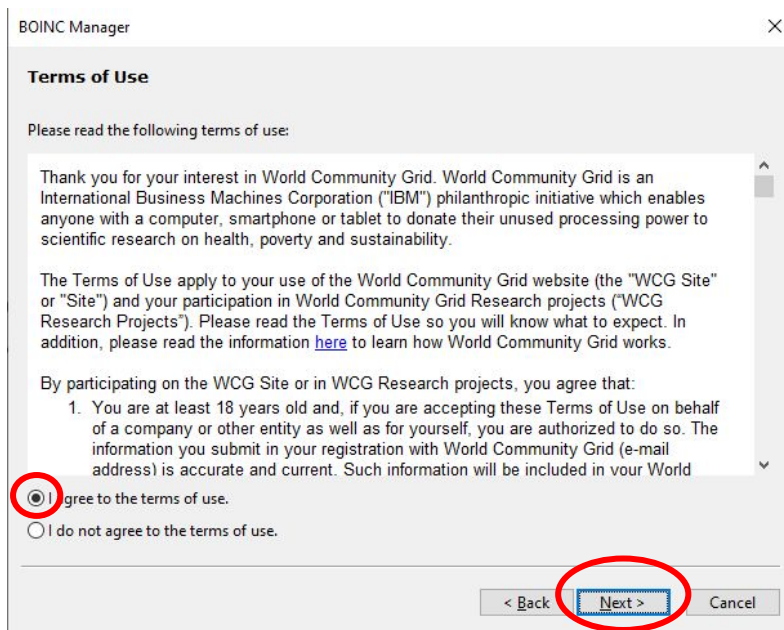
Installing BOINC 5 of 8

1. Scroll down until you see "World Community Grid", and select it
2. Click "Next"
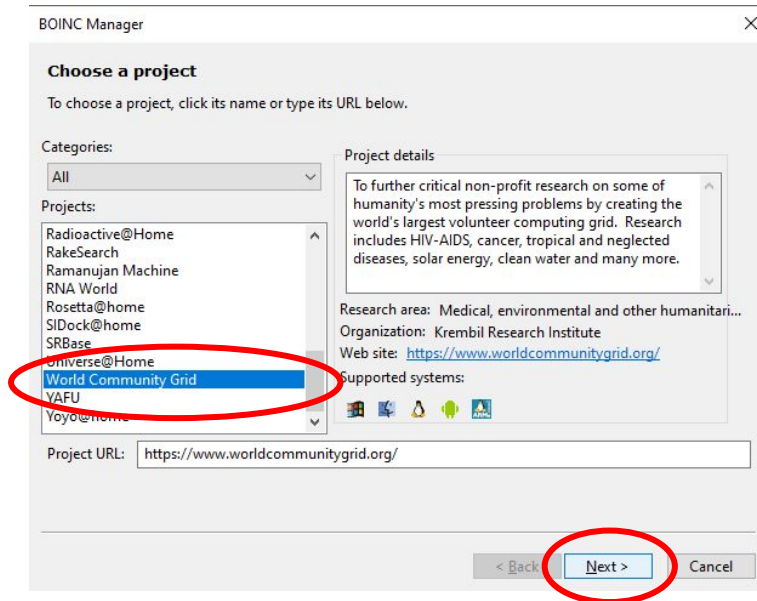
Installing BOINC 6 of 8

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

Installing BOINC 7 of 8

1. Select "No, new user"
2. Create an account by entering an email and choosing a password
3. Click "Next"

Installing BOINC 8 of 8

1. Success!
2. Click "Finish" to complete installation.
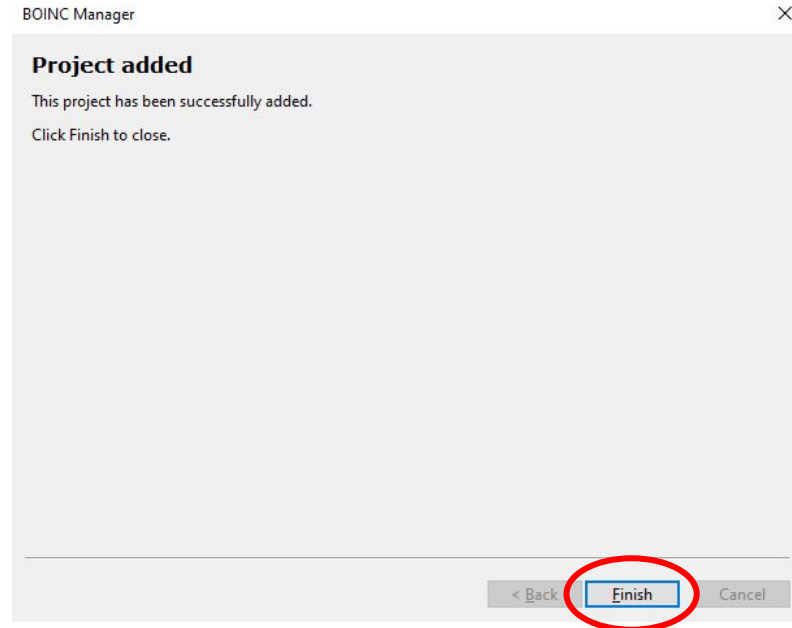
Your computer is now contributing to scientific research!
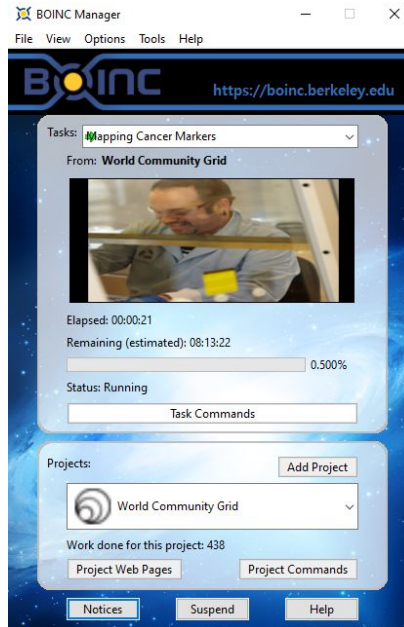
Joining your school's team 1 of 6

1. Click "Project Web Pages"
2. Click "My Contribution" from the menu that appears
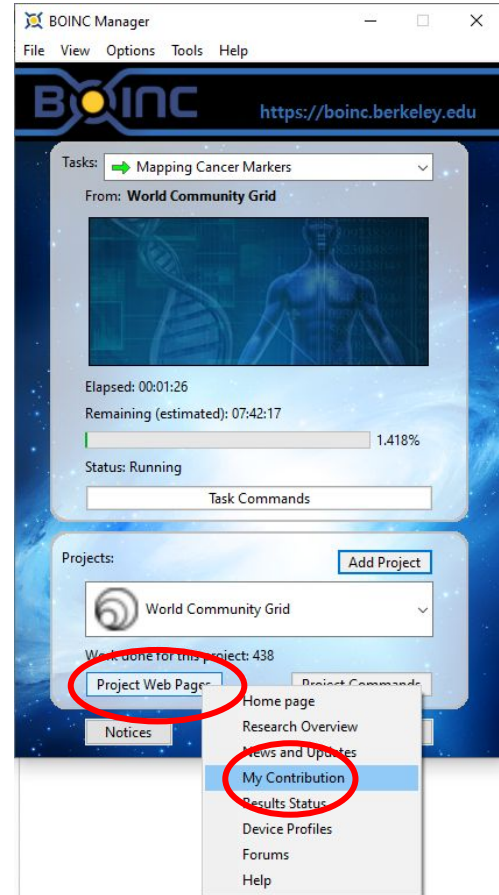
1. Enter your account email and password to log in.

Log in

Don't have an account? Join

Email address

contact@thesciencecommons.org

Password   Forgot password?
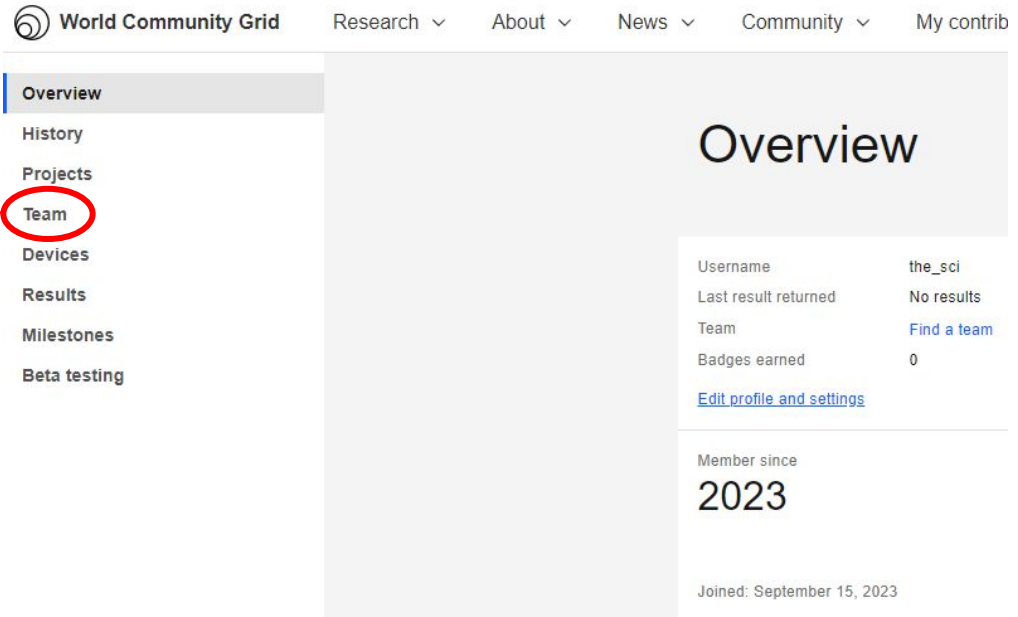
•••••••••••••••   👁

☑ Remember me

Login

1. Click "Team"
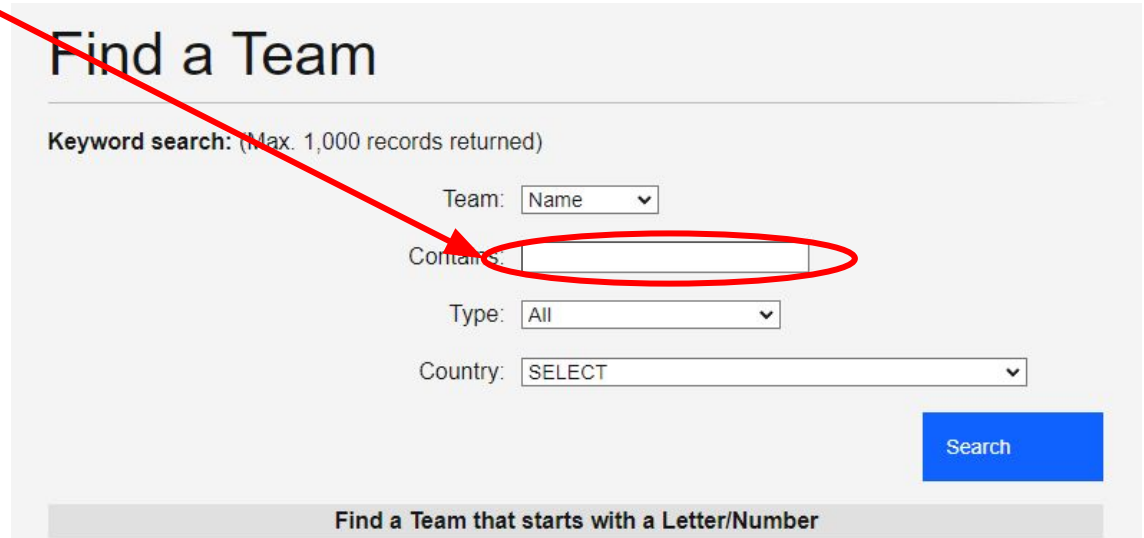
Joining your school's team 4 of 6

1. Input your school's team name
2. Click Search

Joining your school's team 5 of 6

1. Click on your school's team name

Joining your school's team 6 of 6

1. Click "Join Team"

Team information

Team information	
Name:	The SCI Blob Fishies
Created:	01/28/2024
Captain:	the_sci
Country:	UNITED STATES
Type:	Unclassified
Description:	Glub Glub
Team Home Page:	Click Here To Visit Team Home Page
BOINC Team Id:	37842

Team control panel

Join Team

Note: Points gained while with a team will remain with that team.

Your contributions to science now count toward your school's score!

My team

✓ You have successfully been added to the team.

As the member of a team, you can opt-in to receive E-mails from the captain of your team. Just go to your profile page, and check the box for Team E-mail. You can opt-out at any time.

Inviting your family and friends to contribute to your school's score! 1 of 3
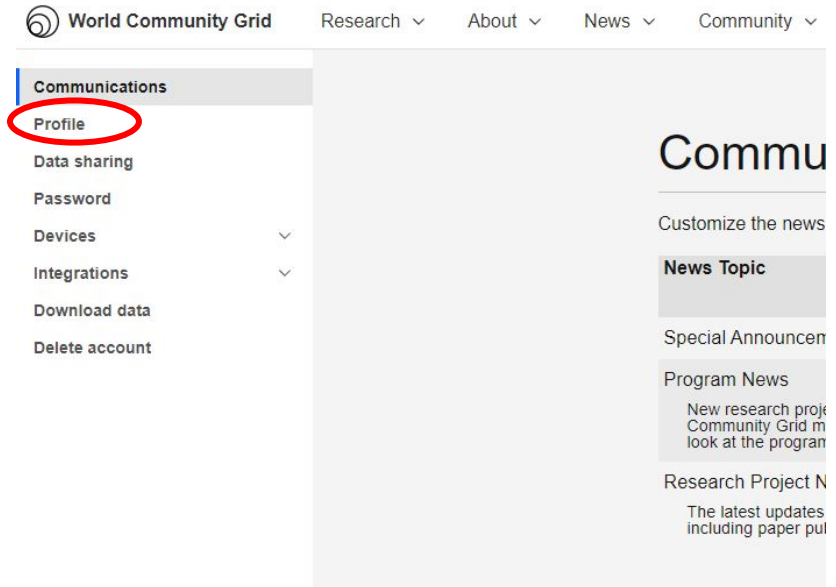
1. Click the green person icon on the top right of the screen
2. Click "Profile and Settings"
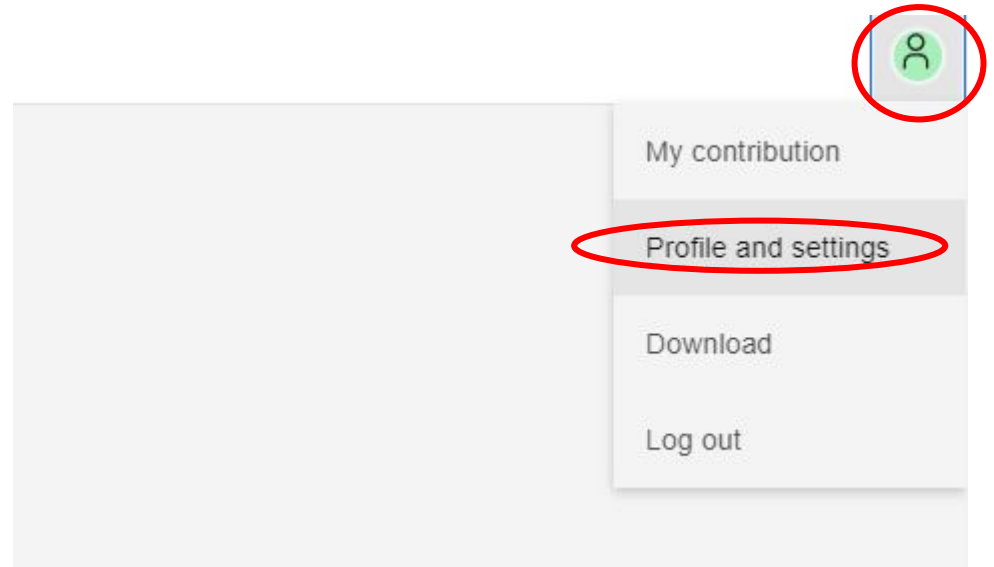
Inviting your family and friends to contribute to your school's score! 2 of 3

1. Click "Profile"

Inviting your family and friends to contribute to your school's score! 3 of 3

1. Scroll down until you see your join link
2. Share this link with your friends and family
3. Share this guide with your friends and family
4. Have them join your school's team to help contribute to your school's score!

Get recognized for signing up your friends and family

Spread the word! Ask your friends and family to join World Community Grid using the link below, and you'll be recognized for introducing them:

https://join.worldcommunitygrid.org?recruiterId=1162973

Verification Code: f11f69d87da184dd9744a98fed7734fa

The following information is useful for attaching devices to World Community Grid:

Project URL: www.worldcommunitygrid.org
Account Key: 5206611e4ff5889c630ac5ed81702534
Weak Account Key: 1162973_eb84800b3283be6a5babe4a51ab1917f
Change

The following information is used on websites that integrate with World Community Grid:

Account Number: 1162973
Cross-Project Id: c3b902c23edf8518749b1b26e734ec3f
External Authorization Code: 6cad2f65f661b001d7a11b1d14b83669

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!

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?

Yes   No

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 work units 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!

Reach out with any questions by contacting us at contact@thesciencecommons.org, or ask your teacher!

Learn more about BOINC settings at the resource provided below: