



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

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](#)

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[Programmers](#): [BOI](#)
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News

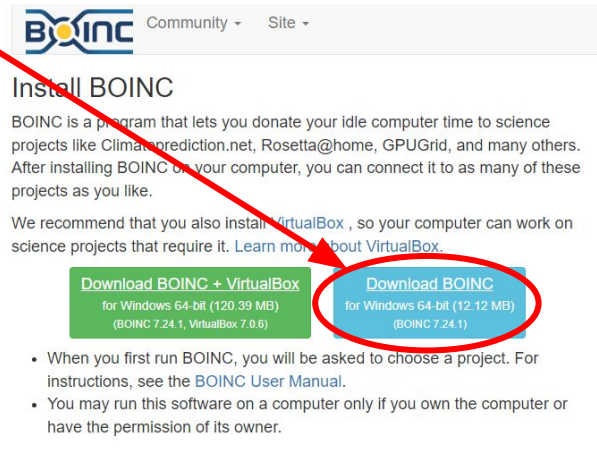
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Installing BOINC 2 of 8

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.](#)

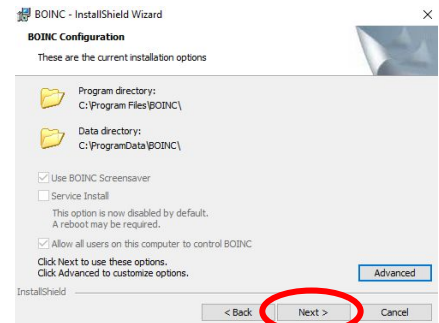
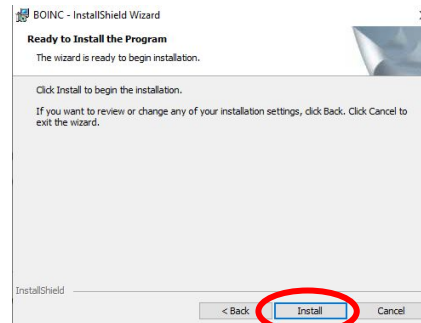
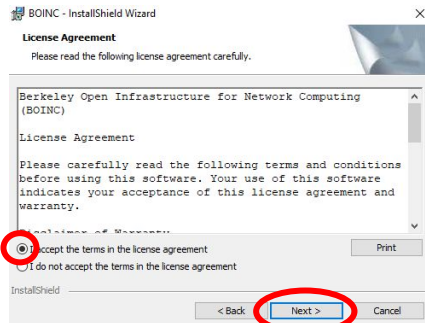
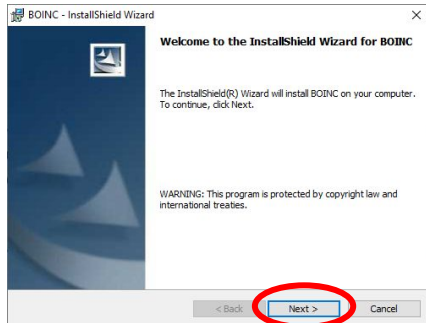
[Download BOINC + VirtualBox](#)
for Windows 64-bit (120.39 MB)
(BOINC 7.24.1, VirtualBox 7.0.6)

[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.

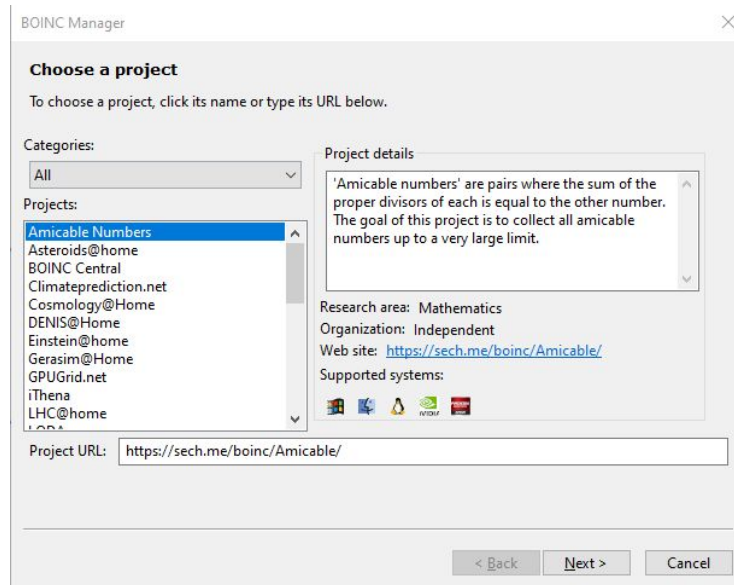
Installing BOINC 3 of 8

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



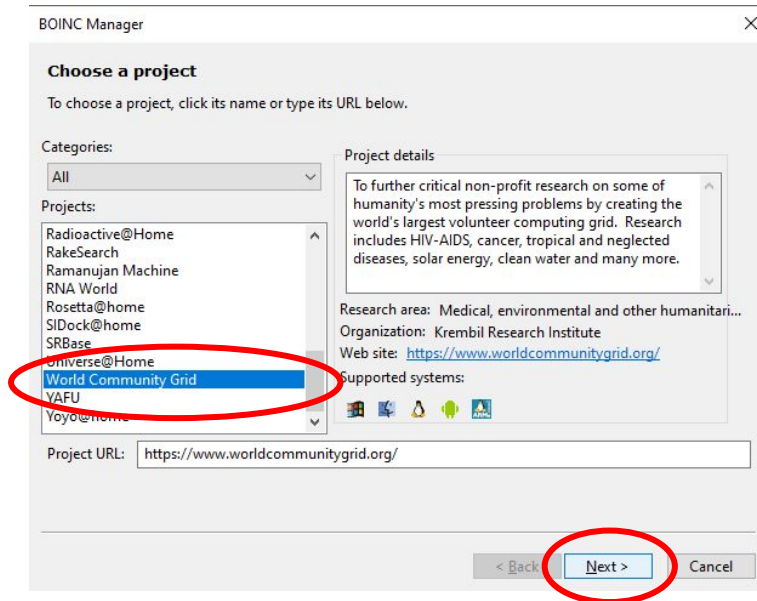
Installing BOINC 4 of 8

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



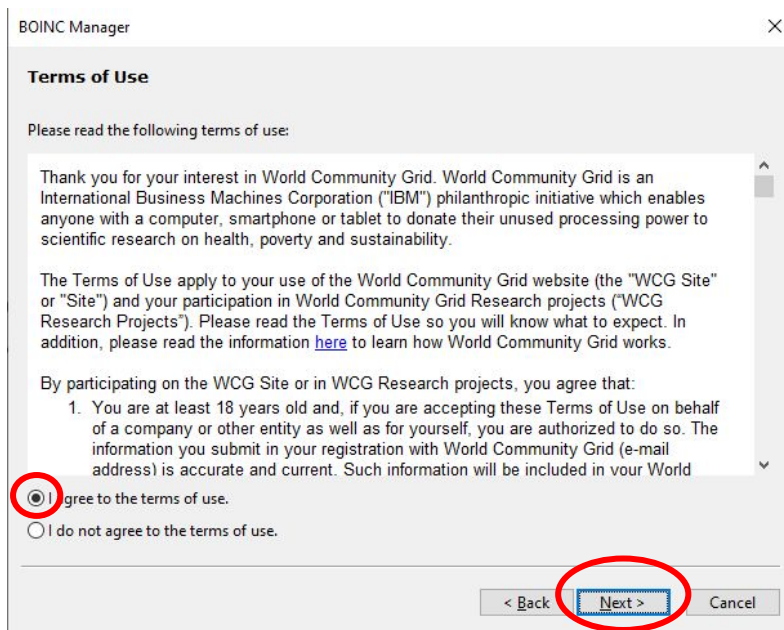
Installing BOINC 5 of 8

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 email 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

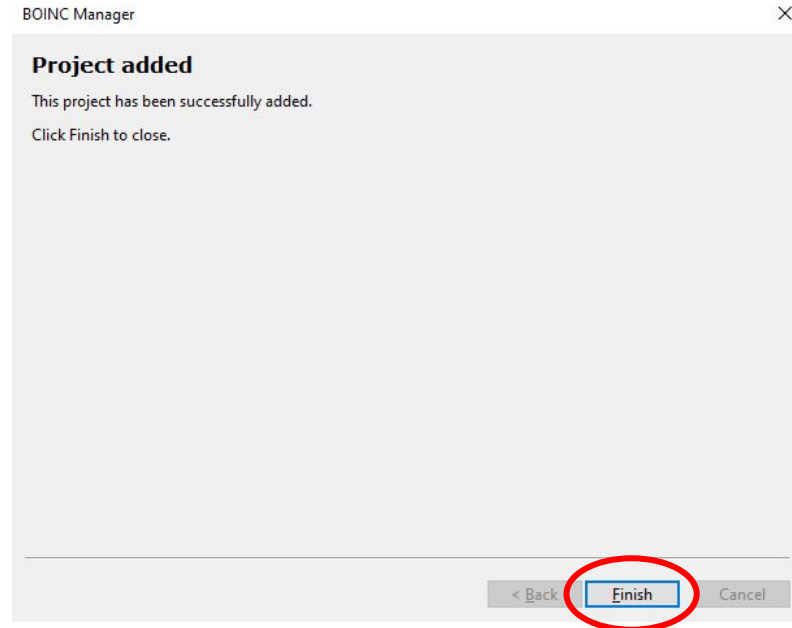
[Forgot your password?](#)

< Back **Next >** Cancel

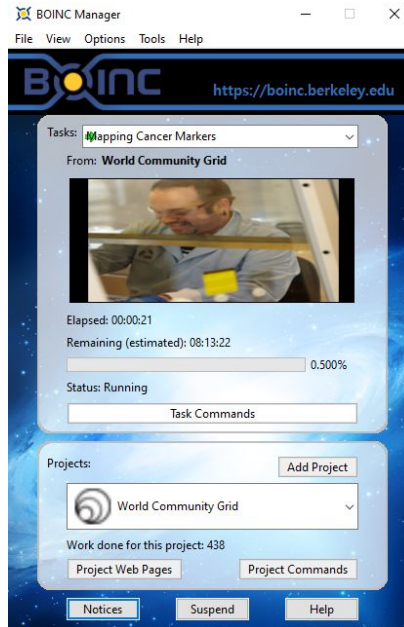


Installing BOINC 8 of 8

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

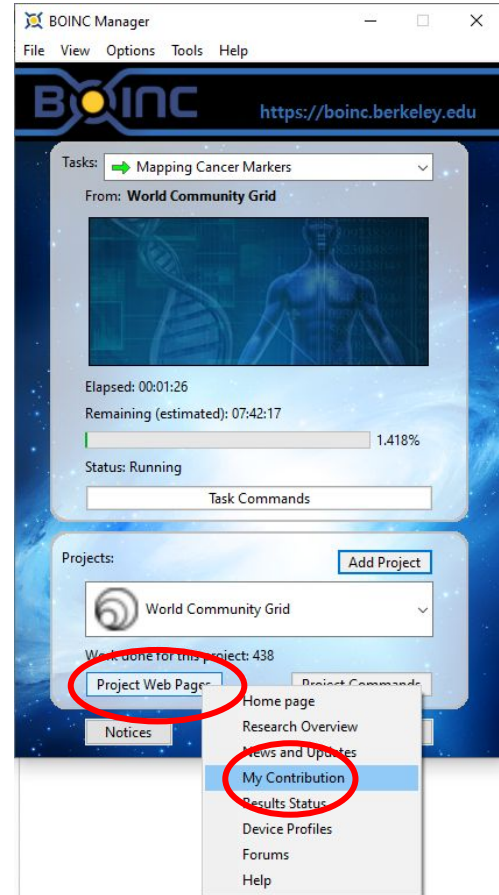


Your computer is now contributing to scientific research!



Joining your school's team 1 of 6

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





Joining your school's team 2 of 6

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?](#)

.....



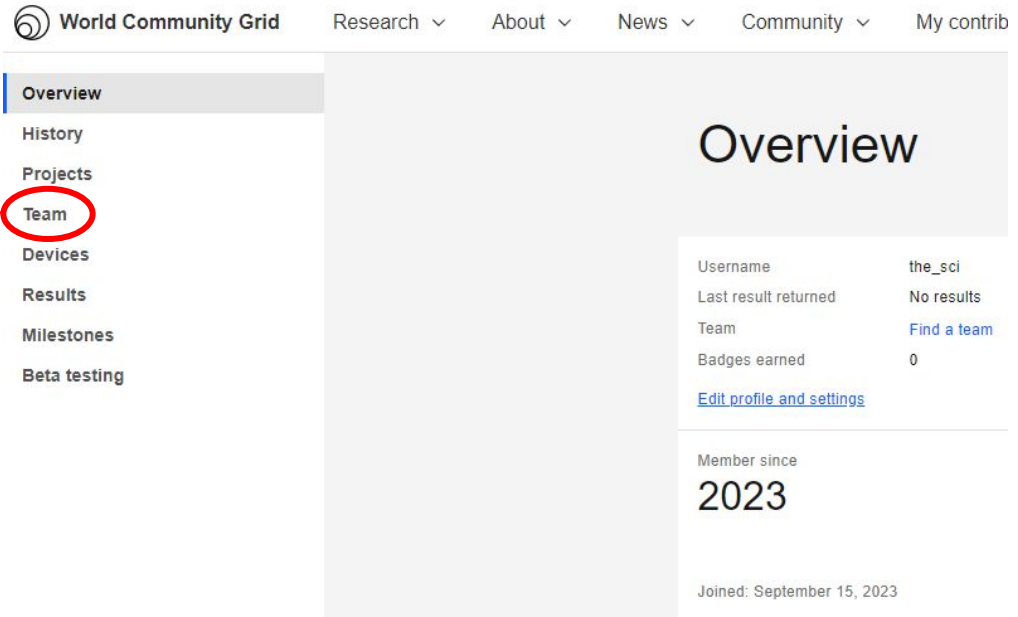
Remember me

Login



Joining your school's team 3 of 6

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

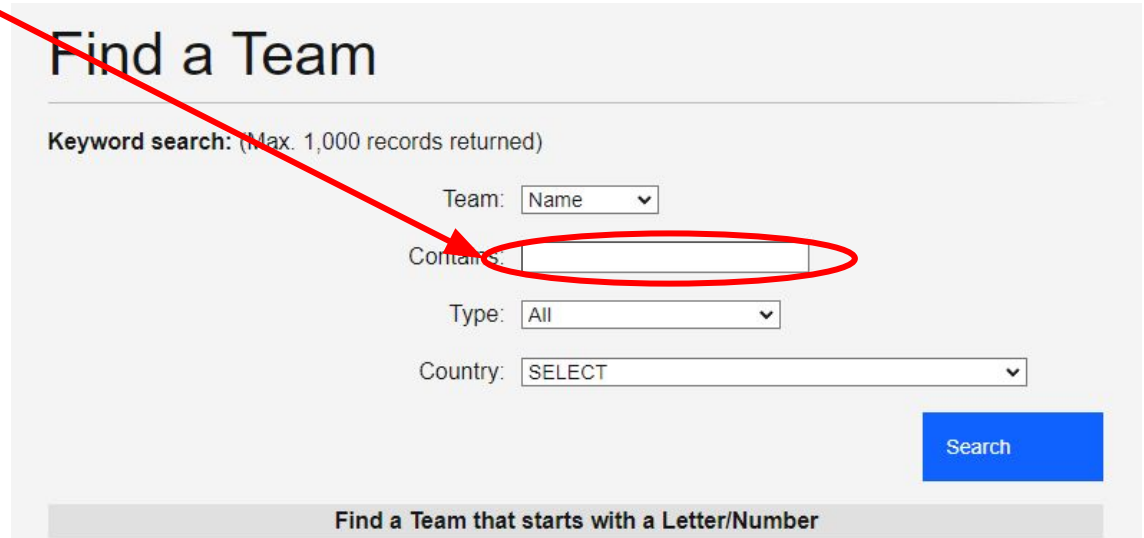
2023

Joined: September 15, 2023



Joining your school's team 4 of 6

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



Find a Team

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

Team: Name ▾

Contains:

Type: All ▾

Country: SELECT ▾

Search

Find a Team that starts with a Letter/Number



Joining your school's team 5 of 6

1. Click on your school's team name

Find a Team

Search Results

Each team is allowed to have a link to their team home page. World Community Grid is not responsible, in any way, for team home pages or team home page content. World Community Grid reserves the right to remove team names and team home page URLs with [objectionable](#) content.

If the search results do not match what you are looking for, please [find another team](#) or [create a new team](#).

Type in search terms or select a letter to find a team

(Max. 1,000 records returned)

Keyword search:

Filter by: Type: Country:

Search

ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789

Team search results

Search: Team name contains 'The SCI Blob Fishies'

Page of | Records to - 1 total | records per page



Team name:	Current members:	Date created:
The SCI Blob Fishies	1	01/28/2024



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!

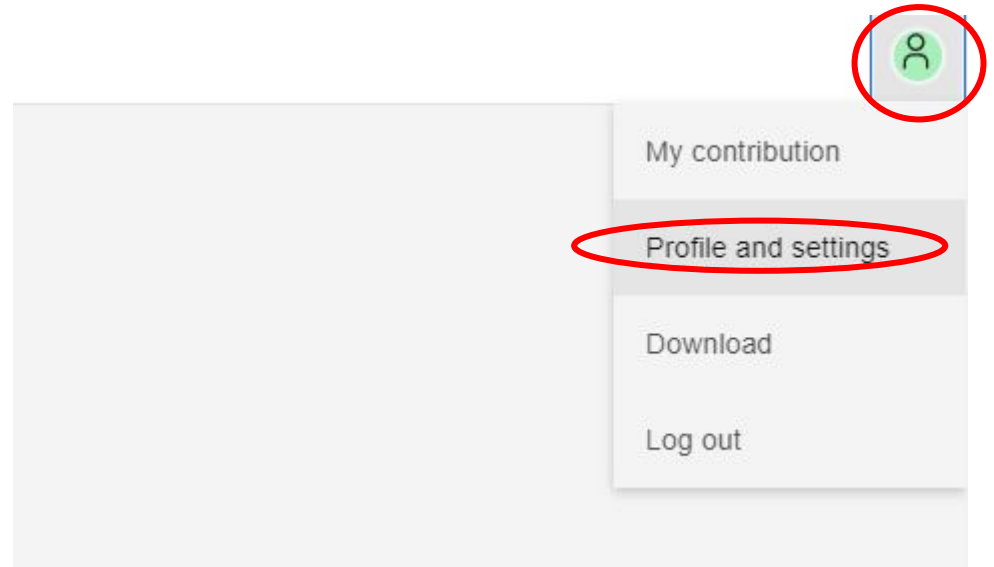
My team

 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

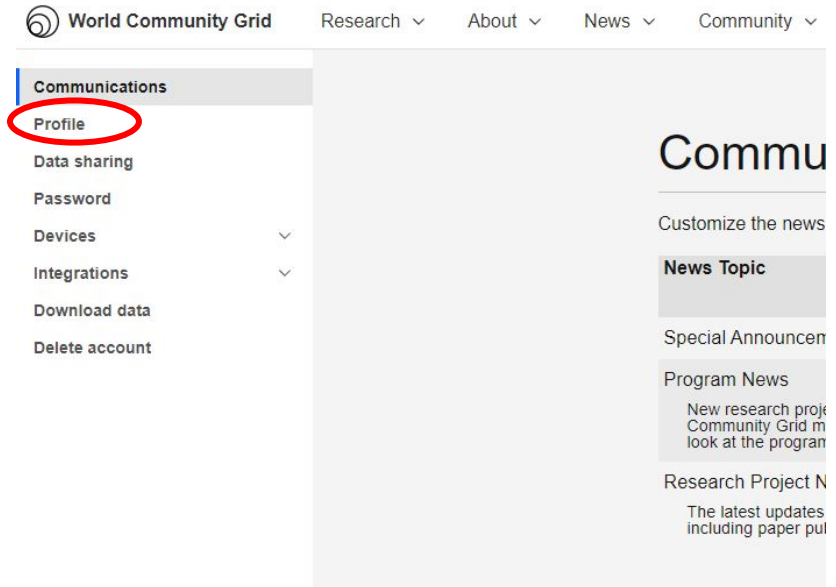
1. Click the green person icon on the top right of the screen
2. Click "Profile and Settings"





Inviting your family and friends to contribute to your school's score! 2 of 3

1. Click "Profile"




The screenshot displays the World Community Grid user interface. At the top, there is a navigation bar with the logo and the text "World Community Grid" on the left, and dropdown menus for "Research", "About", "News", and "Community" on the right. Below the navigation bar is a sidebar menu with the following items: "Communications", "Profile", "Data sharing", "Password", "Devices", "Integrations", "Download data", and "Delete account". The "Profile" item is circled in red. The main content area on the right shows the beginning of a "Communi" section, with sub-sections for "Customize the news", "News Topic", "Special Announcem", "Program News", and "Research Project N".



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!

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?



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: