

Hack for NF (Neurofibromatosis) Hackathon

October 2 - November 13, 2020

What is a hackathon? | *Hack + Marathon = Hackathon* |

A hackathon is an intense and fun collaborative marathon where “hack” means to create something entirely new from things that already exist – think “MacGyver.” Developers, designers, and idea generators (participants) are joined by technology partners for a brief period of time – in this case, 6 weeks – to develop amazing new products or services in response to challenges posed by the hackathon sponsors.

What are the venue details?

This a virtual, global hackathon.

Do I have to know how to code to join?

Not all participants need to be developers, but you will need to demo a prototype of your idea for the judges. So, forming a team that accounts for design, UX and coding is a great way to go. You can do this virtually, on the team formation webinar, or you may want to recruit colleagues with a broad range of skills to register before the hackathon.

How are teams formed?

Teams can be formed ahead of time if you are joining the hackathon with people you know, or virtually using the Slack channel. There will also be an opportunity to pitch your idea, your team or yourself on a team formation webinar.

What is the allowable team size?

Teams may have 1-7 members, but no matter the number of teammates,

make sure to cover all hats; development, design (UI/UX), and pitch. 1 person can absolutely wear several hats!

"Can I recruit patients or NF/tech experts on my team?"

Absolutely. Anyone who registers as a participant can be recruited to join any team. Participants can join only one team. Participating patients and experts can form teams and recruit talent for their ideas as well. If you want first-hand information and/or user feedback on your product you want a patient or an expert on your team! Patients and experts are encouraged to participate and will also be available as mentors if you need extra feedback. Adding a patient's perspective could be the winning factor! Mentors or judges cannot be part of any team.

What is the challenge?

Hackathon Challenge Statements:

By competing in the Hack for NF hackathon you will have the opportunity to create solutions that further advance the research fields around NF (neurofibromatosis) and other rare diseases. Your solutions should focus on improving patient useability & accessibility of applications, or improve upon the data analytics & research methodologies that are used by researchers in this field every day.

The winning solutions will further help to create a data driven framework that helps in hacking tough challenges such as NF & other rare diseases. Solutions should incorporate emerging technologies such as AI, ML or NLP so that existing data can be re-used to find new insights, refine algorithms, and identify alternative approaches to therapies and research.

Challenge Statement #1 - NF DATA

Use the data provided or combine with external datasets to create a data-driven project that will advance the field of NF research.

Examples:

- **Drugs and Targets**
 - Following the recent approval of Koselugo, the first-ever drug approved for NF, use the data provided to identify new promising targets, drugs or drug combinations, biomarkers that could be used for prevention, diagnosis or prognosis. Integrate NF data with external datasets to find common traits or a potential new way to intervene in disease progression.
- **Imaging**
 - Use the Whole-Body MRI dataset provided, including sequential scans to improve on an existing segmentation algorithm for accuracy in measuring tumors, or identify different tumor types.
- **Analytical tools**
 - **Data Analysis App:** Create an application to interactively analyze NF Data Portal data or other open NF data using machine learning or other cutting edge computational methods to help guide NF researchers and clinicians to their next big breakthrough! Submissions in this category will be eligible to be listed on the [Tools page of the NF Data Portal](#).

Challenge Statement #2 - Mobile Device Engagement

Create a mobile device application that improves on common patient problems. First-person input from patients will be given during the hackathon so you can create a solution with real-world applicability.

Examples:

- (Companion App for ABI or cochlear implant) NF2 patients lose hearing due to bilateral VS, they need an ABI or cochlear

implant. How can these devices be improved? For example, your solution could be a companion app that help patients to learn how to use them, guiding them to recognize sounds or words better, or creating daily exercises to improve their usability.

- (Pain tracking app) Pain is a common feature across all forms of NF, heavily impacting on patients' quality of life. Tracking pain is very useful to understand efficacy of therapeutic interventions as well as for the management of daily medication. In collaboration with clinicians, your solution could help patients and clinicians tracking pain evolution in either clinical trial or daily practice settings.

Challenge Statement #3 - Wildcard

- Do you have a project in mind that incorporates aspects of all of the above challenges? Or do you have a project with a different use case in mind, but still benefits NF patients, researchers, & clinicians? If so, then your potential solution would fall into our Wild Card Challenge category! Your solution will still need to focus on improving patient usability & accessibility or helping researchers & clinicians in their work, but if you have an idea in mind that isn't listed in the other challenges, your solution is valuable to this hackathon!

Will I be exposed to the tech and have a chance to ideate and form teams before the event kicks off?

You will have the opportunity to join 2 webinars leading up to the event.

1. Hackathon Overview, How to Win a Hack and Presentation/Demo Tips Webinar, led by BeMyApp

September 22nd, 12 PM EST

- a. Challenge readout
- b. Ideation, team formation, and presentation tips

- c. Ideation Q&A Session + Idea Pitches from Attendees
- d. Team Formation Opportunity
- e. How to give a great hackathon demo by BeMyApp

2. Technical data overview

September 29th, 12 PM EST

- a. Review of the data that will be provided for the hackathon.

Are there prizes?

There will be 3 winning teams for the hackathon that will each be awarded \$7,500. In addition to winning a cash prize, all teams will have the opportunity to win an additional \$7,500 grant prize & participate in further completing their project via the NF Virtual Institute & NF Incubator. To win this prize, teams need to submit (with their completed project), a 3-month plan that details a brief project summary, impact of their solution, and a plan for the development of their project during the incubation period with clear goals.

In addition to the grant prize winner, 3-5 additional teams will be selected for incubation.

Any team that accepts a money prize will commit to complete a detailed write-up of their project, method, and results in the form of a pre-print article or as a wiki page on the NF data portal within 3 months from the acceptance of the prize. Data, protocols, and code have to be made available at the time of submission through the NF Data Portal or a designed GitHub repository.

Will there be other prizes?

In addition to the grant prize winner, 3-5 additional teams will be selected for incubation.

What is the Hack for NF (Neurofibromatosis) hackathon event platform?

<https://nfhack-platform.bemyapp.com/#/event>

This is a virtual platform for all attendees to watch webinars, engage with mentors in 1:1 sessions and Q&A, and to access resources available for the event. You will also create and submit your projects through the platform, and can use the team formation and chat features at any time.

Can I use third party APIs?

Yes. In addition to the data sets that will be provided to you during the hackathon, you may use your own API's of your choosing. However, depending on which challenge statement you choose to pursue, you will need to use the data provided to create your solution.