Date: 4/18/2020

Dear Michael Vang:

The letter is to notify you that Protocol Labs has decided to make a contribution to Michael Vang ("Grantee" or "you") in the amount of $ 20,000 USD (the "Contribution"). This Contribution is intended to support your COVID-19-related efforts outlined in your attached proposal (the "Project").

Our decision to make this Contribution is contingent upon your acknowledgement and acceptance of all of the following terms and conditions:

1. At all times, Grantee will act lawfully and comply with any and all laws and/or rules applicable to its activities, including tax, ethics, or campaign finance laws.

2. To the extent the Project involves developing software, you agree that any software developed using the Contribution will be licensed under an Open Source Initiative-approved open source license.

3. Grantee will not use these funds to make campaign contributions to candidates or political committees, or engage in political campaign intervention or political activities of any kind.

4. Grantee agrees to indemnify Protocol Labs from any and all claims, damages, fines or liabilities that result from Grantee's activities.

5. Although we do not require a report detailing how funds were used, we appreciate regular and timely updates.

6. This letter pertains only to the Contribution identified in this letter and should not be construed as a commitment or pledge, either explicit or implied, of any future contributions to Grantee. It is expressly understood by the parties that this letter relates to a contribution and is not a contract between the parties for services or guaranteed payment. Accordingly, Protocol Labs may, in its sole discretion, postpone or cancel any installment payment, or all future installment payments, contemplated under this agreement.

Please sign this acknowledgement and return it at your earliest convenience. In any event, your receipt and acceptance of funds from Protocol Labs shall constitute acceptance of these terms and conditions. We are pleased to be able to support your organization and its mission, and we look forward to working with you in the future.

Sincerely,

DocuSigned by:
Chris Brocoum
95E510245DA8421...

Chris Brocoum
Head of Finance
Protocol Labs, Inc.

Agreed and accepted,

DocuSigned by:
Michael Vang
6C579113EB28406...

Name: Michael Vang
Title: Stethoscope Project Team Member
Organization: Michael Vang
Date: 4/18/2020

Application: Affordable High Quality Electronic Stethoscope Design to assist HCP

Michael Vang - vjmichael@protonmail.com
COVID-19 Open Innovation Grants

Summary

ID: 3277482538
Last submitted: 4 Apr 2020 10:14 (PDT)

Application form

Completed - 4 Apr 2020

Application form

Applicant

Applicant

Name	Michael Vang
Email	vjmichael@protonmail.com
Institution (if applicable)	(No response)
Country	United States

What is your relationship to the project?

Please describe your involvement in the project (or group) you're applying with. If not in a leadership position, please provide contact information for the project leads.

We are an early stage project where volunteers have come together, so we are still trying to figure out our formal roles if any formal roles will be named.

I have been handling welcoming new team members, sterilization of product, creating a best practice for sterilization, and potentially connecting with the medical community to receive feedback on prototype field testing.

Project

Project webpage

Please link to your project website, GitHub repository, or other main online presence.

https://github.com/zipzit/Covid-Bluetooth-Stethoscope, https://helpwithcovid.com/projects/252-bluetooth-stethoscope-pulse-oximeter

Project contact

Please indicate the official contact method for the project (preferably email), as listed on its website.

email, https://discordapp.com/channels/689552739797434432/693610848098189343

Project summary

Please summarise the project in one paragraph. We may publish this summary if your application is approved.

This is a project initiated by Dr. Brian Lichtenstein on HelpWithCovid.com. Dr. Lichtenstein is a frontline physician in San Diego, and put out a request for a very affordable wireless stethoscope that could be made readily available for healthcare providers (HCP) during this pandemic. Request features included Bluetooth capabilities to reduce very-close proximity exposure of HCP to patients with Covid-19, wide availability of the design, and a higher quality construction and sound than the low-cost stethoscopes currently in use.

Problem description

Please describe the problem you intend to solve.

Stethoscopes are difficult to sterilize and good quality ones are expensive. This results in one cheap stethoscope being left with each patient, and that stethoscope is then used by multiple HCP's throughout the day. This use model poses risks such as cross-contamination. These stethoscopes are effectively disposeable - cheap and produce poor sound quality. Additionally, such stethoscopes have short tubes connecting the bell to the ear plugs, forcing HCP's closer than necessary to a patient incubating covid-19 or other contagious diseases. In addition, standard stethoscope ear plugs are hard to use when the HCP's head is wrapped in a hood and wearing protective gear such as face masks, so an over-the-ear headphone style would be preferable.

Higher quality stethoscopes can be very expensive, so not all medical professionals possess their own. Digital stethoscopes available online can be upwards of $500.

A few devices that feature Bluetooth connectivity require an intermediary device such as smart phone or Android device to connect separately with both bluetooth-enabled ear plugs and a headset.

Some designs prove a challenge to effective sterilization.

Proposed approach

Please describe your overall approach to solving the problem.

Our current trajectory is to design a stethoscope that can effectively listen to either heart beats or breathing sounds, amplify the sound which is then played through a speaker. This device will not feature tubes like traditional stethoscopes.

Once this basic design is completed, we may look into adding other features such as Bluetooth and such. The Bluetooth could work directly with Bluetooth headphones and headsets.

It is our hope that this open design can be easily produced by many people particularly those in the healthcare and medical industry.

Expected outcomes

What are the expected outcomes? What resources are already available to the public? Please include any relevant links.

A stethoscope that provides high quality sound for any HCP that needs to listen to a patient.
Simple to use with lower exposure risk of covid-19 for HCP's.
Easy and safe to sterilize/sanitize.
Affordable to institutions and HCP's.
Donating 90% of proceeds to medical relief organizations.
Hobbyists could purchase off-the-shelf components to create one.

Open licensing

How will the intellectual property generated by the project, if any, be licensed? If unsure, we recommend MIT + Apache-2 for code and Creative Commons Attribution for most other media. Whenever possible, we expect to see the same license declared in your website/repository.

Open source for hobbyist version.

If we somehow found a manufacturer willing to manufacture our design, we might pursue a production model design. We are not there yet.

Timeline

By when do you expect to achieve your goals (if applicable)?

2020/4/30

Requested amount

How much funding are you requesting from us? This should normally not exceed $20,000.

$ 20,000

Purpose of funds

Briefly describe how you expect to use the grant money and how it will help you achieve your goals.

The grant will be used to purchase equipment, supplies and etc. to help us prototype the design and then test the fidelity of the sound produced. What this looks like, we will purchase different mics (MEMs, electronet), boards and components to test what works best.

Then, once we reach a conclusion of what components are best, we will create a few models and ship them out to field test them. From the feedback provided by the healthcare and medical professionals, we will tweak our designs.

Once we reach a satisfactory model, we'll compile a design document that will be provided to the public at large. We may also try to produce as many as we can to supply HCP's.

Also, some of the funds might be used to financially help some of our volunteer members who are now unemployed for the next few months whether directly or indirectly caused by the covid-19 pandemic.

Observations

Use this field for any additional notes or comments regarding your application.

Dr. Lichtenstein noted that many generic stethoscopes are poor quality. Higher grade stethoscopes are very expensive. Many stethoscopes do not natively feature Bluetooth.

By creating an affordable stethoscope, many HCP can own their own.

And since the design includes a speaker and/or bluetooth, an HCP does not need to get closer to a patient that is incubating covid-19 or other infectious disease.

Terms

Applying for a grant is not a guarantee of funding and we expect to receive more grant requests than we are able to fund. The decision as to whether or not to award funding is entirely at our discretion.

By submitting an application, an individual or organization agrees:

- To use any support provided solely for the project described in the funding request,
- To release the results to the public domain or under an open-source license (e.g. the Permissive License Stack, Apache-2 + MIT), to the extent possible.
- Transfering of the funds may be contingent on signing an agreement. This agreement, if necessary, will merely serve to meet compliance requirements and protect both parties.

We reserve the right to change the terms and conditions, including cancelling the program at any time without notice. Please note that you are responsible for complying with taxes and laws, and you agree to provide us with enough information, at our request, so that we can comply with all relevant laws and regulations.

Responses Selected:

I agree with the terms and conditions