

Why We Work on Solutions for the Prevention, Detection and Eradication of Malaria

Why are you inventing in this area?

Humanity faces significant global health challenges that have been difficult to solve through traditional methods. Our hope is through out-of-the-box thinking – which is encouraged in our invention environment– we can find new ways to tackle some of these issues.

With regard to our malaria projects, we are actively pursuing several invention ideas that could help detect, prevent and eradicate the disease. Intellectual Ventures believes that introducing the right combination of these technologies—while keeping older approaches in place—will lead to a better chance of completely eradicating malaria.

But why malaria and not AIDS or other health issues?

We have a variety of global health projects underway. One reason we are focusing on malaria first is it is a disease that is both preventable and curable. Yet more than one million people—including half a million children—reportedly died of the disease last year.

In spite of many decades of malaria control, however, the disease still afflicts hundreds of millions of people every year. Some of the attempts that appeared so promising at first – anti-malarial drugs and insecticides that kill mosquitoes that spread the parasite – now seem to only have made the disease more resilient.

Controlling malaria through prevention is only bringing one perspective to the problem. There also needs to be focus on additional strategies that will lead to total eradication of the disease. Some of the modeling software we've developed to track the spread of malaria will likely be useful for tracking the spread of other diseases. Knowing the predictable travel routes is one way to greatly impact the spread of diseases.

To meet our goal of total eradication of malaria, we need to take a combination of tailored approaches for specific regions of the world; there is not a single magic bullet. To this end, IV's inventors are also coming up with new methods to identify and kill the mosquitoes that carry and spread malaria, as well as determining how to use optics and magnetism to affordably diagnose and treat malaria, and epidemiological modeling software to help track, understand and eradicate malaria.

By considering all of the tools at our disposal including old approaches and new inventions, our inventors are confident they can arrive at an overarching plan to make malaria a scourge of the past.

How did you come up with the idea to use lasers to shoot down mosquitoes?

Humanity faces significant problems that have been difficult to solve through traditional methods. Some problems in particular require the bravery to pursue out-of-the-box thinking in order to uncover new ways to tackle common issues.

At Intellectual Ventures, we take a multidisciplinary approach to invention and problem solving and are fortunate to work with some of the world's most distinguished scientists and inventors. We also have the unique benefit of not being tied to product creation and distribution but rather focusing solely on the creation of new concepts and ideas. This means we can think big. Some of our inventors were involved in the Star Wars defense planning from the 1980s. For them, the idea of using lasers to shoot mosquitoes was one of those "it's so crazy, it just might work!" ideas.

We have been hearing about this photonic fence for nearly a year now. What is new?

Our early prototypes were too expensive especially for developing countries or mass-market approaches. Although we don't do product development, we do think it's our responsibility to refine our designs and find inexpensive, off-the-shelf technologies that can be used to develop inventions such as the photonic fence in a cost-effective way.

As you may expect, the lasers really capture people's imagination so we get the most feedback and interest around the photonic fence, however, the photonic fence is just one of several inventions Intellectual Ventures has been working on to help eradicate malaria. There is no magic bullet. No one technology or approach will ever be 100 percent effective. This is why we are focused on multiple projects to help treat, diagnose and eradicate malaria. IV is currently working on projects focused on the detection and treatment of malaria using optics and magnetism, the use of artificial diets to kill mosquitoes or at least prevent them from spreading infected blood, as well as an epidemiological modeling software to help track, understand and determine the best plan to put in place to eradicate malaria in any given situation. Please refer to the following white papers for more details on each of these projects.

[Malaria Eradication Inventions at IV White Paper](#)

[Epidemiological Modeling White Paper](#)

Who funded the work and how much have you invested in these inventions?

This area of research is an example of an IV program called Sponsored Invention. In Sponsored Invention, an outside sponsor picks the particular problems they want addressed and pays us to come up with the inventions. The sponsor gets a license to the inventions, but we can also license them to others. For these Malaria related projects, our sponsor is Bill Gates. To date, we've spent several millions of dollars on these projects.

Are all of your inventions non profit?

No. We are in the business of invention. Most of our work is intended to create a return on our investment for both our investors as well as our employees. We do, however, have a significant amount of resources dedicated to projects we call "the greater good." We will have more announcements regarding our greater good projects later this year.