

Find your upgrade at crucial.com today  
free compatibility tools · free shipping

Advertise on NYTimes.com

Search Health 3,000+ Topics

Go

SCIENTIST AT WORK | NATHAN WOLFE

## Deep in the Rain Forest, Stalking the Next Pandemic

By ELIZABETH SVOBODA  
Published: October 20, 2008

For Nathan Wolfe, a 38-year-old visiting professor at Stanford, an ordinary workday can look like a clip from "Survivor" — chasing primate hunters through the dense foliage of rural Cameroon, sloshing through mud and streams, dodging branches and malaria-carrying mosquitoes.



Dr. Wolfe says he enjoys the adventure. But he has a broader purpose: staving off global pandemics before they happen.



The subsistence, or "bushmeat," hunters he tracks face a singular occupational hazard: their blood often mingles with that of their prey. Because animals like chimpanzees and orangutans are genetically similar to humans, the likelihood of virus transmission between species is very high.

Both [H.I.V.](#) and Ebola, for example, have documented primate origins, and a [paper published in Nature](#) in February noted that 60 percent of emerging human pathogens came from animals.



Tom Clynes

**IN THE BUSH** Nathan Wolfe, top and above, tracks primate hunters in Cameroon in his disease study.

"We're starting to expand the watershed of global disease control," Dr. Wolfe said. "Before, the best thing you could do was develop a vaccine, but now people are recognizing that's not going to be enough.

"If you find diseases before they've really emerged," he continued, "you can control them early on, before you get a major epidemic."

That pre-emptive-strike approach to epidemic management, he said, is what makes chasing the Cameroonian hunters so crucial.

When he can persuade the hunters, whom he calls "sentinels," to supply him with blood samples, he can form a better idea of which new animal diseases they are

**Depression and the Nobel Prize**  
October 21, 2008, 9:35 AM

**Choosing Between Cavities or Chemicals**  
October 20, 2008

**Mountain Climbing Bad for the Brain**  
October 20, 2008

**Patients Tell Their Stories**  
October 17, 2008

**A 'Dose of Nature' for Attention Problems**  
October 17, 2008

SIGN IN TO E-MAIL OR SAVE THIS

PRINT

SINGLE PAGE

REPRINTS

SHARE

ARTICLE TOOLS SPONSORED BY  
**BASED ON THE NOVEL**

### Up to The Moment



Sign up for a weekly guide to style, from the editors of T Magazine.

Sign Up

[See Sample](#) | [Privacy Policy](#)

Find guaranteed compatible Crucial memory by using our Memory Advisor tool.

Advertise on NYTimes.com

### Health & Fitness Tools



**BMI Calculator**  
What's your score? »  
**Calorie Calculator for Goal Weight**  
What's your limit? »

**What you need to know about diabetes**  
LEARN MORE »  
**nytimes.com/health**

What's this?

Since he began his hunter studies, he has come across several viruses never before seen in humans, including retroviruses from the same family as H.I.V.

"With epidemics, people have been standing on the shore, waiting for the gusher to hit the ocean," Dr. Wolfe said, referring to the tidal-wave impact a widespread epidemic could have around the world. "But to prevent epidemics, you have to look at the various little sources that feed into the river."

With the goal of identifying more of these "little sources" — new disease-causing pathogens — and choking them off, Dr. Wolfe started the Global Viral Forecasting Initiative this year. If new disease strains could be culled before they had a chance to take hold in humans, he reasoned, health organizations would have to spend less money and energy on developing expensive vaccines and treatment drugs.

Google's philanthropic arm, Google.org, is announcing Tuesday that it will contribute \$5.5 million to the initiative; that is being matched by \$5.5 million from the Skoll Foundation, which supports the work of social entrepreneurs.

"Nathan is going to be a rock star in this field," said Frank Rijsberman, a Google.org program director. "We have high hopes he'll discover 5 to 10 new viruses within the next few years."

While outsiders and colleagues alike have endorsed Dr. Wolfe's forecasting tactics, putting them into practice is a tall order. After his team arrives in a rural Cameroonian village on a rickety bus, its first task is to convince local populations that the research poses no threat to their way of life.

"People can't always see a connection between diseases and wild animals," said Matthew LeBreton, a research coordinator who designs field education programs for the villagers. "And they sometimes think that we're going to have their meat confiscated. If someone talks to them about bushmeat, that's what they're going to hear."

Once rapport is established, the data collection can begin. Technicians supply the hunters with bits of filter paper, which they use to absorb blood dripping from their prey. At the same time, scientists take blood samples from the hunters themselves. All of the samples are tested for unfamiliar viruses.

"The main things we look for are: Does a particular virus cause disease, and is it transmissible?" Dr. Wolfe said. "We know there are certain types of viruses that are nasty — [influenza](#), for instance, is an area that is not a blindside. But a lot of viruses have come out of nowhere, like H.I.V., or to a certain extent SARS. Because we know we have the potential to be blindsided, we really have to investigate the unknowns."

To map the emergence of novel viruses, Dr. Wolfe and his colleagues in the Global Viral Forecasting Initiative — more than 100 scientists in nine countries — have begun following other sentinel populations, like people who receive frequent blood transfusions. They have recently expanded their investigations of viruses that cross the animal-human barrier, conducting research in field locations in China, Madagascar, Malaysia and Paraguay.

1. [Weight-Loss Surgery, No Cutting Required](#)
2. [Mind: When All Else Fails, Blaming the Patient Often Comes Next](#)
3. [Well: Dentists Back Sealants, Despite Concerns](#)
4. [The New Old Age: 10 Things to Know About Assisted Living](#)
5. [Well: Mountain Climbing Bad for the Brain](#)
6. [Well: A 'Dose of Nature' for Attention Problems](#)
7. [Recipes for Health: In Defense of Potatoes](#)
8. [Recipes for Health: Macaroni With Tomato Sauce and Goat Cheese](#)
9. [Vital Signs: Nostrums: Supplements Seem to Be No Help to Knees](#)
10. [Cases: A Planet of Pain, Where No Words Are Quite Right](#)

[Go to Complete List »](#)

The New York Times **TECH**  
nytimes.com/tech



**The new sleeker Macbook**

Also in Tech:  
[Is the Google phone real?](#)  
[McCain supports right to remix on YouTube](#)  
[Tech terms to avoid](#)

ADVERTISEMENTS

**Need to know more?**  
Get 50% off home delivery of The Times.



**YOU CAN STOP CLIMATE CHANGE**

ONE ACRE AT A TIME

CONSERVATION INTERNATIONAL

Advertise on NYTimes.com

Past Coverage

[A CONVERSATION WITH JOSEPH DERISI: 'From now on, I don't think there is going to be any new viral epidemic that we will not be able to identify within a few days.'](#) (October 7, 2008)

<p><b>Welcome to TimesPeople</b> What's this?</p>	<p>Share and Discover the Best of NYTimes.com</p>	<p>2:56 PM</p> <p><b>Log In or Register</b> No, thanks</p>			
 <p><b>Post-Cyclone Aid Divides Myanmar</b></p>	 <p><b>Terror and Attraction of Science, Put to Song</b></p>	<p><b>Obama's Neighborhood</b></p> <p>In a Bloggingheads video, a debate about Hyde Park, Barack Obama's Chicago neighborhood.</p>	 <p><b>Obama Pulls Even With McCain in North Carolina</b></p>	 <p><b>Letters: Twists and Turns, Finish Line in Sight</b></p>	 <p><b>Financial Straits Hit Athletic Programs</b></p>
<p> <a href="#">Home</a>   <a href="#">World</a>   <a href="#">U.S.</a>   <a href="#">N.Y./Region</a>   <a href="#">Business</a>   <a href="#">Technology</a>   <a href="#">Science</a>   <a href="#">Health</a>   <a href="#">Sports</a>   <a href="#">Opinion</a>   <a href="#">Arts</a>   <a href="#">Style</a>   <a href="#">Travel</a>   <a href="#">Jobs</a>   <a href="#">Real Estate</a>   <a href="#">Automobiles</a>   <a href="#">Back to Top</a>  <a href="#">Copyright 2008 The New York Times Company</a>   <a href="#">Privacy Policy</a>   <a href="#">Search</a>   <a href="#">Corrections</a>   <a href="#">RSS</a>   <a href="#">First Look</a>   <a href="#">Help</a>   <a href="#">Contact Us</a>   <a href="#">Work for Us</a>   <a href="#">Site Map</a> </p>					