

## Cornell University College of Veterinary Medicine

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# Faculty call for academia to share in fight against diseases of poverty

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Should universities share discoveries crucial to combating diseases plaguing people in poverty? Calling for academia to loosen its focus on patent protection to solve global health threats, two Cornell scientists with decades of experience translating research into cures say unreasonable financial hopes are driving some universities to withhold invaluable discoveries from the fight against deadly diseases.

The journal *Nature* published their piece, “Graduation Time: Universities should forego profits from tuberculosis,” in an October special edition on Tuberculosis (TB). The leading cause of death from bacterial infection, TB chiefly afflicts people in low-income countries, and grows more untreatable and fatal by the day.



Tuberculosis patient in India. *World Health Organization*



Dr. David Russell,  
the William Kaplan  
Professor of Infection  
Biology in the  
Department of  
Microbiology and

“The challenges in developing TB drugs are scientific, logistical, fiscal, and societal,” said TB experts Drs. David Russell, the William Kaplan Professor of Infection Biology in the Department of Microbiology and Immunology at the College of Veterinary Medicine, and Carl Nathan, the R.A. Rees Pritchett Professor of Microbiology at the Weill Cornell Medical College. “The complex nature of the discovery research and low profit potential dissuades many companies from working on TB rather than on infections common in wealthy markets or therapies for common chronic conditions.”

In the race to develop new TB drugs, humanity is falling far behind. Many pharmaceutical companies are dropping out. The bacteria *Mycobacterium tuberculosis* have developed resistance to all widely used treatments, evolving so rapidly that only complex chemotherapy combinations can combat them. Each drug must not conflict with the others, or with treatments for HIV, a common co-



Dr. Carl Nathan,  
the R.A. Rees  
Pritchett Professor

Immunology at  
the College of  
Veterinary Medicine

infection. Any TB drug that does make it  
to market spurs counterfeiting, which  
alters drug composition and accelerates

of Microbiology  
at the Weill  
Cornell Medical  
College

resistance.

“Embarking on such a complex search takes an unprecedented level of social consciousness and cross-industry cooperation,” said Drs. Russell and Nathan. “Some companies have risen to this challenge. But universities with resources invaluable to this pursuit haven’t always followed suit. In our years working toward TB cures, pharmaceutical companies uniformly say the biggest hurdle is negotiating [intellectual property rights] with universities.”



*Mycobacterium tuberculosis* bacteria

Several public-private partnerships have dedicated themselves to developing new TB drugs. In these consortia, academic researchers share up-to-date knowledge of the evolving biology and epidemiology of TB. Pharmaceutical companies and their scientists share treasure troves of chemical compounds suited to drug development; expertise in medicinal chemistry, pharmacology, and toxicology; and infrastructure to perform clinical trials.

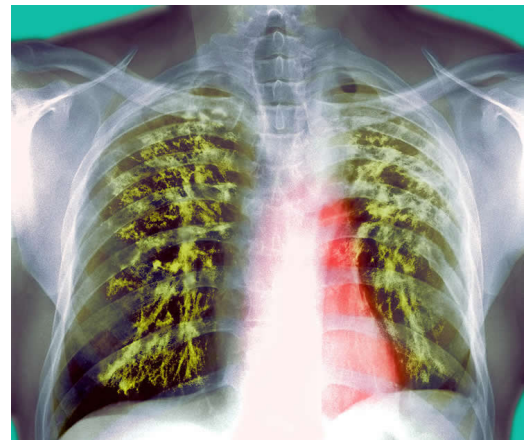
“Such partnerships provide outstanding opportunities for innovation and efficiency,” said Drs. Russell and Nathan.

“Unfortunately, this enlightened attempt to address the depleted

TB drug pipeline is not always matched by universities. Some universities balk at sharing patents with drug companies, or make unreasonable IP claims, or demand a disproportionate share of perceived income.”

Russell and Nathan say universities should step up and share their knowledge, accepting the low profit potential from intellectual property related to drug discovery for neglected diseases like TB.

“It’s unrealistic to expect income from the IP needed for TB drug discovery,” said Russell and Nathan. “The negligible revenue it could bring pales in comparison to the hundreds of millions of dollars companies must invest to turn compounds into drugs. This penchant for fiscal conservatism and IP protectionism are obstructing drug discovery for all diseases of people in poverty. At this critical time, with millions dying every year from such infections, it is imperative that universities re-evaluate their position and become activists for global health.”



Lung scarring from tuberculosis

