**Non-tuberculous Mycobacteria (NTM’s)**

- Everyone inhales them, but only a small fraction of people get disease, unclear why.
- NTM’s are not contagious, unlike TB.
- Increasing rate of infection 10% each year since 2008, especially in **women and people over 65**.
- People with COPD, cystic fibrosis and individuals who are **immunocompromised**, or undergoing **cancer treatment** are most at risk.
- Indiana has a high prevalence and low screening rate for NTM infections.

**Tuberculosis is the #1 infectious disease killer globally**

- Highly contagious
- passed from person to person by cough
- Most Americans are not vaccinated against tuberculosis
- TB is rapidly gaining resistance to antibiotics.
- All 50 states continue to report cases of tuberculosis each year, and there were **116 new cases of TB in Indiana in 2018**, two of which were resistant to antibiotics.

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Doctors and scientists previously thought that the bacteria could turn this weapon on and off like a light switch.

However, my research has shown that it is more like a **dial**: you can tune it up or down, and there are varying degrees of virulence.

My lab has found two components that **turn down the bacteria’s ability to infect us**.

This is useful information for **drugs and vaccines** against NTM’s and tuberculosis.

Left: A Confocal Microscopy Image of Pathogenic *Mycobacteria* inside a white blood cell.