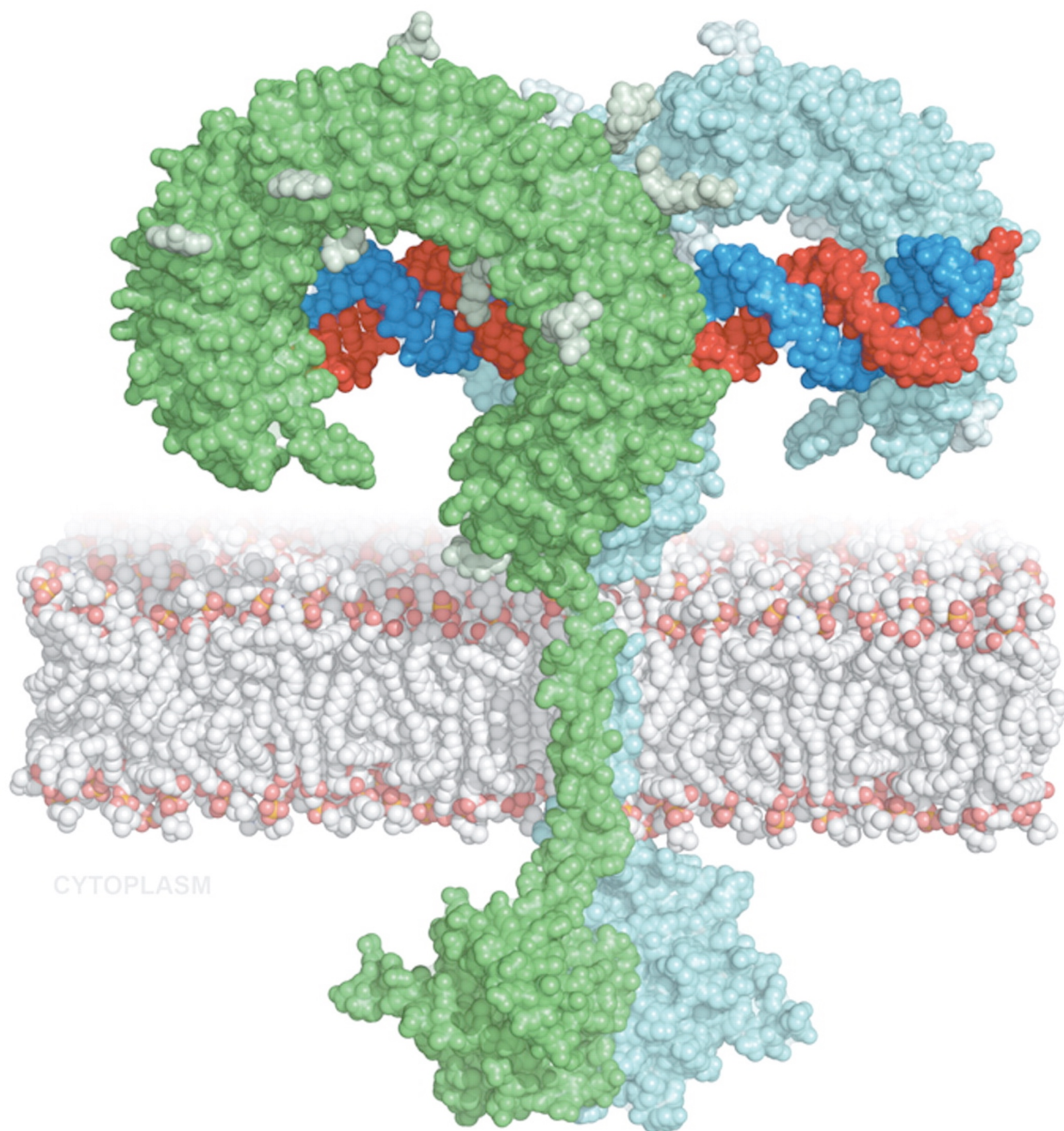


# TLR



## Caption

Molecular imaging of a toll-like receptor (TLR), from the Protein Database, a public repository. Every lung cell is studded with tens of thousands of receptors that form what biosemioticians call "semiotic bridges" -- molecular assemblages that transduce signals from an exterior environment (top) across the cell membrane (the thick and mostly colorless middle) to a semi-fluid cytoplasmic interior (bottom) crowded with diverse complex molecules that get mobilized into (nonlinear) "signalling pathways" (not pictured here) to produce symptoms like inflammation, and asthma. These particular "pattern recognition molecules" (PRMs), an ancient set of molecular structures that humans share with fruitflies and fugu fish, mice and other mammals, are visualizable and knowable only since the 1980s, a basic part of the recently discovered "innate immune system." Enormous investments of time, money, resources, energy, and affect are mobilized -- largely in Euro-American and East Asian societies -- to understand these receptors and their complex signalling pathways.

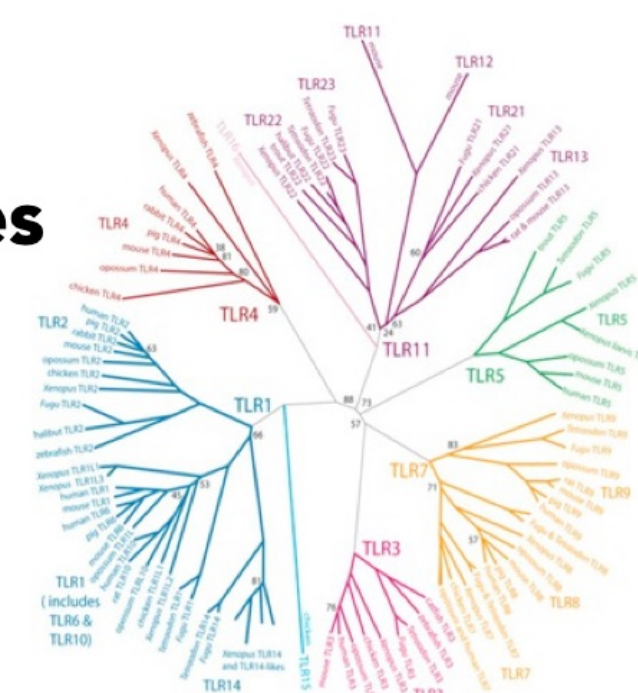
## Design Statement

This image interpellates the viewer into a scientific imaging tradition dating back to Robert Hooke's *Micrographia* of 1665: asked to wonder, in amazement and curiosity, at the world within the world, the vital beautiful fragile structures of flesh. Some scholars find such "molecularization" of life, health, and toxicity to be reductive, hypermechanistic, deserving only critique. I am looking to activate different semiotic pathways in viewers and readers: to transduce the intricate beauty of molecular structures and how they capture the attention and interests of scientists; the commitments that those scientists embody in figuring out how variations in the molecule here may be associated with variations in different people's responses to inhaled pollutants; the importance of public investment in such "basic science" that will take years or maybe decades to "pay off," if it ever does; the collective effort to understand toxicity in its most minute enactments, and to stockpile and share data in public repositories like the Protein Database; and the drives of curiosity, wonder, and for old-fashioned enlightenment that infrastructures a microscopic entity like this Toll-like receptor.

## Project Statement

I am an anthropologist and historian of truth-making practices in (some of) the sciences, primarily genomics and air pollution research, but also including the science of signs, semiotics. My essay here makes occasional reference, including in its title, to the productive overlaps, borrowings, and cross-talk that have taken place in both the life sciences and the sign sciences, and their collusion in biosemiotics. The images traverse the scales my scientists work on and between, planes of immanence from the molecular to the planetary where collective work happens. Friendship with the sciences is both motto and method; I want my writing to increase interest in and care for the sciences, and their much-needed truths. Considering how much criticism (some of) the sciences also merit, this can be a challenge sometimes, but I consider it an essential part of an ethnographic responsibility.

## Semiotic Bridges and Toxic Transductions



Fortun, Mike. 2019. "TLR"

In "Semiotic Bridges and Toxic Transductions." In *Visualizing Toxic Subjects*, curated by James Adams and Kim Fortun. The Center for Ethnography. May.

<https://tinyurl.com/yynxboew>