

From Ebola to Zika: Present and Emerging Infectious Diseases

Introductory remarks

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Good morning, welcome to Columbia University, and welcome to this Symposium, *From Ebola to Zika: Present and Emerging Infectious Diseases*, sponsored in part by the University Seminars through a grant to Kathy Nolan's *University Seminar on Population Biology*.

We are gathered here to address a deeply troubling problem, that is, how to confront the consequences of our own species' success in outsmarting the constraints of Natural Selection. By our wits, we have exceeded the typical species number for a vertebrate our size by about 100,000-fold. The result? Any microbe with a novel DNA or RNA sequence that encodes an escape from our species' defenses, will have access to a uniquely ubiquitous, global host.

Like the cynical Vichy policeman in *Casablanca*, our scientific and medical establishments, and our colleagues in the national press, are repeatedly *shocked, shocked!* to find that our species is a popular target for new microbes of all sorts. It is time we take note of the fact that we, and the animals we raise to eat, are today about 90% of the planet's mammalian biomass. That is, to me, a very good reason to pay attention to the subject of Population Biology, and to today's Symposium.

I will not keep you from this topic for more than another few minutes. I do want to take the time to introduce the University Seminars themselves to you. I am the fifth Director of this seven-decade-old program, unique to Columbia so far as we have been able to tell.

Each of our 90 or so Seminars has emerged from a group of colleagues here and elsewhere, who came to us because they had come together first around a problem that shares with today's topic at least three attributes: social significance, and bottomless complexity, and a tendency to fall perpendicularly across divisional and departmental lines.

Three of the first five Seminars formed in 1945 are still meeting monthly: *The Problem of Peace*, *The Renaissance*, and *Studies in Religion*.

For my introduction this morning, I thought it useful to review how today's Symposium, initiated by the Seminar on *Population Biology*, may intersect the issues that some of our other Seminars are meeting to discuss, if not today than soon enough. Here's what I found.

Population Biology began in 1971. At that time there were four other Seminars in place – and still running today - whose members might have found this new Seminar to be dealing with problems adjacent to or even overlapping their own topics: *Ecology and Culture*, founded in 1964; *Knowledge, Technology and Social Systems*, founded in 1966; *Pollution and Water Resources*, founded in 1968; and *The History and Philosophy of Science*, founded in 1970.

Since *Population Biology* has been meeting, other Seminars have emerged from faculty here and elsewhere who have asked for the University Seminars to help them form a collegial conversation around questions that also touch on today's event. The relevant ones still meeting today include *Genetic Epidemiology*, founded in 1982; *Disability Studies*, founded in 2003; *Complexity Science, Modeling and Sustainability*, founded in 2011, *Animal Behavior*, founded in 2014; and *the Future of Aging*, also founded in 2014.

So we may say that about a tenth of our 90 Seminars are studying issues relevant to today's Symposium. But who would know or care about that, if they had not already chosen to take the time out of their competitive, focused academic work, to join one or more of these Seminars? And so for everyone here, let me simply invite you to look at our website, universityseminars@columbia.edu, and if you see a Seminar that you would like to join, let me know.

Finally, I'd like to make the case in the spirit of today's topics, that our program of Seminars, each proposed and run by a collegium of accomplished folks willing to share their ideas in private, and have the minutes archived for scholarly research, is an example of the uniquely human capacity to scale up social structures without losing the freedom and creativity of the individual.

I hope that this capacity will suffice to bring us as a species to the self-awareness necessary to consider the biology of our own population to be a contributing factor as well as a victim of the scourges we will now discuss.

Thank you. Let's get to work.