

# Vision for Epidemiology

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Epidemiology has made truly impressive contributions to humanity. Many of the health benefits we enjoy today are the direct result of over a century of epidemiological fieldwork and research to eradicate diseases, improve our environments, make us safer, and set the record straight for countless health threats that would have otherwise gone unrecognized. From smallpox to smoking to safe cars, epidemiology and epidemiologists have made a difference. Yet today, few people are aware of the awesome magnitude of these contributions.

As epidemiologists it is our duty to put forward the absolute best, life-saving science and to train the next generation of scientists. But it is also our duty to do this in a way that elevates our field in the eyes of other scientists and policymakers and, even more importantly, in the eyes of the public who are the real reason we do what we do.

The Columbia University Mailman School Department of Epidemiology is one of the oldest and most distinguished departments of epidemiology in the world. Our Department's history is part and parcel with the very history of the field of epidemiology itself. Our founding leaders were also the founders of epidemiology in the United States and many of the field's premier organizations that still stand today. Currently, the Department is one of the largest and best known in the world with hundreds of faculty and students, and highly committed teams of administrative and research staff.

As a broad vision, the Columbia Department of Epidemiology is committed to producing world-class science with real-world impact while training the next generation of epidemiologists to improve the health and lives of communities around the world. This document aims to clearly articulate a strategic direction for this vision, serving as the scaffolding on which department activities, from research to education to impact, can be built. This is not intended to be a 'final document', but rather a 'living document', to be updated, and improved with the passage of time.<sup>1</sup>

## Science

We are committed to understanding the cells-to-society determinants of global population health. In keeping with the goals of an epidemiology of consequence we explicitly intend our work to inform prevention efforts that improve the health of populations. We are interested in putting our science to work for public good and for the public's health, having our findings impact policy and implementation whenever possible.

We are dedicated to developing new and novel methods, and will adopt, apply, and improve upon methods from other disciplines, both quantitative and qualitative, that can fruitfully inform population health science. We are willing to embrace a broad range of approaches and mixed methods in achieving these ends and building new partnerships with complementary disciplines.

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<sup>1</sup> This document builds on a vision first articulated through faculty-wide discussions in 2010, followed by additional input from a department leadership retreat in 2013, and then a faculty-wide retreat in 2017.

We aspire to explore and allow new ways of thinking to flourish, to catalyze multi and inter-disciplinary work, and to articulate frameworks that scientifically explain the production of health, intervene in demonstrably reducing health problems, and galvanize effective population health practice.

## Education

We aim to innovate in education and to foster an environment of educational excellence. We aim to engage in the teaching of epidemiologic science to a diverse body of students, to use multiple educational modalities both in-person and remotely, and to create the spaces for the continuing exchange of ideas that promote the field, its science, and its reach. We are committed to training students who will be leaders in population health science and in public health practice. We aim for our students to be critical thinkers who treasure scientific dissent, learn practical skills with real-world value, and are prepared for lifelong engagement in knowledge discovery, translation, and implementation.

We will achieve the highest level of interdisciplinary education for our students, grounded in the basic skills of epidemiologic science but encouraging the embrace of complementary quantitative and qualitative methods that can help answer key population health questions and guide public health practice and policy. Our education is embedded within a model of experiential learning and active mentorship that flexibly guides students to function at their maximum capacity.

## Impact

We aim to convincingly identify the causes of population health, intervene upon known threats to health, and measurably impact the health of populations through the highest levels of scientific inquiry. To that end, the department aspires to translate scholarship into implementation in an effort to impact and change real-world conditions that make people healthier. We will make our scholarship both replicable and accessible to populations around the world who need it, so that it may inform and influence science more broadly, public conversations about health, and the ultimate production of population health.

We are committed to translating our science to the broadest audience possible, including policymakers, members of the general public, public health stakeholders, and other scientists who have the capacity to influence the health of populations. In order to accomplish this we will solicit input from thinkers across diverse spheres of influence to form strategic partnerships and to catalyze advances in policy and practice that ultimately improve public health.