**Unfunded**

**Roadmap**

Public Health

---

**EARTH SCIENCE RESEARCH**

**DEcision-Support Inputs**

**GOALS/PARTNERS**

Improved capabilities of the public health community to use Earth science data products and technology to identify and address environmental risk factors related to public health

---

**Where we are now**

**Where we plan to be**

**EARTH OBSERVING MISSIONS**

---

**Public Health Surveillance Systems require complete information on weather/climate/environment factors**

**Public health surveillance systems able to track weather/climate/environmental factors to improve disease outbreak predictions, increase warning time**

**Data standards, workforce development support, sustained integration of data and models**

**Surveillance System have automated ingest of data and models; public health decision-support systems benchmark use of Earth system sciences**

**State 2**

**EPHTN and Malaria Modeling and Surveillance System validate data and models for use in surveillance; visualization technology enhances public health risk communication**

**Predictive capacity of Earth system science data and modeling verified for specific environmental exposures, plague**

**New weather/climate/environment disease relationships discovered; results applied to Environmental Public Health Tracking Network, Malaria Modeling and Surveillance, ArboNet, RSVP**

**Chronic and infectious disease models coupled with Earth science models**

**Integration of Earth system science data and models into surveillance systems; visualization of weather/climate/environmental data**

**Data standards, workforce development support, sustained integration of data and models**

**Surveillance System have automated ingest of data and models; public health decision-support systems benchmark use of Earth system sciences**

**State 1**

**EPHTN and Malaria Modeling and Surveillance System validate data and models for use in surveillance; visualization technology enhances public health risk communication**

**Predictive capacity of Earth system science data and modeling verified for specific environmental exposures, plague**

**New weather/climate/environment disease relationships discovered; results applied to Environmental Public Health Tracking Network, Malaria Modeling and Surveillance, ArboNet, RSVP**

**Chronic and infectious disease models coupled with Earth science models**

**Integration of Earth system science data and models into surveillance systems; visualization of weather/climate/environmental data**

**Data standards, workforce development support, sustained integration of data and models**

**Surveillance System have automated ingest of data and models; public health decision-support systems benchmark use of Earth system sciences**

---

**Where we are now**

Earth science missions (Terra, TOMS, TRMM) provide information on environmental features correlated with disease risk factors, such as ecotones, flooding, human settlements, and soil moisture

Earth observing instruments, advanced communication technology, high speed computing capabilities, data products, and predictive models of Earth system phenomena associated with the occurrence of disease assists partners in enhancing epidemiologic surveillance systems

---

**Where we plan to be**

Weather, climate, natural hazards, and other environmental factors are routinely included in disease forecasting

More accurate representation of environmental risk factors enhances the prediction of and response to infectious disease outbreaks, harmful exposures, chronic disease conditions, and bioterrorism

Verified and validated Earth science enhancements to public health decision support tools

---

**2004**

**2012**