

Air Pollution in India: Huge Impacts on Health, Renewable Energy, and Cultural Heritage

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Air Pollution Dominates Deaths Due to Pollution

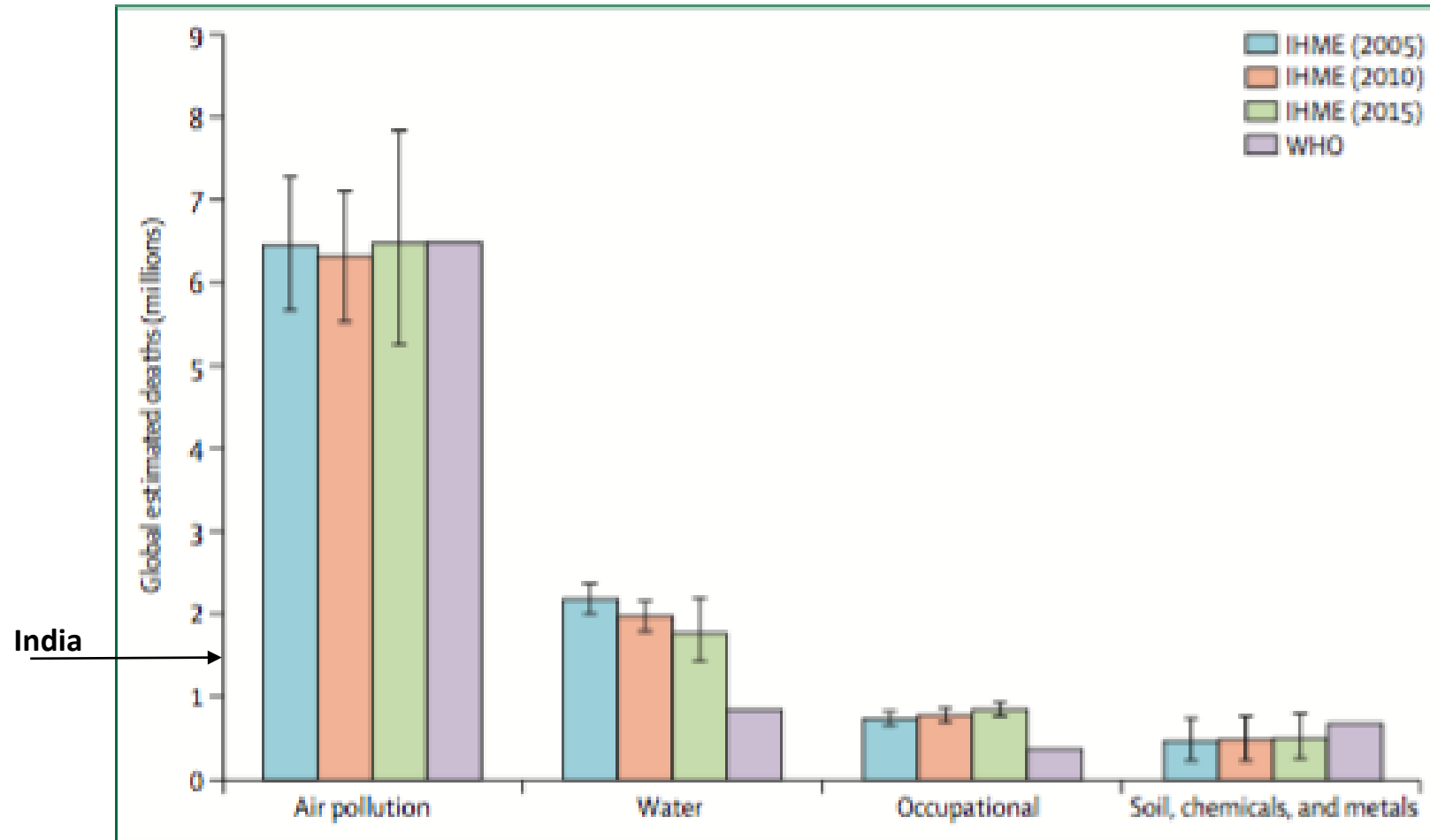
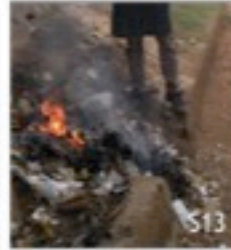


Figure 4: Global estimated deaths (millions) by pollution risk factor, 2005–15
Using data from the GBD study⁴⁷ and WHO.³⁹ IHME=Institute for Health Metrics and Evaluation.

Sampling Roadside Burning



Samples collected ~0.5 m
from source

Indian Roadside Refuse Fires Produce Toxic Rainbow



OCTOBER 24, 2016

First toxicity measurements of roadside garbage fires in India highlight the unhealthy nature of a common practice

By Ken Kingery



Air Quality in India

@airqualityindia

Ever wondered about the contribution of waste burning to ambient PM in India <https://t.co/QAMm200Ppy>

@cwiedinm @Parth_Itsme @ajaynagpure

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**DUST AND ATMOSPHERIC
POLLUTION DECREASE
SOLAR ENERGY PRODUCTION**



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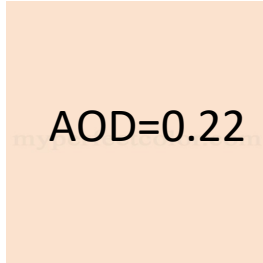
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Current Loss of Solar Production

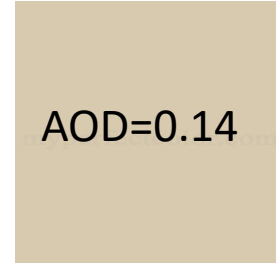
- China \cong 11GW \cong 10 billion US \$ per year**
- India \cong 1 GW \cong 1 billion US \$ per year**

Results- Modeled color

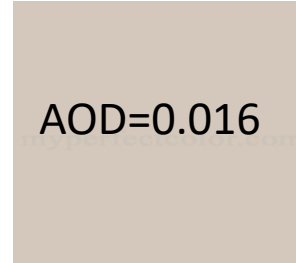
Color from dust
(59%)



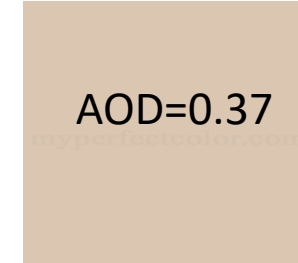
Color from BrC
(38%)

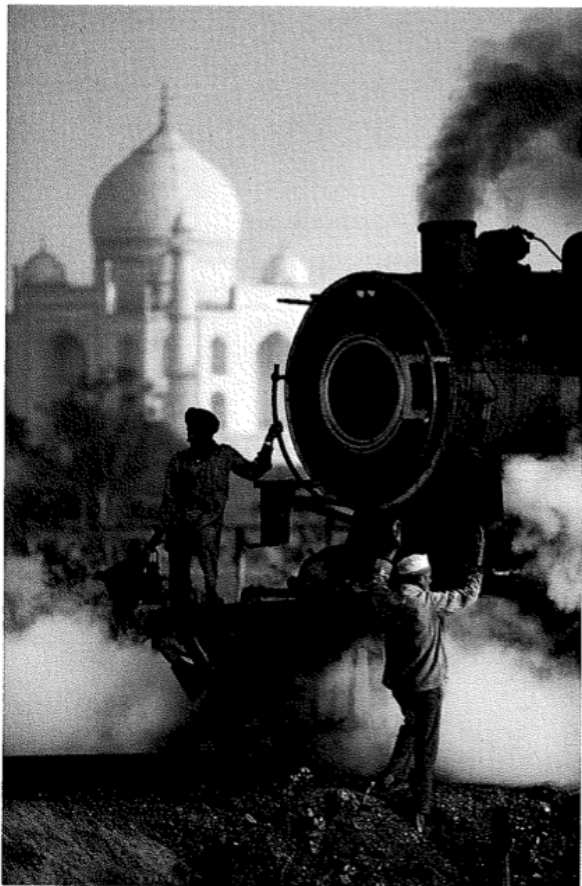


Color from BC
(3%)

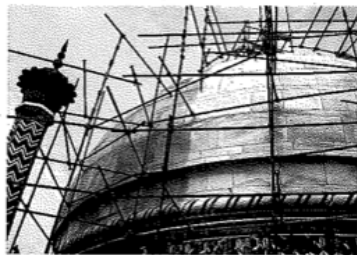


Color from dust, BrC, BC
(100%)





In 1983, when the photo above was taken, the Taj Mahal's marble was dazzling. Since then, polluted air has covered the stone with dark particles that even the monsoon rains can't wash off. To restore the original color, a mud pack is applied periodically, followed by a distilled water rinse. A cleaning in progress is shown at right, behind the workers' scaffolding.



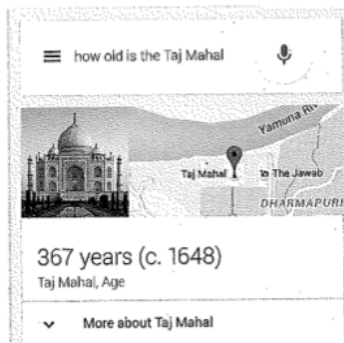
Rescuing an Icon

Once a shining vision in white, the world-famous Taj Mahal has lost some luster over the past few decades. As the population of the surrounding city of Agra, India, swelled and air pollution worsened, the marble of the 17th-century monumental tomb began to turn brownish yellow.

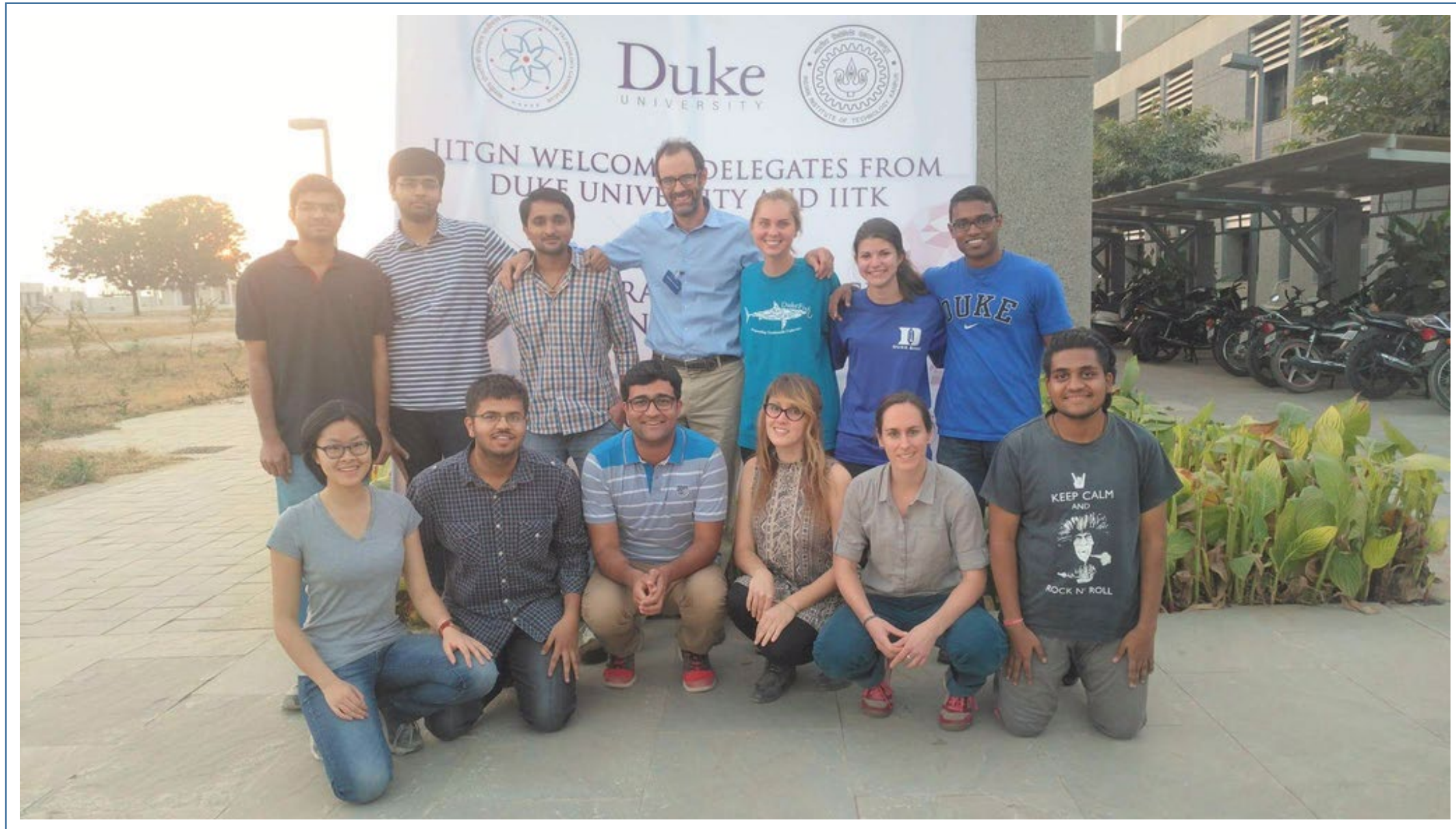
No one knew the exact cause of the discoloration, though. Was it manufacturing? Transportation? Construction? Or some other activity in the burgeoning industrial hub?

Now a study carried out by scientists from the United States and India has identified the culprits: dust, likely stirred up by the traffic on unpaved roads; and soot produced by burning trash, agricultural refuse, fossil fuels, and the dung and wood that locals use in fires for cooking and warmth.

The official response was swift. "Our paper came out, and within two weeks it was being discussed in the Indian Parliament," says environmental engineer Mike Bergin. Authorities in Agra then adopted plans to improve air quality, which include giving people propane to cook with and switching several thousand trucks from diesel to natural gas. —A. R. Williams

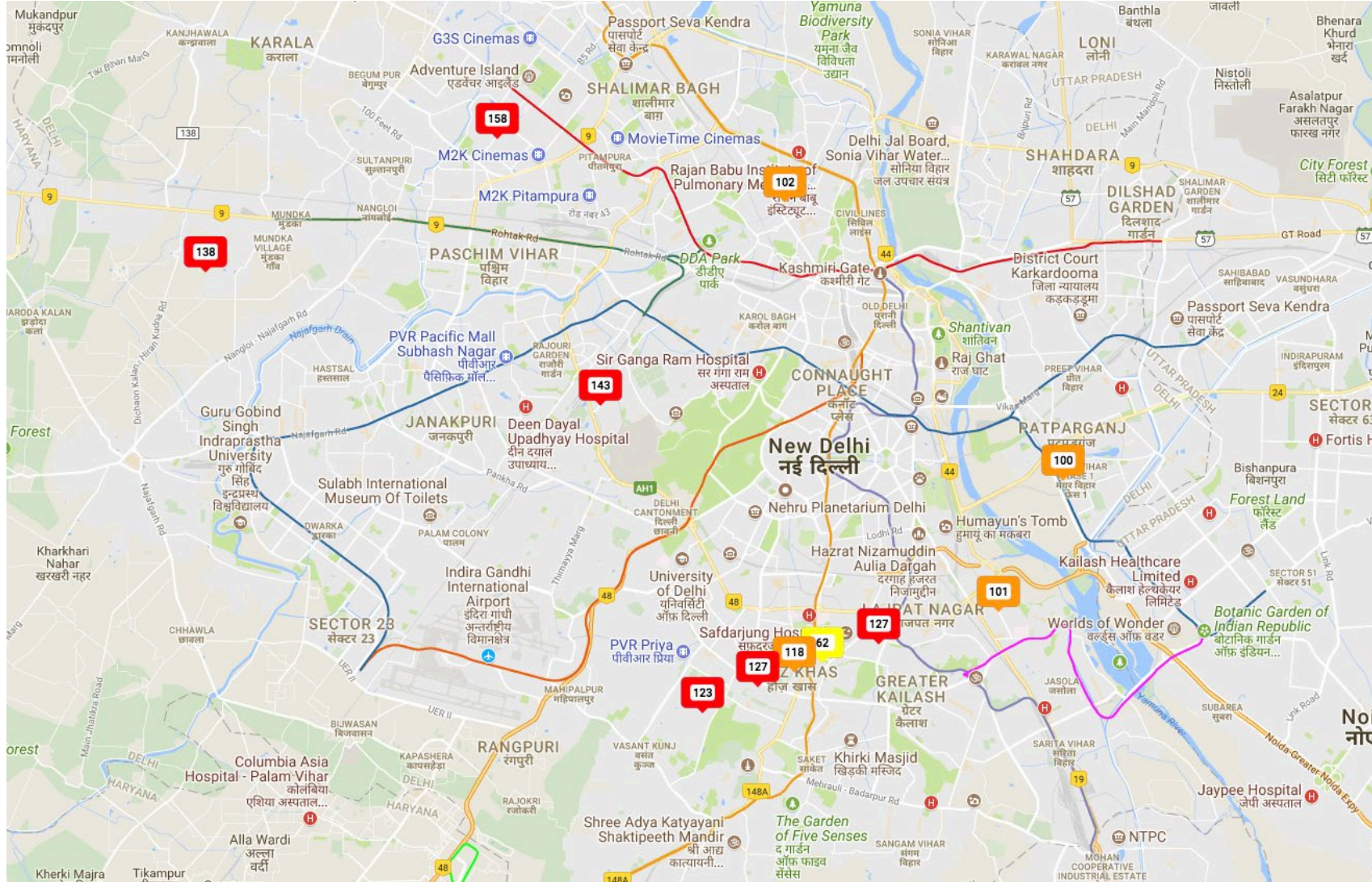


Hands-on Research Experiences for Undergraduates: Duke-RTI-IITG-IITK



December, 2016

Low cost sensor network deployed in India: Streaming real time data



<http://atmos.urbansciences.in/dashboard/>