

Alexander von Humboldt, Global Science, and Today's United States

The United States withdrew earlier this year from the 2015 Paris Climate Agreement, the World Health Organization, and virtually abolished the U.S. Agency for International Development. EPA, NOAA, and other agencies supporting scientific research have had their staffs and budgets cut.

In times like this it is worth recalling the origins, and immense benefits, of U.S. international scientific cooperation. One of its first catalysts was the 1804 six-week U.S. visit of the German polymath Alexander von Humboldt. The great scientist traveled to Washington and Philadelphia at the end of a five-year exploration and research voyage to Spanish New World possessions, including South America, Cuba, and Mexico. He spent long hours of conversation with President Thomas Jefferson and Secretary of State James Madison. He expressed hope that the United States would be a future leader not just in science, but in public enlightenment, human rights, and culture. For many years Humboldt proclaimed that he felt “half American.”

Humboldt was perhaps the last of the great Enlightenment savants, an intrepid traveler and explorer who made extraordinary contributions to natural history, geology, zoology, ethnography, ecology, and to the international promotion of scientific research. In the words of one of his biographers, “More places around the world are named for him—villages, towns, counties, streets, schools, rivers, bays, mountains, glaciers, parks, forests—than any other historical figure.”

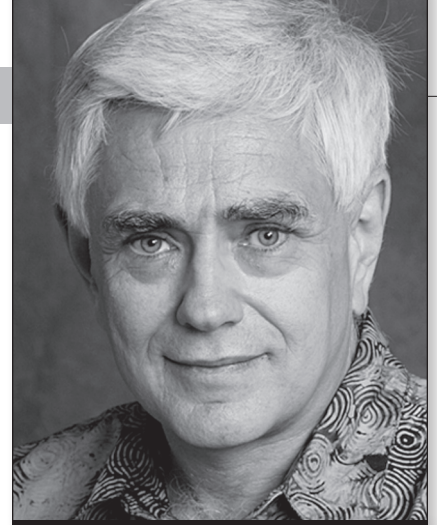
Humboldt pioneered climate change research. He observed that human activity was affecting climate through deforestation, environmentally negligent irrigation (leading to salini-

zation of soils and depletion of water tables), and increasing emissions of “steam and gas” produced by growing industrialization. He condemned European imperialism for its conversion of native lands for ecologically destructive export monocultures, and its attendant abuses of human and natural resources.

His approach was one of meticulous empirical observation coupled with a synthesizing, multidisciplinary vision, conceptualizing human culture and activity as increasingly powerful forces in the natural world. Humboldt's direct experiences with Indigenous cultures and peoples of African descent in Spanish America led him to affirm the inherent equality of all humans and to condemn slavery as “possibly the greatest evil ever to have afflicted humanity.” All human beings should be treated equally, he wrote, with “sensibility, emotion, intelligence and wisdom.”

He later became disillusioned with the single-minded pursuit of profit and short-term narrow utility that he thought increasingly pervaded the United States, an amoral mentality he believed that contributed to the country's growing dependence on slavery. “Alas!” Humboldt wrote, “how I detest this Politics that measures and evaluates the public good simply according to the value of Exports! A Nation's wealth is just like an individual's, only the accessory to our happiness. Before being [able to be truly] free, we must be just, and without justice there can be no lasting prosperity.”

Humboldt was also a major force in the creation of national and international scientific networks, starting by reorganizing German scientific associations to attract more members. These efforts were a model for the creation of the British Association for the Advancement of Science in 1831 and



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in 1848 the American Association for the Advancement of Science. In 1836 Humboldt persuaded the British government to join the United States and Russia to set up a series of permanent scientific stations around the world to observe magnetic and meteorological phenomena. This network enabled the first attempt at a global map of the Earth's geophysics and climate. Humboldt also had a profound effect on many of the major 19th century figures we view as the founders of American environmentalism, including Henry David Thoreau and John Muir.

Later in the 19th century his influence waned, replaced by a focus on increasingly narrow specialized academic disciplines. The Humboldtian project was a multidisciplinary global science, encompassing connections not just between different scientific subjects but also the interactions of historical practices, cultures, and politics with climate and biodiversity. The global nature of environmental challenges such as climate change, ecosystem deterioration, and biodiversity destruction has led in recent years to a renewed appreciation of Humboldt. His pioneering vision of international collaborative science linked to improved governmental and inter-governmental policies and agreements is needed more than ever.

It is lamentable that 221 years after Humboldt's visit with Jefferson and Madison, the United States is unilaterally withdrawing from the international organizations and agreements that embody his vision.

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