In partnership with Cornell and five other leading universities, The Nature Conservancy has established the NatureNet Science Fellows Program to create a reservoir of interdisciplinary science talent that will carry out the new work of conservation.

Our world faces unprecedented demands for food, water and energy — and meeting these demands without exacerbating climate change and degrading natural systems is the human challenge of our generation. The Nature Conservancy is confronting these challenges head-on — through a new set of priorities that focus on everything from green infrastructure to sustainable agriculture and fisheries, natural defenses against extreme weather to encouraging sustainable energy forms and corporate practices. We firmly believe that conservation can be a solution to sustainable well-being for billions of people.

That’s why the Conservancy has established the NatureNet Science Fellows Program in partnership with six of the world’s leading universities — Columbia, Cornell, Princeton, Stanford, the University of Pennsylvania, and Yale — to create a reservoir of new interdisciplinary science talent that will carry out the new work of conservation.

Learn more about the postdoctoral fellowships and how to apply

Ideal Candidate Profile
We need a new brand of science to tackle these challenges — science that blends economics, business, engineering, technology and communications with conservation and ecology. And addressing human well-being demands a science practice that marries the best academic analyses with opportunities to rapidly test and deploy those analyses in the real world.

Ideal candidates for NatureNet Science Fellowships are outstanding early-career scientists who seek to improve and expand their research skills while directing their efforts toward problems at the interface of conservation, business and technology.

Thematic Areas for 2014 (tailored for Cornell University)
Agriculture – pathways to expanding sustainable food productions systems.
We seek fellows who will help develop or identify sustainable crop production systems, grazing systems, or aquaculture. Work can include assessment of alternative farming or production systems
with an eye towards alternative choices on the cropping systems, as well as on certification or standards that might be implemented to promote particular systems. Analyses could also include landscape studies of agricultural systems and ecosystem responses. The goal is to deliver food without damaging ecosystems or causing loss of biodiversity.

Cornell is a world leader in sustainable agriculture. Strengths of our program that will integrate well with ongoing TNC programs include:

1) Management of soil organic matter to provide the basis for sustainable land use, including development of sound decision tools that allow on-farm resource allocation of nutrients and biomass. Such research also involves analysis of trade-offs between bioenergy and soil health, life-cycle assessment of the full environmental and climate-relevant impacts of land management around national parks and conservation areas. Increasingly watershed-wide analyses and carbon and nutrient cycles between urban and rural communities may point the way for a sounder resource management.

2) Agroecological intensification of cropping systems for sustainable food production and biodiversity conservation in agricultural landscapes. Increased global demand for food requires ecological approaches to intensification, including innovative crop improvement and taking advantage of ecosystem services provided by biodiversity in and around agricultural systems. Ecological approaches will weight diversity from the gene to plant to plot to farm to landscape level. We need to do innovative improvement of diverse species but also to look at combinatorial agronomy (e.g., testing intercrops) as well as combinatorial genetics. Research on these processes can increase productivity in both rural and urban settings, contributing to enhanced food security.

3) Cornell projects also support the agroecological intensification (AEI) of smallholder agriculture in Africa by making relevant evidence, tools, and skills more accessible to researchers, development professionals and farmers. This work involves interaction with “communities of practice” of teams of African scientists and development professionals working towards AEI. There are opportunities to contribute to the establishment of a pilot-scale farmer research network that will crowd-source data on the performance of crop varieties and intercrops from smallholder farmers in East Africa; to contribute to the development of a Web-based resource to support post-graduate students and others working on AEI; and opportunities to contribute to the development of models for use in participatory exploration of AEI scenarios.

**Securing Clean Water in Ample Supply**

We seek fellows who will help insure that clean and reliable water supplies are available to urban and rural people as well as biodiversity. Strategies for achieving this include sound watershed management, technology, mitigation, and regulation. This could also involve efforts aimed at reducing sources of pollution.

Cornell has an exceptional array of opportunities for working with water, including a world-class program and training grant in biogeochemistry and climate change. Examples of links between our program in water and TNC include efforts to understand vulnerability of aquatic biota to climate change and a developing project on environmental flows intended to integrate closely with Water Fund projects in the Northern Andes. One goal is to develop regional hydrologic databases and
characterizations of flow regimes to provide a context for predicting ecological vulnerability to changes in climate and human susceptibility to water supply. We are also interested in mapping ecosystem services associated with water. For example, an assessment of the ecological contexts for which aquatic biota sequester and transform significant quantities of nutrients could provide important information on the role of biodiversity in providing ecosystem services that contribute towards securing clean water.

**Energy Futures**

We seek fellows who will analyze and assess alternative energy portfolios that can meet a region’s or nation’s energy needs over the next twenty years, while also achieving the multiple environmental goals of minimal habitat fragmentation and degradation, reduced emissions, minimal risk to people, and sustainable water use or impact. This could entail working with innovations in the energy arena to consider them in this environmental and portfolio approach. The portfolios to be considered might include shale gas, nuclear, coal, oil, and renewables.

Cornell, through its Energy Institute and ACSF, has unusually strong programs integrating energy and environmental futures. The Energy Institute provides rich opportunities for projects in biofuel, tidal, wind and geothermal renewable energies, including a large cadre working on algal biofuels and wind energy. Hydrokinetic and wind energy from point-of-use scale to grid-scale farms. In wind for example, harnessing the kinetic energy from the omnipresent flow of air and water is a critical part of our transition to a zero carbon footprint energy future but this must occur while ensuring the protection of the full range of ecosystem services at competitive levelized energy costs. Cornell is uniquely positioned to address these issues given its broad strengths in engineering, agriculture, management, life and social sciences, along with its unique Laboratory of Ornithology. Opportunities range across development efforts at extremely low-cost self-powered water pumps to studies of the interaction of arrays of turbine wakes while minimizing their ecosystem and societal impacts.

In addition, Cornell is near ground zero for pending shale gas development in NY, providing a fertile ground for new projects that examine shale-water interactions such as intrusions of methane and other additives into water supplies and developing potential solutions.

[www.acsf.cornell.edu/TNC-CU](http://www.acsf.cornell.edu/TNC-CU)