Millions of people with leukemia, HIV, and many other diseases are alive and well today because of the pharmacological research and resulting drug treatments discovered by Nobel Prize winner Gertrude Elion. Along with collaborator George Hitchings, Elion won the Nobel Prize in Medicine in 1988 for “important principles for drug treatment” stemming from their research in the 1950s and 1960s.
Conducting research as an undergraduate isn’t really about winning the Nobel Prize… or is it?

Yet long before Elion won the Nobel, she was just beginning in 1930 to work toward a master’s degree in chemistry at NYU, honing the research and analytical skills that would someday help her save lives.

Fast-forward nearly 75 years to today, and you’ll find NYU undergraduates walking in Ellen’s footsteps, conducting high-level research in their respective fields. Students pursuing their research interests have support from all over the NYU community in the form of undergraduate research funds, grant competitions, and especially faculty members, who solicit student help with their latest research projects, whether it be by working together in their labs, in the field, on film sets, or even on archaeological digs. Many students also conduct international research with classmates through school-specific grants. Students often bring their research findings to the NYU community by publishing their reports and essays in Inqury, the undergraduate research journal, and by presenting at the annual Undergraduate Research Conference, which is open to students in all the NYU colleges and sponsored by the College of Arts and Science each spring. Projects come from all academic disciplines, spanning the humanities, social sciences, natural and physical sciences, and everything in between.

Here is just a sampling of the diverse and fascinating research in which undergraduates have most recently been involved.

Environmental Research in New York City

When College of Arts and Science student Marie Tosi came to New York City, she didn’t realize how crucial this city’s nature reserves were to the conservation of birds and plant life. As a biology and environmental studies major, she took a course called Field Lab in Ecology, which included field trips to pine barrens, salt marshes, swamps, maritime forests, coastal beaches, urban wildlife refuges, and bogs. Passionate about studying animals her whole life, she says, “I became involved with conservation biology in high school through the study of bats and the effects of stress on these bats in the greater Boston area and New Hampshire. I instantly fell in love with conducting research in the field!” At NYU, she has been able to pursue some amazing research projects, including a study of the dispersal patterns of spider monkeys in Ecuador and the Amazonian rain forest. This project involved analyzing the genes of individual primates from DNA found in their feces.

To Marie, the importance of learning about and protecting our environment for all creatures cannot be underestimated. As she puts it, “Too many animals have become endangered due to anthropogenic factors. I feel that it is our duty to respect other organisms enough to not drive them to extinction.” After graduation, Marie will be pursuing her Ph.D. in conservation biology and plans to continue conducting research on endangered animals.

Hand-in-Hand with Faculty and Grad Students

Layla Quinones, a physics education major at Steinhardt, spent a summer conducting research on the applicability of citizen photography to astronomy with physics professor David Hogg. Research scientist Adrian Price-Whelan, one of Layla’s supervisors in Professor Hogg’s lab, explains, “One interesting application would be to crowd-source a sky survey by providing amateur astronomers with consumer-grade camera equipment, with the requirement that they upload their data to be calibrated and used for science.”

Using such data calls for a solid understanding of these cameras and of certain programming techniques, which is where Layla comes in. She takes photographs and loads them into a computer program that she wrote with fellow student researchers. The goal is to find the mean, the median, and differences between sequential shots and to optimize the program so that it can run more quickly with many photos.

Layla says, “Being exposed to different concepts in photography and astronomy has been a really enjoyable and fascinating way to learn about physics.”

Formulating a Project of Her Own

Gallatin student Paolina Liu found the inspiration for her research through her personal academic journey. Her concentration focuses on evolution and policy as it pertains to the human body, so to complement this, she and her adviser created an independent study called “How the Body Works.” Paolina explains, “We explored questions such as, What is the physical body’s relationship to work? How do our ideas of the body affect the way that we value (monetarily and socially) different kinds of labor?” As part of this independent study, she interned with Domestic Workers United, a New York City nonprofit that seeks to unite workers whose work has been historically undervalued.

About the same time, she took a sociology class on race and ethnicity, and this—combined with her independent study experiences—moved her to begin her own research project, entitled “Networks of Communication: Ethnic Identity and the Domestic Workers Bill of Rights.” Her research is especially timely: the bill, passed by New York State in 2009, “extends basic rights to domestic workers, mostly immigrant women who historically have been excluded from this kind of legislation,” says Paolina. She is investigating domestic workers throughout New York City to gain more insight into whether or not networks of communication are drawn along ethnic lines, and if so, what the impacts of that might be for this population. Paolina received a 2011 Dean’s Award for Summer Research, which provided her with the funding to begin this important research.

NYU’s Newest Nobel Prize Winner: Economist, Thomas Sargent

In October 2011, Thomas Sargent, NYU professor of economics, won the Nobel Prize for Economics along with fellow economist Christopher Sims, a professor at Princeton University. The two will share the prize money ($1.49 million) and the award. The research of the two laureates was conducted separately, but the Nobel Committee considered their ideas to be complementary. Professors Sargent and Sims are longtime colleagues in the field, having attended Harvard together and earned their doctorates there in 1970.

Their seminal work during the ‘70s and ‘80s has been widely accepted throughout the world by policy makers and other researchers as “essential tools in macroeconomic analysis.” Both scholars have focused on the two-way relationship between policy’s effect on the economy and vice versa.