Queensborough Program Develops 'Virtual Hospital'

Fifty-eight new nurses graduated from the Queensborough Community College Nursing Program, in the time honored Candlelight Ceremony.

At the forefront of nursing education since 1967, Queensborough Community College is in the process of building a Virtual Hospital that will expand the capacities of a program already recognized for its depth of practical, clinical training.

Laboratory space is being renovated to establish the four-bed Virtual Hospital, which will allow more than 350 nursing students a year to hone their clinical practice skills.

Queensborough has one of the largest clinical nursing programs in the New York metropolitan area, and is the main educator of registered nurses in Queens.

Last month—early January—58 new nurses graduated from the college's Nursing Program. They participated in a time-honored Candlelight Ceremony (which originated in the 1860's at Nightingale School of Nursing at St. Thomas Hospital in London) and heard remarks by Queensborough President Dr. Eduardo J. Martí, along with Dr. Maureen Wallace, Chairperson of the Nursing Department, and Nursing Professor Cheryl Spencer.

Regarding the upcoming virtual hospital, it was helped along by a recent $12,000 grant from The Verizon Foundation, assisting in the purchase of human patient simulators, referred to as "mannequins," and associated program materials.

The mannequins are the latest in educational technology. They imitate human physiological life signs and can be programmed to mimic a wide variety of clinical situations. Their realistic anatomy and clinical functionality challenge students to perform quickly and effectively during realistic patient care scenarios.

The mannequins allow for real-time interaction between "patient" and caregiver as well as immediate instructor feedback.

Through assignments in the Virtual Hospital (which is expected to be ready soon, though no date has been set), Queensborough students will refine their language and clinical skills and gain experience and confidence before they encounter real patients in real clinical settings. This is one of the many strategies that Queensborough's Nursing Department is utilizing to ensure that its student body is well prepared for modern, demanding healthcare settings.

"The Virtual Hospital will provide the college's substantial body of ESL (English as a Second Language) students an opportunity to familiarize themselves with the use of English in clinical settings," said Nursing Department Chair Wallace.

"This is crucial to their success."

Along with The Verizon Foundation, additional program funding for the Virtual Hospital has been awarded to the Queensborough Nursing Department by the Roslyn Savings Foundation.

Social Explorer: A Demographic Tool Allowing Us

In the spring of 2005, a quiet bulletin was posted to several e-mail list servers announcing the trial release of Social Explorer, an unusual Website developed by a team of demographers at Queens College.

The site, www.socialexplorer.com, was designed to help people understand the nature of demographic change in the United States by using interactive maps and reports created by Census Bureau data going back to 1940. Soon, mini-reviews of Social Explorer began popping up on special-interest Websites.

"You can zoom all the way from the national level to your own neighborhood (even the street you live on), and see all sorts of different data," wrote researcher and teacher Jeremy Faludi, on www.world-changing.com, an influential web log dedicated to emerging technology and the environment. "Want a map showing percent of foreign-born nationals who immigrated in the last five years? It's there. Want a map showing the percentage of self-employed males? It's there. Percentage of housing where heat is provided by solar power? It's there."

Spurred by such word-of-Web publicity, teachers of urban sociology courses began using Social Explorer at colleges such as Barnard, Rutgers, Middlebury and Ohio State; the site was showcased at workshops at Amherst and NITLE, a non-profit initiative dedicated to promoting liberal education, and listed as a data and library resource at dozens of academic libraries.

While the Census Bureau publishes an enormous amount of data—the 2000 Census, for example, offers 14 million variables—it's difficult for most casual users to extract information from its reports, since the information is provided in a tabulated numeric format suited more for professional analysts.

"Our goal has been to knock down the incredible barriers to using this data," said Andrew Beveridge, chairman of the Sociology Department at Queens College, who leads the Social Explorer team that includes chief software developer Ahmed Lacevic and chief data developer Jordan Segall.

"We want people to give it a shot."

And people have been doing just that. The interactive Website has logged millions of visits; its users are now creating more than 10,000 customized maps a day from the interactive maps on the site.

In some cases, researchers are analyzing larger demographic phenomena, such as changing patterns of racial segregation in major metropolitan areas. But in other instances, faculty like Beveridge are teaching students how to look at their neighborhoods over time.

"If students map their own neighborhoods, they actually see how they relate to the rest of the social world," Beveridge said. "That's a powerful thing."

And it will grow even more powerful, as Beveridge has plans to expand the site, allowing visitors to map trends going back to 1790, the first U.S. Census.

The roots of Social Explorer actually go back to the early 1990s, when Beveridge began working as a consultant to *The New York Times*. "It's been a long, constantly evolving project," said Beveridge, who came to Queens College in 1981 and has just been awarded the American Sociological Association's 2007 Public Understanding of Sociology award.

Centuries of Data

Beveridge spent several years digitizing Census data and maps of New York City from 1910 to the present, working with *Times* reporters on their coverage of the 100th anniversary of the city's consolidation into five boroughs in 1898. In addition, Beveridge has provided analyses of Census data for dozens of *New York Times* articles, including a recent one detailing the swelling numbers of immigrants in the New York metropolitan area, and another analyzing the declining number of married couples among American households.

Over the years, Beveridge became interested in a fast-growing technology called Geographical Information Systems (GIS), an approach that uses computer software to link specific types of information to locations—often through the use of thematic maps. The user then can layer these maps to get a better understanding of a broader trend or issue. For instance, a bank could map the distribution of its branches in New York City in relation to the deposit potential of customers in various areas to determine where their coverage is strong or weak.

In 1999, Beveridge received a grant from the National Science Foundation that eventually led to the first version of Social Explorer. This pilot project used interactive Web-based tools to map demographic change in New York City from 1905 to 2000, using Census data.

"We thought that if we could set this up in an interactive way, then people could

NANCY BARELS

The Queens College team that puts together the Social Explorer web site and other demographic projects. Front row: Susan Weber and Ahmed Lacevic. Back row: Jordan Segall and Social Explorer team leader Andrew Beveridge.

to Better See and Understand the World in Which We Live

explore New York over time," Beveridge recalled.

The project, in turn, led to another NSF-funded initiative with UCLA sociology professor David Halle, an interactive Web-based mapping project examining urban and rural change in the U.S. from 1790 to 2000. And that project resulted in a book on the comparative development of Los Angeles and New York—and the launching of the Social Explorer Website, which first allowed people to interact with some of the New York and Los Angeles material online.

Meanwhile, Beveridge also began assisting a group of researchers at the University of Minnesota's Population Center, who were creating the National Historical Geographic Information System—a project designed to create maps for all Census tracts of urban areas in the United States, beginning in 1910, and all counties going back to 1790.

Finally, in 2002, Beveridge and Halle received a grant from the National Science Digital Library, an online library established by NSF, which enabled the researchers to bring Social Explorer to where it is today: a tool that allows users to map, display and interact with a range of demographic data from Census reports going back to 1940.

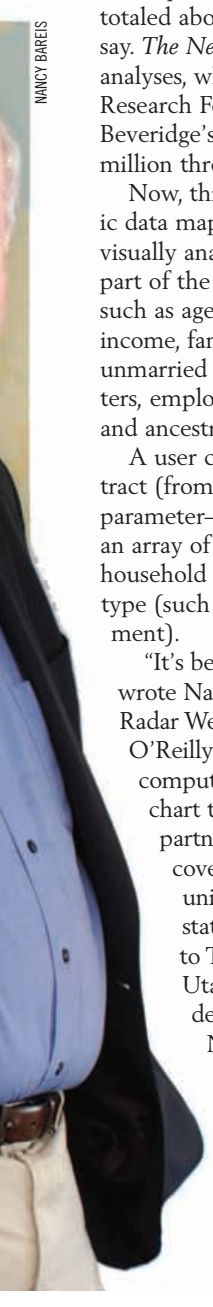
"We wanted Social Explorer to be fast, flexible, and have reasonable standards for visual display," Beveridge said.

So far, the grants and awards for the development of Social Explorer have totaled about $1.5 million, the researchers say. *The New York Times* grants for Census analyses, which are awarded to the CUNY Research Foundation for use by Beveridge's team, will total another $1.5 million through 2009.

Now, through the thousands of thematic data maps on Social Explorer, users can visually analyze the demography of any part of the U.S., breaking out variables such as age, population density, race, sex, income, family structure, marital status, unmarried partners, housing, group quarters, employment, foreign-born population, and ancestry.

A user can click on a map for a Census tract (from 1940 to 2000), and pick a parameter—say, "income"—then examine an array of sub-categories, such as median household income by amount, race, or type (such as public assistance or retirement).

"It's beautiful and really interesting," wrote Nathan Torkington on the O'Reilly Radar Website, which is sponsored by the O'Reilly Group, a leading publisher of computer books. "For example, you can chart the density of lesbian and gay partners across the country and discover that the distribution is uniform except for the central one-state-wide strip from North Dakota to Texas and the lone splotch of Utah. When you chart the changing density of blacks and whites in New York City, you get a feel for the sudden post-war boom in projects in Queens and Kings."



NANCY BARELS

Making It Simple

However the data are presented, Social Explorer is dedicated to providing users easy access to the demographic information—which isn't always easy, its creators say.

"The simpler you want to make something, the more work it takes," said Lacevic, Social Explorer's chief software developer. "People don't know how much work it took to do this—you can't see it," added Lacevic, who immigrated to the United States from his eastern European homeland at the outset of the Bosnian civil war in 1992. "At Google [maps site] they have three maps; we have thousands of maps."

Much of the task of making Social Explorer accessible goes to Lacevic and Segall, the site's chief data developer. Segall, who has been with the project since 2005, prepares the reams of underlying data before the information can be used for mapping.

The extensive Census data and map files "need to be thinned," Segall said, so the user isn't burdened with long download times. In addition, it's important to be accurate and consistent in labeling data and making sure that the categories mean the same thing over time, said Segall, whose own research focuses on American urban and labor history.

Colors Count

One of the issues Lacevic faces is how to take a particular theme, say population density, and break up the data into segments that can be displayed visually. Even picking colors to represent the different categories can be tricky. "You need colors that have the same intensity from one class to another," Lacevic informed. One needs colors and map designs that work well for interactive Web-based use, not just printed on paper, he said.

Like its maps, the Social Explorer website itself is in a dynamic state. The team, which includes Susan Weber, the Senior Research Specialist, is looking to create student accounts, then find ways that would allow students to mark up their individual maps, labeling them and putting notes on them, and then saving them in their Social Explorer accounts.

Beveridge also has worked on numerous consulting assignments over the years, including more than two dozen civil rights cases, and he's begun another NSF-funded project to develop social science curricula using Social Explorer technologies. A few months ago, Social Explorer began offering more comprehensive subscriber services to other educational institutions and non-profit organizations.

"Our real hope," Beveridge said, "is that we can become self-sustaining."

Scholar on a Mission

In a fall 2003 article in Q magazine, a Queens College alumni publication, Beveridge was described as a sociologist who has moved between the worlds of sociology and civic involvement. In 1988, he was elected president of the school board in Yonkers, New York, and during his two-year tenure he worked with local organizations to end the city's opposition to a desegregation order. He also led a fight to convince the board to sue New York State, an action that resulted in a multimillion-dollar settlement.

Rather than describing that experience as the time he supplemented his teaching and research duties at Queens College, Beveridge calls it the era when "[I] took leave of my senses." That's the kind of person Beveridge is, gregarious and reflective, quick to point out ironies about himself and about the localities that he profiles through maps and numbers.

Beveridge continues to write columns for the online *Gotham Gazette*, which calls itself the "Web site about the issues facing New York City." In addition to writing articles that illuminate issues such as poverty or de facto segregation, he continually meets with elected officials and others from various ethnic groups, sharing data and insight on the problems of the city that some call Gotham.

And the sociologist/demographer remains also the professor, who shows a prideful delight at the work of his students. The Q article pointed out that after two decades at Queens College, Beveridge has retained his "upbeat" perspective on the college and the students who study there.

His tools may be numbers and computers, but in a sense—as Q suggested in its article about him—Beveridge is a painter of pictures about New York; and, in that sense, his demographic projects are veritable works of art.

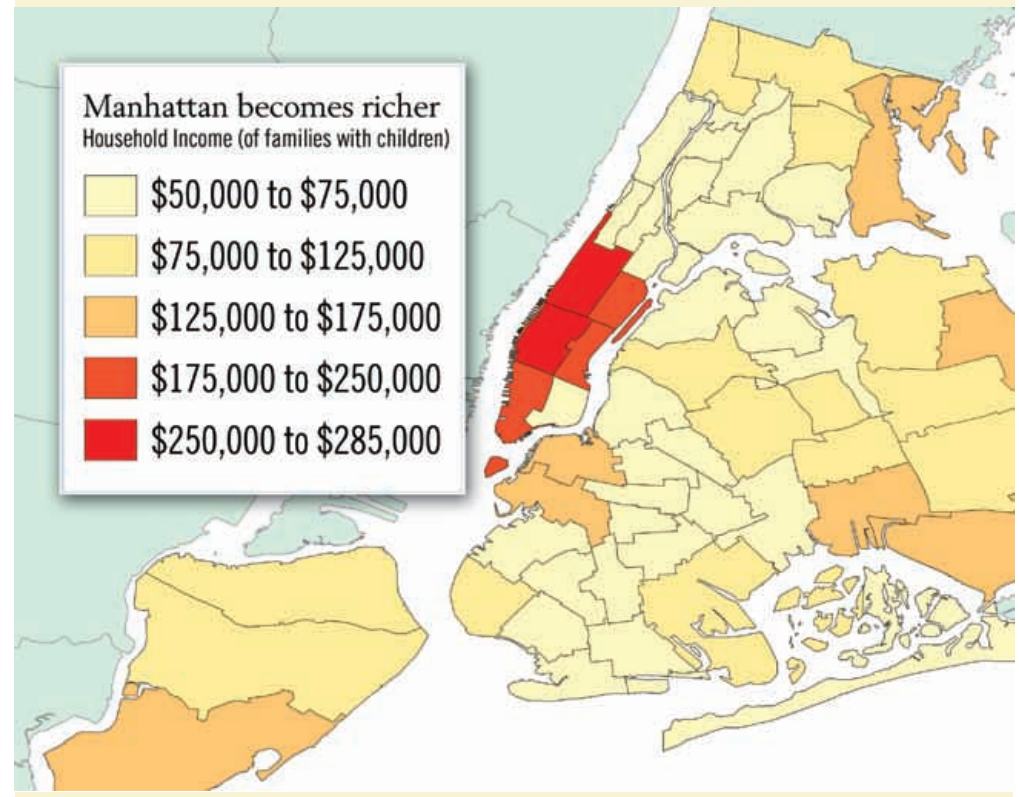
Mapping a Manhattan Boom, in Babies and Income

Median household income increased massively in certain neighborhoods of Manhattan over the past 15 years. These are the very same areas where now there is a baby boom among non-Hispanic white parents, virtually all of whom are married, and many of whom are older (in their mid-thirties) than parents from other groups.

These are elite areas, where apartments fetch at least $1,000 per square foot, and where the median family income is now above $250,000 (for those families with children).

The neighborhoods include: the upper East and upper West Sides; Chelsea; Mid-town; Tribeca; Greenwich Village and Battery Park. These areas are plainly visible on the map.

—Andrew Beveridge



DATA FOR MAP ARE FROM U.S. CENSUS BUREAU'S 2005 AMERICAN COMMUNITY SURVEYAND REFLECT HOUSEHOLDS WITH CHILDREN FOUR YEARS OLD AND YOUNGER.

Project Will Create Maps of Areas Where Students Live

As Social Explorer continues to mature, the Web site is poised to produce an offspring: CUNY Social Explorer.

The new site, now being planned by University faculty and administrators, will use Social Explorer's interactive mapping technology to display demographic information about CUNY's student population.

"It would open up doors for our students to learn more about themselves, and for the University to learn more about them," said David Crook, University Dean for Institutional Research and Assessment.

For instance, on the latter point, officials at a college could become more impressed by the number of their students commuting substantial distances to attend classes and activities, and could plan ways to make the best use of the students' time on campus, Crook said.

Crook said the project might be launched later this semester.

Andrew Beveridge, chairman of the sociology department at Queens College and head of a team that developed Social Explorer, said the new project would "show location—the 'geocoding'—of 214,000 current CUNY students."

The colleges could use CUNY Social Explorer as a marketing tool, studying areas where prospective students are concentrated and encouraging people in those communities to visit and apply.

Crook said of the plan, "It's exciting."