Summary of Research on Selection of Majors for the New Community College Planning Team

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Note

As the title suggests, this paper summarizes the research that was done to inform the planning team on the selection of possible majors for the New CUNY Community College. Each major was carefully vetted and written up based on answers to 11 key questions, and part but not all of each major’s description was included in the concept paper. In Phase II planning, the desirability and feasibility of these selections will once again be revisited before final decisions are made to move ahead.
NEW COMMUNITY COLLEGE PROJECT

Program of Study: Nursing (RN)

Registered nurses provide patients with direct care and assist doctors. They work in hospitals, home care settings, clinics, nursing homes, community health organizations, doctors’ offices and other settings. They may also be health educators and work with individuals and communities to prevent illness and improve health.

1) Describe the ways in which the proposed program of study is consistent with the mission of the college to prepare its students to be active participants in developing and sustaining the future of New York City.

From the Survey of Nurse Staffing in GNYHA (Greater New York Health Association) Member Hospitals, 2005 (published April 2006)

“The results of the [Survey] continue to demonstrate that we are on a collision course with what has been termed in the nursing world ‘the perfect storm.’ The data indicate that 60% of the RN staff nurse workforce is over 40 years of age, indicating a potential wave of retirement over the next 10 to 20 years. The GNYHA survey findings are in direct alignment with the U.S. Department of Health and Human Services estimates predicting that, nationally by 2020, hospitals will have a nurse vacancy rate of 29%, up from the current 7% rate. This is a shortage of almost one million nurses. ….

Of equal concern is the parallel track on which the American population is progressing with regard to aging, increased demand for health care services, and increases in patient acuity. According to the U.S. Census Bureau, demographics indicate that between 2010 and 2030, America will see a decline of more than 6% in the proportion of the population aged 18–64, but the proportion of the population aged 65 or older will increase from approximately 13% to 20%—an increase of approximately 30 million people over age 65. That trend, in addition to the shrinking nursing workforce, begs the question: Who will care for each of us?"

As I write this the New York Health and Hospital Corporation is holding a conference on Urban Health at which an afternoon workshop is devoted to the “Recruitment and Retention of Nurses: A National Crisis.”

2) Describe why prospective college students will be interested in pursuing the program of study and/or describe the ways that significant numbers of students without clearly defined interests might become interested.

As described above and below, there are and will continue to be many jobs in this area, at very good starting salaries. Also, the new community college will offer opportunities for LPNs and other incumbent workers to pursue career growth and advancement.

Of all the careers in the health professions that are available to a community college graduate, nursing allows the most flexibility. A nurse can specialize and work in a range of settings, and can take advantage of recognized pathways for advancement. There is also a great deal of psychic reward in nursing, as there is in other caring professions. Students who enjoy being helpful, who are compassionate and sympathetic, who like to work with people, but who for whatever reasons don’t feel they can undertake the long haul necessary to become physicians, are often attracted to nursing.

Typically, nursing students don’t begin the clinical part of the program until they’ve completed the health science courses – the new community college model will allow early exposure and reinforcement for those who may be interested in the field but remain unsure. This academic model is about cognitive growth and development – the idea that we will support students in a way that ensures mastery and competence should make the major interesting to those who might have some concerns about their ability to pursue a rigorous course of study but who would be able to do it with some support.

3) Describe how the program of study will both be aligned with employment in fields with substantial openings in the future and provide individuals entering the fields with salaries and benefits that make the acquisition of the credential worthwhile.

In a November 2007 report, the Bureau of Labor Statistics projected that through 2016 the country will add about 587,000 new jobs for Registered Nurses, an increase of about 23% from 2006. It noted that the increase in demand for health care practitioners in general is primarily the result of a growing and aging population and of technological advances in the medical field that will lead to increased demand for more medical procedures and the workers who perform them. Medical advances also mean greater accident and illness survival rates and longer lives, sometimes with more health issues, so growth in health care service occupations will remain strong.

In a statement released in March 2008, the Council on Physician and Nurse Supply, an independent group of
health care leaders based at the University of Pennsylvania, determined that 30,000 additional nurses should be graduated annually to meet the nation’s healthcare needs, an expansion of 30% over the current number of annual nurse graduates.

In April 2007, the Healthcare Association of New York State published a report which noted a decline in vacancy rates from 2003-2006. However the report stated that this decline was likely the result of significant retention initiatives HANYS’ members were undertaking. It stated that the coming workforce shortage is different from others and is expected to worsen over time. “Baby boomers” will soon retire from health care provider institutions and current data show that there are not enough workers to fill these vacated positions. There will be a growing demand for nurses and a very limited supply. In New York City the average vacancy rate in 2006 was 6.18%; the turnover rate was 9.63%.

According to the Bureau of Labor Statistics, RNs working for hospitals in 2006 earned, on average, $60,970. Those working in nursing homes earned $53,690 and those working in Doctors’ offices earned an average of $59,170. Numbers in New York are higher. We were told that nurses at the Visiting Nurse Service start at approximately $68,000. The institutions and agencies for which nurses work generally provide an array of excellent benefits, often including tuition reimbursement.

4) Describe how the program of study will equip graduates to qualify for a position in a variety of different employment opportunities related to the field of study and/or qualify them for admission as a transfer student to one or more baccalaureate degree programs.

Of all the health professions Nursing allows the greatest degree of flexibility – it is often referred to as a gateway profession – once a person has become a nurse he/or she has a range of opportunities going forward. The settings in which one may practice nursing are wide ranging as well, hospitals, clinics, home care, public health, etc. In fact, in meeting with the administrators from the Visiting Nurse Service we were specifically asked to consider the possibility of considering inclusion of a curriculum though which nurses could move into the home health care field. The VNS recently initiated an internship program (paid) for associate degree holders.

People we met with also indicated the importance of clinical experience. The new community college model provides for 2 years of clinical experience, starting in the 2nd semester. We have also discussed building in a full-time clinical experience during the summer.

One suggestion is to develop a joint degree program with a senior college in the CUNY system, rather than an articulation agreement, to enable associate degree RNs to move into BSN programs. With such an agreement they would not have to repeat the clinicals but rather would take liberal arts courses and courses in leadership and management. A range of models may be considered, including online classes.

Several colleges in the CUNY system offer baccalaureate programs in Nursing: Hunter, (which offers a BS programs Gerontological Nursing), Lehman, NYC College of Technology, Medgar Evers and York.

5) Explain why a program of study in this major could be designed to ensure that students taking required and elective courses will acquire skills in reading, writing and mathematics.

The Nursing curriculum will provide a strong foundation in general education, biological sciences, and social sciences, as well as nursing science, and will be complemented by intensive clinical experiences in a range of health care settings. It’s recommended that students interested in nursing take challenging math and science courses even in high school. To be successful in a nursing program they will need to read and understand a variety of material both technical and related to the profession. Courses might include Chemistry, Biology and/or Microbiology, Psychology, Sociology (the LaGuardia program requires “Urban Sociology), Math, and an array of nursing courses. Many of the people with whom we consulted suggested that fluency in a 2nd language is becoming more essential to working in health care settings in New York.

By beginning the clinical component early the students get a sense of why these classes are important and how the skills and knowledge that derive from them are used in the nursing profession.

The academic model that we propose, which will offer opportunities for early field experiences will help to develop the observational, reporting and communication skills of our nursing graduates.

6) Describe how the program of study will be complementary to the other proposed programs of study and will contribute to the strengthening of inter-disciplinary connections.

The curriculum for programs in the areas of health and human services will provide opportunities for
interdisciplinary study as well as for interprofessional connections; health sciences courses that will be available to nursing students and surgical technology students might include, anatomy, physiology, biology and other areas that are common to each major.

Courses in Urban Studies will be available as liberal arts courses, as might a course in Health and the Environment, which could be part of Earth and Environmental Science. There would be cross-over with the health track of the Information Studies and Community Health Worker majors.

7) Describe how the new college will be able to recruit and select faculty and staff needed to develop and implement the program of study.

According to the American Association of Colleges of Nursing, U.S. nursing schools turned away more than 40,000 qualified applicants from BA and graduate nursing programs in 2007. Almost ¾ of the nursing schools responding to the 2007 survey pointed to faculty shortages as a reason for not accepting all qualified applicants into entry level nursing programs.

Our intention is to design a nursing program that resolves the issue of clinical experience through close affiliation with hospitals and other settings, and makes innovative use of faculty, including use of distinguished lecturer lines, affiliated appointments and perhaps even clinical faculty lines. Dean Bill Ebenstein is very interested in this model and will be helpful as we move forward. The HHC, 1199 and the Visiting Nurse Service are all eager as well to affiliate with the new community college. In addition there is a new doctoral program in nursing – it just admitted its 3rd cohort - that will provide some home-grown faculty. And Lehman and Hunter now have programs that offer post-masters work in teaching for nurses – the students get an advanced certificate in Nursing Education. Affiliations with these various programs will work to the advantage of the new community college as well as to the programs themselves, providing, clinical sites for their students to practice teaching.

8) Describe the extent of overlap or duplication of the program of study with existing programs of study at CUNY community colleges and, as necessary, explain why the new program is needed.

All of the CUNY community colleges, and the comprehensive colleges as well, offer associate degree programs in Nursing. The new community college program will be distinguished by the intensity of the clinical experience and the initiation of that experience at the earliest possible time. Traditionally nursing students don’t start the practicum in associate degree programs until 2nd semester of year 3 – at which time they begin more limited clinical experiences. One problem we’ve heard from several people is that they learn in the practicum how to take care of one patient at a time in a variety of rotations – a very different experience from the reality they encounter when they get to a hospital. The new program will be in touch with that reality and the students will have had a very deep clinical exposure at the end of their program of study. More field based instruction supports the importance of clinical work; it gives students a preview of what the job is all about and leads to more clinical efficiency. In addition, we will take into consideration the need for training nursing students for settings other than hospitals, in particular home care.

Dean Ebenstein is also working to expand capacities in the other colleges. The more seats that can be provided for nursing, and the more qualified nurses CUNY can graduate the closer the new community college and the system are to meeting their overarching goal to serve New York.

9) Describe the external partnerships that will be developed to support field-based learning for the program of study and provide employment opportunities to graduates.

Partnership with the Health and Hospitals Corporation, 1199, and the Visiting Nurse Service, all of which have been explored, offer extraordinary opportunities to build a nursing program that is field based and focused on developing the clinical as well the decision-making and critical thinking skills inherent to the nursing profession. The enthusiasm of these groups for the proposal leads us to believe that other organizations with whom we’ve not yet had a chance to speak are likely to be interested well. Dean Ebenstein, in particular, is enthusiastic about this approach and will use his contacts to establish necessary partnerships.

10) Describe the special resources, if any, that will be needed to support the program of study.

Because this is intended as a field based program the special resources would be found in the hospitals and other organizations with which the new community college would affiliate.

11) Indicate whether this program of study is a match with one or more of the CTE schools intended to be partner school with the college.

This program could build on the work in the health care fields that the CTE schools will be offering. It would provide opportunities for further education for LPNs and some in the allied health professions with high school
diplomas. This would be to the advantage of the new community college as well as to the CTE schools. Students who are LPNs, and who have had experience in allied health high school programs, have a familiarity with the field and an exposure to the health sciences that will enable them to be productive and successful in the new community college.

Program of Study: Surgical Technologist

Surgical technologists are part of operating room teams and assist in surgical operations under the supervision of surgeons, registered nurses, or other surgical personnel. They help prepare the operating room, assemble, check and, where necessary, adjust sterile and non-sterile equipment, get patients ready for surgery, transport patients to the operating room and help position them on the operating table. Technologists also observe patients’ vital signs, check charts, and help the surgical team put on sterile gowns and gloves. During surgery, technologists pass instruments and other sterile supplies to surgeons and surgeon assistants. They help prepare, care for, and dispose of specimens taken for laboratory analysis and help apply dressings. They may operate sterilizers, lights, or suction machines, and help operate diagnostic equipment. After an operation, surgical technologists may help transfer patients to the recovery room and clean and restock the operating room.

1) Describe the ways in which the proposed program of study is consistent with the mission of the college to prepare its students to be active participants in developing and sustaining the future of New York City.

The Occupational Outlook Handbook, and just about every other relevant document, indicates that education and health services will be growing and adding more jobs than any other industry sector. Some of the jobs in health are at low income levels and require little education (e.g., Home Health Care Aide). But many of the jobs are in the allied health areas. While the planning committee agreed that there are disadvantages to offering majors in these areas (space, equipment, some concern about career paths), we cannot deny the growing need for these health service workers in New York and in fact throughout the country. It’s a need that is reiterated in everything written about future jobs, and by everyone who is currently involved in the health field. Indeed, any one of the allied health professions could have been selected. Surgical technology was selected because the number of surgical procedures is expected to rise dramatically as the population grows and ages. Older people, including the baby boom generation, who generally require more surgical procedures, will account for a larger portion of the general population. In addition, technological advances, such as fiber optics and laser technology, will permit an increasing number of new surgical procedures to be performed and also will allow surgical technologists to assist with a greater variety of procedures. There is a huge need for people with these skills in New York today and there will be an even greater need tomorrow.

2) Describe why prospective college students will be interested in pursuing the program of study and/or describe the ways that significant numbers of students without clearly defined interests might become interested.

One obvious reason for student interest will be the growing demand for people in this area of allied health - there is job security with decent wages and substantial benefits. This is discussed in other sections.

In addition, the allied health professions appeal to people who are attracted to the health professions but are more interested in the technical aspects of health care than in offering palliative care. For some, the prospect of working as part of a team, and of working closely with physicians may be appealing. In considering an associate degree, LPNs might be interested in moving away from a situation in which they carry a heavy patient load, and work shifts that don’t always fit comfortably within their lives. Such considerations might mitigate salary concerns as they consider a career pathway. And there will be students who simply will be eager to get a degree in which their education leads clearly and directly to employment.

The educational model will work to the advantage of students unsure of their interests. Early field experiences allow for the possibility of developing new interests – students could observe the surgical technologist at work, perhaps shadow a surgical technologist in the course of his/her day and make a decision about the profession at a time when they would still have an opportunity to declare a major in this field.

3) Describe how the program of study will both be aligned with employment in fields with substantial openings in the future and provide individuals entering the fields with salaries and benefits that make the acquisition of
According to the DOL Bureau of Labor Statistics, the employment of surgical technologists is expected to grow 24% between 2006 and 2016, much faster than the average for all occupations, as the volume of surgeries increases. Median annual earnings were $36,080 in May 2006. The middle 50% earned between $30,300 and $43,560. While surgical technologists usually work a 40 hour week there is ample room for overtime, bringing salaries up further. Hospitals are the primary employers of surgical technologists (although they may also be employed in physicians offices and out-patient care centers) and benefits usually include paid vacation and sick leave, health and medical insurance, often vision, dental and life insurance, a retirement program and sometimes tuition reimbursement.

Hospitals are finding that a clinical ladder program can help in recruiting and retaining surgical technologists. The Association of Surgical Technologists suggests a path from entry level practitioner to “Proficient Practitioner” to “Expert Practitioner,” with increasingly complex responsibilities in the operating room, the hospital and even the community. Certified surgical technologists with additional specialized education also may act in the role of the surgical first assistant or circulator. The surgical first assistant, as defined by the American College of Surgeons (ACS), provides aid in exposure, hemostasis (controlling blood flow and stopping or preventing hemorrhage), and other technical functions under the surgeon’s direction. A circulating technologist is the member of the surgical team who interviews the patient before surgery; helps with anesthesia; keeps a written account of the surgical procedure; and answers the surgeon’s questions about the patient during the surgery.

Perhaps most important, community colleges around the country are reporting that because of the very high demand, there is 100% placement of graduates of their surgical technology programs.

4) Describe how the program of study will equip graduates to qualify for a position in a variety of different employment opportunities related to the field of study and/or qualify them for admission as a transfer student to one or more baccalaureate degree programs.

Many surgical technology programs require special application separate from the application to the college and students may be judged on previous work at that college; admission can be quite competitive. In addition to the courses that students must take as part of the program the programs require courses relevant to human behavior (psychology, anthropology or sociology) and ethics.

These programs are focused on training students in surgical technology and the student would then obtain certification by passing a national certification exam. But it should be clear that surgical technology is what they are training for. There are opportunities, as cited in question 4 to specialize in a particular area of surgery, or to work as circulating technologists or first assistants, to manage central supply departments (for which some colleges have special certificate programs) or to work with insurance companies or operating equipment firms. But these graduates could not be move between various allied health areas.

The ease of transfer into a baccalaureate program would likely be dependent on the general education courses a student completed, or on articulation agreements that the new community college worked out with senior colleges in the system. One obvious path might be nursing; others might be biology or psychology. This major though doesn’t lend itself to an easy transfer path. It would be important if a student is interested in transfer to work closely with an advisor. It seems more likely though that it would be some years down the road before a surgical technologist might decide to look at a related career.

5) Explain why a program of study in this major could be designed to ensure that students taking required and elective courses will acquire skills in reading, writing and mathematics.

Recommended high school classes for students interested in this field include health, biology, chemistry and math. Courses required by surgical technology programs include, in addition to specific surgical technology courses: anatomy, physiology, microbiology, and pharmacology. These are difficult subjects and the assignments would be designed to ensure that the students are acquiring the appropriate knowledge and skills. Clinical work in a hospital setting would both reinforce the learning and reveal deficits.

6) Describe how the program of study will be complementary to the other proposed programs of study and will contribute to the strengthening of inter-disciplinary connections.

A program in Surgical Technology would be complementary to just about any program in the health area. We are strongly recommending a major in Nursing and recommending, with some caveats, a major related to public health/community health/health management, perhaps with a focus in gerontology or chronic disease management, both of which would relate to a program in surgical technology. Given the likelihood that the graduate would remain in New York City (although surgical technologists are in demand throughout the country) classes in urban studies would be relevant as well, and could provide some of the general education requirements.
7) Describe how the new college will be able to recruit and select faculty and staff needed to develop and implement the program of study.

We envision a core curriculum in the health areas that could be taught by faculty hired for any one of those areas. Specialized courses could be taught by experienced RNs working as adjunct faculty. The Association of Surgical Technologists Continuing Education Department has compiled a wealth of valuable information for educators in its Center for Teaching Excellence – materials ranging from curriculum development, to record-keeping to laboratory needs and everything in between. Affiliations with hospitals to facilitate place based learning will be important in implementation of this program, as it will be in nursing.

8) Describe the extent of overlap or duplication of the program of study with existing programs of study at CUNY community colleges and, as necessary, explain why the new program is needed.

Many of the CUNY community and comprehensive colleges offer AAS degrees in one or more of the allied health fields; only Kingsborough offers an AAS in Surgical Technology. We have been told that there are more positions than they can possibly fill with their graduates. Also, Kingsborough is in Brooklyn; it would be advantageous to the city as well as to prospective CUNY students, to offer a program in Surgical Technology in Manhattan.

9) Describe the external partnerships that will be developed to support field-based learning for the program of study and provide employment opportunities to graduates.

The Health and Hospitals Corporation is eager to work with us and suggested that we partner with a hospital and create a strong linkage in everything from curriculum to the clinical experience. New York’s United Health Care Workers Union (1199 SEIU) is also eager to work with CUNY and is particularly interested in providing opportunities for incumbent workers. Partnerships will be sought as well with individual hospitals; it may be possible to co-locate a program within a hospital. That would ensure that graduates of the program had a deep relationship with a particular facility.

10) Describe the special resources, if any, that will be needed to support the program of study.

In the best of all possible worlds the new community college will have a state-of-the-art multi-media lab with smart board technology and the ability to access virtual simulation and virtual learning programs. While it would be ideal to have a surgical technology suite, if the program is set up as envisioned the new community college could rely on partnerships with hospitals for actual work space and specialty needs of the clinical program.

As the program grows and the college grows, it may be possible to make future arrangements that would include dedicated space for both nursing and surgical technology.

11) Indicate whether this program of study is a match with one or more of the CTE schools intended to be a partner school with the college.

Surgical Technology, like Nursing, could build on the work in the health care fields that the CTE schools will be offering. It would provide opportunities for further education for LPNs who might prefer one of the allied health professions to nursing, and to some already working in the health areas who only have high school diplomas. This would be to the advantage of the new community college as well as to the CTE schools. Students who are LPNs and who have had experience in health programs through their high schools have a familiarity with the field and an exposure to the health sciences that will enable them to be productive and successful in the new community college.

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**Program of Study: Environmental Technology**

Environmental Technology utilizes the principles of science, engineering, communication and economics to evaluate man’s impact on his environment and protect and enhance safety, health and natural resources. Through classroom and lab instruction students develop skills in statistics, graphical and mathematical analysis. They are exposed as well to an array of science courses, including biology and chemistry and also study computer applications and industrial safety. The demand for technicians capable of performing tasks such as sample collection, monitoring, data management and instrumentation calibration, operation, and maintenance continues to increase. The environmental technician may work in environmental compliance in public and private sector organizations, pollution prevention, environmental remediation, workplace health and safety, water/wastewater treatment, hazardous material handling, waste abatement/removal, contaminated site assessment/remediation and even consumer service.
1) Describe the ways in which the proposed program of study is consistent with the mission of the college to prepare its students to be active participants in developing and sustaining the future of New York City.

Environmental technology is an area with a tremendous impact on the city’s future – its water systems, waste disposal and sanitation, parks and other open space, and so forth. This is true now and will only become more true as the number of city residents grows and puts more strain on city infrastructure. The challenges of climate change, energy use and consumption of resources are forcing city policymakers, planners, and residents to pay more attention to issues of environmental sustainability.

Under Mayor Michael Bloomberg, city government developed a comprehensive plan for long-term environmental sustainability in New York City, called “PlaNYC 2030”. While Bloomberg’s mayoralty will end, and initiatives such as congestion pricing have been at least temporarily defeated, the broad outlines of the plan’s proposals will undoubtedly be implemented on a large scale as the fiscal and environmental costs of our current energy use and other modes and habits of living become clearer. A projection of future jobs associated with PlaNYC 2030 shows massive amounts of employment related to expanding and revamping the city’s water systems, transportation infrastructure, and power plants. Interviews with sustainability experts generated projections of substantial growth in areas such as energy efficiency, storm water management, and air quality control.

2) Describe why prospective college students will be interested in pursuing the program of study and/or describe the ways that significant numbers of students without clearly defined interests might become interested.

Young people in general are expressing great interest in and concern about environmental sustainability issues, as evidenced by the number of organizations dedicated to channeling their energy into environmental advocacy, and discussions about youth environmental advocacy in the media. The interest of young people in this area should grow over the next several years, as youth become more aware of the impact of the environment on their futures. Whether or not urban youth from the backgrounds typically associated with students at CUNY community colleges have an awareness of environmental issues would have to be tested. But growing interest in and concern about the environment would support marketing and recruitment for this degree.

In addition, the employment of environmental science and protection technicians is expected to grow much faster than the average, as noted below. The prospect of a robust job market is likely to encourage students to consider a major in Environmental Technology.

3) Describe how the program of study will both be aligned with employment in fields with substantial openings in the future and provide individuals entering the fields with salaries and benefits that make the acquisition of the credential worthwhile.

The Bureau of Labor Statistics projects a faster than average growth rate in the employment of environmental science technicians – 28% through 2016. These workers will be needed to help regulate waste produce, to collect air, water and soil samples for measuring levels of pollutants; to monitor compliance with environmental regulations; and to clean up contaminated sites. Annual wages in this occupation range from about $25,090 to $63,670, with the median at $39,370.

In New York, there are a number of areas in which graduates of this program could potentially become employed. These include water management (e.g., with the NYC Department of Environmental Protection), public sanitation and public or private waste management, natural resource management (such as in the NYC Parks Dept. or National Parks Service), air quality management and pollution control (NYC Health Dept.), and emergency management. All of these fields and organizations would have career tracks and opportunities for advancement. The public sector positions are unionized.

Private sector positions would likely be with environmental engineering and remediation firms, with companies that deal with hazardous materials disposal and transport, and with consultants hired by corporations and public agencies to conduct analyses and generate reports and recommendations. More research is needed into these private sector positions.

4) Describe how the program of study will equip graduates to qualify for a position in a variety of different employment opportunities related to the field of study and/or qualify them for admission as a transfer student to one or more baccalaureate degree programs.

The program would provide a strong general background in environmental concerns related to the range of industries listed above. Graduates would have strong written and oral communication skills, proficiency in the use of state-of-the-art scientific instrumentation, broad computer skills and practical hands-on training in the field and
the laboratory. The technical skills in the degree would likely focus on identifying and evaluating environmental pollutants and on natural resource management. Since there are so many fields associated with environmental technology, there is also the opportunity to create sub-specialties within the degree program, such as in emergency management or storm water management. Other potential places of employment include regulatory compliance and monitoring roles in the public and private sector, and research laboratories in public sector agencies and private corporations.

The degree could articulate into a range of earth and environmental science/studies bachelor’s degree programs. In the CUNY system programs relevant to environmental science are offered at Queens, Hunter, Brooklyn, City, York and Medgar. Baccalaureate programs in chemistry, biology, science education, public health and public administration are also possible transfer tracks. Because of the technical nature of a major in Environmental Technology it would be important for the new community college to develop clear understandings, with a receiving college, of required course-taking and expectations for student achievement.

5) Explain why a program of study in this major could be designed to ensure that students taking required and elective courses will acquire skills in reading, writing and mathematics.

Through classroom and lab instruction students will develop skills in statistics, graphical and mathematical analysis as well as technical writing. Required and elective coursework in this program would likely include biology, chemistry, industrial safety, relevant computer applications (such as GIS), genetics, microbiology, astronomy, meteorology and environmental law. Some of the general education classes would be drawn from the programs in Earth and Environmental Science and Urban Studies. Environmental seminars would create opportunities for addressing real-world problems that require research into industry and scientific literature, collection and analysis of data from the field, and writing analytical reports. With interdisciplinary study brought to bear on problems in the urban environment, students have an opportunity to learn how real-world problems are solved by integrating a variety of perspectives.

6) Describe how the program of study will be complementary to the other proposed programs of study and will contribute to the strengthening of inter-disciplinary connections.

The degree would have significant common coursework with energy services management (as is the case at Iowa Lakes Community College). And the supply chain management program could include some environmental tech coursework in its curriculum. Common coursework with Information Studies, Geographic Information Systems, and healthcare-related degrees is also possible. The Programs in Earth and Environmental Science and Urban Studies will almost certainly include relevant courses that would satisfy some of the Liberal arts/general education requirement.

Based on review of Environmental Technology programs across the country, including several in the northeast, it seems likely that the program would provide students with a general background in environmental issues and in analysis and planning in areas such as air and water pollution and remediation, and natural resource management. For students, many of the classes in Earth and Environmental Science and those in Environmental Technology will be interchangeable, which will be helpful if the Technology students decide to go on for a baccalaureate degree. This should be explored further as the program is developed.

7) Describe how the new college will be able to recruit and select faculty and staff needed to develop and implement the program of study.

It is likely that some of the faculty in the program would have expertise along the lines of faculty teaching in environmental science degree programs. And there are likely potential faculty in all of the traditional scientific disciplines needed for this program. In terms of the more technical faculty, the college would need first to identify the specific needed technical skills, perhaps as part of a “DACUM” curriculum development process, and then search for faculty. But it seems likely that these roles might also be filled by adjunct faculty with day jobs working in the field.

8) Describe the extent of overlap or duplication of the program of study with existing programs of study at CUNY community colleges and, as necessary, explain why the new program is needed.

There is no overlap with existing associate degree programs at CUNY, though there are programs with similar names at New York City Tech and at Bronx Community College. The program at City Tech in “Environmental Control Technology” is focused on building systems (HVAC – heating, ventilation and air conditioning). Graduates of this program perform the “hands-on” installation and maintenance of systems in buildings and power plants.

The environmental technology program at BCC is focused on health and safety issues (and is also quite small).
9) Describe the external partnerships that will be developed to support field-based learning for the program of study and provide employment opportunities to graduates.

New York City government (through the Mayor’s Office of Long-Term Planning and Sustainability and through individual agencies) could provide significant input into the curriculum. City agencies would have excellent internship and employment opportunities. There may also be opportunities for internships and jobs through private environmental consulting and remediation firms.

Late in our research we learned about PETE, the Partnership for Environmental Technology Education. Their mission is “To provide leadership in environmental education and training through community and technical colleges (two-year colleges) partnerships and with business, industry, government and other educational providers.” We should explore this further.

10) Describe the special resources, if any, that will be needed to support the program of study.

There may be need for particular kinds of scientific laboratories, particularly if the school ultimately develops subspecialties, but more research would be needed to determine this. Because of the new community college’s focus on place-based education it may be possible to keep expenses for equipment and such to a minimum.

11) Indicate whether this program of study is a match with one or more of the CTE schools intended to be a partner school with the college.

This program could potentially have some content overlap with a CTE school focused on green jobs. Certainly such a school would be a good recruitment source, as would all high schools with environmental themes.

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iii Interview with Laurie Kerr, Ariella Maron, and others, Mayor’s Office of Long-Term Sustainability, 5/13/08.

iv The Environmental Technology and Sustainable Energy Resource Management degrees at Iowa Lakes have a common first year and are offered through the same department. See [http://www.iowalakes.edu/programs_study/technology/environmental_studies/index.htm](http://www.iowalakes.edu/programs_study/technology/environmental_studies/index.htm).


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**Program of Study: Energy Services Management**

The coming decades will see a major expansion in the range of careers in energy services and technologies. These will include not only jobs in energy efficient building construction, operations and maintenance, but also in buying and selling energy, energy assessment, and regulatory affairs. Although this proposed program would focus on the business, marketing and customer service aspects of the growing energy services field, the graduate will need to be familiar with the science behind the technology. Thus, the student will take courses in earth and environmental science and will develop a broad knowledge of alternative energy systems, as well as the skills needed to conduct audits of existing systems and feasibility studies relevant to the retrofitting of existing systems or proposed new systems. Employers will include public utilities, alternative energy systems manufacturers, architectural and engineering consultants, heating and cooling contractors, and independent energy systems retailers.

1) Describe the ways in which the proposed program of study is consistent with the mission of the college to prepare its students to be active participants in developing and sustaining the future of New York City.
Massive increases in fuel prices over the past few years have brought energy use and efficiency to the forefront of public concern. The number of jobs associated with energy use and efficiency is expected to grow tremendously – New York City government’s projections of employment associated with its energy efficiency plans, 126,000 jobs in energy services (through PlaNYC 2030), are significant just on their own.\textsuperscript{iii}

Growth will take place in both the public and private sectors.\textsuperscript{iv} Old buildings will be evaluated for energy efficiency with new systems installed, new construction will have updated heating, ventilation and A/C systems that will have to be properly maintained, power plants will be built, rebuilt and upgraded, and so forth. The field of “energy services” itself will evolve to meet new demands for efficient buildings and systems, and for energy generated from renewable sources such as wind, the sun, and geothermal (from the earth).

2) Describe why prospective college students will be interested in pursuing the program of study and/or describe the ways that significant numbers of students without clearly defined interests might become interested.

Energy services, like Environmental Technology, is likely to be of interest to individuals who are aware of environmental sustainability issues, and, as discussed in the environmental technology paper, environmental awareness amongst young adults is only going to grow. Certainly the run-up in fuel prices this year, which has affected individual drivers, as well as those who use public transportation, and even the price of food, has brought home to young and old the need to consider alternatives to the way we get and use energy. The program would need effective marketing in order to make clear its connection with jobs that are becoming and will become more available as a result of the need to develop and use alternative energy sources, as well as the connection between energy efficiency/renewable energy and the environment.

3) Describe how the program of study will both be aligned with employment in fields with substantial openings in the future and provide individuals entering the fields with salaries and benefits that make the acquisition of the credential worthwhile.

As stated earlier, energy services, in general, will be a field with tremendous demand for workers. Current unmet demand is such that a number of energy services companies and their clients (including Siemens, Con Ed, Chevron Energy Solutions, DMJM Harris) are planning the first-annual energy services job fair in New York City.

We have been told that jobs available for holders of associate degrees would include “energy auditing,” analyzing a building’s energy systems and usage and recommending improvements, and, related to that, energy analysis, the economics end of the business in which, for example, cost and benefits of making changes are determined. But there is also projected need in positions related to sales and marketing, customer service, and business/fiscal operations dimensions of the energy services industry.\textsuperscript{iv}

More research needs to be done into specific job categories relevant to this degree, such as energy service salesperson, energy services customer service provider, renewable energy site assessment technician, and energy services broker. These and many other career categories are defined in the report, Defining Energy Technologies and Services, that was generated by a forum sponsored by the Advanced Technological Education Program at the National Science Foundation. A number of community and technical college faculty, as well as industry representatives, participated in that forum. Salary range is difficult to predict as growth in this area is unprecedented and there is little historical data for this new industry. With energy costs spiraling upward though and concerns about oil production increasing, job growth and employment opportunities are likely to continue to improve and it seems clear that the field as a whole holds significant opportunity.

4) Describe how the program of study will equip graduates to qualify for a position in a variety of different employment opportunities related to the field of study and/or qualify them for admission as a transfer student to one or more baccalaureate degree programs.
Employers will want energy services workers, including auditors, analysts, salespeople, etc., who are familiar with the science behind the technology and who are able to adapt to rapid changes in the field. The program in Energy Services Management will be able to provide these workers. The program will include courses in environmental studies and alternative energies resources, but it could also include courses in accounting, sales, marketing, oral communications and management.

Job opportunities would be with energy services companies, utility companies, companies that install and maintain HVAC systems in individual buildings, and possibly in government agencies concerned with public infrastructure and regulatory/legal compliance. In developing the program additional research should be done to define the specific skill sets associated with energy services management and the match between an associate degree program and the types of positions listed above.

If arrangements were made as the program was being developed the degree might articulate into many of the same baccalaureate programs that would receive the degrees in Environmental Technology and Earth and Environmental Sciences including programs at Queens, Hunter, Brooklyn, City, York and Medgar. Transfer could also be made into a business degree program at Baruch, or an accounting program at Queens. Because of the technical nature of a the major however, it would be important for the new community college to develop clear understandings, with a receiving college, of required course-taking and expectations for student achievement.

5) Explain why a program of study in this major could be designed to ensure that students taking required and elective courses will acquire skills in reading, writing and mathematics.

The alternative energy technologist must have a good general knowledge of earth science, practical physics, and general chemistry. Math is needed for technical analysis, and writing is needed for technical reporting, and for marketing and customer service functions. Specialized courses such as Energy Site Evaluation, Energy Efficiency and Management, Codes and Regulations can all be designed to ensure development of basic skills, critical thinking skills and communication skills.

The Sustainable Energy Resource Management degree program at Iowa Lakes Community College is one program example. Its curriculum consists of business courses, with a series of environmental science seminars and some content courses specific to energy services. Another example is the Customer Energy Specialist associate degree program at Lansing Community College which includes coursework in business, accounting, business law, computer drafting, and customer service. An interesting course that could supplement the above might be a philosophical course in sustainable development, which would address many of the non-technical advantages to energy systems based on renewable resources.

6) Describe how the program of study will be complementary to the other proposed programs of study and will contribute to the strengthening of inter-disciplinary connections.

Energy services is related to environmental technology in the sense that the energy services field is focused on energy efficiency, and to a lesser degree, on renewable energy sources. It is also linked to supply chain management. Supply chain management can focus on (and in the future certainly will focus on) efficiency and energy conservation. SCM also includes business courses. All three programs could share coursework in Earth and Environmental Sciences. Students in the Energy Services Management program would also be advantaged by some basic knowledge of Geographical Information Systems. And the concepts of Information Studies are important for retrieving and organizing knowledge in any area.

7) Describe how the new college will be able to recruit and select faculty and staff needed to develop and implement the program of study.

The college would need to engage experts in the field in the curriculum development process, most likely using a formal DACUM (a development process frequently used for technical degree curricula). As part of this process the college could start to build relationships that would help to identify sources of potential faculty members. For now, it is the case that it can be difficult to hire energy services-related adjunct instructors because there is so much demand in the field for skilled professionals and the universe of people with the needed knowledge is relatively small. Salary may also be a concern for practitioners coming from the field.
8) Describe the extent of overlap or duplication of the program of study with existing programs of study at CUNY community colleges and, as necessary, explain why the new program is needed.

The new energy services technology degree at Bronx Community College may overlap with this degree. The Bronx program will serve an important need for technicians in this field. That degree will train individuals to manage efficient and environmentally sound building systems, and some part of the degree will include evaluation of buildings for energy efficiency ("energy auditing"). Growing demand for energy services workers in general, however, points toward the need for more than just the BCC energy services degree (and the environmental control technology degree at City Tech). It also should not preclude degrees in some aspect of energy services offered in both the Bronx and Manhattan. A key difference between the BCC degree and this proposed degree is that Energy Services Management would be more focused on the business, marketing, sales, and customer service facets of the energy services business.

9) Describe the external partnerships that will be developed to support field-based learning for the program of study and provide employment opportunities to graduates.

Partnerships would be developed with building and property management companies, energy services companies, and government agencies to help design the curriculum and for internship and job placement opportunities.

10) Describe the special resources, if any, that will be needed to support the program of study.

The program might need a building systems laboratory, depending on the structure and emphasis of the curriculum.

11) Indicate whether this program of study is a match with one or more of the CTE schools intended to be a partner school with the college.

CTE schools (and other high schools) with a focus on the environment and construction trades might have relevant coursework and would be good recruitment sites.

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**Program of Study: Earth and Environmental Science**

The primary intent of this program is to prepare students for transfer into a baccalaureate degree program with a major in earth and environmental sciences. Some of those students may also pursue initial teacher certification as secondary science teachers.

The program would emphasize extensive fieldwork and analysis of data on all aspects of the local environment. The quote below, from a recent proposal to the National Science Foundation from the Geology Department at Brooklyn College, describes the first two years of a baccalaureate program in Geo-sciences, and illustrates what an associate degree, or two-year program might look like.

Most freshman and sophomore geo-science courses provide a survey of the immense knowledge base of the discipline – an approach resulting in broad but shallow content coverage and often shallow learning. However, students build knowledge that is deeper, longer lasting, and more broadly applicable when they recognize the link between the knowledge or skills being taught and their life experiences and career needs. Therefore, lessons that progress from the practical and concrete to the abstract are more effective for the majority of students.

Our proposed Phase 1 Project seeks to transform geo-science education at Brooklyn College through the development of a freshman and sophomore curriculum that integrates place-based learning, authentic scientific inquiry, and development of skills essential to the successful pursuit of a geo-science career in an urban setting. We will concentrate on the first two years of the college experience in order to: 1) more fully engage students in student-focused geo-science experiences to increase and retain enrollment; 2) provide students with a broad perspective on urban geo-science to allow for more carefully considered career pathways in their junior and senior years; 3) provide a strong foundation in communication skills, research methodology, and application of technology that will allow students to secure rewarding internship and independent research opportunities in their junior and senior years; and, 4) serve as a coherent curricular
model that will facilitate articulation between our institution and 2-year colleges within the 20 campus system of the City University of New York.

Core courses would include topics associated with the geo-sciences, life sciences, physical sciences and mathematics as well as the social sciences and humanities.

1) Describe the ways in which the proposed program of study is consistent with the mission of the college to prepare its students to be active participants in developing and sustaining the future of New York City.

The future of the City is deeply dependent on the development and implementation of a comprehensive approach to preserving its natural environment and monitoring and modifying the interactions of its residents and visitors with that environment. CUNY has already embraced that goal. We quote from “Exploring the Nature of New York”:

> While *Exploring the Nature of New York*, remember that for the first time in history, more humans are living in cities than in rural areas on earth. Soon, more than 60% of the world population will be concentrated in large metropolitan areas. New York is no exception, with an expanding population of 8 million people living in the five boroughs and close to 20 million in the greater NYC region. This is not without consequence to the environment. NYC’s ongoing growth and development impacts its local ecology, its surviving urban wildlife, marine and terrestrial ecosystems, and air quality. In fact, New York City is exerting more and more pressure on the entire planet; with the escalating demands of its population - for space, energy and food - extending throughout the globe. The emerging field of urban ecology seeks to understand these impacts and interactions, with the knowledge that the health of our immediate and global environment is crucial to our own welfare, and survival.

The City needs well educated scientists and technicians who are able to analyze continuities and changes in the local environment. Higher education must make an important contribution to the preparation of those individuals.

2) Describe why prospective college students will be interested in pursuing the program of study and/or describe the ways that significant numbers of students without clearly defined interests might become interested.

At this time we do not have definitive data on the interests of prospective community college students in New York City in studying environmental sciences. However, there are at least six public high schools with environmental themes. Recently, those schools have attracted many more applicants than available slots.

Nonetheless, it is clear that environmental issues occupy a very prominent place in the public media and that, on many college campuses, a widespread culture of sustainability has taken hold. In addition, the City of New York has embarked upon a comprehensive approach to sustaining the city’s environment, PlaNYC 2030, and it is likely that the importance of the issues in the public sphere will continue to be emphasized.

In discussion of the major in Environmental Technology it is noted that PlaNYC 2030, is likely to generate a substantial number of jobs. A degree in E&ES will provide an appropriate credential, for many of them. Employment prospects for environmental scientists and geoscientists are quite good though the best jobs require a master’s degree. The Bureau of Labor Statistics projects that growth in both areas will be well above the average: 25% for environmental scientists and 22% for geoscientists through 2016. And finally, while the degree clearly provides a good background for students interested in the science of earth systems and ecology, it can also support career goals in areas such as law, journalism, business, and government - anywhere where an understanding of earth and human interaction and the application of the scientific method are relevant.

In conversations with faculty members at senior colleges, we learned that many students are recruited to majors in earth and environmental sciences because of their experience in non-major introductory courses which engage their interest in the topics being studied. Since classes in this area will be part of general education, we may see a similar effect on new community college students. There may also be students who major in Environmental Technology, because of concern for a job upon graduation, but who take classes in E&ES as a foundation for a baccalaureate degree in the future.
3) Describe how the program of study will both be aligned with employment in fields with substantial openings in the future and provide individuals entering the fields with salaries and benefits that make the acquisition of the credential worthwhile.

Employment prospects for environmental scientists and geoscientists are quite good though the best jobs require a master’s degree. The Bureau of Labor Statistics projects that growth in both areas will be well above the average: 25% for environmental scientists and 22% for geoscientists through 2016. This growth will be spurred by the increasing demands placed on the environment by population growth, the need to comply with complex environmental laws and regulations, the need to monitor the quality of the environment and to interpret the impact of human actions on ecosystems, and to develop strategies for restoring ecosystems. In addition, environmental scientists will be needed to help planners develop and construct buildings, transportation corridors and utilities that protect water resources and reflect efficient and beneficial land and energy use.

There are some employment opportunities for individuals with associate degrees; it seems likely that those who have taken some courses in Environmental Technology or Energy Services Management would gain important knowledge and skills and have an easier time capturing those jobs. There will also be very basic, entry-level jobs that graduates may fill while they are working toward their baccalaureate degrees. The new community college will need to work with possible relevant employers, such as the NYC Department of Parks, the United States National Parks Service, the Central Park Conservancy, the Bronx and Brooklyn Botanical Gardens, the NYC Department of Environmental Protection, the NYC Department of Health and Mental Hygiene and non-profit environmental action groups to develop the relationships needed for new community college graduates to have those opportunities.

4) Describe how the program of study will equip graduates to qualify for a position in a variety of different employment opportunities related to the field of study and/or qualify them for admission as a transfer student to one or more baccalaureate degree programs.

Positions with governmental agencies are almost always governed by civil service regulations which allow for the combination of education and experience for qualifications for particular jobs. It would be especially helpful if cooperating agencies would agree to view experience obtained through fieldwork, which will be a basic tenet of this degree (as well as all others) as sufficient to meet the experiential requirements for positions. Several sample job descriptions are attached.

We need to contact the possible agency employers mentioned above to determine the extent of job opportunities for associate degree holders.

Currently, several CUNY colleges offer programs leading to baccalaureate degrees in Earth & Environmental Sciences. The programs prepare students for professional, as well as for graduate work in geology and related environmental fields and for teaching in secondary schools (York). On the basis of a very preliminary review, one of the programs explicitly embraces a focus on the environment of New York City (Queens College – which has a School of Earth and Environmental Sciences) and another program does so implicitly (Brooklyn College). There is also a Dept. of Earth and Atmospheric Science at The City College, as well as a wide range of engineering programs at City which might interest some students. Hunter and Lehman both offer baccalaureate programs in Geography.

Effective articulation model will require very careful alignments of the coursework at the new college and any receiving institution. The effectiveness of any combined program of study will require common understanding and clear signals regarding required course-taking and expectations of student achievement. Preliminary conversations with the Geology Departments at Brooklyn and Queens have revealed a great deal of interest in exploring possible articulation agreements with a new community college.
5) Explain why a program of study in this major could be designed to ensure that students taking required and elective courses will acquire skills in reading, writing and mathematics.

The core courses should require that students engage in extended readings of texts in a wide variety of genres and that they respond to those readings, to classroom discussions and to their fieldwork experiences in varieties of writing that could include narrative, description, analysis, argument and synthesis. A number of the disciplines, beyond mathematics as such, require that students analyze and draw conclusions from quantitative data. Students should be expected to organize and conduct presentations of their work in a variety of different print and electronic formats.

6) Describe how the program of study will be complementary to the other proposed programs of study and will contribute to the strengthening of inter-disciplinary connections.

Earth & Environmental Sciences faculty would be able to teach courses in programs in Urban Education, Urban Systems, the other two majors recommended as Liberal Arts/transfer programs. E&ES would also provide some of the necessary liberal arts courses for the more career oriented programs such as Environmental Technology, Energy Services Management, and Geographical Information Systems. There could be courses developed as well that would provide useful and appropriate general education background for students in the healthcare areas.

7) Describe how the new college will be able to recruit and select faculty and staff needed to develop and implement the program of study.

To the best of our knowledge, CUNY colleges have no difficulty in recruiting qualified earth and environmental sciences faculty. While we have no data at this time it would seem that the increased interest in this area will lead to increased numbers of new PhDs looking for positions. It remains to be determined if we could attract faculty to make the kind of intense commitment we have discussed for faculty positions in the new community college.

8) Describe the extent of overlap or duplication of the program of study with existing programs of study at CUNY community colleges and, as necessary, explain why the new program is needed.

There are no current programs of study in Earth & Environmental Sciences at the associate degree level at CUNY colleges.

9) Describe the external partnerships that will be developed to support field-based learning for the program of study and provide employment opportunities to graduates.

The City presents numerous opportunities for college students to work in agencies or institutions while they are pursuing their degrees—the Department of Environmental Protection (waste treatment facilities, reservoirs), the NYC Parks Department, the National Parks Service (including Jamaica Bay), the zoos and botanic gardens.

There are many opportunities for volunteer positions at the above-mentioned organizations. It is not clear if the organizations would be willing or able to employ college student interns as volunteers—if those interns were obtaining stipends from the college. This and other questions need to be explored at greater length.

10) Describe the special resources, if any, that will be needed to support the program of study.

There is no need for special resources beyond the laboratory needs that one would expect. These would be shared with other programs, e.g., Environmental Technology, GIS.

11) Indicate whether this program of study is a match with one or more of the CTE schools intended to be a partner school with the college.

There are no apparent connections to CTE schools.

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**Program of Study: Information Studies/ Information Management/Informatics**

Given the emerging and interdisciplinary nature of the field, we offer three tentative titles, one of which will be selected when the program is fleshed out. For convenience, we’ll call it Information Studies.
Information Studies is an emerging discipline that traverses several areas of application. Information related careers can be found in Business Intelligence, Accounting Information Systems, Health Care Informatics, Bio Informatics, Legal Information Systems, Geospatial Information Systems (GIS), and the Social Sciences. The core skills necessary to be a successful practitioner are the same regardless of the market segment. Graduates would be expected to gather, organize, codify, store, and retrieve information. In addition, these skilled knowledge workers produce and manage reports under the guidance of more senior experts who are likely to be the decision-makers. Professional competencies include software applications and databases, quantitative ability in statistics and math, basic research, human-computer interactions, project management, and customer service. There’s not an organization that doesn’t have some information component as a part of it – in their work these graduates focus more on the applications of the technologies they learn than on the technology itself.

1) Describe the ways in which the proposed program of study is consistent with the mission of the college to prepare its students to be active participants in developing and sustaining the future of New York City.

| Careers in Information Studies are found in a wide range of disciplines including banking, financial services, insurance, legal services, accounting, consulting, information services, entertainment, health care, transportation, environmental management, science, and education, all important growth sectors in the region. In New York City, financial services alone represents 35% of the economy, a figure that has nearly tripled since 1970 (Orr and Topa, 2006). Similarly, Healthcare and Legal Services make up a significant portion of New York’s service base. Biosciences too is a rapidly growing field with more than 125 companies, 35 research institutes, and 175 hospitals and laboratories (EDC, 2008b). Additional research by Global Insights, Inc. (2006) suggests that access to a pool of highly skilled knowledge workers, like those in information, as well as the availability of investment capital often attracts other types of innovative firms such as computer system design and biotechnology research firms to metro areas (Global Insight, 2006) thereby driving continued economic growth and job creation. |

2) Describe why prospective college students will be interested in pursuing the program of study and/or describe the ways that significant numbers of students without clearly defined interests might become interested.

| Broadly speaking, majors in Information Studies could train students to support a company’s information core regardless of the specific area of application, e.g. accounting, finance, healthcare, geosciences, bioscience, or law. Such a program would be intellectually challenging and on the cutting edge of 21st century employment. It would provide students with solid job prospects, upward mobility, geographic mobility, and long-term job security in a host of sectors. The new community college could launch with programs that focus on health care and business. Additional content area (sometimes called cognate areas) could be added over time; the core skills and competencies remain essentially the same. |

3) Describe how the program of study will both be aligned with employment in fields with substantial openings in the future and provide individuals entering the fields with salaries and benefits that make the acquisition of the credential worthwhile.

| New York State Department of Labor data projects that titles in the Information field -- Systems Manager, Database Managers, and Research Analysts – albeit more senior level titles than the new community college graduates would have, are projected to have strong growth. Associate degree graduates’ titles, at entry level might be assistant information manager, database support technician, survey research assistant, even administrative assistant. But a recent Associated Press article on Boston.com indicated that “Fewer college students are pursuing computer-related degrees at a time when demand is increasing and thousands of baby boomers are retiring from technical jobs.” Business leaders are worried that they won’t be able to find the workers they need. A smart, conscientious employee in this field, who started in an entry level job, and made it a point to understand the company culture, could rise quickly. Add another level of education (for there’s no question that the better jobs, as in so many areas, require a baccalaureate degree) and that person is likely to be very solidly employed. To combat the trend of off-shoring, as was the case for classic computer programming jobs, graduates should be prepared to work in an organization’s knowledge domains and less on the technical side of the house. |
Taking a quick look into careers and business, current research by NYCEDC (2008a) determined that financial services, information services, and business and professional services – three of the nation’s highest value-added sectors in urban locations – represent 9.2% (348K), 4.5% (170K), and 15.6% (590K) of the City’s employment, respectively.

Analysis of BLS, DOL, and O-NET employment data demonstrates that knowledge management is an integral part of most job descriptions for professionals. Correspondingly, a study commissioned by Baruch College, determined that informatics and information skills were important across twenty-seven different business disciplines (Klosek and Bornstein, 2006). That same study was used to justify creating a minor in Informatics which is now available to all Baruch students regardless of major.

The news on wages is positive too. In a report from Global Insight, Inc. (2006) for The United States Conference of Mayors, information related jobs yielded an average annual salary of $57,329. New York State DOL statistics project for the Year 2007, across all levels of seniority, that Information Specialists earn approximately $106,000 per year. While these numbers show upside potential, they do not reflect starting wages. By selecting four comparable entry level titles -- -- I have estimated an average starting salary $38,692.

Employers with whom we consulted suggested that if the new community college could develop students with the necessary skill sets, the students would be very employable. The executive director of the Institute for Innovation and Information Productivity (IIIP), Michael LoBue, is preparing to conduct a survey of the organization’s industry and faculty advisor boards.

Employers also had caveats. Andrew Brust, vice chair of the New York Software Association felt that in order to be effective quickly, the graduates must have: workplace experience (from internships); software platform specific training (so that they could start producing quickly); training in how to understand the industry; ambition and curiosity.

4) Describe how the program of study will equip graduates to qualify for a position in a variety of different employment opportunities related to the field of study and/or qualify them for admission as a transfer student to one or more baccalaureate degree programs.

Graduates who gravitate toward business related careers might have titles such as Information Specialist, Knowledge Management Specialist, Systems Manager, Database Managers, and Research Analyst. Other positions, for example in health care, might be more discipline specific.

It may well be that there is a set of foundation courses which serve as a base for discipline specific tracks. Core courses could include systems thinking, basic research, data mining and analysis, reporting, communication, technical writing, data visualization, and human-computer interaction. These skills are in high demand.

There are many transfer opportunities, depending on which track the graduates follow or if their interests diverge still further. Examples include:

1. Business
   a. BS in Computer Information Systems at Brooklyn College offered through the Economics Department
   b. BS in Business at CSI although transfer credit must be addressed.
   c. BS from Queens’ Business and Liberal Arts (BALA) program
   d. The accounting program at Queens.
2. Healthcare
   a. BS in Community and Environmental Health at Hunter
   b. BS in Health Services Administration at Lehman or NYCCT
   c. BS in Health Promotion Management at York
   d. BS in Health Education Promotion at Lehman

3. Legal Information Systems
   a. BS in Legal Studies at John Jay (TBD)

These graduates could also transfer into a computer information systems or computer science degree. Baccalaureate degrees in computer information systems are offered at Lehman, Baruch, John Jay, New York City Tech, Brooklyn, Staten Island and York.

5) Explain why a program of study in this major could be designed to ensure that students taking required and elective courses will acquire skills in reading, writing and mathematics.

It’s been said that the skills developed in this major serve as a foundation for all other college work. For Math students learn and apply basic statistics to actual scenarios, questions, and problems faced in the real world. Major courses, the internship, and appropriate general education courses reinforce quantitative competencies.

For Reading courses in business, psychology, research methods, and the general education sequence provide appropriate skills development. And major courses will require written reports to summarize and explain the technical outcomes of projects. Beyond writing, project findings would be presented orally to develop well rounded communication skills.

Analytic Thinking – data analysis, basic research, reporting, and internship courses will require students to organize data into logical sets, compare the groups side-by-side, relate data to real world problems, and report out their findings. During oral presentations, the class learns to give peer feedback and the presenter learns to receive their critique. This mirrors the real world.

For those who may be interested in further exploration, examples of Information Management or Informatics programs, at the associate’s and bachelor's levels, can be found at the following institutions:

- **Indiana University**: School of Informatics (BA)
- **Foothill College**: Computers, Technology, and Information Systems Division
- **Bellevue Community College**: Information Systems Department & Life Science Informatics
- **Community College of Baltimore County**: Health Informatics

6) Describe how the program of study will be complementary to the other proposed programs of study and will contribute to the strengthening of inter-disciplinary connections.

As stated above, courses in Information Studies would be helpful in just about any area. In particular, in the new community college there ought to be relationships with the programs in Geographical Information Systems, Supply Chain Management both of which depend heavily on information mining. There can also be cross-over with Energy Services Management, Earth and Environmental Science and Environmental Technology, and Nursing and Surgical Technology. As the college grows, and other disciplines are added, the range of Information based programs could expand as well.

In point of fact, Information and Knowledge Management are competencies that should be integrated across the disciplines.
7) Describe how the new college will be able to recruit and select faculty and staff needed to develop and implement the program of study.

Comparable individual courses are offered at other CUNY colleges. Faculty should be readily available. In addition, there are a number of doctoral programs in Informatics at such schools as George Mason, University of Missouri, University of Illinois, Stanford, University of Nevada, University of Utah, and Columbia. Our choice of tracks will determine faculty sources.

8) Describe the extent of overlap or duplication of the program of study with existing programs of study at CUNY community colleges and, as necessary, explain why the new program is needed.

BMCC has a program in Health Information Technology, which appears to have a narrower focus than that envisioned in the health track in the Information Studies program.

Baruch recently developed a minor in Informatics which is available to all students, and might be of interest to a graduate focusing on the business track.

9) Describe the external partnerships that will be developed to support field-based learning for the program of study and provide employment opportunities to graduates.

- New York Software Industry Association
- CUNY Institute for Software Design and Development
- Project Management Institute of New York (Needs to be explored)
- NYSGIS for GIS
- Other Industry Specific Organizations (e.g. 1199 for Health Care Informatics, National Association for Legal Assistants and the CUNY Law School for Legal Information Systems) Requires further exploration

As for all programs at the college, New York City and State Agencies as well as Unions would be an excellent source of potential employment.

10) Describe the special resources, if any, that will be needed to support the program of study.

Most programs would require specialized software applications that are industry specific, database servers, web enabled development environments, analytical software, presentation tools, graphics software, high end laptops, access to online information systems (e.g. Lexis-Nexis, Data Monitor), color printers, and projectors.

11) Indicate whether this program of study is a match with one or more of the CTE schools intended to be a partner school with the college.

There are CTE programs that seem appropriate but, additional information about the content of those programs is required.

REFERENCES


Klusek, L. and Bornstein, J. (2006) “Information Literacy Skills for Business Careers Matching Skills to the Workplace,” Journal of Business & Financial Librarianship, Bol. 11, No. 4. 3-21


GEOGRAPHIC INFORMATION SYSTEMS (GIS)

GIS, a marriage of Geospatial Science and Informatics, has several interchangeable first names which include Geographic, Geospatial, and Geologic. No matter which acronym you choose, GIS specialists are responsible for “measuring and mapping the earth’s surface” (BLS, 2008). As in other fields of informatics, GIS workers collect, manage, analyze, and present information that allows us to make better decisions about our world (San Juan College Website, 2008; BLS, 2008). Technicians are skilled at designing and drafting, data analysis and management, and using a host of specialized instrumentation. In their work, they draw on information from GPS systems, remote aerial sensors, earthbound mapping databases, and population statistics. Many people deal with Geospatial related technologies every day; using the GPS system in their cars, looking for directions on Mapquest, and marveling at pictures of their rooftops on Google Earth.

GIS allows us to view, understand, question, interpret and visualize data in ways that reveal relationships, patterns and trends in the form of maps, globes, reports and charts. It is a tool that is being applied in environmental studies, real estate planning, election administration, market analyses, public health and safety, transportation and logistics, law enforcement and emergency response. GIS technicians or specialists may be employed in private companies and government agencies that use geographic information systems, generally working along side engineers, architects, environmental specialists, homeland security experts, park and landscape professionals, utility managers and archeologists. The GIS technician might hold a range of job titles including: surveyors, cartographers, photogrammetrists, and surveying & mapping technicians.

1) Describe the ways in which the proposed program of study is consistent with the mission of the college to prepare its students to be active participants in developing and sustaining the future of New York City.

GIS emerged as a viable technology in the early 80s. It became more widely adopted in the 1990s, as high powered computers and modern telecommunications increased the possibilities for applications. Geospatial data and products, including maps, simulations, and databases, became important tools in the management of utility infrastructures, transportation, energy, emergency management and response, natural resource management, climate analysis and weather prediction, disaster recovery, law enforcement and homeland defense. The business community too, as well as economic developers, are turning more and more to the geospatial industry to answer complex questions dealing with such issues as market analysis and site location, quickly and effectively. These applications are all very relevant to New York City, now and in the future. Government agencies, such as the New York City Department of Information Technology and Transportation (DIOTT), are the largest employers of GIS specialists although private companies also have support positions available.

Hunter Professor of Geology, Sean Ahearn, recently received a $709,500 grant from the New York City DEPARTMENT OF INFORMATION TECHNOLOGY & TELECOMMUNICATIONS to study the “Maintenance of New York City Base-Map & GIS Application Development.” Professor Ahearn was also recently appointed to the new National Geospatial Advisory Committee. A discussion with Professor Ahearn would be helpful as we continue to explore this major.

2) Describe why prospective college students will be interested in pursuing the program of study and/or describe the ways that significant numbers of students without clearly defined interests might become interested.
The wide range of GIS applications, and the burgeoning of the marketplace for people who know how to use this technology, makes this an attractive major. GIS projects are akin to puzzles and problem solving that contain not only quantitative elements but also visually rich media, across a host of interdisciplinary fields. As students begin to understand the context of the work, for example, mapping escape routes during a natural disaster or tracking the migration of the Hudson River, they may become interested in the range of possibilities for application of their skills. Students who are interested in computer science but want to apply those skills to areas such as transportation, disaster relief, environmental issues, or homeland security may feel that they have an opportunity with this major to use their skills to make a real difference.

With the increased use of computers in imaging and geospatial technology careers, most jobs are in an office environment. However, some careers may require field work to verify results or to acquire data. This diversity in the working environments may be attractive to many.

One other reason students will be interested is that this is a major for which there are jobs with decent salaries available at the technician/specialist level, for people with these skills and with an associate degree. However, there is also a range of pathways for advancement for those interested in additional education.

3) Describe how the program of study will both be aligned with employment in fields with substantial openings in the future and provide individuals entering the fields with salaries and benefits that make the acquisition of the credential worthwhile.

Two trends are influencing the potential for geospatial workforce training at [the associate degree level]. The demand for geospatial skills is increasing so rapidly that workforce needs are not being met. At the same time, recent advances in software, hardware, data acquisition, and data sharing are making geospatial technologies more accessible. Skilled technicians can now perform many aspects of work previously accomplished only by expert professionals (NSF 2005)

“In the past, many people with little formal training started as members of survey crews and worked their way up to become licensed surveyors, but this has become increasingly difficult to do. Now, many community colleges, technical institutes, and vocational schools offer 1-, 2-, and 3-year programs in surveying or surveying technology” (BLS, 2008). The associate’s degree prepares graduates for jobs at the technician or specialist level in companies that use GIS, GPS and remote sensing. They might work in government agencies, map and database publishers, marketing and sales companies, oil or gas companies, real estate companies, utilities, etc. They may also continue their studies toward a baccalaureate degree in urban planning, environmental science, geography and other areas in which GIS skills are valuable.

The field is relatively new and it’s somewhat of a challenge to translate projections regarding growth to the New York region. GIS is anticipated to have faster than average employment growth nationally, and specifically, in NYC expected increases average 14% or 10,350 jobs up from 9,080, a net of 1270 jobs (NYS DOL 2008). While this is a moderate number of new jobs in GIS specifically, because of the wide range of GIS applications and the relatively small number of students expected to enroll in the new community college initially, it may be perfectly adequate at this time. Over time the college could align the number of prospective graduates with market demand, which seems likely to grow as more businesses, industries and government agencies understand the capacity of GIS and remote sensing to enhance their operations.
Regarding Wages… Lansing Community College in Lansing, MI suggests that holders of associate’s degrees in GIS average $30,000 to $35,000 annually. Central Piedmont in NC lists the median at about $36,600. GISjobs.com lists average salary with one year of experience at $33,450.

Below is an excerpt of a typical GIS related job description from ATSI Engineering in Amherst, NY that makes the point for experience and specific software platform skills. Notice in this description, no degree requirement is indicated.

“Required Skills and Experience:
- 3 years experience developing robust .NET applications using VB.NET, ASP, ASP.NET, C#, ADO.NET, XML, NUnit
- 3+ years GIS programming experience utilizing ESRI ArcGIS Desktop and ArcGIS Server
- 3+ years experience with ArcObjects or ArcEngine.”

Additional information regarding jobs can be found at:
- [http://www.gisjobs.com/classifieds/search.jsp](http://www.gisjobs.com/classifieds/search.jsp)
- [http://www.gjc.org/gjc-cgi/listjobs.pl?order=location](http://www.gjc.org/gjc-cgi/listjobs.pl?order=location)

4) Describe how the program of study will equip graduates to qualify for a position in a variety of different employment opportunities related to the field of study and/or qualify them for admission as a transfer student to one or more baccalaureate degree programs.

Everyday, GIS professionals deal with collecting, organizing, codifying, storing, and reporting on information from geographic and demographic databases. GIS has environmental, as well as planning, surveying, and mapping applications. In an urban environment, GIS helps planners with infrastructure management; public health and safety; transportation and logistics; real estate information; election administration and redistricting; and research and education. GIS technicians can be found in government agencies, consulting firms, high tech information, utilities, major transportation businesses, and real estate development companies.

There is some feeling that the wide range of possible jobs makes it difficult for technologists to receive all the training they need in any two-year program and that new employees will require additional training tailored to specific job requirements. Any program in GIS, including the new community college’s, must therefore ensure that graduates have skills that can be applied in a variety of workforce contexts. Most geospatial technologist jobs require basic remote sensing, GIS skills and familiarity with current hardware and software. Many require a working knowledge of GPS, basic surveying skills, and/or an understanding of information integration and data fusion. Virtually all jobs require problem-solving skills based on assessing data quality and using multiple data sets. Technologists with these qualifications will be well-prepared for any additional training that may be required by the specifications of a particular job. (NSF 2005)

Baccalaureate programs that might be partners in articulation include the BA in Geography at Hunter or Lehman, programs in the School of Earth and Environmental Sciences at Queens, the Environmental Studies and Geology programs at Brooklyn. There is also a Dept. of Earth and Atmospheric Science at The City College, as well as a wide range of engineering programs at City and Computer Science programs at many of the colleges. Enrollments in some of the Earth and Environments Science programs are low; it seems likely that they will grow as environmental awareness grows. Articulation agreements with any programs would require exploration with faculty.
5) Explain why a program of study in this major could be designed to ensure that students taking required and elective courses will acquire skills in reading, writing and mathematics.

In Math, the program of study would require students to learn and apply basic statistics/geometry/trigonometry/algebra to actual scenarios, questions, and problems faced in the real world. This program would require a significant amount of computational and algorithmic training in the computer programming courses. Major courses, the internship, and appropriate general education courses would reinforce quantitative competencies.

Courses in geography and the natural sciences, research methods, and the general education sequence will provide appropriate skills development in reading.

Major courses would require written reports to summarize and explain the technical outcomes of projects. Beyond writing, project findings would be presented orally to develop well-rounded communication skills.

Analytic Thinking – data analysis, basic research, reporting, and internship courses would require students to compare sets of data side-by-side, relate those data sets to real world problems, organize, and report out their findings. Oral reports would give the class a chance to make sense of someone else’s work and give the presenter a chance to learn to receive feedback. Revisions would be made to the project based on the class’s feedback. This mirrors the real world.

Examples of GIS programs, at the associate degree level, can be found at the following institutions:

- Lansing Community College
- Cayuga Community College
- Itasca Community College
- Central Piedmont Community College

6) Describe how the program of study will be complementary to the other proposed programs of study and will contribute to the strengthening of inter-disciplinary connections.

Graduates will need much of the same knowledge and skills as graduates of the program in Information Studies. These have been described above and in the document on Information Studies. General Education courses will be found in the Earth and Environmental Science major and even in the Urban Studies major. There is likely to be overlap as well with the courses in the Environmental Technology and Energy Services Management programs.

7) Describe how the new college will be able to recruit and select faculty and staff needed to develop and implement the program of study.

There is a GIS minor at Lehman and other GIS programs exist at SUNY suggesting that faculty are available. There are many organizations (The American Society for Photogrammetry and Remote Sensing, the Geospatial Information and Technology Association, The Urban and Regional Information Systems Association, the Spatial Technologies Information Association, the Open GIS Consortium, and others) that may be helpful as the new community college seeks faculty. Also, there are many community colleges across the country offering programs in GIS; it would be appropriate to contact them to inquire about their sources of faculty.

8) Describe the extent of overlap or duplication of the program of study with existing programs of study at CUNY community colleges and, as necessary, explain why the new program is needed.

There is no GIS program offered at any CUNY community college.

Lehman College now offers a minor in GIS. [http://www.lehman.cuny.edu/deannss/geography/gisc_minor.htm](http://www.lehman.cuny.edu/deannss/geography/gisc_minor.htm)
9) Describe the external partnerships that will be developed to support field-based learning for the program of study and provide employment opportunities to graduates.

As for all programs at the college, New York City and State Agencies would be an excellent source of internships and potential employment.

Other industry organizations include:

- NYS GIS Association
- NYS has its own GIS List-Serve. Subscribers could be contacted directly.

William Johnson, Assistant Deputy Director at the NYS Office of Cyber Security & Critical Infrastructure Coordination has volunteered to help convene a panel of GIS experts, government and private, to discuss what an industry partnership would look like.

10) Describe the special resources, if any, that will be needed to support the program of study.

The following have been identified as some of the basic laboratory needs: computer with adequate memory, high resolution monitors, fast video cards, flash drives, specialized industry specific software applications, database servers, web enabled development environments, analytical software, presentation tools, graphics software, high end laptops, access to online information systems, large scale color printers, large scale drum scanner, and projectors, GPS units, cameras.

**Software systems include:** .NET applications, VB.NET, ASP, ASP.NET, C#, ADO.NET, XML, NUnit, ESRI ArcGIS Desktop, ArcGIS Server, ArcObjects and ArcEngine.

The University has purchased site licenses for most of these software products.

http://search.cuny.edu/search?q=cache:-5NYP51sdDsJ:www1.cuny.edu/resources/site_licenses/index1.html+GIS&access=p&output=xml_no_dtd&site=CUNYedu&ie=UTF-8&client=web80&proxystylesheet=web80&oe=ISO-8859-1

11) Indicate whether this program of study is a match with one or more of the CTE schools intended to be a partner school with the college.

There are CTE programs that may be relevant, but additional information about the content of those programs is required.

**REFERENCES**


Cayuga Community College website (2008) http://www.cayuga-cc.edu


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**Program of Study: Supply Chain Management**

Supply chain management is a field that encompasses a large range of activities related to identifying needs for materials and products, finding sources, and transporting and storing purchased goods. These activities include
development of technical specifications, contract and purchasing negotiation, and logistics management. Logistics is that part of supply chain management that plans, implements, and controls the efficient flow and storage of goods, services and related information between the point of origin and the point of consumption. Courses beyond general education teach relevant business and accounting practices, negotiation techniques, planning, organizing, industrial safety issues, relevant computer applications and an understanding of the legal aspects of purchasing. Since almost every business has a supply chain component, jobs exist in manufacturing, construction, retail operations, educational institutions, wholesale service and distribution businesses and government offices. Entry level positions include positions such as buyer, purchasing analyst, inventory control manager, transportation coordinator, production coordinator, warehouse manager and many others.

1) Describe the ways in which the proposed program of study is consistent with the mission of the college to prepare its students to be active participants in developing and sustaining the future of New York City.

The concept of supply chain management was brought to our attention by Iris Weinshall, currently Vice Chancellor for Facilities Planning, Construction and Management at CUNY and formerly Commissioner of Transportation for New York City. Specifically, Vice Chancellor Weinshall identified the lack of personnel with skills in procurement as a serious gap in city government. Further research led to the realization that Supply Chain Management, sometimes called “a hidden profession,” plays an important role in the business model of almost any business in the city. SCM professionals are important players in activities across the spheres of marketing, sales, product design, finance and information technology.

In addition, effective management of purchasing, and of the movement and supply of goods, is an issue with significant environmental implications—witness public discussions of the “carbon footprint” of the food we eat, i.e. how far it travels to get to us and how much energy is used not just in its production but also in transporting it. This is particularly an issue in a highly urbanized environment in which transportation of food, waste, gas and oil, and manufactured products is crucial to keeping the city running. In New York City, the high costs of fuel needed for transportation will mean that analyzing and adapting the supply chain to maximize efficiency and to decrease energy use is an area of growing demand for workers. One estimate is that there are 40,000 empty truck runs within city boundaries every day—better supply chain management would help to address this waste. This problem has not gone unnoticed by the Council of Supply Chain Management Professionals. In early June, the CSCMP held a workshop, “Green Innovation with a Shared Vision,” that focused on the opportunities, challenges and rewards to implementing supply chains that are environmentally sustainable, while still being operationally superior and financially productive.

2) Describe why prospective college students will be interested in pursuing the program of study and/or describe the ways that significant numbers of students without clearly defined interests might become interested.

Supply chain management may not be the first thing community college students think of when considering a major. However, this area’s environmental implications and the existence of good jobs for graduates would make it possible to effectively market it to potential students. Students and graduates would participate in improving the city’s environmental sustainability and would also be challenged by the need to use and adapt new technologies (such as Radio Frequency Identification). As stated above, almost every business has a supply chain component, and the skills associated with this degree would have applications in a large range of occupations and work settings.

3) Describe how the program of study will both be aligned with employment in fields with substantial openings in the future and provide individuals entering the fields with salaries and benefits that make the acquisition of the credential worthwhile.

The Council of Supply Chain Management Professional (CSCMP) notes that “nearly every organization is involved in purchasing goods, controlling inventory, building products, moving freight, and/or managing relationships.” Potential employers include retailers and distributors, consulting firms, service firms, universities and other educational institutions, government, transport companies, manufacturing, and construction companies. Ohio recently chose SCM as a key industry to promote, and the Employ Florida Banner Center is working with community colleges in Florida to train workers for what they consider to be critical jobs in SCM and logistics. Additional research is needed to define the exact match between the curriculum of an associate degree program and existing jobs in New York City. Should this become part of the initial plan, the NYC Department of Citywide Administration Services has offered to create a workgroup to advise us on the development process.
Supply chain management programs in other cities in the U.S. place students in entry-level management positions in functions such as traffic and transportation, inventory management, warehousing, purchasing, and international import/export. Faculty involved with these programs have indicated that there are many positions available for graduates with associate degrees.

The CSCMP notes that starting salaries range from $23,500 to $58,500 with an average of about $39,500. The higher number may be for a person with a baccalaureate degree – there are a number of baccalaureate programs in colleges and universities, often within a business department or school of business.

4) Describe how the program of study will equip graduates to qualify for a position in a variety of different employment opportunities related to the field of study and/or qualify them for admission as a transfer student to one or more baccalaureate degree programs.

In addition to general education, program requirements or electives would include accounting, business law, purchasing, marketing, transportation and traffic management, business communications, and inventory management. Potential jobs would be in purchasing, and other, related administrative and operations departments of government agencies, private companies and other organizations. The program should parallel the courses to certification in the industry. After the requisite time in the field (we should determine if place based education, or an internship would count for time in the field) graduates could become Certified Supply Management Professionals.

Obvious transfers would include programs in business (Baruch, Medgar or CSI), Business Administration (Brooklyn, York, Queens, Lehman) or Accounting (eight colleges currently offer accounting programs). Less obvious possibilities within the CUNY system would be Economics or Management at Baruch, or Marketing at York. As with any articulation arrangement, it would be important to work with the receiving college on required course-taking and expectations of student achievement.

5) Explain why a program of study in this major could be designed to ensure that students taking required and elective courses will acquire skills in reading, writing and mathematics.

Sophisticated math, reading and writing skills are integral to this area of study, which would incorporate problem-solving seminars, field research, and analysis of best practices. Two existing degree programs (at Columbus State CC and Central Georgia Technical College include coursework in communications, economics and mathematical modeling.) Programs invariably include courses in accounting and business finance, and often include statistics and management information systems.

6) Describe how the program of study will be complementary to the other proposed programs of study and will contribute to the strengthening of inter-disciplinary connections.

This program could be located within either the “urban systems” or the “information services” area of study in the college because of its relevance to both. As stated earlier, the program content could integrate environmental concerns and new technologies. Some coursework would overlap with environmental technology. Earth and Environmental Science might provide some of the necessary general education courses as might Urban Studies. Courses in the Energy Services Management program would reinforce the need to consider possibilities for ‘greening’ the supply chain. When we have developed relationships with hospitals for the Nursing and Surgical Technology programs we might approach them with the possibility of internships for the Supply Chain Management program as well.

7) Describe how the new college will be able to recruit and select faculty and staff needed to develop and implement the program of study.

The college would find some faculty with particular expertise in this area through its relationships with city government and other employers, and potentially through work with industry groups such as the Institute for Supply Management, the Council of Supply Chain Management Professionals and APICS, the Association for Operations Management. Some faculty would be needed to teach traditional business topics, such as accounting and marketing. While these faculty often command high salaries (to approach marketplace salaries) there may be some new graduates interested in the concept of the new community college, not as a lifetime job but for a while. Graduate students from Baruch could serve as adjuncts for some of the business courses.
8) Describe the extent of overlap or duplication of the program of study with existing programs of study at CUNY community colleges and, as necessary, explain why the new program is needed.

There is no duplication or overlap with existing degree programs at CUNY. The closest existing area is Business Administration or Business Management, which are popular programs (usually transfer programs) at several community colleges, and possibly retail merchandising at Kingsborough.

9) Describe the external partnerships that will be developed to support field-based learning for the program of study and provide employment opportunities to graduates.

A partnership with city government could support the development of the curriculum, provide internships and other workplace opportunities, and jobs for graduates. We have been told by coordinators of programs around the country that industry has been very supportive of their programs; partnerships with private sector companies should be explored. There is some evidence of growing need for individuals to manage logistics in the truck transport industry within NYC. This demand for the skills of supply chain management in city government could result in a range of public service internship and employment opportunities for students in this program. As well, the curriculum of the degree program would provide a strong basis from which to learn the specific rules and practices of government procurement and supply management.

It would be appropriate to contact the Council of Supply Chain Management Professionals, which publishes a newsletter for academics, offers online courses, and professional development workshops, sponsors a career center, and has a host of other resources that would be useful.

10) Describe the special resources, if any, that will be needed to support the program of study.

Up-to-date software, such as that for GIS and radio frequency identification systems, would be needed.

11) Indicate whether this program of study is a match with one or more of the CTE schools intended to be a partner school with the college.

There would probably not be a CTE school offering coursework in this area.

Program of Study (tentative title): Community Health Worker (CHW)

We are obliged to say, up front, that there is more research needed in this area. It would have been helpful, for example, to spend time talking to people involved in community health and community health centers and to have made contact with the New York City Dept. of Health and Human Services. However, conversations with experts in Urban Health and Public Health persuaded us that there is a gap in the health system that a community college might be able to play a role in filling. There is also precedent for the role we envision. The Bureau of Labor Statistics describes an occupation called “Social and Human Service Assistants,” and notes that their term is a generic one for workers with a wide array of job titles, including community support worker and community outreach worker. For convenience we will call this program, at this time, Community Health Worker, or CHW.

The CHW provides a vital cost-effective bridge between health and social service systems and the communities they serve. There are in fact a plethora of titles used by organizations that have employed such people. These include: Care Coordinator, Community Health Aide, Community Health Outreach Worker, Family Support Worker, Health Facilitator, Health Liaison, Patient Navigator, Peer Counselor, Public Health Aide, and so on. These workers tend to be trusted members of the communities they serve, and with which they share ethnicity, culture, language and life experience, and they function as frontline health and social service professionals. While their specific responsibilities may depend on the place of employment, and the title, in general they provide health education and advocacy, coordinate care for people with diseases and chronic conditions, help people navigate complicated health systems, assist in the health insurance enrollment process and address in a variety of ways the broader issues that impact their community’s health. (See www.chwnetwork.org, the website of the Community Health Worker Network of NYC)

1) Describe the ways in which the proposed program of study is consistent with the mission of the college to prepare its students to be active participants in developing and sustaining the future of New York City.
Every person with whom we met, who is active in public health and/or urban health, in the City told us that the major challenges faced by New York in coming decades are the aging of the population and the management of chronic diseases such as diabetes, respiratory disorders, hypertension, AIDS, heart disease, even cancer in ways that keep people out of the hospital and enjoying a good quality of life.

In addition, although much progress has been made in reducing health disparities in New York City, substantial inequalities remain among New Yorkers of different economic and racial/ethnic groups. Poor health is concentrated in certain New York City neighborhoods and factors associated with poor health, such as poor access to medical care and unhealthy behaviors, are more common in these areas. One strategy to overcome the barriers to providing increasingly inaccessible and costly health care that have contributed to these troubling health disparities that some communities have adopted is the enlistment of community health workers. More people in these roles could produce a wide range of benefits for New Yorkers including: increased access to quality care, increased health insurance coverage, and improved quality of life.

2) Describe why prospective college students will be interested in pursuing the program of study and/or describe the ways that significant numbers of students without clearly defined interests might become interested.

The CHW is a front line public health professional who has a close understanding of the community (s)he serves, which enables him or her to bridge social and cultural barriers between those communities and health or social service systems. They are non-physician, non-nursing providers who are functionally trained for work in the field and they provide a bridge between the clinically trained and the non-clinically trained. It would particularly attract students who are not interested in the clinical applications of health sciences, who are interested in care-taking and care-giving but not into the messiness of nursing. It might also be of interest to people with previous health care experience, such as LPNs or Emergency Medical Technicians.

As in other areas, the educational model will work to the advantage of students unsure of their interests. Early field experiences allow for the possibility of developing new interests – students could “try it out” and make a decision about the profession at a time when they would still have an opportunity to declare a major in this field.

3) Describe how the program of study will both be aligned with employment in fields with substantial openings in the future and provide individuals entering the fields with salaries and benefits that make the acquisition of the credential worthwhile.

Unfortunately this is the piece that is wobbly. As stated above, we have been told that the biggest problems facing New York’s health care systems in the coming years are chronic care and the aging of the population. There have been programs in New York and throughout the country that have employed people with titles like Community Health Worker or Patient Navigator, but there are funding issues, and when the special funding that often supports these positions disappears the position goes as well. This is shortsighted since anything that could help an individual navigate the health care system and minimize the impact of chronic disease (and having a person in this position has been shown to do so) should be welcomed by insurance companies and the hospitals.

This may be changing however. According to the Bureau of Labor Statistics, the number of social and human service assistants is projected to grow much faster than the average for all occupations – by nearly 34% through 2016. The BLS notes, for example, the growing elderly population, urban issues such as the homeless and the expected retirements of workers now in the labor force and states that, “Faced with rapid growth in the demand for social and human services, many employers increasingly rely on social and human service assistants.”

In June 2005 the Patient Navigator, Outreach and Chronic Disease Prevention Act was passed with strong bipartisan support from Congress and signed into law. However the program has yet to be funded and without an appropriation will face a sunset provision this year.
There is some feeling that as part of the mission of the new community college we should be advocates for new structures that would benefit prospective students and the city. If we decided to take this on, it would extremely important to link the program to jobs – to form appropriate partnerships or extend the partnerships established in other areas in order to ensure jobs in the near future for these graduates as well. Dr. Jo Ivey Boufford, President of the New York Academy of Medicine and Dr. Nicholas Freudenberg, Distinguished Professor at the Hunter School of Public Health, both thought this could be an important program if done correctly and both stressed that it was critical to get potential employers to buy in early. Dr. Freudenberg suggested that we create a market – work with the union and industry and get a commitment for say 50 jobs over the course of two years. He also suggested that there is a potential for external support. They both noted the potential for increasing the diversity of the workforce and Dr. Boufford said that we had “the students you need to serve the population we’ll have in this city.”

4) Describe how the program of study will equip graduates to qualify for a position in a variety of different employment opportunities related to the field of study and/or qualify them for admission as a transfer student to one or more baccalaureate degree programs.

The program, like the others in the new community college would be a blend of classroom (technical and academic) and field based learning. The field experience will begin early and will be intense, since the very purpose of this position is to enable the graduate to act as a link between their community and systems of care. Courses might include the urban education courses cited in the response to question #5, classes in the core health care curriculum designed for nursing and surgical tech (e.g., medical terminology, communication issues in health care) as well as courses in health services and policy, public health, environmental health and health education. Fluency in a second language would be an advantage.

The program would articulate to programs in sociology, social work, nutrition and public health. Hunter has programs in Urban Public Health and Community Health Education. Both Dr. Boufford and Dr. Freudenberg suggested that it be designed as a pipeline program, a feeder program for a baccalaureate program in the University. The associate degree graduate would work in a public or private agency or organization, while studying for the baccalaureate degree. They suggested that health agencies might buy in because they would save money, since an associate degree graduate would work for lower wages than a person with a BA, yet the person would be well trained and able to function independently. The better jobs are at the baccalaureate level and the gold standard is the MPH.

CUNY is about to launch a new School of Public Health, which will be the only school of public health in the United States to focus on urban health. This is likely to be a time of reassessment for undergraduate programs in public health and related areas. It might be a good time to reach out to Hunter, for example, to discuss a possible partnership that would facilitate articulation between our two institutions. Dr. Freudenberg expressed his own interest in working with the new community college.

5) Explain why a program of study in this major could be designed to ensure that students taking required and elective courses will acquire skills in reading, writing and mathematics.

Communication skills would be critical in this major – one way of developing them would be through reading, writing and speaking assignments. There would be substantial crossover with a degree in urban studies, which would provide the rigor of study in major discipline areas. Community health spans the disciplines of anthropology, nutrition, medicine, sociology, biology, psychology, history, economics, philosophy, and political science. Undergraduate courses in other colleges that offer programs in Urban Health and Public Health have titles such as: Place, Poverty and Race, Neighborhoods and Public Housing, and include work in urban history, social inequality, urban policy, cultural factors in public health and health and the environment. The economics of the health system is a major issue today; a course in that area would include math.

6) Describe how the program of study will be complementary to the other proposed programs of study and will contribute to the strengthening of inter-disciplinary connections.

This program would be complementary to several of the suggested programs. There would be substantial crossover with the liberal arts program in urban studies (see question #5). There would also be courses in common with the curriculum in nursing and in disability studies. A course in the environment and health might be an elective here and in several other areas. General courses in psychology, sociology, even urban education might play a role in the program as well.
7) Describe how the new college will be able to recruit and select faculty and staff needed to develop and implement the program of study.

There are people currently at CUNY who are teaching many of the courses that will be needed for the program. Some may be interested in teaching at the new community college. Faculty recruited for other courses being considered under the Health rubric (Nursing and Disability Studies) could teach courses appropriate to this area as well. If the new community college were to develop a working relationship with the new School of Public Health it seems likely that there would be a pool of graduate students who would be interested in teaching as adjuncts.

Dr. Freudenberg would be a valuable resource in helping to develop the program of study, as would Dean Bill Ebenstein.

Dr. Boufford, of the NY Academy of Medicine, was also interested in working with the new community college. She said that she would be pleased to arrange a meeting of people involved in urban health to brainstorm about the issues that we would confront.

8) Describe the extent of overlap or duplication of the program of study with existing programs of study at CUNY community colleges and, as necessary, explain why the new program is needed.

Bronx CC offers an AS in Community School/Health Education, which has had a fairly strong enrollment. It’s a transfer degree and the focus is on people who will work in educational facilities Pre-K through college.

Hostos offers a program in Gerontology, in which the enrollment has been dropping, and in 2006 initiated a program in Community Health, which has so far a very small enrollment. It bears some similarities to the program we have in mind but without the intense placed based learning. It articulates with a program in Community Health Education at York.

Kingsborough has a very small AS program in Community Health. The focus seems different. It “provides a foundation for diverse careers in health promotion, disease prevention, health care administration, health education.” It has three tracks: health education and promotion, health administration and gerontology.

If it’s worth doing a program like this, it’s worth doing it in Manhattan.

9) Describe the external partnerships that will be developed to support field-based learning for the program of study and provide employment opportunities to graduates.

Answers to previous questions noted conversations in which support was offered by Dr. Boufford, President of the New York Academy of Medicine and Dr. Freudenberg, who has been Acting Dean of the CUNY School of Public Health.

As indicated earlier, we feel there is more research to be done in this area. It requires contact with the New York City Dept of Health, community agencies in Manhattan and perhaps other boroughs.

A publication from the Morehouse School of Medicine (October 2003), Community Health Workers and Community Voices: Promoting Good Health was valuable in helping us think this through. It was written by faculty members affiliated with Columbia University’s Mailman School of Public Health. We should be in touch with them.

And, there’s a Community Health Network in New York City that we should be in touch with.

10) Describe the special resources, if any, that will be needed to support the program of study.

No special resources are needed to support this program.

11) Indicate whether this program of study is a match with one or more of the CTE schools intended to be a partner school with the college.

This program could build on the work in the health care fields that the CTE schools will be offering. It would provide opportunities for further education for LPNs and some in the allied health professions with only high school diplomas. It would appeal to students who want to work in the health care area but don’t want to be nurses.
Program of Study: Disability Studies

The National Institute for Disability and Rehabilitation Research defines Disability Studies as “the holistic study of the phenomenon of disability through a multidisciplinary approach.” It has often been compared with Women’s Studies and Ethnic Studies that incorporate a socio-political “minority group” perspective within a multidisciplinary framework. An essential aspect of Disability Studies is its definition of disability as a “social construction,” as distinct from the prevailing medical model of disability. The social model recognizes that disability is not inherent in the individual as a deficit, but rather, is a set of physical and social barriers that often constrain people. This strength-based approach supports a paradigm in which disability is regarded as a basic aspect of human experience. The program in Disability Studies would bring a variety of disciplines to bear on the education of direct-service workers, who support people with disabilities in a wide range of settings including community agencies, schools and their own homes.

1) Describe the ways in which the proposed program of study is consistent with the mission of the college to prepare its students to be active participants in developing and sustaining the future of New York City.

Several government and public service reports in recent years have called attention to the ubiquitous nature of disabilities. Many of these reports, e.g., the Developmental Disabilities Act of 2000, also emphasize the “need for a well-trained workforce that is able to provide the services, supports and other forms of assistance required to enable individuals to overcome barriers to their full integration and inclusion.”

The 2007 Institute of Medicine (IOM) report The Future of Disability in America describes the ubiquitous nature of disability.

    Today, between 40 million and 50 million people in the United States report some kind of disability. That number will likely grow significantly in the next 30 years as the baby boom generation enters later life, when the risk of disability is the highest. If one considers people who now have disabilities (at least one in seven Americans), people who are likely to develop disabilities in the future, and people who are or will be affected by the disabilities of family members and others close to them, then disability affects today or will affect tomorrow the lives of most Americans.

The need for an educated workforce, and the shortage of Direct Service Professionals (DSPs), has also been well documented. “Direct Support Professionals” are defined as follows: generalists who “provide a wide range of supportive services … on a day-to-day basis, including habilitation, health needs, personal care and hygiene, employment, transportation, recreation … so that these individuals can live and work in their communities” and “lead self-directed, community and social lives.”

People with disabilities are part of the fabric of life in New York. An associate degree program recognizes the need for professional training for the dedicated people who help them participate in the life of the city.

2) Describe why prospective college students will be interested in pursuing the program of study and/or describe the ways that significant numbers of students without clearly defined interests might become interested.

As in nursing and teaching there is a great deal of psychic reward in being a front-line worker for people with disabilities. It’s a field that is attractive to people who enjoy being helpful, who are compassionate and sympathetic. They may also take special pride in being part of a movement that is combating the pervasive system of prejudice, discrimination and exclusion that has had a deleterious effect on the lives of so many people with disabilities. Many people who are interested in pursuing a career in this area have direct or indirect relationships with a person, perhaps a friend or relative, who has needed support. There are many people now working as DSPs in the disabilities field. Anecdotal evidence has suggested that they derive a great deal of satisfaction from their jobs. There was not time, during this project, to survey these people, but evidence suggests that if they were attracted to college, this might be major they would be interested in.

Because the field has a firm liberal arts base it may appeal to students without clearly defined interests who, in another college, would choose liberal arts by default. In the new community college that person can study liberal arts in the context of an important movement.
3) Describe how the program of study will both be aligned with employment in fields with substantial openings in the future and provide individuals entering the fields with salaries and benefits that make the acquisition of the credential worthwhile.

Graduates may work in a variety of settings, including group homes, foster homes, supported and transitional employment sites, school special education programs and recreational programs. The jobs abound, in New York and throughout the country.

In its 2006 Report to Congress, the U.S. Department of Health and Human Services, Office of Disability, Aging and Long-Term Care Policy, documented the ongoing shortage of DSPs to work with people with intellectual and other developmental disabilities. The report noted that between 2003 and 2020 the number of individuals in need of residential, vocational and other supports will increase 38%; by 2020 1.2 million DSPs will be needed to provide these services.

Hundreds of thousands of New Yorkers are employed in a fragmented system of federal, state and locally funded organizations, public and private, that provide services and other resources for people with disabilities. New York’s Office of Mental Health and Office of Mental Retardation and Developmental Disabilities and their network of over four thousand non-profit community based agencies and fifty-four institutional facilities is projected to serve more than one million New Yorkers with physical, mental and emotional disabilities in 2008-09. The NYS Early Intervention Program administered by the NYS Department of Health provides comprehensive services to 75,000 infants and toddlers with disabilities and their families. The NYS Office of Vocational Educational Services for Individuals with Disabilities provides services to over 90,000 adults with disabilities and also funds a network of thirty-seven, consumer-run Independent Living Centers. Each year over 150,000 students receive special education services through the NYC Department of Education. And approximately 9,000 students with disabilities are enrolled in credited courses in CUNY (where each campus staffs a Disability Services Office). Disability Navigators serve as resource specialists at many of New York’s Workforce One-Stop Centers. Older adults with disabilities are supported through a network of generic agencies that serve the elderly population.

The downside of this potential program is that the salaries of entry level, front-line workers, like the salaries of many who work in human services, is not high – only in the mid-twenties (they do generally receive appropriate benefits). It is not clear that an associate degree would have any impact on an individual’s salary or advancement. To mitigate this it may be that this degree would need to be viewed as a stepping stone to a BA or even, eventually, a master’s degree and thus a higher paying job in a related profession or a managerial or supervisory position in an agency that works with people with disabilities.

4) Describe how the program of study will equip graduates to qualify for a position in a variety of different employment opportunities related to the field of study and/or qualify them for admission as a transfer student to one or more baccalaureate degree programs.

Over the last 15 years the development of Disability Studies as a distinct field has been a priority of the National Institute for Disability and Rehabilitation Research. Recently, the Society for Disability Studies, an international association of disability scholars, advocates and service professionals, approved guidelines for the development of academic programs in Disability Studies. The guidelines emphasize its multidisciplinary aspect and this program would be consistent with those guidelines. Right now many front-line workers have only high school diplomas, GEDs or small amounts of college. Associate degree graduates who understood disability from a perspective that included, for example, psycho-social, political, historical, and legal studies, will be better service workers and better advocates for people with disabilities.

If a student wants to go on in Disability Studies specifically he/she has several choices. The baccalaureate program in Human Services at NYC College of Technology offers an option in human services for disabled and physically challenged persons as an area of concentration. Students at the College of Staten Island may complete a fifteen credit minor in Disability Studies as part of a baccalaureate degree. The Center for Worker Education offers a BA in Liberal Arts and Sciences with a concentration in Disability Studies. And many of the CUNY senior colleges offer baccalaureate degrees in psychology, sociology, and education. In addition, about 60 students have taken a BA in Disability Studies through the CUNY BA program.
The person who earns a BA will be able to go forward in the CUNY system in the newly approved Master’s Degree in Disability Studies.

5) Explain why a program of study in this major could be designed to ensure that students taking required and elective courses will acquire skills in reading, writing and mathematics.

Disability Studies is an interdisciplinary liberal arts major. Many of the primary source readings are memoirs of people who have disabilities, or have lived with people who have disabilities. There are biographies, memoirs, many materials that provide a rich source of study, discussion and research. The liberal arts context provides for a wide range of study of sophisticated material in history, literature, the fine arts, the sciences, even areas such as criminal justice and legal studies, all of which encourage development of skills in oral and written communication as well as in reading. There is an economic side to the field of disabilities as well, which could provide interesting analytical problems in math.

6) Describe how the program of study will be complementary to the other proposed programs of study and will contribute to the strengthening of inter-disciplinary connections.

The program would find some crossover with the programs in nursing and in Community Health/Patient Care. Students might also be interested in courses offered through two of the other liberal arts programs, Urban Education and Urban Studies. The program is itself an interdisciplinary program and, in its way is a good model. Because the program would have a liberal arts foundation some of the courses in Disability Studies might serve as general education courses for interested students in the more technical programs.

7) Describe how the new college will be able to recruit and select faculty and staff needed to develop and implement the program of study.

Recently the Board Committee on Academic Policy, Program and Research approved a Masters Degree in Disability Studies, to be offered through the School of Professional Studies. The curriculum was developed for that program by Dr. Bill Ebenstein, University Dean for Health and Human Services, in consultation with a Faculty Advisory Committee that included more than a dozen full-time CUNY faculty members. The composition of the committee spans the humanities, the social sciences, health, education and human services professions. Some of these faculty might be interested in supporting a program at the undergraduate level as well. And, as in the nursing program, the new community college would make use of distinguished lecturer lines, affiliated faculty lines and, if possible, clinical faculty lines.

The Society for Disability Studies recently decided to house its administrative offices at CUNY’s John F. Kennedy, Jr. Institute for Worker Education. This organization would likely provide support as well for a program of study, and could be helpful in recruiting faculty.

8) Describe the extent of overlap or duplication of the program of study with existing programs of study at CUNY community colleges and, as necessary, explain why the new program is needed.

There is no other associate degree program in Disability Studies in the CUNY system.

9) Describe the external partnerships that will be developed to support field-based learning for the program of study and provide employment opportunities to graduates.

Dr. Ebenstein is very interested in the possibilities for a program in Disability Studies at the associate degree level. He would be pleased to help the new community college develop the appropriate affiliations to support field –based study, which he feels is critical to the program. Some of the larger agencies he mentioned during our conversation include: the Young Adult Institute, the Association for Retarded Children, United Cerebral Palsy of New York State and United Cerebral Palsy of NYC, and Federation Employment and Guidance Services. He also thought that there would be many small community based agencies that would be pleased to work with the new community college.

10) Describe the special resources, if any, that will be needed to support the program of study.

There are no special resources needed for this program.

11) Indicate whether this program of study is a match with one or more of the CTE schools intended to be a partner school with the college.

There are programs offered in the CTE schools that could provide appropriate background and/or encourage interest in a community college major in Disability Studies.
Program of Study: Urban Education

The primary intent of this program of study will be to prepare students for transfer into a baccalaureate degree program. Students interested in becoming certified teachers will be expected to complete the introductory coursework needed for successful entry into a major program of study at the baccalaureate level that would then lead to initial certification as a teacher in New York State. We do, however, anticipate that some students will be interested in pursuing other complementary fields of study upon transfer. The program would provide students with a substantial introduction to the wide range of subjective and objective factors that shape education in the urban centers of the United States—with a decided emphasis on the specific ways in which those factors shape education in the City of New York. Education will be understood as encompassing traditional schooling at all levels from early childhood through postsecondary and non-traditional education as provided by labor, community and cultural organizations and institutions.

The program will enable students to examine critical issues at both a macro and micro level. Studies might include, on the one hand, the impact of city and state budgeting decisions on schools and students and, on the other, the ways in which small moments in the everyday lives of teachers and students can contribute to success or failure. The program will emphasize the development of knowledge and skill through intensive content-area study in college courses and through extensive fieldwork experiences in schools and other educational settings (as currently modeled in CUNY’s Teacher Academy – described more fully in Appendix XX: Selection of Majors, (Urban Education)).

The core topics to be studied will come from the following disciplines: history, economics, philosophy, literature, the social sciences (psychology, sociology and anthropology) mathematics and education. This, however, should not be understood as meaning that courses will be organized by discipline.

1) Describe the ways in which the proposed program of study is consistent with the mission of the college to prepare its students to be active participants in developing and sustaining the future of New York City.

New York City, with a public school system that enrolls more than one million children, is the nation’s largest system of urban education. The preparation of significant numbers of effective educators who are prepared to make work in education their career is essential to the future well-being of the city. It is all but certain that the future will demand that more of the city’s residents complete more years of schooling and that they achieve higher levels of achievement. That demand will not be met if colleges do not significantly increase their output of highly qualified educators.

2) Describe why prospective college students will be interested in pursuing the program of study and/or describe the ways that significant numbers of students without clearly defined interests might become interested.

The current state of student interest in educational careers in New York City is somewhat paradoxical. Relatively large numbers of undergraduates continue to be interested in preparing to be early childhood or elementary school teachers. Far fewer are interested in working in middle schools and high schools. In the case of math and science, the numbers are especially low. In general, it is probably fair to say that the extent of interest is greatest where the need is the least and vice versa.

On the other hand, many thousands of college graduates who had not studied to become teachers are recruited each year by Teach for America, the NYC Teaching Fellows and CUNY’s own Teaching Opportunity Program to fill positions in the city’s public schools. Those recruitment efforts rely extensively on an appeal to individuals’ interest in making a significant contribution to the futures of the city’s children.
Nonetheless, it is quite clear that many prospective applicants to a teacher preparation program are discouraged by what they perceive to be the very difficult circumstances of a teacher’s work situation and what they imagine to be unacceptably low levels of pay. Any strategy intended to promote greater interest will have to grapple with those perceptions directly. In the course of designing and developing recruitment strategies for CUNY’s Teacher Academy (see below), staff from the University and the Department of Education have been evolving a more precise messaging strategy, a strategy that may be followed by the new community college as well, that will:

- aim complementary messages at three distinct audiences—prospective students, their parents and high school staff;
- rely on key individuals—current Teacher Academy students, parents of those students and outstanding teachers in the city’s secondary schools—to deliver those messages;
- make use of multiple vehicles for delivering messages, including the new electronic social networks and video.

I suggest that we would be able to develop effective strategies to promote interest in the urban education program by highlighting the ways in which students will be prepared to make important contributions to the education of the city’s children and by providing clear evidence that the program of study will be intellectually vibrant and effective in preparing students to become effective educators.

3) Describe how the program of study will both be aligned with employment in fields with substantial openings in the future and provide individuals entering the fields with salaries and benefits that make the acquisition of the credential worthwhile.

The city’s providers of educational services employ hundreds of thousands of individuals and offer numerous opportunities for new entrants each year.

New York City has a public school system that enrolls more than one million children; that system employs more than 135,000 individuals in a wide variety of positions—teachers, counselors, secretaries, paraprofessionals, administrators, and more. In recent years, the New York City Department of Education has employed between 7,000 and 8,000 new teachers annually. While projections suggest a modest decline in the need for new positions in the future, expected demand will still be substantial. The City is also home to many private and parochial schools that employ individuals in similar positions.

The City also has numerous other educational institutions—in the care and education for young children, in a wide variety of after-school programs and community organizations and numerous adult education programs, including a comprehensive adult literacy education initiative (which includes opportunities for English language learning). Finally, the City includes numerous cultural institutions that have educational functions. These include museums, parks, botanic gardens and zoos.

In addition, the City includes numerous institutions of higher education. In addition to CUNY, there are several SUNY institutions located in the city and approximately ____ private institutions. All told, those public and private institutions enroll more than 500,000 students. While teaching positions in the postsecondary sector of course require advanced degrees, there are opportunities for individuals with bachelor degrees to fill essential positions in other offices of the institutions—such as tutoring centers, admissions offices, and student services.

Salaries and benefits vary across the different types of institutions. However, all of the positions in the public school system and most in the higher education institutions are covered by collective bargaining agreements which provide significant employment security and stable and generous benefits. Although many might argue that public school teachers should be better paid than they are, recent salary increases have led to a situation where the starting salary for an individual with the minimum credentials is $43,000 and the annual salary at the top of the scale now exceeds $100,000.

4) Describe how the program of study will equip graduates to qualify for a position in a variety of different employment opportunities related to the field of study and/or qualify them for admission as a transfer student to one or more baccalaureate degree programs.
While most permanent full-time positions in these varied educational settings will almost always require a bachelor’s degree, it is also the case that there are numerous opportunities for graduates from a community college to work on a part-time basis while continuing to pursue the baccalaureate. These opportunities include work as parent coordinators and paraprofessionals in the city’s public schools, tutors and other positions in after-school and summer programs, and guides and other workers in various cultural institutions.

An increasing number of programs at the associate degree level are fully articulated with and jointly registered with programs at the senior colleges. Currently, nine CUNY colleges offer programs leading to the baccalaureate degree and initial teacher certification. In all programs, students major in a discipline other than education and also complete a required sequence of education courses, including student teaching. The programs of study prepare students for work in early childhood, elementary, middle and high schools. In the case of secondary school programs, the programs include a wide range of subject matter specialties.

An effective articulation model will require very careful alignments of the coursework at the new college and any receiving institution. The effectiveness of any combined program of preparation will require common understanding and clear signals regarding required course-taking and expectations of student achievement. While there are many dimensions to the development of an effective teacher, mastery of appropriate content matter is indispensable. This suggests the need to work very closely with interested senior college partners to identify appropriate discipline area majors, including courses that would be offered within the new community college that will fulfill those major requirements, and to establish clear benchmarks of minimum grades.

5) Explain why a program of study in this major could be designed to ensure that students taking required and elective courses will acquire skills in reading, writing and mathematics.

The core courses should require that students engage in extended readings of texts in a wide variety of genres and that they respond to those readings, to classroom discussions and to their fieldwork experiences in varieties of writing that could include narrative, description, analysis, argument and synthesis. A number of the disciplines, beyond mathematics as such, require that students analyze and draw conclusions from quantitative data. Students should be expected to organize and conduct presentations of their work in a variety of different print and electronic formats.

6) Describe how the program of study will be complementary to the other proposed programs of study and will contribute to the strengthening of inter-disciplinary connections.

The faculty responsible for teaching the core courses (with expertise in subject matter traditionally identified with history, economics, philosophy, literature, the social sciences, mathematics and education) would be able to play an important role in the development and provision of general education coursework for students enrolled in all of the other programs of study and somewhat customized courses for students enrolled in programs such as nursing. Many of the courses in Urban Education will be appropriate and of interest to students in the Urban Studies program, and vice-versa. Courses in both these programs will also provide general education classes for students in the health care areas, especially Community Health Worker.

7) Describe how the new college will be able to recruit and select faculty and staff needed to develop and implement the program of study.

Since the disciplinary knowledge required for faculty in this program is not specialized but rather more or less comparable to that required for employment in the liberal arts and sciences at the other CUNY colleges, it is not anticipated that there will be any difficulty in identifying faculty with appropriate knowledge. Also, there will be a fair amount of cross-over between the program in Urban Education and the Program in Urban Studies.

In addition, the Urban Education Program at the Graduate Center offers specializations in: Arts, Humanities, and Social Studies in Urban Education; Science, Mathematics and Technology in Urban Education; and, Urban Education Policy Studies. Graduates of this program may be interested in teaching at the new community college, at least for some set period of time. At the very least there will be a ready supply of graduate students who will be able to work as adjuncts in the program.

It remains to be seen if we will be able to attract individuals with the requisite knowledge and a commitment to teaching and learning.
8) Describe the extent of overlap or duplication of the program of study with existing programs of study at CUNY community colleges and, as necessary, explain why the new program is needed.

Currently, community colleges at CUNY offer the following programs of study:

- two offer programs in bilingual education;
- five offer programs in early childhood/elementary education;
- five offer programs leading to a degree as an Education Associate;
- one offers a program in health education;
- two offer programs in secondary education;
- two offer programs in Liberal Arts/Teacher Education.

The above list needs to be verified and may need to be brought up-to-date. We also need to obtain data from OIRA on enrollment patterns in the different programs. Whatever the results of further investigation, none of the community colleges offer programs in Urban Education, i.e., programs that introduce prospective teachers to the special challenges and opportunities of urban teaching.

As stated earlier, to meet the demand for new teachers in the city, colleges will have to significantly increase their output of highly qualified educators. An early and intensive field experience will give students a taste of what teaching is all about (see below re Teacher Academy) and will make them more effective teachers as well.

9) Describe the external partnerships that will be developed to support field-based learning for the program of study and provide employment opportunities to graduates.

The recent establishment of The Teacher Academy, a partnership between CUNY and the NYC Department of Education, as part of the NYC Partnership for Teacher Excellence, has provided a model that could be adopted and adapted. At the heart of the model is the significant involvement of selected schools that serve as sites for field-based learning by Academy students throughout their studies and that bring teachers and other staff members of those schools into active collaboration with college faculty and staff to develop and implement the overall program.

The Teachers Academy is an innovative model of teacher education. In most cases, prospective teachers are not placed in school classrooms and do not even begin taking education courses until the final two years of their undergraduate career. However, students in The Teacher Academy follow a rigorous and imaginative curriculum and are immediately introduced into New York City’s middle and high school classrooms. The goal is for students to spend nearly 1,000 hours in schools or other learning environments, working with students, before they graduate. In addition, students have opportunities to become familiar with many of the different dimensions of a school’s operation—such as teacher meetings, parent/teacher conferences, and PTA meetings. The aspiring teachers also participate in seminars where they make connections between their experiences and their own learning in other college courses.

The cornerstone of the Teacher Academy is the partnership between CUNY and the NYC Department of Education. Any number of other educational settings could provide similar opportunities. In addition, the large number of educational policy and advocacy organizations in the city could provide other kinds of fieldwork settings wherein students could look at educational issues and ideas from a somewhat detached perspective.

10) Describe the special resources, if any, that will be needed to support the program of study.

There is no apparent need for any special resources.

11) Indicate whether this program of study is a match with one or more of the CTE schools intended to be a partner school with the college.

There do not appear to be any likely connections with CTE schools.
Program of Study: Urban Studies

The primary intent of this program is to prepare students for transfer into a baccalaureate degree program with a major in a related field.

Urban Studies is a variation on the traditional liberal arts degree and requires core curriculum across the humanities, social sciences, sciences and the arts. Urban Studies majors use the tools of disciplines such as sociology, anthropology, economics and other social sciences to analyze urban social issues and problems and to study city life, government and services. This program would emphasize intensive examinations of New York City realities and issues—as reflected in neighborhoods and communities, boroughs, the city as a whole, the metropolitan area, the nation and the world. Those issues would include: health care, education, economic development, city planning, housing and neighborhood development, labor relations, transportation, the environment, politics, governance and public administration. The program takes advantage of CUNY’s location - New York City becomes a laboratory in which to examine institutions of urban life, urban cultural dynamics and the social and environmental consequence of urbanization. The interdisciplinary, liberal arts core of the program facilitates transfer to a wide range of baccalaureate programs that lead to careers in the public or private sector.

1) Describe the ways in which the proposed program of study is consistent with the mission of the college to prepare its students to be active participants in developing and sustaining the future of New York City.

This is the first time in history that the majority of people on our planet are living in cities. New York is no exception, with an expanding population of eight million people in the five boroughs and close to 20 million in the greater New York City region. As such it is one of the most complex social and political places in the world. The people who live and work in New York must address, at various times in their lives, issues of housing, transit, living wage employment, access to health care, education, community development, environmental sustainability and social justice.

Higher education institutions must cultivate the skills and talents that are needed to enable the people of this City to manage their daily affairs and to deal with the inevitable social, economic and political challenges that arise in neighborhoods and the city as a whole. Those institutions must also prepare individuals to staff the various public and not-for-profit organizations that engage the city’s people on an everyday basis—so that they are ready to answer questions, solve problems and address difficult situations in ways that are respectful to their clients. By enabling students to think about cities in an informed and integrated way a program in Urban Studies prepares them to explore and understand many of the central issues – including aspects of racism, gender issues, poverty and wealth, and ethnicity - facing the city they live in and in fact much of U.S. society today.

2) Describe why prospective college students will be interested in pursuing the program of study and/or describe the ways that significant numbers of students without clearly defined interests might become interested.

Urban Studies programs tend to attract students interested in social change, students who want a meaningful career in public and community service. There is abundant evidence that young people care deeply about their communities and wish to make a contribution to the betterment of neighborhoods and the larger city. Within CUNY’s College Now program, for example, high school students are avid participants in the Model City Council Program and applicants for the Myself Third Scholarship which recognizes and rewards civic engagement. In addition, an increasing number of College Now projects feature a service-learning component. Beyond College Now, the high schools of the city include an ever-growing number of schools that attract students to programs oriented to themes of law, community research, social justice and social betterment.

Students who intend to go on to a baccalaureate degree will also be attracted to this program because it is interdisciplinary, giving them an opportunity to explore the “ways of knowing” in a wide range of disciplines. This liberal arts background is arguably the most flexible of educations, the one most definitively associated with the critical thinking and communication skills the student will need to succeed in a senior college and subsequently in his or her career.

3) Describe how the program of study will both be aligned with employment in fields with substantial openings in the future and provide individuals entering the fields with salaries and benefits that make the acquisition of the credential worthwhile.
Additional research is needed to determine jobs that might be held by individuals with associate degrees in Urban Studies. The City is administered by a complicated array of public agencies and departments and its people are provided services by another complicated array of community-based organizations. There are also a large number of state and federal agencies based in the City, as well as many not-for-profit policy and advocacy groups. There are many administrative and back office positions in these organizations that could be filled by well-educated graduates, with appropriate skills and competencies. In addition the city is filled with cultural organizations that employ people working towards their baccalaureate degrees in, for example, Visitors Services departments and as guides, and small and large businesses that employ people in retail and back office operations.

It must be kept in mind though that the associate degree in Urban Studies prepares students for transfer into a baccalaureate degree program with a major in urban studies or a related field. Related fields might include urban planning, sociology or social work, public administration, non-profit management, government, business administration, women’s studies or ethnic studies, and a host of others. Jobs in urban professions are ubiquitous and cover a wide range of opportunities in both the public and private sectors. Urban professionals work in planning, designing, managing and operating public services – in transit, disaster preparation, zoning, recreational facilities, social services, city governance, hospital administration, community organization, etc. A background in urban studies is also a good foundation for careers in business, law or journalism. The job the student goes after will be dependent on the major(s) he chooses at a senior college. If the new community college does its job the student will succeed in that major and in his or her chosen career.

4) Describe how the program of study will equip graduates to qualify for a position in a variety of different employment opportunities related to the field of study and/or qualify them for admission as a transfer student to one or more baccalaureate degree programs.

Urban Studies will provide students with a rigorous liberal arts education and an introduction to the research tools used by a variety of social science disciplines. Many of the respondents to the question “What kinds of degree programs will prepare students for modern urban occupations?” in the CUNY online survey affirmed the advantages of a strong liberal arts education. One respondent said, “To thrive in rapid change one must learn how to learn and be able to merge knowledge of various disciplines.” Another noted that a broad liberal arts curriculum is an important step toward employment, as well as for continued education. And a third suggested that liberal arts was important because “technologies change quickly, the abilities to read, write, think critically and speak well ensure that students can negotiate their way through modern occupations.” As indicated above, there will be jobs available to students who stop after two years. Some of these jobs, for example those with public agencies, governed by civil service regulations, will be unionized and provide stable salaries and benefits. But if the student goes on to complete a baccalaureate degree, whether in urban studies or another area, whether full time or while working, the opportunity for a satisfying career will present itself.

Both Hunter College and Queens College offer programs in Urban Studies. The Queens program encourages students to specialize in areas such as Health and Health Policy, Social and Economic Policy, Urban Culture and Identity. The Hunter program is in their Dept. of Urban Affairs and Planning; the program “create[s] an environment for concentrating the urban-related concerns appropriate to a major city college.” But, to reiterate, there are many majors and many degrees that an Urban Studies graduate might find attractive, and that would serve him or her well when it’s time to look for a job. As with any other major, an effective articulation model will require very careful alignments of the coursework at the new college and any receiving institution. The effectiveness of any combined program of preparation will require common understanding and clear signals regarding required course-taking and expectations of student achievement.

5) Explain why a program of study in this major could be designed to ensure that students taking required and elective courses will acquire skills in reading, writing and mathematics.

Urban Studies is the quintessential interdisciplinary program – disciplines such history, political science, sociology, anthropology, economics, literature, criminal justice, psychology, environmental science, mathematics can all be brought to bear on the examination of urban issues and problems. Urban studies majors use the tools and research skills of these disciplines to study city life, government and services.

The core courses should require that students engage in extended readings of texts in a wide variety of genres and that they respond to those readings, to classroom discussions and to their fieldwork experiences in varieties of writing that could include narrative, description, analysis, argument and synthesis. A number of the disciplines, beyond mathematics as such, require that students analyze and draw conclusions from quantitative data. Students should be expected to organize and conduct presentations of their work in a variety of different print and electronic formats.
6) Describe how the program of study will be complementary to the other proposed programs of study and will contribute to the strengthening of inter-disciplinary connections.

The faculty for the core courses in Urban Studies would be especially helpful in developing and teaching courses for students enrolled in programs where matters of urban policy have a significant impact—Urban Education of course, but also the programs dealing with energy and the environment, those that address health care, including Community Health Worker and Disability Studies, Supply Chain Management, Geographic Information Systems. The fact is that students in any one of the other new community college programs might find a course or two in Urban Studies that was relevant and that satisfied their general education requirement.

7) Describe how the new college will be able to recruit and select faculty and staff needed to develop and implement the program of study.

There are a number of doctoral programs in the CUNY system, e.g., Sociology, Urban Education, Public Health, that could provide graduate students who could help with course development and teach as adjuncts. And there are many graduate programs in Urban Studies itself, in New York (including programs at Hunter and Queens) that could also provide faculty.

There are also a number of PhD programs in Urban Studies - including programs at the University of Wisconsin – Milwaukee, MIT, the University of New Orleans - and still others with titles such as Public Administration and Urban Policy, or Urban Design and Planning. All of these programs, and others, will be graduating young scholars looking for college teaching jobs.

And finally, the advantage of offering a program such as Urban Studies in a city such as New York is the possibility for adjunct faculty, or even guest lecturers who are active in the city’s government, community and non-profit agencies.

8) Describe the extent of overlap or duplication of the program of study with existing programs of study at CUNY community colleges and, as necessary, explain why the new program is needed.

There are no associate degree programs in Urban Studies. Hostos Community College offers an associate degree in Public Affairs.

9) Describe the external partnerships that will be developed to support field-based learning for the program of study and provide employment opportunities to graduates.

There are many agencies and organizations in the City, public and private, that could serve as sites for fieldwork opportunities. These include city government, community organizations, cultural institutions, social service agencies and non-profits. There is a well-established practice of providing internships to high school and college students that could be expanded and strengthened. Since these students will be learning to use the research tools of various disciplines, one interesting possibility is to arrange internships in which they are working alongside faculty or graduate students in a particular discipline doing research in an area in which a student is interested. Additional work is needed to establish appropriate contacts with individuals and organization. Students working as interns are often offered jobs upon graduation. While employment was discussed at length above, we should keep in mind that Urban Studies is offered primarily as a transfer degree.

10) Describe the special resources, if any, that will be needed to support the program of study.

There is no apparent need for special resources.

11) Indicate whether this program of study is a match with one or more of the CTE schools intended to be a partner school with the college.

There is no apparent connection to CTE schools.