QUEENSBOROUGH COMMUNITY COLLEGE
OF
THE CITY UNIVERSITY OF NEW YORK

PROPOSAL TO ESTABLISH A PROGRAM IN BIOLOGY LEADING TO THE ASSOCIATE IN SCIENCES DEGREE

EFFECTIVE FALL 2019

SPONSORED BY THE DEPARTMENT OF
BIOLOGICAL SCIENCES AND GEOLOGY

APPROVED BY

QUEENSBOROUGH COMMUNITY COLLEGE ACADEMIC SENATE

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Executive Summary

The Department of Biological Sciences and Geology at Queensborough Community College (QCC) proposes an Associate of Science (A.S.) degree in Biology. The program will allow students to complete their first two years of higher education at Queensborough Community College and transfer to complete their baccalaureate degree in Biology or a related field at the CUNY Senior Colleges and other public and private four-year institutions. This A.S. degree program offers increased educational opportunities for women and other underrepresented minority students in a growing STEM discipline.

The mission of the Department of Biological Sciences and Geology parallels that of Queensborough Community College: to promote scientific literacy and to provide a quality education for our major and non-major students. The Department offers students numerous choices in biology and geology courses, as well as several degree programs including the A.S. in Liberal Arts and Sciences (Mathematics and Science) (L.S.-A.S.), A.S. in Biotechnology, A.S. in Environmental Science, A.S. in Public Health, A.S. in Health Sciences, and the Medical Assistant A.A.S. degree. The Department also takes a leading role in promoting the college-wide goals of broadening and deepening an individual's perspective and of heightening intellectual curiosity and creativity. While we currently have plenty of choices for the students interested in biology-related fields, we realized, after our recent L.S.-A.S. program review, that there is a genuine need for a new A.S. degree in Biology to keep students on track. In particular, many students are confused about the choice between the Health Sciences and L.S.-A.S. programs. Students seeking admission to medical and dental schools in the future mistakenly register for Health Sciences degree only to find out that they are lacking required pre-requisites before transferring to a senior college as juniors. This new A.S. in Biology degree will provide them with all the necessary courses to transfer to a senior college to continue their education seamlessly.

Biology is the third most popular undergraduate major in the nation and is the fourth most conferred degree at the graduate level.[1] National data shows that biology majors tend to be ethnically diverse and more female than male across all ethnic groups that earn this degree. Currently there are about 2.49 M people in the biology-related workforce and growing.[2] It is expected that all biology-related jobs will keep increasing, about 10% over the next decade across the nation.[3]

The proposed curriculum is designed to align with B.S. in Biology programs at the CUNY senior colleges. Articulations are being actively sought out actively for our students to be able to transfer with ease. In addition, the designated Program Outcomes for the curriculum are aligned with the QCC General Education Objectives and with the Learning Goals for undergraduate biology programs. This is also in alignment with nationally recognized skill sets needed by the students in the workforce. These skill sets include reading comprehension, writing and active listening.[2]

The current personnel and physical resources of QCC are adequate to satisfy the needs of the proposed program and its courses. The QCC Biological Sciences and Geology faculty presently include thirty-eight full-time and thirty-seven part-time members; their education, teaching experience and areas of expertise are sufficient to insure the highest quality of instruction. Classroom, laboratory, and library resources also are sufficient to sustain effective instructional and support services. Academic advisement for students in the program will be available both from the Biological Sciences and Geology faculty and the advisement professionals in the STEM Academy.

[1] https://nces.ed.gov/fastfacts/display.asp?id=37
[2] https://datausa.io/profile/cip/26/#radar
[3] https://www.bls.gov/ooh/life-physical-and-social-science/home.htm

Abstract

Queensborough Community College (QCC) of the City University of New York (CUNY) proposes an Associate in Science (A.S.) degree in Biology. This program will become part of a continuum of programs in biological sciences offered at CUNY. The program will have an articulation agreement with Queens College's B.S. degree program in Biology. The curriculum will consist of a strong foundation in STEM courses and CUNY Gateway courses for Biology. This will prepare graduates of the program for transfer into upper division degree programs in Biology without any loss of credit.

Purpose and Goals

QCC proposes to offer an Associate in Science (A.S.) degree in Biology. This degree will enable students to transfer to upper division baccalaureate degree programs in Biology and Biological Sciences, Natural Sciences, and Health Sciences. The goals of the program are to prepare students for further studies in Biology and create sustainable partnerships between QCC, Queens College, and other bachelor's level programs in Biology-related fields of study.

The proposed program builds on the existing LS-A.S. program, Liberal Arts and Sciences (Mathematics and Science). Currently, students interested in pursuing careers in biological science as well as those interested in professional programs in medical fields, veterinary medicine, and related professions are enrolled in the L.S.-A.S. program with a concentration in biology. This program is part of the STEM Academy. The A.S. degree in biology will build on the strength of the L.S.-A.S. The QCC Biology Program will equip students with the knowledge and skills required to succeed in advanced careers in Natural Sciences and Medical fields.

Need and Justification

Queensborough Community College developed and implemented a model of five academies. Students interested in careers in biology as well as pre-med students are supposed to be enrolled in the STEM Academy, while students interested in health service careers should be enrolled in the Health-Related Sciences Academy. The primary transfer degree program for STEM students is the Liberal Arts and Sciences: Mathematics and Science A.S. degree program which includes concentrations for a range of STEM majors including Biology. Such a broad program poses a challenge for both students and advisors. Currently, the program is jointly sponsored by four departments: mathematics, chemistry, biology, and physics. During the Academic Year 2017/2018, a Program Review of the L.S.-A.S. degree was conducted. One of the weaknesses of the program was the extended time to graduation and the amount of extra credits taken by the students. One of the external reviewer's recommendations was to separate the program into individual disciplines (e.g. Biology, Chemistry, Physics, etc.). A separate A.S. degree program in Biology is a step in this direction. It would allow the department to advise and guide students more effectively. The program will also allow students to complete more credits in biology courses prior to transfer. Students will be encouraged to participate in research projects by the inclusion of the courses "Introduction to Biological Research" and "Research Laboratory Internship" in the major electives.

Students who are interested in the Allied Health disciplines such as Nursing, Massage Therapy, Medical Assistant, and related fields are enrolled in programs associated with the Health-Related Sciences Academy. There is a certain degree of confusion among students interested in professional graduate programs in medicine and related fields and they often enroll in the incorrect course of study resulting in the need of taking additional courses required for transfer, and thus postponing their

graduation. About 15% of students switch their program of study (both into and out of the L.S.-A.S. program). A specific degree in Biology will help students in choosing the appropriate program.

Students

Interest/Demand

During the Fall 2017 semester, a survey was conducted in all sections of the first semester of General Biology (BI-201). (See Appendix A: Student Interest Survey.) BI-201 is a Gateway course in the biological sciences. 265 students provided an answer to the question: Would you like a degree program in biology? 48% (128 students) answered "Yes," 34% (91 students) answered "Maybe," 17% (44 students) answered "No," and 1% (2 students) answered "Do not care." Thus, 82.6% of surveyed students expressed interest in majoring in biology. The survey demonstrated that majority of students taking STEM variant biology are interested in the possibility of an A.S. degree in biology.

Enrollment Projections

There are approximately 400 students pursuing the biology concentration within the current L.S.-A.S. degree program. Once this new degree is approved, we expect a similar number of students to pursue the proposed A.S. in Biology degree. We anticipate that the enrollment in the proposed program to grow to that number over two to three years.

Admission Requirements and Advisement

Students seeking admission to the Biology degree program must satisfy the general requirements for entry to Queensborough: completion of either a high school diploma or a New York State Equivalency Diploma. Upon acceptance, students must take the CUNY Placement Exams, which measure proficiency in reading, writing, and mathematics. The College's Office of New Student Engagement will help guide students through this process and prepare them for academic success. Students requiring developmental coursework in Math, Reading, and/or English have a range of options, including the Accelerated Learning Program which allows them to take a credit-bearing course alongside a developmental co-requisite course.

Students enrolled in the Biology degree program will be part of the Queensborough STEM Academy. Queensborough's STEM Academy, together with the Department of Biological Sciences and Geology, will advise students on their curriculum and opportunities for transfer to 4-year institutions. The Transfer Resource Center at the College will also advise students on how to prepare for transfer to specific B.S. degree programs.

Curriculum

The proposed A.S. Biology degree program will require students to complete courses in the following areas: (1) The Pathways General Education curriculum; (2) Biology Major Requirements; and (3) Additional Major Requirements. The 60 credit A.S. Biology degree program consists of 35 credits of Pathways Required and Flexible Core courses and 14–23 Biology major credits. (See Appendix B for descriptions of required courses.)

Program Outcomes

1. Demonstrate proficiency in factual knowledge, conceptual understanding, and methodology required for transfer to the junior year in a baccalaureate program in biology, biological sciences or natural sciences.
2. Disciplinary learning:
   A. Apply mathematics concepts to solve problems in biological sciences.
   B. Demonstrate proficiency in acquiring, processing, and analyzing scientific information in all its forms, as related to biology.
   C. Proficiently convey information specific to the biological sciences, through scientific writing and oral presentation.
   D. Use current technology or experimental techniques to supplement the fundamental concepts and methodology used in the field of biology.
   E. Work collaboratively to acquire and analyze data, or solve problems in the biology related field.
   F. Demonstrate an understanding of ethics in science and responsible conduct of research while analyzing their results and writing lab reports.

Associate of Science (A.S.) in Biology Degree Requirements

The Associate in Science degree program in Biology offers students interested in careers in biological sciences and professional medical fields an opportunity to complete the first two years of study leading to the Bachelor of Science degree.

COMMON CORE REQUIREMENTS	**CREDITS**
REQUIRED CORE 1A:	ENGL-101 English Composition I……3
	ENGL-102 English Composition II……3
REQUIRED CORE 1B:	Mathematics & Quantitative Reasoning
	MA-441[1] Analytic Geometry and Calculus I (required)[1]……4
REQUIRED CORE 1C:	Life & Physical Sciences
	BI-201 General Biology I (required)……4
FLEXIBLE CORE 2A:	World Cultures & Global Issues
	(select one course)……3
FLEXIBLE CORE 2B:	U.S. Experience & Its Diversity
	SP-211 Speech Communication (required)……3
FLEXIBLE CORE 2C:	Creative Expression
	(select one course)……3
FLEXIBLE CORE 2D:	Individual & Society
	(select one course)……3

FLEXIBLE CORE 2E:	Scientific World	
	CH-151 General Chemistry I (required)…….....	4.5
FLEXIBLE CORE 2A, 2B, 2C, 2D, or 2E	One additional Flexible Core course	
	CH-152 General Chemistry II (required)…….....	4.5
	Sub-total	35

REQUIREMENTS FOR THE MAJOR

BIOL-202	General Biology II.....	4
BIOL-203	Cell Biology.....	3
	Sub-total	7

MAJOR ELECTIVES

Select courses from the following list for a total of 7-16[1] credits:

BI-235	Human Anatomy.....	4
BI-356	Principles of Genetics.....	4
BI-357	Bioinformatics.....	3
BI-421	Human Physiology.....	4
BI-453	Biotechnology.....	5
BI-461	Microbiology.....	4
BI-554	Research Laboratory Internship.....	2
	Sub-total	7-16[1]

ADDITIONAL MAJOR REQUIREMENTS

MA-119[1]	College Algebra[1].....	3
MA-121[1]	Trigonometry[1].....	1
MA-440[1]	Pre-Calculus Mathematics[1].....	4
HE-101	Introduction to Health Education	
or		
HE-102	Health, Behavior, and Society.....	1-2
One credit in PE-100, PE-500, or DAN-100 series (one credit courses only).....		1
	Sub-total	2-11
	Total Credits Required	**60**

[1]Depending on their math placement, students may be required to complete MA-119, MA-121, and/or MA-440 (with a C or better) prior to MA-441. Students who are not required to complete one or more of those courses must take additional Major Elective biology courses to reach 60 credits.

All students must successfully complete two (2) writing-intensive classes (designated "WI") to fulfill degree requirements.

The General Education requirements fulfill the Pathways Required Core and the Flexible Core requirements and will include courses in English, Mathematics, Biology, Speech and Social Sciences. The program requirements consist of courses that will provide a solid foundation in General Education and STEM curriculum. Students who do not place at Calculus I will have the opportunity to complete all the required prerequisites within the 60 credits of the program. These courses will prepare students for successful completion of a bachelor's degree in Biology, related majors, and preprofessional programs. Career options range from technical jobs after graduation to careers demanding bachelor's and higher degrees, including research (M.S. and Ph.D.) and professional (M.D., D.D.S, and D.V.M.) degrees. Graduates of this program will be able to go from the A.S. degree all the way through the completion of a Ph.D. or M.D. without leaving the City University of New York.

The scope of courses within the general education and program requirements agrees with Queensborough's mission that "…is dedicated to academic excellence and rigor and to providing an affordable, high-quality education to pre-college, college, and lifelong learners. Our faculty and staff are committed to the holistic development of today's students in a nurturing and diverse environment that prepares them to be successful in a dynamic workforce. The College affirms its open admissions policy and its strong support of critical thinking, intellectual inquiry, global awareness, civic responsibility, and cultural and artistic appreciation." This Biology degree program is comprehensive and serves as a framework for students to become active, responsible partners in their intellectual pursuits. It provides the opportunity for students to achieve their academic and career goals by providing a rich general education core aimed at enhancing students' critical thinking and decision-making skills, and utilizing effective learning strategies. Many of the biology major courses are designated honors courses and many utilize high impact practices and enhanced experiences. Students must also meet the CUNY requirement of the completion of two courses designated as writing intensive.

Shared Governance

The Biology Program will be overseen by the Department of Biological Sciences and Geology, and there will be a program director from the Department of Biological Sciences and Geology. Any changes to the program will be reviewed and approved by the department before being submitted for approval to the College's Academic Senate Curriculum Committee and subsequently to the Academic Senate.

Cost Assessment

Faculty

The Biology faculty have the necessary qualifications, expertise and experience to provide valuable guidance and support to the proposed Biology program. The Biology Department has 37 full-time faculty members, 35 of whom hold doctorate degrees in Biological Sciences. All faculty members are engaged in student advisement and mentoring. A majority of the full-time faculty conduct original research and many of them involve Queensborough students. Biology program students will have opportunity to gain laboratory experience performing research projects. The research students perform experiments both at Queensborough's laboratory facilities and at the institutions of collaborators. To support their research efforts, the faculty have secured and continue to apply for funding from both the CUNY programs and outside of CUNY, including from the NSF and NIH. External funding will provide Biology program students with the opportunity to obtain scholarships to participate in research. The majority of the faculty incorporate high impact practices into their courses, including writing intensive courses, courses incorporating undergraduate research, students working in interdisciplinary groups, common read, global studies, and service learning. Thus, students are expose to enriching experiences inside and outside the classroom.

Facilities and Equipment

The proposed program can be established without requiring Queensborough to increase expenditures in faculty, space or equipment. With the exception of one newly proposed course (BI-203, Cell Biology), all of the courses in the degree program are currently being taught by Biology or other QCC

faculty. Cell Biology (BI-203), which does not include a laboratory component, does not require additional facilities or faculty. All of the courses can be taught in the existing facilities and supplies needed to teach the proposed courses are within the departmental budget.

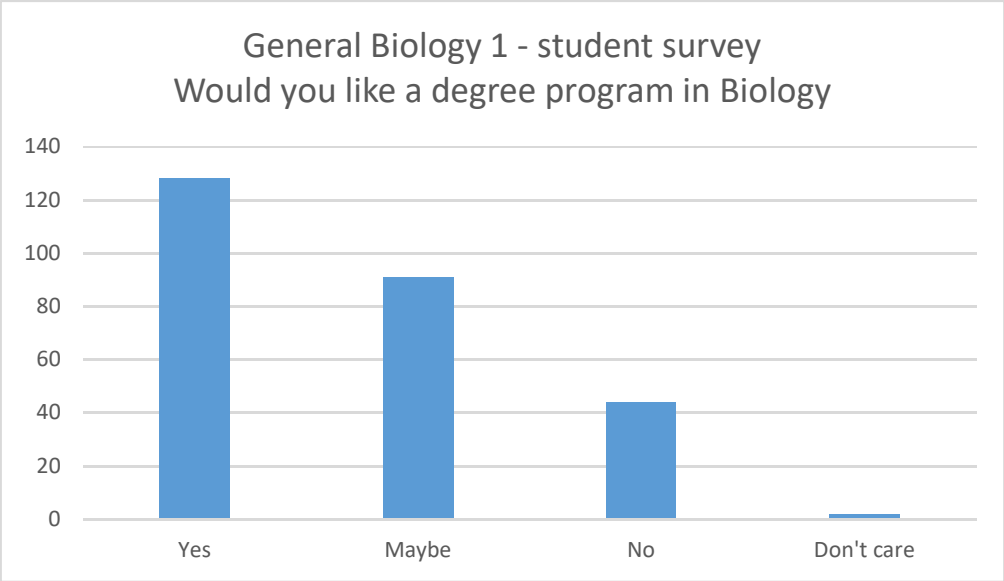
Evaluation

Queensborough Community College has an Institutional Framework in place for evaluating degree programs and for assessing individual courses. Faculty are encouraged to participate in the Assessment Institute that provides guidance on the course assessment. General Education Objectives as well as Program Outcomes are assessed in individual courses. Each degree program is evaluated every five-years on a designated schedule. The program review consists of two parts: a self-study and external evaluation. The A.S. degree in Biology will undergo Program Review in the same manner. The self-study will be conducted by a committee formed by the Biology Department. Using data provided by Institutional Research and individual course assessment posted to the college website for courses applicable to the program, the committees will discuss student outcomes, curriculum, faculty, and facilities; generate major findings; and formulate recommendations. The committee will prepare a report according to a standardized template. An external reviewer, with an expertise in biology, will be invited to read the report, visit the campus and meet with faculty members, administrators, and students. The external reviewer will then prepare a report that includes recommendations. In response to this report, an action plan is developed, followed by an administrative response that operationalizes the action plan and sets the strategic direction of the program for the next five years.

APPENDIX A

Would you like a degree program in Biology?

Yes	Maybe	No	Don't care	Total responses
128	91	44	2	265
48%	34%	17%	<1%	



APPENDIX B

Major course requirements

Required: BI-201, BI-202 and BI-203
BI-201 – General Biology I, 4 credits, 3 hours lecture and 3 hours laboratory
First semester of a one-year General Biology course for science majors. Evolution, structure of the cell, molecular basis of life, classical and modern genetics and molecular biology. Homeostatic control mechanisms, both intracellular and intercellular.

BI-202 – General Biology II, 4 credits, 3 hours lecture and 3 hours laboratory
Strategy of populations in ecology and evolution; diversity of modern plant and animal life, their adaptations and evolutionary relationships. Laboratory includes dissection of representative species.

BI-203 – Cell Biology, 3 credits, 3 hours lecture
This course will provide insight into the structure, function and regulation of animal cells, including cell cycle, subcellular compartmentalization, signal transduction, and cell-cell interactions. Important experimental techniques that led to current understanding of structure and function of cells will be discussed.

Required: MA-441
MA-441 – Analytic Geometry and Calculus I, 4 credits, 4 class hours and 1 recitation. Functions and graphs; derivative of algebraic and trigonometric functions with applications; indefinite and definite integrals with applications; the fundamental theorem of integral calculus; conic sections. Students will develop problem solving skills and construct mathematical models in the computer laboratory using software such as MAPLE, DERIVE, CONVERGE, and MATHCAD.

Required: CH-151 and CH-152

CH-151 General Chemistry I, 4.5 credits, 3 hours lecture, 1hour recitation, 3 hours laboratory
This course is the first part of a two-semester sequence that provides students with a fundamental knowledge of the modern theory in general and inorganic chemistry. It covers topics that are essential to many disciplines in science and technology, and the health professions, with an emphasis on developing problem-solving skills. Topics include matter and energy; chemical nomenclature; mass relationships and stoichiometry; reactions in aqueous solutions; gas laws and kinetic molecular theory; atomic structure and quantum theory; periodicity of elements; chemical bonding and molecular structure; states of matter and intermolecular forces; properties of solutions; and colligative properties. Laboratory work provides training in common experimental methods and hands-on application of theory. The students in Honors classes will attend scientific seminars and write a short paper.

CH-152 General Chemistry II, 4.5 credits, 3 hours lecture, 1hour recitation, 3 hours laboratory
This course is the second part of a two-semester sequence that provides students with a fundamental knowledge of the modern theory in general and inorganic chemistry. It covers topics that are essential to many disciplines in science and technology, and the health professions, with an emphasis on developing problem-solving skills. Topics include enthalpy, entropy, and free energy; chemical kinetics; chemical equilibrium in gaseous and aqueous systems; properties and equilibria of acids and bases;

buffers and acid-base titrations; solubility and complex ion equilibria; qualitative analysis; electrochemistry and redox reactions; and an introduction to nuclear chemistry. Laboratory work provides training in common experimental methods and hands-on application of theory. The students in Honors classes will give 10-15 minute oral presentations on topics and concepts chosen from the course material. This course makes extensive use of computers and requires the development of scientific communication skills.

Required: 7 -16 credits from the following courses

BI-235 Human Anatomy, 4 credits, 3 hours lecture, 3 hours laboratory
The anatomy of the human body from cellular organization to the systems. Laboratory work includes studies of slides, and the human skeleton, and dissection of representative mammals.

BI-461 General Microbiology, 4 credits, 3 hours lecture, 3 hours laboratory
Study of bacteria, molds, yeasts, and viruses, with emphasis on micro-organisms associated with infectious diseases. Laboratory work includes basic microbiological techniques, and procedures for sterilization and disinfection.

BI-356 Principles of Genetics, 4 credits, 4 class hours
Molecular and general genetics. DNA structure, function, replication, mutations, recombinant DNA technology, RFLPs, cloning strategy and application. Gene structure, regulation, genetic code in prokaryotic and eukaryotic systems. Mendelian genetics and its application to population genetics.

BI-357 Bioinformatics/Computational Biology, 3 credits, 3 class hours
Scientific concepts and computational methods of bioinformatics. Topics include sequence alignments, searching for homologous sequences, building phylogenetic trees and protein modeling. Current applications of computational biology in biotechnology and biochemistry. Use of bioinformatics as a tool for research in various biological fields.

BI-421 Human Physiology, 4 credits, 3 hours lecture, 3 hours laboratory
A comprehensive study of human function. Biological chemistry, cellular metabolism, and organ to systemic processes are discussed. Homeostatic mechanisms are stressed. Laboratory exercises demonstrate physiological principles using living systems and train the student in electronic instrumentation and in the use of the computer in report preparation.

BI-453 Biotechnology, 5 credits, 3 hours lecture, 4 hours laboratory
A course in molecular biology that introduces recombinant DNA techniques and methods of genome analysis that are currently employed in industry. Topics covered include gel electrophoresis, plasmid transformation, restriction mapping of chromosomes, Southern hybridization, Polymerase Chain Reaction and forensic DNA fingerprinting.

BI-456 Introduction to Biological Research, 4 credits, 2 hours lecture, 4 hours laboratory
An introduction to current biological techniques including protein biochemistry, molecular biology and microbiology. Other topics include laboratory safety, scientific literature review, analysis and interpretation of data; written and oral communication of results. Students will be expected to carry out group or independent research projects under the direction of the instructor.

BI-461 General Microbiology
This course covers basic principles of microbiology and provides an introduction to the diversity, physiology, morphology, genetics, ecology, applications and pathogenicity of microbes.

BI-554 Research Laboratory Internship, 2 credits, 90 hours
This internship provides an opportunity to learn advanced techniques and gain practical experience working in a modern research laboratory. Students are placed with selected research laboratories for a minimum of 90 hours. Course requirements include submission of a detailed lab notebook and a final report summarizing the activities at the end (exact schedule to be arranged with affiliated lab) of the internship. A final grade will be determined by the internship coordinator based upon the final report, lab notebook, and lab supervisor's evaluation.

Required: HE-101 or HE-102
HE-101 – Introduction to Health Education, 1 credit, 2 class hours
An introductory course in personal and community health designed specifically for students who have been placed in Academic Literacy reading and/or writing, or The English as a Second Language sequence. Topics include mental health, addictions and dependencies, sex and sexuality, diet, exercise and weight control, the major diseases and their relation to morbidity and longevity. In addition, students are required to attend Health Lecture Series Programs and/or related field experiences as a complement to classroom activities.

HE-102 – Health, Behavior and Society, 2 credits, 2 class hours
This fundamental course focuses on the relationship between health and human behavior by exploring the psychological, biological, and socio-cultural perspectives of health. Topics for discussion emphasize disease prevention and lifelong health promotion for the individual and the community. Learning experiences are designed to enable students to develop analytical reasoning skills in order to make informed health decisions and to promote and maintain wellness across diverse cultures. This course will examine major health areas of importance to the individual and society including nutrition, mental health, stress, sexuality, exercise science and addictions

Required: SP-211, 3 credit, 3 class hours
SP-211 – Speech Communication
This course introduces students to the principles and practices of contemporary forms of public speaking in the United States. Selecting topics from current U.S. society and or American history, students will perform research and gather credible evidence from both primary and secondary U.S. sources to create both informative and persuasive speeches. Students are also asked to employ methods taught in this course to analyze both historical and contemporary U.S. rhetoric for authenticity, organizational structure, target audiences and effectiveness as a means of persuasion or communication. Students may be required to complete independent lab hours as a part of the course in order to address proficiency issues in spoken English. Enrollment limited to 22 students.

APPENDIX C

Form 1: New Course Proposal Guidelines/Template (Please fill out all fields except #8. The chair of the Committee on Curriculum will complete that item.)

1. **Department:** Biological Sciences and Geology
2. **Course prefix, number, & title:** BI 203 Cell Biology
3. **Hours (Class, recitation, Laboratory, studio) & Credits:** 3 hour lecture 3 credits
4. **Pre-requisites (if any):** BI 201 General Biology 1
   Co-requisites (if any): None

	Month	Day	Year
5. **Date Approved by Department:**			
6. **Date Consulted with the Office of Academic Affairs:**	11	16	2018
7. **Date submitted to the Committee on Curriculum:**			
8. **Date approved by the Committee on Curriculum:**			

9. **Please state if the proposal was discussed with other department chair(s) with similar interests.**	***Yes**	**No**
	☐	X

If yes, which department(s):

10. **Course Description for College Catalog:**

This course will provide insight into the structure, function and regulation of animal cells, including cell cycle, subcellular compartmentalization, signal transduction, and cell-cell interactions. Important experimental techniques that led to current understanding of structure and function of cells will be discussed.

11. **Rationale: Why the course is needed or desired.**

Cell Biology is a standard course in all biology programs. This course will be required in the new proposed program AS in biology. Queens College and York College were contacted regarding potential articulation agreements and suggested inclusion of the cellular biology course.

12. **Course categories, outcomes, and attributes (**Place an "X" in the appropriate box)

Syllabus clearly articulates: (General education and course level are mandatory)	**Yes***	**No**
…general education outcomes supported by this course	X	☐
…program outcomes supported by this course	X	☐
…course-specific student learning outcomes supported by this course	X	☐

	Yes	**No**
Common Core Course:	☐	X
Requirement for the Major:	X	☐
Elective for the Major:	☐	X
Liberal Arts and Sciences:	X	☐
Writing Intensive:	☐	X
Experimental course	☐	X

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*If you intend to offer this course in the CUNY Common Core, you will need to submit for approval the Common Core Course Submission Form & Syllabus to Dr. A. Corradetti. There are two deadlines each semester for submission.

13. **Academic Programs into which the course would be incorporated and the requirements it will satisfy:**

AS in Biology, LS-1,

14. **Transferability as an elective or course required by a major to senior colleges (with supporting documents if applicable). Include comparable courses at senior or other community colleges, if applicable:**

It will transfer as a major course. It matches Biol 286 Principles of Cell Biology at Queens College.

15. **Faculty available with expertise to teach this course:**

	Instructor 1	**Instructor 2**	**Instructor 3**
Name:	Urszula Golebiewska	Alison Mello	Christopher Roblodowski
Degree:	PhD Physiology & Biophysics	PhD Molecular Biology	PhD Neuroscience

16. **Facilities and technologies required:**

Standard lecture rooms

17. **List of courses to be withdrawn, or replaced by this course, if any:**

N/A

18. **Enrollment limit and frequency the course will be offered (each semester, once a year, or alternating years):**

The course will be offered each semester. Enrollment limit will be as for a standard lecture.

18. **What changes in any programs will be necessitated or requested as a result of this course's additions/charges:**

APPENDIX C

Form 1: New Course Proposal Guidelines/Template (Please fill out all fields except #8. The chair of the Committee on Curriculum will complete that item.)

It is a course for a new program, Associate in Science in Biology

GLOSSARY OF TERMS

Entry-level course	A credit course with no pre-requisites other than passing placement exams or required remediation; usually considered a first semester course; this course may be a pre-requisite for mid-level courses
Mid-level course	A course which has at least one credit course as a pre-requisite; usually a second or third semester course; this course may be a pre-requisite for upper-level courses
Upper-level course	A course, usually taken in the third or fourth semester, which has several credit course pre-requisites
(Student) Learning outcomes	An explicit statement of the competencies (knowledge and skills) a student is expected to demonstrate either in general education, in an academic program or in a course
General education outcomes	The knowledge, skills, attitudes, and values that a student completing an Associate Degree will demonstrate.
Academic Program learning outcomes	An explicit statement of the knowledge, competency, and skills that students must achieve to complete a program of study.
Course learning outcomes	An explicit statement of the knowledge, competency, and skills that students must achieve to complete a course.

Form 4: Syllabus Template (Please fill out all fields)

1.	**Department**	Biological Sciences and Geology
2.	**Course, prefix, number, & title:**	BI 203 Cell Biology
3.	**Hours (Class, recitation, Laboratory, studio) & Credits:**	3 hours lecture 3 credits
4.	**Pre-requisites (if any):**	BI 201 General Biology 1
	Co-requisites (if any):	None

5. Course Description in college catalog:

This course will provide insight into the structure, function and regulation of animal cells, including cell cycle, subcellular compartmentalization, signal transduction, and cell-cell interactions. Important experimental techniques that led to current understanding of structure and function of cells will be discussed.

6. Academic programs for which this course is required:

AS Biology, also may be used to meet requirement in the Liberal Arts and Sciences (Mathematics and Science) Associate in Science (A.S) Degree Program

7. General Education Outcomes: Place an "X" in the appropriate General Education Outcome(s) box that this course supports.

- X 1.Communicate effectively in various forms
- X 2.Use analytical reasoning to identify issues or problems and evaluate evidence in order to make informed decisions
- X 3.Reason quantitatively as required in various fields of interest and in everyday life
- ☐ 4.Apply information management and digital technology skills useful for academic research and lifelong learning

If applicable, check the appropriate program level outcome(s)

- X A. Integrate knowledge and skills in the program of study
- X B. Make ethical judgments while recognizing multiple perspectives, as appropriate in the program of study
- ☐ C. Work collaboratively to accomplish learning objectives

8. Course-specific student learning outcomes: (Expand if needed**)**

a	Demonstrate understanding of the cell as the basic unit of life and discuss the structure, roles and interactions of organelles. Integrate the abundance/absence of organelles with cellular activities.
b	Explain the structure of the genetic material and its relationship to nuclear structure and function. Define chromatin remodeling and correlate chromatin structure with gene expression and cell cycle progression. Discuss gene expression, and correlate the multiple levels of gene expression regulation with cell activity.
c	Provide a conceptual framework for the mechanisms by which proteins, lipids, nucleic acids, and carbohydrates are moved from their sites of synthesis to their ultimate locations. Predict the mechanisms involved in cellular trafficking of a given macromolecule.
d	Define signal transduction and describe the molecules and molecular interactions used by cells to communicate and sense neighboring cells and the environment.
e	Explain the structure of the cytoskeleton and demonstrate an understanding of the ways the cytoskeletal elements enable cell activities such as motility, intracellular transport, and regulation of gene expression.
f	Provide a conceptual overview of cell cycle regulation. Correlate the abundance, location, and activation of cell cycle regulators with cell cycle progression. Understand the process of cell division and relate it to cancer.

9. Program-specific outcomes (if applicable)

Form 4: Syllabus Template (Please fill out all fields)

- Demonstrate proficiency in acquiring, processing, and analyzing scientific information in all its forms, as related to biology
- Proficiently convey information specific to the discipline, through scientific writing and oral presentation

10. Methods by which student learning (general education, course-specific, and, if applicable program specific**) will be assessed and evaluated; describe the types of methods to be employed; note whether certain methods are required for all sections):**

Three multiple choice exams will be given, each with the same weight. Two research papers will be assigned, each with the same weight. 70% of the grade will be from the exams, 30% will be from the papers.

11. Course topics and assignments (include laboratory topics when applicable)

Week	Topics	Sample Assignments (if applicable, Blackboard/Online)
1.	Introduction to the eukaryotic cell: organelles, internal membranes, cytosol, cytoskeleton; Unity and diversity of cells, Chemical components of cells	
2.	Proteins: Shape and structure of proteins, Folding and functions: enzymes, motor proteins	
3.	DNA structure and function, DNA replication, DNA repair	
4.	Gene expression: DNA to RNA, RNA to protein RNA and the origins of life	
5.	Regulation of gene expression and evolution of genomes; Gene regulation; Genetic variation	
6.	Plasma membrane: structure and function, Membrane proteins, Carrier proteins, Ion channels, Intercellular junctions	
7.	Enzymes and Biosynthesis, Catalysis and the use of energy by cells	
8.	Cell Respiration, Breakdown of sugars and fats, Electron transport and proton pumping, Regulation of metabolism	
9.	Intracellular trafficking: Membrane-bound organelles, Protein sorting, Vesicular transport, Secretory pathways, Endocytic pathways	
10.	Cytoskeleton: Intermediate filaments, Microtubules Actin filaments	
11.	Signal transduction pathways and cell Communication: General principles of cell signaling G protein linked receptors, Enzyme linked receptors	
12.	Cell cycle, mitosis, meiosis	
13.	Control of cell cycle and apoptosis Control of cell numbers in multicellular organisms.	
14.	Cancer biology: Tissue maintenance, Tissue disruption by cancer	
15.	Final Examination	

Form 4: Syllabus Template (Please fill out all fields)

12. Sample texts/readings/bibliography/other materials required or recommended for the course (as applicable):

Alberts, Essential Cell Biology, 4th Edition

13. Required attire (if applicable):

None

Form 4: Syllabus Template (Please fill out all fields)

14. Academic Integrity policy (department or College):

Academic honesty is expected of all students. Any violation of academic integrity is taken extremely seriously. All assignments and projects must be the original work of the student or teammates. **Plagiarism will not be tolerated.** Any questions regarding academic integrity should be brought to the attention of the instructor. The following is the Queensborough Community College Policy on Academic Integrity: "It is the official policy of the College that all acts or attempted acts that are violations of Academic Integrity be reported to the Office of Student Affairs. At the faculty member's discretion and with the concurrence of the student or students involved, some cases though reported to the Office of Student Affairs may be resolved within the confines of the course and department. The instructor has the authority to adjust the offender's grade as deemed appropriate, including assigning an F to the assignment or exercise or, in more serious cases, an F to the student for the entire course." The college's policy on Academic Integrity can be found at http://www.qcc.cuny.edu/governance/docs/Academic_Integrity_Document.pdf

16. Disabilities

Any student who feels that he or she may need an accommodation based upon the impact of a disability should contact the office of Services for Students with Disabilities in Science Building, Room S-132, 718-631-6257, to coordinate reasonable accommodations for students with documented disabilities. You can visit the Services for Students with Disabilities website by clicking on this link: http://www.qcc.cuny.edu/SSD/.

OPTIONAL *(May be included by instructors.)*
Student Life, Services: http://www.qcc.cuny.edu/current-students/index.html
Single Stop: http://www.qcc.cuny.edu/singlestop/index.html
Counseling: http://www.qcc.cuny.edu/counseling/index.html

GLOSSARY OF TERMS

Entry-level course	A credit course with no pre-requisites other than passing placement exams or required remediation; usually considered a first semester course; this course may be a pre-requisite for mid-level courses
Mid-level course	A course which has at least one credit course as a pre-requisite; usually a second or third semester course; this course may be a pre-requisite for upper-level courses
Upper-level course	A course, usually taken in the third or fourth semester, which has several credit course pre-requisites
(Student) Learning outcomes	An explicit statement of the competencies (knowledge and skills) a student is expected to demonstrate either in general education, in an academic program or in a course
General education outcomes	The knowledge, skills, attitudes, and values that a student completing an Associate Degree will demonstrate.
Academic Program learning outcomes	An explicit statement of the knowledge, competency, and skills that students must achieve to complete a program of study.
Course learning outcomes	An explicit statement of the knowledge, competency, and skills that students must achieve to complete a course.

APPENDIX D

Table A: Undergraduate Program Schedule

- *Indicate academic calendar type:* **x**☐ *Semester* ☐ *Quarter* ☐ *Trimester* ☐ *Other (describe):*
- *Label each term in sequence, consistent with the institution's academic calendar (e.g., Fall 1, Spring 1, Fall 2)*
- *Use the table to show how a typical student may progress through the program; copy/expand the table as needed.*

Term: Fall semester 01		Credits per classification			
Course Number & Title	Cr	LAS	Maj	New	Prerequisite(s)
ENGL 101 English Composition 1	3	X			BE 112/205 and 122/226 or passing score on CUNY placement, or exemption
MA 441 Analytical Geometry and Calculus 1	4	X			MA 440 with grade of C or better
BI 201 General Biology I	4	X			BE 112/205 and 122/226 or passing score on CUNY placement, or exemption
HE 101 Introduction to Health Ed.	1	X			BE 112/205 and 122/226 or passing score on CUNY placement, or exemption
Flexible Core - one course* from: 2. A, World Cultures and Global Issues OR 2. C. Creative Expression OR 2. D. Individual & Society	3	X			
Term credit total:	**15**				

Term: Spring semester 02		Credits per classification			
Course Number & Title	Cr	LAS	Maj	New	Prerequisite(s)
ENGL 102 English Composition 2	3	X			ENGL 101 or placement
BI 356 Principles of Genetics	4		X		BI 201 with grade of C or better
CH 151 General Chemistry 1	4.5	X			MA 119 and 121
BI 202 General Biology 2	4		X		BI 201
Term credit total:	**15.5**				

Term: Fall semester 02		Credits per classification			
Course Number & Title	Cr	LAS	Maj	New	Prerequisite(s)
CH 152 General Chemistry 2	4.5		X		CH 151
BI 203 Cell Biology	3		X		BI 201
SP 211 Speech Communication	3	X			
BI-357 Bioinformatics	3		X		BI 201
One course from PE 400 or 500 or DAN 100 series	1				
Term credit total:	**14.5**				

Term:		Credits per classification			
Course Number & Title	Cr	LAS	Maj	New	Prerequisite(s)
BI 453 Biotechnology	5		X		BI 201 and permission of the instructor
Bi-461 General Microbiology	4		X		BI-201
Flexible Core one course from 2. A, B, C, or D *	3	X			
Flexible Core one course from 2. A, B, C, or D *	3	X			
Term credit total:	**15**				

Term:		Credits per classification			
Course Number & Title	Cr	LAS	Maj	New	Prerequisite(s)

Term:		Credits per classification			
Course Number & Title	Cr	LAS	Maj	New	Prerequisite(s)

Term credit total:						**Term credit total:**						
Term:		Credits per classification				Term:		Credits per classification				
Course Number & Title	Cr	LAS	Maj	New	Prerequisite(s)	Course Number & Title	Cr	LAS	Maj	New	Prerequisite(s)	
Term credit total:						**Term credit total:**						

Program Totals:	Credits:	Liberal Arts & Sciences:	Major:	Elective & Other:

Cr:= credits LAS = Liberal Arts and Sciences Maj = major requirement New = new course Prerequisite(s) = list prerequisite(s) for the noted courses

APPENDIX E
Faculty Information

Existing Core Faculty

Department Expectations: Identify the specific faculty members that will be responsible for setting the curricular objectives, teaching program courses, advising students, and determining the means by which program and course objectives are measured. Identify the program director.

Core faculty members must meet minimum academic qualifications as identified in Part 52.2(b) of regulation, and be of sufficient depth and breadth to provide leadership, direction, and discharge other responsibilities critical to the start-up of the program.

Note: Faculty curricula vitae or resumes should not be attached to this application and should only be provided if specifically requested by the Department.

Faculty Member Name, Title, and Rank	Courses to be taught	Full-time or Part-time; if Full-time identify % of time to the program	Highest Earned Degree, Discipline, IHE	Additional qualifications which demonstrate professional competence relative to the specific program.
Dr. Urszula Golebiewska, Associate Professor(Program Director)	BI-201 BI-202 BI-203	50	PhD, Physiology and Biophysics, Stony Brook Medicine/Stony Brook University	Expertise in cell biology, particularly membrane biology, coordinator of General Biology 202
Dr. Peter Novick, Associate Professor	BI-201 BI-357	50	Ph.D., Biology, CUNY Graduate Center	PhD work in bioinformatics, developed the Bioinformatics course, coordinator of General Biology 201
Dr. Sara Danzi-Engoron, Associate Professor	BI-201 BI-356	50	Ph.D., Molecular, Cellular & Developmental Biology The City University of New York	Expertise in cell biology, co-coordinator of General Biology 201 course
Dr. Regina Sullivan, Associate Professor	BI-202	20	Ph.D., Biology, The City University of New York	Expertise in cell biology, co-coordinator of General Biology 202
Dr. Andrew Nguyen Associate Professor	BI-554 BI-453	30	Ph.D., Albert Einstein College of Medicine	Expertise in cell biology, teaching the Biotechnology course
Dr. Nidhi Gadura Professor	BI-453 BI-203, BI-554	10	Ph.D. Molecular, Cellular Biology, CUNY	Molecular, cellular biology, biotechnology
Dr. Rochelle Nelson Asst. Prof	Bi-554	10	PhD, Physiology and Biophysics, Stony Brook Medicine/Stony Brook University	General biology, research internship
Dr. Monica Trujillo Assoc. Prof.	BI-461	10	Ph.D. Univ. de la Republica Oriental de Uruguay	Expertise in Microbiology
Dr. Patricia Schneider	BI-201	10	Ph.D. CUNY	General biology, microbiology
Dr. Alison Mello Doctoral Lecturer	BI-203	10	Ph. D., Biology, New York University	Experience in various aspects of cell biology

APPENDIX F

The City University of New York

Articulation Agreement Between

Queensborough Community College

and

Queens College

A. Sending and Receiving Institutions

Sending Institution: Queensborough Community College (QCC)
Department: Biological Sciences and Geology
Program: Biology
Degree: A.S.

Receiving Institution: Queens College (QC)
Department: Biology
Program: Biology
Degree: B.A.

B. Admission Requirements for Senior College Program

Minimum GPA: 2.0

To take advantage of this articulation agreement, students must complete the A.S. in Biology at Queensborough Community College prior to transfer to Queens College. Upon transfer, students must declare a major in Biology. A maximum of 16 credits in Biology may be transferred toward the biology major at Queens College. Additional Biology courses taken at QCC will count as additional course work to reach 120 credits.

Total transfer credits granted toward the baccalaureate degree: 60 credits

Total additional credits required at the Queens College to complete the baccalaureate degree: 60 credits

C. Course-to-Course Equivalencies and Transfer Credit Awarded

Queensborough Community College		Queens College		
Course and Title	**Credit**	**Course and Title**	**Credit**	**Transfer Credits Awarded**
Common Core Requirements		**Course Equivalency**		
Required Core 1A: ENGL-101 English Composition I ENGL-102 English Composition II	 3 3	English Composition 1 and 2: ENGL 110 College Writing I ENGL 130 Writing about Literature in English	 3 3	 3 3
Required Core 1B: MA-440 Pre-Calculus Mathematics	4	Math and Quantitative Reasoning: MATH 122 Precalculus	4	4
Required Core 1C: BI-201[1] General Biology I	4	Life and Physical Sciences: BIOL 105 General Biology: Physiology and Cell Biology	4	4
Flexible Core 2A: Select one course	3	World Cultures and Global Issues	3	3
Flexible Core 2B: SP-211 Speech Communication	3	US Experience in Its Diversity	3	3
Flexible Core 2C: Select one course	3	Creative Expression	3	3
Flexible Core 2D: Select one course	3	Individual and Society	3	3
Flexible Core 2E: CH-151[1] General Chemistry I	4.5	Scientific World: CHEM 113 General Chemistry I	5	4.5
Additional Flexible Core Course: CH-152[1] General Chemistry II	4.5	Additional Flexible Core Course: CHM 114 General Chemistry II	5	4.5
Subtotal	**35**		**Subtotal**	**35**
Requirements for the Major		**Course Equivalency**		
BI-202[1] General Biology II	4	BIOL 106 General Biology: Life-forms and Ecosystems	4	4
BI-203[1] Cell Biology	3	BIOL 286 Principles of Cell Biology	3	3
MA-441[1] Analytic Geometry and Calculus I	4	MATH 151 Calculus/Differentiation and Integration	4	4
QCC Major Electives - Select 7-16 credits:	7-16			
BI-356[2,3] Principles of Genetics	4	BIOL 285 Principles of Genetics	4	4
BI-357[3] Bioinformatics	3	BIOL 385 Special Topics	3	3
BI-461[3] Microbiology	4	BIOL 201 General Microbiology	4	4
BI-453 Biotechnology	5	BIOL 499 (Elective Credit)	5	5
BI-253 Human Anatomy	4	BIOL 499 (Elective Credit)	4	4
BI-421 Human Physiology	4	BIOL 499 (Elective Credit)	4	4
BI-554 Research Laboratory Internship	2	BIOL 390 Research in Biology I	2	2
Subtotal	**18-23**		**Subtotal**	**18-23**
Additional Requirements		**Course Equivalency**		
HE-101 Introduction to Health Education or HE-102 Health, Behavior, and Society	1-2	Elective Credit	–	1-2
One credit in PE-100, PE-500, or DAN-100 series (one credit courses only)	1	Elective Credit	–	1
MA-119 College Algebra (if required)	3	Elective Credit	–	3
MA-121 Trigonometry (if required)	1	Elective Credit	–	1
Subtotal	**2-11**		**Subtotal**	**2-11**
Total	**60**		**Total**	**60**

Notes:

1. These courses count towards the Queens College Biology B.A. course requirements. Some required courses will be taken at QCC as part of the Common Core.
2. BI-356 is a suggested elective. It is equivalent to BIOL 285 Principles of Genetics, which counts as a Foundations Course at QC (see table in Part D).

3. QCC biology majors planning to transfer to Queens College should take one of these courses as their major elective for the A.S. degree. 5 credits of biology major electives taken at QCC will transfer toward the major at QC. The remaining 2-11 credits will transfer as general electives and count toward the 120 credits needed to graduate at QC.

All Queensborough Community College students must complete at least two writing intensive courses, designated as "WI" in the course schedule. Transfer students must take at least one writing intensive course at Queens College, designated W, but this can overlap with the College Option Literature requirement and does not add to the required number of credits.

D. Senior College Courses Remaining for Baccalaureate Degree

Course and Title	Credits
College Option General Education Courses	
One Literature Course (LIT)	3
One Language Course (LANG)	3
Major Courses	
CHEM 251 Organic Chemistry I	5
The B.A. in Biology at Queens College requires that students complete one of these two principles courses: BIOL 285 Principles of Genetics BIOL 287 Principles of Evolutionary Biology If a student completed the equivalent of BIOL 285 (BI-356 at QCC) prior to transfer, then this requirement has been met.	0-4
20-25 credits of BIOL courses at the 200 or above level. At least three of the advanced courses (not including BIOL 344, 381, 390, 391, 395, or 396) must be at the 300 level and at least four must be field/laboratory courses.	20-25
Subtotal	**31**
Additional course work to reach 120 credits	**29**
Total credits to be earned at Queens College	**60**

QCC students are permitted to transfer no more than 16 credits of biology to QC as biology major courses. Those courses will include BI-201, BI-202, BI-203, and one additional biology course (BI-356 recommended) taken at QCC. Additional biology courses taken at QCC will count as additional non-major and non-Pathways course work to reach 120 credits.

Students must complete a minimum of 45 credits in residence at QC during the student's undergraduate career, and at least 30 of the last 64 credits credited toward the degree taken at Queens or the CUNY Graduate Center. All major courses must be completed with a C- or better. Students must earn a cumulative GPA of at least 2.0 based only on work done at Queens College to graduate.

E. Summary of Credits Required

Total credits to be earned at Queensborough Community College	60
Total credits to be earned at Queens College	60
Total credits required for the B.A. degree	120

F. Articulation Agreement Follow-up Procedures

Procedures for reviewing, updating, modifying, or terminating the agreement:

This agreement will be valid for 3 academic years from the Effective Date (below). Each year, there will be a review of the agreement's effectiveness by the Academic Affairs Officers at each institution.

When any of the programs within this agreement undergo any changes relevant to this agreement, this agreement will be reviewed and revised as necessary by the Curriculum Committees of both the sending and receiving program.

Either party may independently cancel this agreement by notifying the other party no less than one academic year before the intended date of cancellation.

Procedures for evaluating agreement:

The academic department, advisement centers, and Offices of Institutional Effectiveness from each campus will keep data on the academic progress of the transfer students. Upon request, Queens College will provide Queensborough Community College with names and academic status of all recent transfer students from QCC pursuing the abovementioned bachelor's degree program.

Sending and receiving college procedures for publicizing agreement:

Queensborough Community College and Queens College will collaborate in publicizing this agreement on their websites and in their catalogs. They will share brochures and other marketing materials including web-based promotions. Transfer advisors will be made aware of this agreement and will have available all necessary materials to publicize the agreement to the students with whom they work.

Members of the Senior College Enrollment Management Division will have this agreement and attend recruitment events at the Sending Institution. They will be assisted by the Office of Academic Affairs and the Transfer Resource Center at Queensborough Community College.

Additional Information

This agreement is deemed to be consistent with the CUNY Pathways General Education curriculum, and will be updated whenever necessary in keeping with changes in the Pathways curriculum. Queens College requires 6-7 credits of additional Pathways classes as part of the College Option, which includes a literature and a language requirement, as well as two Writing Intensive (W) units, with a minimum of one in residency. Writing Units may overlap with other requirements. According to the specifics in this agreement, students will complete a minimum of 60 credits at each institution; however, students who transfer into Queens with more than 60 credits must complete at least 45 credits at Queens College to earn a Queens College degree.

Effective Date: Fall 2019

For Queensborough Community College:

Sandra Palmer, Ph.D. Date
Interim Provost and Vice-President
for Academic Affairs

Michael Pullin, Ph.D. 4/23/19 Date
Associate Dean of Academic
Affairs

Nidhi Gadura, Ph.D. 4/23/19 Date
Chair, Biological Sciences and
Geology Department

For Queens College:

Elizabeth Hendrey, Ph.D. 4/23/19 Date
Provost

Alicia Alvero, Ph.D. 4/23/19 Date
Associate Provost

Daniel Weinstein, Ph.D. 4/23/19 Date
Chair, Biology Department

APPENDIX G

CARRERS FOR BIOLOGY MAJORS

Biology majors study life on different levels starting from molecular and cellular, and ending at population and environmental biology. They study both micro and macroscopic biology and learn diverse research and laboratory techniques. Macroscopic biology involves objects that are measurable and visible by the naked eye. Microscopic biology on the other hand requires microscopes to view the objects being studied. Biology involves global issues from global climate change to cancer research. Students who earn A.S. degrees can enter the work force but more options are available for students who continue their education to earn B.S. degrees. According to Bureau of Labor Statistics employment of life, physical, and social science occupations is projected to grow 10 percent from 2016 to 2026, faster than the average for all occupations. The median annual wage for life, physical, and social science occupations was $66,070 in May 2018, which was higher than the median wage for all occupations of $38,640.

According to the National Center for Educational Statistics over 71,000 students earned bachelor's degree in biological sciences in 2015. The number of students enrolled in biological fields is steadily rising, from 2010 to 2015 it increased by 22%.

Employers recruiting graduates for biology-related jobs include universities and clinical research organizations, zoos or veterinary practices, pharmaceutical and biotechnology companies, hospitals, national and global health, conservation and environmental charities, scientific and technical consultancies, schools and colleges, outreach organizations, such as museums, science centers and broadcast companies.

BIOLOGICAL TECHNICIANS AKA LABORATORY ASSISTANTS help biological and medical scientists conduct laboratory tests and experiments. Employment of biological technicians is projected to grow 10 percent from 2016 to 2026, faster than the average for all occupations. In May 2017, the median annual wages for biological technicians in the top industries in which they worked were as follows: Pharmaceutical and medicine manufacturing – $48,300, Research and development in the physical, engineering, and life sciences – 46,420, Colleges, universities, and professional schools; state, local, and private – 44,000, Hospitals; state, local and private – 43,670, Federal government – 37,830.

CLINICAL LABORATORY TECHNICIANS work behind the scenes and play critical roles in accurately diagnosing diseases. After physicians order blood, urine or tissue tests from patients, these professionals analyze samples and sometimes help interpret the results and suggest next steps for treatment. Entry-level jobs are available at both the associate and bachelor's degree levels in settings such as hospitals, doctor's offices, diagnostic companies, government agencies, universities, environmental testing agencies, forensic labs and law enforcement departments. The median salary in 2017 was $51,770 in 2017.

FORENSIC SCIENCE TECHNICIANS aid criminal investigations by collecting and analyzing evidence. Many technicians specialize in various types of laboratory analysis. Most laboratory forensic science technicians work during regular business hours. Crime scene investigators may work extended or unusual hours and travel to crime scenes within their jurisdiction. Forensic science technicians typically need at least a bachelor's degree in a natural science, such as chemistry or biology, or in forensic science. On-the-job training is generally required for both those who investigate crime scenes and those who work in labs. The median annual wage for forensic science technicians was $57,850 in May 2017. Employment of forensic science technicians is projected to grow 17 percent from 2016 to 2026, much faster than the average for all occupations. However, because it is a small occupation, the fast growth will result in only about 2,600 new jobs over the 10-year period. Competition for jobs is expected to be strong.

AGRICULTURAL AND FOOD SCIENCE TECHNICIANS assist agricultural and food scientists by performing duties such as measuring and analyzing the quality of food and agricultural products. Agricultural and food science technicians work in laboratories, processing plants, farms and ranches, greenhouses, and offices. Agricultural and food science technicians typically need an associate's degree in biology, chemistry, crop or animal science, or a related field. Some positions require candidates to have a bachelor's degree. The median annual wage for agricultural and food science technicians was $39,910 in May 2017. Employment of agricultural and food science technicians is projected to grow 6 percent from 2016 to 2026.

ZOOLOGISTS AND WILDLIFE BIOLOGISTS study animals and other wildlife and how they interact with their ecosystems. They study the physical characteristics of animals, animal behaviors, and the impacts humans have on wildlife and natural habitats. Employment of zoologists and wildlife biologists is projected to grow 8 percent from 2016 to 2026, about as fast as the average for all occupations. More zoologists and wildlife biologists will be needed to study human and wildlife interactions as the human population grows and development impacts wildlife and their natural habitats. Zoologists and wildlife biologists need a bachelor's degree for entry-level positions. The median annual wage for zoologists and wildlife biologists was $62,290 in May 2017.

BIOLOGY HIGH SCHOOL TEACHERS help prepare students for life after graduation. They teach academic lessons and various skills that students will need to attend college and to enter the job market. High school teachers must have a bachelor's degree. In addition, public school teachers must have a state-issued certification or license. The median annual wage for high school teachers was $59,170 in May 2017. Employment of high school teachers is projected to grow 8 percent from 2016 to 2026, about as fast as the average for all occupations.

Lab Technician II
EpiGentek5 reviews - Farmingdale, NY 11735
$39,000 - $42,000 a year
Apply Now

- Job
- Insights

Lab Technician II

Full Time (M-F 9:30am-5:30pm ET)

EpiGentek is a New York-based biotechnology company that focuses on developing and providing innovative technologies, services, and products as a complete and systematic solution for epigenetic related research and drug discovery. Located on beautiful Long Island, with its sandy beaches and fresh bagels, EpiGentek sits less than an hour train ride away from the heart of midtown Manhattan.

Responsibilities:

- Carry out quality control and product testing experiments
- Record and analyze data, and organize and edit technical product literature
- Product preparation according to protocol and supervise the preparation of product components including buffer preparation and component labeling
- Coordinates the resolution of problems relating to product preparation and shipping according to set Standard Operating Procedures

- Setup documentation of product processes, lot numbers, and batch records
- Assist in general laboratory operations

Qualifications:

- Minimum Bachelor's degree in Biology, Biotechnology, or similar life sciences discipline
- Minimum 3 years of biology laboratory or biotech industry experience
- Keen in mathematical and technical concepts
- Attentive to detail and strives for accurate results
- Excellent written and oral communication skills
- Excellent data analysis, problem-solving, and record keeping skills
- Ability to meet continuous due dates
- Computer literate in the use of spreadsheet and word processing applications

Compensation

- Commensurate upon experience, between $39k and $42k base
- Benefits package include medical, dental, and vision insurance
- Retirement fund program with employer contribution matching after 1 year
- Paid vacation days and major holidays

Job Type: Full-time

Salary: $39,000.00 to $42,000.00 /year

Experience:

- lab: 3 years (Required)

Education:

- Bachelor's (Required)

Work authorization:

- United States (Required)

Additional Compensation:

- Bonuses

Benefits offered:

- Paid time off
- Parental leave
- Health insurance

- Dental insurance
- Retirement benefits or accounts
- Employee discounts
- Gym memberships or discounts
- Others

13 days ago

Job: IRC22460

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Description

Job Title **Research Assistant**

Laboratory / Department **Molecular and Cellular Neuroscience**

Department Description

The Laboratory of Molecular and Cellular Neuroscience studies the molecular defects responsible for neurological and psychiatric disorders including Alzheimer's disease, major depressive disorder, Parkinson's disease, and obsessive compulsive disorder, as well as the molecular mechanisms by which neuro- and psychoactive drugs produce their pharmacological actions in these disorders. Research from the laboratory has demonstrated that most neurotransmitters and neuromodulators achieve their actions and interactions on post-synaptic neurons through a process called "slow synaptic transmission." This process involves activation of highly complex signal transduction cascades. For the last 10 years, the group has applied this knowledge and developed a state-of-the-art methodologies (eg. BacTRAP), to the study of the molecular pathways behind various neurological and psychiatric disorders.

Detailed Description

The Research Assistant will contribute to research in the field of Parkinson's disease and psychiatric disorders. Responsibilities include performing a variety of molecular biology techniques such as mammalian cell culture, isolation of DNA, RNA and proteins, Western blotting, PCR, and molecular cloning. In addition the Research Assistant will provide support in maintaining and analyzing transgenic mouse lines (genotyping, tissue sectioning and staining) and behavioral tests. The Research Assistant will have the chance to learn and apply state-of-the-art techniques such as CRISPR/Cas9 gene editing.

Job Requirements

Bachelor's degree in science required; educational emphasis in molecular biology, biochemistry, genetics, neuroscience, or cellular biology preferred. Basic experience in laboratory techniques and willingness to work with transgenic mice required. Experience in mouse handling a plus. Basic computer skills required.

Additional Details

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Research Technician - Chodera Lab

USA-NY-New York 2 weeks ago

Requisition ID 2019-30255 **Category** Research - Laboratory

Company Overview

At Memorial Sloan Kettering (MSK), we're not only changing the way we treat cancer, but also the way the world thinks about it. By working together and pushing forward with innovation and discovery, we're driving excellence and improving outcomes.

For the 28th year, MSK has been named a top hospital for cancer by U.S. News & World Report. We are proud to be on Becker's Healthcare list as one of the 150 Great Places to Work in Healthcare in 2018, as well as one of Glassdoor's Employees' Choice Best Place to Work for 2018. We're treating cancer, one patient at a time. ***Join us and make a difference every day.***

Job Description

The Chodera lab [http://choderalab.org] is currently seeking a **Research Technician** with a life/physical sciences degree who is eager to help design new therapeutics for cancer and other diseases using robots and advanced computing technology. Our lab has a unique automated wet lab [http://choderalab.org/resources] capable of fully automating high-throughput cloning, site-directed mutagenesis, bacterial protein expression/purification, and the collection of high-quality biophysical protein-ligand binding data to advance the design of new cancer therapeutics. As a technician, you would work with our automation system to translate, develop, and refine new protocols and help us scale up existing experiments to generate high-quality open datasets for advancing cancer research.

You have:

- Life or physical sciences BS/BA degree
- Biological wetlab experience
- Strong organizational or project management skills
- Experience with bacterial protein expression, purification, and related molecular biology skills
- Excitement to automate these techniques on our total lab automation system
- Eagerness to learn about (or previous experience with) laboratory robotics and automation
- Coding skills (especially Python) a huge plus
- An unbounded enthusiasm for SCIENCE!

You will:

- Developing and testing robotic lab automation protocols
- Bacterial cloning, protein expression, and purification
- Instrument maintenance (performing routine simple maintenance tasks and coordinating with instrument vendors for service)
- Upkeep of wetlab (orders, inventory, automation waste management)
- Organizing wet and dry labs to keep everything running smoothly
- Work in the basic science arm of a major cancer research institute

Back to top

Accessibility and Equal Opportunity

If a disability prevents you from applying for a job through this website, click here (mailto:HRRC@mskcc.org?subject=Disability%20Accommodations). No other requests will be acknowledged.

MSK is an equal opportunity and affirmative action employer committed to diversity and inclusion in all aspects of recruiting and employment. All qualified individuals are encouraged to apply and will receive consideration without regard to race, color, gender, gender identity or expression, sexual orientation, national origin, age, religion, creed, disability, veteran status, or any other factor that cannot lawfully be used as a basis for an employment decision. Federal law requires employers to provide reasonable accommodation to qualified individuals with disabilities. Please tell us if you require a reasonable accommodation to apply for a job or to perform your job. Examples of reasonable accommodation include making a change to the application process or work procedures, providing documents in an alternate format, using a sign language interpreter, or using specialized equipment.

Your Chance to Make a Difference Is Waiting

Join our talent community (https://externaltalent-mskcc.icims.com/connect?back=intro&hashed=-435744324&mobile=false&width=910&height=500&bga=true&needsRedirect=false) to receive updates on new and noteworthy happenings at MSK.

(https://www.linkedin.com/company/memorial-sloan-kettering-cancer-center/)

(https://www.youtube.com/MSKCareers)

Research Technician I
NYU Winthrop347 reviews - Mineola, NY
Apply On Company Site

- Job
- Insights

NYU Winthrop is a 591-bed university-affiliated medical center, which offers sophisticated diagnostic and therapeutic care in virtually every specialty and subspecialty of medicine and surgery. We are a major regional healthcare resource with a deep commitment to medical education and research, offering a full complement of inpatient and outpatient services.

Position Summary:
We have an exciting opportunity to join our team as a Research Technician I.

In this role, the successful candidate, under supervision, performs experiments and other day-to-day laboratory tasks. Orders supplies, and maintains the laboratory notebook. Prepares data presentation and analysis as well as laboratory cleaning and organization. Assists with manuscripts and grant applications submissions.

Job Responsibilities:

- Under supervision, performs chemical, biological, immunologic, and microscopic assays.
- Prepares buffers and related materials for the other members in the lab.

- Performs basic scientific data analysis derived from experimental studies. Compiles data, graphs, figures and reports. Maintains clear, accurate and detailed records.
- Maintains reagents and consubable stock. Orders supplies,

Professional Assistant l Biology - Anatomy & Physiology

Company Name Suffolk County Community College Company Location

Selden, NY, US

Posted Date Posted 1 day ago Number of applicants

Be among the first 25 applicants

- 

1 connection works here

Professional Assistant I (PAI) Biology - Anatomy and Physiology

Announcement is hereby made for a 12-month term, tenure-track position beginning in the 2019 fall semester on the Ammerman Campus in Selden. Suffolk County Community College is an open admissions institution committed to serving a diverse student population in a variety of degree and career programs.

This is a Unit III position covered under the Faculty Association of Suffolk County Community College collective bargaining agreement with the College.

Job Description

The Anatomy and Physiology Professional Assistant (PAI) manages and coordinates the

Anatomy and Physiology Prep Room at the Ammerman Campus and at the Sayville Center and all associated laboratory classrooms and facilities. The successful candidate must be able to prep the full spectrum of Biology courses offered in the Anatomy and Physiology area, and should be familiar with both traditional and computer-based laboratory instruction. The Professional Assistant should demonstrate outstanding organization skills and a thorough knowledge of the topics covered in Anatomy and Physiology laboratory sections. Recent experience in a science educational laboratory environment is desirable.

The successful candidate will demonstrate an ongoing commitment to excellence in laboratory teaching, professional development and service. The successful candidate will also demonstrate openness to pedagogical innovation, including, but not limited to, the integration of new technologies and new laboratory learning opportunities into the curriculum.

Specific Responsibilities Will Include

Supervise and coordinate the laboratory setup for Anatomy and Physiology I at the Ammerman Campus and at the Sayville Center. This includes the preparation of the laboratory schedules for all sections, the coordination of day and evening classes and laboratory Professional Assistants.

Collaborate with Biology instructors to design and plan the lab topic schedule and integrate all laboratory curricular changes for the academic year. Coordinate with classroom faculty to promote "good lab practices" and a safe learning environment. Be familiar with the laws and regulations regarding educational biology laboratories.

Prepare the Anatomy and Physiology I yearly budget. Order, purchase and keep inventory of all supplies, chemicals, glassware, specimens, models, equipment, and service contracts for Anatomy and Physiology I at the Ammerman Campus and the Sayville Center.

Prepare and manage all complex solutions, stains, and reagents following recommended safety protocols for preparation, storage, usage and safe disposal.

Manage all specimens for these courses including their purchase, maintenance, storage and safe disposal.

Manage all microscope slides in the Anatomy and Physiology I labs and prep-rooms by maintaining a semester inventory and prep-room slide database and ensuring quality control. Report to the departmental microscope slide curator.

Maintain equipment in proper working condition.

Required

Qualifications:

A Bachelor's Degree in Biology or a closely related field. College-level educational laboratory experience or research lab experience in Biology or a closely related field.

Preferred

M.S. degree in Biological Sciences with intensive laboratory experience.

Step 1

Click On The Following Link

http://www.sunysuffolk.edu/About/Employment.asp

Step 2

Select position #19-11 and read the description.

Step 3

Click Apply Online to submit resume and cover letter.

The New York State Retirement and Social Security Law requires retirees of a public pension plan within the State or City of New York to disclose prior public employment and pension plan history for the purpose of establishing a retiree's eligibility for employment.

Seniority Level

Entry level

Industry

- Non-profit Organization Management
- Higher Education
- Government Administration

Employment Type

Full-time

Job Functions

- Education
- Training

Dept-Scientific Research-Research Assistant

The Metropolitan Museum of Art • 1000 Fifth Avenue , New York, NY 10028, US

Posted 4 weeks ago • Over 200 applicants

14 alumni work here

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About the Metropolitan Museum of Art
The Metropolitan Museum of Art collects, studies, conserves, and presents significant works of art across all times and cultures in order to connect people to creativity, knowledge, and ideas.
The Met presents over 5,000 years of art from around the world for everyone to experience and enjoy. The Museum lives in three iconic sites in New York City—The Met Fifth Avenue, The Met Breuer, and The Met Cloisters. Since it was founded in 1870, The Met has always aspired to be more than a treasury of rare and beautiful objects. Every day, art comes alive in the Museum's galleries and through its exhibitions and events, revealing both new ideas and unexpected connections across time and across cultures.
About the Department
The Department of Scientific Research works in conjunction with and in support of curatorial and conservation departments to address the challenges of understanding and preserving works of art in The Met collection.

Leveraging the most advanced analytical technology toward the investigation of works of art, Museum scientists study authenticity, provenance, attribution issues, and investigate artists' materials and techniques. In collaboration with conservators, Museum scientists strive to determine the original appearance of works of art under treatment, they develop new conservation methodologies, and monitor the Museum environment to create the best preservation outcomes for the collection.

GENERAL STATEMENT OF RESPONSIBILITIES & DUTIES:
This role provides technical and administrative support under the general direction of the Environmental Research Scientist in the Preventive Conservation Science Laboratory (PCSL). The main areas of activity include conservation and building materials selection and testing, environmental monitoring, display case leak testing, micro-chemical testing, and insect monitoring, identification, and abatement. Duties will include the maintenance of databases, collection of technical data from primary sources, and communication of test results in the form or reports. The role also includes maintaining related equipment and supplies.

PRIMARY RESPONSIBILITIES & DUTIES:

- Conducts quality assurance testing on display, storage, transport, and construction materials, evaluating commercially available materials for compatibility with artwork using established techniques and protocols.
- Conducts with environmental testing to promote the preservation of the collection. Environmental testing includes the evaluation of temperature, humidity, light, dust, pollution, and vibration levels.
- Conducts environmental testing to promote the preservation of the collection. Environmental testing includes the evaluation of temperature, humidity, light, dust, pollution, vibration levels, and vitrine leak testing.
- Conducts anoxic treatments and assists conservators in treating art objects for insect remediation.
- Assists conservators in sensor calibration for analytical and environmental test equipment.
- Utilizes and maintains database and web-enabled applications to document and disseminate materials testing and insect related results.
- Examines literature reviews on related topics using scientific and conservation literature, proposing improvements to existing protocols and procedures.
- Writes progress and summary reports, standard operating procedures, and annotated bibliographies on related topics and

How you match

Criteria provided by job poster

Skills
- Chemistry
- Optical Fiber
- Textiles
- Medicine

Contact the job poster

Quanishia Mosley, MPS
Manager of Recruiting at The...

PREMIUM
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Job Details

Seniority Level
Entry level

Industry
Chemicals

Employment Type
Full-time

Job Functions
Other

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The Metropolitan Museum of Art
New York, NY, US
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WeWork
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REQUIREMENTS & QUALIFICATIONS:

Experience and Skills:

- Experience in general laboratory practices (required)
- Experience in preventive conservation, spectroscopy, environmental chemistry, air quality monitoring, or corrosion science (preferred).
- Knowledge testing temperature, humidity, light, dust, pollution, or vibration levels (preferred).
- Knowledge of operating and analyzing data from scientific analytical tools. (required)
- Familiar with statistical analysis of data (preferred).
- Previous museum experience (preferred).
- Proficient in Microsoft Word processing, Excel spreadsheet manipulation, and use of PowerPoint for documenting, processing, and presenting information (required).

Knowledge and Education:

- B.S. in chemistry, materials science, physics, geology, biology or environmental science required.
- General chemistry and organic chemistry lab experience preferred
- Strong command of both written and spoken English.

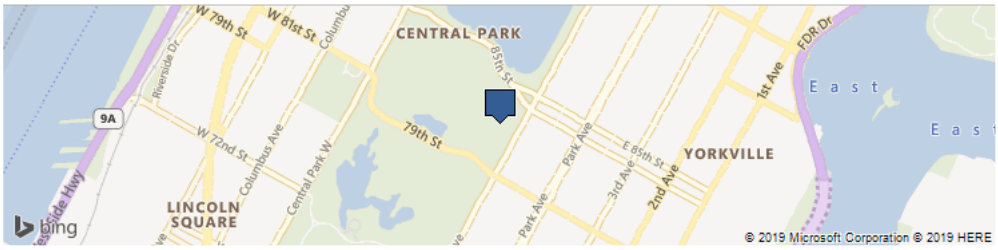
See your commute

From Set starting address

To 1000 5th Ave, New York, NY 10028

At 8:00 AM

N/A N/A N/A



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Highlights

14 people at The Metropolitan Museum of Art also studied at Stony Brook University

About us

From the moment of its founding in 1870, the Metropolitan Museum of Art has been dedicated to the idea of educating the public. Its mission statement was unequivocal on this point, stating that the Met was "to be located in the City of New York, for the purpose of establishing and maintaining in said city a museum and library of art, of encouraging and

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Principal Research Support Specialist - (Descr Title: Project Coordinator - Breeding Bird Atlas)

Company Name State University of New York College of Environmental Sciences and Forestry Company Location Albany, NY, US

Posted Date Posted 4 months ago Number of applicants

Be among the first 25 applicants

2 alumni work here

Principal Research Support Specialist - (Descr Title: Project Coordinator - Breeding Bird Atlas)

Category:Research Foundation

Department:NY Natural Heritage Program

Locations:Albany, NY

Posted:Aug 07, '18

Type:Full-time

Share

About College Of Environmental Science And Forestry

Founded in 1911, the State University of New York College of Environmental Science and Forestry (ESF) is the nation's oldest and most respected school dedicated to the study of the environment, developing renewable technologies and building a sustainable future. The ESF main campus is in Syracuse, NY and has regional campuses throughout Central New York and the Adirondack Park. ESF consistently earns high rankings in US News and World Report, Forbes, Peterson's Guide, The Washington Monthly, Princeton Review and other national college guidebooks.

Job Description

TITLE: Principal Research Support Specialist

DESCRIPTIVE TITLE: Project Coordinator, Breeding Bird Atlas

DEPARTMENT: New York Natural Heritage Program, Albany, NY

SALARY:$50,000 annually (Full time); position is based in Albany, Syracuse, or Ithaca, NY.

PROGRAM BACKGROUND

The New York Natural Heritage Program (NYNHP) is a program of the Research Foundation for the State University of New York College of Environmental Science and Forestry (SUNY- ESF) whose mission is to facilitate the conservation of New York's biodiversity by providing comprehensive information and scientific expertise on rare species and natural ecosystems. NYNHP works in partnership with the New York State Department of Environmental Conservation and other state, federal and private organizations involved in natural resource management, land protection and stewardship, and advancing the conservation of biodiversity.

Project Description

Breeding Bird Atlases, in which volunteer birders systematically document the presence and behavior of bird species over multiple years, are important for obtaining baseline data on a jurisdiction's breeding birds and documenting distributional and phenological change. From 2020-2025, New York will be the first state to conduct its third Breeding Bird Atlas and for the first time will be using eBird (www.ebird.org) to facilitate the collection and storage of data. This Atlas is a partnership between NYNHP, SUNY ESF faculty, the New York State Department of Environmental Conservation, the New York State Ornithological Association, Audubon NY, Cornell University, and the Cornell Laboratory of Ornithology. The Coordinator plays key roles in running day-to-day operations, engaging experienced and novice birders, and ensuring the collection of high-quality data on New York's birds. Funding for this position is in place until summer 2023, after which a renewal through the end of the Atlas is possible pending additional funding.

Brief Description Of Duties

- Oversees the day-to-day implementation of the project by tracking progress on volunteer recruitment and data collection.
- Presents on the Breeding Bird Atlas project and demonstrates eBird to a variety of technical and nontechnical audiences.
- Recruits and oversees regional coordinators and project volunteers around New York.
- Develops scopes of work for contracts and cooperative agreements and administers those agreements.
- Trains groups of birders in project methodology and connects interested birders to other participants.

- Works with eBird team to visualize and summarize Atlas data for a variety of audiences.
- Reports to project Steering Committee at regular meetings and provides periodic progress reports to NYS DEC.
- Works with project Steering Committee to identify and pursue additional funding opportunities.
- Assists Steering Committee and subcommittees with development of field and reporting methodology.
- Drum up enthusiasm for this large citizen science effort.

Requirements

REQUIRED QUALIFICATIONS

- Bachelor's Degree in ornithology, wildlife biology or management, zoology, conservation biology, natural history, natural resources, environmental science, forestry, biology, ecology, environmental education, or related field.
- Expertise in eastern bird identification in the field by sight and sound.
- Experience in avian observational and/or survey methods.
- Proven skills in project management and coordination.
- Strong communication skills (written and oral) to clearly articulate vision and plans, and provide instruction effectively.
- Prioritize activities and multitask.
- Travel throughout NYS; must have valid driver's license.

Preferred Qualifications

- Connections with the birding community in New York.
- Connections with New York State government agencies and non-government organizations with land management or wildlife management responsibilities.
- Proficiency with mobile and desktop versions of eBird.
- Familiarity with the status and distribution of eastern birds, especially New York.
- Familiarity with atlasing methodology.
- Experience with ArcMap or related computer mapping products.
- Develops and disseminates atlas materials.

WORKING CONDITIONS/PHYSICAL EFFORT

May travel throughout New York State conducting field work and may work in variable weather conditions, at remote locations, on difficult and hazardous terrain, and under physically demanding circumstances, in isolated settings.

Additional Information

In accordance with the "Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act" institutions of higher education are required to prepare an annual report containing information on campus security policies and campus statistics. This report includes statistics for the previous three years concerning reported crimes that occurred on-campus; in certain off-campus buildings or property owned or controlled by SUNY-ESF; and on property within, or immediately adjacent to and accessible from the campus. The report also includes institutional policies concerning campus security, such as policies concerning sexual assault, and other matters. You can obtain a printed copy of this report by contacting SUNY-ESF University Police at 315-470-6667 or by accessing the following web site:http://www.esf.edu/univpolice/crimereports/

As an Equal Opportunity / Affirmative Action employer, the Research Foundation will not discriminate in its employment practices due to an applicant's race, color, religion, sex, national origin and veteran or disability status.

Application Instructions

APPLICATION DEADLINE: Although applications will be accepted until the position is filled, candidates should submit their application by September 3, 2018 to ensure optimal consideration.

APPLICATION PROCEDURE: Employment application is required to be submitted on-line. Attach cover letter, curriculum vitae, resume, and contact information for three employment references.

Lab Technician
North American Breweries23 reviews - Rochester, NY
Apply On Company Site

- Job
- Insights

POSITION SUMMARY:
This position involves checking product at various stages of production and verifying the proper operation of testing equipment to specifications. In addition, the position will involve recording and interpreting data, producing reports, and initiating follow up actions as indicated. This position will also be assigned other various tasks as needed to support ongoing projects.

ESSENTIAL FUNCTIONS AND RESPONSIBILITIES

- Using and maintaining laboratory and other testing equipment
- Collection of samples
- Data entry and reporting
- Initiating follow up and corrective actions as necessary
- Adhere to Good Manufacturing Practices (GMPs,) properly wear Personal Protective Equipment (PPEs) and follow all safety and company policies at all times
- Perform other duties as required

SKILLS

- Basic knowledge of science and / or engineering
- Basic laboratory skills
- Basic computer knowledge
- Communication skills – verbal and written

High School Science Teacher

Uncommon Schools • Greater New York City Area

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Messaging

HIGH SCHOOL SCIENCE TEACHER

Teachers hold primary responsibility for the implementation and development of Uncommon's curriculum and the success of its students. Therefore, Uncommon Schools seeks teachers who are committed to continuously improving curriculum and instruction through collaboration as part of a grade level team. We are seeking:

- Biology teachers
- AP Biology teachers
- Chemistry teachers
- Physics teachers
- Engineering teachers

SPECIFIC RESPONSIBILITIES OF HIGH SCHOOL SCIENCE TEACHER

- Teacher will implement curricula and activities to meet academic standards;
- Teacher will design and implement assessments that measure progress towards academic standards;
- Teacher will use assessment data to refine curriculum and inform instructional practices;
- Teacher will participate in collaborative curriculum development, grade-level activities, and school-wide functions;
- Teacher will provide consistent rewards and/or consequences for student behavior;
- Teacher will be accountable for students' mastery of academic standards;
- Teacher will communicate effectively with students, families, and colleagues; and
- Teacher will participate in an annual three-week staff orientation and training.

QUALIFICATIONS

- Drive to improve the minds and lives of students in and out of the classroom;
- Proven track-record of high achievement in the classroom;
- Mastery of and enthusiasm for academic subjects;
- Evidence of self-motivation and willingness to be a team player;
- Bachelor's degree is required; Master's degree is preferred; and
- Minimum of two years teaching/education experience in an urban public school or charter school setting preferred.
- By the time that employment begins, candidates must have received a Bachelor's degree from a College or University. For teaching roles in New York and Massachusetts, candidates must have also earned a cumulative Grade Point Average (GPA) of 2.5 or higher by the time employment begins. For teaching roles in New Jersey, the candidates must have earned a cumulative 2.75 GPA (for candidates graduating before September 1, 2016) or 3.0 (for candidates graduating on or after September 1, 2016)

Valid State Certification is helpful but not required. Belief in and alignment with Uncommon's core beliefs and educational philosophy is non-negotiable.

COMPENSATION

We offer a generous compensation package. All staff members are equipped with the tools needed to succeed, including a dedicated work space, laptop computer, email, high-speed internet access, and all necessary supplies.

The foregoing information is requested for mandatory government reporting purposes only. As an equal opportunity employer, we hire without consideration to race, religion, creed, color, national origin, age, gender, sexual orientation, marital status, veteran status, disability, or any other category protected by applicable law.

See less

How you match

Criteria provided by job poster

Skills

- Tutoring
- Biology
- Science Education
- Chemistry
- Physics
- Life Sciences
- Computer Science
- Engineering
- Qualified Teacher
- AP Biology

Level of education

- Bachelor's Degree

Contact the job poster

Don Taylor
Senior Associate Director of ...
PREMIUM
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Job Details

Seniority Level
Associate

Industry
Primary/Secondary Education

Employment Type
Full-time

Job Functions
Education

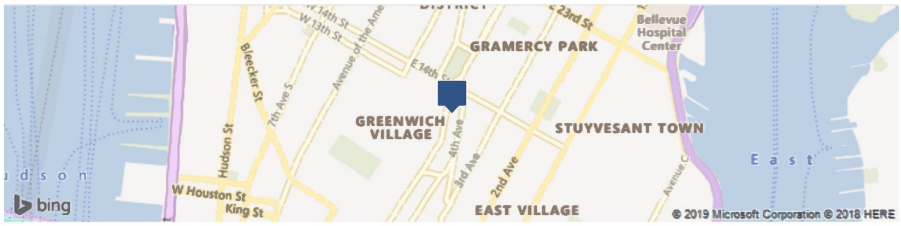
See your commute

From Set starting address

To 826 Broadway, New York, NY 10003

At 8:00 AM

N/A N/A N/A



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Highlights

3 people at Uncommon Schools also studied at Stony Brook University

Uncommon Schools
Primary/Secondary Education • 17,867 followers

+ Follow

About us

Uncommon Schools starts and manages high-performing urban charter public schools that close the achievement gap and prepare low-income students to enter, succeed in, and graduate from college.

See more

Messaging

Conservation Educator, New York Aquarium

Company Name Wildlife Conservation Society Company Location New York City, NY, US

Posted Date Posted 2 months ago Number of applicants

Be among the first 25 applicants

Job Description

Position Title: Conservation Educator, New York Aquarium
Reports To: OnsiteProgram Coordinator
Department: Education
Work Days: Tuesday- Saturday,with some evening & holiday work required

Who We Are: The Wildlife Conservation Society envisions a world where wildlife thrives in healthy lands and seas, valued by societies that embrace and benefit from the diversity and integrity of life on earth. We actively save wildlife and wild places worldwide through science, conservation action, education, and inspiring people to value nature.
The WCS Education Department works across our five parks: Bronx Zoo, Central Park Zoo, Queens Zoo, Prospect Park Zoo, and New York Aquarium. Our mission is to inspire a diverse and inclusive movement of conservation advocates by sparking connection with animals and nature,enhancing scientific literacy through hands-on investigation, and engaging constituents in stewardship and action to conserve wildlife and wild places.
WCS is proud to be an equal opportunity employment workplace dedicated to pursuing and hiring a diverse workforce. We are committed to cultivating an inclusive work and learning environment and look for future team members who share that same value.

The Opportunity: We are looking for an enthusiastic, creative, and committed individual to teach and lead educational programs at the New York Aquarium, with a focus on School and General Audience Programs. WCS Education works with participants from diverse socio-economic and cultural backgrounds, and we are committed to developing and supporting equitable, high quality, STEM and nature-based education for all. The Conservation Educator staff member plays a key role in this mission by developing programs that engage audiences of all ages from across the city, and facilitating specific programming, such as school field trips, ongoing school partnership classes, after-school programming, and general audience programming such as overnights and morning programs.
You have the experience and knowledge of incorporating multiple effective teaching strategies into programming. You are excited to integrate science education with opportunities for program participants to take conservation action. You have a passion for integrating informal science resources into school programming, children and family interaction, and you are committed to engaging diverse, local communities learning. You are adaptable; you enjoy engaging people where they are and supporting their personal learning and needs as visitors. You have excellent communication skills and are comfortable interacting with guests of all ages and backgrounds.

You are a confident problem solver, and you are comfortable working both in a team and independently.

Impact

Collaborate with the Education team to execute our departmental goals and to connect with the New York Aquarium's 700,000 visitors each year.

Responsibilities

- You will conduct educational programs for pre-k through 12th grade students, teachers, children, and families. This will include school programs, summer camps, toddler programs, overnights and other general audience programs and may include supporting birthday parties and special events.
- You will communicate on regular basis with teachers and coordinators whose classes participate in New York Aquarium programs.
- You will develop curricula for new and innovative programs for students, children, and families while taking into account the needs of all audiences.
- You will work to develop new, play-based programming for families and young children in coordination with the opening our new Playquarium Exhibit.
- You will lead and develop curricula for NewYork Aquarium summer camp programming for pre-K and elementary grade levels.
- You will be trained to expertly handle and utilize live animal ambassadors as part of educational programs.
- You will work alongside part time staff,volunteers and interns to help train them to support programming as needed.
- You will facilitate educational programs that inspire children and families in the classroom, at our exhibits, and around the Aquarium when needed.
- You will inspire children and families from diverse socioeconomic and cultural backgrounds with a love of wildlife,science, and conservation.
- You will monitor enrollment for programs you are leading and communicate with the Onsite Program Coordinator and Manager of Education Programs regarding marketing strategies.
- You will communicate on regular basis with program participants including sending welcome letters, program details,teacher confirmations, and post-program surveys.
- You will include consistent conservation education messages in all programming areas.
- You will support the education team in developing materials for and conducting all programs including camps,adult/youth programs, and school field trips.
- You will be an active and supportive team member in the education department through participating in staff development days, team meetings, trainings (both individual and team), and contributing to a positive work environment.

Qualification Requirements

- Qualification Requirements

Qualifications

Minimum Qualifications:

- BS/ BA in Biology, Ecology, Environmental Education or related field
- Some experience developing curricula and teaching formal or informal programs or classes, especially to NYC school groups
- Comfortable building relationships with school and teacher communities to ensure effective marketing and to discuss program needs and satisfaction
- Ability to work some weekends, holidays, and evenings as needed
- Possess a valid driver's license

Preferred Qualifications

- MS/MA in Education or Science
- Two or more years of experience developing curricula and teaching formal or informal programs or classes, including outdoor-based activities, to school groups
- Understanding and familiarity of Standards (Common Core, Next Gen, NY Scope and Sequence)
- Experience developing curriculum and implementing programs that aligns to standards
- Experience or training in working with early childhood audiences
- Experience developing or leading nature play based programming
- Bilingual in English and Spanish a plus

Benefits and Perks

- We value creating a diverse and inclusive work environment and building a culture where everyone is welcomed and can flourish.
- We hire great people and give them opportunities to do great work.
- We offer the opportunity for professional growth through staff development events, WCS scientist talks, workshops, or conferences. WCS Education also offers a Masters in Biology or Teaching of Biological Sciences degree at low cost to employees that are accepted into the program.
- After working for 6 months, you will qualify for up to $3,200 a year for tuition reimbursement.
- We operate in a work environment that includes some weekend and holiday work. Flex time and earned time, as well as holiday, vacation, and sick time are available.
- We prioritize being a fun and collaborative team.
- We offer a competitive salary with a comprehensive medical, dental, and retirement package.

EOE/ AA/M/F/Vets/Disabled