Rensselaer's School of Science offers M.S. and Ph.D. programs in eight academic areas, preparing students for a wide variety of careers in the firmly established areas of mathematics and natural sciences and in the emerging fields of information science.

Many students and faculty in science participate in interdisciplinary centers, including data science, fresh water studies, biosolar energy, terahertz waves, inverse problems, astrobiology, social and cognitive networks, scientific computation, and more. Students often undertake co-op programs with industry and research laboratories.

Applied Mathematics, M.S.
Areas include differential equations, asymptotic analysis, functional analysis, numerical analysis, mathematical programming, and applied geometry. Mathematical modeling and applications of mathematics in the physical sciences, biological sciences, and engineering are also emphasized.

Dawnmarie Robens
Graduate Coordinator
(518) 276-6414
math-program@math.rpi.edu
rpi.edu/dept/math

Applied Science, M.S.
The Master of Science degree traditionally has been in a single subject, e.g., chemistry, physics, or mathematics. However, the working environment that college graduates face today, and will face in the future, is one in which their jobs increasingly bridge more than one area of specialization. The M.S. in Applied Science program, intended for working professionals, is based upon Rensselaer’s belief that science graduates of the past few decades and most current graduates need educational preparation for today’s interdisciplinary world. Options exist in many areas of science. Examples include bioinformatics, polymer science, and computational science.

Joanne Kessler
Admissions Coordinator
(518) 276-6305
kesslj3@rpi.edu
rpi.edu/academics/interdisciplinary/appliedscience.html

Astronomy, M.S.
See Physics description.

Joan Perras
(518) 276-4881
gradphysics@rpi.edu
rpi.edu/dept/phys

Biochemistry/Biophysics, M.S., Ph.D.
Research areas include cell motility mechanisms, bioenergetics, glycobiology, protein folding, cellular bioengineering, and biofluid mechanics. Structure, function, synthesis, folding, stability, and purification of various proteins and nucleic acids are being studied by molecular modeling, NMR, ESR, fluorescent probes, proteomics, and molecular genetic techniques.

Jody Malm
Admissions Coordinator
(518) 276-2808
malmj@rpi.edu
rpi.edu/dept/bcbp
Biology, M.S., Ph.D.
Areas of research include cell, molecular, and developmental biology, genetics, neurobiology, cancer biology, stem cell biology, structural biology, bioinformatics, molecular and cellular biophysics, computational biology, bioenergetics, biochemistry, tissue engineering, microbiology, freshwater ecology, and environmental sciences. The program emphasizes interdisciplinary training, use of cutting-edge technologies, and close interactions between students and faculty.

Jody Malm
Admissions Coordinator
(518) 276-2808
malmj@rpi.edu
rpi.edu/dept/bio

Chemistry, M.S., Ph.D.
Research areas include analytical and bioanalytical chemistry, biochemistry/biophysics, carbohydrate chemistry, cheminformatics, computational chemistry, inorganic and bioinorganic chemistry, materials informatics, organic chemistry, polymer and materials chemistry, and surface science. Programs are designed to fit the needs of individual students.

Sharon Gardner
Admissions Coordinator
(518) 276-2140
dennis@rpi.edu
rpi.edu/dept/chem

Computer Science, M.S., Ph.D.
Research is conducted in algorithms, artificial intelligence, natural language processing, computer graphics, robotics, computer vision, network science, social networks, semantic web, data infrastructure, data mining, machine learning, bioinformatics, security, pervasive computing, distributed systems, high performance computing, programming languages, and software engineering. Entering students are expected to have a substantial academic background in computer science and mathematics. Previous research experience preferred.

Terry Hayden
Admissions Coordinator
(518) 276-8419
grad-adm@cs.rpi.edu
cs.rpi.edu

Geology, M.S., Ph.D.
Research areas include astrobiology, geochemistry, geomicrobiology, igneous and metamorphic petrology, structural geology, tectonics, geophysics, seismology, paleoceanography and micropaleontology, chemical hydrology, and river and lake pollution.

Karen Hardik
Admissions Coordinator
(518) 276-6474
ees@rpi.edu
rpi.edu/dept/ees

Mathematics, M.S., Ph.D.
Research areas include analysis, methods of applied mathematics, differential equations, dynamical systems, inverse problems, numerical analysis, mathematical programming, operations research, data mining, and applications of mathematics in the physical sciences, biological sciences, and engineering.

Dawnmarie Robens
Graduate Coordinator
(518) 276-6414
math-program@math.rpi.edu
rpi.edu/dept/math

Multidisciplinary Science, M.S., Ph.D.
The School of Science offers graduate programs leading to a Master of Science or Doctor of Philosophy degree in Multidisciplinary Science. These degrees allow students, who have traditional discipline-oriented backgrounds, to function more effectively in academic, industrial, or governmental positions that are multidisciplinary in nature. Prior to admission to the program, each student must contact a faculty member at Rensselaer concerning the proposed multidisciplinary research and must demonstrate that financial support is available. With the help of the faculty member, who will be the principal research adviser, each student must prepare a preliminary research proposal that clearly indicates why this research is suited for the multidisciplinary program instead of a departmental program.

Joanne Kessler
Admissions Coordinator
(518) 276-6305
kesslj3@rpi.edu
rpi.edu/academics/interdisciplinary/appliedscience.html

Physics, M.S., Ph.D.
Astronomy, M.S.
Research areas include experimental, theoretical, and computational condensed matter physics, surface physics, nanostructures, nanoparticles, and disordered materials; experimental and theoretical high energy and nuclear physics; optical and electronic properties of artificial structures; ultra-fast and non-linear optical phenomena; terahertz spectroscopy; statistical physics and complex networks; astrobiology; astrophysics of interstellar matter and star-forming regions, structure, evolution, and dark matter in the Milky Way galaxy.

Joan Perras
(518) 276-4881
gradphysics@rpi.edu
rpi.edu/dept/phys