Definitions to get you started on the pathway...

Research:
The careful study of a subject through experimentation that helps in the discovery and interpretation of new facts.

Laboratory:
A room or building with special equipment for conducting scientific experiments and tests.

Life Sciences:
An area of science that deals with living things and life processes.

Bioinformatics:
The study of the make up of the body and the coding system of DNA.

Industry partners will support the development of curriculum and give students the opportunity to use state of the art technology while actively engaging in real world scientific research. Through project based learning in both the classroom and laboratory settings, students will develop their leadership and interpersonal skills through collaborative mentorships and joint research opportunities. Partners will open facilities to students for field visits, distance conference learning, and equipment use for students. Our industry partnership:

• Empire Genomics Company

University partners will support our students in this unique learning environment. Undergraduate and graduate students will assist in the labs and classrooms, serving as role models and mentors. Faculty and researchers will help students access networking and medical industry opportunities available on the Buffalo Niagara Medical Campus. Our university partnerships:

• University at Buffalo (UB)
• UB’s New York State Center of Excellence in Bioinformatics and Life Sciences
• UB’s Interdisciplinary Science and Engineering Partnership

The Western New York Department of Labor identifies STEM and Medical Research Career Pathways as 17 of the 26 fastest growing occupations through the year 2020.

Our industry partnership:

• Empire Genomics Company

For more information, please contact Michelle Zimmerman
(716) 816-4500

Research Laboratory for Bioinformatics and Life Sciences
High School Program
MST Annex
**Science Courses and Experiences:**

**Freshmen Year:**
Regents Biology Course, Interactive Biology Laboratory Journal, Media Research Skills I, Medical Research and Ethics Collaborative Inquiry Project, Portfolio and Presentation.

**Sophomore Year:**
Regents Chemistry Course, Interactive Chemistry Laboratory Journal, Media Research Skills II, Chemistry Research and Experimentation Collaborative Inquiry Project, Portfolio and Presentation.

**Junior Year:**
Anatomy and Physiology Course Interactive Laboratory Journal, Media Research Skills III, Evolution and Genetics Collaborative Inquiry Project and Presentation. This project can be used for college entrance portfolios.

**Senior Year:**
Physics or Advanced Placement Course and Research Opportunity. Students will be responsible for applying their scientific knowledge of the scientific method processes and develop, in collaboration with teachers, mentors, and peers, a final inquiry research portfolio project of their own design. Students will defend their work and findings before a panel of community partners and industry professionals. This project can be used for college entrance portfolios.

**AN INNOVATIVE PATHWAY FOR STUDENTS AND PARENTS**

We will offer...

- Innovative project-based learning
- Online experiences with colleges and hospitals
- Professional communication skill development
- Hands-on collaborative learning environment
- Opportunity to network with university and industry professionals
- Access to learning experiences in the Buffalo

**College and career possibilities after attending Research Laboratory for Bioinformatics and Life Sciences Program:**

- **Lab Career Fields**
  - Medical Laboratory Technician
  - Histologist
  - Bioinformaticsist
  - Bioinformatician
- **Biomedical Engineering Career Fields**
  - Drug Therapy Researcher
  - Vaccine Development Researcher
- **Business Career Fields**
  - Patent Attorney
  - Medical Lab Sales Representative
  - Lab Accountant
  - Lab Manager
- **Civic Career Fields**
  - Genetic Counselor
  - Bio Ethics Researcher
- **Environmental Career Fields**
  - Alternative Energy & Waste Clean Up Researcher
  - Agricultural Studies Researcher
- **Agriculture Researcher**
  - Crop Resistant Insects
  - Nutritional Quality in Soils
- **Comparative Animal Studies Researcher**