



TECH VALLEY COMPENDIUM OF
**EDUCATIONAL
PROGRAMS**

WITH SPECIAL GUEST

U.S. Senator Hillary Rodham Clinton

DECEMBER 6, 2005

Schenectady County Community College



The Graduate College
of UNION UNIVERSITY





PREPARING A WORLD-CLASS
WORKFORCE FOR TECH VALLEY

CONFERENCE

ACKNOWLEDGEMENTS

THE GRADUATE COLLEGE OF UNION UNIVERSITY

WOULD LIKE TO ACKNOWLEDGE THESE ORGANIZATIONS
FOR THEIR SUPPORT OF THIS IMPORTANT INITIATIVE.





I am pleased to introduce the Graduate College of Union University's *Tech Valley Compendium of Educational Programs*.

This document highlights some of the most interesting K-12, vocational, and higher education programs that are available throughout Tech Valley. While this is not intended to be a complete listing of every class and seminar offered in the region, it is an important first step toward developing a repository of exciting and innovative education programs that we offer. As the initial version, we recognize this document does not include some excellent programs already in existence. You can help us make this document more complete.

If you see a program that interests you: Call or email the contact person and explore ways to collaborate or learn from their experiences. By leveraging each other's expertise, we can build on our successes and create even more imaginative programs and partnerships for the future.

If you know of a program that should be listed: Go to www.gcuu.edu and complete the form to have it added. This is intended to be a living document. Updates will be published periodically on a variety of local websites.

We hope that this compendium will spark discussion about what school districts, colleges and universities, state and local government, and the entire range of NYS businesses must do to ensure that our education programs are aligned with our current and future needs.

As we prepare our children, our communities, and ourselves for Tech Valley, it is essential that we continue to work together for a better future. This document, and the associated "Preparing a World-Class Workforce for Tech Valley Conference," is intended to be another step in this important journey.

GCUU is honored and excited to be able to contribute to this important effort. I look forward to working with each of you as we continue to build an even stronger and more vibrant Tech Valley!

Sincerely,

A handwritten signature in black ink that reads "Susan Lehrman". The signature is written in a cursive style.

Dr. Susan Lehrman
President, Graduate College of Union University

The Graduate College of Union University (GCUU), formerly Union College's Center for Graduate Education and Special Programs, was formed and chartered by the State Board of Regents in 2003. GCUU provides marketable cutting-edge degree programs that prepare a diverse student body to enter, or re-enter, their professional fields as team-oriented leaders to initiate beneficial change with a global perspective for today's competitive world. Serving full-time, part-time and distance-learning students, the College is made up of three graduate schools and a center: the School of Management, the School of Education, the School of Engineering and Computer Science, and the Center for Bioethics and Clinical Leadership. More information is available at www.gcuu.edu.



December 6, 2005

Welcome to the Tech Valley Workforce Conference!

Today's conference recognizes the growth of high technology research in the Hudson Valley and the Capital Region making the Tech Valley a perfect destination for new manufacturing initiatives in nanotechnology, biotechnology, life sciences, and other new technologies. To meet the needs of these growing industries, we must ensure that we have a highly educated and skilled workforce from earliest education through the graduate level.

I am delighted that the Graduate College of Union University has prepared the Tech Valley Compendium of Educational Programs. This book lists the varied, comprehensive and exciting programs available to support education and training in math and sciences for Tech Valley students as well as the initiatives of business and industry to support these educational efforts.

I look forward to today's discussions and to working with the business and educational institutions of Tech Valley to ensure that we have a skilled and educated workforce prepared to support the areas economic growth.

Sincerely yours,

A handwritten signature in black ink that reads "Hillary Rodham Clinton". The signature is written in a cursive, flowing style.

Hillary Rodham Clinton
United States Senator

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Albany High School Courses

Albany High School
700 Washington Avenue
Albany, NY 12203
Phone: (518) 454-3987

Contact: Michael T. Cioffi, Principal E-Mail: mcioffi@albany.k12.ny.us

Advanced Computer Applications Course

- This course provides both a practical and conceptual background in microcomputers. Students receive hands-on experience while learning the latest graphical interface technology.

Computer Aided Design (CAD) Course

- This course exposes students to CAD terminology, history, components, applications, design functions and careers.

Computer Applications Course: Internet Emphasis

- This course provides students with hands-on experience with a variety of computer applications. As part of the course students design and implement their own websites.

Computer Repair Servicing and Upgrading Course

- This course provides a study of PC technology, how it works, and the operating system that controls it. Students learn about components that make up a PC, learn to take precision measurements using a digital multimeter, develop a mastery of industry standard operating systems and learn to troubleshoot.

Desktop Publishing Course

- In this course students design and produce professional quality documents and publications that combine text, graphics, illustrations, and photographs. (3 HVCC credits)

E-Commerce/Marketing Course

- Students operate and maintain an internet-based website.

Robotics Course

- This course is the study of robot manipulators, power supplies, classification, controllers, and robots in manufacturing. Students participating in this class are involved in FIRST Robotics national competition.

Technology Applications in Mathematics Course

- This course is designed to explore various applications technology has. The graphing calculator is used extensively in this course.

Albany High School Programs

Albany High School
700 Washington Avenue
Albany, NY 12203
Phone: (518) 454-3987

Contact: Michael T. Cioffi, Principal E-Mail: mcioffi@albany.k12.ny.us

CISCO Computer Networking Academy Program

- This networking program is designed to help meet the needs and demands for skilled technicians. It is a two-year program beginning in eleventh grade. Course content includes IPX and Novell protocol, LAN Segmentation, utilizing bridges, switches, routers, and Ethernet protocols, WAN configuration, Frame relay, ISDN protocols and a threaded case study. The program ends with an internship and CCNA test (CISCO Certified Network Associates). Students are eligible for 9 college credits upon successful completion of this program.

Computer Multimedia Programs

- This class provides instruction relative to the hardware and software used in multimedia production. Topics include hardware and software used for multimedia, application software, pre-production process and layout, production and editing of digital images.

International Baccalaureate Organization Diploma Programme

- Albany High School is authorized to offer the Diploma Programme of the International Baccalaureate Organization. Albany High School is an "IB World School." The program is a comprehensive, two-year international curriculum. The program incorporates the best elements of national systems, without being based on any one. Internationally mobile students are able to transfer from one IB school to another, while students who remain close to home benefit from a highly respected international curriculum. The IBO's goal is to provide students with the values and opportunities that will enable them to develop social judgment, make wise choices, and respect others in the global community. The program equips students with the skills and attitudes necessary for success in higher education and employment.

Senior Career Explorations Program

- Career Exploration Programs are an exciting learning approach for seniors at AHS. The programs give the students an insider's look at what it is like to work in a particular field. The programs place students in many and varied types of working environments. The purpose of the programs is to give students a directed transition to their next level of professional development. Students completing these programs receive 2 credits in Career Education and 1 credit in English 12 and Social Studies 12. Both English 12 and Social Studies 12 are integrated into the specific career or technical area and are taught from that focus. All programs teach to college credit (from 6-9 credits). Partnerships exist with post-secondary institutions - University at Albany, College of St. Rose, R.P.I., and Hudson Valley Community College.

Alternative Education Program

Capital Region BOCES Career and Technical School
1015 Watervliet-Shaker Rd
Albany, NY 12205 (Albany campus)
174 State Route 30A
Schoharie, NY 12157 (Schoharie campus)
Phone: (518) 862-4800 (Albany campus)
(518) 295-3000 (Schoharie campus)
Contact: Hank Stopinski, Director of Career & Technical Education
Phone: (518) 862-4744 E-Mail: hstopins@gw.neric.org

Description: The Alternative Education program at the Capital Region Career and Technical School is designed for students who may be more successful in a learning environment other than their home high school. The Alternative Education program offers high school Regents academic courses (science, math, social studies, English, etc.) along with the opportunity for students to enroll in career and technical education programs of study. Alternative Education classes are traditionally smaller in size, providing students with more individualized attention. In addition to building students' transcripts and career options, such a combination of Regents-level academics and career and technical education enhances self-confidence and social skills. Students also may earn a New York State Regents Diploma with a Career and Technical Education Endorsement. The Capital Region Career and Technical School is operated by the Capital Region Board of Cooperative Educational Services (BOCES) and serves more than 1,300 high school and adult students from 25 school districts in Albany, Schenectady, Schoharie and southern Saratoga counties.

Partners: The Capital Region Career and Technical School is operated by the Capital Region Board of Cooperative Educational Services (BOCES) and is advised by a volunteer Board of Education and more than 300 representatives of local business, industry and the local educational community who sit on advisory committees for career and technical education programs.

Funding Sources: As a BOCES program, the Capital Region Career and Technical School is regulated by the New York State Education Department and operated under the leadership of the Capital Region BOCES District Superintendent.

Applied Technology Education (MS in Education, Bachelor of Arts)

**The College of Saint Rose
432 Western Avenue
Albany, NY 12203
Phone: (800) 637-8556**

**Contact: Travis Plowman, Asst Professor Phone: (518) 454-5279
E-Mail: plowmant@strose.edu**

Description:

Both the MSED and BA programs in Applied Technology Education lead to NYS certification to teach technology education in grades K-12. The master's program is designed for career changers with bachelor's degrees and backgrounds in fields such as engineering, communication and information technology, construction, electronics, and/or manufacturing.

The bachelor's degree results in certification to teach applied technology subjects in middle and high schools. Through the program, students acquire expertise in scientific and technical fields, as well as gaining strong foundations in the liberal arts and education.

Partners:

Cooperating school districts (student teaching)

Funding Sources:

Charitable Leadership Foundation

Arlington School District Initiative

Arlington School District
696 Dutchess Turnpike
Poughkeepsie, NY 12603
Phone: (845) 486-4460

Contact: Frank Pepe, Superintendent
Established: 2003

E-Mail: fpepe@acsdny.org

Description:

The Arlington Central School District has engaged intense dialogue with the local engineering community in order to understand the demands of modern global competition on engineering enterprises and scientific research. The goal of this dialogue is to identify the knowledge, skills, and abilities that our students will need in order to be successful and to extrapolate these attributes into appropriate curriculum and beneficial learning experiences. The District has established and funded an administrative supervisory position ("Supervisor of Science and Engineering") to encourage this process and ensure that these expectations are implemented.

Partners:

IBM, Phillips Semiconductor, Solid State Cooling Systems, Conklin Intracom

Strengths:

Arlington is aggressively pursuing engineering, math, science, and entrepreneurial preparation for students in grades K-12 that will enable graduates to play a leadership role in the economic growth of New York State.

Associate Degrees Offered at SUNY Ulster County Community College

SUNY Ulster County Community College
Stone Ridge, New York 12484
Phone: (845) 687-5000

Contact: James Perry
Established: 1980

E-mail: perryj@sunyulster.edu

Applied Science

Students who complete this program earn an Associate in Applied Science degree. The program prepares students for positions involving the use of microcomputers for business administration, decision support, and financial applications. Graduates of the program qualify for entrance into careers in which they function as end users or applications developers for microcomputer systems.

Computer Science

Students who complete this program earn an Associate in Science degree. This program is recommended for students who plan careers in computer science or who plan to transfer to a four-year program. Students who know the college to which they want to transfer should select electives appropriate to the program at the transfer institution. It is recommended that students have finished high school Regents Mathematics Course III.

Engineering Science

Students who complete this program earn an Associate in Science degree. The program provides basic preparation for students who plan to continue engineering studies at a four-year college. The College's Engineering Science program is affiliated with the Two-Year Engineering Science Association and the Association of Engineering Colleges of New York State.

Contact: Steve Plumb
Established: 1966

Phone: (845) 687-5161
Email: plumbs@sunyulster.edu

Funding Sources:

College operating budget.

Associate Degree in Computer Networking and Systems

Schenectady County Community College
78 Washington Avenue
Schenectady, NY 12305
Phone: (518) 381-1200

Contact: Thomas Nelson, Dean of Academic Affairs
Phone: (518) 381-1374 E-Mail: nelsonjt@gw.sunysccc.edu

Description:

This degree is designed to prepare students for employment as network and systems administrators and provides students with both a theoretical and hands-on foundation using industry-standard hardware and software.

Partners:

More than 10 local employers were surveyed regarding the need and the design of the degree program.

Strengths:

Graduates will be qualified for employment in entry-level computer and network support roles in a wide variety of business settings. Graduates will understand and employ network security measures.

Limitations:

The need to maintain and update equipment.

Associate Degree in Drafting and Design Technology

SUNY Ulster County Community College
Stone Ridge, New
York 12484
Phone: (845) 687-5000

Contact: Sal Ligotino
Established: 1966

E-mail: ligotinos@sunyulster.edu

Description:

Students who complete this program earn an Associate in Applied Science Degree. The program is designed for students who wish to enter the profession of drafting and design or related fields.

Funding Sources:

College operating budget

Associate Degree in Histotechnology

SUNY Cobleskill
Cobleskill, New York 12043
Phone: (518) 255-5700

Contact: Dr. Michael Murphy

Phone: (518) 255-5445
E-Mail: murphymj@Cobleskill.edu

Description:

SUNY Cobleskill has the only certified associate's degree histotechnology program in the north east. Histotechnicians are trained in the preparation and staining of tissue slides for microscopic examination and disease diagnosis by pathologists. The tissue may be obtained from an operating room, clinic, doctor's office, emergency room, or a postmortem examination. Histotechnicians may also assist the pathologist in the preparation of frozen tissue sections which are used to provide rapid diagnosis while the patient is still undergoing surgery.

Partners:

Various companies hosting interns.

Authentic Research Program

Schuylerville High School
14 Spring Street
Schuylerville, NY 12871
Phone: (518) 695-3255

Contact: Rose Cervei

E- Mail: JRSRHS@schuylerville.org

Description:

Program that encourages students to independently study topics that interest them. Projects include self-directed Internet searches, as well as working with outside research and corporate partners. Topics have included the study of horse behavior, Parkinson's disease, subatomic particles and heart abnormalities.

This is a 3-year program and students have the ability to purchase up to 12 undergraduate credits through the State University System.

Partners:

RPI, Wadsworth Laboratories, SUNY Albany, Intel Science Talent Search.

Strengths:

Self-directed, independent research.

Bachelor of Arts in Biology/Cytotechnology

The College of Saint Rose
432 Western Avenue, Albany, NY 12203
Phone: (800) 637-8556

Contact: Steven Strazza, Associate Professor Phone: 454-5285
E- Mail: strazzas@strose.edu

Description:

This 3 + 1 program is offered in conjunction with the Albany College of Pharmacy, School of Cytotechnology. Students complete three years at The College of Saint Rose and then one year at the Albany College of Pharmacy. Successful completion of this degree entitles the student to a B.A. degree in Biology/Cytotechnology and eligibility for the national registry examination to become certified as a cytotechnologist.

Bachelor of Business Administration in Technology Management

SUNY Cobleskill
Cobleskill, NY 12043
Phone: (518) 255-5700

Contact: Dr. Chester Burton

Phone: (518) 255-5427
E-Mail: burtoncj@cobleskill.edu

Description: The Bachelor of Business Administration in Technology Management programs prepare students to enter management positions in financial services, information technology and the culinary arts industry.

The Information Technology concentration prepares students to serve as managers, supervisors and project team leaders. The Financial Services concentration provides students with the necessary applied knowledge and skills in the area of management, communications, and financial services with the objectives of: training professionals who are proficient, and have a solid grounding in the workings of financial institutions, brokerage houses, insurance companies, real estate agencies, financial planning firms, and tax accounts; providing specialized, in-depth training in key areas of application; providing professional training for students who wish to combine financial planning with other disciplines, such as management, marketing or accounting; and preparing students for graduate study and research in appropriate areas. The Culinary Arts concentration is designed to accommodate the associate degree student with an educational opportunity that will lead to a bachelor's degree with additional knowledge of management and culinary arts.

One of the most exciting features of the Bachelor of Business Administration in Technology Management program is the 12-credit internship. With the completion of this internship in a specialized Information Technology environment, graduates will have experienced the real work world in their fields of expertise. This professional experience enhances their qualifications and will be a definite asset as they seek employment.

Partners: Various companies hosting interns.

Bachelor of Science in Computer Information Systems

The College of Saint Rose
432 Western Avenue, Albany, NY 12203
Phone: (800) 637-8556

Contact: John Avitabile, Associate Professor **Phone: 458-5317**
E- Mail: avitabij@strose.edu

Description:

The computer information systems (CIS) program at Saint Rose stresses practical, applied knowledge in the field of computer technology. The curriculum is constantly evolving with changes in the field, allowing the College to offer courses in emerging, popular areas such as Internet programming, Bioinformatics, Expert Systems, and computer networks. Students also become skilled programmers in languages like C++, Java, Visual BASIC (.NET), and C#. By completing a semester-long internship at a local company or state agency, Saint Rose computer information systems students gain valuable experience that reinforces their classroom learning.

Bachelor of Science in Computer Science

The College of Saint Rose
432 Western Avenue, Albany, NY 12203
Phone: (800) 637-8556

Contact: John Avitabile, Associate Professor **Phone: 458-5317**
E- Mail: avitabij@strose.edu

Description:

Computer science students at The College of Saint Rose receive industry-specific training on the same hardware and software they will encounter in the "real world." Students who pursue a degree in computer science at Saint Rose develop a strong understanding of computer programming and become adept at developing computer applications using the most up-to-date technology. However, this program extends beyond practical knowledge to the underlying principles and theories of computing and features a broad curriculum of mathematics, algorithm formulation, software development, and hardware design-essential to the study of computer science. By completing an internship at a local company or state agency, Saint Rose computer science students gain valuable experience that reinforces their classroom learning.

Bachelor of Science in Electronics Engineering Technology

Excelsior College
7 Columbia Circle
Albany, NY 12203-5159
Phone: (518) 464-8500

Contact: Dr. Altaf Memon
Established: 1984

Phone: (518) 464-8509
E-Mail: amemon@excelsior.edu

Description:

The Bachelor of Science in Electronics Engineering Technology program at Excelsior College gives students the opportunity to advance their careers and stay abreast of the latest technology - all while staying on the job. Credits are earned by taking Excelsior College examinations and online courses, and through the acceptance of transfer credit from a wide array of faculty evaluated sources such as military training, workplace training programs recognized by the American Council on Education (ACE), professional IT certifications, proficiency exams, and courses from other colleges and universities.

The Bachelor of Science in Electronics Engineering Technology graduate is typically employed as an electronics technologist with responsibilities including product design and development, manufacturing, field engineering, systems supervision, and quality assurance.

The degree program requires 124 semester hours of credit, including at least 60 credits in the arts and sciences component and at least 48 credits in the electronics engineering technology component. The choice of using free electives for certain credits adds flexibility to the program design.

Excelsior College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools. The Bachelor of Science in Electronics Engineering Technology program is accredited by the Technology Accreditation Commission (TAC) of the Accreditation Board for Engineering and Technology (ABET).

Partners:

Society of Broadcast Engineers.

Bachelor of Science in Information Design

Sage College of Albany
140 New Scotland Avenue
Albany, NY 12208
Phone: 1-888-VERYSAGE

Contact: Kevin Stoner
Established: 2001

Phone: 518- 292-8611
E-Mail: stonek@sage.edu

Description:

Innovative, interdisciplinary major combining courses from communications, computer science, management and graphic design to produce professionals capable of moving among ever-changing technologies to serve the communication needs of various audiences, including the electronic publishing industry. Offers internships with various regional communications and technology employers.

Partners:

Various communications and technology employers in the Capital Region.

Funding Sources:

Institutional

Bachelor of Science in Information Technology

Excelsior College
7 Columbia Circle
Albany, NY 12203-5159
Phone: (518) 464-8500

Contact: Dr. Altaf Memon
Established: 1984

Phone: (518) 464-8509
E-Mail: amemon@excelsior.edu

Description:

The Bachelor of Science in Information Technology is built around real-world experience and professional certifications to stay current and relevant. It is designed to enhance job skills and improve opportunities for career advancement in the information technology field. Students may select the general information technology option, or choose from one of the following concentrations: Information Security, Network Management, Object-Oriented Software Development, Internet Technology for E-Commerce, Multimedia and Web Development, Video Game and Simulation Development.

The Bachelor of Science in Information Technology program requires 120 semester hours of credit, including 60 in the arts and sciences component and at least 45 in the information technology component. Most concentrations include four 3-credit courses followed by a 6-credit capstone project developed and implemented over two semesters under the supervision of a faculty member. The capstone course provides undergraduate students motivation for undertaking independent research, learning emerging technologies, and gaining experience in the implementation of a large project. The choice of using information technology and free electives for certain credits adds flexibility to the program design. For example, credit toward degree requirements may be awarded for successful completion of Microsoft, Novell, CompTIA, Cisco, and Sun Microsystems certifications, Game Institute courses, and other faculty evaluated sources.

Excelsior College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools.

Partners:

The Game Institute; Black Data Processors Association.

Bachelor of Science in International Trade and Economic Development

**Sage College of Albany
140 New Scotland Avenue
Albany, NY 12208
Phone: 1-888-VERYSAGE**

**Contact: James Gunn
Established: 2003**

**Phone: 518-292-1749
E-Mail: gunnj@sage.edu**

Description:

Interdisciplinary major combining courses in business, economics and international studies, preparing graduates to work for and occupy leadership roles in multinational companies, including technology companies.. The curriculum focuses on the theory and practice of international trade and its impact on regional economic development. This program is aimed first at students who already are native speakers of a language other than English (e.g., Chinese, Japanese, Spanish, German). Native speakers of English are expected to enter the program with proficiency in a second language, to continue to develop that proficiency, and to spend at least one semester working and studying in a foreign country. Internships are an important part of this program.

Partners:

Sage Graduate School, offering acceleration to the M.B.A.
Shanghai School of International Trade (Graduate School)

Funding Sources:

Institutional

Bachelor of Science in Music Industry

The College of Saint Rose
432 Western Avenue
Albany, NY 12203
Phone: (800) 637-8556

Contact: Sister Mary Ann Nelson

Phone: (518) 454-5278
E-Mail: nelsonm@strose.edu

Description:

The Bachelor of Science in Music Industry focuses on development, mastery and integration of students' knowledge and skills in the technical, administrative and musical aspects of the music industry. Graduates of this program are prepared for successful careers in sound recording, sound reinforcement, and internet and computer applications for music. The 132-credit program includes 17 credits specifically in music technology.

Bachelor of Science in Nuclear Engineering Technology

Excelsior College
7 Columbia Circle
Albany, NY 12203-5159
Phone: (518) 464-8500

Contact: Dr. Altaf Memon
Established: 1984

Ph: (518) 464-8509
E-Mail: amemon@excelsior.edu

Description: The Bachelor of Science in Nuclear Engineering Technology program at Excelsior College emphasizes practical applications of engineering principles as they relate to the nuclear industry. It is intended to equip graduates to perform competently in occupational areas such as reactor operations, health physics, quality assurance, chemical technology, and instrumentation and control technology, as well as in related areas in the nuclear technology field. Graduates may develop an individualized program to meet their needs as nuclear technology professionals.

The degree program requires 124 semester hours of credit, including at least 60 credits in the arts and sciences component, and at least 48 credits in the nuclear engineering technology component. The choice of using free electives for certain credits adds flexibility to the program design.

To increase accessibility to the nuclear engineering technology degree for persons employed in the nuclear power industry, Excelsior College faculty evaluate for college-level equivalency utility workplace training programs that have been accredited by organizations such as the National Academy for Nuclear Training (NANT) and from other recognized sources. Through this process, for example, our faculty has recommended that credit be awarded for the accredited training programs applicable to ten job titles at nuclear power facilities. Excelsior College also awards credit for Navy Nuclear Power School, Prototype, and ELT training.

Excelsior College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools. The Bachelor of Science in Nuclear Engineering Technology program is accredited by the Technology Accreditation Commission (TAC) of the Accreditation Board for Engineering and Technology (ABET).

Partners: General Physics; Entergy Corporation; U. S. Department of Energy; Idaho National Lab (INL).

Funding Sources: Entergy Corporation Foundation

Beanstalk

Center for Economic Growth
63 State Street
Albany, NY 12207
Phone: 518-465-8975

Contact: Jeff Marusak

E-Mail: jeffm@ceg.org

Description:

Beanstalk, is a broad-based student, business, and academic partnership aimed at developing the Capital Region's talent, retaining more of our area's college graduates, and creating employment opportunities for past, current and future Capital Region residents and their families.

The Beanstalk web site at www.mybeanstalk.com allows employers to list available internships, co-op positions and volunteer opportunities that can be found and applied to online by local students. The goal is that these internships create a strong bond between mentor and student. Optimally, this relationship results in a permanent employment opportunity.

Partners:

CEG, local businesses, local universities, and local students.

Strengths:

One stop shopping for internships in Tech Valley at no charge to either posters or browsers.

The Birdhouse Network

Spackenkill School District
7 Nassau Road
Poughkeepsie, NY 12601
Phone: (845) 453-7879

Contact: Karen Vitek

E-Mail: KVitek@nassau.sufsd.dcbooces.org

Description:

Students use handheld computers for data collection along a birdhouse trail. They send the collected data to the Cornell Laboratory of Ornithology as part of a citizen science project that assists scientists in their study of cavity nesting birds. The special needs students become participants in Cornell's Birdhouse Network and help gather information to help scientists better understand and protect birds and their habitats. The students in grades four and five at this school in Poughkeepsie, New York, put up twenty birdhouses along a trail on school grounds. They're using Palm handhelds to help them monitor the activity inside the houses throughout the breeding season. They're also collecting valuable information about habitat, nesting materials, and numbers of eggs and nestlings, and submit their data over the Internet to scientists at the Cornell Lab. Through several grants, Vitek was able to acquire Palm handhelds, handheld-compatible digital cameras, Imagiworks ImagiProbe software, and Vernier temperature probes. To introduce the Palm handhelds to her students, she provided basic handheld skills training and then had different grades levels work on projects so they could practice their skills.

Strengths:

The classroom seems more efficient and organized and students seem to be more excited about the learning process. The students can use one easy-to-carry piece of technology for so many things: collecting temperature data, taking photos, and writing up results. Helps students in special education program to work independently and gain confidence.

Partners:

PalmOne, Cornell, Imagiworks, Vernier

Black Family Technology Awareness Day

Rensselaer Polytechnic Institute
110 8th Street, Troy, NY 12180
Phone: (518) 276-6000

Contact: Kenneth B. Durgans
Established: 1999

E-Mail: durgak@rpi.edu

Description:

The Office of Institute Diversity at Rensselaer Polytechnic Institute (RPI), located in Troy, NY, participates each year in Black Family Technology Awareness Week by providing a variety of hands-on programs in a single day format. The event includes the participation and support of faculty, staff, and students from RPI and the community. The program incorporates the mission of Black Family Net by helping to bridge the digital divide. The daylong program includes interactive workshops for students from kindergarten through college on a range of topics aimed to engage children and their families in the fascinating world of science, engineering, and technology.

Partners:

Career Communications Group, The Junior Museum

Strengths:

Has made a positive impact on the communities surrounding Rensselaer Polytechnic Institute (Troy, Albany, and Schenectady). Program grew by 46% this year alone.

Funding Sources:

Office of Institute Diversity, Career Communications Group – Black Family Awareness Campaign.

Building Operator Certification

Northeast Energy Efficiency Partnerships, Inc.

5 Militia Drive

Lexington, MA 02421

<http://www.neep.org/boc/>

Fax: (781) 860-9178

Contact: Keith D. Guernsey

Phone: (781) 860-9177 x 40

Established: 1996

Description: Building Operator Certification is a nationally recognized training program designed to educate facilities personnel in the energy and resource efficient operation and maintenance of building systems.

Operators earn certification by:

- Attending 8 days of training over 3 months
- Completing 5 project assignments in their facilities
- Passing class exams

Instructors personally trained in facility maintenance and operation conduct training sessions on the following topics:

- Building Systems Overview
- Energy Conservation Techniques
- HVAC Systems and Controls
- Efficient Lighting Fundamentals
- Environmental Health and Safety Regulations
- Indoor Air Quality
- Facility Electrical Systems

Building Operator Certification (BOC) is a competency-based training and (nationally-recognized) certification for building operators offering improved job skills and more comfortable, efficient facilities and a savings of \$20,000 per total facility per year.

Supporters of the BOC program in the Northeast

Association of Facility Engineers (Champlain, VT chapter), Burlington (VT) Electric Department, Cape Cod Chamber of Commerce, Cape Light Compact, Commonwealth of Massachusetts, Connecticut Light and Power Company, Connective Power Delivery, Efficiency Maine, Efficiency Vermont, Granite State Electric Company, Jersey Central Power and Light KeySpan Energy Delivery, Lincoln Properties, Long Island Power Authority (LIPA), National Grid, New Hampshire Business and Industry Association, New Hampshire Electric Co-op, New Hampshire Governor's Office of Energy and Planning, New York State Energy Research and Development Authority (NYSERDA), Northeast Utilities, Public Service Electric and Gas (PSE&G), Public Service Company of New Hampshire (PSNH), Sensor Switch, United Illuminating, Unitil Service Company, Western Massachusetts Electric Company.

Business Higher Education Roundtable of the Capital Region

BHER

C/O UAlbany, President's Office, UAB 427
1400 Washington Avenue
Albany NY 12222

Contact: Miriam Tremontozzi

Phone: (518) 437-4922

Established: December 2000 E-Mail: mtremontozzi@uamail.albany.edu

Description: The Business-Higher Education Roundtable (BHER) is a non-partisan, non-political alliance of some thirty college and university presidents and business executives collaborating to advance the region's economic growth and quality of life. Both visionary and catalyst, the group works to build the region's competitiveness at all levels. To help transcend community and county borders on major issues, BHER periodically convenes experts and key decision makers to shape new strategies and explore best practices. A new strategic focus is on developing a more innovative, diversified, entrepreneurial culture and economy, a need identified by the BHER's Entrepreneurship Committee. The Communications group is conducting a joint college marketing campaign to help attract and retain young talent. The Infrastructure Committee issued white papers on enhancing transportation and information infrastructure, the latter developed by its subgroup of CIOs which continues to spearhead efforts. Other committees are Health Care, concentrating on critical workforce needs, and the Math and Science Education group which has a special focus on collaborations.

Partners: Co-conveners Kermit Hall (UAlbany) and Michael Marvin (Chairman Emeritus, MapInfo Corp.); Harry Apkarian (TransTech Systems, Inc.); Guha Bala (Vicarious Visions); James Barba (Albany Medical Center); Gabriel Basil (Schenectady County Community College); Murray Block (Interim, Excelsior College); Steven Boyle (St. Peter's Health Care Services); William Dake (Stewart's Ice Cream Co.); Steven Fischer (Mechanical Technology Inc.); Philip Glotzbach (Skidmore College); James Gozzo (Albany College of Pharmacy); Thomas Guernsey (Albany Law School); Thomas Haas (SUNY Cobleskill); Daniel Hogarty, Jr. (First Niagara Financial Group); Shirley Ann Jackson (Rensselaer Polytechnic Institute); Susan Lehrman (Graduate College of Union University); Fr. Kevin Mackin (Siena College); Thomas J. Marusak (Comfortex Corporation); Elliott Masie (The Masie Center); Andrew Matonak (Hudson Valley Community College); George McNamee (First Albany Corp.); Joseph Moore (Empire State College, SUNY); Jeanne Neff (The Sage Colleges); Deborah Onslow (WMHT Educational Telecommunications); James Reed, MD (Northeast Health); Carl Rosner (CardioMag Imaging Inc.); Frank Schmeler (Albany International Corp.); Craig Skevington (Flow Management Technologies); Robert Smanik (Ellis Hospital); R. Mark Sullivan (The College of Saint Rose); James Underwood (Interim, Union College)

Strengths: Leadership, knowledge capital

The Capital District Educational Opportunity Center

Hudson Valley Community College
80 Vandenberg Ave. Troy, NY 12180
Phone: (518) 629-4822

Contact: Dr. Lucille A. Marion

E-Mail: marioluc@hvcc.edu

Description: The Capital District Educational Opportunity Center (EOC) offers tuition-free academic and workforce development opportunities to economically disadvantaged and educationally under-prepared New York State residents 16 years and older. The main emphasis of the Center is to help people acquire skills that will enable them to increase their effectiveness in society through a four-pronged approach: vocational programs, academic programs, counseling services, and employment services.

Vocational programs allow students to acquire employment skills so that they may increase their effectiveness on the job, gain a better job, or secure initial employment. The programs involve students in hands-on learning. Tools and equipment are integrated with textbook and workbook instruction. On-the-job experience is also provided in most programs through internships, clinical, or other work-based training experiences.

Academic programs help students improve their reading, writing, and math skills to enhance employability, to obtain a General Educational Development (GED) diploma, and/or to gain entrance to college. Very often, students at the Center have two goals: To obtain a vocational skill and to achieve a GED. Both are achievable through completion of a combination EOC programs.

Counseling services help students overcome personal barriers to academic and vocational success, for example: lack of child care, lack of suitable clothing or equipment, substance abuse, language/job skills deficiencies, and poor work history. When necessary, referrals are made to appropriate agencies that may be of service to students for personal, family, financial, or other matters. Career counseling, testing, and assessment services are available to assist individuals in the community, regardless of educational and financial need, to clarify their educational goals and to assist in the development of a career plan.

Employment services assist students with resume preparation, application, job interviews, and job retention strategies. Employability Skills, designed to help individuals recognize problem areas and meet specific behavioral objectives that improve employability, is an integral part of the Center's vocational programs. The Center's Employment Services Centers, funded by the New York State Education Department's Perkin's allocation, have a staff of seven Employment Specialists, including some fluent in Spanish, to help individuals seek and obtain jobs through resume preparation and cover letter assistance, computer and internet access, research assistance, job development and placement activities, and other job hunting aides. Job Readiness Training is also available.

Capital Region High School Computing Conference

Siena College
515 Loudon Road Loudonville, NY 12211
Phone: (518) 783-2400

Contact: Larry Medsker, Dean of Science
Established: 2005

Phone: (518) 782-6749
E-Mail: lmedsker@siena.edu

Description: This program promotes partnerships between colleges and their communities in the Capital Region to encourage high school students to pursue postsecondary education and careers in the computing field. An emphasis is on minority students and women. The annual computing conference is preceded by a year-long mentoring program that links college students and other volunteers with high school students working on computing projects. Along with encouraging students to enter careers in technology, the program aims to help build the technical workforce in the Capitol Region.

This project is establishing an exciting opportunity to encourage secondary school students to pursue careers in computing fields. Siena's new Science Dean, Dr. Larry Medsker, and Siena's Computer Science department are working with the Capital Region community to establish an annual conference and a related mentoring program. For the past 14 years, Dr. Medsker has hosted a computing conference for Washington DC pre-college students at American University. The DC Computer Science Conference (<http://www.american.edu/dccsc>) is a unique program for young people who are interested in computer science, science & technology, and computing applications. A purpose of the conference is to give high school students an opportunity to present their work in computer science and applications in a professional-style forum and to publish technical papers in a refereed proceedings. The year-long program leading up to the conference encourages underrepresented students to enter postsecondary education and pursue professional careers. The involvement of university faculty and students, as well as local business and government representatives, as conference organizers and mentors for the high school students has also proved to be a valuable public service and experiential learning component of the university students' education. Under a grant from Lumina Foundation, Dr. Medsker is encouraging partnerships between colleges/universities and local and regional high school students and their teachers. He is establishing a national network in which information about the conference project model can be disseminated and people can obtain advice and assistance in starting their own programs (www.american.edu/nupace).

Partners: Siena College and representatives from various Albany area businesses, government agencies, universities, and the Albany Public schools.

Funding Sources: Siena College; initial support from Lumina Foundation for Education

Capital Region Sponsor-A-Scholar Inc.

Capital Region Sponsor-A-Scholar, Inc
The College of Saint Rose
Brubacher Hall, Room 141
432 Western Ave.
Albany, New York 12203-1490
Phone: (518) 454-2811
www.crsas.org

Contact: William K. Corbett Sr.
Established: 1996

Phone: (518) 454-2846
E-Mail: sponsorascholar@yahoo.com

Description:

We help disadvantaged students in Albany, Troy and Schenectady High School, graduate from High School and go onto the college their choice.

We induct promising sophomores in the three urban high schools in the New York, Capital District. We provide a mentor, homework sessions weekly throughout the school year and financial assistance for Advanced Placement and SAT courses and tests. After our students graduate from high school, we provide a \$750.00 stipend for every successful semester of college the student completes.

Partners:

A very small part of the list of partners includes: The College of Saint Rose, Albany High School, Troy High School, Schenectady High School, Albany International, Community Foundation for the Capital Region, Stewarts Shoppes, Charitable Ventures and Charitable Leadership and SEFCU.

Capstone Course for M.B.A. Program

The Graduate College of Union University
807 Union Street
Schenectady, 12308
Phone: (518) 388-6148

Contact: Mel Chudzik, Dean of the School of Management

Phone: (518) 388-6447

Established: 1970

E-Mail: chudzikm@union.edu

Description:

Two year M.B.A. program that culminates in a capstone course that integrates the total program into the development of a comprehensive business plan for a real start-up company in the capital region. The majority of the companies are in the high tech field. Students provide the companies with a professional business plan and the companies provide the students with an introduction to the high tech companies in the area as potential employers.

Partners:

Various high tech companies in the capital region.

Strengths:

Connect professional students to the high tech community.

Limitations:

Capstone course is part of a two year Masters in Business Administration degreed program.

Career Center at Steinmetz

Schenectady High School, Career Center at Steinmetz
880 Oakwood Avenue
Schenectady, NY 12303
Phone: 518-370-8183

Contact: Gregory Fields E-Mail: FieldsG@Schenectady.k12.ny.us

Description:

Offers the following programs of study:

- Media Arts
- Culinary Arts
- Property Management
- Office Management

CC@S is dedicated to preparing students for entry into the workplace, providing them with life skills and the opportunity to continue their education. For a more effectual learning environment, the teachers of CC@S are collaborating to integrate core courses with the career programs. Up-to-date labs provide our students with a full commercial kitchen, available indoor and outdoor construction walls, workplace business simulations and excellent software programs. All students will have the opportunity to receive class credit for a NYS course approved Career Exploration and Internship Program. All students also have the opportunity to receive high school credit by obtaining an after-school job and attending an in-school seminar twice weekly, in the Work Experience course.

Career Passport

Schenectady County Community College
78 Washington Avenue, Schenectady, NY 12305
Phone: 518-381-1200

Contact: Edward S. Baker

Phone: 518-381-1319
E-Mail: bakeres@gw.sunysccc.edu

Description:

High School Students and/or unemployed adults pursue soft-skills curriculum based upon SCANS skills, culminating in a laminated, credit card sized “passport” which is presented to participating employers to gain special advantage in the hiring process. The basic passport targets students seeking their first part-time job. The advanced passport requires employer evaluation of skills/employability risk and targets those seeking their first full time jobs.

Partners:

Seven public school districts, Job Training Agency, Chamber of Commerce and local employers.

Strengths:

Requires demonstration of soft-skills prior to job entry. Supported by school superintendents and chamber of commerce.

Limitations:

Limited funding stretched limits of Chamber staff to validate and disseminate certificates.

Capital Region Career & Technical School

Capital Region BOCES Career and Technical School

1015 Watervliet-Shaker Rd
Albany, NY 12205 (Albany campus)

174 State Route 30A
Schoharie, NY 12157 (Schoharie campus)

Phone: (518) 862-4800 (Albany campus)
(518) 295-3000 (Schoharie campus)

Contact: Hank Stopinski, Director of Career & Technical Education

Phone: (518) 862-4744

E-Mail: hstopins@gw.neric.org

Description: The Capital Region Career and Technical School is operated by the Capital Region Board of Cooperative Educational Services (BOCES) and serves more than 1,300 high school and adult students from 25 school districts in Albany, Schenectady, Schoharie and southern Saratoga counties. The Capital Region Career and Technical School has campuses in Albany (Colonie) and Schoharie and offers more than 40 programs of study including career and technical education in skilled trades and licensed professions, honors-level and college-level programs, off-campus study including a full-day career academy, and programs designed for students with special educational needs. Students may earn a New York State Regents Diploma with a Career and Technical Education Endorsement. Adults may attend Career & Tech to learn new careers, upgrade their skills, pursue special interests, and earn their GED, among other goals.

Partners: The Capital Region Career and Technical School is operated by the Capital Region Board of Cooperative Educational Services (BOCES) and is advised by a volunteer Board of Education and more than 300 representatives of local business, industry and the local educational community who sit on advisory committees for career and technical education programs. The Capital Region Career and Technical School is fully accredited by the Middle States Commission on Colleges and Schools.

Funding Sources: As a BOCES program, the Capital Region Career and Technical School is regulated by the New York State Education Department and operated under the leadership of the Capital Region BOCES District Superintendent.

Career Ready Youth Program

New York Wired for Education
120 Washington Avenue Albany, NY 12210
Phone: (518) 462-1780

Contact: Brian Lee
Established: 2004

E-Mail: blee@uswired4ed.net

Description: The 2005 Career Ready Youth program, the brainchild of CEO Brian Lee of NY Wired for Education, provides urban and rural youth of the Capital District with the skills and education they need to become successful in the business world, and bridge the gap between education and businesses in Tech Valley. In 2004, the first year of the program, 31 students from Albany High School and Bishop Maginn took online courses in computer and professional skills. They were assisted by College of Saint Rose interns, and placed for 20 hours a week for six weeks, at local businesses recruited by the Albany-Colonie Regional Chamber of Commerce. Building and expanding upon the success of the 2004 Career Ready Youth program, NY Wired for Education, in partnership with elected officials and chambers of commerce in Albany, Rensselaer and Schenectady, proudly presented this year's 88 Digital Youth graduates from eight area high schools at a ceremony on the University at Albany campus on May 25th, 2005. Career Ready Youth students spend two days per week after school in the computer lab, where they take online courses such as "Difficult People in the Workplace" and "Microsoft Excel" to develop workplace skills. Upon completion and testing, the students are placed for six weeks of employment at local host companies to continue the mentoring experience into the summer. The 88 students completed ten courses via the Internet giving them work readiness skills in preparation for the internships. Through the partnership with chambers of commerce in Albany, Rensselaer and Schenectady, businesses and other organizations throughout the area are able to offer summer internships to Career Ready Youth students, fully funded by our government partners in each county.

Partners: AAA Hudson Valley, Albany-Colonie Regional Chamber of Commerce, Albany County, Albany County Executive Michael G. Breslin, Albany High School, Albany YMCA, Berne-Knox-Westerlo High School, Bishop Maginn High School, The Business Review, Capital Region Workforce & Investment Board, CDPHP, City of Albany & Mayor Jerry Jennings, Cohoes High School, Duanesburg High School, Duanesburg Area Community Center Eba Inc., Girvin & Ferlazzo, Harriman Research & Technology Development Co., Lansingburgh High School, Marjorie Doyle Rockwell Center, Metroland, Mezzo Marketplace & Eatery, Millview of Latham, The National MS Society, New York Business Dev't Corp, O'Connell and Aronowitz, Ordway Research Institute, Inc., Our Lady of Mercy Life Center, Parsons Child & Family Center, Rensselaer County Executive Kathy Jimino, Rensselaer County Chamber of Commerce, The Sage Colleges, Senior Services, Schenectady County Chamber of Commerce, Schenectady High School, Senate Majority Leader Joseph L. Bruno, St. Peter's Healthcare, Times Union, Troy High School, Tully, Rinckey & Associates, PLLC, University at Albany.

Funding Sources: Albany City (Mayor Jerry Jennings), Albany County (County Executive Breslin), Rensselaer County (County Executive Jimino and Senator Bruno), Schenectady County (Mayor Brian Stratton).

Career & Technical Education

Questar III BOCES
10 Empire State Blvd.
Castleton, NY 12033
Phone: (518) 477-8771

Contact: David Leavitt
Established: 1960s

Phone: (518)828-4157
E-Mail: dleavitt@questar.org

Description: For high school students in Rensselaer, Columbia and Greene counties, career and technical education (CTE) is one pathway to fulfilling potential and gaining employment in skilled jobs. These technical programs help secure better futures for young people—and more highly skilled workers for local businesses.

Relevant, real world learning:

Questar III is preparing high school juniors and seniors in dynamic programs integrating core academic subjects with real world technology and business experience. More than 20 CTE programs offer students the opportunity to discover a variety of career choices while earning a Regents diploma. State-of-the-art technical training is integrated with English language arts and other courses needed to pass the Regents. Program areas also reflect current industry standards of excellence.

Questar III programs also provide students with the opportunity to hone such “employability skills” as creativity, problem-solving skills, teamwork, leadership, self-esteem and integrity—the skills indispensable to success in today’s workplace. Partnerships with local business, higher education and community agencies provide students with a window into the realities of college, the workplace and global economy.

CTE programs prepare students through: hands-on, high-tech learning experiences; unique, innovative programs; educational choices; career exploration; academic support and guidance services, and; college credit and/or advanced placement (through articulation agreements with local colleges and universities).

Questar III is a member of the High Schools That Work (HSTW) network—a national framework of goals, key practices and key conditions for accelerating learning and setting higher academic standards. The idea is: *how* students learn is just as important as *what* they learn. Questar III students learn skills they can apply right of high school.

Partners: Local colleges and universities; business and labor

Center for Construction Trades

M + W Zander/ Watervliet Arsenal
Watervliet Arsenal
Watervliet, NY 12189-4050
Phone: (518) 266-5418

Description:

Watervliet Arsenal is the nation's oldest and, in many ways, newest, manufacturing arsenal. Founded in 1813 to support the "Second War for Independence," the War of 1812, the arsenal has been a valuable resource ever since. In 1887, the arsenal became America's "Cannon Factory." It is America's sole manufacturing facility for large caliber cannon in volume.

M+W Zander offers a full range of services revolving around high-tech buildings and production facilities from consulting, engineering, and construction to facility management and modernization projects. M+W Zander focuses on cleanroom technologies including the production of cleanroom components and technical facility systems for the electronic, pharmaceutical and food industries. The company is a global leader in the planning and realization of turnkey chip factories.

The Center for Construction Trades is dedicated to train displaced blue-collar workers and others in the skills necessary to build and manage high tech research facilities.

Center for Construction Trades Training

Arsenal Business & Technology Partnership

44 Dalliba Avenue

Watervliet, NY 12189

Phone: 266-6006

Contact: Tony Gaetano, President

Established: May 2004 E-Mail: tgaetano@arsenalpartnership.com

Description: The \$6.5 million Center for Construction Trades Training is a professional development program designed to give plumbers, steamfitters, electricians and sheetmetal workers in Tech Valley the skills they will need to work in clean room settings at research facilities or chip manufacturing plants. Approximately 200 local workers have taken the free, after-work courses in clean room safety, protocol and manufacturing. There are twenty different courses offered. Eighty-five trainees have already landed high-paying jobs (\$70,000 - \$80,00 per year) making products for facilities at Albany Nanotech, IBM Fishkill, GE Global Research Center in Niskayuna, Regeneron Pharmaceuticals in East Greenbush, and similar high-tech construction projects in Washington, D.C., Virginia, Vermont and Arizona.

Partners: The Center is a joint program of:

- **The Arsenal Business & Technology Partnership** - a non-profit development corporation that is creating a high-tech research and manufacturing campus in underutilized facilities at the Watervliet Arsenal. In recent years the Partnership has attracted \$15 million in private and public investment, brought twelve companies and more than one hundred jobs to the site, and opened an incubator program for companies working on new homeland security technologies.
- **M+W Zander, Inc.** - based in Stuttgart, Germany, M+W Zander is a \$2 billion a year global leader in high-tech construction and management. With the encouragement of leaders at Albany Nanotech, Zander moved its east coast headquarters to the Watervliet Arsenal in 2004 and agreed to supervise the clean room training and manufacturing activities at the Center for Construction Trades Training.
- **The New York State Assembly** - the Center received nearly \$2 million in support through the efforts of Assemblyman Ron Canestrari and Assembly Speaker Sheldon Silver who wanted the region's skilled trades workers to be able to compete for the high-tech jobs of the future.
- **Plumbers and Steamfitters Union Local No. 7** - union leaders wholeheartedly embraced this education opportunity for their members, and have been very pleased with the results.
- **Albany Nanotech** has supported the training program from the start, and is one of the main buyers of the ultra-clean pipes and other products manufactured at the Center.

Funding Sources: Arsenal Business & Technology Partnership, Arsenal Support Program Initiative (a federal program that awarded a grant to the Partnership to support the Center), M + W Zander, New York State

Center for Urban Youth and Technology

SUNY Albany

Center for Urban Youth and Technology in the School of Education

1400 Washington Avenue Albany, NY 12222

Phone: (518) 442-5572

Contact: Dr. Joseph Bowman, Director

Ph: (518) 442-5035

Established: 1992

E-Mail: jebowman@albany.edu

Description: The Center for Urban Youth and Technology (CUYT) has been in the forefront of technology, education, community involvement, content development, and youth and adult preparation for the “Tech Valley” for ten years. This is a short list of our accomplishments:

1. Created the Summer Technology Youth Institute at the University at Albany. Preparing youth for college and careers in “Tech Valley” initiatives. (2000-2004)
2. Created Math and Science Day weekend activities for students around the capital region to stress the importance of math and science and that it is fun. (November 1, 2003 & April 3, 2004).
3. Director and Consultant to the “Science Technology Entry Program” at the University at Albany. STEP is a technology based youth program for the Center for Urban Youth and Technology. (1999 - 2001)
4. Established the 1st electronic community network in the capital region with One Hundred Black Men Organization. (100NET-1996-2003)
5. Held the first and second national “Digital Divide” Conferences in the capital region 2001 and 2002.
6. Program Coordinator of “Goals 2000” Professional Development project for teachers with Schenectady City School District. (1997-2000)
7. Established after school Computer Program at Giffen Memorial Elementary School (CyberHood Kidz, 1996).

CUYT has developed a collaborative environment university departments and colleges, community based organizations, businesses, churches, and school districts in the capital region. We represent several collaborative initiatives that reflect the commitment that we have to the growth and development of urban communities in the capital region.

Partners: One Hundred Black Men, Boys and Girls Clubs, Hamilton Hill Arts Center, Albany NanoTech, RPI, National Weather Service, & Department of Transportation, etc.

Strengths: Collaboration skills, ability to work in urban communities, listening, program design, technology integration, training, and multi-media design.

Funding Sources: US Department of Education, NYSED, private donations

Charitable Venture Foundation

747 Pierce Road
Clifton Park, NY 12065
Phone: (518) 877-8454

Contact: William Dessingue, Executive Director
E-mail: wdessingue@charitableventure.org

Description:

Charitable Venture Foundation seeks to address the problems of society and education through innovative and entrepreneurial means, which emphasize individual responsibility. In order to achieve this end, it awards grants, loans and technical assistance to legally incorporated, IRS 501 (c) (3) charitable organizations for projects and programs appropriate to this mission. Funded programs including the following:

- Community Land Trust
- Foundation for Excellent Schools
- Computers for Kids
- Apple A Day drug prevention program
- Science Research In The High School
- Project Lead the Way pre-engineering program
- Sponsor A Scholar
- Careerlinks-Opportunities That Last
- Habitat for Humanity
- Regional Food Bank
- Community Loan Fund

Partners:

Grantmakers Alliance of Northeastern New York
SUNY Albany School of Social Welfare
Seedco, New York

Funding Sources:

Private, family foundation

Children & Education Career Academy

Capital Region BOCES Career & Technical School
1015 Watervliet-Shaker Rd.
Albany, NY 12205
Phone: (518) 862-4800

Contact: Hank Stopinski
Phone: (518) 862-4744
E-Mail: hstopins@gw.neric.org
Established: September 2005

Cobleskill-Richmondville High School
1353 State Route 7
Richmondville, NY 12149
Phone: (518) 234-3565

Contact: Melissa Ausfeld, Ast. Principal
E-Mail: ausfeldm@cracs.k12.ny.us

Amy Wright, Instructor
E-mail: awright@gw.neric.org

Description: The Children & Education Career Academy is a unique, full-day program designed for high school students who are interested in careers working with children or as elementary, preschool or special education teachers. Offered through the Capital Region BOCES Career & Technical School, the Academy is located at Cobleskill-Richmondville High School and unites the best qualities of career and technical education and academic study with the ability to earn college credit while still in high school. Academy students in this two-year program learn through focused study, specialized academics and experiences working with young children in a variety of settings. Upon completion they may enter college in advanced standing. The Capital Region Career and Technical School is operated by the Capital Region Board of Cooperative Educational Services (BOCES) and serves more than 1,300 high school and adult students from 25 school districts in Albany, Schenectady, Schoharie and southern Saratoga counties.

Partners: The Capital Region Career and Technical School is operated by the Capital Region Board of Cooperative Educational Services (BOCES) and is advised by a volunteer Board of Education and more than 300 representatives of local business, industry and the local educational community who sit on advisory committees for career and technical education programs. The Capital Region Career and Technical School is fully accredited by the Middle States Commission on Colleges and Schools.

Funding Sources: As a BOCES program, the Capital Region Career and Technical School is regulated by the New York State Education Department and operated under the leadership of the Capital Region BOCES District Superintendent.

Cisco Networking Academy

SUNY Cobleskill
Cobleskill, NY 12043
Phone: (518) 234-5011

Contact: Holly Cargill-Cramer

Phone: (518) 255-5524
E-Mail: carhillh@Cobleskill.edu

Description:

The Cisco Networking Academy program has evolved into a partnership between Industry and Education programs at both secondary and post secondary levels which has lent credibility to the program since the very same organizations seeking skilled employees are providing resources in the form of equipment, software and curricula at significantly reduced cost to the participating schools.

As an example, Sun Microsystems, an industry leader in both hardware and software products provides curriculum materials in software products such as Java and Unix along with free access to the Solaris Operating System to participating schools.

Cisco Systems has provided access to the latest networking hardware at significantly reduced cost. SUNY Cobleskill has saved over \$30,000 in equipment costs as a result of this partnership.

In addition, the blended delivery of the curriculum provides students with significant hands-on experience often lacking at the "Certification Mills" where students often enroll. Several of our students have received internship and subsequent job offers based primarily on the skills developed through the Cisco Networking Academy Program.

Complete Pre-Engineering Program

South Colonie High School
1 Raider Boulevard
Albany, NY 12205
Phone: (518) 459-1220

Contact: Barry Witte, Teacher
Established: 1997

Ph: (518) 459-1220 x3569
E-Mail: brwitte@earthlink.net

Description:

This program incorporates Project Lead the Way's national curriculum and is in the high school. They offer five different classes over four years, and prepare students for engineering careers. Many go on to college to pursue engineering degrees, and some of the classes offer college credit. Far-reaching goals are to provide students with the skills they need in math, science, and technology. They also have the largest technology department in the capital district, including graphic arts technology and video; they do work for local businesses. They have an automotive program in conjunction with HVCC. Along with traditional technologies, they learn about some higher end technology such as fuel cells, etc. They are currently participating in an "electrothon," designing an electric vehicle to be tested on the road. High school classes of 1998-2002 produced 50 former students who have graduated from Colonie High School, gone on to earn their engineering degrees from a wide range of colleges and universities and are now gainfully employed in the field of engineering. There are another 75 in college working on an engineering degree.

Computer Design and Manufacturing Program

Ulster County BOCES Career and Technical Center
PO Box 601, Rte 9W
Port Ewen, NY 12466
Phone: (845) 331-6680

Contact: Mark Harris
Established: 1990

E-Mail: mharris@mhric.org

Description:

This program instructs 10th, 11th, and 12th grade students in architectural design, computer numerical control machining, computer-aided design, computer aided manufacturing, manual machining, mechanical design, pre-engineering, and welding. The program leverages state-of-the-art numerically controlled machines, as well as distance learning through live web broadcasts. A variety of guest speakers have also been involved in the program, including civil and geological engineers to owners of manufacturing businesses. The curriculum includes metallurgy, electricity, robotics, and earth and environmental sciences.

The program includes a research project. For example, last year the students in the program researched, designed, and manufactured an English wheel. Other projects have included designing a two-story building using CAD, design and fabrication of components for a custom motorcycle, and design and construction of functioning robots.

This teacher won a 2004 Tech Valley Innovative Education Award.

Partners:

Council of Industry, Fala Technologies, Otto Tech, Haas, and Dorsey Metallurgy.

Strengths:

NIMS, Strong support from advisory committee.

Funding Sources:

Local school district, Workforce Development Board, VESID.

Computer Information Systems Certificates

The College of Saint Rose
432 Western Avenue
Albany, NY 12203
Phone: (800) 637-8556

Contact: John Avitabile, Assoc Professor

Phone: (518) 458-5317
E-Mail: avitabij@strose.edu

Description:

The College of Saint Rose offers four undergraduate certificate programs in the Computer Information Systems program. These are:

- **Certificate in Computer Programming** (20-21 credits) – Students who complete this program will be conversant in designing, writing and debugging computer programs. Career options include application and systems programmer, and end-user liaison.
- **Certificate in Data Processing** (21 credits) – This certificate enables students to write and design computer programs, as well as design and implement databases. Career options include applications programmer, and technical advisor for selection and installation of hardware and software.
- **Certificate in Microcomputer Systems** (20 credits) – Successful completion of this certificate prepares students to use computers for business administration and financial applications, especially in activities that require designing database applications, and installing and implementing microcomputer systems. This versatile certificate enhances career options across a wide variety of fields that require proficiency with database applications.
- **Certificate in Internet Programming** (20 credits) – Completing this certificate makes it possible for students to implement Internet programming at an advanced level. Career options include web technology developer, web programmer and Internet application designer.

Computer Networking Systems Capstone

ITT Technical Institute
13 Airline Drive
Albany, NY 122205
Phone: (518) 452-9300

Contact: Bettyjo Bouchey, Dean
Established: March 2005

E-mail: bbouchey@itt-tech.edu

Description: Capstone – Real World

In our March quarter our networking capstone class entirely revamped, repaired and optimized the network infrastructure at Trinity House in downtown Albany. Normally this class is a simulated capstone, but this quarter we decided to put our students to work for a good cause. Among many things, the students optimized and rewired the existing infrastructure, provided extensive network documentation, secured their network, provided anti-virus protection and updated the employee workstations. All-in-all, the students estimate their work being worth tens of thousands of dollars. Trinity Institution, a non-profit working to improve downtown Albany neighborhoods and family life, are thrilled with the student's work and grateful that much needed financial resources didn't have to be spent to upgrade their network and improve productivity.

About ITT Technical Institute, Albany, NY

Established in 1998, the Albany ITT Technical Institute has a student enrollment of approximately 413 students, as of December 2004. The Albany ITT Technical Institute is owned and operated by ITT Educational Services, Inc., a leading provider of technology-oriented postsecondary degree programs in the United States. ESI operates 77 ITT Technical Institutes across the country, which primarily offer career-focused degree programs of study to more than 40,000 students.

About Trinity Institution-Homer Perkins Center, Inc.

Trinity Institution was established in 1921 as a Settlement House for the immigrant Irish, German, Polish and Italian population. Today, the agency strengthens families through the provision of fitness and education programming, nutrition assistance, after-school programming for over one hundred children a day, parenting instruction for parents of children who are at risk of developmental delays and much more. The agency also runs a twenty bed adult substance abuse rehabilitation program which has successfully graduated hundreds of individuals.

Cross Training of Undergraduate Students

Albany Medical College
47 New Scotland Avenue Albany
New York 12208
Phone: (518) 262-5253

Contact: Jean Cornwell
Established: May 2000

Phone: (518) 262-5253
E-Mail: graduate-studies@mail.amc.edu

Description:

A 10-week program is designed to allow undergraduates to spend 90% of their time doing important biological research, supplemented with activities to facilitate written communication skills, develop an understanding of the responsible conduct of science, examine career opportunities, enhance biomedical information search and retrieval skills, and develop a broad overview of biology through interactive seminars. The rationale is that the explosion of information generated in the biological science over the next several decades (the so called 'post-genomic' era) will provide job opportunities for, and will require the skills and expertise of, individuals who are comfortable with the power of mathematics, physics, computer sciences, engineering and similar 'quantitative' sciences, and who are conversant in the biological sciences. The intent is to provide a summer opportunity for undergraduates to contribute their talents and expertise to a meaningful, authentic, mentored, research experience in a laboratory centered in the biomedical sciences. For more information and application please visit www.amc.edu.

Strengths:

Pays a competitive salary, provides outstanding training and preparation for careers at the interface of quantitative science and biological sciences.

Limitations:

Limited to students majoring in math, physics, engineering, computer sciences and other quantitative sciences.

Funding Source:

National Institutes of Health

Data Collection and Evaluation System

Wappingers School District
167 Myers Corners Road
Wappingers Falls, NY 12590

Contact: Charles Hill, Asst Superintendent Phone: (845)298-5000 x138
E-mail: chill@wappingersschools.org

Description:

On the administrative level, the Wappingers Central School District has developed a system to help them comply with the increasing NCLB demands for assessment. They have developed their own data warehouse to help drive instructional improvement through its ability to bring data to bear on instructionally-focused questions. The latest addition to the warehouse is a web-enabled, locally-developed, standards-aligned elementary school report card system that can also link to state assessment and student demographic data.

Database Management Certificate

SUNY Ulster County Community College
Stone Ridge
New York 12484
Phone: (845) 687-5000

Contact: Jim Perry
Established: 1997

E-mail: perryj@sunyulster.edu

Description:

This 22 credit certificate program provides the basic skills to effectively manage databases. This program, which consists of a series of classes in computer information systems, fits within SUNY Ulster's Associate in Applied Science Program in Computer Information Systems. Students enrolled in the program have the option of applying credits earned directly into the Associate in Applied Science degree program.

Funding Sources:

College operating budget.

Degrees in Computer Technologies

Sage College of Albany
140 New Scotland Avenue
Albany, NY 12208
Phone: 1-888-VERYSAGE

Contact: Elizabeth Fryer

Phone: 518-292-8655
E-Mail: freyere@sage.edu

Description:

Associate and bachelor's degrees in: Computer Information Systems; Computer Network and System Administration. Certificate in Help Desk Management and Operations. The programs offer students both a theoretical and conceptual foundation in computing studies as well as a set of specific skills and capabilities. Curriculum is constantly evolving to reflect changing technologies; internships are required at both associate and bachelor's degree levels. Bachelor's degree completion (upper two years) is also available through Sage After Work, in a flexible evening/weekend/online schedule designed for working adults.

Partners:

Various regional businesses and technology companies

Funding Sources:

Institutional

Design Your Future Day

Rensselaer Polytechnic Institute

110 8th Street

Troy, NY 12180

Phone: (518) 276-6000

Contact: Barbara Ruel

Established: 1997

Phone: (518) 276-6203

E-Mail: ruelb@rpi.edu

Description: This one-day program is free for female 11th grade girls with demonstrated aptitude and interest in math and science who want to explore potential careers in engineering, science and technology disciplines. Visiting students participate in two hands-on workshops led by Rensselaer faculty, and interact with Rensselaer students and young alumnae who are pursuing degrees and careers in engineering, science and technology. Rensselaer enrolls 10 to 12 students annually who have attended this program.

A parallel program for parents, guidance counselors and teachers allows adults to learn about and provide support for students interested in careers in science, engineering and technology. It also enables them to see Rensselaer's facilities, to interact with Rensselaer students, faculty and staff, and to learn about Rensselaer's academic programs, admissions and financial aid, housing, first-year student programs and much more.

Partners: Industrial partners who want to diversify their workforce and recruit future technological leaders have partnered with Rensselaer over the years to fund this program. Those partners are Cap, Gemini Ernst and Young and General Motors. High school guidance counselors and teachers assist in identifying the students who are on a 3-year science and 4-year math track with a minimum cumulative grade average of B or better.

Strengths: In 2004, we invited over 100 public and private schools in the northeast that were within 3 hours driving distance from Rensselaer. Partnering with high school guidance counselors to identify students with the appropriate credentials who would be admissible to Rensselaer and with current students and alumni who can tell their own stories about why they chose to pursue careers in these exciting fields and how they're impacting the world.

Discover Your Passion Program

Raize
12 Elmwood Road
Menands, NY 12204
Phone: (518) 292-6522

Contact: William R. Wagner
Established: 2005

E-Mail: bwagner@raizesolutions.com

Description:

The “Discover your Passion” program is designed to drive self-awareness for the individual. I created the course to address the energy and focus issue I see in today’s workforce between the ages of 18-32. Our workforce is spending too much time figuring themselves out during the period of time that they have the most to offer to the workforce. It begins with the passion profile and goes through passion awareness. The course has been designed to be self-utilized by participants so to allow people as much time in thought as possible. Uncovering who you are and what you are passionate about leads to intrinsic motivation and unconditional commitment. Couple passion, intrinsic motivation and unconditional commitment with presentation and you have a very talented individual.

Partners:

The Dale Carnegie Training Group for presentation

Funding Sources:

The program is currently privately funded through our “for profit” talent agency.

Early Admissions Program for Related Health Professions

SUNY Cobleskill
Cobleskill, New York 12043
Phone: (518) 255-5700

Contact: Dr. Michael Murphy

Phone: (518) 255-5445
E-Mail: murphymj@Cobleskill.edu

Description:

Students interested in pursuing careers in Cardiovascular Perfusion Technology, Respiratory Care, Cytotechnology, Physical Therapy, and Medical Technology are recruited directly in their senior year in high school. The first two years of each program occur at SUNY Cobleskill in an appropriate major (e.g. biology, histotechnology). Program completion will occur at the Health Science Center in Syracuse, College of Related Health Professions.

Partners:

Upstate Medical University; Bassett Hospital.

Early Assurance Physician Training Program

SUNY Cobleskill

Wheeler 103, SUNY, Cobleskill, New York 12043

Phone: 518-255-5445

Contact: Michael Murphy

Phone: 518-255-5445

E-Mail: murphymj@cobleskill.edu

Description:

Early Decision Program: Two years at SUNY Cobleskill, two years at either Siena College or Cornell College of Agriculture and Life Sciences, 4 years at Upstate Medical University.

Initial Entry Requirements: 90% High School average or equivalent, 1200 SAT minimum or 27 ACT minimum score, three years of appropriate high school science and mathematics including algebra, trigonometry, and geometry with appropriate grades are generally necessary to qualify for acceptance into the science programs. Precalculus is recommended.

Early-Decision on Acceptance to Upstate University: Students must maintain a minimum 3.5 general and science-specific cumulative average. Students must complete 40 hours of volunteer service/year. It is strongly recommended that this service be in direct contact with patients and physicians. Students must complete 4 days of shadowing a physician, 2 days ambulatory and 2 days in a hospital setting/year. Students must abide by all "Rules of Student Conduct" and be in good standing with the college. Students must apply during the Spring of their first year to both Upstate Medical University and Siena College or Cornell College of Agriculture and Technology. After a review of the student credentials, an invitation to interview with Upstate Medical University *may* be issued. The results of this interview will be the basis for acceptance into the Early-Decision Program at Upstate Medical University. A place will be held for you at Upstate Medical University and at either Siena or Cornell provided the following program conditions are met. ** No Medical College Admissions Test (MCAT) is required.

Continuance in the Program: Students must complete year 2 at SUNY Cobleskill and then transfer to either Siena College or the Cornell College of Agriculture and Life Sciences at Cornell to complete the bachelor's degree. Students must maintain a minimum 3.5 general and science-specific GPA throughout all years of the program. Students must continue to shadow (4 days/year) and volunteer (40 hours/year) each year of the program. Students must remain in good standing with all institutions and abide by all Rules of student Conduct. Students will transfer from Siena College or Cornell College of Agriculture and Life Sciences to pursue the M.D. degree. Students not accepted into the early decision program may continue in the conventional (traditional) pre-medical program if their grades remain passing (C) or better. It is necessary for these students to take the MCAT's in order to apply for medical school

Partners: Siena College, Cornell University, Upstate Medical College

Funding Sources: SUNY, Cornell, Siena, and CHAHEC

EDGE

Union College
807 Union Street
Schenectady, NY 12308
Phone: (518) 388-8394

Contact: Cherrice Traver
Established: 2003

Phone: (518) 388-6530
E-Mail: traverc@union.edu

Description: EDGE is an innovative two-week program for high school junior and senior girls that is designed to encourage their interest in engineering and science. The program addresses the national need to increase the number of women in the engineering workplace, as less than 10 percent of practicing engineers in the US are women.

Under the leadership of Union College faculty, 25 students from the Capital Region participate in lectures, field trips, laboratory work, and social activities both on and off the Union campus. Students explore and apply engineering principles - bioengineering, robotics, computer systems etc. - to solve a specific challenge. Past workshops, for example, have focused on designing and building adaptive toys for local children with disabilities. In addition to their scientific focus, students also benefit from communications training and education to enhance their presentation skills and build self-confidence to present ideas in a public setting.

Partners: GE, Hilltop Manor Head Injury Hospital, and Knolls Atomic Power Laboratory.

Strengths: The program makes engineering fun, which fosters recognition that engineering is far more than numbers and formulas - it is an essential part of the world we live in. Workshop projects are designed to encourage students to explore ideas, think critically, and work in a team atmosphere to achieve results.

Limitations: Since the number of students in program is capped to ensure a beneficial faculty-student ratio, the total number of girls served in the region each year is limited.

Funding Sources: Northrop Grumman Corporation, Union College.

Educational Programs at Schenectady Museum

Schenectady Museum & Suits-Bueche Planetarium
Nott Terrace Heights
Schenectady NY 12308
Phone: (518) 382-7890

Contact: Erin Breslin, Dir Communication Ph: (518) 382-7890 x223
Established: 2002

Description:

The Museum offers a variety of programs offered throughout the year.

Who Are You, Scientist? program allows Pre-K-2 students to discover how scientists work, using a scientist's tools to do a simple experiment in chromatography. After predicting the outcome, students separate ink into its component colors, and take home the colorful results. A brief visit through the exhibits ties the work of a scientist to the regional community.

Inventions at Home program asks grades 1-5 students how household inventions have evolved over time and changed family life. Students learn the process of invention by exploring the evolution of a simple household appliance. In hands-on stations, they work in small groups to discover solutions to invention problems.

Fun With Physics program allows students to become human gyroscopes. Through interactive demonstrations, this program explores Bernoulli's principle, the center of gravity, and other physics concepts.

All of these programs, as well as many others offered by the Museum, meet multiple NYS Learning Standards.

Partners:

Regional schools, school districts.

Electrical Technology A.A.S./Computer Support Technology Certificate

Schenectady County Community College
78 Washington Avenue
Schenectady, NY 12305
Phone: (518) 381-1200

Contact: Thomas Nelson, Dean of Academic Affairs
Phone: (518) 381-1347 E-Mail: nelsontj@gw.sunysccc.edu

Description:

These programs were revised to better address the needs of the shifting trends in the industry and to emphasize the electrical aspects of the programs.

Strengths:

Students will have the opportunity to select from the two concentration areas; computer or materials. All of the 32 credits in the Computer Support Technology Certificate program are applicable to the Electrical Technology A.A.S. program. Students have the option of transferring into the Electrical Technology program or pursuing employment as support personnel for computer users.

Electrical Technologies: Semiconductor Manufacturing Technologies Option

Hudson Valley Community College
80 Vandenberg Ave.
Troy, NY 12180
Phone: (518) 629-4822

Contact: Phil White

Phone: (518) 629-7585
E-Mail: whitephi@hvcc.edu

Description:

The mission of the Semiconductor Manufacturing Technology initiative is to provide education for employment and transfer through competency-based curriculum, integrated with hands-on instruction that supports developments in the semiconductor industry including present and emerging fields such as semiconductor fabrication, Micro-Electro-Mechanical Systems (MEMS), and nanotechnology. Students will complete hands-on lab experiments at the University at Albany nanoscience facilities.

Partners:

University at Albany, School of Nanosciences and Nanoengineering, and a pending corporate partner.

Strengths:

Will produce technicians trained in clean room technologies and chip fabrication.

Limitations:

Student must be qualified to enroll in the Electrical Engineering Technologies Program and successfully complete the first year of study.

Elementary School Programs

Junior Achievement, Northeastern NY, Inc
8 Stanley Circle
Latham, NY 12110
Phone: (518) 783-4336

Contact: Carol Dyer

Phone: (518) 783-4336
E-Mail: cdyer@broadviewnet.net

Description:

Junior Achievement offers a variety of elementary school programs, including:

- Ourselves (K) - is designed to develop personal economic concepts through storybook characters in read-aloud stories and hands-on activities.
- Our Families (1st) - provides practical information about family members and their interdependence.
- Our Community (2nd) - focuses on the many occupations found in government and businesses in a typical community.
- Our City (3rd) - teaches students about businesses and the main occupations found in those businesses in a typical city.
- Our Region (4th) - provides practical information about natural, human and capital resources found in regions and used by businesses to produce goods and services.
- Our Nation (5th) - teaches students about business operations and economic issues in the United States.
- Our World (6th) - introduces students to key aspects of global trade and helps them understand how most countries are economically interdependent.
- JA Dollars and \$ense - teaches students in grades 3-5 about earning, sharing, saving and spending money, and businesses they can start or jobs they can perform to earn money. There are six after-school, volunteer-led activities.

The purpose of these programs is to show K-6th grade students the relevance of education to the workplace. For each grade level, there is a different theme that fits in with the social studies curriculum and teaches the students through fun, activity-oriented lessons the basics of business. Volunteers work with the classroom teacher 45 minutes a week, for six weeks. Concepts and skills taught at each grade level build on those taught in the preceding grades.

Elementary Science Partnership

IBM Corp and Arlington School District
2455 South Rd, Mailstop P330
Poughkeepsie, NY, 12601
Phone: (800) 426-4968

Contact: Bruce Wile
Established: 2005

Phone: (845) 435-8539
E-Mail: bwile@us.ibm.com

Description:

As an award for winning a local reading contest supported by State Senator Steve Saland, IBM Engineers partnered with the teachers at Titusville Intermediate School to enhance the science curriculum with some hands-on demonstrations. Based on the different needs of each grade (3rd, 4th, and 5th), we developed three separate sets of presentations. Third grade focused on weather demonstrations (highlight was a tornado-chasing IBM engineer). Fourth grade concentrated on electricity (highlight was an electric xylophone and circuit kits). Fifth grade focused on light and sound experiments. In all cases the IBM team collaborated with the teachers to create interesting demonstrations that reinforced the school curriculum.

Partners:

IBM Corp (Mid-Hudson Valley, NY) and Titusville Intermediate School (Dutchess County, NY).

Strengths:

Engineers re-enforced the school curriculum. Collaboration between teachers and engineers led to a strong partnership.

Limitations:

Set-up and invention/brainstorming was very time-consuming.

Elementary School Mathematics Initiative

Rensselaer Polytechnic Institute - Center for Initiatives in
Pre-College Education
CII 3225; 110 8th Street
Troy, NY 12180
Phone: (518) 276-6906

Contact: Linda Polhemus

Phone: (518) 276-2723

E-Mail: polhel@rpi.edu

Lester Rubenfield
Established: 1999

Email: rubenl@rpi.edu

Description:

The Staff of the Center for Initiatives in Pre-College Education (CIPCE) works with elementary school teachers on how to use interactive multimedia materials developed by CIPCE in support of the teaching of elementary school mathematics.

Strengths:

Changing the environment of school mathematics classrooms to more reflect the game-play, technological, real worlds of students, and to make mathematics more relevant and interesting to them.

Limitations:

At the present time teachers in the Troy, Cohoes and Lansingburgh School Districts

Funding Sources:

These activities were supported by funding from The General Electric Foundation, the New York State Department of Education under their "Teacher Leadership Quality Program", and from the Troy, Cohoes and Lansingburgh School districts.

Energy System Graduate Courses

The Graduate College of Union University
807 Union Street
Schenectady, NY 12308
Phone: (518) 388-8068

Contact: Robert Kozik, Dean School of Engineering and Computer Science
E-Mail: kozikr@union.edu

Description:

The Graduate College of Union University is introducing Energy System Graduate School Courses into the Engineering Curriculum. Courses introduced in the '04 - '05 academic year were: Fuel Cell, Photovoltaics, and Turbine Technologies. Additional courses will be added in the '06-'07 academic year.

Partners:

Courses are being developed and introduced in partnership with Schenectady based energy related industries such as PlugPower, General Electric, Lockheed Martin, and SuperPower.

Strengths:

Integrates Capital District industry technologies into existing GCUU curriculum to focus increased emphasis on attracting and training students for energy related careers.

Funding Sources:

Current programs are being developed without external funding.

Engineering in Classrooms Program

IBM Corp and Arlington School District
2455 South Rd, Mailstop P330
Poughkeepsie, NY, 12601
Phone: (800) 426-4968

Contact: Bruce Wile
Established: 2004

Phone: (845) 435-8539
E-Mail: bwile@us.ibm.com

Description:

While visits to the classrooms during National Engineering week provide a great forum to introduce engineering to students, the magic of the visits wears off in a few short weeks. To continuously keep engineering in the forefront of students' minds, engineers from IBM are partnering with science and technology teachers and visiting classrooms on a continuous basis, assisting students in the design and implementation of their science projects. This is a pilot program.

Partners:

IBM Corp (Mid-Hudson Valley, NY) and Arlington Central School District (Dutchess County, NY).

Strengths:

Engineers and students have continuing contact throughout school year. They work within the teachers' curriculum so as not to add a burden to the already full schedule.

Limitations:

Currently working at the 7th and 8th grade levels, but could be expanded.

Engineering Discovery Fair

Rensselaer Polytechnic Institute
110 8th Street
Troy, NY 12180
Phone: (518) 276-6000

Contact: Barbara Ruel
Established: 2001

Phone: (518) 276-6203
E-Mail: ruelb@rpi.edu

Description: This program was initiated by Rensselaer undergraduates who wanted career information from alumni in industry, government, higher education, and nonprofits so that they could make informed decisions about choosing engineering disciplines that were a good match for their personal interests and skills. Students learn how alumni who graduated with an engineering degree are applying their degrees in the work world. Faculty and alumni provide advice on academic courses and extracurricular experiences that will best prepare students for today's work world. Partners from industry and academe share information about emerging technologies, the skills that employers are seeking in practicing professional engineers and technological leaders of the 21st century, and the effects of globalization and economic challenges.

Partners: Rensselaer faculty, alumni and partners from industry, government, higher education, and nonprofits who are interested in recruiting and educating our future graduates and leaders.

Strengths: Program activities allow students to explore a variety of engineering disciplines. Experts discuss broad topics important to students entering technological careers. Student organizations and academic departments work closely to advertise and promote the benefits of this program. Endowed funds from an alumnus provide alumni travel support for this annual program.

Funding Sources: School of Engineering.

Exploring Engineering Day

Rensselaer Polytechnic Institute
110 8th Street
Troy, NY 12180
Phone: (518) 276-6000

Contact: Barbara Ruel
Established: 2001

Phone: (518) 276-6203
E-Mail: ruelb@rpi.edu

Description: This one-day program is free for children in grades 3 through 6 who are participating in local Boy and Girl Scout troops who want to learn about what engineers do. Visiting students participate in four hands-on workshops led by Rensselaer students studying engineering. Children learn basic science concepts while employing the same skills engineers use every day. At the end of the program, children are able to give examples of different ways in which engineering is applied in our world, can list the kinds of skills engineers employ, and the kinds of subjects that students study to prepare to become engineers.

Partners: Hudson Valley and Mohawk Pathways Girl Scout Councils and Twin Rivers Boy Scout Council and four student organizations who demonstrate that engineers are diversely represented: National Society of Black Engineers, the Society for Hispanic Engineers, the Society of Women Engineers and the School of Engineering Dean's Student Advisory Committee.

Strengths: As part of National Engineers Week, we invited 125 Boy Scouts and 125 Girls Scouts to participate in half-day sessions. Troops and their assigned sessions are tracked in a database so that returning troops are not assigned to the same workshops, which may be offered in subsequent years. This allows children to learn about many different engineering disciplines and demonstrates the vast career choices in engineering. Seeing diverse role models of young women and men who are enthusiastic about engineering helps to dismantle societal stereotypes and the notion of gender-appropriate careers.

Funding Sources: School of Engineering at Rensselaer

FAMtask

Albany-Colonie Regional Chamber of Commerce
107 Washington Ave.
Albany, NY 12210
Phone: (518) 431-1400

Contact: Diana Martin

Phone: (518) 453-5235
E-Mail: dianam@ac-chamber.org

Description:

FAMtask's overall mission is to evaluate Tech Valley resources, strengthen areas of need, and forward Tech Valley as a world-class center for technology. FAMtask Initiatives include:

Tech Valley Portal: Develop a dynamic, virtual gateway to Tech Valley. A one-stop shop for information on working, living and doing business, highlighting the region's quality of life assets through links to arts, cultural, recreational and educational institutions as well as financial, legal, healthcare and human services resources available throughout Tech Valley.

Tech Valley Education: Establish links between industry and Tech Valley educational institutions to improve curricula, technical training, workforce development and continuing education. Develop forums for sharing best practices to improve student achievement.

Tech Valley Pride: Up the "hip" factor by building on the region's #1 ranking in Arts & Cultural attractions. Package Arts & Cultural events and promote the live music scene. Provide "We are Tech Valley" tool kits and training to front-line workers to encourage awareness and regional pride. Promote Tech Valley abroad through a FAMtour for Foreign Consuls and Commercial Attachés.

Tech Valley Welcome: Welcome new arrivals to Tech Valley through a series of programs designed to ease their transition into our community: Tech Valley Concierge, Tech Valley Ambassadors, International Relocation Handbook, International Banking Specialist and Dual Career Partner Programs

Partners:

City of Albany, First Albany, GE Power Systems, Albany Institute of History & Art, Key Bank, United Jewish Federation, Parsons Child & Family Center, RPI, Northeast Health, College of St. Rose, Real Seafood, Downtown Albany Business Improvement District, Center for the Disabled, Organichem Corporation, Nixon Peabody, Pepsi Arena, B. Lodge Co., TL Metzger & Associates, Chamber Members.

Following the Monarch Butterfly

Spackenkill School District
11 Croft Road
Poughkeepsie, NY 12603
Phone: (845) 463-7830

Contact: Karen Vitek
Established: 2005

E-Mail: Karen.vitek@spackenkillschools.org

Description:

In March 2005 Mrs. Vitek took a trip to the overwintering monarch sanctuaries in Mexico. To maximize the learning potential of the trip several activities were conducted before, during and after the trip. Fifth grade students at the Nassau School participated in the Symbolic Monarch Migration sponsored by Journey North (<http://www.learner.org/jnorth/sm/index.html>.) Before leaving on her trip these students made a multimedia presentation to compare Mexico and the United States governments and culture. Third grade students wrote letters of friendship and sent their Flat Stanleys with Mrs. Vitek. This is part of an online project (<http://flatstanley.enoreo.on.ca/>) and Mrs. Vitek brought the letters to a third grade classroom she visited in a school in Anganguero, Michoacan. During the trip Mrs. Vitek kept in touch with students through a blog (<http://homepage.mac.com/kvitek/monarch>.) Each day there were trip notes and a mystery photo. Weather conditions were reported using a handheld weather station and location and altitude were reported using a handheld gps unit. After returning from the trip Mrs. Vitek created a movie that was shown to over 300 students and faculty members in more than 20 presentations. The movie can be found at http://homepage.mac.com/kvitek/monarch_movie.

Partners:

Journey North, Apple Computer, Nielsen-Kellerman (Kestrel 4000), Garmin (eTrex Legend) and Lifli Software.

Forensic Science

Russell Sage College
45 Ferry Street
Troy, NY 12180
Phone: 1-888-VERYSAGE

Contact: Frank Vozzo
Established: 2001

Phone: 518-244-2495
E-Mail: vozzof@sage.edu

Description:

Bachelor's degree in Forensic Science is the only undergraduate program in the Capital Region. The curriculum combines courses in biology, chemistry, mathematics, computer science, criminal justice and forensic science/investigation to prepare graduates for technical positions in any state or private forensics laboratory or to pursue graduate study in forensic biology or chemistry. Internships are provided by various forensic laboratories in a wide geographic area.

Partners:

New York State forensics laboratories and other similar sites

Funding Sources:

Institutional

GE²M^cS (Girls Excited about Engineering, Mathematics, and Computer Science)

The Sage College
45 Ferry Street
Troy, New York 12180-4115
www.sage.edu/rsc/gems

Contact:

Tina Mancuso

E-Mail: mancut@sage.edu

Phone: (518) 292-1755

Deb Lawrence

E-Mail: lawred@sage.edu

Established: September 2003

Phone: (518) 244-2488

Description:

High school and middle school female students chosen by their teachers and guidance counselors participate in a day long program that engages them in age-appropriate hands-on workshops in engineering, mathematics and computer science. After lunch, a career panel comprised of women from these fields share with these students their experiences navigating the transition from middle school to high school, and then to college and the working world. This event is held annually on the Russell Sage College campus in October (high school) and November (middle school).

Saturday Career GE²M^cS consists of three Saturday morning programs where each program focuses only on one of our program fields. Students and their parents are shown the types of exciting careers available with these majors. A hands-on age-appropriate workshop is held for both middle school and high school female students in the field. There are also workshops specifically designed for the parents. After the workshop, a career panel of women from various jobs within each field discuss their career paths.

Partners:

Various regional high schools and middle schools.

Funding Sources:

The Charitable Leadership Foundation and The Sage Colleges.

GenNEXT

Albany-Colonie Regional Chamber of Commerce
107 Washington Ave.
Albany, NY 12210
Phone: (518) 431-1400

Contact: Diana Martin

Phone: (518) 453-5235
E-Mail: dianam@ac-chamber.org

Description:

GenNEXT, the young professionals' council of the Albany-Colonie Regional Chamber of Commerce, is dedicated to promoting the region's economic vitality through the attraction and retention of young professionals and business leaders throughout Tech Valley. The council's various programs seek to groom the next generation of Tech Valley leaders, provide a forum for young professionals to expand their business and social networks and serve as a sounding board for regional economic development issues.

Since its inception one year ago, the GenNEXT council has grown and gained tremendous recognition in the region and beyond. Membership has increased from several individuals to nearly 300, representing a diverse group of companies in the region. The mentorship programs have connected college students with young professionals, and young professionals with senior executives, creating synergy between these distinct groups. Other programs, such as "Executives Unplugged" and the "Insider Series," draw large crowds and create media attention in local, regional and even national publications.

The Council held its inaugural conference in 2005, which brought together young professionals, business leaders, government officials, university faculty and students. A wide variety of issues were discussed, including the attraction and retention of college students and young professionals, leadership and community involvement, and economic development. Specific initiatives will be created from this discussion that will be implemented in the future.

With the success of GenNEXT, several area chambers of commerce have also launched councils for their young professionals.

Further information about GenNEXT programs can be found at www.ac-chamber.org.

Hands On Science Program

**General Electric- Global Research
One Research Circle
Niskayuna, NY 12309
Phone: (518) 612-6863**

**Contacts: Maria LaTorre
Established: 2003**

**Phone: (518) 387-4124
E-Mail: maria.latorre@crd.ge.com**

Description:

This program brings GE scientists and engineers to a fourth grade classroom on a weekly basis to perform hands on activities with the students. Topics parallel the fourth grade curriculum and include Chemistry, Biology, Physical Science, Simple Machines, Astronomy, Electricity, Magnetism, Earth Science, and Weather. The highlight is the annual science fair in which students select a science based question and work stepwise through the scientific method to investigate and report on their topic of interest.

Partners:

GE Volunteers (from GE Global Research), GE Global Research MACS and PCT, and Schenectady City Schools.

Strengths:

Weekly interaction with students throughout the entire school year builds relationships and provides role models and mentors to the students. More in-depth investigation of areas beyond the standard curriculum generates enthusiasm for math and science among the students. Co-dependence of math and science are promoted; i.e. math skills are needed to generate the answer to a scientific question. Supplies are provided to an urban school district with a limited budget. Fourth grade is a wonderful age for generating enthusiasm for math and science that will hopefully continue throughout life.

Limitations:

Currently not enough resources to meet the needs of this and other districts.

Funding Sources:

A grant from the GE Elfun Volunteers and GE Global Research.

Hickey Financial Technology Center

Siena College
515 Loudon Rd, Loudonville, NY 12211
518-783-2321

Contact: Jim Nolan, Dean School of Business Phone: 518-783-2321
Established: 2004

Description:

Students in middle school and high school come to campus to learn about the stock market/investments. This program is for youths from underserved communities.

Funding Sources:

Siena College

High School Programs

Junior Achievement, Northeastern NY, Inc
8 Stanley Circle
Latham, NY 12110
Phone: (518) 783-4336

Contact: Carol Dyer

E-Mail: cdyer@broadviewnet.net

Description: Junior Achievement offers a variety of high school programs, including:

The JA Economics program is a hands-on, activity-oriented economics course for high school seniors, which meets the state mandate. An economics teacher in partnership teaches it with a business volunteer who makes 8-10 visits to the class during the semester to give the practical application of the economic theory. This program is offered at area schools. When the program was offered at Scotia - Glenville, for example, 175 students in grade 12 participated. Scotia-Glenville has also offered GLOBE—Global Learning of the Business Enterprise—with Mexican and Russian high schools. A joint venture was created in which products are exchanged and sold in the other country. Teleconferencing greatly facilitated communication.

The JA Success Skills is another program for high school students. This program focuses on developing students' interpersonal skills, including an assessment, career matching, mock job interviews, and videotaping.

Other programs include a web-based business simulation and personal finance.

Partners: Local businesses such as Dimension Fabricators and General Electric have a link with Scotia-Glenville High School. (S-G has piloted GLOBE in the area and strongly participates in JA Economics.)

Strengths: Brings real-life business leaders into the classroom. Program can allow student exposure to business environment through field trips.

Limitations: Necessary to have local business people who are willing to make a commitment to regularly visit a class with planned lessons. Corporate commitment is essential to the success of GLOBE.

High Tech Chip Camp

**College of Nanoscale Science and Engineering
Albany NanoTech Complex
255 Fuller Road
Albany, NY 12203
Phone: (518) 437-8686**

Contact: Michael Fancher

Description:

Three day program designed to introduce students to career opportunities in the semiconductor industry. Intended to create interest in science, mathematics, and high-tech careers among high school students. Students learn the basics of electronics, digital logic, and chip fabrication through a combination of classroom and hands-on experiments.

Partners:

SEMI workforce development Institute, Albany Nanotech, Borton Engineering, Corning, General Electric, IBM, International Sematech, Krakelor Scientific, Motorola, MTI Instruments, and Teradyne.

Strengths:

Draws students from Troy, Schenectady, Chatham, the Capital Region BOCES, and Questar. School guidance counselors and teachers select students.

Limitations:

Only 27 students allowed to join.

Information Security Academy

**SUNY Albany- Center for Information Forensics and Assurance
Institute for Informatics, Logics
Washington Avenue Albany, NY 12222
Phone: (518) 442-4949
Contact: Jagdish Gangolly, PhD E-Mail: gangolly@cnsunix.albany.edu**

Description:

A teaching and research program where educational cases based on real problems provide learning opportunities for students and practitioners to hone their skills under the guidance of seasoned experts. Knowledge gained from case-based learning can be applied to real problems using case-based reasoning. Courses include Information Security Policies and Compliance Verification, Information Security Risk Analysis, Risk Analysis, Incident Handling, and Computer Security.

Partners:

New York State Police, Forensic Investigation Center, Computer Crime Unit; New York State Office of Cyber Security and Critical Infrastructure Coordination; and the Center for Education and Research in Information Assurance and Security (CERIAS) at Purdue University.

Strengths:

Two hands-on laboratories: Educational Research and Learning Lab, Collaborative Research Lab; integration of authentic cases in course modules; collaborative problem solving processes; curriculum validated as conforming to Committee on National Security Systems (CNSS National Standard 4011); laboratories can be used for continuing education.

Funding Sources:

U.S. Dept. of Education Fund for the Improvement of Postsecondary Education; National Science Foundation; and U.S. Dept. of Justice

Invention Convention

**Schenectady Museum & Suits-Bueche Planetarium
Nott Terrace Heights
Schenectady NY 12308
Phone: (518) 382-7890**

**Contact: Erin Breslin
Established: 1997**

Phone: (518) 382-7890 x223

Description:

Invention Convention is an annual student invention competition open to Capital District students from grades K through eight from both public and private schools. It's designed to stimulate creativity and imagination. Teaching students how to invent and apply problem-solving skills helps nurture the next generation of inventors and scientists. Regional competitions are held in the Capital District, Binghamton, Rochester, and Syracuse.

An exhibit of 100 inventions by area students opens in May at the Schenectady Museum & Suits-Bueche Planetarium and will be on display throughout the month. A reception and awards ceremony is held at the Museum when 100 student inventors are recognized as regional semi-finalists and 25 students are announced as state finalists.

Partners:

GE Global Research; the Schenectady Chapter of the GE Elfun Volunteers; Heslin Rothenberg Farley & Mesiti, PC; Schmeiser, Olsen and Watts, LLP; and the Eastern New York Intellectual Property Law Association.

INVEST Nanotechnology Incubator

Russell Sage College
45 Ferry Street
Troy, NY 12180
Phone: 1-888-VERYSAGE

Contact: Dr. Thomas Keane
Established: 2005

Phone: 518-244-2299
E-Mail: keanet@sage.edu

Description:

The INVEST nanotechnology business incubator facility, in a renovated building linked to Science Hall at Russell Sage College, will provide space and support for startup companies manufacturing products rooted in the nano-sciences. Its first tenant will be Evident Technologies, Inc., which produces quantum dots for multiple industrial uses. Evident scientists and other personnel will interact with Sage faculty and students in the sciences, business, marketing, finance, and other related fields, providing internships and assisting in the development of nano-science applications across the curriculum in biology, chemistry and physics. INVEST is the only facility of its kind at a woman's college in the U.S.

Partners:

Evident Technologies, Inc.; Tech Valley Communications

Funding Sources:

State of New York (\$2.5 million); private donors \$2.5 million.

IQ: Inform. Influence. Inspire.

Albany-Colonie Regional Chamber of Commerce
107 Washington Avenue
Albany, NY 12210
(518) 431-1400

Contact: Diana Martin Ph: (518) 453-5235 E-Mail: dianam@ac-chamber.org

Description: The IQ program of the Albany-Colonie Regional Chamber of Commerce is working to foster world-class educational opportunities throughout the region, preparing students for the future work force and helping leaders in business and education work together most effectively to achieve results.

Tech Valley Educator Awareness Conferences - Through a series of Tech Valley Educator Awareness Conferences held throughout the year, superintendents, elementary, middle and high school teachers, guidance counselors, school board and PTA members learn more about the opportunities in Tech Valley and become partners in the growth of the region.

Tech Valley Teacher Externship Program - This program is designed to expose teachers to careers in the math, science and technology fields, and educate them about the skills that are needed for the future workforce in Tech Valley. Teachers have the opportunity to work in technology companies and gain valuable insight into the demands of the modern workplace. These experiences give teachers a chance to influence both curriculum and the way that students learn.

Tech Valley Innovative Educator Awards - Each year, as part of the Summit in Tech Valley, the Tech Valley Innovative Educator awards are given to K-12 level teachers in a public or private/independent school located in Tech Valley. Teachers who have made extraordinary contributions and brought innovation to the field of math, science or technology teaching will be honored with this recognition. Awards are given to a teacher or team of teachers at the elementary, middle and high school levels. The teachers chosen are recognized at an assembly at each of their respective schools and presented a \$1500 check to be used to purchase technology equipment for their classroom.

Tech Valley Student Summit - To nurture a love of math, science and engineering, students need to be inspired through hands-on experiences and the opportunity to meet those individuals leading innovation in Tech Valley. The half-day Summit will be geared towards students in grades 5-8 and will include a keynote speaker, followed by breakout sessions where students will work with innovative technology companies on a wide range of hands-on activities.

Classroom Pilot Programs - Schools from throughout the region will have the opportunity to participate in a program that begins at the first grade level, follows students over the course of four years, and concludes with the standardized New York State testing in fourth grade. Through presentations, hands-on learning experiences and mentoring, the program hopes to inspire students in math, science and technology at an early age and lead to greater success in academic achievement in these areas. Further information about IQ programs can be found at www.ac-chamber.org.

John Deere Partnerships

SUNY Cobleskill
Cobleskill, NY 12043
Phone: (518) 234-5011

Contact: Holly Cargill-Cramer

Phone: (518) 255-5524

E-Mail:

cargillh@Cobleskill.edu

Description:

The John Deere Partnerships consists of three 2-year Associate in Applied Science Concentrations in Agricultural Technology, Construction and Forestry Technology, and Lawn and Grounds Care Technology. Each of these concentrations consists of formal education at SUNY Cobleskill and a work experience component at an independent John Deere Dealership. These concentrations are designed to graduate trained and certified John Deere service technicians. This cooperative venture with John Deere supports over a million dollars of educational training materials in the way of whole machines parts, tools, computers, simulators and training information. There are approximately 30 to 40 associate students involved in these programs at any one time.

Another component the industry partnership is the training of current technicians in the field for both John Deere and Ingersoll-Rand/Bobcat. This consists of training schools conducted at SUNY Cobleskill by SUNY staff and by industry staff. Additional educational materials are contributed from Ingersoll-Rand Bobcat of a value of \$250,000 a year. These programs train approximately 150 to 300 individuals currently working in the Northeast.

Partners:

John Deere, Ingersoll-Rand.

Strengths:

Long standing relationships with both companies.

Joseph Henry Science Fair

The College of Saint Rose
432 Western Avenue
Albany New York 12203
Phone: (800) 637-8556

Contact: Kari Murad, Assistant Professor
Established: 1985

Phone: (518) 454-5184
E-Mail: muradk@strose.edu

Description:

The **JOSEPH HENRY SCIENCE FAIR** is open to any 4th – 8th grade student attending parochial, private, and public schools in the City of Albany, as well as Joseph Henry Elementary School in Galway, NY. There are Prize winners in two categories – Grades 4-6 and Grades 7-8 – they receive the young Sigma Xi scholar award. The Science Fair is named for Joseph Henry, a native of Albany and one of America's most important scientists of the 19th century. In 2005, more than 90 entries from individuals and teams were displayed.

Partners:

Albany City Schools, Diocese of Albany Schools

Funding Sources:

The College of Saint Rose, Corporate sponsors

Knowledge is Power Program (KIPP)

KIPP Tech Valley Charter School
1 Dudley Heights
Albany, NY 12210
Phone: (518) 694-9494
www.kipptechvalley.org

Contact: Dustin Mitchell

Phone: (518) 701-1909
E-Mail: dmitchell@kipptechvalley.org

Description:

KIPP (Knowledge is Power Program) Schools are a growing number of free open-enrollment public schools that provide educationally underserved students with the knowledge, skills, and character needed to succeed in top-quality high schools, colleges, and the competitive world beyond. KIPP students are accepted regardless of prior academic record, conduct, or socioeconomic background and over 80% of KIPP students qualify for the federally subsidized meal program. The regional school has 84 fifth-graders, and will expand by adding one grade each year until it reaches over 300 students in grades 5 through 8.

LEGO Mindstorm Robotics and Interactive Multimedia Materials Integration into Middle Grades Mathematics Curricula

**Rensselaer Polytechnic Institute - Center for Initiatives in Pre-College
Education**

CII 3225; 110 8th Street

Troy, NY 12180

Phone: (518) 276-6906

Contact: Lester Rubinfeld

Established: 2001

Phone: (518) 276-6906

E-Mail: cipce@rpi.edu

Description:

The Staff of the Center for Initiatives in Pre-College Education (CIPCE) works with middle grades (6-8) mathematics teachers on how to use the LEGO Mindstorm robotics technologies, and how this and interactive multimedia materials developed by CIPCE can be used in support of the teaching of middle school mathematics

Strengths:

Changing the environment of middle grades mathematics classrooms to more reflect the game-play, technological, real worlds of middle grades students, and to make middle grades mathematics more relevant and interesting to these students.

Limitations:

At the present time teachers in the Troy, Cohoes and Albany School Districts

Funding Sources:

These activities were supported by funding from The General Electric Foundation. the New York State Department of Education under their "Teacher Leadership Quality Program", and from the Troy, Cohoes and Albany School districts

Light Years From Andromeda

Schenectady Museum & Suits-Bueche Planetarium
Nott Terrace Heights
Schenectady NY 12308
Phone: (518) 382-7890

Contact: Erin Breslin
Established: 2003

Phone: (518) 382-7890 x223

Description:

Light Years From Andromeda is a planetarium show about a journey between two galaxies. Narrated by Michael Dorn, Worf of Star Trek, this program explains cosmic distances and light speed and includes a live segment about the current night sky.

In conjunction with the program, the 42-inch plasma TV screens flanking the entrance to the Suits-Bueche Planetarium show NASA TV, which includes updates on the latest happenings in space.

Partners:

Regional schools and school districts.

The Mars Planetarium Show

**Schenectady Museum & Planetarium
Nott Terrace Heights
Schenectady NY 12308
Phone: (518) 382-7890**

**Contact: Erin Breslin
Established: 2003**

Phone: (518) 382-7890 x223

Description:

The Mars Show, a planetarium show narrated by Star Trek actor Patrick Stewart, explores the discoveries of the past, present, and future of the Red Planet, as seen by telescopes, space probes, and Mars Landers.

In conjunction with the Mars planetarium show, the 42-inch plasma TV screens flanking the entrance to the newly remodeled Suits-Bueche Planetarium show NASA TV, which includes updates on the Mars Rovers, Spirit and Opportunity.

Partners:

Regional schools and school districts.

Master of Arts in Music Technology

The College of Saint Rose
432 Western Avenue
Albany, NY 12203
Phone: (800) 637-8556

Contact: Sister Mary Ann Nelson

Phone: (518) 454-5278
E-Mail: nelsonm@strose.edu

Description:

The Master of Arts in Music Technology is a 36-credit degree designed to provide studies with opportunities for personal and career enhancement through advanced study in both music and music technology. The curriculum encourages students to enhance their professional competence in emerging technology and to integrate music technologies and creative expression. Applicants must hold an undergraduate degree in music.

Master of Business Administration

Excelsior College
7 Columbia Circle
Albany, NY 12203-5159
Phone: (518) 464-8500

Contact: Dr. Altaf Memon
Established: 2004

Phone: (518) 464-8509
E-Mail: amemon@excelsior.edu

Description:

The Excelsior College MBA program continues the long-standing Excelsior College model for adult higher education by recognizing prior learning and enabling self-paced study. Designed for adult learners with working experience, the degree program is suited to those who have earned a bachelor's degree and now seek to expand their opportunities in business. Excelsior's flexible learning format enables students to study at their own individual pace. The program will equip successful students to further their careers through enhanced knowledge, understanding, and application of business disciplines to their work environments.

The Master of Business Administration degree requires 48 semester hours of credit. Students entering the program may transfer up to 42 relevant graduate-level credits earned through faculty approved sources. Up to 9 credits in MBA electives are allowed. Students fulfill degree requirements by completing Excelsior College MBA courses, or approved courses from one of the member institutions in our Preferred Provider Network. Distance and traditional classroom-based courses from other colleges and universities, and recognized industry training that has been evaluated for college-level credit may also apply.

Excelsior College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, and is an organizational member of the International Assembly for Collegiate Business Education.

Partners:

Corporate College Services; European Business School.

Master of Science in Engineering and Management Systems

The Graduate College of Union University
807 Union Street
Schenectady, NY 12308
Phone: (518) 388-8068

Contact: Robert Kozik, Dean School of Engineering and Computer
Science E-Mail: kozikr@union.edu

Description:

The Graduate College of Union University (GCUU) is now offering a new degree: Master of Science in Engineering and Management Systems. This degree will allow an engineering or computer science professional to integrate mechanical, electrical and computer science technologies with the core components of an MBA such as, finance, marketing, and operations management. With the increase in smaller, flexible, hi-tech industries in the Capital District and Tech Valley, there is a growing demand for managers and executives with multi-disciplined technical and management backgrounds. GCUU specifically designed this program to address such professional needs within the engineering and computer science industries.

Partners:

This program is being introduced through students from Capital District industries such as GE, Benet Labs, Lockheed Martin, Bechtel, and Plug Power.

Strengths:

This program requires a minimum of six technical courses and an additional five management courses. Flexible schedules, evening course and a supportive academic atmosphere make it possible for the working professional to complete the program on a part-time basis within three years, and prepare themselves for advancement into senior management and executive positions and contribute to the successes of Tech Vally initiatives.

Funding Sources:

This Program was developed and introduced without external funding.

Master of Science in Natural Science

Rensselaer Polytechnic Institute
110 8th Street
Troy, NY 12180
Phone: (518) 276-6000

Contact: Lester Rubenfeld
Established: 1995

Phone: (518) 276-6906
E-Mail: rubenl@rpi.edu

Description:

This is a thirty credit, three summers, six weeks/summer program for secondary school mathematics and science teachers leading to a Master Degree in Natural Science. The program has a strong focus on content, interactive/inquiry pedagogy and the integration of interactive technologies, including multimedia and LEGO Mindstorm Robotics, into secondary school teaching.

Strengths:

The integration of interactive technologies into secondary school mathematics and science teaching.

Funding Sources:

The development of the program was supported in part by a grant from the U. S., Department of Education's Fund for the Improvement of Post Secondary Education.

Materials for Alternate Energy and Environmental Applications Course

Plug Power Inc.
968 Albany-Shaker Road
Latham, NY 12110
Phone: (518) 782-7700

Contact: Dr. John F. Elter
Established: Fall 2004

E-Mail: John_Elter@plugpower.com

Description:

This course will deal with the subject of nano-technology and its application to fuel cells. The course will include an overview of fuel cells, the electrochemistry underlying their operation and system design considerations. Theoretical models and simulations will lead to a discussion of how fuel cells degrade and how their performance can benefit from optimization of materials processing approaches. The course will draw upon recent literature in the field and include a review of nano-structured electrode approaches.

Partners:

Plug Power Inc. and Albany NanoTech.

Math Mentors at Work Program

General Electric- Energy
1 River Rd. Schenectady, NY 12345
Phone: (518) 385-4740

Contact: Scott Blackwell
Established: May 2004

E-Mail: scott.blackwell@ge.com

Description:

Weekly math tutoring program where students from a local high school (Mohonasen HS) are bussed to the GE Energy main campus in Schenectady. 20+ students take part in this weekly tutoring program. GE employees provide tutoring for Algebra and Geometry courses on site at GE Energy using real world problems to reinforce the need for math skills. Students are able to feel what it is like within a work environment while the convenience of on-site tutoring allows over 40 GE tutors to participate in the program.

Partners:

GE Energy and Mohonasen High School

Strengths:

Students learn in work environment, convenience for tutors leads to greater participation, favorable student to tutor ratios (2 to 1), GE employees use real-life engineering examples as part of tutoring, strong relationships built.

Limitations:

School bussing requires coordination and improvements in on-time arrival are needed.

Mid-Hudson Pattern for Progress

Mid-Hudson Pattern for Progress
Desmond Campus 6 Albany Post Road
Newburgh, New York 12550
Phone: (845) 565-4900

Contact: Michael DiTullo
Established: 1965

E-Mail: mditullo@pfprogress.org

Description: Pattern works with county planning and economic development offices to provide technical expertise and market/demographic data for strategic planning. Pattern maintains a comprehensive regional research base and data library on the Hudson Valley, including information on population, households, mobility, economic climate, retail sales, housing, labor force availability and expected growth sectors, transportation, and education and training programs. To further foster regionalism and information exchange, Pattern brought the nine-county planning commissioners together this year on a regional basis to create The Hudson Valley County Planners Forum to share data and best practices, and stimulate regional thinking, planning and public investment.

Partners: Adirondack Transit Lines Inc., Arrow Bus Lines, Inc., Coach USA, Gallagher Transportation Services, Metro-North Railroad, National Express Group, Stewart International Airport, West Point Tours, Anderson School, Cornell Cooperate Extension, Culinary Institute of America, Dominican College, Dutchess County BOCES, Dutchess County Community College, Marist College, Mount Saint Mary College, Orange County Community College, Orange/Ulster BOCES, Pace University, Sullivan County Community College, SUNY New Paltz, Ulster County Community College, Ulster County BOCES, Vassar College, Clemson Bros., Inc., DHS Systems LLC, Dynegy Northeast Generation, Inc., EFCO Products Inc., Heritagenergy, Inc., IBM Corporation, International Paper, Masterwork Kitchens, Inc., Minolta Advance Technology, N&S Supply, Pawling Corporation, PDQ Manufacturing Co., Inc., Spiegel Bros. Paper Company, Taylor Recycling Facility LLC, Viking Industries, Inc., County and municipal governments, Medical Centers, and Environmental groups.

Strengths: Pattern has strong support from many organizations in the Hudson Valley and has instituted many programs bringing corporations to the Hudson Valley, as well as improving the Hudson Valley infrastructure.

Middle School Programs

Junior Achievement, Northeastern NY, Inc
8 Stanley Circle
Latham, NY 12110
Phone: (518) 783-4336

Contact: Carol Dyer

E-Mail: cdyer@broadviewnet.net

Description:

Junior Achievement offers a variety of middle grades programs, including:

- Personal Economics – this program helps students assess their personal skills and interests, explore career options, learn job-hunting skills, and discover the value of an education. Students also learn about budgets, personal and family financial management, and the use and abuse of credit. Volunteers present 45 minute activities once a week for eight weeks.
- Groundhog Job Shadow Day - allows middle grade and high school students to “shadow” a workplace mentor. Students get an up-close look at how the skills learned relate to the workplace, creating a link between academics and careers.
- Enterprise in Action – this program helps students understand the principal characteristics of the U.S. economic system and the role of business in it. Students learn the steps in organizing a business, as well as producing and marketing a product. Students also study the social responsibilities of business and the role of government in the US economy. Volunteers present 45 minute activities once a week for eight weeks.
- The Economics of Staying in School – this program consists of activities designed to help seventh grade students understand the importance of school for future success. Activities include: Playing with Success, Living and Learning, and the Cost of Living. This program is currently being done throughout the Capital District, and is taught by business people or college students in five class visit of 45 minutes each.
- JA Global Marketplace – this program is designed to provide practical information about the key aspects of the global economy, what makes world trade work, and how trade affects students’ daily lives.
- JA Economics for Success – this program explores personal finance and students’ education and career options based on their skills, interests, and values.

MIDI Lab

Niskayuna Central School District
1239 Van Antwerp Rd.
Niskayuna, NY 12309
Phone: (518) 377-4666

Contact:

Scott Walroth, District Director of Art Education

E-Mail: Walroth.s@nisk.k12.ny.us

Christopher Neubert, District Director of Music Education

E-Mail: neubert.c@nisk.k12.ny.us

Description:

Within the Electronic Arts Studio, students utilize new advances in technology and equipment to create and produce high end graphics, music composition, and films.

Often these media are combined in a variety of ways to create unique and original multimedia experiences. The works created are often on par with what is being done professionally in the market place.

Partners:

Art and Music departments of the high school.

Strengths:

Student developed creations, which through advanced problem-solving combine many mediums and disciplines in a quest to express a personal vision or “voice”.

Mildred Elley

Mildred Elley
800 New Loudon Road
Latham N.Y. 12110
Phone: (518) 786-0855

Contact: Dr. Robert Giuffrida Jr. Phone: (518) 786-0855 x249
Established: 1917 E-Mail: bob.giuffrida@mildred-elley.edu

Description:

Mildred Elley has nearly a 90 year history in the Capital Region, admitting its first class in 1917. Currently the school enrolls about 1,000 students each year, and graduates about 250 per year with two-year Associate in Occupational Studies degrees or one-year certificates. We are approved by the New York State Board of Regents and accredited by the Accrediting Council for Independent Colleges and Schools.

Mildred Elley is enhancing its technical offerings with two programs that we expect to implement soon: Game Design and 3-D Animation and Digital Graphics and Multimedia Design. Both will be offered as one-year certificates and two year degrees. We currently offer 13 programs: Accounting Systems Specialist, Administrative Assistant, Advanced Paralegal Studies, Business Management, Clinical Medical Assistant, Information Technology, Information Technology Specialist, Medical Assistant, Medical Office Assistant, Office Technologies, Paralegal Studies, Software Specialist and Travel/Tourism (clock hour course).

All of our programs emphasize preparation for employment immediately upon completion. We provide job search training and academic and vocational counseling. The school's in-field job placement rate averaged 87% for the years 2001-03.

Our graduates enter fields that provide living incomes with benefits and prospects for advancement (starting pay averages \$22,000 - \$27,000 with benefits). Our graduates are found everywhere in the Capital Region's businesses and non-profit organizations.

Funding Sources:

Private pay, Pell, TAP, SEOG plus some grant funding.

Network Administrator Program

SUNY Ulster County Community College
Stone Ridge, New York 12484
Phone: (845) 687-5000

Contact: Karl Wick
Established: 1997

Phone: (845) 687-5177
E-mail: wickk@sunyulster.edu

Description:

SUNY Ulster is a Cisco Regional Academy and is also a member of the Microsoft IT Academy program. This program is designed to include the Cisco Certified Network Associate (CCNA) course sequence, the Cisco Certified Network Professional (CCNP) sequence, and the Microsoft Certified System Engineer (MCSE) sequence. Program graduates will be prepared for the Cisco CCNA and CCNP examinations, Microsoft MCP and MCSE examinations, and CompTia A+ examinations.

The College has two networked classrooms with labs on the Stone Ridge campus dedicated to the Network Administrator curriculum. SUNY Ulster offers Associates degrees in both Cisco and Microsoft concentrations plus a Network Administrator Certificate. A fully transferable articulation agreement with SUNY Cobleskill is pending.

Partners:

Cisco & Microsoft

Funding Sources:

College operating budget

New Visions Program - Questar III

Questar III BOCES
10 Empire State Blvd.
Castleton, NY 12033
Phone: (518) 477-8771

Contact: David Leavitt, Director of Career, Technical & Alternative Ed.
Phone: (518) 828-4157
Established: 2000
E-Mail: dleavitt@questar.org

Description:

Questar III's New Visions program provides ambitious high school seniors in Rensselaer, Columbia and Greene counties with the unique opportunity to explore career options from a real world perspective.

Each one of Questar III's four New Visions programs place students in real world settings. Through academics, site visits, guest speakers, mentoring and a senior project, New Visions students work at a level that prepares them for college. Throughout the year students rotate to different locations on campus or in the field where they observe and assist professionals firsthand. Students gain a jump-start on their futures by developing advanced writing, communications, problem solving skills, and taking a first-hand look at their futures.

Questar III currently offers four New Visions programs in: Math, Engineering, Technology & Science (METS); Medicine & Allied Health; Scientific Research & World Health; and, Visual & Performing Arts. Classes are held on location at Rensselaer Polytechnic Institute, University at Albany's East Campus, Arts Center of the Capital Region and Columbia Memorial Hospital in Hudson.

The programs are selective and enroll only 12 to 15 seniors in each program. Students earn both high school and college credit in this full-time, morning program.

Partners:

Rensselaer Polytechnic Institute, University at Albany, Columbia Memorial Hospital and the Arts Center of the Capital Region

Funding Sources:

Local school districts

New Visions METS Program - Partnership with Questar III

SuperPower, Inc.
450 Duane Avenue
Schenectady, NY 12304
Phone: (518) 346-1414

Contact: Traute Lehner
Established: 2003

Phone: (518) 346-1414 ext. 3070
E-Mail: tlehner@igc.com

Description:

SuperPower, Inc., of Schenectady, NY, is dedicated to scaling up to manufacture second-generation (2G) high-temperature superconducting (HTS) wire for applications in devices for the energy industry (underground power cables, power transformers, fault current limiters, motors, generators, etc.) and for defense applications (electric ships, directed energy weapons, etc.) The wire can transmit up to 100 times the amount of electricity as the copper wire in use today.

SuperPower has hosted the New Visions Math, Engineering, Technology & Science (METS) Program for an “Introduction to Superconductivity” program and a facility tour for several years now. Additionally, we have hosted a student for a senior-year internship program to learn about the characterization activities involved in producing superconductors. This same student has returned for two additional summer internships to assist with characterization activities and continue to learn about the technology.

Partners:

SuperPower, Inc., wholly-owned subsidiary of Intermagnetics General Corporation (publicly traded company)

Questar III New Visions METS Program with Rensselaer Polytechnic Institute

Funding Sources:

SuperPower, Inc. and Questar III

New York Wired Business Center

New York Wired for Education
120 Washington Avenue
Albany, NY 12210
Phone: (518) 462-1780

Contact: Brian Lee
Established: 2005

E-Mail: blee@uswired4ed.net

Description: NY Wired for Education has launched an electronic web-based training portal (located at www.nywired.business.com) for organizations (corporate, non-profit, state agencies, etc.) The portal is a centralized site to access educational opportunities and deliver targeted training solutions, and will impact businesses and their employees throughout Tech Valley. The program was launched at a seminar on March 23, 2005, which featured business and civic figures in the region emphasizing the economic need to attract, train and retain a solid workforce. The business center targets organizations looking to understand the skill sets of their employees, provide training to their employees and measure/monitor skill development progress.

There are several world-class workforce development tools available on the portal: self-assessments, objective assessments, Certifications, career ladder progressions and course offerings. If a user lacks knowledge in a particular skill discovered through the self-assessment or objective assessment test, the portal recommends courses based on the user's assessment results. The courses recommended may be NY Wired e-learning courses or other local educator partner course offerings. Benefits to business include:

1. The portal is used as a workforce development tool for employers to assess employee skills, provide a mechanism for taking inventory of organizational skill sets and perform skill gap analyses.

2. Course recommendations based on skills gap analysis help employers target training dollars more effectively, thus reducing turnover and increasing ROI.
3. Potential employees' skills are objectively validated by a rigorous testing and evaluation process based on extensive research and computer adaptive testing (CAT) similar to the GMAT, SAT, and other highly-regarded standardized tests.

Partners: Times Union, CE Technologies, Excelsior College, University at Albany, The Sage Colleges, Siena College, College of Saint Rose and SUNY Cobleskill.

Funding Sources: Private.

New York Wired Skill Center

New York Wired for Education
120 Washington Avenue
Albany, NY 12210
Phone: (518) 462-1780

Contact: Brian Lee
Established: 2005

E-Mail: blee@uswired4ed.net

Description: NY Wired for Education, in partnership with the Times Union and local educational providers, has launched an electronic web-based training portal (located at nywired.skill.ce.com and also can be found at JobsTU.com). The portal is a centralized site to access regional educational opportunities and deliver targeted training solutions.

The portal will impact Capital District residents seeking employment as well as those simply seeking to improve their knowledge through skills development. The program was launched at a seminar on March 23, 2005, which featured business and civic figures in the region emphasizing the economic need to attract, train and retain a solid workforce. The seminar highlighted the partnership between NY Wired, the Times Union and the various educator partners in the region.

There are several world-class workforce development tools available on the portal: self-assessments, objective assessments, Certifications, career ladder progressions and course offerings. On the NY Wired Skill Center, self-assessments and objective assessments are free of charge. Once a test-taker passes an objective assessment test or series of objective assessment tests, they have the option to acquire a Certificate to demonstrate aptitude in a particular skill or job. Certifications are validated by Excelsior College. If a user lacks knowledge in a particular skill discovered through the self-assessment or objective assessment test, the portal recommends courses based on the user's assessment results. The courses recommended may be NY Wired e-learning courses or other educator partner course offerings. In addition, the Times Union will integrate the classified listings on the Times Union job website (TUJobs.com) with the portal to offer enhanced services to jobseekers (i.e. the Times Union can email classified openings that match a user's skill set based on the achievement of certain skills.)

Partners: Times Union, CE Technologies, Excelsior College, University at Albany, The Sage Colleges, Siena College, College of Saint Rose and SUNY Cobleskill.

Funding Sources: Private.

New York State Career & Technical Education Resource Center

Questar III BOCES
10 Empire State Blvd.
Castleton, NY 12033
Phone: (518) 477-8771
www.novemberlearning.com/blogs/cterc

Contact: Katherine Schadewald, Director
Established: June 2005 E-Mail: kschadewald@questar.org

Description: Based at Questar III, the CTE Resource Center is the only organization of its kind in New York State. Working in partnership with the State Education Department and regional partners, the center coordinates activities and initiatives designed to increase student achievement and enhance instructional practices statewide.

The CTE Resource Center is a component of New York State's technical and support system aimed at closing the achievement gap in CTE high schools identified as needing improvement, including those failing to meet the Perkins Act or No Child Left Behind (NCLB) performance standards.

The CTE Resource Center is a collaborative service that offers training, information and technical assistance to school districts, administrative leaders and educators. The focus and scope of the center includes all career and technical education high schools in New York, including high need and urban schools. Assistance is provided at no cost.

The center's goal is to establish a culture of unrelenting improvement through the modeling of best practices. Through technical visits and review, the center demonstrates innovative ways to use technology and project-based learning to improve classroom instruction—and increase student achievement.

Partners: New York State Education Department, Bilingual Education Technical Assistance Centers, Regional School Support Centers, Staff Curriculum Development Network, Student Support Services Center, Teacher Centers, and other local, regional and state programs, services and organizations.

Funding Sources: Awarded a five-year contract from New York State Education Department.

New York State Continuing Education Program for Professional Engineers

The Graduate College of Union University
807 Union Street
Schenectady, NY 12308
Phone: (518) 388-8068

Contact: Robert Kozik, Dean School of Engineering and Computer Science
E-Mail: kozikr@union.edu

Description:

The Graduate College of Union University is an approved sponsor of Continuing Education for Professional Engineers in New York State, initiated in 2004. New York State requires 36 credit hours, which is 3 years time in the program.

Partners:

The Graduate College of Union University has partnered with the State Education Department and Union College Faculty to offer “courses of learning” meeting Professional Engineering education credit requirements.

Strengths:

GCUU programs focus on extended course programs taught by Ph.D. licensed engineers who have extensive college institution teaching experience. Most of the courses focus on Civil Engineering.

Funding Sources:

Sponsored by the Graduate College of Union University.

New York State Professional Development Collaborative

Hofstra University
Hempstead, NY 11549-1130
Phone: (607) 292-6116
Website: www.hofstra.edu/nyspdc

Contact: Peggie Weeks, Principal Investigator
Established: 2003
E-Mail: peggie.weeks@adelphia.net

Description:

The New York State Professional Development Collaborative is funded by the National Science Foundation's Advanced Technological Education (ATE) Program and is providing professional development for high school technology teachers across the state. Workshops are focused on informed design, a philosophical approach rooted in engineering. Content is focused on manufacturing & materials, networking, and computer repair and troubleshooting. Website: www.hofstra.edu/nyspdc.

Partners:

Dutchess Community College, Fulton-Montgomery Community College, Mohawk Valley Community College, State University of New York at Oswego.

Strengths:

Train the trainer model: Teams of high school and college faculty participated in a leadership workshop during summer 2003, and are now the leadership teams facilitating workshops at the four college sites (partners listed above).

Limitations:

Focused on high school technology teachers due to NSF mandate (although interested mathematics and science teachers may apply, as well as middle school teachers).

Funding Sources:

National Science Foundation's ATE Program.

Nuclear Technology Degrees

Excelsior College
7 Columbia Circle
Albany, NY 12203
Phone: (518) 464-8500

Contact: Dr. Altaf Memon
Established: 2003

Phone: (518) 464-8509
E-Mail: amemon@excelsior.edu

Description:

Excelsior College has increased accessibility to Nuclear Technology degrees for employees of nuclear power plants by making it possible to obtain college credit for Nuclear Utility Accredited Training Programs.

A taskforce—comprised of the Excelsior College Nuclear Engineering Technology faculty members—determined that the utility workplace training met the institution’s criteria for college-level learning. They recommended credit be awarded for the accredited training programs for 10 job titles at nuclear power facilities. The College also awards credit for Navy Nuclear Power School, Prototype and ELT training. Credit for training may be applied to one of our distance programs, including:

- The Bachelor of Science in Nuclear Engineering Technology (TAC-ABET accredited)
- The Bachelor of Science in Technology with Technical Specialty in Nuclear Technologies
- The Associate in Science in Nuclear Technology
- The Associate in Science in Technology with Technical Specialty in Nuclear Technologies
- The Associate in Applied Science in Technical Studies with a Specialty in Nuclear Technologies

Strengths:

The baccalaureate degree programs in electronics engineering technology and nuclear engineering technology are accredited by the Technology Accreditation Commission (TAC) of the Accreditation Board for Engineering and Technology (ABET), 111 Market Place, Suite 1050, Baltimore, MD, 21202, 410-347-7700. TAC of ABET is a specialized accrediting agency recognized by the U.S. Secretary of Education.

One-Year Master of Business Administration

The College of Saint Rose
432 Western Avenue
Albany, NY 12203
Phone: (800) 637-8556

Contact: Michael Mathews, Assoc. Professor Phone: (518) 454-5210
E-Mail: mathewsm@strose.edu

Description:

The Saint Rose One-Year MBA consists of three terms, beginning each year in the late Summer and continuing through the following July. Notable features of the College's One-Year MBA are the mentor program and the internship, which are both administered in partnership with the Albany-Colonie Regional Chamber of Commerce. In the mentor program, students are paired with senior executives, meeting several times throughout the year to discuss career management and explore insights that enhance classroom learning. The six-credit internship takes learning into the business community; students complete a significant professional experience consistent with their professional goals in Tech Valley organizations.

Partners:

Albany-Colonie Regional Chamber of Commerce

Online Learning Forum

Rensselaer Polytechnic Institute - Center for Initiatives in Pre-College Education

CII 3225; 110 8th Street

Troy, NY 12180

Phone: (518) 276-6906

Contact: Linda Polhemus

Phone: (518) 276-2723

E-Mail: polhel@rpi.edu

Lester Rubenfield

Established: 2001

Email: rubenl@rpi.edu

Description:

This is a highly interactive, online environment, available to teachers nationally, to enroll in interactive, distance experiences focused on integrating technologies into K-12 mathematics teaching. Offerings to date are focused on the use of the Geometer's Sketchpad to teach secondary school geometry concepts.

Strengths:

The learning environment is highly interactive.

Funding Sources:

These activities are fully supported by participant costs.

Operation SMART (Science, Math, And Relevant Technology)

Girls Incorporated of the Greater Capital Region
962 Albany Street
Schenectady, NY 12307
Phone: (518) 374-9800

Contact: Teri Bordenave

Phone: (518) 374-9800 X 230
E-Mail: tbordenave@aol.com

Description: Girls Incorporated is a national nonprofit youth organization. Operation SMART is an age-appropriate science and engineering program for adolescent girls, (ages 5-18), especially girls from low-income families, and diverse ethnic backgrounds and girls with disabilities. The program is research-based, on how females learn best, and introduces girls to interesting science, math, and technology careers and pairs them with accomplished women in these industries. The program engages girls in team projects within four areas: Material Girls (structural engineering/architecture), Eco Girls (ecology/environmental engineering), Space Girls (space/physics), and Net Girls (computer science). It also includes a mentoring initiative, online activities and training, and resource materials; mentors from the GE Women's Network volunteer and tutor girls in math. (The GE Women's Network (GEWN) was formed to support the professional development of women at GE, with the mission of fostering professional women's development to help grow, attract and retain successful women throughout GE. Development is focused on leadership, advancement and career-broadening opportunities in a variety of ways including information, education and networking with other men and women to learn best practices.) Once a year the girls spend a day at GE and take part in all sorts of science related programs, and meet women in all sorts of different science career pathways, dispelling myths of women not having a place in such roles.

- *TriMathlon:* Combining math, athletics and fun, the girls spend an entire day doing a "triathlon" but making it math-related: averaging swim times, calculating the volume of the pool, biking, running, all showing them the practical applications of science, math, and technology in everyday life.
- *Eureka!:* A program still in the planning stages in conjunction with RPI, Siena, ATW, and SWE. This program would be a day camp for girls in middle school that would take place on a college campus. In the morning the girls would spend time learning technology, science, and math, and spend the afternoon doing sports. During the school year they would be paired with a female mentor, and the following year, would come back to the camp.

Partners/Funding Sources: GE Women's Network, National Science Foundation, public support, RPI, Siena, ATW, SWE

Partnership with Albany College of Pharmacy

The Doane Stuart School
799 South Pearl Street
Albany, NY 12202
Phone: (518) 465-5222

Contact: Lisa Brown

Phone: (518) 465-5222 x 227
E-Mail: lbrown@doanestuart.org

Description:

Summer opportunity that allows two high school juniors and seniors to work with a college professor doing independent scientific research. Offers students experience in the research process on the professional level, from hypothesis through actual scientific journal submission and publication.

Partners:

Albany College of Pharmacy and the Doane Stuart School.

Strengths:

Close working relationship for students with research scientists, including opportunity of publishing scientific research in professional journals.

Limitations:

Limited number of juniors and seniors can participate annually.

Partnership with University at Albany

The Doane Stuart School
799 South Pearl Street
Albany, NY 12202
Phone: (518) 465-5222

Contact: Lisa Brown

Phone: (518) 465-5222 x 227
E-Mail: lbrown@doanestuart.org

Description:

College study opportunity for students during their junior and senior years. Students can take 100-level courses in every university department for UAlbany credit.

Partners:

University at Albany and the Doane Stuart School.

Strengths:

UAlbany's growth in the technology field offers students a significant opportunity for higher level preparation in the areas of math, science and technology.

Limitations:

Program open to juniors and seniors only.

Patent Prosecution & Drafting Course

Schmeiser, Olsen & Watts
3 Lear Jet Lane, Ste. 201, Latham, NY 12110
518-220-1850

Contact: Arlen L. Olsen
Established: 2005

E-Mail: aolsen@iplawusa.com

Description:

This course will provide students with an in-depth knowledge of Patent Prosecution and Drafting. In particular, the course will focus on providing a student with the skills and knowledge necessary to assist the client/inventor in obtaining a patent, from the initial step of meeting with an inventor through the post patent issuance procedures. It will be assumed that the student has had a course in basic patent law.

Partners:

Taught at Albany Law School

Pathways to Engineering Program

General Electric- Energy
1 River Road
Schenectady, New York 12345
Phone: (518) 385-4740

Contact: Dean Slack
Established: 2000

Phone: (518) 385-7882
E-Mail: dean.slack@ps.ge.com

Description:

High School Program: Four day session to introduce high school students to the different career opportunities in engineering by providing hands on activities involving engineering style problems. This program has run for five years with 220 students attending.

Middle School Program: Two, one-day sessions to introduce middle school students to the different career opportunities in engineering by providing hands on activities involving engineering style problems. This program has run for three years with over 400 students attending.

Partners: GE Energy, GE Global Research Center, & Schenectady County School Districts, Brown School, Northeast Parent and Child, and The Chamber of Schenectady County.

Strengths:

High School Program: The students learn what the different types of engineering are and the different career paths that engineers take. The students get to solve real life engineering problems and use hands on lab sessions on computer program control, electrical motor circuits, and vibration and balancing. The students get to interact with newly hired engineers learning how they put themselves through engineering college.

Middle School Program: The students get an overview of what the different types of engineering careers are. The students get hands on lab sessions on computer controls, motor control circuits, vibration and balancing, generator synchronization, weights & center of gravity, engineering design drawings and hydraulics.

Limitations: The High School Program is limited to 45 students for each session. The Middle School Program is limited to 75 students for each session.

Funding Sources: Program funding provided by GE Energy. Grant by The Chamber of Schenectady County to provide bus transportation for schools that do not have busses.

Plattsburgh Aeronautical Institute

CV-TEC (and Clinton Community College)
1585 Military Turnpike P.O. Box 455
Plattsburgh, New York 12901
Phone: (518) 561-0100

Contact: James R. McCartney III

Phone: (518) 561-0100 x243
E-Mail: jmccartney@cves.org

Description: Established in April of 2004 by and between CV-TEC and Clinton Community College, the Plattsburgh Aeronautical Institute (PAI) represents a unique, collaborative endeavor that will provide high school students and adults with the opportunity to obtain a CV-TEC graduation certificate, licensure as an FAA-certified Airframe mechanic, licensure as an FAA-certified Powerplant mechanic, and an Associates Degree in aeronautical technology from Clinton Community College, a 2-year SUNY institution. The Plattsburgh Aeronautical Institute represents a unique, efficient, and proactive blend of existing technical school and collegiate resources at the former Plattsburgh Air Force Base, now known as the Plattsburgh International Airport.

Partners: More importantly, PAI symbolizes the cooperation between public technical education institutions and industry (e.g., Pratt and Whitney, the Wood Group), various legislative bodies (e.g., Clinton County Legislature, Town of Plattsburgh, City of Plattsburgh), regional airports (PIA, and the Adirondack Airport), business (North Country WIB, OWS, North Country Chamber of Commerce), Regional Development Corporations (PARC, TDC, Empire Zone), NYS and international aeronautical programs (e.g., École nationale d'aérotechnique, North America's Largest aeronautical program, Western Suffolk BOCES, Burlington Technical Center), the Department of Homeland Security (e.g., promise of aeronautical apprentices and graduates for the unit assigned to the PIA); and more than a dozen northern New York State public school districts.

Funding Sources: Currently the PAI has acquired approximately \$14.7 million worth of support, commitments and donations, as outlined in the PAI prospectus. Copies of the PAI Prospectus may be obtained through the following web address: www.cves.org/cvtec (scroll to the "Plattsburgh Aeronautical Institute" link).

PREP: Addressing Health Disparities Research Program

**Albany Medical College
47 New Scotland Avenue
Albany, New York 12208
Phone: (518) 262-6008**

**Contact: Craig Parker
Established: September 2003**

**Phone: (518) 262-0974
E-Mail: prep@mail.amc.edu**

Description:

PREP: Addressing Health Disparities is a post-baccalaureate research education program designed to increase the number of underrepresented minorities and individuals from medically under-served populations who go on to graduate school to earn the Ph.D. or the M.D./Ph.D. and do research on diseases that disproportionately affect minorities and the medically under-served. Through employment as Research Apprentices, participants will acquire stronger research skills and will improve the competitiveness necessary for the successful pursuit of a doctoral degree. Research apprentices will be engaged actively in meaningful, authentic, mentored research, working alongside their mentors who are faculty members in the interdisciplinary research Centers (Departments) of the Graduate Studies Program at Albany Medical College (AMC).

Strengths:

Draws applications from across the nation. Pays a competitive salary and tuition. Prepares students for graduate education. Focuses on health disparities.

Limitations:

Selective for underrepresented minorities and individuals from medically under-served populations who wish to go on to graduate school to earn the Ph.D. or M.D./Ph.D. and do research on diseases that disproportionately affect minorities and the medically under-served.

Funding Sources:

National Institutes of Health

Professional Engineering Refresher Program

The Graduate College of Union University
807 Union Street
Schenectady, NY 12308
Phone: (518) 388-8068

Contact: Professor Frank Wicks, Program Director
Robert Kozik, Dean School of Engineering and Computer
Science
Ph: (518) 388-6267 E-Mail: wicksf@union.edu

Description:

The Graduate College of Union University prepares engineers for the Fundamentals of Engineering (FE) (Part A) and Professional Engineer (PE) (Part B) examinations administered by the New York State Department of Education. The Part B program courses specialize in Civil and Mechanical engineering.

Strengths:

The program has helped many students who may have been out of school for a length of time to sharpen their engineering skills and thoroughly prepare for the NYS exams.

Funding Sources:

Sponsored by the Graduate College of Union University and Enrollment Fees.

Professional Science Master's Degree in Computer Information Systems

The College of Saint Rose
432 Western Avenue, Albany, NY 12203
Phone: (800) 637-8556

Contact: John Avitabile, Associate Professor Phone: 458-5317
Established: 2005 E- Mail: avitabij@strose.edu

Description:

The Professional Science Master's Degree in Computer Information Systems features three new concentrations: Internet programming, for students who want to design Web sites, with a focus on server-side programming; Bioinformatics, for students interested in the application of computer science techniques to biological problems; and Real-time Embedded Systems, for students interested in designing and writing programs for computer chips. A designated laptop computer lab supports the program with 20 laptop computers, in addition to other pieces of hardware that students use to gain hands-on experience in writing programs for embedded systems.

Funding Sources:

Council of Graduate Schools
The Alfred P. Sloan Foundation

Project Lead The Way®

Project Lead The Way
747 Pierce Road
Clifton Park, NY 12065
Phone: (518) 877-6491

Contact: Richard Blais

Ph: (518) 877-6491
E-Mail: blaisrr@att.net

Description: Project Lead The Way Inc. (PLTW) is a national program forming partnerships among Public Schools, Higher Education Institutions and the Private Sector to increase the quantity and quality of engineers and engineering technologists graduating from our educational system. The program is partially funded by Charitable Venture Foundation, a private foundation located in Clifton Park, New York. PLTW has a support staff of experienced technology educators and college and university partners to support schools as they implement PLTW curricula. The program which began in 11 high schools in upstate New York in 1997 is now found at over 1300 sites in 45 states and the District of Columbia. Known for its rigorous and relevant curriculum and professional development, the program offers eight high school courses and a middle school program called *Gateway To Technology*. In the greater Capital Region 23 schools offer the program, serving 7500 students, including Bethlehem, Saratoga, Shenendehowa, Mohonasen and Columbia high schools.

Partners: PLTW has established its program in 45 states and the District of Columbia, and has connections with the state and federal departments of education. It is the only pre-college engineering education program recognized by the Center for the Advancement of Scholarship in Engineering Education (CASEE) of the National Academy of Engineering. Other strategic partners include the Southern Regional Education Board (SREB), the Corporate Member Council of the American Society of Engineering Education (ASEE), the Society of Manufacturing Engineers (SME) and NASA. Business partners include Intel, Rolls Royce and Autodesk.

Strengths: Evaluation of the Project Lead The Way program has shown the following:

- College attendance rates of students who have successfully completed three or more Project Lead The Way courses to 2- and 4-year colleges exceed the rate of their non-Project Lead The Way peers by 15%; and 24% compared to the national average (Hezel).
- Project Lead The Way students have a higher retention rate in engineering and related majors at the post-secondary level than the national average (RIT, Hezel).
- Project Lead The Way students significantly outperformed peers on the 2004 National Assessment of Educational Progress (NAEP) exam in mathematics (SREB).
- Project Lead The Way students enrolled in higher levels of mathematics (Algebra 1 through Calculus) and science (Physics) than peers (SREB).

The percentage of Hispanics and African-Americans enrolled in PLTW is almost twice as large as the percentage enrolled in post-secondary engineering education programs (TrueOutcomes).

Project Lead The Way At Albany High School

Albany High School
700 Washington Avenue
Albany, NY 12203
Phone: (518) 454-3987

Contact: Michael T. Cioffi, Principal E-Mail: mcioffi@albany.k12.ny.us

Description:

PLTW is a program for students who are interested in a high tech career. As a program the following courses are available: computer-aided design, robotics, mechanical engineering, electrical engineering, digital electronics, computer integrated manufacturing.

Specific PLTW courses:

- Design & Drawing for Production Pre-Engineering (DDP). DDP provides opportunities to be creative and apply decision-making and problem-solving skills to various design problems. Students use powerful computer hardware and software to develop 3-D models.
- Principles of Engineering (POE). POE is a hands-on laboratory based course that introduces the concepts of engineering, and explores various technology systems and manufacturing processes.
- Digital Electronics. This course introduces students to the digital circuits found in video games, watches, calculators, digital cameras, etc. Students use industry standard electronic design software, Circuit Maker, to build and export designs to a printed circuit auto-routing program that generates printed circuit boards.
- Computer Integrated Manufacturing. Applying principles of robotics and automation, students use CNC equipment to produce actual models of 3-D designs.
- Engineering Design and Development. In this engineering research course, students work in teams to research, design, and construct a solution to an open-ended engineering problem. Students present progress reports, submit a final written report and defend their solutions to a panel of outside reviewers.

College credit is available for PLTW courses.

Ravena/Coeymans/Selkirk Middle School Tutoring

General Electric-Plastics
1 Noryl Ave
Selkirk, NY 12158-9765
Phone: (518) 475-5011

Contact: Carol Rhoads
Established: 1994

Phone: (518) 475-5638
E-Mail: Carol.Rhoads@ge.com

Description:

GE professionals assist students during 7th grade Science labs. Generally, this is the student's first exposure to hands-on labs, lab practices, scientific methods and problem solving. There is one teacher in a classroom with 15-25 students sometimes, and GE tutors serve as another resource to answer questions and help the students grasp new concepts.

Partners:

GE Plastics and Ravena Coeymans Selkirk Middle School

Strengths:

Interactions of students with adults to encourage their interest in science.

Limitations:

Availability of mentors to help with other classes.

Regional Adult Education Network, East Region

University at Albany
Dutch Quad, B-7
Albany, NY 12222
Phone: (518) 437 3987

Contact: Tanya Lipinski
Established: July 1, 2004 (previously Staff Development Consortium in 1988)
E-Mail: tlipinski2@nycap.rr.com or tlipinski@uamail.albany.edu

Program Information:

Professional Development and training for staff and professionals working with adult learners in education and training programs.

Description:

Training and professional development for individuals working with adult learners. Program Management Training and professional development for certified teachers, employers and others who are preparing individuals for the workforce. Training includes workplace literacy, Adult Basic Education, General Educational Development (GED), English as a second language, Distance Learning, Family Literacy, as well as customized trainings and events.

Funding Sources:

The Research Foundation, University at Albany, Education Department and the New York State Education Department, Office of Adult Education and Workforce Development.

Regional Development

Center for Economic Growth
63 State Street, Albany, NY 12207
Phone: (518) 465-8975

Contact: David Rooney

E-Mail: davidr@ceg.org

Description:

In addition to pursuing targeted economic development strategies, CEG focuses on the "big picture" behind business development that helps the region to prepare for technology-based economic development. Long-range planning, strategic investments in infrastructure, and maintaining quality of life are crucial to healthy regional growth. CEG's Regional Development Strategy projects facilitate regional growth through intergovernmental cooperation, public-private partnerships, technical assistance, and support for projects of significant regional impact. In addition, we provide information to the public about economic development and industry attraction efforts in Tech Valley. Workforce development is crucial to attracting the high technology industry that will secure the Capital Region's place in the new economy. CEG's workforce development initiative focuses on attracting and retaining the type of workers that will allow us to attract high technology industry. Targeted workforce development projects include administering a regional network of technology professionals (TechConnex) and a cooperative internship and college graduate retention program that is developed and marketed through Capital Region college students (Beanstalk).

Partners:

CEN Manufacturing, TechConnex, University@Albany, Albany-Colonie Regional Chamber of Commerce, Key Bank, Bank of America, Albany County Convention & Visitors Bureau, PricewaterhouseCoopers LLP, Blasch Precision Ceramics, Comfortex Corp, Flow Management Technologies, Honen & Wood, P.C., Times Union, City of Albany, Golub Corporation, MapInfo Corporation, The VisComm Group, LLC.

Strengths:

Wide recognition within the Capital Region and Tech Valley. Highly structured and easy to use the services that CEG provides on its websites.

Resource Room Programs

Nassau-Spackenkill School
7 Nassau Road
Poughkeepsie, NY 12601
Phone: (845) 463-7844 Established: 1999

Contact: Karen Vitek

E-Mail: kvitek@nassau.sufsd.dcbooces.org

Description: K-5 students that are assigned to this program have all been identified as having learning challenges. The program uses the Internet to research topics and participate in projects; they use a large screen monitor as well as PalmOne handheld computers and laptops for group discussions and presentations. Digital still and video cameras are used, as well as web cameras. They also use GPS units, Bookman handheld electronic dictionaries, digital microscopes, and science probes and data loggers for additional studies.

This year students have continued to develop their own bird feeding website, which includes two web cams. The hands-on activities really get students involved in the project. They set up the feeders, fill them, and take daily bird counts that are submitted to the Cornell Lab of Ornithology through their website. The technology aspects of the project kept them interested and motivated. The students also collect data for our Birdhouse Trail and WeatherWise websites. The WeatherWise website has realtime data from our weather station and a skycam. Students also organize an annual Butterfly Festival. Along with this project they maintain and contribute to our Butterfly Cam and Moth Cam websites.

This teacher won a 2004 Tech Valley Innovative Education Award, a 2003 Education's Unsung Heroes Award, and a 2003 Apple's iLife Educator Award.

Partners: Cornell Lab of Ornithology Classroom FeederWatch and Birdhouse Network Programs, Monarch Watch at the University of Kansas, WNBC and AWS WeatherNet

Strengths: Providing learning challenged students with hands on/minds on inquiry based and technology enriched projects.

Limitations: Keeping up with the changes in technology and finding the funding for it.

Funding Sources: Competitive grants and donations from businesses.

Robot Camp

Union College
807 Union Street
Schenectady, NY 12308
Phone: (518) 388-6530

Contact: Cherrice Traver, Dean of Engineering and Computer Science
Established: 1998 **E-Mail: traverc@union.edu**

Description:

Sponsored by the Electrical and Computer Engineering department and the Union College Robot Club, this day camp introduces middle and high school students to the exciting world of robotics. During the course of the camp, students learn to solder and program in Basic as they take a bag of parts and transform it into a working Micromouse or Carpet Rover Robot. The camp also includes sessions on robotics in general, and demonstrations of working robots developed by the Robot Club and others. The camp culminates in a friendly competition where students can show off their robots and software control programs. Program was established in 1998, funding was provided by Internal Education Foundation to get it started, but it is currently supported by charging tuition to cover the robot kits and kid's lunches and parts, funding for student helpers from the Dean of Engineering budget, and having a volunteer director.

Some photos and descriptions of events can be found on the following pages for previous Robot Camps. <http://doc.union.edu/Robotcamp/>

Schenectady Superconductivity Partnership

SuperPower, Inc.
450 Duane Avenue
Schenectady, NY 12304
Phone: (518) 346-1414

Contact: Traute Lehner
Established: 2004

Phone: (518) 346-1414 x3070
E-Mail: tlehner@igc.com

Description:

SuperPower, Inc., of Schenectady, NY, is dedicated to scaling up to manufacture second-generation (2G) high-temperature superconducting (HTS) wire for applications in devices for the energy industry (underground power cables, power transformers, fault current limiters, motors, generators, etc.) and for defense applications (electric ships, directed energy weapons, etc.) The wire can transmit up to 100 times the amount of electricity as the copper wire in use today.

The high-tech processes used to manufacture 2G HTS wire requires scientists, engineers and technicians with very specialized skill sets who are not readily available in the local market. SuperPower has teamed with Schenectady County Community College (SCCC) and Union College, to work together to develop the workforce that SuperPower needs to move forward and maintain its leadership in this market. The collaboration includes development of new curricula for students at both institutions, internships and work-study opportunities at SuperPower, course projects in superconductivity for engineering students, and professional development opportunities for existing staff at all three institutions.

Partners:

SuperPower, Inc., wholly-owned subsidiary of Intermagnetics General Corporation (publicly traded company) Schenectady County Community College, 2-year public college; Union College, 4-year private liberal arts college with strong engineering programs

Funding Sources:

New York State Senate (sponsored by Senator Hugh L. Farley, D-Niskayuna). Total 3-year project amount of \$5 million to be shared by the 3 partners.

Science Day

SUNY Albany
Center for Urban Youth and Technology in the School of Education
1400 Washington Avenue
Albany, NY 12222
Phone: (518) 442-5572
Contact: Dr. Joseph Bowman, Director of CUYT Ph: (518) 442-5035
Established: 2004 **E-Mail: jebowman@albany.edu**

Description:

Our Science Day was held on April 3, 2004 for middle and high students from the capital region. We provided one-hour workshops with hands-on activities for the students. Our goal is to improve student ideas and attitudes about Math, Science, and Technology. 112 students from seven school districts in the capital region were in attendance. We plan to have another Science day this year.

Partners:

SEMI, Albany NanoTech, State Police Forensic Lab, Amazing Science Guy-Dr. Keith McElroy, Albany City School District - Mr. Louis Lawson, Schenectady City School District - Cisco Academy,

Strengths:

Strong support from regional districts, Strong partnerships, large turn out of students, teachers, and parents. Structured workshops for different age groups

Limitations:

Funding, Space and access to science labs, dissemination of information before and after about the event. No media coverage.

Funding Sources:

SED

Science Day at Global Research

General Electric- Global Research
One Research Circle
Niskayuna, NY 12309

Contact: Ricki Shapiro
Established: 1989

Phone: (518) 387-7912
E-Mail: Ricki.Shapiro@research.ge.com

Description:

An annual morning-long program at GE's Global Research Center for 300 Capital Region fourth graders and their teachers designed to introduce students to the magic and wonders of science, and to educate them on the many career possibilities in this field. Guided by GE Volunteers, students circulate among a dozen different hands-on demonstrations, including "Is it Magic or Chemistry?" (a "magician" and a chemist perform an array of "tricks" and ask the children to judge whether they've seen science or magic), a slime lab, liquid nitrogen experiments, paper chromatography "whodunit" experiment, and a visual music experience.

Partners:

GE Volunteers and various school districts

Strengths:

An incredible team (nearly 100 strong) of GE volunteers and retirees who each year devote their time and energy to make Science Day as memorable as possible for the students. Students respond with unabashed enthusiasm, as well as heartwarming thank-you letters detailing the highlights of their visit. Additionally, because Science Day has received widespread and positive media attention, schools often contact GE Global Research and ask to be invited for the next year's event.

Limitations:

Capacity restraints limit the number of schools that can be invited to four or five each year.

Funding Sources:

GE Global Research, GE Volunteers

Science Education K-12

The College of Saint Rose
432 Western Avenue, Albany, NY 12203
Phone: (800) 637-8556

Contact: Steven Strazza, Associate Professor **Phone:** 454-5285
E- Mail: strazzas@strose.edu

Description:

The College of Saint Rose prepares Childhood Education majors with a “train the trainer” approach to learning and teaching science. This method, known as problem-based learning, relies on students’ investigation of problems as a means of learning, but also shows them how to apply problem-based pedagogy when they are teaching in their own elementary classrooms. In addition, Adolescence Education majors who complete programs in Biology, Chemistry, or Earth Science qualify for initial certification by New York State to teach science in grades 7 through 12. The College of Saint Rose boasts a 96% pass rate among its students on the New York State Teacher Certification Examinations.

Funding Sources:

The Charitable Leadership Foundation
The Charitable Venture Foundation/Project Lead the Way

Science Research in the High School

SUNY Albany- Department of Biological Sciences
1400 Washington Avenue
Albany, NY 12222

Contact: Mary Cuff
Established: 1996

Phone: (518) 442-4030

Description: The Science Research in the High School (SHRS) program recruits, trains, motivates and prepares young people for careers in science, technology engineering and math. This three-year, interdisciplinary course provides students in grades 10-12 with an opportunity to select, present and conduct original science research. SRHS teaches critical thinking, sparks scientific creativity, and provides a preview of life as a working scientist. The program is open to any student willing to work hard. Students work on problems they identify and hypotheses they develop. They learn that scientific research is demanding, but the end result can be glorious, namely the discovery of new knowledge.

Partners: The SRHS program is offered in approximately 150 schools throughout New York State. The SRHS Advisory Committee is made up of CEO's and other representatives from companies and organizations such as Intermagnetics General Corporation, X-Ray Optical Systems, General Electric, Corning, Starfire Systems, Inc. Albany-Colonie Chamber of Commerce, and Tech Valley Alliance for Technology and Women.

Strengths: The use of scientist mentors recruited from universities and industry. The opportunity for high school students to study what *they* are interested in. The program is offered in rural, suburban and inner city schools and does not depend on the proximity of a laboratory. 87% of graduates select further study in science, technology, engineering and math. Approximately 50% of program graduates are young women.

Limitations: School districts must have a teacher trained to implement the program.

Funding Sources: The National Science Foundation provided initial funding for teacher training. Charitable Venture Foundation provided a grant to help administer and find support for the program. The program relies on grants, individual and corporate contributions.

Science Research Program

Academy of the Holy Names
1075 New Scotland Road
Albany NY 12208
Phone: (518) 489-2559

Contact: Donna Mooney
Established: 1994

E-Mail: jemsnm2003@yahoo.com

Description:

The Science Research Program helps high school students to go beyond a traditional high school-level literature search to conduct research. The program leverages both university and mentor resources to help students conduct credible and realistic research. The program also supports the high school students in developing presentations, writing research papers, and has produced multiple semi-finalists and finalists in the Intel Science Talent Search.

The program also includes discussion of such timely topics as recombinant DNA, real-time weather tracking, and nanoscale systems. The program uses digital probe ware technology using sensor and data collection software installed in computers in the lab, as well as Power Point software on a laptop computer and the use of a video camera to view microscopic images.

This teacher won a 2004 Tech Valley Innovative Education Award.

Partners:

High school students doing cutting edge research at the graduate level. High School students communicate their results of their research by using projection software and a laptop computer to their school, regional and state community, at the Junior Science and Humanities Symposium. Many students publish their research at the end of three years.

Funding Sources:

NSF, Charitable Venture Foundation, Dialog, Academy of Applied Sciences, U.S. Department of Army, Navy and Air Force, NY State Teachers, to name a few.

Science & Technology Entry Program (STEP)

SUNY Albany
Center for Urban Youth and Technology in the School of Education
Education 124
1400 Washington Avenue
Albany, NY 12222

Contact: Mrs. Etwin Bowman, Coordinator **Ph: (518) 442-5035**
Established: 1999 **E-Mail: elbowman@albany.edu**

Description: The Science & Technology Entry Program (STEP) prepares historically underrepresented and/or economically disadvantaged elementary and secondary school students to acquire the skills and attitudes necessary to pursue postsecondary degree programs that lead to professional careers in the scientific, technical, health-related or other licensed professions. This after-school program provides academic instruction, scientific experiments, tutoring, counseling, field trips and other enrichment activities to promote and enhance student's interest and potential for college level study. This provides the opportunity for students to develop skills and potential ideas about college and careers in fields of science, math, and technology. The program also challenges parents and educators to become involved in the process to support the development of our "community of learners."

We had many success stories in this reporting year, July 1, 2003 – June 2004. We won first place at the Science and Technology Entry Program statewide conference in the Junior Division of the Biological/Life Sciences. Our STEP work was selected by three national organizations for presentation (National

Education Computing Conference, Conference on Instructional Technologies and The American Education Research Association). Three of our students attended and presented at the American Educational Research Association conference in San Diego. Our weekend programs attracted almost 200 students and some 50 parents for our Math and Science Day activities.

Partners: State Education Department, Albany City School District, Department of Transportation, Albany NanoTech, National Weather Service, RPI, & SUNY TUNES.

Strengths: After-school tutoring support at all middle and high school sites. Weekday and weekend intervention programs that focus around math, science and technology. Parent component that provides information about education, work force development, and college and career skills development.

Funding Sources: SED, Albany City School District, and private donations

Science, TEchnology & Mathematics, Inc (STEM)

STEM

P.O. Box 1434

Latham, New York 12110

Contact: Beverly P. Schwartz, President

Phone: (518) 270-8270

Established: 1991

E-Mail: BeverlyS@interconnetix.com

Description:

Science, TEchnology & Mathematics, Inc. (**STEM**) is a volunteer non-profit organization made up of members from the educational, business and professional communities in Albany, Rensselaer, Saratoga, and Schenectady counties. Incorporated in 1993, this partnership was established to promote the importance and value of education, specifically in the study of science, technology, engineering, and mathematics. By encouraging members of the business and professional communities to serve as mentors and role models to students in kindergarten through twelfth grade, it is hoped that these students will discover the value of such education as it pertains to everyday life. This program facilitates student education with "hands-on" demonstrations, experiments, and on-site visits. **STEM** also offers lectures, assistance with science fairs, career-related events and professional consultations available to their schools.

Partners:

Public, Private and Charter schools in Albany, Saratoga, Schenectady, and Rensselaer Counties of New York State, local universities and businesses in these four counties, and assemblyman and senators representing the four counties. SUNY at Albany, Clough Harbour & Associates, Albany College of Pharmacy, GE of Schenectady, Stewarts, Price Chopper, parent teacher associations, parents, administrators, and teachers from the four counties are some of the supporters of **STEM**.

Funding Sources:

Funding sources for **STEM** include private donations, New York State technical societies and the New York State Legislature.

Simple Machines for 4th Graders

General Electric- Energy

1 River Rd.

Schenectady, NY 12345

Phone: (518) 385-4740 Established: 1999

Contacts:

Mark Kowalczyk

Maria LaTorre

E-Mail: mark.kowalczyk@ps.ge.com

E-Mail: maria.latorre@crd.ge.com

Phone: (518) 385-4090

Description: This mentoring program began in order to answer a need that elementary level teachers are now experiencing. As a result of “No Child Left Behind” legislation, accountability for science has been added to the grade four standardized tests. Beginning in 2004, a new Elementary Level Science Test includes questions and performance tasks related to the concepts of force, motion and simple machines.

GE mentors and a team of teachers from Schenectady City Schools work with the Capital Region Science Education Partnership (thru a National Science Foundation Professional Development Grant) to deliver “hands on” science investigations for a Simple Machines Unit in grade four classrooms. The mentoring in this project focuses on entire classes rather than the traditional one-on-one mentoring between a volunteer and a single student. Moreover, this project provides a great opportunity for GE professionals to apply their technical backgrounds in the classroom.

By linking the subject of Simple Machines with the practical experience of GE Engineers, the students and teachers are introduced to the subject in a unique manner. The examples used in the kits and the Simple Machines Workshop (developed by a GE Engineer) merge the textbooks with real machines and real applications for their use. The focus on the importance of math and science is reinforced at the fourth grade level, thus laying the groundwork for sparking children’s interest in pursuing math and science as they continue their education.

Partners: GE Volunteers (from GE Energy & GE Global Research), Schenectady City Schools, the Capital Region Science Education Partnership, Science, Technology & Mathematics, Inc. (STEM)

Strengths: Students and teachers benefit from having experts in science working in the classroom. Specialized kits are provided to an urban school district that is in need of supplies.

Limitations: Currently not enough resources to meet the needs of this and other districts.

Smart Classroom

**Wappingers School District
167 Myers Corners Road
Wappingers Falls, NY 12590**

**Contact: Charles Hill, Asst Superintendent Ph: (845) 298-5000 x138
E-Mail: chill@wappingersschools.org**

Description:

The smart classroom program enriches English, math, science, social studies, and special education classrooms of middle school instructional teams with interactive whiteboards and an emphasis on collaborative, interdisciplinary, project-focused learning. Each team teacher has a wireless laptop connected to a wall-mounted interactive whiteboard with a ceiling-mounted projector. Teachers can put up active and flexible lessons that have students writing on the board and getting involved on a rather large level. For example, if you were to have unassembled pieces of a jigsaw puzzle up on the board, the students can arrange them together on the board. They can draw on and annotate maps both geographic and language maps. A website can be blown up to wall size, with each link clickable from the board. And teachers can save the notes taken on the board and send them home to absent students. The project started as a pilot program in about four classrooms. Find it to be a successful way of engaging students actively in their lessons and promoting interdisciplinary activities, the district has expanded the program to more than 25 of its classes throughout both its middle schools.

Partners:

IBM.

Strengths:

Using technology in an innovative way, and encouraging students to do the same.

Smart Up

The Rensselaer Gateway Development Corporation
255 River Street
Troy NY 12180
Phone: (518) 274-7474

Contact: Sarah E. Galimore
Established: 2004

Phone: (518) 274-7474
E-Mail: sgalimore@renscochamber.com

Description:

A comprehensive course designed specifically to help entrepreneurs who wish to start or grow their small businesses. Covering critical topics from accounting and insurance to market analysis and business management, the program delivers essential knowledge at a very reasonable fee. The goal of Smart Up is to not only provide participants a broad understanding of business operation, but also to help them develop a professional business plan - one of the most important aspects of any business start up and a requirement for most lenders and venture capitalists. Offered twice a year for 8 weeks, each session is led by experienced business professionals with expertise in the particular topics. Participants who graduate from the program are enriched with valuable insights, actionable business plan, and a network of valuable resources upon which they can rely for continued development, advice, and success.

Partners:

Rensselaer County Economic Development and Planning
Rensselaer County Regional Chamber of Commerce
M & T Bank, Hudson Valley Community College.

Funding Sources:

Tuition and corporate sponsorship provided by M & T Bank

Space Day

Schenectady Museum & Suits-Bueche Planetarium
Nott Terrace Heights
Schenectady NY 12308
Phone: (518) 382-7890

Contact: Erin Breslin
Established: 2002

Phone: (518) 382-7890 x223

Description:

NASA Astronaut Rick Hieb met with students at Space Day 2005 – an award-winning global celebration dedicated to extraordinary achievements and opportunities in the exploration of space. A veteran of three space flights between 1991 and 1994, Hieb spent more than 750 hours in space, including more than 17 hours of space walking.

Museum staff welcomed sixth grade students from Oneida, Central Park, and Mont Pleasant Middle Schools, and areas Girl and Boy Scouts for the event. After a presentation from NASA Astronaut Rick Hieb, the students and scouts saw demonstrations about static electricity in space and the Apollo Project and a Live Sky Tour Planetarium Show in the Suits-Bueche Planetarium.

This program is a past winner of the Business in Education Partnership at the Schenectady Chamber of Commerce Award.

Partners:

Schenectady City School District (Oneida, Central Park, and Mont Pleasant Middle Schools), Mohawk Pathways Council Girl Scouts, Twin Rivers Council Boy Scouts, Lockheed Martin's Knolls Atomic Power Laboratory (KAPL).

Spatial Information Technology (A.S., Cert), New Visions Geospatial (High School Seniors)

Fulton-Montgomery Community College, Spatial Information
Technology Center, HFM BOCES CTC
2805 State Highway 67
Johnstown, NY 12095
Phone: (518) 762-4651 ext. 7-3486

Contact: Alex Chaucer
E-Mail: sitc@fmcc.suny.edu or achaucer@fmcc.suny.edu
Established: 2000, 2004

Description:

Offering innovative programs in geospatial technology to secondary and post-secondary students. Geospatial technology is comprised of GIS, GPS, and Remote Sensing, and is a growing field that crosses many disciplines and has many local and regional applications and opportunities. Our website is <http://www.sitc.cc> for more information.

Partners:

FMCC, HFM BOCES, NASA

Funding Sources:

FMCC, HFM BOCES, NASA

Special Education/Career & Technical (Occupational) Education Programs

Capital Region BOCES Career and Technical School

1015 Watervliet-Shaker Rd.
Albany, NY 12205 (Albany campus)
174 State Route 30A
Schoharie, NY 12157 (Schoharie campus)
Phone: (518) 862-4800 (Albany campus)
(518) 295-3000 (Schoharie campus)

Contact: Hank Stopinski, Director of Career & Technical Education
Phone: (518) 862-4744 E-Mail: hstopins@gw.neric.org

Description: The Capital Region Career and Technical School is operated by the Capital Region Board of Cooperative Educational Services (BOCES) and serves more than 1,300 high school and adult students from 25 school districts in Albany, Schenectady, Schoharie and southern Saratoga counties. The school has campuses in Albany (Colonie) and Schoharie, and each offers career and technical programs of study for students with special educational needs and varying degrees of disability. The programs are designed to provide basic training for entry-level employment or the background needed to enter another Career and Technical School program of study. Program curricula are aligned so Special Education/Career & Technical Education students may move to a higher level program when they are ready to do so. Students in all programs at the Career and Technical School learn skills key to their success in the workplace and further education including communication skills, teamwork, work ethic, desire for lifelong learning and other important “soft skills.”

Partners: The Capital Region Career and Technical School is operated by the Capital Region Board of Cooperative Educational Services (BOCES) and is advised by a volunteer Board of Education and more than 300 representatives of local business, industry and the local educational community who sit on advisory committees for career and technical education programs.

Funding Sources: As a BOCES program, the Capital Region Career and Technical School is regulated by the New York State Education Department and operated under the leadership of the Capital Region BOCES District Superintendent.

Summer Academy for Youth

College of Saint Rose
432 Western Avenue
Albany New York 12203
Phone: (800) 637-8556

Contact: John Hunter
Established: 1992

Phone: (518) 458-5381
E-Mail: hunterj@strose.edu

Description:

The Summer Academy for Youth, a six-week summer enrichment program for students in Grades 6-10, includes a popular Science and Technology week. In the 2005 schedule, courses included 2-D Animation with Flash, TV Production, Computer Programming with Java, Web Page Design, and a crime-scene analysis session in Forensics.

Summer Institutes for Elementary School Mathematics Teachers on Integrating Interactive Technologies into the Classroom

Rensselaer Polytechnic Institute
110 8th Street
Troy, NY 12180
Phone: (518) 276-6000

Contact: Lester Rubenfeld
Established: 2003

Phone: (518) 276-6906
E-Mail: rubenl@rpi.edu

Description:

This is a five-day, six hours/day set of workshops whose objectives are to introduce elementary school mathematics teachers to compelling interactive, multimedia materials that can be used to teach elementary school mathematics.

Strengths:

The integration of interactive technologies into elementary school mathematics teaching.

Limitations:

15-20 teachers

Funding Sources:

Funding from the New York State Department of Education under its "Teacher Leadership Quality Program" supported these Institutes.

Summer Institutes for Middle School Mathematics Teachers on Integrating LEGO Mindstorm Robotics into the Classroom

Rensselaer Polytechnic Institute
110 8th Street
Troy, NY 12180
Phone: (518) 276-6000

Contact: Lester Rubinfeld
Established: 2003

Phone: (518) 276-6906
E-Mail: rubenl@rpi.edu

Description:

This is a five day, six hours/day set of workshops whose objectives are to introduce middle school mathematics teachers to LEGO Mindstorm Robotics technologies and how it can be used in support of the teaching of middle school mathematics.

Strengths:

The integration of a robotics technology into middle school mathematics teaching.

Limitations:

15-20 teachers

Funding Sources:

These Institutes were supported by funding from The General Electric Foundation and from the New York State Department of Education under their "Teacher Leadership Quality Program".

Summer Science Workshop

Union College
807 Union Street
Schenectady, NY 12308
Phone: (518) 388-6530

Contact: Barbara Pytel
Established: 1996

Phone: 518-388-6746
E-Mail: pytelb@union.edu

Description: Summer Science Workshop is a 12-day, residential workshop held at Union College for high school students from throughout the United States and Barbados. This workshop has been offered at Union each summer since 1996, when the program was initiated with Howard Hughes Medical Institute funds. The program has been tremendously successful in encouraging talented minority students to attend college, major in the sciences, mathematics, or engineering, and continue their education into graduate or professional school. Ninety-five percent of participants who responded to a recent survey are currently attending or have graduated from four-year colleges. Of the 24 who have attended Union since 1998, 74% have chosen to major in science, math, engineering, or computer science, and 42% are pursuing careers in medicine. Twenty-one high school juniors and seniors from groups underserved in the sciences participated in the workshop during the summer of 2005. This year, for the first time, students who were economically disadvantaged and/or of the first generation in their family to attend college were included. Of the 21 students—13 female and 9 male—there were 10 Blacks, 6 Asians, 3 Hispanics, and 2 Caucasians. The Summer Science Workshop uses HIV/AIDS as its overarching theme and includes three college-level academic components, each with laboratories (immunology, cell and molecular biology, and biology-related computer technology and engineering.) The students are required to make oral presentations and to complete written lab reports and take exams. In addition, the students perform library research and prepare a research paper. The program also includes educational field trips and recreational activities. Educational field trips include a trip to the Albany Medical Center to hear speakers talk about medical school, meet with a team of pediatric AIDS specialists, tour various laboratories and speak with researchers, and meet with a physician's assistant and a nurse anesthetist. Students also visit the Double H Hole in the Woods Ranch, a camp for chronically ill children in Lake Luzerne, NY, where the students can see children actively participating in typical camp activities and can interact with the health-care professionals on staff at the camp.

Funding Sources: Howard Hughes Medical Institute

SuperPower Programs

SuperPower, Inc.
450 Duane Avenue
Schenectady, NY 12304
Phone: (518) 346-1414

Contact: Traute Lehner

E-Mail: tlehner@igc.com

Description:

SuperPower, Inc., a wholly-owned subsidiary of Intermagnetics General Corporation, is dedicated to scaling up second generation (2G) high temperature superconducting (HTS) technology for cost-effective application to electric power components such as transmission and distribution cables, transformers, fault current limiters and motors and generators. Currently in transition from development-stage to becoming a commercial company, SuperPower has programs in place with academia to give students hands-on experience in the technology.

Union College and Schenectady County Community College (SCCC): SuperPower has formed a partnership with these two academic institutions toward ensuring the workforce that will be needed as the company scales up its operation to full-scale manufacture of 2G HTS wire. The partners have obtained \$5M in funding from the New York State Senate to purchase capital equipment for quality control processes and for related facility renovations at all three locations. These facilities and the equipment are being used to give students hands-on opportunities in internships and class projects to learn and practice the technology, while at the same time, curriculum is being developed collaboratively to provide the students with the appropriate scientific/technical backgrounds.

RPI and BOCES/Questar III: SuperPower's Materials Group hosts visits of the Questar III New Visions Math, Engineering, Technology & Science (METS) Program each spring to promote interest in the sciences. The METS program is run through RPI for high school seniors who are planning to attend an undergraduate program in applied science. It blends practical experience with classroom lessons and exposes students to various science and engineering fields and research.

TechConnex

**Center for Economic Growth
63 State Street
Albany, NY 12207**

**Contact: Elena D'Agnese
Established: 1995**

**Phone: (518) 465-8975 x228
E-Mail: elenad@ceg.org**

Description:

Techconnex is designed to foster a community and network of IT and software professionals, allowing an information and resource sharing environment that supports the growth of our information technology industry.

The region has witnessed considerable success in enhancing the technology focus of its economy. Two decades ago, there were only a few dozen software companies and a fledging IT community. We now have over 600 information technology companies with more than \$650 million in annual revenue. These companies employ over 5,200 professionals locally.

TechConnex provides a variety of events, programs, networking events and professional development opportunities for the information technology community in Tech Valley.

TechConnex holds technology seminars & fiestas which provide a unique forum for technical, business and social interaction with more than 130 of the Region's software, technology and business professionals.

Tech Valley Camp

Capital Region BOCES
1031 Watervliet-Shaker Road
Albany, NY
Phone: (518) 862-4923

Contact: Dr. Barbara Nagler

E-Mail: bnagler@gw.neric.org

Description:

Tech Valley Camp is a one-week course done in conjunction with Questar III. This program works to introduce children into the business environment of nanotechnology, biotechnology, and information technology. Using previously formed business relationships with Albany Nanotech, students are able to get a close up look at the work environments that exist at high tech facilities. It will demonstrate the value of project-based learning and excite students about math and science. It will also demonstrate that math and science are neither too hard nor boring. Teachers will also participate in a similar experience. This will help them understand answer children's questions about tech valley and enable the teacher to contribute to the overall tech valley goals. This program is to begin later this year.

Partners:

Questar III

TechValleyCareers.org

Center for Innovation in Career Development, University at Albany
1400 Washington Ave., Dutch Quad B7
Albany, New York 12222
Phone: (518) 437-3993

Contact: Sandra McGarraugh, Program Director
Established: 2005 E-Mail: smcgarraugh@uamail.albany.edu

Description:

TechValleyCareers.org is a clearinghouse website for career information that connects the opportunities of the Tech Valley economic development with the interests and needs of local educators, students and their families. With a focus on new and emerging high tech careers, the website provides up-to-date information about education and career opportunities in the various fields developing right here in our Greater Capital Region. The audience for this resource is guidance and career counselors, students, and parents, as well as teachers and other interested individuals and groups.

Some of the features include:

Basic Information about science and technology and related careers
Job Profiles that outline career paths in high tech fields utilizing local opportunities and resources in high tech education and employment;
Resources to help counselors, students and parents explore and prepare for career paths in technology sectors; and
Online surveys to determine the needs of families for career related information.

The purpose of the website is to improve the quality of information available to students and families about high-tech or technology based careers in science, technology, engineering and math (STEM), utilizing the current “tech valley” environment as a resource.

Partners:

University at Albany
Greater Capital District Tech Prep Consortium
Instructional Technologies Unit, Professional Development Program,
Rockefeller College

Funding Sources: Grants

Tech Valley Communications

Tech Valley Communications
87 State Street
Albany, NY
Phone: (518) 598-0937

Contact: Kevin O'Connor
Established: 1999

E-Mail: koconnor@techvalleycom.com

Description:

Tech Valley Communication is a locally owned, facilities-based telecommunications provider headquartered in Upstate New York's Tech Valley. TVC offers a full range of local and long distance voice services, data, and high-speed and dial up Internet services at competitive prices.

Partners:

Campus Tech Communications and Albany Chamber of Commerce

Strengths:

Has many connections with business in the area. Provides high quality service to the capital region.

Limitations:

Capital region's communications infrastructure needs a major upgrade, which will cost in the ten's of millions of dollars.

Tech Valley High School

Capital Region BOCES
1031 Watervliet-Shaker Road
Albany, NY
Phone: (518) 862-4900

Contact: Dr. Barbara Nagler

E-Mail: bnagler@gw.neric.org

Description:

BOCES was created in 1948 and establishes professional development for teachers, works with state aid planning, and has career and technical educational support. The Capital Region BOCES has partnered with Questar III to create a regional comprehensive technical high school and learning community. Capital Region BOCES provides instructional and support services to 25 school districts in Albany, Schenectady, Schoharie and southern Saratoga counties; while Questar III provides instructional and support services to 23 school districts in New York State's Rensselaer, Columbia and Greene counties. Through the Capital Region BOCES and Questar III, school districts can offer programs and services more economically, efficiently, and equitably by sharing their costs. These programs and services are offered in the following areas: Career and Technical Education, Special Education, General Education and District Support Services.

This sharing will continue through the development of the Tech Valley High School which will be a learning community using 21st Century learning tools, co-located with businesses and offering students the opportunity to engage in project based learning, internships and real work experience based on Regents academic standards. It will focus learning on five emerging technologies: nanotechnology, biotechnology, advanced materials information and communication technology, and energy technology. Tech Valley High school students will graduate with a Regents diploma, six college level credits, critical thinking, problem solving and teamwork skills, recognition of the value of citizenship to the community, and respect for themselves and others.

The school will hold approximately 400 students and is scheduled for occupancy in September 2007.

Partners: Questar III

Technology Certificate

Wappingers School District
167 Myers Road
Wappingers Falls, NY 12590

Contact: Charles Hill, Asst Superintendent Ph: (845) 298-5000 x138
E-Mail: chill@wappingersschools.org

Description:

In collaboration with the teachers union in the school district, they have created a "Technology Certificate," which teachers can apply for. Applicants complete requirements based on the ISTA standards for teachers and present their work to a peer review panel of technology-knowledgeable staff. Successful applicants agree to serve as technology integration mentors in their schools and receive an annual stipend.

Strengths:

Encouraging instructors to actively integrate technology education into their classes.

Technology Day

General Electric- Energy

1 River Rd.

Schenectady, NY 12345

Phone: (518) 385-4740

Contact: Robin Houseknecht

Established: 2001

Phone: (518) 385-6640

E-Mail: Robin.Houseknecht@ps.ge.com

Description: 50 -75 girls from Girls Inc. are invited to the GE Energy Schenectady Campus for a half-day of activities geared around Science, Math and Technology. Each Girl is partnered with a GE Women's Network mentor and during an exciting rotation of fun activities with their buddy, are exposed to the possibilities of careers as Scientists, Engineers, and Statisticians. The activity room rotations are about 20 minutes in length and girls and mentors rotate together through about six rooms over the course of the half-day event, and also participate in teambuilding exercises. Activities vary each year, but have included: forensic medicine and the study of DNA at the "Technology Day Crime Lab", material densities through paper chromatography and the movement of color pigments, solar and kinetic energy conversions to electrical energy, digital photography, measure and build woodworking structures, website development, make your own slime & polymers experiments, potato batteries, and a variety of other science experiments. The girls each receive a goody bag with some fun GE giveaways and a kid-oriented Science Experiments book including some of the experiments they did that day and others that are subsequently used at their Girls Inc. after school programs.

Partners: Girl's Incorporated of the Greater Capital Region and GE Women's Network

Strengths: This program is part of a strong partnership that the GE Women's Network has with Girls Inc locally...particularly in driving Girls Inc. Project SMART (Science Math & Relevant Technology) and exposing young girls to thinking about technical careers. It also supports the GE Women's Network Outreach and Pipeline Development goals. The girls really benefit from seeing the GE facility and having an opportunity to be mentored by female technologists. GE women enjoy a fun and rewarding day encouraging young girls to consider futures in an area they have an interest in and passion for.

Limitations: Scale of event - number of girls impacted is limited

Funding Sources: GE Women's Network

Technology Roadmap

Center for Economic Growth
63 State Street
Albany, NY 12207
Phone: (518) 465-8975

Contact: Jeff Marusak

E-Mail: jeffm@ceg.org

Description:

The Technology Roadmap, www.technologyroadmap.org, is an online community, providing an information source and network for technology and service professionals within Tech Valley. Professionals use the tool to: communicate strengths and areas of interest for their organizations, learn about each other, make connections and generate ideas, identify potential business, collaboration and commercialization partners, and uncover unexpected ways that regional resources can be connected to create mutual benefit.

The Roadmap enables people across all levels and functions to identify opportunities for their organizations and themselves. This creates a network much broader and deeper than most, because of its accessibility and efficiency in helping users identify opportunities of interest.

The Technology Roadmap site also serves as a means of communicating back to professionals and organizations within the region, providing a commonly accessible vision of the future of the regional economy and the path to achieve that vision – a true roadmap for our future. Work to develop a roadmap for regional growth is already underway, and the outcomes of these efforts will be posted on the website.

Strengths:

The Technology Roadmap serves as a convenient, e-based tool to help local professionals connect to the technology riches in our Region, and help our Region identify and promote those riches to attract complimentary investment.

University Verification Partnership

IBM Corp and Arlington School District
2455 South Rd, Mailstop P330
Poughkeepsie, NY, 12601
Phone: (800) 426-4968

Contact: Bruce Wile
Established: 2001

Phone: (845) 435-8539
E-Mail: bwile@us.ibm.com

Description:

The field of functional verification had not been a focus at the university level for Computer Engineering. Working with various universities, including Syracuse and SUNY New Paltz, IBM donated lecture materials, lab exercises and guest lecturers to initiate classes on functional verification. Six universities in the north east now teach the class, and IBM experts continue to support to these efforts.

Partners:

IBM Corp (Mid-Hudson Valley, NY) and multiple universities (Syracuse, SUNY New Paltz, Penn State, Ohio State, Pittsburgh, Carnegie Mellon).

Strengths:

Universities now teach an important vocation in the field of computer engineering. IBM can hire graduates with interest and skill in the area of functional verification.

Limitations:

Need interested professor at the university.

Videoconferencing for Distance Learning & Instructional Support

Questar III BOCES
10 Empire State Blvd.
Castleton, NY 12033
Phone: (518) 477-8771

Contact: Jeff Elliott, Specialist
Established: 1980s

E-Mail: JElliott@questar.org

Description:

Questar III's Instructional Videoconferencing Service provides school districts with the technology and training to bridge the digital divide. The organization provides a high-speed T-1 video/Internet line, training, technical assistance and program support for distance learning and videoconferencing in local school districts.

Questar III coordinates instructional program opportunities for school districts to partner with colleges, universities, museums, zoos, science centers and other school districts across the region, state, nation and world. Program offerings include high school/college level courses, professional development workshops and e-field trips to instructional content providers. Additional programming (i.e., meetings, special events, etc.) is available upon request.

Students in rural school districts use the technology to take college-level courses at local colleges and universities.

Partners:

Adirondack Area Network, Capital Region BOCES

Funding Sources:

Local school districts.

Wappingers School District Initiative

Wappingers School District
167 Myers Corners Road
Wappingers Falls, NY 12590
Phone: (845) 298-5000 x138
Contact: Charles Hill, Assistant Superintendent
E-Mail: chill@wappingersschools.org

Description:

This is a relatively new project underway, still being planned out. Wappingers School District plans on making the school fully wireless. Students will be using wireless laptops, can take them on field trips, to gym class, wherever imaginable.

Strengths:

This is a relatively new project, just starting its second year. Wappingers School District plans on making its school fully wireless, with laptops becoming widely available inside and outside of the school walls and both on and off a clock-based schedule. Students will use wireless laptops in classroom, the library, the halls, on field trips, in gym class- wherever imaginable. They will use them in large and small groups, on projects that involve everyone doing the same thing, and on individual assignments. The district began implementation last year in two of its elementary schools and one high school, expanding this year to two more elementary schools.

Weather Stations

General Electric- Global Research
One Research Circle
Niskayuna, NY 12309
Phone: (518) 612-6863

Contacts:

Maria LaTorre

Chris Nafis

Established: 2004

E-Mail: maria.latorre@crd.ge.com

E-Mail: christopher.nafis@crd.ge.com

Phone: (518) 387-4124

Description:

GE Volunteers and students in several schools collaborate to build a Capital District Weather Station and Lightning Detection Network. Weather sensors are located at several schools. The sensor information is processed, integrated with local Doppler radar, and graphically presented on the Internet.

Partners:

GE Volunteers, Schenectady HS, Middleburgh HS, Berne-Knox-Westerlo HS, Martin Luther King School, *plus* schools in Munich, Germany and Shanghai, China

Strengths:

Weather is something that impacts everyone and is easily understood. The goal is to generate excitement for scientific learning, so that children can see how science *does* have a use in their lives. This project focuses on practical applications of scientific principles, including:

- * Developing an appreciation of scientific practices by using weather sensors for data collection, statistics, and graphing techniques
- * Sharing information through collaborative efforts to develop a basis of understanding
- * Enhancing Internet skills

Students also have contact with peers in other countries to compare results.

Limitations:

Time involved to train teachers on equipment.

Funding Sources:

A grant from the GE Volunteers.

WIRO

**Niskayuna Central School District
1239 Van Antwerp Rd.
Niskayuna, NY 12309
Phone: (518) 377-4666**

Contact: Dave L'Hommedieu E-Mail: dLhommedieu@niskyschools.org

Description:

Middle School Television Station provided on-line in building daily throughout school year.

Strengths:

Student involvement in real life practical solutions, replicating a production studio. Students plan, edit, write, and produce daily shows with minimal adult supervision.

Limitations:

Age of equipment, changing technology, need for fiber cable to share programming regionally.

Women at Rensselaer Mentor Program

Rensselaer Polytechnic Institute
110 8th Street, Troy, NY 12180
Phone: (518) 276-6000

Contact: Barbara Ruel
Established: 1994

Phone: (518) 276-6203
E-Mail: ruelb@rpi.edu

Description:

Over 65% of all first-year women in all majors at Rensselaer register to be matched with peer mentors who can help them to make a smooth transition to Rensselaer and successfully reach their academic and personal goals. Because women are a minority amongst the student population at Rensselaer, it is important for them to find community, network with others, and receive support to persist in the pursuit of their academic degrees. This coming fall, first-year students are matched with two mentors: one has the same major and the other has similar hobbies or personal interests. Mentors provide coaching, support and advice for managing the first-year experience. Monthly social activities provide the 400+ program participants with opportunities to socialize, broaden their perspectives, network with other students, faculty, alumni and local professionals, and acquire professional development skills.

Partners:

Rensselaer students, faculty, Archer Center for Student Leadership, Office of the First-Year Experience, Admissions, ATW (Alliance of Technology and Women), SWE (Society of Women Engineers), GEWN (GE Women's Network), women business owners, corporate institutions.

Strengths:

Rensselaer has a 97% persistence rate amongst women students who enter in the freshmen year and continue on to the sophomore year. Peer mentors and the activities of the Mentor Program help students to persist.

Funding Sources:

Proctor and Gamble, Avon Foundation, Lockheed Martin, UTC, Rensselaer Polytechnic Institute, School of Engineering

Work-Based Learning Program

Capital Region BOCES Career and Technical School
1015 Watervliet-Shaker Rd
Albany, NY 12205
Phone: (518) 862-4800

Contact: Hank Stopinski, Director of Career & Technical Education
Phone: (518) 862-4744 E-Mail: hstopins@gw.neric.org

Description: The Work-Based Learning program at the Capital Region Career and Technical School provides high school students with firsthand knowledge about their chosen careers by making the community their classroom. Tailored to individual needs, Work-Based Learning features job shadowing, career exploration internships and co-operative education and builds both career-specific and overall workplace and life skills. In job shadowing, students observe an employee mentor during a normal workday. Career exploration internships offer non-paid experience at area businesses. Students in some programs may also secure paid internships. Co-operative education provides part-time job placement related to a student's career and technical program of study. Work-Based Learning experiences enhance a student's education, help him or her define career goals, and may lead to future employment.

The Capital Region Career and Technical School is operated by the Capital Region Board of Cooperative Educational Services (BOCES) and serves more than 1,300 high school and adult students from 25 school districts in Albany, Schenectady, Schoharie and southern Saratoga counties.

Partners: The Capital Region Career and Technical School is operated by the Capital Region Board of Cooperative Educational Services (BOCES) and is advised by a volunteer Board of Education and more than 300 representatives of local business, industry and the local educational community who sit on advisory committees for career and technical education programs. The Capital Region Career and Technical School is fully accredited by the Middle States Commission on Colleges and Schools.

Funding Sources: As a BOCES program, the Capital Region Career and Technical School is regulated by the New York State Education Department and operated under the leadership of the Capital Region BOCES District Superintendent.

Workforce Development Institute

**Hudson Valley Community College
Office of Continuing Education, Summer Sessions
& Workforce Development
80 Vandenburg Ave
Troy, NY 12180**

Contact: Richard E. Bennett, III, Director

Phone: (518) 629-7206

E-Mail: benneric@hvcc.edu

Description: The Workforce Development Institute offers individuals and businesses credit and credit-free courses and programs to meet their training needs.

The Institute offers a “Learn Where You Earn” program that brings a new level of convenience to students who may want to take credit courses toward a degree, or who might simply be interested in increasing their knowledge and abilities in various job-related skills.

Working in partnership with an advisory committee that represents such entities as the Central Avenue Business Improvement District, the Rensselaer Gateway Development Corporation, the Rensselaer County Office of Economic Development and Planning, and the Empire State Office of Development, and the local business community, the Institute can explore, assess and prepare for both current and future workforce training needs.

The institute also offers customized training to meet the needs of any size business, including skills assessment, organizational and communications consulting, job profiling, and nationally-certified computer training.

For example, the college has embarked upon training partnerships with the Golub Corporation, the parent company of Price Chopper Supermarkets, and CVS. It also has established partnerships with the New York State Energy Research and Development Authority, the Northeast Retail Lumber Association, Northeast Inspection Services, the North American Board of Certified Energy Practitioners, the Albany City School District, the Center for Economic Growth and Excelsior College.

The college also provides state-of-the-art facilities for business and industry, including teleconferencing, videoconferencing, video production and DVD duplication.

Partners: Price Chopper/Golub Corporation, CVS, NYSEDA, (NYS Energy & Development Authority), NRLA (Northeastern Retail Lumber Association); NISI (Northeast Inspection Services, Inc.) and NABCEP (North American Board of Certified Energy Practitioners) the Albany Central BID, The Veterans Administration, the Albany School District, CEG, (Center for Economic Growth), Excelsior College.

Youth & Education Task Force

ARISE (A Regional Initiative Supporting Empowerment)

15 Barney St.
Schenectady, NY 12307
Phone: (518) 331-3190

Contact: Paula Simpson

Phone: (518) 861-8053
E-Mail: pdsimpson41@yahoo.com

Description: ARISE is a faith based organization in the Capital Region, comprised of 38 member congregations and neighborhood associations. Our member groups have a combined strength of about 12,000 people. Over the past 3 years, our top priorities have been youth and education issues in our region. Some of our recent victories include obtaining a NYS Assembly grant of \$225,000 from Assemblyman Paul Tonko for after school programs in Hamilton Hill, and the highly visible program Operation Holy Ground, which has helped restore peace to the streets of Schenectady, after 8 murders within a 4-month period. Our main initiatives this year include working with our city schools, community leaders, legislators and clergy to try to increase graduation rates, especially for minority students (NYS currently has the lowest rate of minority student graduation in the nation). ARISE members also meet regularly with the Director of the Capital Region Workforce Investment Board, to seek a Workforce Strategic Plan to help encourage our inner city kids to stay in school and to understand the new jobs that may become available to them through Tech Valley Initiatives.

Partners: We have partnered with Schenectady City Schools for enhanced after school programming and Operation Holy Ground Initiatives. We also meet regularly with local legislators, representatives of the NYS Department of Education, and other key players for expansion of Liberty Partnership.

Strengths: Drawing from our member base of 12,000, we have a core of highly committed volunteers who are motivated to help our kids succeed. We have established good connections with leaders in the public schools, clergy, colleges, state agencies, and state legislators, as we seek strategies to keep our kids in school, and better prepared for future job opportunities.

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