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A History of Computer Technology and its Impact on Academics at SUNY Brockport

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A History of Computer Technology and its Impact on Academics at SUNY Brockport

by

Thomas Louis Jennings

A thesis submitted to the Department of

History of the State University of New York College at Brockport in partial fulfillment of the
requirements for the degree of

Master of History

February 15 2010

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Chair, Graduate Committee   Date

Dedication

The inspiration for this project came in September of 2004 when I arrived at SUNY Brockport as a "non-traditional" transfer student majoring in history. Being a thirty eight year old on a vibrant college campus was a bit of a culture shock. Dr. John Killigrew taught my first history course and on the first day, he handed out a syllabus that looked like he had produced it on a typewriter and then mimeographed it, both familiar pieces of "technology" from my youth. One of the younger students looked at it and laughed because Dr. Killigrew had not used a computer word processor.

By the time I arrived on campus in 2004 at the age of thirty-eight, I was not completely oblivious to the latest computer technology. The previous two years I completed fifteen online courses at Genesee Community College and completed couple of training courses in Microsoft Excel and Microsoft Word for my job.

At Genesee Community College, I completed a few history courses, but nothing that required a tremendous amount of research. My first reaction to online databases was amazement. The online databases replaced *The Readers Guide to Periodical Literature, which* was a wonderful print index of magazine articles; unfortunately, all too often the periodical cited was not available in the school library. I remember struggling to find decent sources for research papers when I was in high school in the early 1980s and how frustrating it was to look for missing or unavailable print material. I wondered if younger students at SUNY Brockport in 2004 knew how lucky they were.

Even knowing that the internet was fast becoming a tool for research, I was still shocked when I entered Drake library for the first time, in search of good old-fashioned print material Dr. Killigrew had on reserve. I had been to public libraries with a few computer terminals, but never one that had a mass of computers; it resembled a computer lab and not a library.

Out of habit, while I attended SUNY Brockport I still used a fair amount of print material for research. When you enter the SUNY Brockport library, the shelves of books are located on the second floor. Even when the library was busy there were few people perusing the bookshelves, most were sitting in front of a computer terminal. I wondered to myself when the books stopped being the most important part of the library.

I loved the ease of typing a term in a search engine and letting the computer do the work, but it was not fulfilling. I missed searching shelves for material and being sidetracked and discovering a book or magazine article that I otherwise would never have discovered. Thus, I tried to find a balance between the computer and print material.

For a paper I wrote on The Bonus Army, I integrated internet research, finding a wealth of scanned newspaper articles on the Herbert Hoover Presidential Museum website. Nonetheless, I still took a stack of books out of the library. When I did my honors program thesis on the student occupation of Hartwell Hall, I used the SUNY archives for the first time, flipping through paper copies of *The Stylus* a newspaper I had a special fondness for because I was a columnist for *The Stylus* for five years.

For this project, the medium truly is the message. The research combined my love of computer technology with my love of traditional historical research and connected me to the evolution of technology at SUNY Brockport during my childhood and the following twenty years when I was away from educational institutions. I combined research methods from my youth, like microfilm and print sources, and recollections from some people who witnessed the change with a wealth of electronic sources unimaginable twenty years ago.

This project is dedicated to everyone who has witnessed the massive changes in research methods because of the increased availability of computing technology, and especially to those people with fond memories of the card catalogue.

Acknowledgements

Thanks to the history faculty at SUNY Brockport for inspiring me to be a better writer and better researcher.

Special thanks to Dr. Bruce Leslie for his patience, guidance, and friendship. Extra special thanks to Mary Jo Gigliotti for her wealth of knowledge and assistance in the SUNY Brockport Archives. Finally to Dr. Ken O'Brien for his work on the history of SUNY Brockport and his leadership during my time in the honors program.

Abstract

A history of academic computing at SUNY Brockport; while administrative computing shares some common history but is only examined here in the broader context of academic computing capability; their histories occasionally intertwine but are distinct.

The history of SUNY Brockport's management of the academic computing revolution containing success stories and shortcomings; It is presented in decades starting with the 1960s when computer technology was not an essential part of the campus and ends in the 21st century when computers are an integral part of the campus.

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Introduction

Over the years, SUNY Brockport faculty and students have examined many aspects of SUNY Brockport's history. The definitive written version of SUNY Brockport's broad history entitled *Cherishing This Heritage* written by W.Wayne Dedman examined the school's first one hundred years and an additional chapter appeared in 1984, which examined the Dr. Albert Brown era of the mid 1960s to the early 1980s.

In 2006, a pictorial history covering SUNY Brockport's history published by Arcadia publishing, chronicled the years from 1835 to 2006. In addition, a comprehensive website chronicles SUNY Brockport's history including short biographies of the school's "principals and presidents" as well as the history of the buildings on the SUNY Brockport campus.

Missing from the body of SUNY Brockport research was a work examining the revolutionary change associated with the acquisition of computer technology. Over a span of less than thirty years, computers changed nearly every facet of student life on the SUNY Brockport campus. To the SUNY Brockport student, new technology appeared in waves so the radical transformation of the SUNY Brockport campus was not instantaneous.

Nonetheless, it was a revolution in every sense of the word and yet what is not understood is how SUNY Brockport's ability to manage the massive influx of computer technology played a key role in shaping the college's image as it reached the 21st century. An understanding of how SUNY Brockport managed the acquisition and implementation of state of the art computer technology lends insight into SUNY Brockport's ability to meet other challenges in the future.

This work focuses on academic computing at SUNY Brockport. Administrative computing shares some common history but is only examined here in the broader context of academic computing capability; their histories occasionally intertwine but are distinct.

SUNY Brockport's management of the academic computing revolution contains success stories and failures. It is presented here in decades starting with the 1960s when computer technology was not an essential part of the campus and ends in the 21st century when computers are an integral part of the campus.

<center>**Accidental Revolution**</center>

The 21st Century SUNY Brockport campus loaded with the latest technology is the product of years of struggles to keep up with expensive technology that was often outdated in as little as three years. SUNY Brockport faced the same challenge as other liberal arts institutions, namely whether to risk investing a huge amount of money into computer technology only to find that cheaper and more efficient computers were on the horizon. The "wait and see" mentality could have hurt its academic reputation and its ability to recruit quality students, but an overly aggressive pursuit of innovative technology could have had disastrous consequences on other departments.

A 1981 government report dealing with computers in higher education called the influx of new microcomputers on college and university campuses, "an accidental rather than planned revolution. College and university faculty and administrators are aware of the changes but unsure what the revolution means to them."[1]

This paper will examine what the "accidental revolution" in computer technology "meant" to SUNY Brockport, and how the acceptance of computers was a vital component of the college's need to improve SUNY Brockport's image in the 1980s and well into the 1990s. SUNY Brockport eventually embraced the latest computer technology and at the same time restored its status in the community as a quality institution. The pursuit of the latest computer technology was essential in remaking SUNY Brockport's reputation, as evidenced by the fact the years SUNY Brockport did not pursue computer technology through creative funding sources or its budget were the years of declining reputation and enrollment.

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[1] Robert G Gillespie, Dicaro, Deborah A." Computing and Higher Education: An Accidental Revolution" accessed via ERIC reference # ED205068

While the first operational computer on an American campus was the Mark I at Harvard University in 1944, the first "modern" computer appears two years later in 1946 at the University of Pennsylvania. It was the first electronic computer, called ENIAC. [2] The ENIAC had thirty separate units, weighed over thirty tons including over 19,000 vacuum tubes, 1,500 relays, and hundreds of thousands of resistors, capacitors, and inductors. The ENIAC needed almost 200 kilowatts of electrical power to operate. [3] The Defense Department funded the development of the computer to perform complex ballistic calculations.

The history of academic computing in higher education begins with two major federally sponsored reports dealing with computers in higher education released in the 1960s. The first in 1966 entitled, "Digital Computer Needs in Universities and Colleges" referred to as the Rosser Report named after J. Barkley Rosser chair of the Committee on Uses of Computers of the National Research Council. The second appeared in 1967 entitled, "Computers in Higher Education" known as the Pierce Report after John Pierce, the chair of the panel formed by the President's Science Advisory Committee of the Office of Science and Technology.

The Rosser report advocated for greater university access to computers for research projects but did not propose a comprehensive program for greater student access to computers. The Pierce report took a stronger stance, calling an undergraduate college education that did not include access computers as inadequate as an education without access to a library. The Pierce report called for all colleges and universities to have computer access within a decade.

Consequently, President Lyndon Johnson issued a presidential directive to the National Science Foundation to establish a plan to develop the potential of computers in higher education.

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[2] Andrew Molnar, "Computers in Education: a historical perspective of the unfinished task" *T H E Journal* volume 18 no. 4 November 1990

[3] Martin Weik, "The ENIAC Story" accessed online at http://ftp.arl.mil/~mike/comphist/eniac-story.html

[4] The National Science Foundation then established the Office of Computing Activities to establish federal support for computer initiatives in education. In June of 1969, approximately 1,255 colleges and universities had computer facilities and 1,282 did not. At the end of 1969, the federal government estimated that over one million students in higher education still had no access to computers.[5].

Computer science departments first appear on American college and university campuses in the early 1960s at Purdue and Stanford.[6] Other colleges followed suit, the move toward establishing some form of computer science department grew, and by the late 1960s, computational science departments were becoming common on college campuses. SUNY Brockport was just one of many colleges following the trend, and they established a small Department of Computer Science in 1970 led by Norman Plyter. SUNY Brockport only offered an undergraduate academic minor in computer science. SUNY Albany, SUNY Potsdam and SUNY at Buffalo were part of a select group of institutions that offered an academic major in computer science, and SUNY Albany offered a Master's in computer science. While the computer science major gained acceptance in the mid 1960s, some colleges and universities continued to offer computer related degrees in data processing and information science instead of computer science.

Many early pioneers of academic computing, like Columbia University, did not embrace computer science as a discipline. In the 1970s, Columbia University carried out computer science activities in the electrical engineering and mathematical statistics departments.

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[4] Molnar
[5] John W Hamblen ,"Using Computers in Higher Education: Past Recommendations, Status, and Needs" *Communications of the ACM* Volume 14 issue 11 November 1971 p.1
[6] William Aspray, "Was Early Entry a Competitive Advantage? US Universities That Entered Computing in the 1940s," IEEE Annals of the History of Computing, vol. 22, no. 3, pp. 42-87, July-Sept. 2000

"Columbia was ranked sixtieth of seventy schools in the national rankings of departments of computer science. Like most of the Ivy league schools in the 1970s, Columbia did not see computer science as an important discipline within the liberal arts."[7] SUNY Brockport had a similar attitude in the latter part of 1970s, which may explain why there is scant mention of computers in any of the promotional literature or *The Stylus*.

Even though SUNY Brockport did not place great emphasis on computer science as a discipline or aggressively seek out state of the art computer technology in the early 1970s, the college still grew dramatically, proving that student demand for computing programs was not necessary for growth during the early 1970s. Even though a number of factors caused SUNY Brockport's decline in enrollment during the latter half of the 1970s, it coincided with an era that the college did not seriously attempt to position itself as a leader in the field of academic computing. nor did there appear to be much interest in computers on the campus from the faculty or students.

Nonetheless, a vital component of SUNY Brockport's image makeover was the institution's commitment to acquiring state of the art computer technology, establishing a recognized and respected computer science program and making computers an important part of the social sciences, something that was not a given in the mid1980s. This concept is summed up nicely by Violet Meek, Director of programs of the Council of Independent Colleges who told *The New York Times* in 1986 that, ""The technology is still moving so fast that many schools are

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[7] Ibid.p.71

worried they won't spend their resources wisely. And while applications in the hard sciences are clear, many in the social sciences are still figuring out how networks fit in."[8]

In nearby SUNY Geneseo, computer science was an integral part of their image makeover in the 1970s and early 1980s. In the 1970s, SUNY Geneseo established a computer science major as part of a plan to attract the best students with the highest SAT scores.[9] In the early 1980s, SUNY Geneseo closed its eighty-year-old School of Library and Information Science so that it could allocate more resources to its computer science program.[10]

SUNY Geneseo, like SUNY Brockport gambled that computers were the wave of the future, and by the mid 1980s when both institutions moved toward the acceptance of computer technology as an essential part of the college, there were still naysayers like Harvard University's President Derek Bok-a recognized expert in evaluating the effects of educational technology- who reported to the Harvard Board of Overseers in 1985 that, "Thomas Edison was clearly wrong in declaring that the phonograph would revolutionize education. Radio could not make a lasting impact on the public schools even though foundations gave generous subsidies to bring programs into the classroom. Television met a similar fate in spite of glowing predictions heralding its power to improve teaching."[11] Bok encouraged educators to ignore the "media hype," and "exaggerated claims" about how computers will transform college campuses and instead urged, "cautious optimism."[12]

[8] David E Sanger"The Electronic College is Still a Dim Prospect" January 5, 1986 accessed via the *New York Times* Histotical Archive
[9] Wayne Mahood,"A Touch of New England in Western New York" *The Transformation of SUNY Geneseo*
[10] Ibid. p 10
[11] Edward B. Fiske, "EDUCATOR ASSAILS COMPUTER 'HYPE'; Bok of Harvard Urges Caution in Using New Technology on Nation's Campuses" *The New York Times* Apr 19, 1985. pg. D19
[12] Ibid.

The question SUNY Brockport, a leader in instructional television in the 1950s and 1960s, faced in the 1980s was whether to gamble on computers. There were mixed results and some challenges along the way, but SUNY Brockport's gamble eventually paid off and SUNY Brockport entered the 21st Century equipped to effectively manage the challenges associated with fast-paced technological advances in computers.

Brockport Begins

When Dr. Albert W. Brown assumed the presidency of SUNY Brockport in the fall of 1965, the campus was in the early stages of a massive building program.[13] At his first inaugural address President Brown told listeners that the "barren and torn ground which you see is in reality a fertile garden… from which a great campus will soon emerge."

Two years later "on a hot sunny day in August 1967," SUNY Brockport quietly entered the computer age with the installation of an IBM 1401 in the basement of Hartwell Hall.[14] Other computers arrived to assist with mundane tasks like grading exams and data storage, and perform some academic functions like complex statistical analysis.

By the end of the decade, SUNY Brockport had experienced both massive physical growth and population growth, a great campus had emerged out of an era marked by war protests, racial strife, and all of the growing pains typical of an organization experienced massive growth quickly.

By the early seventies, the student population was near its peak of 12,000 students, up from the meager 2,500 students when Dr. Brown gave his inaugural address in 1965.[15] In May of 1970, a group of students occupied Hartwell Hall as their part of a nationwide protest over the shooting of student protestors at Kent State University. In addition to students, the basement of Hartwell Hall contained all of the campuses computer services.

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[13] W.Wayne Dedman,. *Cherishing Our Heritage: Chapter 17.* NY: Appleton-Century-Crofts, 1984. page 10

[14] *"Brockport Enters Computer Age." Computing Center Newsletter 15 May 1968:*p1 located at the SUNY Brockport Archives RG 7/1/5

[15] Dedman, p. 34

Pictures taken during the occupation show students huddled together in hallways, some trying to study for final exams, many of which would be optional or cancelled altogether. A similar scene if played out forty years later might show students listening to iPods, working on laptops, or relating events on social networking sites. One can only speculate if the impact modern computer technology on participation in the protest, but in the 1970s there were only hints at the seemingly endless task that the computer could accomplish.

The 1970s: Growth and Potential

In the 1970-71 introduction to the SUNY Brockport course catalog, it states that Brockport was in the final stages of a $46 million renovation project including the construction of a new larger Drake Library.[16] The state of the art technology at the time was Brockport Television (BTV) that began in 1956 as an ambitious experiment. The catalog only made a scant mention of the school's computer services, including the machines that were available for student use enrolled in courses in the recently established Department of Computer Science headed by Norman Plyter-then still a section of the Mathematics Department. The first year SUNY Brockport offered an undergraduate computer science minor was 1970, it was another six years before a SUNY Brockport offered a computer science undergraduate major.

In the fall of 1970, the State of New York chose SUNY Brockport to participate in a program to replace computers like the IBM 1130, and the IBM 1401.[17] The IBM introduced the 1130 in 1965 and at the time, it was IBM's least expensive microcomputer, the unit rented for less than $1,000 a month and retailed for $32,280.[18] SUNY Brockport purchased the IBM 1401 in 1958 to handle administrative tasks and data mangement; IBM discontinued marketing the 1401 in 1971.[19] The 1401 was the workhorse of computer services, responsible for handling payroll and other functions for the personnel department, there was very little if any academic use of the 1401.

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[16] SUNY Brockport Course Catalog 1970-71 located ta the SUNY Brockport Archives, R/G 11/9/2

[17] "Brockport to Get a New Computer." *The Stylus* [Brockport NY] 3 Nov. 1970: 3. Print.

[18] "IBM 1130." IBM Archives. IBM, n.d. Web. 1 Feb. 2010. <ibm1130.org/ and IBM archives at http://www-03.ibm.com/ibm/history/exhibits

[19] IBM archives lists the machine as being produced in 1959, one article cites the machine as being purchased by SUNY Brockport in 1958, a year before the IBM archives stated it was produced and one article states it was purchased in "the early sixties."

The SUNY Brockport administration formed an ad hoc committee to determine the needs of the campus. The following questionnaire sent to 600 faculty and staff members:

A. Interest in computer services:

   1) No interest

   2) Curious but not knowledgeable : would like to learn more

   3) Interested in development of potential uses

   4) Actively planning to use computer services

   5) Interested in the planning and development of computer services at Brockport

B. Experience with computers:

   1) Have never used a computer

   2) Have used computing facilities, but have not written programs

   3) Have made extensive use of "packaged" programs

   4) Have written occasional programs

   5) Have personally made extensive use of computers in a wide variety of applications

C. I would like to explore ways that the computing resources at Brockport can better serve my needs through:

Even without the results, the questionnaire lends insight into the state of computer technology at SUNY Brockport in the 1970s. Most of the answers are geared towards individuals with limited or no experience with computer technology, which suggests that the purpose of the questionnaire was to demonstrate that there was an interest in computer technology on the SUNY Brockport campus.

At the close of the fall semester in 1970, SUNY Brockport submitted a proposal to the State of New York to acquire a sophisticated computer system; a group of computer science

department heads from the SUNY system rejected the proposal and instead proposed that SUNY

Brockport purchase a less expensive system.[20] Jeffrey Balling, SUNY Brockport's Data

Processing manager argued that the college's computers, then located in the basement of

Hartwell Hall were not suitable for a modern college campus. If the state did not approve the

proposed computer system, "many of the faculty members will be on the verge of leaving."[21]

Norman Plyter, SUNY Brockport's first director of computer services, agreed that the

academic computing facilities were inadequate and noted, "you simply can't educate students

today without giving them some type of computer exposure." To support his case,   Plyter listed

the departments that used computers, which included Political Science, Economics, Dance,

Sociology, Math, Physics, Computer Science and Psychology.[22]

Registrar David Metz supported Plyter's attempts to get a new system. In addition to the

academic benefits a newer system would bring, Metz had the foresight to realize that a

sophisticated computer system could eliminate registration lines, advise the student on what

classes they needed to take, and even allow them to see if a textbook is available in the school

bookstore.[23]

The computer system that Plyter and Metz wanted for SUNY Brockport was a system

manufactured by the Xerox Corporation; The SUNY central office rejected the purchase of the

Xerox system and instead proposed the purchase of Burroughs 1300s manufactured by the

Burroughs Corporation, a forerunner of the Unisys Corporation.[24] The SUNY Central office

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[20] "Brockport Fights For Computers." *The Stylus*   8 Dec. 1970: 3. Print.
[21] Ibid
[22] Ibid
[23] Ibid
[24] Deborah Dunn,."Requiem for a Computer." *The Stylus* 19 Oct. 1971: 15. the Xerox system Plyter fought to obtain was the PARC, an early personal computer that included an email tool and the first mouse, which was developed in

wanted all of the four-year colleges in the system to purchase the Burroughs machine but while

Plyter and Metz agreed the Burroughs system would be an improvement over the IBM 1401 for

handling registration and records, it would not be useful to students and faculty.[25] In this case,

administrative functionality was more important than academic functions.

By 1971, Brockport did have a portable computer unlike any other school in the SUNY

system. The unit was located in room 210 in Hartwell Hall and had the capability to transmit

information over phone lines. [26] *Stylus* writer Chuck Lathrop described the process this way:

> "The computer works by using regular telephone lines. The signal leaves the terminal computer in Albany as a "bee-bop" type of signal. This is then transformed into a regular telephone line impulse. When it reaches here it goes through the telephone and then into the computer where it returns the "bee-bop" signal."[27]

The fight for a new system to replace the IBM 1401 and the IBM 1130 continued into

1973.[28] In an article published in *The Stylus* on February 6, 1973, Dr. Plyter continued to reject

the State's proposal to allow for the purchase of the Burroughs 1300. In 1973, Computer

Departments were the only departments in the SUNY system that required purchase approval

outside the SUNY system by the New York State division budget office.[29]This was likely

because of the massive cost of burgeoning computer technology. Plyter also noted that the

Computer Science Department was the smallest on the campus, comprising only two members,

administrators taught many of the courses.

Rochester NY at Xerox. Apple "borrowed" many of their idea for the Apple II and the Apple Lisa and by the time the personal computer gained popularity Xerox was no longer producing computers.

[25] Ibid

[26] Chuck Lathrop, "The Computer Talks Back." *The Stylus*   28 Sept. 1972: 3. Print. p2

[27] Ibid.

[28] Wes Byers,. "Brockport Cries for Better Computer Still Unanswered." *The Stylus*   6 Feb. 1973: 11. Print.

[29] Ibid

By 1973, two departments at SUNY Brockport had their own computing labs; the Psychology Department computer was obtained in 1973 as part of a Title VI grant from New York State. The Psychology computer lab's main system was PDP8e manufactured by the Digital Equipment Corporation. The system was widely used by psychology departments across the nation and had modem capability so it could communicate with other systems and allowed for remote access. The Psychology department reported an average of six students a day and 200 students a semester using the system. [30] The Chemistry Department Computer Lab housed a Wang 720 and Wang 2200 and teletype terminals that communicated with the mainframe at the Computer lab. There were also teletype terminals located in the Math Department, Learning Skills Center, The Alternate College, Data Analysis Lab. Typical of the era, each department had systems designed to perform academic functions associated with their discipline. There was no standard type of system or a means to share software with all of the computers on the campus.

There were computing facilities available for students in other disciplines but many of them were not using them, In October of 1974, Daryl Van Alstyne, director of the Academic processing center an appeal to students that appeared in *The Stylus* to encourage students to utilize the Computer Center, which was located in the basement of Hartwell Hall.[31] Van Alstyne was concerned that more students were not utilizing the computer lab. The school was still utilizing the IBM 1130 to grade tests and had added a Hewlett Packard 2000c system.

The Hewlett Packard 2000c was a mainframe computer that served up to 32 students at a time, 16 in the computer lab and 16 from home via a standard telephone line. The portable units,

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[30] Ibid

[31] Barbara Brady,. "Computer Center Not Just a Pinball Room." *The Stylus* 24 Oct. 1974: 13.

called Port-a-coms" could be signed out so students could work on them from home.[32]The computers also had games like Word Scramble, Tic-Tac-Toe, Battleship, Space War, Ice Hockey and a racing game installed on them. [33] Although games were available, Van Alstyne reminded students "The Computer Center is not just one big pinball room."[34]

In October of 1975 during Homecoming, the Computer Science Club demonstrated the remote capabilities of SUNY Brockport's computers.[35] "A small television screen was hooked up to a telephone, which in turn was connected with a larger computer in Hartwell Hall. In spite of the limited amount of machinery, the simple set up could perform many of the actions of the main computer."[36] The author of the column that appeared in the *Stylus* noted that the students played games like Star Trek and Las Vegas slot machine.

In October of 1975, an author whose pen name was "Gypsie" lamented that the computer facilities at SUNY Brockport "seem to go almost unnoticed by the Black populace."[37] The IBM 1130 was still in use as well as the Hewlett-Packard 2000c. Gypsy closed the story writing, "I urge all the Brothers and Sisters to come and check (the computer center) out."[38]Also in 1975, SUNY Brockport participated in a Women's Rights symposium project at an event commemorating the United Nations. SUNY Brockport was one of six colleges in the SUNY system that could feed information to a central computer in New York and transmitted to participants at The World Trade Center in New York City. [39] The project was conceived by Glen and Robert Leet and Leet described the process as "in a sense we are using the computer as a

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[32] Ibid.
[33] Ibid
[34] Ibid
[35]Eleanor Finnegan,. "Computer Jargon." *The Stylus* Oct. 23 1975: 3
[36] Ibid
[37] Gypsie. "Error, error...it does not compute." *The Stylus* October 23, 1975:7
[38] Ibid
[39] Burns, Charles. "Women from a Computer's Point of View." *The Stylus* October 23, 1975.p.2

'bulletin board' which numerous individuals can tack up their ideas and read those of everyone else.[40]

Norman Plyter fought hard to obtain his choice of systems throughout the 1970s series of memos and newspaper articles to that effect, including references in letters requesting an appraisal for a job Plyter applied for at University of California, Berkley. in the letter dated July 23, 1976 Jeffrey Balling writes : "I would add to the above that Mr. Plyter, and the college, have been frustrated for at least seven years at our inability to get approval from 'Albany for adequate academic computing facilities and support. Anything he says about that you can believe date July 23, 1976."[41]

Computers on the SUNY Brockport campus in the 1970s were not extraordinary nor were they state- of- the- art. Norman Plyter's battle for a better system may not have been successful but there is scant evidence that suggests the majority of the student body was concerned with whether SUNY Brockport had state of the art computers or not as is evidenced by the pleas that appeared in *The Stylus* for students to utilize the computer lab. From 1975 until 1980, there is no appearance of the word "computer" in *The Stylus* index.

When stories about computers appeared in the *Stylus,* it was a plea to utilize them for academic use and not just for computer gaming, or a demonstration of its remote capability. While these early computers certainly performed useful academic functions, they were not seen as an essential component to the SUNY Brockport campus as a whole. There is no evidence that

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[40] Ibid.

[41] Letter found at SUNY Brockport archives in folder Academic Computing Misc R/G 7/1. This was an unusual find, three reference letters saying the same thing about Plyter's attempts to obtain computers for SUNY Brockport. The letters were personal in nature and subsequently removed by archivist Mary Jo Gigliotti because of the personal nature of the correspondence. Ms. Gigliotti stated that when departments give documents to the archives these types of things sometimes get mixed in. Since it is an important piece of evidence, I have included the pertinent contents in this work.

there was widespread dissatisfaction with the computing facilities amongst the faculty or the student body. It appears that most students saw them as a novelty and not a necessity, and that people like Norman Plyter were in the minority and tried to stir up interest in computing to justify seeking better equipment. Simply put, the student demand on the SUNY Brockport campus for better computers did not exist in the 1970s.

The 1970s laid the groundwork for a technological revolution driven by computer technology. As part of Dr. Brown's, overhaul of academics at SUNY Brockport in the 1970s a minor in computer science in 1969 to an academic major in 1976.[42] Throughout the 1970s, there were still debates over whether computer technology was just a passing fad on college campuses. Many departments, including the Department of History, did not utilize computer technology so the impact was limited on the SUNY Brockport campus.

It is also interesting to note that this appeared in the 1975-76 *Brockport Student Handbook* concerning the Academic Computing Center: "A lot of students could benefit from using the facilities of the Academic Computing Center and the general use library programs: there isn't really a monster in the back room of the Center, just a machine, and if you understand how to use it, you can do a lot with it."[43] The concept of the computer as "a monster" demonstrates that many students on the SUNY Brockport either were intimidated by or saw little use for computers. The "monster" quotation in the 1974-1975 is the last mention of computer facilities at SUNY Brockport in student handbooks in the 1970s, another indication that computers were not an important part of the campus in the late 1970s. On the same page of the handbook where computer facilities were mentioned the previous year, in the 1976-77 SUNY

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[42] Gigliotti, Mary Jo, W.Bruce Lelsie, and Keneth P. Obrien. State University of New York at Brockport (NY) (College History Series). Charleston, SC: Arcadia Publishing, 2006. page 71
[43] Brockport Student Life Handbook 1975-76 (page 9 RG 24/1/5)

Brockport Student Life Handbook contained the heading "drugs" and said, "reefer prices on campus are not as expensive as the prices at private schools, but then again, Grade A, top quality (and we mean quality) smoke might be hard to come by."[44]

In many ways, the disappearance of a section devoted to computers replaced by a section devoted to drugs in the student handbook symbolized the image problems at SUNY Brockport by the end of the 1970s and the precipitous decline in enrollment and stature of the college during the latter half of the 1970s. Whereas in 1975 a student pleaded their case that computers are not "monsters" and can be very useful, the following year contained a passage assessing the quality of marijuana that could be obtained on campus. Were students more concerned with the latest technology or did they attend SUNY Brockport because it was a "party school?" The evidence suggests the latter, for if access to academic computers were a relatively important to SUNY Brockport students they should have merited a mention in the student handbook from 1975 to 1980 or received some coverage in *The Stylus*.

From 1975 until the end of the 1970s, SUNY Brockport made small advances in academic computing, including the installation of the Prime model 300 in1977, this provided thirty-two users simultaneous access, and the installation of twenty-four dial in modems in 1978.[45] In 1979, SUNY Brockport hired Brian Volkmar as Computing Services Operations Supervisor.

At Columbia University during the 1970s, there were similar debates as to whether to establish computer science as a separate entity; it had been carrying out computer science

[44] 1976-1977 Brockport Student Life Handbook? (page 9 RG 24/1/5)

[45] Timeline created by Anne Parsons for the Academic Computing Newsletter, May 1999, received via email from Mary Jo Orzech. The timeline's dates conflict with some of the dates I have found in my research including the establishment of the computer science major which the timeline list at 1976 and the Gigliotti et. Al book lists as 1973

activities in the electrical engineering and the mathematical statistics departments.[46] In spite of not having an academic major in computer science, Columbia had made extraordinary gains in academic computing in the 1970s, and began the move away from centralized computing and moved towards microcomputers in 1975.

From 1975-1979 at Columbia, the university placed a plain paper computer printer in service, established email accounts and used computers for video editing.[47] Columbia also had to deal with its first attack by computer hackers, and received one of the first known instances of "spam" or junk email. In addition, they opened a public computing facility on campus, so not only did students have access to computers the public did as well.

Even though Columbia was ahead of many schools in computer technology, Columbia's dean, Peter Likens, felt that it was crucial to build up Columbia's computer science program. Likens and associate provost Norman Mintz recruited Joseph F. Traub, chair of Carnegie Mellon's world-renowned computer science department. In 1979 Traub led the newly independent Computer Science Department at Columbia and secured a $200 thousand donation for IBM to help with recruitment. Within five years, Columbia's computer science department moved up in ranks to the top twenty in the nation.[48]

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[46] Aspray, 71
[47] Computing at Columbia Timeline
[48] Aspray

The 1980s: The PC Arrives

In 1981 the Albert Brown era that had begun with so much promise, ended with disappointment. In 1975, SUNY Brockport's enrollment peaked at 12,000. By 1980 due to years of budgetary problems in New York State Government and the end of the "baby boom" generation, SUNY Brockport's new student enrollment experienced a 25% decline from its peak. Exacerbating the problems associated with declining numbers of students was Dr. Brown's directive to allow for more "special admits" into the college. The special admits were students that had not met the basic admission requirements but they filled seats. The faculty dubbed them the "light brigade."[49] In addition to its other problems, SUNY Brockport had acquired the dreaded reputation of being a college of last resort for weak applicants.

While dealing with budgetary constraints, faculty turnover, image problems and apathy were not enough to contend with; on February 10, 1980, someone stole an Apple II computer- recently purchased for $2700- from a storage room located at 229 Lathrop.[50] Dr. Theron Rockhill, a professor in the Mathematics-Computer Science Department lamented that the "cost isn't all that high, but when you consider that $2700 is more than our budget it's quite a bit."[51] The only possible motive given was that "with the right sequence" a student could hook into the network from home and do their assignments. The computer science department offered a $100 reward for its return. There was no follow up story, which suggests no one apprehended the perpetrator.

On a lighter note, by the fall of 1980, computer technology may not have significantly changed the way most students learned, but it had changed the way students purchased their food

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[49] Dan Olmstad, "The Trouble at Brockport." *Upstate New York*, October 19, 1980.
[50] Vandana.Mathur, "Computer Missing." *The Stylus* March 5, 1980. p.2
[51] Ibid.

on the SUNY Brockport campus. As reported in *The Stylus* on September 10, 1980, a system called the Vali-Dine made its debut on the SUNY Brockport campus, replacing coupons for meals. [52] The Vali-Dine system used a magnetic strip similar to those that are on credit cards. The computer then communicated the purchase information to a database that kept track of the students "dining dollars." The technology had been in use on other campuses for three years.

As SUNY Brockport engaged in a new media campaign to clean up its declining image, a local newspaper ran a damning expose entitled simply, "The Trouble at Brockport." The article appeared in the October 19 1980 edition of *Upstate New York Magazine*, a Sunday supplement to The *Rochester Democrat and Chronicle;* ironically, an ad for SUNY Brockport appeared in the same issue. It detailed the problems associated with the "special admits" and the increasing perception that SUNY Brockport was a "party school." Brockport Student Government president Rob Fiorella noted, "we can't afford to be a party school anymore."[53]

In a positive note, the article corrected one negative misconception about SUNY Brockport. It reported that the largest major at SUNY Brockport was mathematics/computational science, followed by business administration, and then economics. In spite of the long held perception that SUNY Brockport was a "phys-ed" school," Physical Education was fourth.

Less than two weeks after "The Trouble at Brockport" was published, the banner headline on the Wednesday October 22, 1980 edition of *The Stylus* simply read, "Prez Brown Resigns After 15 years of Good Service." Located beneath the story on Dr. Brown was a story entitled, "Computer Overload" about the lack of computer time available to students and faculty

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[52] *The Stylus* "No More Coupons No More Books," September 10, 1980.
[53] Ibid

on the SUNY Brockport campus. The story reported that eleven-hundred students were vying for terminal time, including students from the sociology, mathematics and economics departments who were using computers to complete research projects and administer tests. [54] The overload created a problem called "thrashing" which occurs when there is not enough memory available because of the system is being taxed. The administration's answer to the problem was to reduce the number of students taking courses that required the use of a computer from 800 down to 550 students.

The reduction in admits to courses using computers came in spite of the fact that in 1980, SUNY Brockport had placed fourth in a regional Computer programming competition, behind the Rochester Institute of Technology, Michigan Institute of Technology and Cornell, emphasizing the quality of students in the Computer Science Department. In spite of the challenges facing academic computing, some students at SUNY Brockport excelled in computer programming. Jeff Kinz, the head of the Computer Science Club feared that if the SUNY Brockport administration, "was not responsive to the needs of the Computer Science Department" that the quality of education at SUNY Brockport will suffer.[55]

A confidential report dated November 7, 1980 entitled, "A Hypothetical Evaluation of Computing at the College," painted a grim picture of computer technology capabilities at SUNY Brockport.[56] The report noted that there was " a need for college recognition that computing is an important function that will continue to grow," but that "the overwhelming majority of faculty

[54] Laura Salzman,. "Computer Overload." *The Stylus* October 22, 1980.
[55]Ibid.and *The Stylus* "CompSci Time and Space," October 28, 1980 p3
[56] " A Hypothetical Evaluation of Computing at the College" Report found at the SUNY Brockport Archives Computer Literacy RG 7/3

and administrative staff have no interest in managing hardware or coping with the complexity of software and communications."

The report mentioned the low morale amongst staff in the computer centers because of a "perceived lack of recognition by administrators" and low pay." It described the current system as running "inefficiently" and being "prone to error." There is no author or recipient listed on the report.

Whereas the Brown era began with ambitious plans for expansion, the John Van de Wetering era began in 1981 with staff reductions and the elimination and consolidation of academic departments.[57] Budgetary and image problems on the campus put SUNY Brockport at a disadvantage technologically just as many colleges went headlong into the computer age.

A month into Van de Wetering's presidency, a group of faculty members including Norm Plyter, John Spitzer from the Business Administration and Economics Department, Ann Bewicke from the Computer Science Club and others met with President Van de Wetering to discuss "computer literacy" on the SUNY Brockport campus.[58] Items on the agenda included "the scope of computing power available to academic users" and "current undertakings in the area of general computer literacy."[59]

In 1982, there was considerable pressure for SUNY Brockport to address the issue of computer literacy. In an article, appearing in the *Chronicle of Higher Education* entitled "Computer Literacy Gaining Place in Undergraduate Curriculum," the author noted, "At several

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[57] Gigliotti et al page 91-92
[58] Memo from Donald S. Douglas dated 10/30/1981 Computer Literacy located in the SUNY Brockport Archives RG 7/3
[59] Douglas memo

institutions 'computer literacy' is now required." [60] In response to the trend, President Van de Wetering formed the Ad Hoc Committee on Computer Literacy. Their first recommendation to President Van de Wetering was that the "College begin a computer development project for all faculty."[61] A workshop on computers for the faculty took place six months later.

In a memo to the Ad Hoc Computer Literacy Committee, SUNY Brockport Provost Donald S. Douglas reported that he had attended a meeting of the Rochester Area College Vice Presidents, "where the focus was upon the plan that Rochester Institute of Technology has for making its contribution to computer literacy."[62] Douglas did not think that the SUNY Brockport should "ape" R.I.T's plan because R.I.T had "computing power and resources that border on ideal," but he notes optimistically that SUNY Brockport has "greater diversity and larger power than most of the colleges in the state" and it should position itself to be a leader in the field of computing.[63]

On Monday October 25, 1983, the Ad Hoc Computer Literacy Committee hosted a public forum in the Red Room at Edwards Hall.[64] In response to the public forum, Burton Wolin, the Vice President of Academic Affairs wrote the to the Chair of the Ad Hoc Committee calling the committee's "concept of computer literacy too narrowly drawn, "and that it" would not lead to

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[60] Anderson, Cheryl. "Computer Literacy Gaining Place in Undergraduate Curriculum." *Journal of Teacher Education* 34, no. 5 (1982): 6-9.

[61] Memo from Ad Hoc Committee on Computer Literacy to Dr. John Van de Wetering 12/9/82 located at SUNY Brockport Archives Computer Literacy RG 7/3

[62] Memo from Donald S. Douglas to Ad Hoc Computer Literacy Committee, 8/29/82 located at SUNY Brockport Archives Computer Literacy RG 7/3

[63] Ibid.

[64] Flyer located in SUNY Brockport Archives   Computer Literacy RG 7/3

sufficient change in our environment."[65] Wolin was not a supporter of instituting a computer literacy requirement on the SUNY Brockport campus.

In the spring of 1983, Clarkson College in Potsdam New York became the first college in the United States to require students to own a microcomputer. All entering freshman at Clarkson were provided with a Zenith Z-100 personal computer as part of their tuition cost.[66] This was done despite of the fact that Clarkson did not have network capability or even phone lines in the dorms to hook up to a network if it existed. Many other private colleges planned to institute the same requirement, including the Rochester Institute of Technology.[67]

A few months later, Clarkson declared the program a success. Jackie Poulllot, an accounting major at Clarkson, was quoted in a newswire story carried in *The Stylus* as saying she used the computer, "at least 3-5 hours a week and don't know how I would get along without it."[68] Kim Wiley of the EDUCOM Computer Literacy Project observed, "computers have become academically respectable," and that most colleges are no longer asking "if" computers will become a vital part of campuses but "when" and "how. "[69] The Clarkson public relations director also reported that students were using the computers for all of their classes but in the liberal arts courses computers students used the computer for word processing.

In response to the trend toward computer literacy, and in spite of objections, a year later, in the fall of 1984 at SUNY Brockport, freshman and transfer students had a new computer literacy requirement. The Faculty Senate passed a "Computer Literacy Program Implementation Proposal" on January 30, 1984 and President Van de Wetering signed it stating that he thought

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[65] Letter to Ad Hoc Committee located in the SUNY Brockport archives, Computer Literacy RG 7/3
[66] CPS. "Computer Age Hits New York Campuses." *The Stylus* September 23, 1983.
[67] Ibid.
[68] CPS. "Computers Hit Colleges." *The Stylus* January 25, 1984 p.8
[69] Ibid.

the Computer Literacy Program was, "an important addition to the curriculum."[70] Van de Wetering wrote a letter to the members of the Ad Hoc Committee thanking them for a "fine job done in preparing a Computer Literacy Program for the college."[71]

The SUNY Brockport administration appointed Edward Gucker to chair the Senate's Sub-Committee on Computer Literacy (SCL). The SCL reviewed course work to see if it met the computer literacy requirement. Students could also pass a "waiver examination," or submit courses of study from other institutions to meet the computer literacy requirement. In order to meet the demand for computers due to the new computer literacy requirement, SUNY Brockport purchased thirty-two microcomputers at a cost of $41,000.

The increase in computer usage on the SUNY Brockport campus created new concerns about computer security, a topic addressed in the February 8, 1984 issue of *The Stylus.* Curt Hamlin, head of student personnel at the academic computing center, stated, "there was no way of really stopping" people who wanted to hack the system. [72] Hacking was a bigger problem on the Prime system than it was on the Burroughs, because the Burroughs system tracked users and all of the files they accessed, the Prime did not. In spite of these problems, Hamlin and John Zwierzynski, director of administrative data processing, pronounced that SUNY Brockport's computer system was safe and that ultimately it was up to the user to take steps to safeguard their information. Hamlin said the biggest security threat was "theft of people's print outs."[73]

In March of 1984, a College Press Service story reported that there were concerns that a black market in computers may form because of deep discounts offered to college students on

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[70] Jennifer Hawkins, "Computer Literacy Required for '84." *The Stylus* February 8, 1984
[71] Letter from John E. Van de Wetering to Dr. Morris I. Beers, 1/7/83 with notation that the "same letter sent to" and listing Ad Hoc Committee members. Located in SUNY Brockport College archives Computer Literacy RG 7/3
[72] Michael Seinberg, "Brockport's Computer System Safe." *The Stylus* February 8, 1984, 2:8:1984 p1
[73] Ibid

some campuses.[74] In an effort to thwart a potential black market, Apple Computers had students

sign a "moral commitment" stating the student would not sell the computer purchased at a

discount for two years and that they would use it solely for academic purposes. [75] Other

manufacturers required students to pay a fine of $2000 if they sold the computers they purchased

at a discount in less than two years.

Eight months later SUNY Brockport announced its own computer discount program

developed by the SUNY Research Foundation.[76] Dr. Melvin Smagorinski, director of

Educational Communications, oversaw the program, which offered deep discounts to full time

students or staff on Apple and IBM computers. Participants could purchase the Apple Lisa 2,

which retailed for $3229 dollars, for $2493 dollars. IBM PC packages were discounted

from$1688- $3788 dollars down to $1249-$1778.[77]

In November of 1984, SUNY Brockport student Philip C. Rose authored a two part series

comparing the IBM and Apple. Rose noted that the IBM XT had a "fixed 10 mb hard disk drive

built in," which could store "the equivalent of 32 diskettes."[78] The "portable" IBM unit came

with a nine-inch monitor and Rose described it as "the size of a large briefcase or small

suitcase."[79]

In his piece on the Apple Lisa 2, Rose wrote, "The Lisa 2 comes with what is called a

mouse, in the computer business, is an item which allows the cursor to be moved easily around

the video display screen. It is approximately the size of a pack of cigarettes and is connected to

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[74] CPS. "Sales War With Computer Dealers Forming Black Market on Campuses." *The Stylus* March 21, 1984.
[75] Ibid
[76] McCrudden, Kevin. "Discount on Computers." *The Stylus* November 14, 1984.p.5
[77] ibid
[78] Philip Rose "Apple or IBM: Taking a Closer Look." *The Stylus* November 28, 19841984 p3
[79] Ibid.

the computer by a card."[80] Rose did not weigh in on whether he thought Apple or IBM made the better product.

SUNY Brockport's *Academic Computing Newsletter* debuted in December of 1985. The publication's opening message stated that members of the SUNY Brockport Computer Policy Advisory Committee "identified an existing for making computing information more broadly available to users and potential users of resources of Academic Computing Services."[81] Computer usage had expanded greatly as the "personal computer," -still called a microcomputer for most of the 1980s- era began, and ten departments on the SUNY Brockport campus had dedicated computing facilities including Physical Education, Business Administration, Public Administration, English, Chemistry, Sociology, Physics, Journalism, and Earth Science.

In the fall of 1986, the Brockport Student Government closed the "typing room" it funded and replaced it with a "Micro Computing Room," so that students could utilize the computer's word processing capabilities.[82] In an editorial appearing in *The Stylus*, the writer commended SUNY Brockport administrators for "asking its instructors to accept papers printed on a dot matrix printer."[83] The BSG cited financial reasons as the motive, noting that it would cost $8,000 to maintain and replace typewriters and this seemed extravagant because typewriters were becoming obsolete.

In 1986 SUNY Brockport purchased 60 Apple II systems with $400 thousand dollars received as part of the SUNY's Student Computing Access Program (SCAP). SCAP was a program started by the New York State Legislature in 1983 with an initial budget of $3.9 million

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[80] Philip Rose,. "Apple Computers Now Available Through College." *The Stylus* December 5, 1984.p7
[81] Academic Computing Newsletter, volume 1 issue 1 R/G 7/1/5
[82] *The Stylus* "Use of Apple Computers a Good Idea (Editorial)," September 18, 1985.
[83] Ibid.

dollars.[84] The purpose of the program was to help SUNY schools keep pace with modern computer technology.

Also in 1986 at SUNY Brockport, an IBM personal computer lab opened in the basement of Drake Library with two IBM personal computers, which included the PC-Write word processor, PC F.6 database manager and PC Cale, a spreadsheet program.[85]

In March of 1987, the academic subcommittee of Computing Officers Association at SUNY Brockport pushed for campus support of a proposed statewide initiative aimed at making computer technology available to faculty and staff.[86] The Faculty Access to Computing Program (FACT) included provisions for computer workstations for staff and faculty as well as workshops to show them how to use the computers. Unfortunately, according to Arthur Fiser, the manager of academic computing services at SUNY Brockport and the subcommittee chair, "There has been no response from the faculty regarding the program."[87] Fiser went on to say, "the program will only succeed if the faculty is willing to become involved."[88]

In the fall of 1987, SUNY Brockport connected the Prime 9995 system to the nationwide BITNET network.[89] Launched in the spring of 1981, the international BITNET network began when Ira H. Fuchs and Greydon Freeman, of the City University of New York and Yale University developed a way to send information between two mainframe computers; in essence, it was the earliest practical form of mass electronic mail communication.[90] BITNET was at its

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[84] SUNY Brockport *Academic Computing Newsletter* volume 1 issue 2 April 1986 R/G 7/1/5
[85] SUNY Brockport *Academic Computing Newsletter* volume 2 number 1 September 1986
[86] Pamela Slack, "Faculty Not Responding to Help With Computers." *The Stylus* March 4, 19871987 p2
[87] Ibid.
[88] Ibid.
[89] SUNY Brockport *Academic Computing Newsletter* volume 3 number 1 September 1987
[90] http://bit.net/

peak in 1991, so SUNY Brockport was slightly ahead of the worldwide academic community in tapping into the network.

In addition to e-mail, users could send documents and join mailing lists supported by LISTSERV software. Faculty email accounts were available by the summer of 1987 and student accounts were subsequently available in October of 1987. In order to obtain access to BITNET, Academic Computing Services required students to attend a seminar and they must have already established a Prime account.[91]

In response to the college replacing the Prime 6350 with the Prime 9995-II, E. Arthur Fiser wrote in the fall of 1987, "As I begin my fifth year at Brockport and with the new system installed, academic computing capacity will have grown ten-fold during my tenure."[92] In a span of a few years it would continue to multiply dramatically, SUNY Brockport, like many other colleges and universities, would struggle to keep up with modern technology, both because of rapid changes in technology, and the expenses associated with keeping up to date with rapidly changing technology.

As the 1980s ended, computer technology was an important facet of the college. In 1989, The SUNY Brockport bookstore carried a book entitled, "User's Guide to Computing at Brockport," a one hundred and ninety page manual described as ranging "from the very elementary to the rather technical."[93] The book listed for $2.75.

Perhaps the greatest impact computer technology had on the SUNY Brockport Campus in the 1980s was the mammoth program to convert the library's card catalog into a viable electronic

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[91] SUNY Brockport *Academic Computing Newsletter* Volume 3 Number 1 September 1987
[92] Ibid
[93] "User's Guide to Computing at Brockport" located at the SUNY Brockport Archives R/G 7/1/1

database. The card catalog had long been a mainstay in libraries but by the mid 1980s, the bulky system used to find books and other library materials was fast becoming obsolete with many major institutions eliminating card catalogs in favor electronic databases.

The advantages of a computer database over a card catalog are numerous including the ability to see if another patron checked out the item or if it is in house. The elimination of the card catalog also meant that libraries could free up space, as card catalogues were housed in huge cabinets that often dominated a huge portion of a library.

In November of 1986, the first issue of *On-Lines* "an irregular newsletter intended to keep library staff informed about how the automation project is proceeding." The "Dynix Task Forces" named after the Dynix operating system. The task force included over fifty members and eight different sub-committees: Bar-coding, Cataloging, Circulation, Public Access Catalog, Publicity, Site, Steering and Training.[94]

The conversion was not without its snags including the Dynix system "losing" the holdings records during the fall of 1987.[95] Steering Committee member Steve Buckley wrote in a February 1 1988 memo "we've encountered a variety of snags and difficulties and frustrations in working with Dynix." [96]Those frustrations included "erratic communications between Dynix and the library" and the company changing sales representatives when the original sales representative "abruptly left the company's employ."[97]

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[94] *On Lines* November 1986 volume 1 number 1 Drake Memorial Library Dynix Automation Located at the SUNY Brockport Archives R/G 916
[95] Memo from Steve Buckley dated November 17, 1987 Drake located at the SUNY Brockport Archives R/G 916
[96] Memo from Steve Buckley dated February 1 1988 Memorial Library Dynix Automation Located at the SUNY Brockport Archives R/G 9/16
[97] Ibid.

One of the more daunting tasks related to the conversion included the bar coding of the library catalog. Initially there were twenty teams of two persons working two-hour shifts; they averaged two items per minute. [98] The team consisted of one library staff member and one student. The student was paid $4.00 an hour.[99] The job took nearly three years to complete.

On Tuesday April 4 1989 at 2:00, Drake Library officially closed its card catalogue. The invitation which was sent to local luminaries and others read, "you are cordially invited to attend the dedication of our Dynix automated Library System and the closing of our card catalog." The event included a ribbon cutting ceremony, and remarks by library director Raj Madan who noted that the automation project took over twenty years to complete. Madan also thanked Dr. George Cornell for overseeing the creation of the first database. Madan closed her remarks with the following poem:

Great Directory, who led us through

BA's, MA's and many more degrees

Who now like dead or dying Dewey, left

To Gather cobwebs of neglect: we few who love the palpable realities

Of print on cards or paper feel bereft

Of a friend to fingers, eyes, nerves, mind.

Though Dynix has its evil minions spew

Its ghastly, morbid green to make us blind,

We'll still revere you, Catalogue more kind[100]

The press release for the event bragged, "the new computerized library retrieval and circulation system, the most sophisticated of any among the SUNY colleges and universities,

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[98] Ibid

[99] Ibid.

[100] Ibid.

makes obsolete the current card catalogs."[101] For a period after the closing of the card catalogue, library workers wore a yellow and green button with a picture of a computer stating simply, "Ask Me About Dynix."[102]

In February 1989, The Brockport Student Government purchased four Zenith computers for $22 thousand dollars in a move BSG president Bryan Samuels called bringing BSG "into the 21st century," and touted the large purchase as "part of his legacy" at SUNY Brockport.[103] That legacy would be short-lived, as but three years later in February of 1992, BSG purchased four new Macintosh 2SI's, a Macintosh LC and an Apple laser jet printer to replace the Zenith system which the 1992 BSG president called, "so inefficient, we fall behind daily."[104] The price tag was a little over $20 thousand dollars.

During the 1980s, SUNY Brockport struggled to keep up with the latest computer technology, which was typical for many institutions during the period. As illustrated in the BSG's attempt to find technology that brought it into the "21st century" keeping up with the changes in technology was challenging and expensive.

The 1980s provided a glimpse of the potential of computer technology to change every aspect of SUNY Brockport's academic programs. With the opening of the library's electronic database, students of all disciplines relied on computers to assist them. Most of the potential that was dreamed of in the 1960s, came to fruition in the 1990s, laying the groundwork for the 21st century and a massive technological revolution that changed everything from the way students

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[101] Ibid.
[102] Ibid. Discovering a pristine "Ask Me About Dynix" button amongst the documents was quite a treat for this researcher.
[103] Greg Stevens, BSG computers add 21st century touch, 2:15:1989 p3
[104] Lisa Vanderlan, Student government awaits computers., 2:5:1992 p5

and faculty communicate and turn in assignments, to the way students are notified in case of emergency.

In 1985, internet domain registration begins for the internet. Some of the first domain names include ucla.edu, ibm.com, apple.com and columbia.edu. By the end of the 1980s Columbia's campus is wired for the internet, and had Ethernet capability.

The 1990s: The Information Super-Highway

The 1990s was the last decade of the twentieth century as well as the last of the second millennium. It was an era on the national level of relative peace between the end of the Cold War and before the "War on Terror. At the beginning of the era, SUNY Brockport still utilized the Prime 6350 as its mainframe computer and installed a Prime 2455 minicomputer to provide backup for the libraries Dynix system.[105]

E Arthur Fiser wrote of the Academic Computing Staff that they devote, "a major portion of their time assisting faculty in the development of effective means of utilizing computing instruction and in identifying and acquiring resources."[106]

In February of 1990, the SUNY Brockport Education Department announced that it had received a grant to "establish a network lab of IBM PC's to improve teacher education.[107] SUNY Brockport also announced that it was hosting a conference in May of 1990 entitled, "Technology Tools for the Classroom." The event was open to K-12 teachers and school administrators.[108] The event gave Dr. Morris Beers the opportunity to highlight the 15-station IBM computer network installed in the Cooper Hall.[109] The network included the latest education software.

In the September 1990 *Academic Computing Newsletter* under the heading "ACS Users in the News", Tom Verso, a SUNY Brockport History graduate reported using the SPSS

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[105] Academic Computing Newsletter, volume5 number 2 February 1990 R/G 7/1/5
[106] E Arthur Fiser, ibid.
[107] Ibid.
[108] Ibid
[109] Academic Computing Newsletter p.1 Volume 5 Number 3 April 1990 RG 7/1/5

statistics software to analyze the 1865 Census of New York State. [110] It also reported that a 1979 SUNY Brockport Computer Science graduate, Gene Spafford, authored a book about "vandalware," what is now called malware, entitled "Rogue Programs: Viruses, Worms and Trojan Horses."

It was also announced in 1990 that the ACS labs were supporting 3.5" disks, which were a "more reliable, durable method of data storage," than the 5.25" floppy disk.[111] Academic Computing Services noted that they would no longer purchase computers with a 5.25" floppy drive.[112]

On October 1, 1990 a document entitled, "SUNY and Educational Technology for the Year 2000- Report of the Presidents' Task Force on Educational Technology" was released. The task force included Presidents of seven SUNY schools including President John Van De Wetering from SUNY Brockport. The report noted that by the year 2000, "all of the major institutions of higher learning in America will be transformed by rapidly changing technological capabilities."[113] One of the many recommendations was to "infuse the use of technology into the curriculum of all academic disciplines to enhance teaching and learning.[114]

In January 1991, the Academic Computing Services at SUNY Brockport reported a record high of 59 simultaneous users of the Prime system and noted that computer viruses had

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[110] Academic Computing Newsletter p.5 Volume 6 Number 1 September 1990
[111] Ibid. p 6
[112] Ibid
[113] Academic Computing Newsletter Volume 6 number 2 January 1991 p 2 available in the addendum
[114] Ibid.

"hit Brockport."[115] One of the more interesting viruses displayed a message saying, "Your Computer Has Been Stoned, Legalize Marijuana."[116]

In April of 1991, E Arthur Fiser announced that the latest upgrade of the Prime system gave it "fourteen times the processing capacity of the machine that was replaced in 1985," and had the ability to handle 200 users simultaneously.[117] Computers also appeared in two SUNY Brockport Scholar's Day presentations, one entitled "Four Chamber Problem" by Jeremy Shafer using the PC:SOLVE software and another by Morris Beers, Mary Jo Orzech and Anne Parsons in preparation for the "Technology and Teacher Education Conference" that was to be held on April 25-27, 1991 in Greenville North Carolina.[118] In addition, one of the first multimedia programs, a hypercard/videodisk program entitled "Election '88- The Run for the White House" which ran on a Mac SE was available in the Drake Libary. The program included video clips of notable speeches and debates became available.[119] By the end of 1991, Prime users could access the University of Buffalo and SUNY Fredonia "card catalogs."[120]

In October of 1991, SUNY Brockport released a massive Academic Computing Study, commissioned by vice president of academic affairs Robert Marcus. [121] The report recommended a $6 million upgrade to the schools computing systems. One of the major problems addressed was that only forty-three percent of the faculty had a computer on their desk and that one hundred fifty requests for staff computers remained unfulfilled. The plan called for three phases over a three-year period beginning in January of 1992. The first phase included providing all

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[115] Academic Computing Newsletter Volume 6 Number 2 January 1991 THOM Why not IbiD?
[116] Ibid
[117] Ibid., check fn 103
[118] Ibid. p9
[119] Ibid.
[120] Academic Computing Services Newsletter Volume 7 Number 1 September 1991 p.1
[121] Academic Computing Study, October 1991 SUNY Brockport archives RG 7/1/3

faculty members a PC, installing a campus-wide network and other initiatives. Phases two and three include plans to expand the college's multimedia capacity, establishing a software library, consolidate computing services in Dailey Hall and investigate the "remote learning" possibilities.[122]

The Academic Computing Services announced in January of 1992 that they had begun experimenting with a five-station "Ethernet" network, noting that its chief advantage was that it was "FAST." [123] It also noted that Ethernet was, "reliable, highly efficient, stable and widely used in academic institutions."[124] There were also 150 registered Bitnet users.[125]

By 1992, SUNY Brockport offered many seminars dealing with computers and computer usage. In February of 1992, SUNY Brockport offered an information session on carpel tunnel syndrome. [126] In April of 1992, an introductory session on how to use Windows 3.1 for people who "want to use Windows for something more than playing solitaire" was held at the Instructional Seminar Lab located in Drake Library.

The Dailey Hall Computing Center opened in the fall of 1992; it consolidated computers from the Drake Memorial Library and from Cooper Hall.[127] SUNY Brockport chose Dailey because of its central location on the campus. Dailey had seen many uses including as a dining hall, a bookstore and a storage facility.[128] On moving day from Drake to Dailey, library staff "loaded up the 13 personal computers and 50 terminals from the ground floor of Drake and

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[122] Amy Kendall "Computing plan focuses on student access., The Stylus, 3/4/92 p. 5
[123] Academic Computing Services Newsletter Volume 7 number 2 January 1992
[124] Ibid.
[125] Ibid
[126] Ibid.
[127] Mark Hopkins "Campus computing Center Opens" The Stylus 10/21/92 page 12
[128] Kristi Whitt "Dailey Hall used to be more than computers," The Stylus 11/6/96 p. 4

transported them to Dailey."[129] The following April the Academic Computing Center announced

that it had "broke its own record for number of simultaneous users logged into the mainframe,"

the high of 150 students broke the previous record of 126.[130]

The April 1993 Academic Services Newsletter included an "Internet Treasure Hunt"[131]

first use of the term "internet" in newsletter. The September 1993 Academic Computing Services

Newsletter carried a headline "Internet" and the story associated with the headline noted,

"Internet is a buzzword among the academic community."[132] A typical personal computer

located in the Dailey Computing lab had a 1.2 GB hard drive and CD-ROMs. In October of

1993, SUNY Brockport offered its first seminar on the Internet at Dailey Hall.

By January of 1994, SUNY Brockport added Mosaic-an early web browser the

forerunner of Mozilla Firefox- and Microsoft PowerPoint.[133] Three months later, in April of

1994, EDUCOM released a draft of the, "Bill of Rights and Responsibilities for Electronic

Learners" to the SUNY University Faculty Senate for consideration.[134] In September 1994,

multimedia software introduced, Adobe Photoshop 2.5 and Grolier's Encyclopedia on CD-ROM.
[135]

In January of 1995, SUNY Brockport acquired sixty Pentium PC's equipped with CD-

ROM drives and 8 MB RAM for Dailey Hall.[136] As part of the Microsoft Teacher Education

Partnership Grant, SUNY Brockport acquired Microsoft Office, Works, Publisher and some

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[129] Ibid.
[130] Academic Computing Newsletter Volume 8 number 2 April 1993 p. 1
[131] Ibid.
[132] Academic Computing Newsletter September 1993 p. 1
[133] ACS Newsletter Volume 9 Number 2 January 1994
[134] ACS newsletter Volume 9 Number 3 April 1994
[135] ACS Newsletter Volume 10 number 1
[136] ACS Newsletter volume 10 number 2 January 1995 p1

multimedia CD-ROMS. [137] The library also had pilot programs as part of the SUNY Joint Database Project, which allowed access to databases like the Wilson indexes in business and humanities, which included ERIC, an early database for education research. [138] There was also a pilot involving FirstSearch, which allowed users to retrieve abstracts of journal articles and full text for a fee.[139]

On May 22 1995, SUNY Brockport hosted a one-day conference entitled, "Infusing Technology in Teacher Education." That same month Academic Computing Services announced, "cruising the information highway just got a little easier thanks to our new T1 connection.[140] The T1 line replaced a 56KBPS modem; SUNY Brockport now had high-speed internet capability, and just a few months later Academic Computing Services announced that they had connected ninety-six rooms in the dorms to the Internet. [141] Students wanting to connect to the Internet in the dorms still had to provide their own computer and there was a charge to connect to the Internet.

In July of 1995, the SUNY Brockport's first web page launched.[142] The first page included directions on how to apply for admission to SUNY Brockport, basic information about the college and departmental web pages.[143] Nine months later SUNY Brockport updated the web site, and assistant vice-president for information technology services, Mike Oshier stated, "We

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[137] Ibid.
[138] Ibid.p3
[139] Ibid.
[140] ACS Newsletter Volume 10 Number 3 p.3
[141] ACS Newsletter Volume 11 Number1 p.1
[142] Chris Michael, The Stylus,3/6/96 p.3
[143] Ibid.

are trying to make our page the premier one in the area. In other words we are trying to keep up with the Jones."[144]

In the fall of 1995, SUNY Brockport began exploring the possibility of levying a "technology fee" on students to cover the rising cost associated with keeping up with rapidly changing technology.[145]SUNY Potsdam was already collecting a technology fee. Raj Madan said that the proposed fee would cover, "technology related to expanding the computer labs in Dailey, the library system and wiring residence halls for such things as the Internet." Brockport Student Government Vice President Andy Proto was among many critics of the proposed fee, noting that SUNY Brockport had recently raised the dorm fee to cover cable television and other technology costs.

In response to the fee, a scathing editorial appeared in *The Stylus* which stated that the SUNY Brockport administration was creating a "smoke screen." The article dismissed President Van de Wetering's statements at an open mike forum held on November 8, 1995 at which President Van de Wetering stated that the fee is "crucial for a school like this to stay at the front of the technological curve.[146]" The writer notes, "The college has already funded technology upgrades without burdening students with a technology fee. These upgrades include: cable in the dormitories, scores of CD-ROM computers in Dailey Hall and the college's pride and joy, the Dynix computer catalogs found in Drake Memorial library."[147]

The debate over whether to impose a technology continued in the spring of 1996, with the Brockport Student Government President Tony LaMacchia taking a more conciliatory approach

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[144] Ibid.
[145] Matt White, "College deliberates over technology fee" The Stylus, November 15, 1995 p.7
[146] Editorial, "Technology fee unreasonable"
[147] Ibid.

than his vice president had the previous fall. After returning from a student assembly meeting at SUNY Cobleskill, LaMacchia told The Stylus that, "SUNY Geneseo students welcome a technology fee because they feel they will benefit from it.[148] In March of 1996, a $120 per year technology fee was on a list of fees proposed by the Brockport Auxiliary Service.[149] SUNY Brockport imposed the fee starting the fall of 1996.

1996 continued the trend that had started the previous year, a massive influx of new technology including rendering computers that were state of art at the beginning of the decade obsolete. In 1996, SUNY Brockport replaced the Intel 8088, located in Dailey, with newer Pentium models that had over ten times the processing capability and came equipped with a 540 MB hard drive.[150] The new computers did not come equipped with 5.25" floppy drives, which signaled the end of the floppy disk era at SUNY Brockport as 3.5" HD disks became the standard.

The SUNY Brockport College Archives web page created by Charlie Cowling launched in the spring of 1996. By the summer of 1996, there were computer labs located in Cooper, Hartwell Hall, Tuttle North, Lennon and Dailey, many funded by the newly imposed student technology fee. [151]

In the fall of 1996, all SUNY Brockport automatically provided all students an email account.[152] Academic Computing Services issued fliers explaining the use of emoticons to express emotions and warnings about harassment via email. Early SUNY Brockport emails were deleted after thirty days. Mary Jo Orzech, the director of academic computing services, stated

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[148] Julie Benson and Sue Bisha, "Technology Fee not decided upon –yet" The Stylus 2/7/96 p.3
[149] Sue Bisha, "Technology fee on list of proposed fees" The Stylus 3/6/96 p.1
[150] ACS Newsletter Volume 11 Number 2 p. 1
[151] ACS Newsletter Volume 12 Number 1
[152] ACS Newsletetr Volume 12 number 1 page 1

that providing each student with an email account, "was done as a convenience to students staff and faculty" and called email "the wave of the future."[153] The technology fee and some state funds provided the funds for the email accounts.

In addition, in 1996, Windows '95 became the main operating system on PCs, the school acquired it s first CD rewritable and a distance learning classroom was installed in Edwards 107.[154] Microsoft positioned itself as the operating system of choice through the Microsoft Teacher Education Partnership Grants, which allowed public institutions to obtain Microsoft software at little or no cost until educators were "hooked" on the products and they became the standard. When the grants ended, institutions had no choice but to purchase Microsoft products.[155]

The first time the internet is mentioned in the undergraduate catalog is the 1997-1999 edition, which simply says under the Academic Computing section, "instruction in a variety of applications as well in uses of Internet and World Wide Web as research tools is offered by ACS at the beginning of each semester."

In 1997, Paul Yu's first year as SUNY Brockport President, the main goal was to wire the entire campus with a fiber optic network and marked the introduction of TopClass software, which allowed instructors to post syllabi, notes and even on-line tests. [156] SUNY Brockport was one of the SUNY schools selected to pilot the TopClass software. Mary Jo Orzech, touted the

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[153] Tammy Coons "Daily assigns e-mail increase availability," The Stylus 9/18/96 p.3
[154] ACS Newsletter volume 12 number 1 January 1997
[155] Mary Jo Orzech conversation with author 2/1/10
[156] ACS Newsletter volume 13Number 1

benefits' of installing the fiber optic network, especially the capability to set up "virtual classrooms."[157]

The installation of the fiber optic network also provided campus wide access to all of the programs used in Dailey, and internet browsers like Netscape. Mary Jo Orzech stated that the project put SUNY Brockport "on track" with other colleges that had already or were in the process of installing fiber optic networks.[158] The only major snag in the project was working around the railroad tracks that ran through the center of the campus.

In the fall of 1997, SUNY Brockport began planning for an online computer skills entry requirement projected to start in 1999.[159] In 1997 many faculty were integrating technology in the classroom including Mark Anderson who reported using e-mail for assignment and Elaine Miller had students look for foreign language newspaper articles.[160] Also in 1997, Career Services launched JobShop, an online program that assisted students in finding employment.

In 1998, SUNY Brockport made the move towards multimedia, new multimedia lab installed in Dailey and a PC lab in the library. The building of a computer lab in Drake Library came amid concerns that the library staff was not equipped to deal with questions about computer programs and had been resistant to having computers beyond the ones connected to the library catalog. [161]

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[157] Joanne Yanulevitch *The Stylus* "installation of fiber optics underway" p.4
[158] Ibid.
[159] ACS Newsletter Volume 13 Number 2
[160] ACS Newsletter Volume 13 number 2 January 1998
[161] Charlie Cowling, conversation with author

In the fall of 1998, Intel Corporation contributed a Paragon XP/s-16 Node System supercomputer to SUNY Brockport. [162] The state of the art supercomputer was "the size of a medium sized filing cabinet" and boasted a ½ GB Memory and 10GB hard drive and came cost $400 thousand. Osman Yasar the director of SUNY Brockport's Interdisciplinary Computational Science Program stated that the computer's capabilities were impressive "for being relatively small."[163]

Two consultants, Martin Ringle and John Stuckey, hired to assess information technology at SUNY Brockport in 1998 began their report to President Paul Yu stating, "SUNY Brockport has achieved a well-earned reputation for its innovative use of technology," calling it "superior to those of many peer institutions." Among some of their recommendations for continued success was to create a unified technology organization, merging academic computing, administrative computing, library media services and telecommunications into a single entity.[164] They called for an upgrade to the campus wide email system and for SUNY Brockport to stabilize and improve the use of financial resources for technology.[165]

As the decade ended and SUNY Brockport entered the 21st Century, its computer workhorse, they replaced the Prime system, in part due to Y2K compliant issues. The SUNY Brockport consolidated the email system consolidated and the userid@brockport.edu replaced the awkward and varied Prime (acspr1.acs.brockport.edu), Suns (po.brockport.edu) and the IBM (po.brockport.edu and brockvma.cc.brockport.edu) addresses.[166]

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[162] Sean Valdes, "Campus obtains supercomputer" *The Stylus* 9/23/98 p.3
[163] Ibid.
[164] Martin Ringle, John Stuckey "An External Review of Information Technology at SUNY Brockport"
[165] Ibid.
[166] ACS Newsletter Volume 13 number 2, September 1998

By the end of the 1990s, fourteen computer labs were located all across campus with the majority of them containing Pentium computers. [167] *The Stylus* published an article on popular websites including the recently launched Internet Movie Database, which allowed users to find out information on movies new and old.[168] *The Stylus* also offered advice on how to do holiday shopping on the internet at sites like Amazon.com. [169]

The 1990s marked a period of massive change in computer technology with the spreading of the internet and all its promise. SUNY Brockport entered the decade poised to keep up with technology that seemed to change in an instant. In the early 1980s it appeared that SUNY Brockport had bigger problems to handle than attempting to "keep up with Jones," nonetheless they succeeded in obtaining grant money for computer programs.

In a decade that started boasting a mere fifty nine simultaneous users on its mainframe computer, SUNY Brockport would end the decade with a state of the art fiber optic network installed and provide internet access to the entire student body. The internet was beginning to change everything. Registration for classes on computer, potential realized in the 1970s had not quite come to fruition at SUNY Brockport but students were able to access the course catalog online and register for classes by telephone.

On December 10, 1999, Eric Fredericksen, SUNY Assistant Provost for Advanced Learning Information Systems came to SUNY Brockport to discuss the recently launched SUNY Learning Network.[170] Fredericksen reported that 5,600 students were enrolled in 1,000 courses

[167] ACS Newsletter Volume 14 number 1 p.5
[168] Michael Empric "Night at the Movies offers Many Hours of Fun" The Stylus November 17, 1999 p. 16
[169] Ibid.
[170] Academic Computing Newsletter, Volume 15 number 2 January 2000 SUNY Brockport archives Academic Computing Newsletter RG 7/1/5

offered at 42 SUNY campuses. Participation in the SUNY Learning Network was voluntary and SUNY Brockport solicited volunteers for a possible pilot in the fall of 2000.

During the 1990s computer technology on the SUNY Brockport became accepted thanks to the internet and user friendly programs from Microsoft that were strategically provided by the corporation. At the beginning the decade there were still many players in the computer industry and a large degree of specialized computer programs. By the end of the 1990s it was clear that IBM PCs and Macs would dominate the SUNY Brockport campus.

2000-2005 Potential Realized

As the nineties ended fears of a Y2K computer bug swept the nation. The Y2K or "millennium bug" threatened to shut down computers worldwide that did used the last two digits to mark the year, and thus 2000 would not be recognized as the year "00." This was supposed to result in chaos as bank accounts were wiped out, prison doors would swing open and the nation's power grid would shut down resulting in mass lootings etc. Writers for *The Stylus* joked about the needless fear, one rightfully calling it a "marketing dream," and another providing web addresses to sites such as the "Millennium Ark" a site that provided a list of basic provisions and instructions on how to build bread ovens out of stone and advice for canning frog legs.[171] SUNY Brockport provided a "Y2K Solutions" page for its students and faculty.[172]

The January 2000 *Academic Computing Newsletter* informed readers that SUNY Brockport "appears to have survived Y2K with few surprises."[173] SUNY Brockport, like the rest of the world, survived the Y2K bug and instead had to contend with a real three-letter threat to its computers, MP3. An MP3 is a compressed music file. An article in the November 17, 1999 issue of *The Stylus* entitled "MP3 offers net music options" and informed students that " MP3's are easy to download off the internet, which makes them very appealing" and goes on to note "Another appealing feature of the MP3's is that they are free."[174]

The author of the "MP3" column did make the distinction between legal, illegal downloads, and potential "copyright violations," but it was far from a condemnation of the

[171] Allison Hauber, "Y2K spreads fear; humor, excitement" *The Stylus* November 17 1999, p. 15

[172] Academic Computing Newsletter February 1999 Volume 14 number 3 Page 1. SUNY Brockport archives Academic Computing Newsletter RG 7/1/5

[173] Academic Computing Newsletter, Volume 15 number 2 January 2000 SUNY Brockport archives Academic Computing Newsletter RG 7/1/5

[174] Jen Burke, " MP3 offers net music options" The Stylus November, SUNY Brockport Archives RG 7/1/5 er 17, 1999 p.17

practice made popular with the launch of Napster in June of 1999. In early 2000, SUNY

Brockport had to confront another problem associated with Napster, the use of bandwidth.

In March of 2000 SUNY Brockport installed a new server with a fractional T3 line,

doubling the bandwidth of the previous Dual T1 server. Within twenty, four hours of the new

server being installed the bandwidth usage jumped to 98% of its capacity and it was determined

that Napster was responsible for 30 to 50 percent of the spike.[175] Computer services

subsequently decided to block access to Napster on the SUNY Brockport campus.[176] SUNY

Potsdam, SUNY Geneseo and SUNY Plattsburgh had previously blocked access to Napster.

The following week an editorial in *The Stylus* called the blocking of access to Napster a

"knee-jerk" reaction to an "ongoing problem around the country."[177] The editorial called for

SUNY Brockport to consider a limited use policy that "would not interfere with the speed of

other online services on the campus." The author then attempted to make the case that even

though the Recording Industry Association of America had sued Napster for copyright

infringement, " as long as the users are not gaining a profit and the MP3s are for private use,"

then there was no copyright infringement.

By the end of the spring of 2000, as recommended, Academic Computing Services

became part of the larger "Information Technology Services" which also included

Administrative Computing Services, Drake Library, Media Services and Technical Services.[178]

The library offered access to seven online databases including, EBSCO, Academic Search Elite

and Newspaper Source. Also in the spring of 2000, Information established a new examination

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[175] Tim Brioddy, "Access to MP3 site restricted" The Stylus, March 8, 2000 p. 1,3
[176] Ibid.
[177] Editorial, "Block of access to internet material questionable" The Stylus 3/8/2000 page 7
[178] Information Technology Services Newsletter Volume 15 P. 1 RG 7/1

for incoming students to fulfill the computer skills requirement, and the library reported they had 178 faculty members using Electronic Reserves to provide readings.

In the fall of 2000, SUNY Brockport offered its first classes online, Organizational Behavior, Intro to Computational Science, Internet Research, Organizational Management, and Statistics for Managers.[179] Almost one thousand freshmen took the Computer Skills exam administered at Dailey in a dedicated computer lab, nine hundred thirteen of them passed the exam.[180]

An editorial entitled "Whither distance learning at Brockport" authored by Timothy J. Flanagan, Vice President for Academic Affairs appeared in the January 2001 *Information Technologies Newsletter*. In the editorial, Flanagan gave the "short answer" to the question posed in the headline, stating "SLN and distant learning courses generally, do not fit neatly into the College's academic goals and directions."[181] The sole purpose Flanagan saw for SLN courses was to "provide a professional development opportunity to faculty who wish to expand their pedagogical repertoire."[182] Even though SUNY Brockport had participated in other "distance learning" projects like WestNet, MetroCenter and some telecourses, there was little interest in taking the lead in fully online courses. SUNY Brockport continued to utilize other online resources like E-Reserves, and TopClass to supplement course material.

In the February 14, 2001 edition of *The Stylus* Editor Sheila Rinere informed her readers that there was a website for students who "find it difficult to find time to get to the library."[183]

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[179] Informational Technology Services Newsletter, Volume 15 number 3 page 1
[180] Information Technology Services Newsletter Volume 16 number 2 page 3 RG 7/1
[181] Information Technology Services Newsletter Volume 16 number 2 page 1,2 RG 7/1

[182] Ibid
[183] Sheila Rinere "Full online library at Questia.com" The Stylus, February 14, 2001 p.15

The site she touted, Questia.com provided subscribers access to an online library of over 50 thousand books and full text articles on nearly every subject.

In March of 2001, two controversies developed involving computer technology and the internet, one involving an online database and the other content on the schools webpage. The first was a debate on the use and access of an online faculty and student directory, the Lightweight Directory Access Protocol system promised users the ability to easily search for a faculty or students information including the students major and campus phone number. [184] An editorial in *The Stylus* published March 7, 2001raised concerns over privacy and possible abuse by telemarketers.[185]

The controversy dealing with web page involved a "drag" show. The "Fire and Ice Drag Show" requested that the college post information about their drag show on the SUNY Brockport webpage. The webpage had recently been revamped, including the new bulletin board. The Web manager, Steve Lewis, refused to post information about the drag show, and the accompanying photograph, for "personal reasons." Lewis thought the vent and accompanying image "obscene."

Subsequently a draft of a new policy concerning bulletin board content stated "the events section of the home page should not be seen as an equal-opportunity space available for all campus groups and campus events." [186]This raised the ire of assistant professor Donna Kowal who stated, "we need to recognize that any removal of these images on the basis that they are

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[184] Tricia Murphy, "Phone numbers posted on the internet" The Stylus, March 7, 2001 page 6
[185] Ibid.
[186] Alissa Bulizak, "Home page controversy leads to new web policy" The Stylus April 4, 2001 p 1,2

obscene would never pass the legal test for determining whether or not expression constitutes obscenity.[187]

On August 1, 2001, the "SUNY Brockport Campus Technology Long Range Plan 2001-2006" was released and posted on the SUNY Brockport website. The report included results of a "satisfaction survey" given to students at 28 SUNY colleges, including 13 four-year institutions.[188] Respondents were asked if they were satisfied with "access to computing facilities" and "computing laboratories."SUNY Brockport student satisfaction was the highest of all the SUNY schools that participated in the survey.

The long range plan identified the challenge of keeping up with the latest technology, both for students and for faculty, and proposed a two year cycle of replacement for student computers and a three year staggered cycle for replacement of staff computers. The report identified emerging technology, noting in 2001 that in five years "instead of viewing pages on a computer, the information will be available through handheld PDAs and cellular phones." The report identified SUNY Brockport's "challenges" if they were to remain competitive, and they included, implementing Web portal technology, acquiring a secure digital certificate, website redesign and increasing staff demand.

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[187] Ibid
[188] SUNY Brockport Campus Technology Long Range Plan 2001-2006 available at http://www.brockport.edu/its/about/5yrplan/2003-02/combined.pdf

In the summer of 2001, Information Technology oversaw the distribution of one hundred new Gateway PCs to replace outdated computers.[189] The goal of the program was to "keep campus technology refreshed and updated."[190]

In the fall of 2001, a new system to replace TopClass launched. Lauren D'Avolio, a copy editior for The Stylus described it as "a technological Angel" that had descended upon the campus.[191] Angel performed the same functions as TopClass but in a more user-friendly format. Since students had access to class lists there were concerns expressed over privacy. SUNY Brockport addressed another privacy issue in the fall 2001 semester by eliminating parts of a student's social security number form their e-mail username, replacing it with the students four digit date of birth.

In the spring semester 2002 SUNY Brockport took giant leaps in technology, the Drake Memorial Library started answering questions on AOL Instant Messenger, the Touchstone telephone class registration was eliminated and Information Technology announced the launch of "Banner Web" which allowed students to register online, but they could still register in-person.[192] And the Drake Library announced that 12 thousand periodical titles, newspapers, magazines and peer reviewed journals were available through the library's website.[193]The addition of all of the print materials online and the need for more space for computers caused the library staff to take a close look at what materials needed to be saved and which could be recycled.[194]

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[189] Information Technology Newsletter, Volume 16 number 2 May 2001 p.1
[190] Ibid.
[191] Lauren D'Avolio, "Angel System Arrives on Campus, The Stylus, September 12, 2001 p.1
[192] Information Technology Newsletter Volume 17 page 2. January 2002, RF 7/1
[193] Ibid.
[194] Charlie Cowling conversation with author

In the spring of 2003 *Stylus* columnist Jennifer Burke wrote, "It seems like either I have to read for class or do work on the computer. Do you ever wonder what they did before computers? I often think about that when we're putting together *The Stylus*. Not only do we type the articles on computers, but we lay out and design the pages on the computers, and we're constantly checking facts online." [195]

Jennifer's observations in 2003 are interesting I that the computer revolution was still relatively new, only ten years earlier the internet was just developing and computers were just beginning to be utilized as word processors and fact checking was not nearly as easy as it was in 2003. It is safe to say with relative certainty that Jen's parents accomplished many of the tasks she did without access to the internet or even a personal computer.

In August of 2003, two unwanted visitors appeared on the SUNY Brockport campus, the Blaster Worm and the Sobig-F virus.[196] The Blaster worm knocked out internet access on the SUNY Brockport campus for five days. The Sobig-F virus hit the campus when students returned to calluses on August 21, 2003. The Internet Technical Support Systems team brought together a group of less than a dozen full-time staff and forty student technicians to disinfect the machines on campus as well as approximately 2,100 student owned computers. They completed the job in five days.

One of the problems that surfaced during the virus/worm attack was how to communicate with students about the virus/worm problems since the email server was down. Janak Gada, a

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[195] Jennifer Burke
[196] Chris Lazzaro, "Technicians rid viruses, rescue network

help desk coordinator for Information Technology Services lamented that they "went back to the archaic method of writing letters to every student."[197]

The milestones in the fall of 2003 included a 95% passing rate for incoming students taking the Computer Skills Exam, a reflection of more students having access to computer technology at a younger age.[198] Also that fall the Drake library announced a new version of their online catalog with the ability to save lists in the MLA or Chicago format and email them."[199] Information Technology also announced that enrollment in SUNY Learning Network course at SUNY Brockport had doubled from the previous semester and that fifty of sixty-four SUNY campuses were offering courses on SLN. The Advanced Computing track also received accreditation from the Accreditation Board for Engineering and Technology, one of only three SUNY schools and one of one seventy nationwide to earn the accreditation.[200]

In the fall of 2004 students were required to log on to computers to gain access, a new wireless network with "hot spots" located in Brockway, Cooper, Dailey, Drake, Edwards, FOB, Hartwell, Harrison, Holmes, Seymour and Smith and a new email system debuted.[201]

In January of 2005, new computer systems appeared in Dailey Hall, they included the Windows XP operating system and flat screens. The ratio of students to computers was an impressive one PC for every ten students.[202] Mary Jo Orzech told The Stylus that the campus that the next step was campus wide wireless access.

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[197] Ibid.
[198] Information Technology Newsletter Volume 18 Number 2 p6.RF 7/1
[199] Ibid.
[200] Allen S. Harvey Jr. "Computer Science advanced computing program granted accreditation" The Stylus 9/10/2003
[201] Information Technology Newsletter Volume 20 number 1 September 2004 p.1
[202] Adam Young, "New Technology comes to campus during break" The Stylus, February 16, 2005 p.1-3

2006 and beyond

The following survey provides a glimpse at the impact that computer technology had on the typical college student midway through the first decade of the 21st century. Clearly, there was no need to convince students to use computers, nor were they any longer a novelty. By 2006, SUNY Brockport had shed its image as just a party school and became a respected part of the SUNY system, not entirely because the college successfully was able to stay current with computer technology, but that was a key element of it.

Numbers Worth Knowing: The 2006 College Student

The technology:

* 13% of students have desktop computers

* 50% have laptop computers

* 41% have MP3 players

The time:

* Hours per day spent doing e-mail, instant messaging and web surfing: 3.5

* Time per day spent sending and receiving text messages: 20 minutes

* Hours per week spent on social networking sites: 6.5

The social networking:

* 85% of students who visit social networking sites use them to see what their friends are doing

* 70% of them use the message boards to communicate with their friends

* 61% talk to people they have never met in person

The studies:

* 72% of students receive grades and assignments online

* 56% e-mail or instant message their professors for help

* 71% submit assignments via e-mail[203]

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[203] Alloy Media + Marketing. "College Explorer Study." 2006.
< www.harrisinteractive.com/news/newsletters/clientnews/2006_Alloy.pdf> reprinted from ITS newsletter volume 22Number 1 page 6 available online at http://www.brockport.edu/its/about/newsletter/fall06.pdf

By 2006, there were hundreds of state of the art computers available across the SUNY Brockport campus. After falling behind in the late 1970s, regaining ground in the 1980s and then becoming a leader in some areas of computer technology, SUNY Brockport entered the 21st century poised to "keep up with the Jones," and within a few years the Jones might feel as though they had to keep up with Brockport.

Conclusion

In 1967 when the first computer arrived on the SUNY Brockport campus, students relied on typewriters for their assignments, phones were connected to the wall that did not take pictures much less handle text messaging. Registering for classes was an all-day affair with students standing in long lines. A student researcher would use large reference books and the Reader's Guide to Periodical Literature to find information and sift through cards in a card catalogue to find books. SUNY Brockport communicated with students in the "archaic" way of, sending letters in the mail.

From 1967 to 2005, The SUNY Brockport experienced the technological revolution It is hard to determine which era within that period had the greatest impact on the SUNY Brockport Campus. Some may argue the PC era introduced most of the campus to computers and computer technology, and others can argue that it was the explosion of the internet in the mid- to late 1990s.

What is clear is that in the 1960s and 1970s a few advocates fought to obtain the latest computer technology. In the years from 1975 to 1980 SUNY Brockport's general reputation declined at the same time that efforts to obtain the latest computer technology were unsuccessful and little mention of computer technology appeared in SUNY Brockport publications including their student handbooks and student newspapers. This technological stagnation preceded an unflattering article about SUNY Brockport in the *Rochester Democrat and Chronicle* that precipitated a crisis and change of leadership..

In the 1970s many liberal arts colleges did not see academic computing as an important component of a liberal arts curriculum. This was even the case at Columbia University, one of

the earliest colleges to obtain computers for academic use. It was not until the marketplace demanded computer literate students, a trend that appears in the early 1980s, that SUNY Brockport officials begin to consider the computer literacy component. This is done shortly after more aggressive programs like the one at Clarkson University in Potsdam required students to purchase a "microcomputer" and R.I.T began a computer literacy program.

By the 1990s, many of the problems that SUNY Brockport faced in the 1980s had been addressed and the pursuit of new computer technology became a little easier thanks to a series of grants and donations. In addition to grant money, companies like Microsoft and IBM were aggressively trying to position themselves on college campuses to create loyalty and make certain sectors of the economy- like education -dependent on their software.

The important developments in the 1990s included the move towards a standardized computer system instead of the departmental models. This included the opening of a centrally located computer facility at Dailey Hall complete with a software library. This was a crucial move and a successful one that showed strong commitment to academic computing. Although there were likely some behind the scenes problems, the Academics Computing Department did a masterful job positioning SUNY Brockport for the 21st century. This is evidenced by the massive amount of technology acquired in the 1990s, which explains why the 1990s section of this paper is a dry list of major academic computing accomplishments.

It also appears as if SUNY Brockport felts confident in its academic computing capability by 2001 which explains why they could reject the move towards online courses. And SUNY Brockport's confidence was warranted as the school as by the 21st century SUNY Brockport offered the first graduate degree program in computational science in the nation.

SUNY Brockport, like other colleges, continues to face the financial challenges associated with keeping current with technological trends. Nevertheless, the last decades of the 20th century, computer technonolgy is an essential element of all colleges and becoming standard on high school campuses as well, which is why a computer skills exam replaced the computer literacy requirement and it has such a high passing rate.

Possibly the most fascinating element of the computer technology revolution is what changed, not just on the SUNY campus, but also on college campuses across the nation. A device that in the 1970s that many people in academia thought was a novelty, changed both the way students write, by providing easy to use word processors, and the way they researched by providing easy access to an infinite number of peer reviewed journals, newspaper articles and other reference material. The computer is able to advise students, help them purchase books, pay bills, and revolutionized student-teacher communication. On some campuses, the computer has virtually eliminated the need for the student to go to the campus. It has also found a place in the social sciences, something that skeptics in the mid 1980s could not envision.

As for SUNY Brockport, the pursuit of computer technology in the mid 1980s was a gamble, but if the campus had not had not aggressively sought state of the art computer technology in the late 1990s, the overhaul of admission requirements and the aggressive marketing strategy to attract higher achieving students might well have failed. And SUNY Brockport may well have continued to be looked at as nothing but a "party school."

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