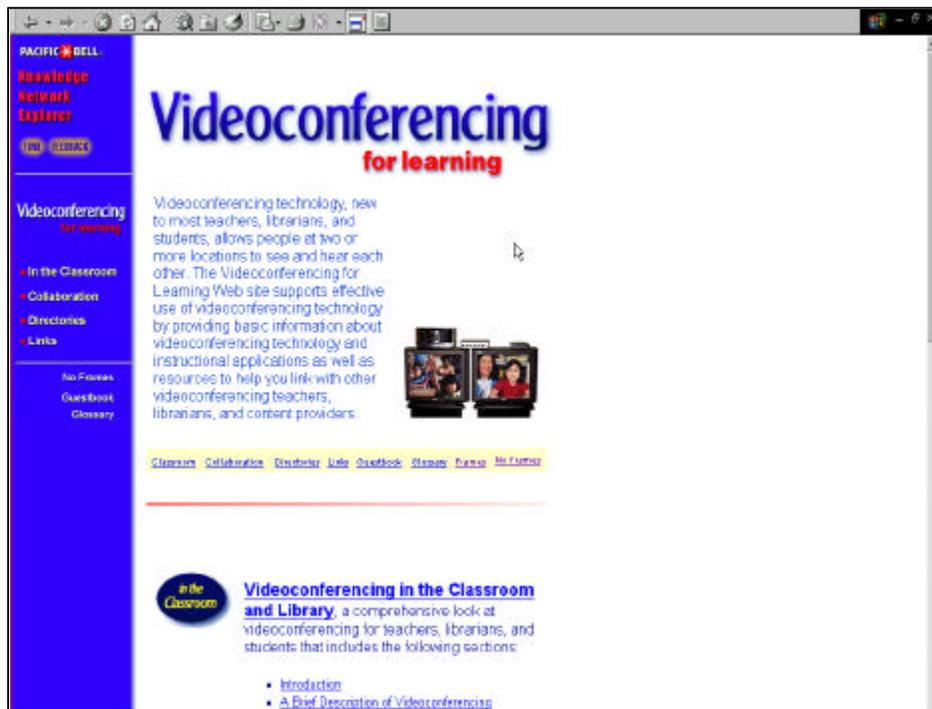




### **AT&T.**

In the 1970s, information on videoconferencing appeared in such journals as *The Futurist* under such questioning titles as "An Altered State of Communications?" Investigative programs explored the socio-dynamics of the medium when life in any virtual reality still was hardly more than a phantasmagoria.



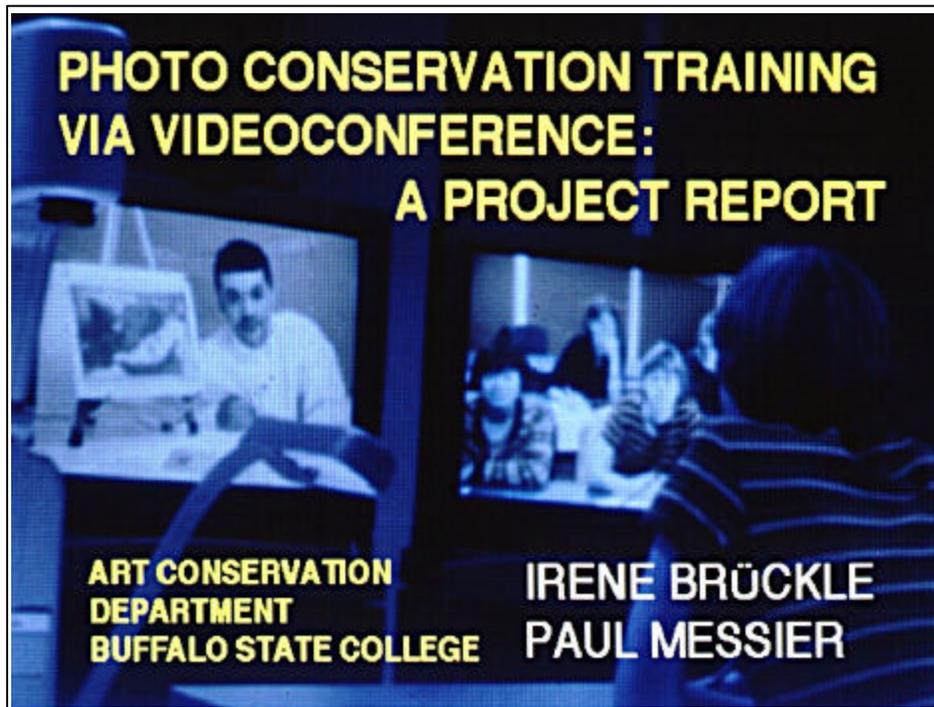
## Videoconferencing Graph

Today, videoconferencing is employed in countless communications-based ventures. It allows groups at separate geographic locations to participate face-to-face in interactive meetings through the use of cameras, microphones and monitors that are linked through special telephone lines. In the last few years, the quality of the technology - hence that of the transmitted visual and audio signals - has vastly improved, the equipment has become more operable, and the costs of videoconferencing have dropped. It is a thriving business: revenue predictions for the year 2000 extend beyond the billion-dollar level. A 1995 survey of educational technologies identified teleconferencing as one of the most important new media used in the instruction of learners geographically separate from their teachers. A long list of higher education institutions (including - to name just two - the University of Notre Dame and Kent State) offer a large variety of television-based distance learning programs that may include even complete degree programs or training in specialized fields - such as the Warner Brothers Feature Animation that maintains a transcontinental Virtual Training Network for animation artists. In conservation, distance leaning has rarely been explored except in some pilot projects - NEDCC, for example, will be offering an online course on paper conservation for museum professionals and collectors. Videoconferencing, however, has not been part of these ventures.



### **Class**

Over the past years, almost every class graduating from the Art Conservation Department at Buffalo State College included at least one student who chose photo conservation as her or his specialization. The educational needs of these students were met as much as possible on an individual basis. When, in the fall of last year, three out of ten incoming students declared their interest in this area, we realized that our previous approach had to be re-dressed.



### **Title**

In addition to the course offerings at the department that have always included - and continue to include - guest lectures by specialists in photograph conservation, I was invited to participate in the development of a training schedule that would be integrated with the rest of the curriculum.

Photo components:

The first year of instruction was conducted in a tri-partite system that included - as the most important component - videoconference sessions. These allowed me to administer lectures, facilitated discussion between him and students, included formal student presentations, and most recently, even allowed for some hands-on workshop activities. I created a website for the review of information, to provide links to pertinent sites, and for a pass-word protected discussion forum where exchange of information could occur. These activities were integrated with hands-on lab practices.



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### **Classroom view**

This project was carried out with the support of Buffalo State College's Center for Applied Research in Interactive Technologies that is equipped with state-of-the-art instructional resources. We were stationed in one of the center's interactive classrooms. Here you see students assembled for one of the presentations.



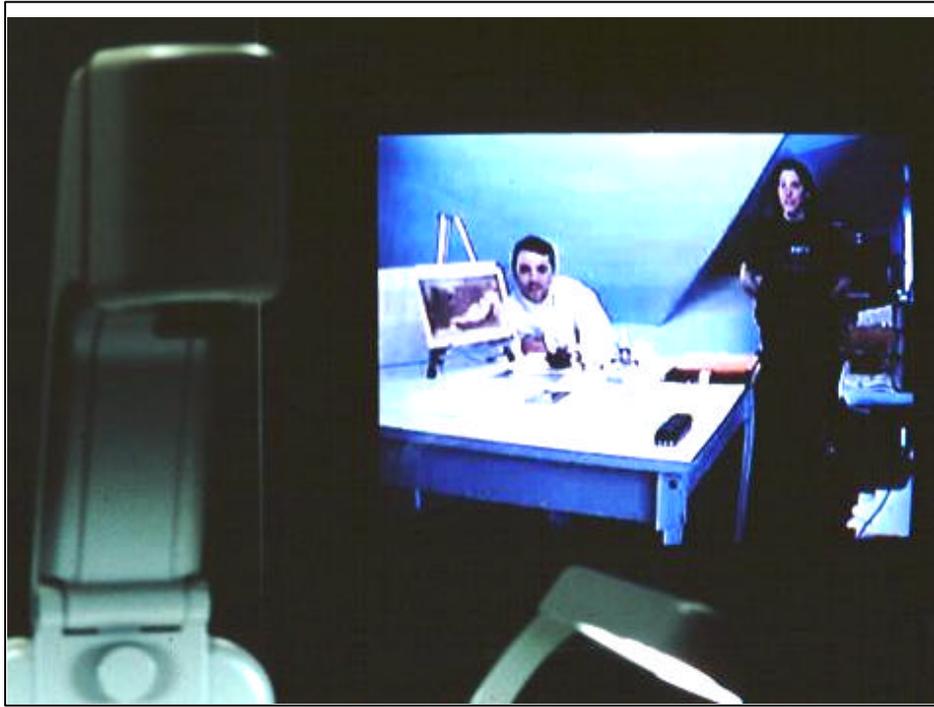
**Monitor view**

And here are the monitors they face - this one providing the students a view of me, and this one allowing us to check my view of the students. On top of this monitor is stationed a camera that transmits the view of the classroom in Buffalo to me in Boston.



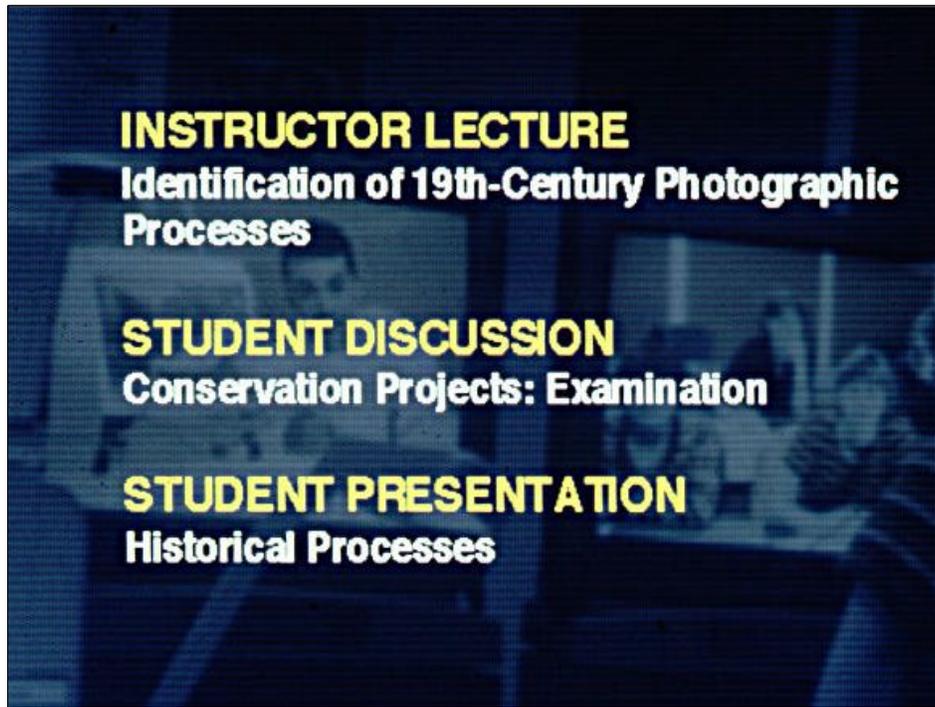
### **Control panel**

With the aid of this console, the camera is directed if necessary to focus on different individuals in the room. Here you also see the microphone stationed centrally in the space. I initially communicated from the Center for Advanced Educational Services at MIT - seen here -



**Paul studio**

Recently, however, we established a portable videoconferencing system at my private conservation lab in Boston, here providing us a partial view of my studio.



**TEXT sessions 1-3**

During the past academic year, we have held 6 videoconferences. The first three sessions were designed to familiarize all participants with the use of the system while gradually increasing student involvement, beginning with a lecture, followed by each student discussing the examination of a photograph, and ending with a formal student presentation.



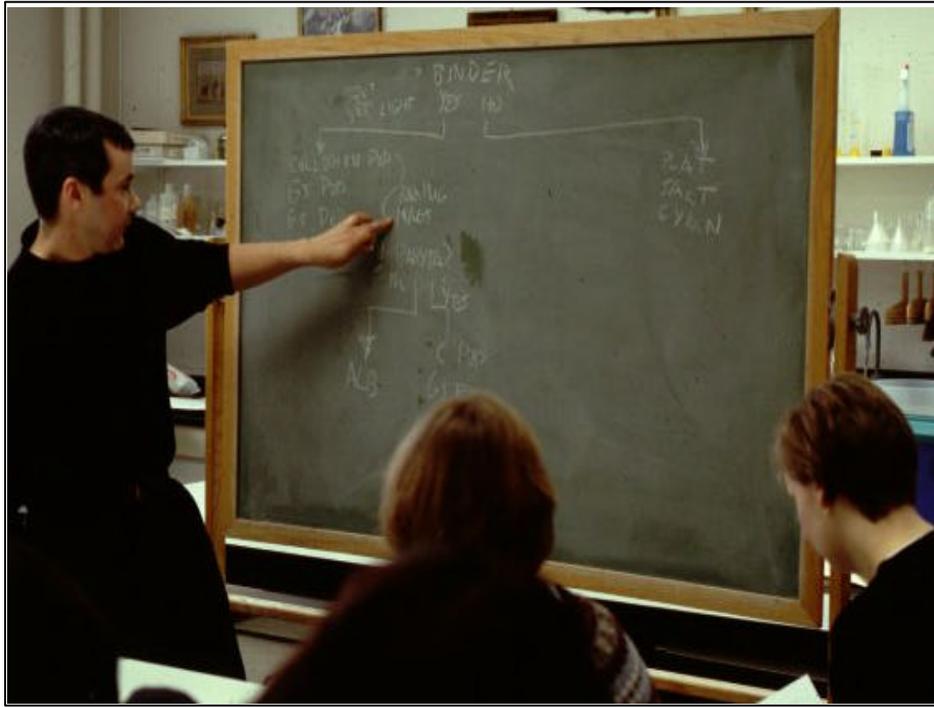
### **Lecture text**

We began with a lecture on the Identification of 19th-century paper-based photographs; The lecture was accompanied by a set of handouts (sent to the department as an attached document via email) that simplified the task of taking notes off the TV monitor while listening to the lecture. The slide illustrations - text slide seen here and...



**Lecture photo**

... the detail of a photograph seen here - were transmitted to us through a special slide projector system. The image resolution compared quite favorably to regular slide viewing.



This session was later followed up upon with a hands-on workshop conducted during one of my visits to the department. Here shown describing a methodology for determining photographic process identification...



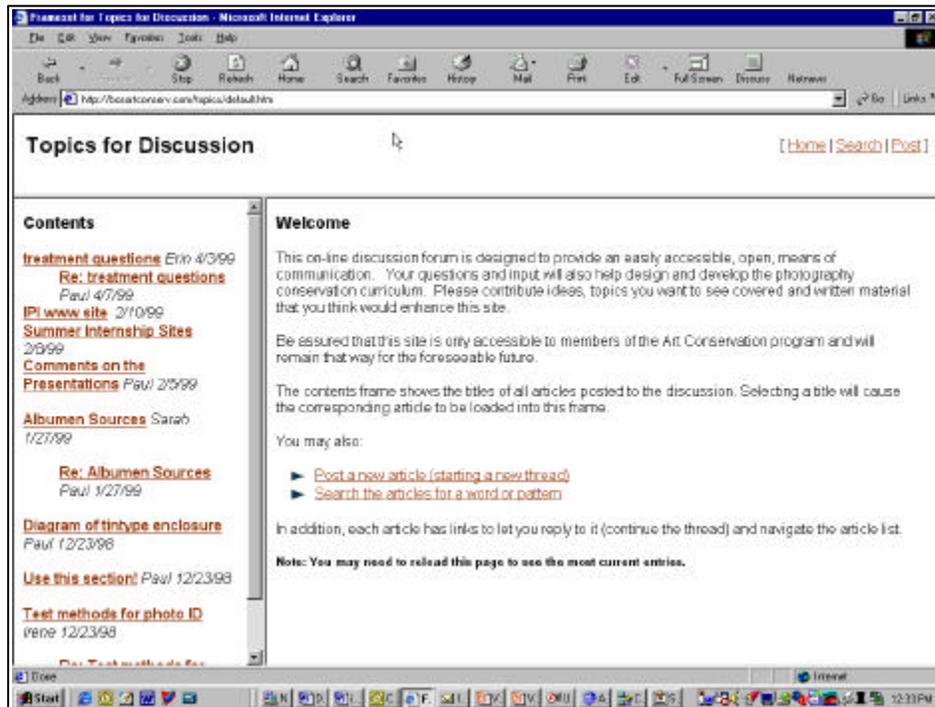
...and here using a video monitor on a stereomicroscope to show the group some characteristic surface features on an albumen print.



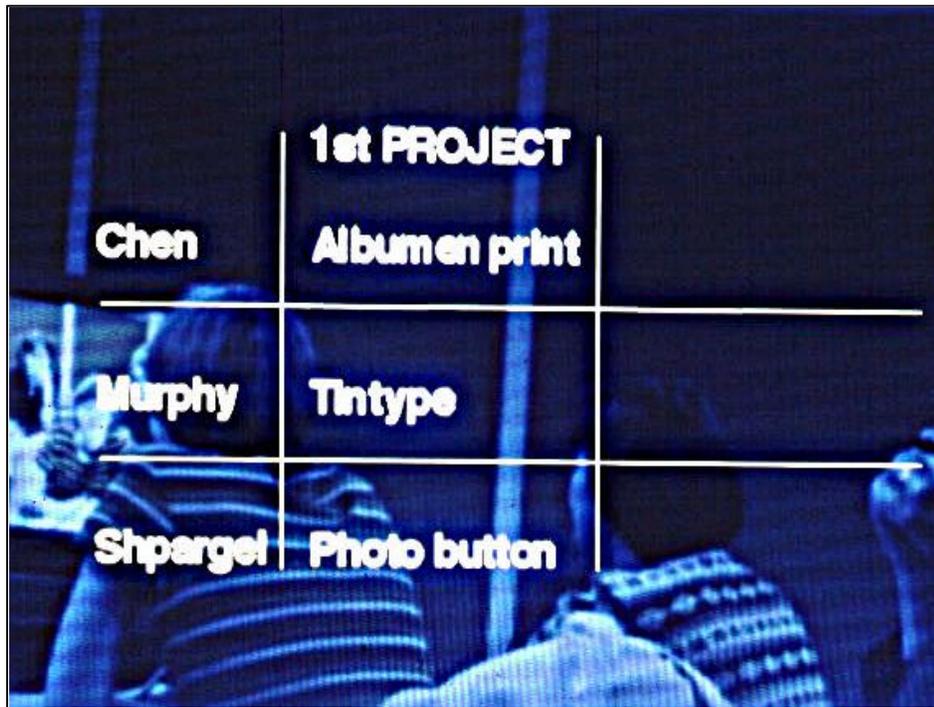
was supported by information entered on the website I designed as an additional teaching aid. Here I'm shown using the site for a graphic supplements to the lecture.



Here is a detail from the site, showing an image and description of a daguerreotype.

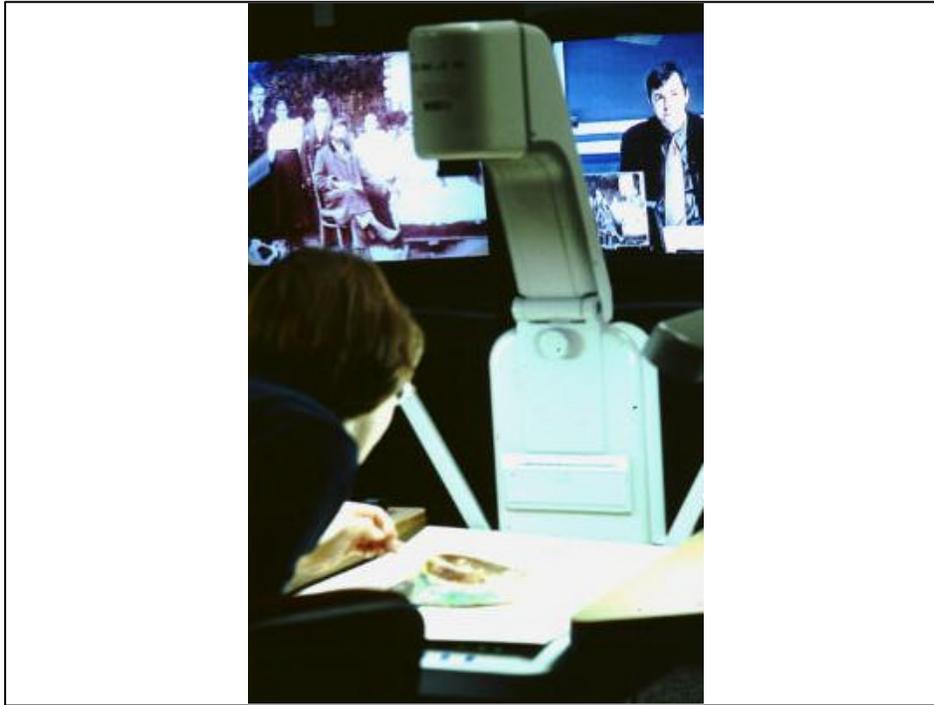


Here is the password protected discussion on the website. This aspect of the site provides a private forum to discuss issues relevant to the group.



### **TEXT Projects**

In the second videoconference session, the three first-year students presented their examination of a photograph prepared as part of their first project assignment in photo conservation. Three very different objects were chosen with the idea that this would increase the learning spectrum of the students who - during the duration of the sessions - became intimately familiar with each other's projects.



### **Sara camera 1**

The students used a document camera to transmit an image of the their object to me while they verbally describe it. The camera is equipped with a zoom lens and adjustable lights that allow easy control of the image. Here Sara Shpargel has positioned a photo button under the document camera to point out details of its structure - this is the view she is transmitting to me and here she sees me in Boston observing her discussion.



**Sara camera 2**

- and here I reciprocate by using the document camera on my end at the MIT studio to show Sara an illustration of a photo button press.



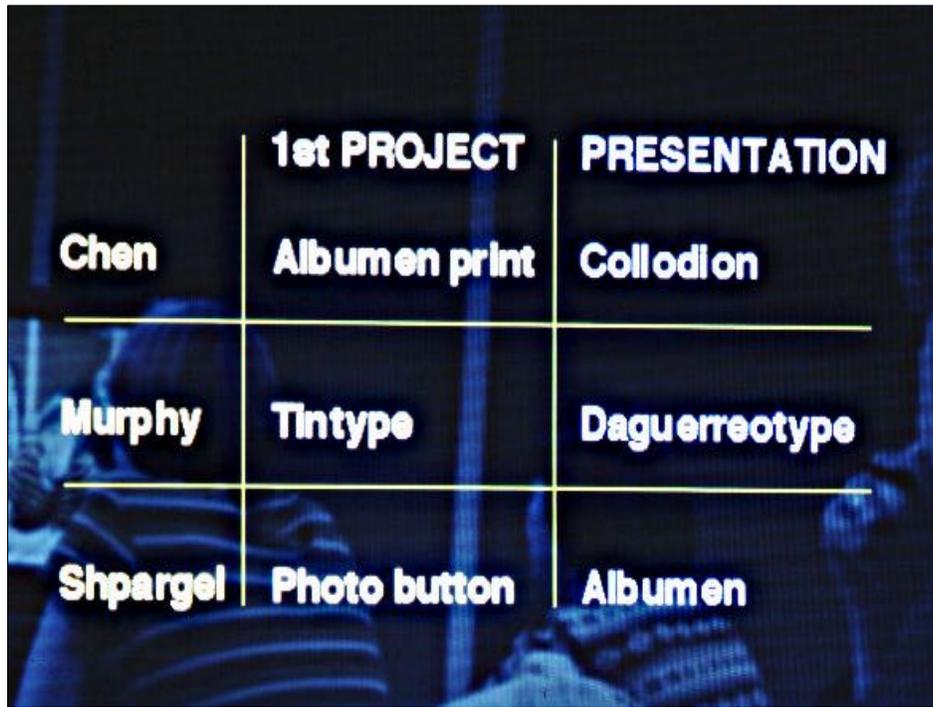
### **Erin camera**

The document camera here is zoomed in to reveal pinhole losses of the japanning layer and image of a tintype examined by Erin Murphy. And here it is adjusted to provide a specular light view of the tintype. I meanwhile have put up another tintype for comparison. Note that there is a certain amount of image pixilation that occurs when a person or an object move before the camera.



**Erin camera**

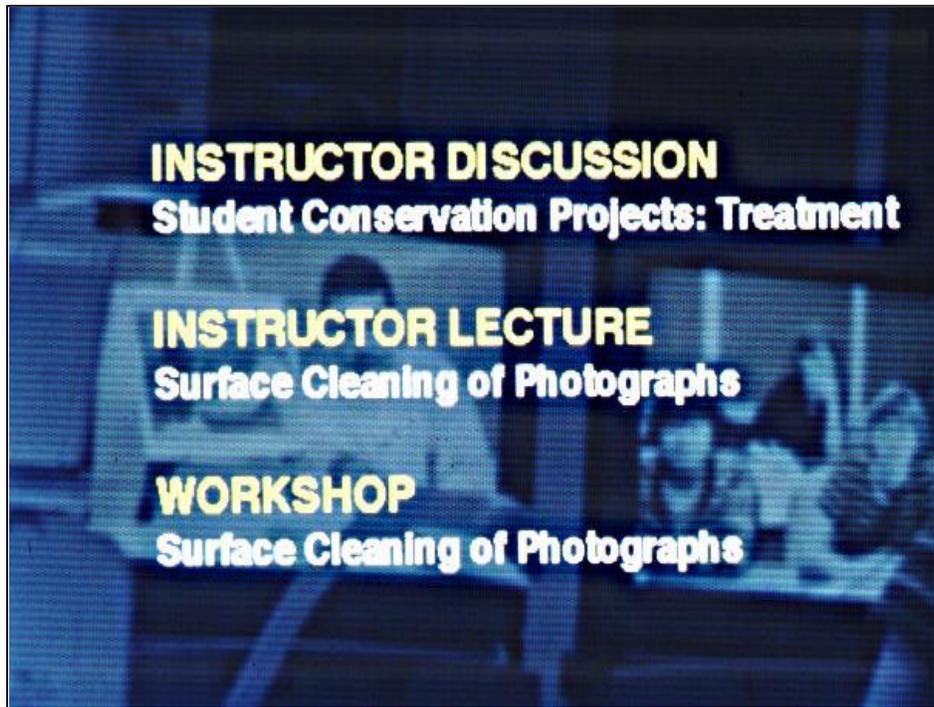
On the left monitor is the tintype I'm using for comparison. On the right is Erin's tintype.



	<b>1st PROJECT</b>	<b>PRESENTATION</b>
<b>Chen</b>	<b>Albumen print</b>	<b>Collodion</b>
<b>Murphy</b>	<b>Tintype</b>	<b>Daguerreotype</b>
<b>Shpargel</b>	<b>Photo button</b>	<b>Albumen</b>

### **TEXT Present**

In the third session, the students each gave a formal presentation on one area of investigation they had chosen early in the academic year. The topics were intentionally varied so they would not overlap in content with their first treatment project analyses. Students were asked to prepare annotated bibliographies of their readings, and share written information they had gathered with their classmates and with through email exchanges with me (some of which is then posted on the website).



#### **TEXT Sessions 4-6**

The next session featured a further discussion of conservation treatments. I focused on those types of treatments that relate to the student's first photo conservation treatment projects. This was followed by a lecture I presented on the surface cleaning of photographs. While the delivery of lectures and discussions remains within established practices of videoconferencing, we were also intent on exploring the use of the medium for the discussion of hands-on treatment practices.



### **3 students in class**

In a workshop session, students were asked to try some of the surface cleaning techniques I described. Each student was responsible for the treatment of one expendable photograph, and took turns at the document camera, so I could critique her approach and treatment results.



**JJ at Camera**

Here we see Juan-juan Chen at the document camera. I am observing her progress on the removal of soiling on an albumen print.



**Paul observing**

And here, I am watching a student experiment with the removal of silver mirroring. While a clear view of some of the subtleties of such treatments could not be transmitted by this equipment, the participants' observations communicated to me while they were working, seemed to overcome this deficiency.



### **Classroom**

After the completion of the first three sessions, one student commented: "I really had no idea what to expect when we started, but now feel more comfortable talking to Paul over TV. When he speaks to us it seems as if he's in the same room, but I think we're still getting used to talking back to him. I was impressed with the image quality of the photographs he was able to show us." Another student remarked: "I found it easy to pay attention to the lectures; perhaps this comes from our being accustomed to watching videos and take notes." I think these comments reflect the general mood of all participants after the end of this first year. One might add, however, that those in Buffalo were more comfortably off sitting in a room with other live participants, while I had to get adjusted speaking to a crowd dwarfed in a TV monitor stationed in an otherwise empty room. Communicating from my studio has proven more comfortable and easier to manage.



### **Monitors**

Now let me say a few words about the equipment and - in the spirit commensurate with the theme of the AIC meeting in St. Louis (where this presentation was originally delivered) - about the costs of videoconferencing.

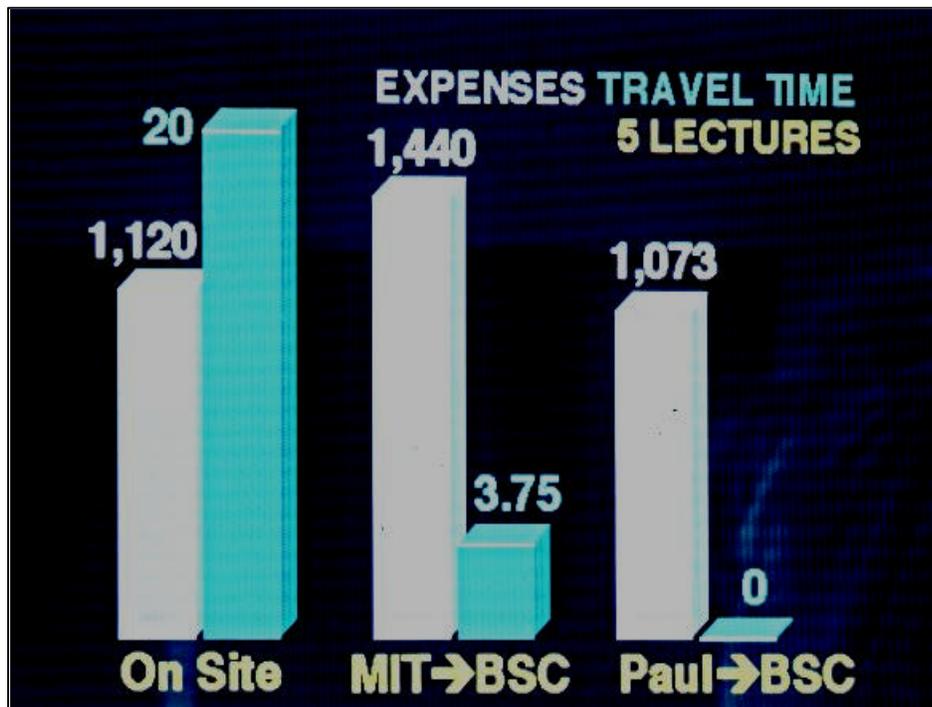
The quality of videoconferencing depends on the clear transmission of data. Most systems rely on ISDN or Integrated Services Digital Network connections. These digital lines are able to transfer multiple data packets simultaneously with great speed, whereas regular, analog phone lines accommodate only one information unit at a time and are unable to support the transmission of clean images and sounds. Each ISDN line has a bandwidth that allows - in three separate segments - the digital transmission of visual and audio signals at the speed of 112 kilobytes per second. Gathering up to three ISDN lines produces video-quality images, but is more costly. The Buffalo State College videoconferencing system accommodates up to six lines. The fewer lines are used, the greater the pixilation of any moving image, and the greater the delay of information transmission. During our sessions with MIT, we used two ISDN lines, whereas the portable system in my studio currently only uses one line.



### **Swiftsite**

The portable videoconferencing equipment we rented was the so-called Swiftsite manufactured by PictureTel. It integrates a built-in zoom camera, microphone and the device that digitizes or compresses outgoing analog video signals. It also decompress or un-digitizes any received transmission. At a current purchase price of around \$7,000, and a weight of less than 10 pounds, this instrument makes videoconferencing, as one company official put it, so affordable and so easy to use that soon "everyone can buy it."

The set up of the Swiftsite was comparatively easy: it required a TV monitor (I actually used a video card on my computer to convert the TV signal so I could see it on my computer's monitor) and the installation of an ISDN line to my studio



### TEXT costs

We summarized the costs for the three different videoconference connections we were able to try out during this past year by figuring the equipment and travel expenses for a series of five separate lectures. If I were to travel to Buffalo two times to deliver 5 lectures ON SITE (and ideally, these five lectures were better spread out over three separate visits), my travel expenses would amount to \$ 1,120. If I were to connect with Buffalo from the MIT Center for Advanced Educational Services, the room rental and line charges would cost us \$ 1,440. Now that I connect with the program from my own studio, the costs are slightly lower, \$ 1,073.

While these figures are relatively close, the travel time varies more substantially. If I were to travel to Buffalo, we figured an average of 20 hours spent in transit. Going to MIT for 5 separate occasions would take me 3 3/4 hours, and, switching on the monitor in my studio costs no time at all. I should add that renting the videoconferencing room from BSC for one hour costs outside clients \$85 but for us is free. Renting the room from MIT for one hour costs \$ 175. The monthly fee for the rental of equipment for my studio was \$250. Line user charges now cost us 12 cents per minute for one ISDN line - the more lines one uses, the higher the hourly costs.

At this point, we can already observe that, had the series of lectures required me to travel to Buffalo every time, it would have been far more expensive - considering the additional time that I would have had to spend in transit between my Boston home and Buffalo that would have also made my involvement all the more difficult to fit logistically with the rest of my schedule. It can be expected that the charges for renting portable videoconferencing equipment will continue to decline in the future.



### **Monitor Paul/class**

I believe I speak for all involved when I say that video conferencing has proven a viable addition to our lecture system, and one that, given our initial experiences, we intend to improve upon in the coming year by moving to a higher image resolution and perhaps purchasing portable equipment to forego the rental costs. We might then also further exploit the fact that this equipment can be transported to other locations in a customized suitcase. This might give us an opportunity to integrate lectures by other featured guests in the session series without them having to travel to Buffalo - it goes without saying that this will not replace, but will only add to the list of on-site guest lectures of conservation specialists. We would also like to expand our program to include participants from other locations. The Conservation Graduate Program at Queen's University already expressed interest in joining some of our sessions, and we may have the students of the paper conservation training program in Stuttgart Academy in Germany join some future sessions as well.



### **TEXT Courses**

Most importantly for now, however, we will be intent on further streamlining the photo conservation training with the curriculum structure of the Art Conservation Department that integrates in a continued parallel course structure different areas of conservation and that also continues to include live guest lectures by me and other speakers. In the following year, we plan to work out methods of evaluating the student's learning in writing and treatment practice, still relying on and expanding upon the long-distance learning program already instituted. It should be kept in mind that the students carry out their work in photo conservation in addition to all of the other required courses, and I think they should be proud of their accomplishments during this first year. They carried out a considerable amount of work additional to their already intense regular schedule.

One might also consider the potential uses of videoconferencing for other areas of conservation training - such as the provision of courses supporting continued education in context with accreditation, or to increase the range of participants that are able to attend conservation workshops or lectures - even though they will be prevented from partaking in hands-on activities with live participants, they would at least be able to listen to lectures and observe practical work- Clearly, videoconferencing still could be further exploited for our field - we might learn from other applied professions such as medicine where the consultation of specialists and through interactive long-distance media is more firmly established.



### Picture

This year-long project showed that videoconferencing is indeed capable of connecting individuals so smoothly that the medium becomes virtually transparent. It was particularly interesting to see that the technology was also capable of transmitting sufficient visual detail to allow discussions focused on the examination of objects - an area where we suspected it might be most likely to fail. It should be added, however, that the success of this first year of videoconferencing depended on an amalgamation of distance learning and close continued life interaction between instructors and students.

Questioning the nature of this new technology, one may be reminded of the controversy that followed the announcement of Daguerre's photography in France. Photography was hailed at its inception as the one medium that would revolutionize the world - "an immediate and transparent means of representation ... a tool for a universal science and a progressive technology". Not much later, photography was denounced by Baudelaire as a medium that would destroy whatever artistic spirit was existent among the French people, and it should be allowed only to take the position of a "secretary and clerk" in professions that seek factual exactitude. In our contemporary world, the development of communications technologies has become so familiar that we will find ourselves not so much questioning the principles of its use, but rather we will accept it as just one more stream that joins a flood of new media that expands the possibilities of our teaching. In contrast, seeing its potential, we ask for more. Where does that, you may ask, leave the "art of the conservator", paraphrasing Beaudelaire's critique? Well, we may trust that our close association with real objects cannot be that easily severed, and can only be enhanced.