

E-Mentoring Handbook: Lessons Learned from Two Electronic Mentoring Pilot Programs

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I. Getting Started

E-Mentoring, electronic mentoring for tomorrow's scientist, connects Historically Minority University (HMU) students and corporate scientists. E-Mentoring helps to prepare HMU students for a rewarding future and/or career not only in science but also quite possibly in technology.

E-Mentoring introduces all participants to the world of technology, if they haven't already been exposed to it. Students use e-mail and computer technology, often for the first time. Teachers get additional hands-on exposure to computers and web-based instructional software. Corporate scientists get the satisfaction of being mentors to tomorrow's scientists, using technology on their desktop or in their homes.

There are numerous items that need to be in place before E-Mentoring can occur. This first section covers identifying participants and matching students and scientists. The next sections will pick up where this leaves off, in terms of pulling all the pieces together and making it work and be successful.

A. Identify the Participants

The first step in making E-Mentoring happen is to identify the participants for the E-Mentoring project. The key participants include the university, the professor of the course that will offer E-Mentoring to the students and the corporate scientists. On the university side, the faculty and class must be identified early and willing to commit for the duration of the E-Mentoring project, which is normally one semester. This is also necessary for the corporate side. The corporation needs to be brought on board as early as possible, to ensure a commitment to recruit and support individual scientists as mentors.

A first step is to identify the university. For the purpose of PMABS, this would be one currently in the already selected institutions. There are seven Historically Minority Universities (HMUs) from which to choose. With the number of courses and institutions, numerous possibilities can occur. At each of the seven sites, one, two or even three professors involved in PMABS might be able to integrate E-Mentoring into their courses for the specific semester, for graduate or undergraduate students.

In identifying the biology department and professor, he/she has to be a willing individual who wants to become a bit more computer savvy by the semester's end. Teachers use information technology and may not want to take up the offer of E-Mentoring, fearing the onslaught of the additional workload. This is where the CELL staff steps in and offer a helping hand. Be it a graduate student from SILS or the CELL

technical coordinator, each is willing to help with the specifics of E-Mentoring and are only an e-mail or phone call away.

In identifying the corporate scientists who will be mentors in the E-Mentoring program into their organization, currently two options exist, Ortho Clinical Diagnostics (OCD) & GlaxoWellcome. Other corporations should be actively recruited. Each corporation should identify a liaison. The liaison is the primary contact between the E-Mentoring project and mentors in the corporation. The liaison's main purpose is to coordinate events between the scientists and the E-Mentoring program director. The liaison themselves may also be a mentor in the project.

A color brochure has been developed to inform students about the program and a brochure to help recruit mentors has been used. Copies are available in Appendix A; electronic copies are available from the CELL Technical Director.

B. Gather Data on Participants

After the participants for the E-Mentoring project have been identified, individual data, used for matching purposes and personal profile building, must be gathered from each faculty member, student and scientist participating in the project.

The individuals identified, faculty members, students and scientists, will either be interviewed or given questionnaires to collect the necessary information that will be used to match participants and to build personal profiles that will be displayed on the website. A picture should also be taken at this time to be included on the personal profile section on the website. Some participants have mentioned in their post-program interviews that they didn't realize how important these online profiles would turn out to be. The profiles were a major way participants would get to know each other. It was recommended the E-Mentoring staff stress the importance of the online profiles in the future.

After the questionnaire is completed, an interview could be conducted to find out more specific details that could be used in the matching process. Sample questionnaires are included in Appendix B. In the future, the scientific interests listed on the matching questionnaire could be customized to increase their relevancy to the particular students and courses involved in E-Mentoring.

For research purposes, participants in the pilot semesters completed surveys before and after the program. Pre-program surveys explored information needs, previous experience with mentoring programs, and expectations for E-Mentoring. Similarly, post-program surveys offered participants the opportunity to evaluate their experience and sought to determine the impact of E-Mentoring on participants' information horizons. Copies of these surveys are included in Appendix I.

C. Match Participants

After the participants have been identified and the data has been gathered on them, it is time to match the participants. Participants can be matched in several ways:

1. By topics that participants may want to discuss.
2. By career interests.
3. By scientific interests.
4. By majors of the students and disciplines of the scientists.

Each project can have its own way of matching the participants. The list above shows the ways the first two E-Mentoring projects used to match their participants.

Since my involvement with E-Mentoring has been only one semester, the professors who handled the interview process also did the matching of participants. In the first E-Mentoring pilot, Dr. Harmon and Dr. Sonnenwald conferred and matched students. Dr. Harmon knew many of the students well and Dr. Sonnenwald had met the mentors and interviewed many of them. In the second pilot, Dr. Wildemuth and Dr. Sonnenwald matched students and mentors based on items 1-4 above. The Excel spreadsheet created to aggregate and compare student and mentors interests is illustrated in Appendix C and is available from the CELL Technical Director.

Once E-Mentoring is released from research mode and turned over to the CELL staff for management, the CELL Technical Director will work with the participating biology professor and corporate liaison to match students and mentors.

II. E-Mentoring Technology

A. Decide on Web-based Instructional Course

I have established an outstanding working relationship with Lori Mathis, CIT personnel, who is responsible for WebCT deployment on campus. She has played a very instrumental role in the rollout of WebCT for E-Mentoring during both semesters.

Currently, with UNC handling the E-Mentoring website/design, the website development involves choosing between two courseware packages, WebCT and CourseInfo. WebCT is being phased out and CIT campus support for the product will be extremely minimized, if any, by Fall 2001. CourseInfo will become the primary choice for handling the E-Mentoring project at that time. Currently, WebCT offers some very flexible design opportunities while CourseInfo is pretty much a “what you see is what you get” software package. The homepage needed to be designed a special way and only WebCT offered this opportunity. However as, support for WebCT is going away by Fall 2001, CourseInfo will no doubt become the software package for E-Mentoring. Hopefully by then, Blackboard would be allowing some original designing to occur.

Although Blackboard will eventually become the sole software choice, we include instructions here for developing the website in WebCT. In the short term, templates developed during the pilot semester may make WebCT the more efficient option. Additional support for WebCT is available at www.webct.com.

B. Design and Development of Website

The original website design was developed and implemented by the SILS graduate students, with close supervision and input of the professors on the E-Mentoring project. HTML knowledge was required and advanced web authoring design skills were a definite plus.

Before the first pilot semester, usability tests were conducted to make sure the site was easy to use, making some major changes. Volunteers from INLS 50 were recruited to try out the website and from their comments, the current design was developed and has been proven easy to understand. The most often cited criticism of the current web page is the length of its URL (<http://www.ils.unc.edu/~cell/welcome.html>). Other than this, the design appears easy to learn and use by faculty, students and scientists.

In designing the website, the current or last E-Mentoring site can be used as a starting point. For the first two E-Mentoring pilots, WebCT was the software package used. The same website design was used for both semesters and seems a continuing sensible choice.

If CourseInfo becomes the preferred software package, quite a few changes will have to be made in respect to the look and feel of the E-Mentoring website homepage offering. The changes include:

- the website design
- the website offerings
- the e-mail notification process

I will continue to work closely with Lori Mathis (CIT support) and monitor the WebCT and CourseInfo situation. Several UNC faculty have expressed their displeasure with the switching of products. I think a final, final decision awaits.

If the existing website is used as a starting point, the following guidelines may be helpful in making revisions. Regardless of the courseware package selected, static web pages will need revision; specific instructions are also given below for updating the WebCT interface.

Revise Static Web Pages

Existing Templates

Each group of web pages on the website uses a similar template. Headers, structured by a table, contain links back to the group's main page and the website's home page. The body of pages are organized in tables, and red lines divide sections. A small textual menu at the bottom of each page links to all other pages in the group.

If you want to use the same design, you should be able to cut-and-paste new information into existing templates. Be sure the change links leading to "Home" (changing `Ementoring002002` to the correct number) – otherwise participants will get an error message when they try to return "Home" and are sent to a password-protected page to which they don't have access.

To access files through WebCT website:

- Press "File Manager" on menu at bottom of screen
- From File Manger, files can be downloaded, uploaded, copied, renamed, deleted, etc. HTML files can be edited, but the window for editing is so small that only it's only practical for minimal changes.

Graphic Files

<code>1linedNA.gif</code>	Red line with DNA symbol (used as header)
<code>1linedNAhome.gif</code>	Red line with DNA symbol and "home" icon
<code>1redlinebest.gif</code>	Plain red line used as divider.
<code>Bannerlogocap.gif</code>	Horizontal logo used as header on main screen of website

ementorlogo.gif	Standard logo
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Profile pages

Pictures of participants, taken on a digital camera, should be edited in PhotoShop. Use the cropping tool to get a good head-and-shoulders shot, and save the file as a .jpg or .gif. Most of the profile pictures are about 150 pixels wide.

We've passed out a paper form to participants at the beginning of the semester to collect profile information, and then typed the info into the web page templates (see Appendix B). It might be worth making a web-based form in the future (which could automatically spit information into dynamically-generated web pages).

The most current versions of these files may be accessed through the website (use File Manager):

2participantstopNH.htm	Participant profiles main page
2studentprofiles_nccu.htm	Student profiles, NCCU
2mentorprofiles_gw.htm	Mentor profiles, GlaxoWellcome
2facultyprofiles_nccu.htm	Faculty profiles, NCCU
2facilitatorprofiles_sp2000.htm	Facilitator profiles, Spring 2000

Scrapbook pages

The main scrapbook page contains thumbnail images linking to web pages displaying the full-sized picture and an explanatory title. During the pilot semester, our scrapbook contained pictures of the ECSU and OCD campuses as well as photos from the kick-off event. Participants seemed to enjoy seeing each other's workplaces.

Photos for the scrapbook should be edited in PhotoShop. The same graphic can be used for the thumbnail image on the main page and the full-size image by changing the size of the graphic in the IMG tag. Thumbnails have a width of approximately 100 pixels; full-sized images are about 600 pixels wide.

Scrapbook_main00.html	Main scrapbook page, Spring 2000
kgracealisha.html	Sample of scrapbook page with full-size photo; could be used as template.

Help Tips, Netiquette, Guidelines, and Mentoring Resources pages should require less updating. These groups of pages all use the same design as the **Profiles** and **Scrapbook** pages. The most recent versions can be accessed through the File Manager in WebCT; older versions are on ruby in Webpages\Policy Pages & Graphics and Webpages\Help Tips.

Adjust WebCT Interface for New Participants

Creating Icons

At the beginning of the program, each participant will need a new icon for their mentor-student forum. Depending on the perspective, the icon will read “Your Mentor, Joe Schmoe” or “Your Student, Jane Schmane.”

We created icons in Photoshop, saving templates as .psd files and creating gifs for use on the website. To create a new mentor-student icon from the template:

1. Open appropriate template (stored on ruby in webCT Icons/Fall 99/templates)
 - a. Student view – 7boxmentor.psd
 - b. Mentor view – 7boxstudent.psd
 2. In “Layers” tab of toolbox in bottom right corner, double click on the layer with text (“Your Mentor,” or “Your Student,.”)
 3. The “Type Tool” box should appear. Type mentor or student’s name there. If the name is long, you may have to adjust the placement of the little people graphics – do this by clicking on the appropriate layer and moving the person with the “Move” tool (arrow in upper-right corner of toolbox that appears on left side of the screen).
 4. Save as gif: From File menu, select “Export...” Select GIF89a Export, click OK when dialog box appears.
- Our icons are color coded:
 - Red – students
 - Purple - mentors
 - Green - faculty
 - Blue – facilitators
 - Font is Helvetica Bold, size 11
 - Icons with shadows indicate links to communication tools; those with plain boxes link to static web pages
 - We own a package of clip art which could be useful in designing new icons (it’s often difficult to find pictures of minority students using computers).

Revising Website through WebCT

To perform the following tasks, enter the WebCT course page as a designer (Your password and login name will be the same as those for your ISIS account; Lori Mathis in ATN can set this up).

Creating new participants

1. On the toolbar at the bottom of the screen, press “Course Management”
2. On the new toolbar at the bottom of the screen, press “Student Management”
3. On the Student Mgmt. Toolbar, press “Students...”
4. Press “Add new student”

5. Complete the form. Login IDs must be more than 8 characters long; shorter words won't give you an error message now, but they won't allow you to log into the system later. You will be able to edit other fields later, but the Login ID cannot be changed. Login names and passwords are case-sensitive.
- To edit participant information, click on their (underlined) first name in the list of participants.

We have several fake participants whose perspectives we use for demos. Their login IDs and passwords are:

Name	Login ID	Password	Role
Denzel Washington	dwashington	glory	mentor
Angela Bassett	angelabassett	stella	student
Halle Berry	halleberry	halle	student

Creating Discussion Forums

1. Enter any existing forum
2. Press "Forum Mgmt" on left menu
3. Press "New Forum" on bottom menu
4. Enter title of forum and hit "Continue." Even if you want to make the forum private in the future, leave it public for now.
5. Hit "Done"
6. You'll be returned to the forum where you began. Hit the "forum" button to see a list of accessible forums. This list should include the new forum.
7. Place the cursor over the name of the new forum (so that the cursor changes from an arrow to a hand). At the bottom of the window, some text should appear giving the unique number associated with the forum. It should read something like:
"javascript: listForum: 958662210." Make a note of this number; you will need it when you add an icon for the forum.
8. If you want to make the forum private, press "Forum Mgmt"
9. Select the forum from the list, and hit the "Private" button.
10. Select members, hit "Update," hit "Done"

Adding Icons

To add an icon for a discussion forum:

1. From the main screen, hit "Organize Icons"
2. Select a discussion forum icon by clicking on its radio button
3. Hit "edit"
4. From the resulting screen, copy the URL listed in the field titled URL:
5. Hit "Cancel" to return to main Organize Icons screen
6. Hit the "Add..." button
7. Hit "URL" button

8. Paste the copied URL into the appropriate field, changing the 9 digit number at the end to the number associated with the new forum
9. To select the icon, you may type in the filename of the graphic, or use the “Browse...” button to access the File Manager. From the File Manager, you may select an existing file or upload a file.
10. We have always left the `Title` field blank since titles are incorporated into the icons.
11. Hit “add”

By default, an icon is visible to all participants. To restrict its visibility to certain participants:

1. Select the icon and hit “Edit” (you may have to hit the “Back” button on the bottom menu to reach the correct menu level).
2. Enter the login names of those who should see the icon in the `Release To` field. It’s probably easiest to use the “Browse...” button to select participants.
3. When you return to the “Organize Icons” screen, the icon will have the label “(Conditional)” beneath it.

Organizing Icons

In WebCT, icons are organized in a table. Although you can change the dimensions of the table (use the “Layout” button), all elements must be placed in the table’s grid. When you add an icon, it’s automatically placed in the last available table cell. To change an element’s position, you must select its radio button and use the “Backward” and “Forward” buttons to move it one cell in either direction. This can become time-consuming when you have lots of icons, but there doesn’t seem to be a better way.

To make icons line up correctly, we use a transparent .gif as a placeholder in strategic table cells. This file, `transparent.gif`, occupies a table cell but is invisible.

Making sure that each person sees the correct combination of icons can be complicated. When we revised the interface for the second semester, Lori Mathis created a copy of the website used in the pilot semester. Thus we could use the same essential layout, substituting new icons for the original ones. If you use an existing website as a template, be sure to change all URLs to reflect the new website’s address (the URL for the first semester contained `Ementoring001001`, while the second semester contained `Ementoring002002`).

Uploading Files to WebCT

To upload a file:

1. Hit the “File Manager” button
2. Hit the “Upload” button
3. Select desired file using “Browse...” button
4. Hit “Continue”

5. You'll receive an "upload report" – hit "Continue" again

If you're uploading more than a few files, it's fastest to create a zip file and upload that. You can open WinZip from the "Start" menu on the SILS computers:

Start\Programs\Accessories. Drag the files into the WinZip window and create a zip file. Upload zip file to WebCT and use the "Unzip" button to unzip the files it contains. After unzipping, you can delete the original zip file from the WebCT File Manager.

III. Taking Care of Business

In this section items needing to be done in order for E-Mentoring to shine in the eyes of everyone involved, are described. The E-Mentoring staff handles the planning of the events that will bring the students and the scientists together for their first exposure to each other and the E-Mentoring project. The coordination of the participants' training and the kick-off event are a reflection of the hard work the E-Mentoring staff puts in behind the scenes to make the E-Mentoring project come together. In addition, staff meetings and additional promotional materials are needed to support the project.

A. Train Participants

Participants are introduced to the program through face-to-face training sessions. For students, training consists of two components: an overview of the E-Mentoring program and a hands-on software training session. For scientists, training consists of an overview and a demonstration of the software. A hands-on training session is usually not given to the scientists because they are already familiar with similar technology and hands-on training is very difficult to schedule. We have also taken advantage of training sessions to gather information about participants' interests, experience, and expectations in surveys and to take pictures for Profile pages.

Both students and scientists will need training on the software. The training session agenda topics include:

- How to access the website by the URL.
- How the login ID & password procedure work.
- How the site is set-up, what the icons do, and how to navigate the site.
- How the different views (student, mentor, & facilitator) work.
- How the Forums work.
- How to post & read messages (discussion forums).
- How to post & read items (calendar).
- How to use the Chat rooms.
- How to get help from facilitators.

Also, the following items below need to be discussed.

Expectations

- Introduce students to corporate culture, remind mentors of students' lifestyles.
- Let participants know exactly what E-Mentoring staff expects from them-i.e. how often they should write each other, what forms they will have to fill out, etc.

Purposes/goals

- Explain history of E-Mentoring, why it exists, what we expect to accomplish, etc.

The PowerPoint presentations (see Appendix D) used in training describe program goals, benefits and expectations for participants, and research methods. They also include screenshots of the website which can be used to demo the system if an Internet connection is unavailable. (We have conducted demos both with a live Internet connection and using these slides; both ways seem to work fine although the live connection is preferable.)

Originally, we conducted Student Training like a three-ring circus, dividing students into three small groups and conducting three activities simultaneously. One facilitator gave an overview of the program's goals, requirements, and web-based tools using a PowerPoint presentation. Another oversaw students as they completed pre-program surveys and permission forms, explaining that participation in our research is voluntary. A third facilitator helped students complete a few simple tasks designed to help them learn how to use the website. These tasks included:

- Replying to a message in a discussion forum
- Posting a message in a discussion forum
- Posting birthday to calendar
- Chatting with other students in the chat room

In the past, we have given participants a folder containing the following materials (copies of these materials are provided in Appendix E):

- ID card with login name and password (You also want to be sure to bring a master list of all passwords to training sessions, as the ID cards often get lost).
- Printout of PowerPoint slides
- Cheat Sheet explaining how to use website
- Screen shot explaining functions of different tools on the website
- Consent forms for program participation (2 copies – one to sign and return to us, one to keep)
- Pre-Program survey

We printed the ID cards from Word, using the “Labels” feature and printing three cards on each page. For each card, we first created a graphic in PhotoShop:

1. Open IDblank.psd in PhotoShop
2. In the “Layers” tab of the toolbox in the lower right corner of the screen, double click on the layer containing the user name. The Type Tool box will appear; replace user name with appropriate name.
3. Repeat for password.
4. Save under a new filename.

Once graphics have been created, open the Word file:

1. Use “Envelopes and Labels...” option in “Tools” menu to format page (if not using our template). You may need to format the labels so that content is centered and aligned with the top of the label.
2. For each card, go to the “Insert” menu and use the “Picture...” option to insert the appropriate picture.

3. Type in participant's name under graphic.

Templates for ID cards are on ruby in central\id_cards:

IDblank.psd	Template for graphic
2000IDs_mentor.doc	Ready-to-print file with formatted labels (all files that start with 2000ID should work as templates)
IDtemplate.psd	Partial template (doesn't contain user name and password form)

B. Plan Kick-Off Event

After all the information about the participants has been gathered, the instructional software agreed upon and the website developed, it is time to begin planning the kick-off events. Two locations need to be taken into account at this time. One is the HMU and the other is the corporate site.

At the HMU, the items that need to be supplied for the event are as follows:

- Publicity ahead of time.
- A computer lab with computers connected to the Internet.
- CELL personnel standing by for technical support.
- Refreshments for attendees.
- T-shirts for students and faculty.

At the corporate site, the items that need to be supplied for the event are as follows:

- Advance publicity.
- A computer room with computers connected to the Internet, so the scientists can gather in one place.
- Photographer on site.
- In-house technical person and CELL personnel standing by for technical support.
- T-shirts for scientists.

An agreed upon date & time to do the kick-off event should be decided on with input from the participants and mediated by the E-Mentoring staff.

C. Kick-Off Event

The kick-off event is the highlight of the project/semester. This is the first time that the students and mentors will “meet” and exchange conversation. This takes place after all the preliminary arrangements have been made and participants have been trained. This brings all the pieces of the puzzle together. The kick-off event takes place at the sites where scientists and students are located. Everyone involved needs to be on one accord. The E-Mentoring staff needs to design the kick off activities and facilitate the activities during the event itself. Activities, such as keeping track of time, sample problems being answered, and making sure everyone participates need to be monitored. Ideally, an E-Mentoring staff person should be at each site.

Originally we considered incorporating a videoconference into the event; although this never proved practical for us, it might be something to consider in the future. We also planned to conduct discussions using synchronous chat tools but were never able to get through corporate firewalls. We ended up conducting live discussions using the asynchronous discussion forums, and this worked surprisingly well. In fact, some mentor-student pairs liked the synchronous interaction enough to schedule live meetings in their discussion forums during the course of the semester.

We divided the kick-off into several different activities:

1. **Large group activity** – all participants gathered in one discussion forum to play some getting-to-know-you games.
 - *Discovering our Peculiarities* – Messages describing unusual accomplishments/characteristics were posted; participants respond with an explanation if the description fits them. See `kickoff_sp00.doc` or `Kickoff script.doc` for exact text.
2. **Small group activity** – participants were divided into four groups (with 2-3 mentor/student pairs and a facilitator in each group). Each group discussed science and career issues in their own discussion forum. The bulk of our time was spent in these small groups.
 - *Riddle* – In the Fall 99 kick-off, participants solved a riddle together. The purposes were to practice online collaboration and to promote creative thinking. See `Kick-off script.doc` for text).
 - *Science problem* – We used this both semesters, and it worked well. See `Science_problemv2.doc`.
 - *Career problem* – We tried this in Spring 00; the problem itself worked fine, but there wasn't enough time to discuss both the career and science problems. See `career_problemv3.doc`.
3. **Mentor-Student introduction** – Mentors and students retreated to their private discussion forums (where they would converse for the rest of the semester), where we had posted messages recommending they talk about expectations for the semester.

We found it was important to get participants thinking about when and how they planned to communicate, so that there was no time to develop misunderstandings.

Assuming you follow our pattern for the kick-off event, here is the required advance preparation:

- Reserve rooms with computers for students and mentors
- Order food
- Create kick-off forums and post messages:
 - Main kick-off forum
 - Small group forums
 - Post message about establishing expectations in all student-mentor forums
- (If using WebCT) Adjust interface in “Organize Icons” mode so that kick-off forums are visible to the correct participants
- Prepare and copy handouts (see Appendix F):
 1. Schedule/Instructions
 2. Science problem handout
 3. Career problem handout
 4. Pictures and descriptions of small groups

Recommendations for a successful kick-off:

- Make sure someone is keeping track of time at all locations; participants get frustrated if they’re left behind when others have moved on.
- Don’t try to pack too many activities into a short time; it takes participants a while to become familiar with the tools.
- Encourage participants to have fun – their tendency is to be a little intimidated by the situation.

D. Staff meetings/Ongoing Activities

After the Kick-Off event has occurred, the E-Mentoring staff needs to meet on a regular basis to discuss administrative items and possible problems that need attention for the E-Mentoring project to run smoothly. The e-mail notification, the student usage reports, the facilitators’ responsibilities, and any errors that have been happening are issues that should get addressed. The site is also being monitored to make sure that none of the students or mentors drop out without notifying the corporate liaison, the faculty, and the E-Mentoring project staff. Some of these duties may be performed in WebCT using the following instructions:

Check forums daily for messages

1. In WebCT, login to the website as a facilitator (rather than as a designer).
2. Enter any forum. Press the green “Forum” button on the menu on the left side of the screen. This produces a list of all forums to which you have access, showing the number of unread and read messages in each one.
3. If a forum contains unread messages, enter it by clicking on its underlined name in the list. Read the messages or select them and hit the “Mark Read” button.
4. Since WebCT does not have an e-mail notification system, we send e-mail messages manually each time someone receives a message in a discussion forum. Although there is a CELL e-mail account on Ruby, we’ve never been able to separate it from the CELL listserv account (although the listserv supposedly has a different address...). So you may want to use your personal e-mail account.

E. Promotional Materials

E-Mentoring should be promoted to both the educational and corporate environments. Promotional items currently being used include:

1. Specialized color brochures that advertise E-Mentoring at each school and corporation.

Brochures, created before the pilot semester, should be updated; contact names need changing, and quotes from other electronic mentoring projects could be replaced with quotes from our own project. Currently we have two versions of the brochure, one aimed at recruiting mentors, and one targeted at students. Both were created in Word and are designed to be printed front and back on heavy, glossy paper.

2. Laminated posters that are placed at the corporate sites.

We created 24” x 35” posters to display in the lobbies of OCD offices. These were made in PowerPoint – the final version is `cell\poster99\posterv3.ppt`. We had the posters printed and laminated at Kinkos; they needed the an electronic copy of the poster, and it took several days for them to complete the order.

3. T-shirts that are distributed to students and scientists. Our t-shirts show the E-Mentoring logo in CELL’s colors (red and green) on a gray shirt.
4. Plaques/certificates, distributed at the end of the semester for the participants.

Certificates of Appreciation were created in MS Publisher, printed in color on cardstock, and framed. The on-campus office supply store in Venable Hall sometimes has 8½” x 11” frames; otherwise you can go to Michael’s in New Hope Commons.

5. Local PR surrounding the E-Mentoring project.

Scientists' managers and faculty department chairs are also sent thank you/acknowledgement letters at the end of the semester (see Appendix G). We typically ask scientists and faculty to whom these letters should be sent. Also, if funds are limited, scientists do not need to get t-shirts. Students enjoy getting t-shirts much more so than scientists.

IV. Evaluations

A. Ongoing Evaluation

In ongoing evaluations, the facilitators monitor the activities taking place on the website, making sure that the students are using the forums and the mentors are responding to the students postings and students responding to mentors. The site is also being monitored to make sure that none of the mentors or students drop out without notifying the facilitators, which has been the case in more then one instance.

They monitor the site for the faculty and provide bi-weekly statistic sheets on students' activity, as far as message postings are concerned.

To create reports in WebCT showing participants' activity on the website, follow these steps:

1. Hit "Course Management" button
2. Hit "Student Tracking" button
3. Select desired participants using "Select" button
4. The report shows the dates of first and last access, the number of messages read, and the number of messages posted
5. Theoretically you should be able to use the "Query" tool to access specific information, but we've never been able to make it work (even with help from Lori Mathis).

B. End of Semester Evaluation

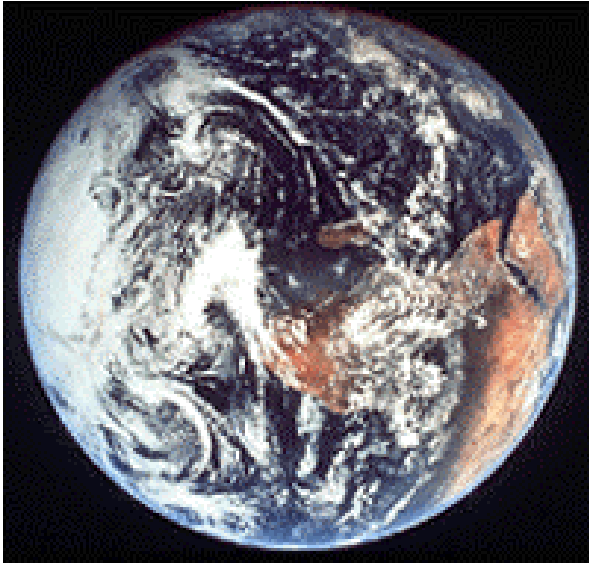
The end of semester evaluation is time when the E-Mentoring project is evaluated to see if it was a success. The end of semester evaluations measure the whole semester project. To perform the evaluations, the final numbers of the total messages posted in the forums is tallied. In addition, mentors and students are asked to complete a survey providing information about their experiences using communications and information technology, E-Mentoring and their learning experiences during the semester. For research purposes, students and mentors previously were also interviewed. In the future, interviews may not be necessary – they are time consuming and may not be applicable when research is not being conducted. Furthermore, future program directors may wish to modify the survey to better meet their evaluation needs. Many of the questions in the survey came from the AAHE Flashlight Evaluation Handbook (Ehrmann & Zuniga, 1997.) This is the opportunity for all involved to give their feedback on whether or not the E-Mentoring project was successful. The ending surveys give the participants the opportunity to acknowledge what effects being involved with E-Mentoring have had on them. See Appendix I for sample surveys and interviews.

C. Ongoing Activities

As the E-Mentoring project winds down, a few items will be considered ongoing activities. One such ongoing activity is the E-Mentoring website being left in place for further usage by the participants but at the same time not being fully monitored by the facilitators for data gathering purposes. As was the case with the first pilot project, the scientists from OCD and some students from ECSU wanted to continue communicating into the next semester.

Another ongoing activity will be the recruitment of the next set of potential students for the next E-Mentoring offering. Even though the E-Mentoring project is still in the developmental stages, there are some intangible benefits that are invaluable. There are ongoing discussions as to having a permanent site in place that PMABS schools will have access to and can use at their discretion in their courses.

Appendix A: Brochures



E-Mentoring

 For Students

Building On-Line Communities
to Support Tomorrow's
Scientists

What is this thing called E-Mentoring?

Electronic Mentoring (E-Mentoring) is the establishment and continuance of a mentoring relationship between students, professors, and corporate scientists using communications technology.

Mentoring in general occurs when an experienced person shares knowledge and provides advice, encouragement, and support to a less experienced person. Mentoring occurs over time, through a relationship built on trust and respect.

As a participant, you will be given the opportunity to electronically discuss issues ranging from careers to research to a lab problem with a professional scientist currently working in the field.

How will E-Mentoring benefit me?

You will be able to...

- Interact 1-on-1 with an expert in your field
- Learn about the corporate view of science
- Develop a broader and more diverse set of contacts in your professional area of interest
- Gain practical experience in technology and communication skills
- Increase your knowledge about biology and information resources, as well as career and internship opportunities

Who will be participating in E-Mentoring?

Mentors: Scientists currently working at Glaxo Wellcome.

Students and Professors: Those enrolled and affiliated with the Spring 2000 Advanced Genetics Biology course at NCCU.

Facilitators: Two professors and two graduate students at the University of North Carolina at Chapel Hill's School of Information and Library Science.

What do I need to do to participate?

Register for the Spring 2000 Advanced Genetics Biology course and you will be automatically enrolled in the E-Mentoring program. E-Mentoring will be integrated into the course; you can discuss biology with your mentor in addition to careers, school and other related topics.

All mentoring will take place via computer through the Internet. You can use any computer that has access to the World Wide Web (Internet), including those in rooms 205 and 318 in the Lee Biology Buildings, university library, and your hometown public library.

If you have access to the Internet in your home or dorm, you can participate there as well.

Are there similar programs out there?

Yes, there are several successful electronic mentoring programs in existence today. Below are opinions of some students who participated in such electronic mentoring projects as MentorNet (www.mentornet.net) and the HP Telementor Program (www.telementor.org/hp/):

"[My mentor] gave me the advice I needed because of her unique perspective and ability to understand what I was going through."

"There are real engineers out in the world who had a hard time in school [and] still learned what they needed to be successful in their fields. I feel more confident that I will be [successful], too."

"I learned a great deal about industry and graduate school. I liked the fact that my mentor was pursuing a job and education that I would like to model."

"I'm most grateful for his [my mentor's] personal encouragement and support of my work, always taking time out from his busy schedule and business trips to answer my e-mails."

Where can I find additional information and direct questions I have about E-Mentoring?

North Carolina Central University

Goldie Byrd, PhD
Biology Department

Tel: 919- 560-6403
E-mail: gbyrd@wpo.nccu.edu

University of North Carolina at Chapel Hill:

Diane Sonnenwald, PhD
School of Library and Information Science

Tel: 919- 962-8065
E-mail: dhs@ils.unc.edu

Barbara Wildemuth, PhD
School of Library and Information Science

Tel: 919- 962-8065
E-mail: wildemuth@ils.unc.edu

E-Mentoring Web Site

<http://www.....>

Will there be anyone to help me deal with technical problems or other difficulties?

Absolutely. The E-Mentoring program will be monitored by facilitators at UNC-CH who will be happy to respond to any technical questions or other problems you may encounter.

The E-Mentoring program is sponsored by:

Partnership for Minority Advancement in the Biomolecular Sciences (PMABS)
<http://www.unc.edu/depts/pmabs/>

Howard Hughes Medical Institute (HHMI)

School of Information and Library Science at the University of North Carolina at Chapel Hill <http://www.ils.unc.edu>

E-Mentoring



Building On-Line Communities to
Support Tomorrow's Scientists



What is this thing called E-Mentoring?

Electronic Mentoring (E-Mentoring) is the establishment and continuance of a mentoring relationship between students, professors, and corporate scientists using communications and information technologies.

Mentoring in general occurs when an experienced person shares knowledge and provides advice, encouragement, and support to a less experienced person. Mentoring occurs over time, through a relationship built on trust and respect.

As a participant, you will be given the opportunity to electronically discuss issues ranging from careers to research to a lab problem with a student currently studying biology.

What are the benefits of this program?

You will be able to...

- Help students learn about science & science careers.
- Encourage and motivate students' learning.
- Explore communications tools that are valuable in a variety of learning & work situations with students.
- Help meet organizational goals by developing future employees & increasing diversity in the workforce.
- Gain more experience in mentoring.

Who will be participating in E-Mentoring?

Mentors: Scientists currently working in the field.

Students and Professors: Those enrolled and affiliated with the Spring 2000 Advanced Genetics Biology course at North Carolina Central University.

Facilitators: Two professors and two graduate students at the University of North Carolina at Chapel Hill's School of Information and Library Science.

What do I need to do to participate?

All mentoring will take place via computer through the Internet. You can use any computer that has access to the World Wide Web, including your personal computer at home.

E-Mentoring will be integrated into a course; biology and other relevant topics (careers, family and work life, etc.) will be discussed.

To get on board as a mentor, please express your interest to Dr. Nancy Shepherd, via e-mail at

Are there similar programs out there?

Yes, there are several successful electronic mentoring programs in existence today.

Below are opinions of some mentors who participated in such electronic mentoring projects as MentorNet (www.mentornet.net) and the HP Telementor Program (www.telementor.org/hp/):

"I've always loved mentoring or tutoring...Since I've had a full-time job, I don't seem to have the time to do that sort of thing. Email, however, is something I do have time for, since it removes all of the scheduling problems."

"Watching/helping others allows me to see where I have been. It helps me to reflect on my past to better design my future."

"One's ability to develop others is something my company rates us on, this opportunity helps my ability to do that."

"I'm finding this a very interesting experience. I hope [my student] is getting as much out of this as I am; I like to hear what it's like to be a college student again, unsure about what the future will be"

"It's so rewarding, yet so painless."

- Participate in personally satisfying activities.

Where can I find additional information and direct questions I have about E-Mentoring?

University of North Carolina at Chapel Hill:

Diane Sonnenwald, PhD
School of Library and Information Science

Tel: 919-962-8065
E-mail: dhs@ils.unc.edu

Barbara Wildemuth, PhD
School of Library and Information Science

Tel: 919-962-8065
E-mail: wildemuth@ils.unc.edu

North Carolina Central University:

Goldie Byrd, PhD
Department of Biology

Tel: 919-560-6403
E-mail: gbyrd@wpo.nccu.edu

E-Mentoring Web Site

<http://www...>

nss12612@glaxowellcome.com.

Will there be anyone to help me deal with technical problems or other difficulties?

Absolutely. The E-Mentoring program will be monitored closely by facilitators at UNC-CH who will be happy to respond to any technical questions or other problems you may encounter.

The E-Mentoring program is sponsored by:

Partnership for Minority Advancement in the Biomolecular Sciences (PMABS)
<http://www.unc.edu/depts/pmabs/>

Howard Hughes Medical Institute (HHMI)

School of Information and Library Science, University of North Carolina at Chapel Hill <http://www.ils.unc.edu>

Appendix B: Participant Profile Form

E-mentoring



Electronic Mentoring for Tomorrow's Scientists

Welcome to the E-Mentoring Project!

E-mentoring is the establishment and continuance of a mentoring relationship between students, teachers, and mentors using communications and information technology. This project is being administered by

As part of the "Advanced Genetics Biology" course that you have enrolled in for the Spring 2000 semester, you will be interacting with a scientist in the field as part of the E-mentoring project.

We are currently developing profiles of all those participating. These profiles will help introduce students, scientists, and faculty to each other; as well as help us match you with an appropriate mentor.

To submit your profile, please complete the following form and return it during your next class .

*Please note that the information you provide for items that are ***italicized*** will be made available to all participants. Those items **not in italics** will be only available to the administrators of the E-mentoring project for matching purposes.

Name:

E-mail address (if available):

Major(s) & Minor(s):

Science topics I am most interested in discussing with a mentor (check as many as you wish):

<input type="checkbox"/>	General Biology	<input type="checkbox"/>	Chemistry
<input type="checkbox"/>	Biochemistry	<input type="checkbox"/>	Ecology
<input type="checkbox"/>	Biostatistics	<input type="checkbox"/>	Genetics
<input type="checkbox"/>	Bio-medical Engineering	<input type="checkbox"/>	Marine Science
<input type="checkbox"/>	Cell Biology	<input type="checkbox"/>	Other:
<input type="checkbox"/>	Molecular Biology/Biotechnology		

Career topics I am most interested in discussing with a mentor (check as many as you wish):

<input type="checkbox"/>	Medical school	<input type="checkbox"/>	Balancing career and family
<input type="checkbox"/>	Getting a job/internship	<input type="checkbox"/>	Publishing
<input type="checkbox"/>	Benefits of getting a Ph.D.	<input type="checkbox"/>	Professional organizations
<input type="checkbox"/>	Attending Conferences	<input type="checkbox"/>	Career options with a master's
<input type="checkbox"/>	Research	<input type="checkbox"/>	Other:
<input type="checkbox"/>	Science patents and inventions		

Please continue on next page....

Why I'm interested in biology:

What classes I take; what classes I really enjoy:

Career plans:

Free time interests; part-time job; family; unique qualities about me; interesting facts about me; etc...

Student Profile Example:

“My name is Pat Student and I'm a master's student Biology at Central. I first got interested in biology when I was a kid playing at the beach. I used to enjoy examining fish and other sea creatures that washed up on the beach. It seems gross now, but my parents introduced me to the wonders of living things.

In addition to my basic biology requirements, I have also taken some advanced chemistry courses.

Although I don't know much about how to become a bio-medical engineer, I think that's what I might like to do for a living.

I've lived in North Carolina my whole life. I have one brother, who also attends ECSU part-time. I enjoy fishing, running and reading John Grisham novels. I also love cats and can't wait to have one of my own once I graduate.”

Thank you for your time and attention! We look forward to working together with you this fall.

Please return this form during your next class.



Welcome to the E-Mentoring Project!

E-mentoring is the establishment and continuance of a mentoring relationship between students, teachers, and mentors using communications and information technology. This project is being administered by Dr. Diane Sonnenwald, Dr. Barbara Wildemuth, Victoria Kindon, and Emily Brassell of the School of Information and Library Science at the University of North Carolina at Chapel Hill. It is funded by OCD, PMABS, and the Howard Hughes Medical Institute.

We are currently developing profiles of all participants. These profiles will help introduce students, mentors, and faculty to each other, as well as help us match you with appropriate students.

To submit your profile, please complete this form. Please return your completed form to An envelope is enclosed for your convenience. Or you can fax the completed form to me at We would appreciate receiving your completed form as soon as possible. Thank you.

*Please note that the information you provide for items that are *italicized* will be made available to all participants. Those items **not in italics** will be only available to the project administrators for the purpose of matching students and mentors.

Name:

E-mail address:

Phone:

Mailing Address:

Field of Study (College Major):

Professional Area(s) of Expertise:

**Science topics I am most interested in discussing with students:
(Please check as many topics as you wish.)**

<input type="checkbox"/>	General Biology	<input type="checkbox"/>	Chemistry
<input type="checkbox"/>	Biochemistry	<input type="checkbox"/>	Ecology
<input type="checkbox"/>	Biostatistics	<input type="checkbox"/>	Genetics
<input type="checkbox"/>	Bio-medical Engineering	<input type="checkbox"/>	Marine Science
<input type="checkbox"/>	Cell Biology	<input type="checkbox"/>	Other:
<input type="checkbox"/>	Molecular Biology/Biotechnology		

**Career topics I am most interested in discussing with students:
(Please check as many topics as you wish.)**

<input type="checkbox"/>	Medical school	<input type="checkbox"/>	Balancing career and family
<input type="checkbox"/>	Getting a job/internship	<input type="checkbox"/>	Publishing
<input type="checkbox"/>	Benefits of getting a Ph.D.	<input type="checkbox"/>	Professional organizations
<input type="checkbox"/>	Attending Conferences	<input type="checkbox"/>	Career options with a master's
<input type="checkbox"/>	Research	<input type="checkbox"/>	Other:
<input type="checkbox"/>	Science patents and inventions		

Why I'm interested in biology/science:

Career history and goals:

Free time interests; part-time job; family; unique qualities about me; interesting facts about me; etc...

Mentor Profile Example:

“My name is Chris Mentor and I'm a researcher at Ortho-Clinical Diagnostics which is a division of Johnson & Johnson. I received my Bachelor and Master's degree in biochemistry from the University of Michigan in 1983. I first got interested in biology during my sophomore year in high school – dissecting the frogs was fun! I enjoyed learning how living things live and breathe.

After college, I worked in a cancer research lab in Boston. I thought I would go to medical school after a few years in the lab, but I realized I enjoyed research so much that I decided to continue in this line of work. In 1990 I moved to NJ and was lucky enough to land a satisfying research job at Ortho. I enjoy the fact that my daily work contributes to the field of biochemistry.

To keep abreast of advances in the field, I read scientific journals and try to attend conferences that are applicable to my work.

I currently live in Hoboken, NJ with my spouse and son. My spouse is a chemist at a local pharmaceutical firm. I enjoy fishing on the weekends and digging around in my garden.”

Thank you very much for your time and attention! We look forward to working together with you this fall.

Appendix C: Student-Mentor Matching Worksheet

MATCHING WORKSHEET

SCIENCE TOPICS

			<i>MAJOR</i>	<i>general bio</i>	<i>biochem</i>	<i>bioinformatics</i>	<i>biostats</i>	<i>bio-med engin</i>	<i>cell bio</i>	<i>comp sci</i>	<i>internat.</i>	<i>medicine</i>	<i>molecular b chem</i>	<i>ecology</i>
John Doe	S	chem		X		X			X					
Ann Brill	S	bio			X				X				X	
Dan Ward	S	bio						X	X		X			
Jane Doe	M	chem			X									
Bob Wren	M	chem		X									X	X
Holly Zo	M	bio					X				X			

MATCHING WORKSHEET

			CAREER TOPICS												
			MAJOR	<i>med school</i>	<i>job</i>	<i>phd</i>	<i>ms caree</i>	<i>career/family</i>	<i>prof orgs</i>	<i>publishing</i>	<i>conferen</i>	<i>teaching</i>	<i>lab</i>	<i>genetic</i>	<i>academic</i>
John Doe	S	chem				X									X
Ann Brill	S	bio		X									X		
Dan Ward	S	bio			X				X						
Jane Doe	M	chem						X	X		X		X		
Bob Wren	M	chem											X		X
Holly Zo	M	bio			X				X		X				

Appendix D: PowerPoint Training Presentations

E-Mentoring

Electronic mentoring for
tomorrow's scientists

Diane H. Sonnenwald Barbara M. Wildemuth

School of Information & Library Science
Collaborative Electronic Learning Lab (CELL)

Partnership for Minority Advancement in the
Biomolecular Sciences (PMABS)

Mentoring



An experienced person shares knowledge and provides advice, encouragement, and support to a less experienced person.



Electronic Mentoring

Establishing and maintaining a mentoring relationship between students, teachers, and mentors using communications and information technology



Integrated with a biology course, guided by policies and procedures, and supported by facilitators

A pilot study exploring the use of technology across distances in higher education.

Motivation for E-Mentoring Project

- Students in historically minority universities (HMUs) often:
 - lack access to information resources & expertise in the broader scientific community
 - have fewer opportunities to use cutting-edge communications & information technology
 - have limited opportunities to learn about corporate R&D
- Faculty mentors on campuses are fewer in number & have many students
- Corporate scientists traveling to campuses is costly
- Mentoring benefits all participants

Project Goals



- To connect undergraduate students at historically minority university (HMU) partners with mentors who can:
 - participate in in-depth discussions on science topics and/or questions
 - provide career advice
- To provide opportunities for all participants to learn about & use information and communication technologies
- To connect corporate scientists with students who are eager to learn & interested in science careers
- To conduct research on computer-mediated communication & information seeking

Benefits for Students



Students will have opportunities to:



- Interact 1-on-1 with an expert in their field
- Learn about the corporate view of science
- Develop a broader & more diverse set of contacts in your professional area of interest
- Gain practical experiences in technology & communication skills that are valuable in learning & work situations
- Increase your knowledge about biology, information resources, & career and internship opportunities

Benefits for Mentors



Mentors will have opportunities to:

- Help students learn about science & science careers
- Encourage and motivate students' learning
- Explore communications tools that are valuable in a variety of learning & work situations with students
- Help meet organizational goals by developing future employees & increasing diversity in the workforce
- Gain more experience in mentoring
- Participate in personally satisfying activities

Benefits for Glaxo-Wellcome

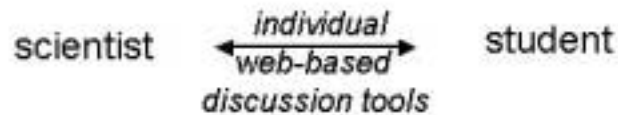


Glaxo-Wellcome will have opportunities to:

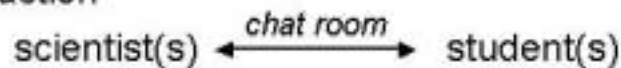
- Help provide cost-effective learning opportunities for potential future employees
- Establish a working relationships with faculty who can identify & help recruit future employees
- Potentially increase diversity in the workforce
- Participate in and access research in computer-mediated communication (virtual communities) & the use of technology in education

Types of E-Mentoring Communication

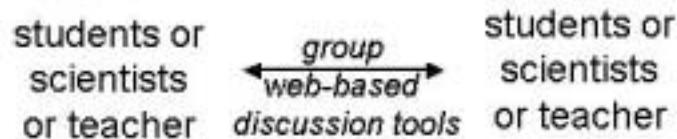
- Asynchronous, 1-to-1 interaction



- Synchronous, 1-to-many, many-to-many or 1-to-1 interaction



- Asynchronous, many-to-many interaction



Expectations for Mentors

Based on Research in Mentoring & CMC

- When possible, participate in the kick-off event and other class activities that include mentors
- Be proactive! Send at least 2 messages to your student(s) per week - even if you haven't heard from your student(s)
- Help your student understand the relationships between academic learning and the pursuit of their interests
- Help extend students' professional network
- Help extend students' use of information resources, including Internet resources
- Encourage your student to excel

Expectations for Mentors

Possible topics to discuss with students:

- career options
- corporate culture, e.g., describe your work day
- internship opportunities
- professional organizations
- course topics & assignments
- relevant information resources
- your experiences as a graduate student
- interpersonal communication & personal information you feel comfortable sharing

Expectations for Mentors

- Communicate with a facilitator, faculty member, and/or each other whenever you have a concern
- Use only the CELL e-mentoring tools for all communication with students, faculty, and/or facilitators
- Participate in our research connected with e-mentoring



Expectations for Students



- Communicate with your mentor on a regular basis
 - each message doesn't have to be lengthy
- Communicate with a facilitator, faculty member, and/or each other whenever you have a concern
- Use only the CELL e-mentoring tools to communicate
- Participate in our research connected with e-mentoring

Discussion Topics



Possible topics to discuss with mentors:

- career options
- corporate culture
- relevant information resources
- professional organizations
- course topics & assignments
- internship opportunities
- mentor's academic & professional experiences
- personal information you feel comfortable sharing

Research Goals

- Identify critical success factors for e-mentoring projects
- Increase our understanding of question-asking & problem resolution in a digital environment
- Investigate how interactions in a digital environment affect information horizons



Research Methods

- Prior to the program:
 - Survey to learn about your use of technology, information resources, etc.
 - Interview to learn about your previous experiences with mentoring & expectations
- During the program:
 - Archive messages among participants (interaction patterns & content)
- At the end of the semester:
 - Follow-up survey
 - Interview to learn about your experiences; what was most satisfying, least satisfying; what worked well; what could be improved

Accessing the Website

From a PC connected to the Internet:

1. Open **Netscape** (not Internet Explorer)



2. Type in URL – <http://www.ils.unc.edu/~cell/welcome.html>



Website: Welcome Page



Accessing the Website

- Click on "Enter" button for NCCU/GW



- Type in User Name and Password



If you lose your password, email Emily (brase@ils.unc.edu), Linwood (websl@ils.unc.edu) or Laura (chesl@ils.unc.edu).

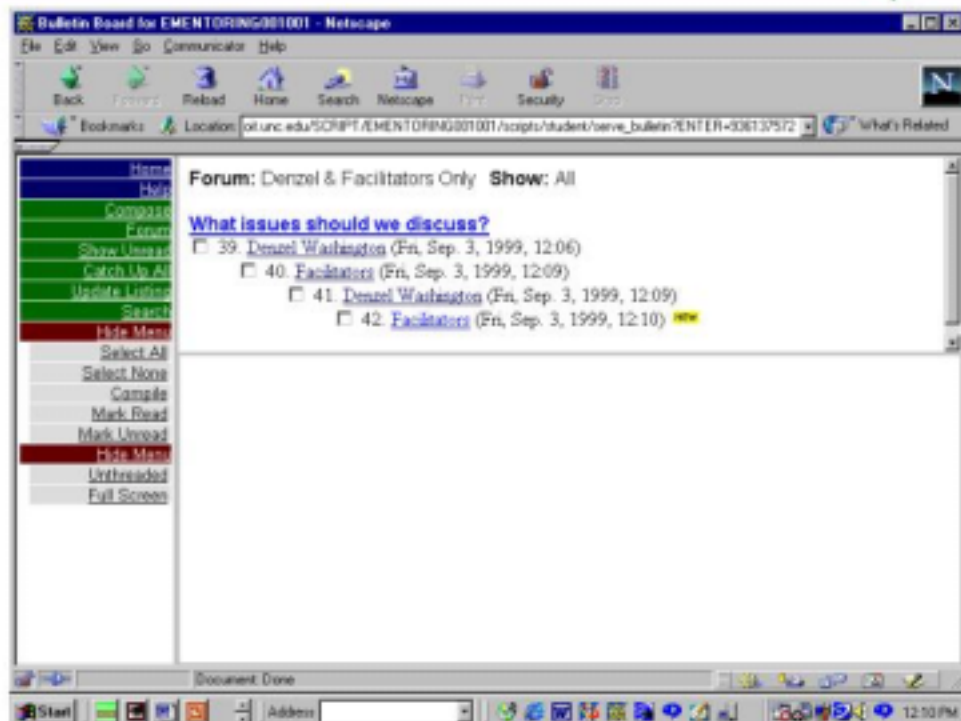
Website: Mentor View



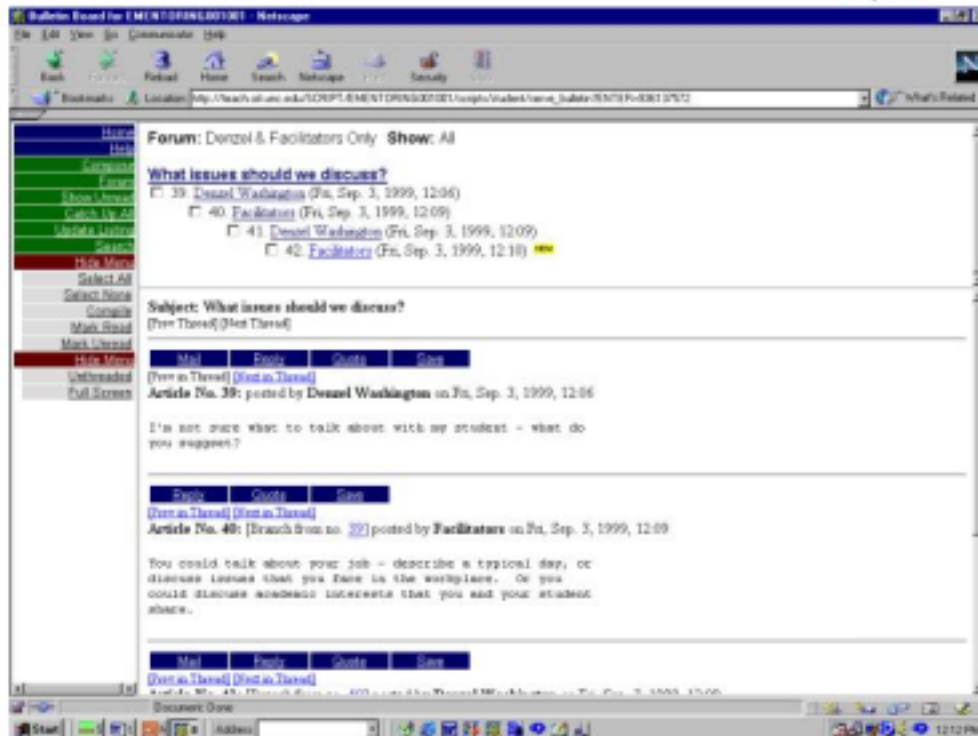
Website: Student View



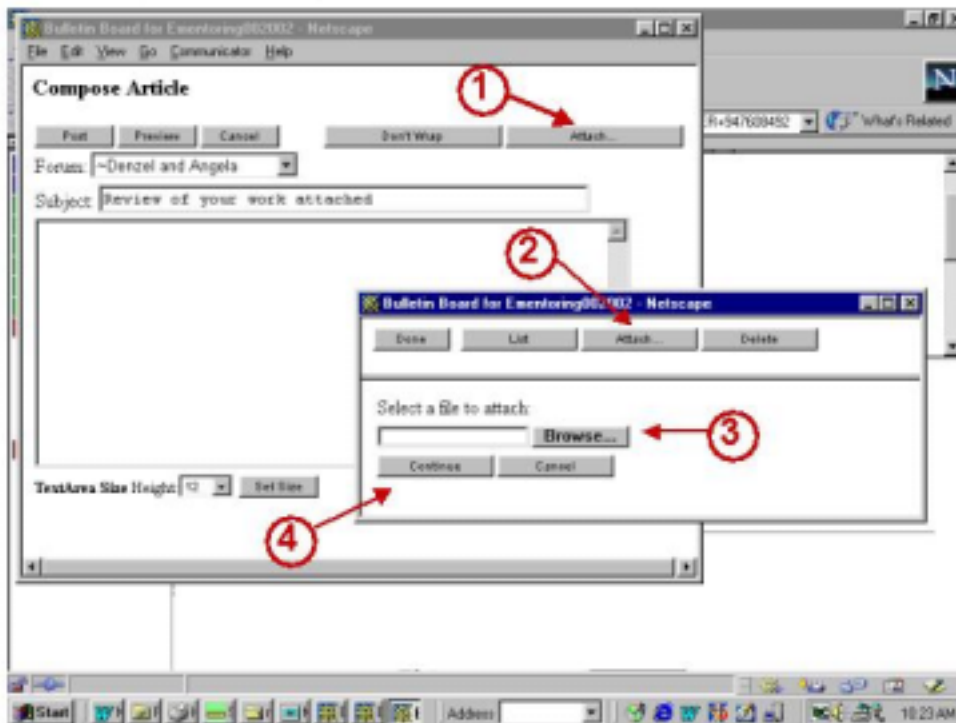
Website: Discussion Forum



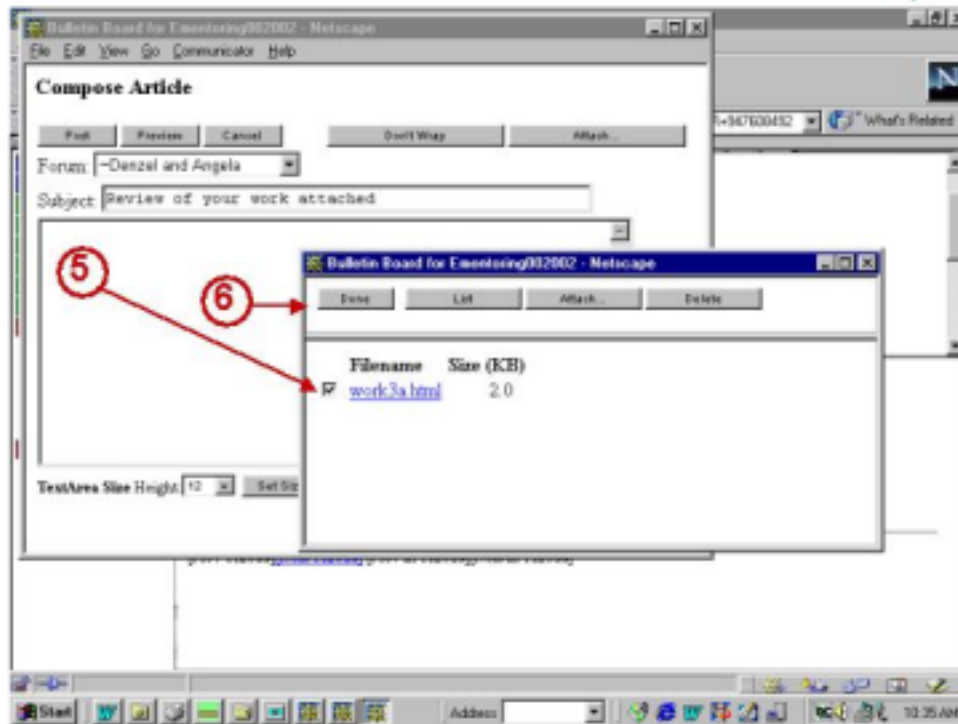
Website: Discussion Forum



Website: Attaching files



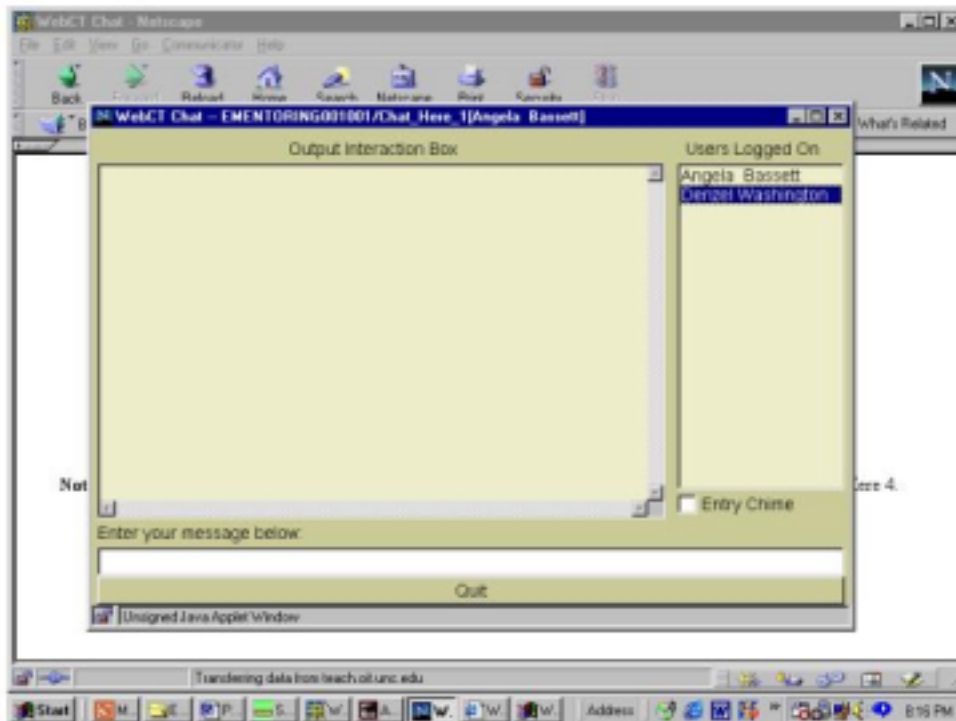
Website: Attaching files



Website: Real-Time Chat



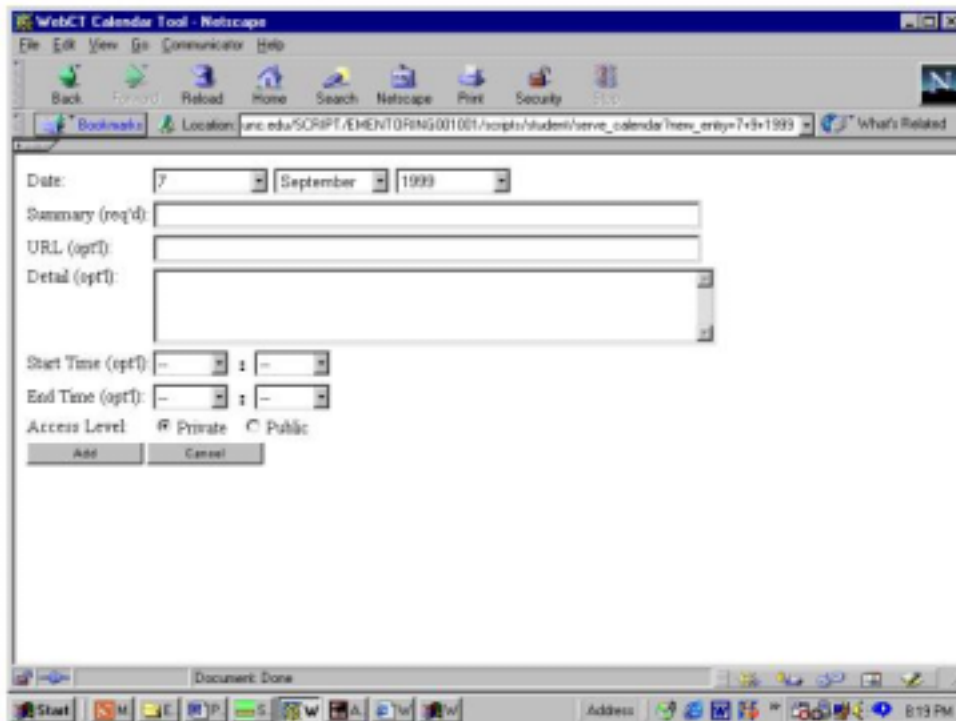
Website: Real-Time Chat



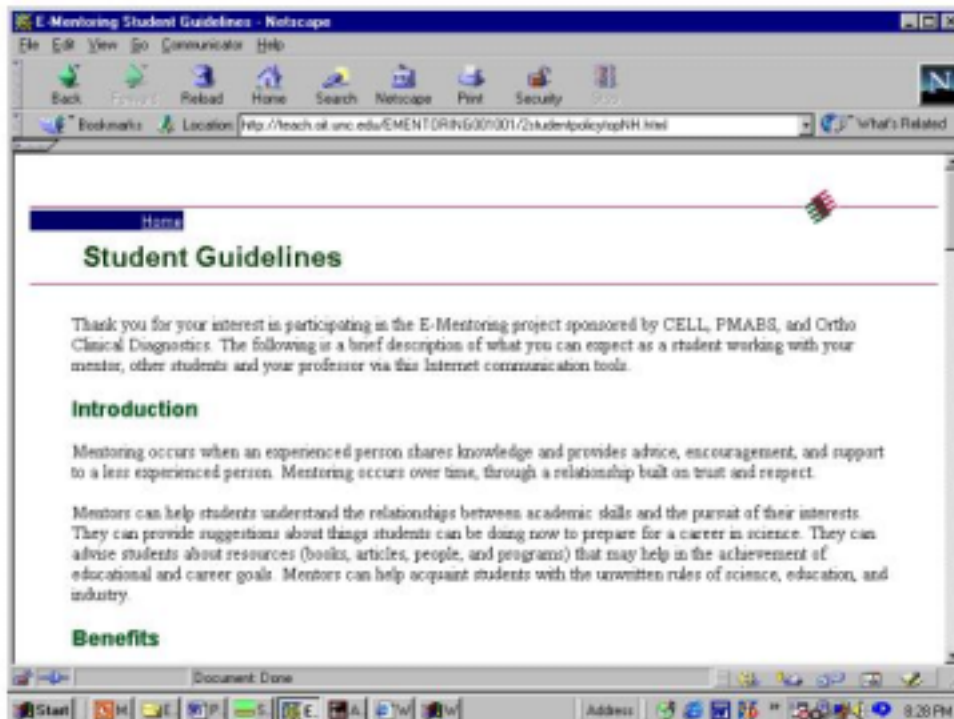
Website: Calendar



Website: Adding Calendar Entry



Website: Guidelines



Website: Participant Profiles

Facilitator Profiles '99 - Netscape

Home

Back to Facilitator

Facilitator Profiles



Diane Sonnenwald, School of Information and Library Science (SILS), University of North Carolina at Chapel Hill (UNC-CH).

I teach courses such as System Analysis, Research Methods, Collaboration, and a Seminar in Communication. In addition, I study how people collaborate, and how people seek, shape, use, and create information.

I've been an assistant professor at UNC-CH for four years. Before that, I was a visiting research fellow at Riso, the Danish National Research Laboratory. And before that, I worked at Bellcore in Morristown, NJ.

I know little about biology, but am very interested in collaboration and collaboration technology, and human information behavior--that is, how people search for information, share, use, and create information.

The professional organization I am most active in is ASIS, the American Society of Information Science.

Website: Netiquette

Netiquette - Netscape

Home

Go to next page

Communicating via the computer: Netiquette

A few conventions for communicating

People have had over 50,000 years' experience in the use of speech and gestures; over 5,000 years' experience in writing; over 100 years' experience using the telephone. We've had considerably less experience communicating using the computer.

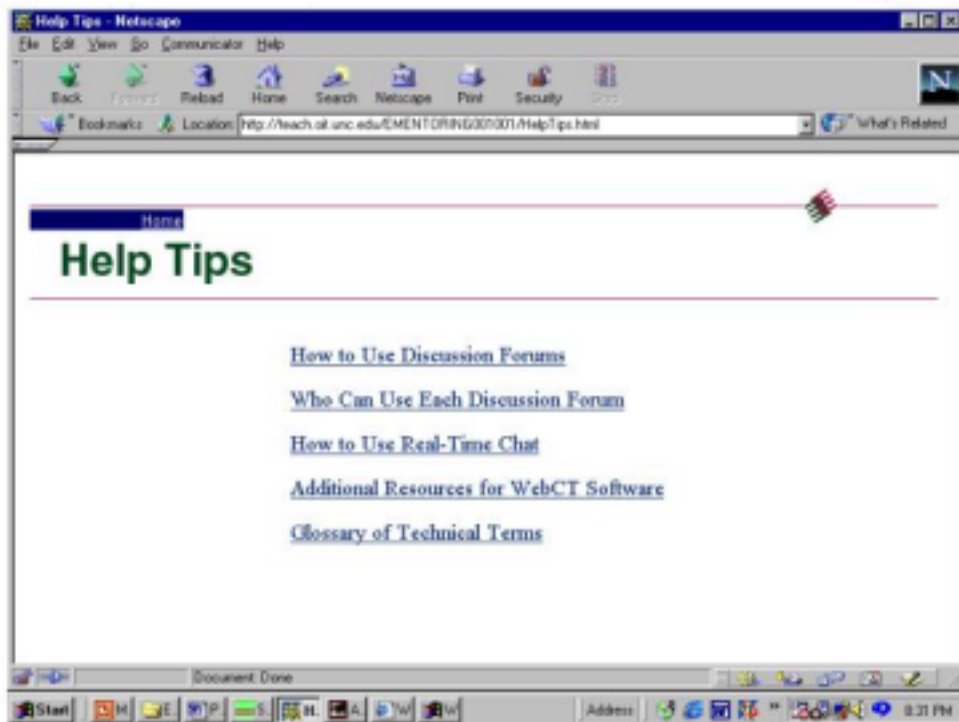
A set of "best practices" and conventions for communicating using the computer is evolving. Following are some of these practices and conventions. Use those you find helpful, disregard the rest.

Remember the human element

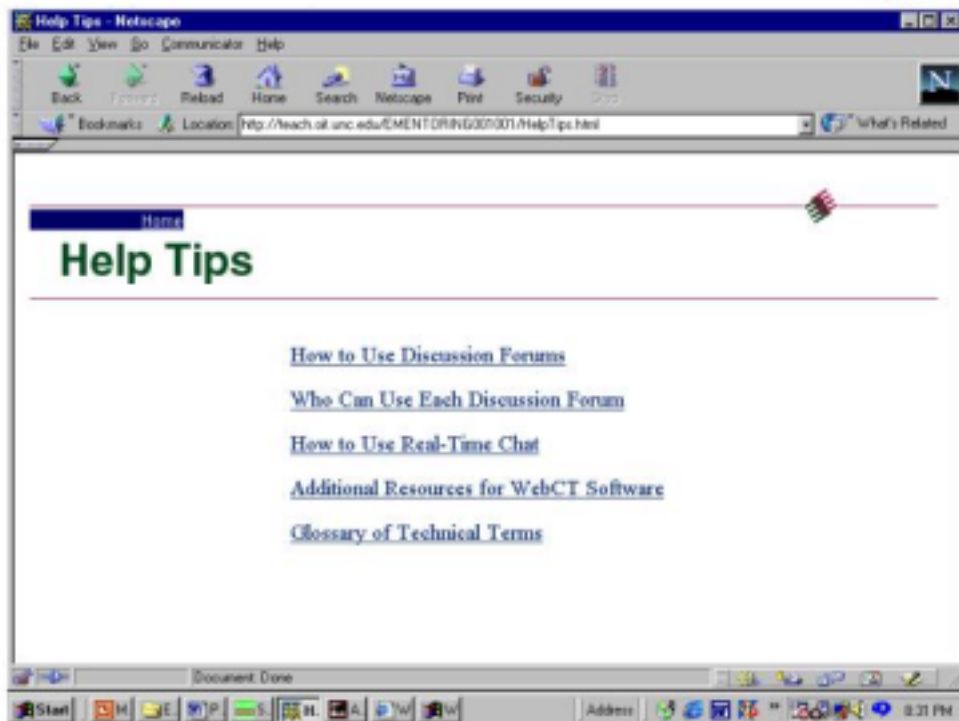
Remember there is a real live human being at the other end of your message, and you want them to understand you. This is easy to forget when typing on a computer screen.

Electronic messages are easy to misinterpret because there are no gestures, facial expressions, and voice intonations like there are when speaking face to face. Sometimes what is meant as a casual comment, or an attempt at humor or irony, is misinterpreted.

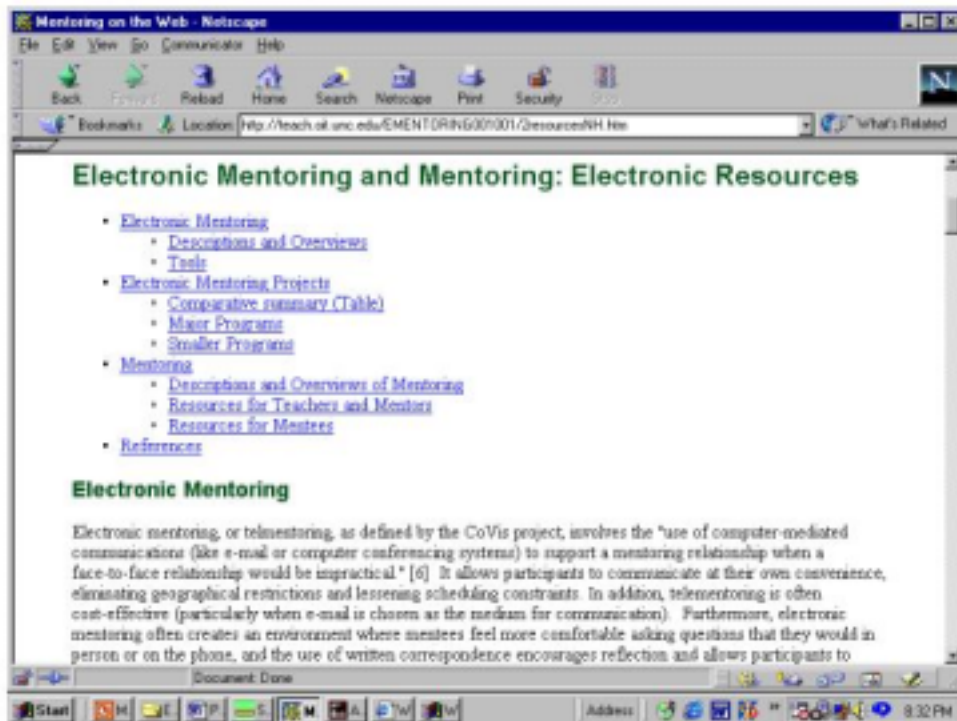
Website: Help Tips



Website: Help Tips



Website: Electronic Resources



Website: Syllabus

Syllabus

GENETICS -- BIO 5120 (3)
NORTH CAROLINA CENTRAL UNIVERSITY
DEPARTMENT OF BIOLOGY

INSTRUCTOR: G.S. BYRD

Office Location: 330 Lee Biology Building
Telephone: 566-6483
Fax: 566-5576
E-mail: gbyrd@ncps.uncu.edu

Accreditation Info: -- "Advancing Teaching, Scholarship, and Service through Diversity, Partnerships, and Technology"

Genetics (3), Biology 1120: A study of the molecular structure and function of genetic material, and the regulation of gene expression in prokaryotes.

Text: *Genes VI* by Benjamin Lewis, Oxford University Press 1997.

[Concepts](#) [Outline](#) [References](#) [Requirements](#) [Evaluation](#)



Netiquette: Remember the Human Element



- You are communicating with a real person & you want them to understand you
- Electronic messages are easy to misinterpret
 - no gestures, facial expressions, voice intonations, or 'timing'
 - casual comments, humor or irony are easily misunderstood
- People forms impressions based on the form & content of messages
 - when establishing a working relationship
 - spelling, punctuation



Netiquette: Some Typing Tricks



- Put line-breaks between paragraphs
- Do not use tabs
- TYPING IN ALL CAPITAL LETTERS IS LIKE SHOUTING
- typing in lower case letters is like whispering
- Limit your line length to 60 characters
- Use asterisks for emphasis
 - **very** helpful
 - **sigh**





Netiquette: Emoticons -or- Smileys



;-)	;)	I'm joking
:-(:(I'm upset
:/		perplexed, confused, embarrassed
%~)		confused
:-!		foot in mouth
:-o		shocked, yelling
:-e		disappointment
B-)		proud of something
:-#		my lips are sealed
X-)		brain dead



Netiquette: Forgive Mistakes



- Everyone makes mistakes
- When a message angers you, don't respond immediately
 - Pause & reread it later
 - Perhaps it was merely a bad choice of words
- Giving someone the benefit of the doubt can be worthwhile



Accessing the Website from home



To connect your computer at home to the Internet, you'll need:

1. Hardware - a **modem**
2. Software - a World Wide Web **browser** (Netscape or Internet Explorer)
3. An account with an **Internet service provider** like America Online, CompuServe, Mindspring, etc.

Appendix E: Other Training Materials



USING THE E-MENTORING WEBSITE

January 2000

Accessing the E-Mentoring Website

1. **Open Netscape.** (We have had problems with Internet Explorer – please use Netscape instead.)
2. **Go to the E-Mentoring “welcome” web page**



Type URL here



3. **Enter your user name and password**

If you lose your password, e-mail Linwood (websl@ils.unc.edu), Laura (chesl@ils.unc.edu) or Emilv (brase@ils.unc.edu).

Calendar

To add an entry to the calendar:

1. Click on “Calendar” icon
2. If you’re looking for a date that’s not in the current month, select the desired month with the drop-down menus at the top of the screen, and press “View”
3. Click on the desired day
4. Click on “New Entry”
5. Fill out the form that appears. You must fill out the “Summary” blank – that’s the caption that appears on the monthly calendar. The other blanks are optional. Select “Public” if you want everyone to read your entry or “Private” if it’s a note just to yourself. When you’ve completed the form, click “Add.”

Continued

Communicating with Other Participants

Discussion Forums

Visit the "Help Tips" section of the website for more information.

- 1. Choose the person or group you want to interact with**
 - Click on the corresponding icon on the home page
 - or Select the appropriate forum from the drop down list in the "Compose" window
 - or Click on "forum" button (in discussion forum menu) to see hyperlinks to all forums you can access

- 2. Continue an existing thread (discussion topic) by replying to a message**
 - Click on the message's subject (written in blue text) to open the message
 - Click on "Reply"
 - Write your message in the text box
 - Click on "Post" to send your message to the forum
 - Click on "Update Listing" to see your message

- 3. or Start a new thread by composing a new message**
 - Click on "Compose"
 - Write a title for the new thread in the "Subject" textbox
 - Follow same steps as replying to a message

To attach a file to your message

- After clicking on "Compose" or "Reply" and reaching the "Compose Article" dialog box, click on "Attach..." This will show you a list of all attached files (there shouldn't be any).
- Again, click on "Attach..."
- Select a file to attach (by typing in the filename or using the "Browse" feature)
- Click on "Continue"
- Click on "Done"

Chat (synchronous, text-based interaction)

1. Click on "Real-Time Chat"
2. Click on one of the rooms labeled "Chat Here"
3. Type your message and hit return
4. To send someone a private message, click on his/her name in the "Users Logged on" box
5. To exit, click on the "Quit" bar at the bottom of the window

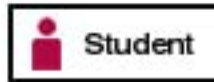
E-Mentoring



Electronic Mentoring for Tomorrow's Scientists

Explains expectations and

→ **Guidelines**



Student



Mentor



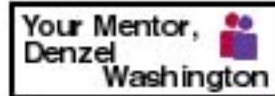
Faculty



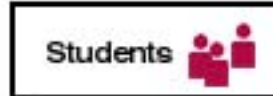
Facilitator

Discussion forums (bulletin boards) for discussions

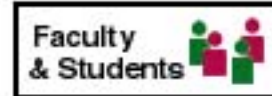
→ **Interact With...**



Your Mentor, Denzel Washington



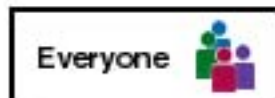
Students



Faculty & Students

Talk in real-time with other

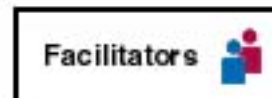
Read and post messages to your mentor here.



Everyone



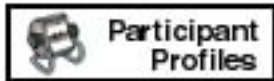
Real-Time Chat



Facilitators

Shows pictures and short biography

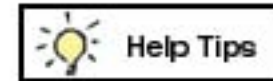
Reference



Participant Profiles



Netiquette

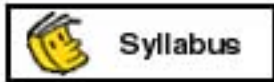


Help Tips



Mentoring Resources

Class Info



Syllabus



Calendar



Scrapbook

Syllabus for BIOL 5120 (3). Includes

Reminders about etiquette on the World Wide Web.

Lists holidays and events at NCCU and GW. You can also post private entries that only you can see.

Tips on using discussion forums and chat. Includes descriptions of forums and lists who has access to each forum.

Pictures from kickoff and other E-Mentoring events

Learn more about mentoring by visiting other websites that discuss mentoring programs and the mentoring process.

Appendix F: Kick-off Materials



Schedule

8:30 EST – Please meet in the “Kickoff Main” Forum. Read the message labeled “Directions” and begin!

8:50 EST – Divide into the small groups to which you have been assigned; enter the forum designated for your group. Begin working on “The Future of Fran” (see handout).

9:10 EST – Begin working on “Dr. Anaconda’s Mission” (Stay in your small groups).

9:30 EST – Move into your mentor/student forum and discuss your expectations for the upcoming weeks. Make plans for your next exchange of messages.

9:45 EST – Say goodbye for today!



Dr. Anaconda's Mission: Harvesting the Rare Curasoacabibi



Many of the world's tropical rainforests are being destroyed at an alarming rate. One of the obvious consequences of this destruction is the permanent disappearance of many forms of plant and animal life. In fact, medications to treat cardiovascular disorders, cancer and a number of other medical conditions are derived from some valuable plants that grow nowhere else on the planet.

Dr. Anaconda, a brilliant and well-known pharmacologist and pathologist, has been given the mission of saving the rare Curasoacabibi (cura-sew-a-ka-bee-bee) plant that contains a compound useful in treating the symptoms of sickle cell anemia and arresting the growth of 5 different cancers. Unfortunately, this plant blooms once every 40 years and the miracle extract can only be isolated from the Curasoacabibi blossoms. A recent survey estimated that only 500 of the plants remain in a remote region of the central Brazilian rainforest.

Dr. Anaconda has appointed you and several other scientists as members of the prestigious team who have the responsibility of locating, preserving, and exploiting this precious plant to better mankind.

While discussing Dr. Anaconda's mission, you may want to consider:

- How could we locate the plant?
- How could we preserve this special plant?
- How would we effectively collect the extract?
- What sort of political and ethical issues does the situation raise?



Life after Graduation: The Future of Fran



Fran Fitzgerald, twenty-five years old, graduates this May from UNC-Greensboro with a master's degree in biology. Fran isn't sure what to do next: Apply to PhD programs? Consider medical school? Start looking for a job? Even if she can narrow it down to one of those options, there are a million more questions to answer: Which programs? What kind of job? How to start looking for either one?

Fran has been in school since she was five years old; from high school, straight to college at Appalachian State University in Boone, NC, and then directly to UNC-G. She faced exactly the same dilemma her senior year at ASU and has never felt entirely sure about the decision she made then -- her move to Greensboro was largely motivated by the friends she has there. She's glad she'll have a master's degree soon, but is it enough? Will it get her the job she wants? What does she really want?

Medical school has never truly interested her; she hates hospitals; she doesn't want to operate on anybody, or examine anybody, or be called out of her warm bed in the middle of the night for an emergency . . . But her parents have always envisioned their little girl wearing a stethoscope around her neck. For as long as she can remember, they've steered her toward medicine, reminding her how proud they'd be to have a doctor in the family. And she does like pathology, the subject of her thesis. It surprises her how quickly the hours pass in the lab, laboring over diseased cells (although it makes her a little queasy to imagine these deformed monster-cells infesting real people).

She wonders if she could find a job related to pathology without an MD? Will she be able to get any sort of interesting, meaningful job without another degree -- something that will require her brain, not just basic lab skills? Fran isn't much interested in school for school's sake; she knows she doesn't want to teach at a university. But if she can't get a job she wants without another degree, she'd rather go ahead now and finish her schooling, before she gets used to making money and working a regular schedule. She'd really like to find a secure, well-paying job; her parents have really sacrificed to see her through school, and she'd like to repay them. And she and her boyfriend are talking about getting married, about the possibility of having kids fairly soon. She doesn't want to be too busy to spend time with him, or to hang out with her friends, or to sing in choir at church. . .

May is less than three months away. Fran is beginning to feel a little panicked.

While discussing Fran's future, you may want to consider some of these issues:

1. *General advice?* What general direction do you think Fran should take? Does it make sense for her to look for a job? Or should she explore graduate programs or medical school? Or is there another option, maybe internships?
2. *Job market?* What sort of job opportunities exist for Fran? Where can she find out about these opportunities?
3. *Balancing personal and professional?* Fran wants to have a satisfying, substantial career, but her personal life matters to her, too. She wants to keep room in her life for her family. She's willing to work hard, but she doesn't want to sacrifice all the activities she loves. Do you have any recommendations for Fran?

Appendix G: Certificates & Letters of Appreciation

CERTIFICATE OF APPRECIATION

This certificate is awarded to

Name of Student

North Carolina Central University

In recognition of your participation in:

E-Mentoring Program

 ***Electronic Mentoring for tomorrow's scientists***

Spring, 2000

In partnership with:

GlaxoWellcome

Collaborative Learning Laboratory

Partnership for Minority Advancement in the Biomolecular Sciences

University of North Carolina at Chapel Hill

Signature

Date

Signature

Date

CERTIFICATE OF APPRECIATION

This certificate is awarded to

Jane Mentor

Company name

In recognition of your contribution to:

E-Mentoring Program

 ***Electronic Mentoring for tomorrow's scientists***

Spring, 2000

In partnership with:

North Carolina Central University
Collaborative Electronic Learning Laboratory
Partnership for Minority Advancement in the Biomolecular Sciences
University of North Carolina at Chapel Hill

Signature

Date

Signature

Date



THE UNIVERSITY OF NORTH CAROLINA
AT
CHAPEL HILL

School of Information and Library Science
Phone# (919) 962-8065
Fax# (919) 962-8071

The University of North Carolina at Chapel Hill
CB# 3360, 100 Manning Hall
Chapel Hill, NC 27599-3360

May 26, 2000

Supervisor
Address

Dear **first-name of supervisor**,

We would like to express our appreciation for your **scientists'** valuable, multi-faceted contributions to the E-mentoring project and your support of their efforts. **Xxx and yyyy** volunteered their time and efforts to help mentor 11 graduate biology students at North Carolina Central University, a historically minority university, during the past several months. **They** answered students' questions about career possibilities, education issues, and scientific information resources. One student reported that her mentor helped her learn research techniques she had not been able to learn from her professors. Other students reported that their mentors helped them refine and add depth to their thinking about science careers. Still other students mentioned that their mentors introduced them to new information resources on the Internet. We very much appreciate the time and effort your scientists made to provide students with insights and information that is hard to obtain in their situation.

In addition, the scientists (**or XXX**) participated in two pre- and post-questionnaires and interviews. The information **they** provided in the questionnaires and interviews will help us evaluate the effectiveness and efficiency of the program, improving it for future students, scientists, and their organizations.

For Nancy's letter only: Nancy further contributed to the program by serving as the program coordinator at GlaxoWellcome. She helped identify mentors, facilitated the kick-off event and interviews, and answered our questions as they arose during the project. We very much appreciate her efforts.

In summary, **xxxx and yyyy** been generous with **their** time and ideas throughout the E-mentoring project. **They** made significant contributions to

students from lower socioeconomic backgrounds and assisted us in evaluating the project. The E-mentoring project would not have been possible without their contributions.

As the data is analyzed we will share the results with GlaxoWellcome. Already several historically minority universities have indicated an interest in having an E-mentoring program at their location because they see benefits for their students for such a program.

Thank you very much for your support of the scientists in this endeavor. If you have any questions or would like further information, please do not hesitate to contact us.

Sincerely,

Diane H. Sonnenwald
University of North Carolina at Chapel Hill

Barbara M. Wildemuth
University of North Carolina at Chapel Hill

Goldie Byrd, Ph.D.
North Carolina Central University

Appendix H: Poster



**Even though these undergraduate students
are at Elizabeth City State University, N.C.,
their mentors are OCD scientists:**

Jack Daiss Roy Snoke
Lisa DiMagno Bill Sutherland
Ted DiMagno Chuck Tackney
Tom Mercolino Bob Witkowski
Roberta Parente

E-Mentoring
 **Electronic mentoring for
tomorrow's scientists**

A partnership among
Ortho-Clinical Diagnostics, Elizabeth City State University &
the University of North Carolina at Chapel Hill

*Working together in a pilot project using electronic communication
tools to connect professional scientists and biology students at
historically minority universities*

Funding Sponsors include:

Ortho-Clinical Diagnostics * School of Information and Library Science at the University of North Carolina
Howard Hughes Medical Institute * Collaborative Electronic Learning Laboratory at the Partnership for
Minority Advancement in the Biomolecular Sciences *

Appendix I:

Research Surveys and Interviews

The surveys used in this research were developed using several different sources, including:

- The Flashlight Current Student Inventory, Version 1.0,¹
- The HP Telementor Program Evaluation, September 1996-May 1997, and
- Rice, R. E., & Tarin, P. (1993). Staying informed: scientific communication and use of information sources within disciplines. *ASIS '93: Proceedings of the 56th ASIS Annual Meeting, Volume 30 (Columbus, OH, October 24-28, 1993)*. Medford, NJ: Learned Information, for ASIS, 160-164.

The source of each item on each survey is provided in this appendix, just prior to the survey.

¹ Use of this survey was licensed from the Teaching, Learning & Technology Group of the American Association for Higher Education (<http://www.tltgroup.org/>).

Pre-Semester Survey: Students

The items in this survey came from the following sources:

FL = Flashlight Student Inventory, Version 1.0

HP = HP Telementor Program Evaluation

N/A = not applicable; item was developed for use in the current study.

Item number	Source
1	FL-0397S429
2	N/A
3	N/A
4	FL-0397S416
5	FL-0397S419
6	FL-0397S420
7	FL-0397S423
8	HP
9	HP
10	HP
11	HP
12	FL-0397S431
13	N/A
14	FL-0397S435
15	HP
16	FL-0397S397
17	FL-0397S402
18	FL-0397S403
19	N/A
20	N/A
21	FL-0397S406
22	FL-0397S407
23	FL-0397S404/5
24	FL-0397S408/09/10
25	FL-0397S413
26	FL-0397S414
27	HP
28	HP
29	N/A
30	Rice & Tarin
31	FL-0397S437
32	FL-0397S438
33	FL-0397S439



PRE-SEMESTER SURVEY: STUDENTS

(January 2000)

We appreciate you taking the time to complete the following questions. Your answers are important because they may shape the future of the E-Mentoring program by enabling us to build the best E-Mentoring system possible. Thank you very much.

Name _____

Academic Profile

1. Prior to this semester, how many credits have you completed toward your graduate degree?

_____ credits

2. Are you a full-time student or a part-time student?

Full-time student

Part-time student

3. Please list the graduate biology courses that you've already taken at Central.

_____	_____
_____	_____
_____	_____

4. Why did you decide to take this course? (Check all that apply.)

to fulfill a general education requirement

to fulfill a requirement for my major

the subject matter looked interesting

the instructor has a good reputation

it was offered at a convenient time

it was offered at a convenient location

it was offered via _____ technology

other (please specify) _____

5. Do you plan to earn a degree from this university?

Yes

No

6. What is the highest degree you plan to earn from any college or university?

Certificate

A.A. or A.A. S.

B.A. / B.S.

M.A. / M.S.

Ph.D. / Ed.D.

J.D.

M.D.

other (please specify _____)

I don't expect to earn a degree.

7. Which of the following best describe(s) your reason for taking college courses at this time? (Check all that apply.)

- to advance in current job or career
- to discover new job opportunities
- personal enrichment
- to earn a college degree
- other (please specify: _____)

8. Doing well in school is _____ to me.

- important
- somewhat important
- somewhat unimportant
- unimportant

9. I feel I have _____ amount of responsibility for my own learning at school.

- a great
- some
- little
- no

10. I feel _____ in my classwork at school.

- very involved
- somewhat involved
- somewhat uninvolved
- uninvolved

11. I feel I have the ability to pursue a career in science.

- strongly agree
- agree
- am unsure
- disagree
- strongly disagree

12. At the end of last term, what was your grade point average at this institution?

- A+ or A
- A- or B+
- B or B-
- C
- D or F

13. Do you live on campus or off campus?

- On campus
- Off campus

14. If you live off campus, on average how many hours per week do you spend on campus excluding time spent in classes or working for pay?

_____ hours per week

Expectations of the E-Mentoring Program

15. How do you expect to be affected by your mentor or your participation in the E-mentoring program?
(Select from the items below the top three items that you believe represent the greatest impact areas.)

- Increase interest in science
- Increase science proficiency
- Improve grades
- Enhance career choices
- Increase motivation to succeed at school
- Increase self-confidence
- Increase involvement at school
- Increase use of technology
- Develop friendship, personal relationship with mentor
- Other _____

Technology/Information Use

Rate your ability to do each of the following:

(Circle the appropriate number, from 1, no knowledge/ability, to 5, expert user.)

	No knowledge/ ability	Some knowledge, but little ability	Novice user	Inter- mediate user	Expert user
16. Create a word processed document on a computer	1	2	3	4	5
17. Send and receive e-mail	1	2	3	4	5
18. Search for information on the Internet/World Wide Web	1	2	3	4	5
19. Participate in online chat sessions	1	2	3	4	5
20. Participate in threaded e-mail discussions (i.e., use electronic bulletin boards)	1	2	3	4	5
21. Create or edit a World Wide Web site (using such programs as html, java, etc.)	1	2	3	4	5
22. Electronically send and receive files by way of the computer (over a modem, the Internet/WWW etc.)	1	2	3	4	5
23. Program a computer using a programming language (such as Fortran, C, C++, or a database language such as Foxpro or Oracle, etc.)	1	2	3	4	5

24. What type of computer do you use? (Check all that apply.)

	Macintosh/ Apple	DOS/ Windows	Windows/ NT	Unix	Other (please specify)*	Not applicable
At home?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In college/university computer lab (either on campus or at a remote/ community site)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*Specify other type of computer: Work: _____ Home: _____

College/university lab: _____

25. Which Internet/World Wide Web browser do you use? (Check all that apply.)

- Netscape
- Microsoft Internet Explorer
- Mosaic
- None/Not Applicable
- Don't Know
- Other (please specify: _____)

26. How satisfied are you with the speed with which your computer system connects to the Internet or World Wide Web...

	Very Dissatisfied	Dissatisfied	Satisfied	Very Satisfied	No Basis for Judgment/ Not Applicable
From home?	1	2	3	4	<input type="radio"/>
From work?	1	2	3	4	<input type="radio"/>
From Central?	1	2	3	4	<input type="radio"/>

27. At school and/or work, I use computers mostly... (Select from the items below the top two items that you believe represent most of your computer use.)

- to play games
- for word processing
- for class projects
- to use e-mail
- to access the Internet
- to do graphic design
- to design web pages
- to do programming
- other _____

28. At home, I use computers mostly... (Select from the items below the top two items that you believe represent most of your computer use.)

- to play games
- for word processing
- for class projects
- to use e-mail
- to access the Internet
- to do graphic design
- to design web pages
- to do programming
- other _____

29. How many hours per week do you use your computer for personal, study, or work-related reasons?

- Less than 1 hour
- 1 to 5 hours
- 5 to 10 hours
- 21 to 40 hours
- over 40 hours/week

30. How many of the following information resources have you used during the past two months? (Check all that apply.)

- Browsed materials in corporate/university library
- Studied materials in corporate/university library
- Borrowed materials from corporate/university library
- Photocopied materials from corporate/university library
- Searched online library catalog
- Searched for scholarly/professional materials in printed abstract & index services
- Searched for scholarly/professional materials via CD-ROM databases
- Searched for scholarly/professional materials from the World Wide Web
- Received preprints or drafts of papers from colleagues/professors
- Shared scholarly/professional interests with colleagues/peers in face-to-face communication
- Shared scholarly/professional interests with colleagues/peers in electronic communication

Demographic Profile

31. Age: _____

32. Sex: Male Female

33. Race/Ethnicity: (Check all that apply.)

- American Indian/Alaskan Native
- African-American/Black
- Asian/Pacific Islander
- White
- Hispanic/Latino
- Other: _____

Thank you for completing this survey.

Pre-Semester Survey: Mentors

The items in this survey came from the following sources:

FL = Flashlight Student Inventory, Version 1.0

HP = HP Telementor Program Evaluation

N/A = not applicable; item was developed for use in the current study.

Item number	Source
1	HP
2	N/A
3	FL-0397S397
4	FL-0397S402
5	FL-0397S403
6	N/A
7	N/A
8	FL-0397S406
9	FL-0397S407
10	FL-0397S404/5
11	FL-0397S408/09/10
12	FL-0397S413
13	FL-0397S414
14	HP
15	HP
16	N/A
17	Rice & Tarin
18	FL-0397S437
19	FL-0397S438
20	FL-0397S439



PRE-SEMESTER SURVEY: MENTORS (January 2000)

We appreciate you taking the time to complete the following questions. Your answers are important because they may shape the future of the E-Mentoring program by enabling us to build the best E-Mentoring system possible. Thank you very much.

Expectations for the E-Mentoring Program

1. How do you expect to affect the student(s) you are mentoring? (Select from the items below the top three items that you believe represent the greatest impact areas.)

- Increase interest in science
- Increase science proficiency
- Improve grades
- Enhance career choices
- Increase motivation to succeed at school
- Increase self-confidence
- Increase involvement at school
- Increase use of technology
- Develop friendship, personal relationship between mentor and student
- Other _____

2. How do you expect to be affected by the E-Mentoring program and your students? (Select from the items below the top three items that you believe represent the greatest impact areas.)

- Help meet organizational goals by developing future employees and increasing diversity in the workforce
- Develop my professional network by making new contacts
- Gain personal satisfaction from helping others
- Gain more experience in mentoring
- Increase my own use of technology
- Learn (or re-learn) about biology topics that I wouldn't otherwise take the time or opportunity to explore
- Learn about contemporary science education at the university level
- Meet people who are different from myself (in age, race and ethnicity, cultural background, etc.)
- Develop friendships, personal relationships with students
- Other _____

Technology/Information Use

Rate your ability to do each of the following:

(Circle the appropriate number, from 1, no knowledge/ability, to 5, expert user.)

	No knowledge/ ability	Some knowledge, but little ability	Novice user	Inter- mediate user	Expert user
3. Create a word processed document on a computer	1	2	3	4	5
4. Send and receive e-mail	1	2	3	4	5

	No knowledge/ ability	Some knowledge, but little ability	Novice user	Inter- mediate user	Expert user
5. Search for information on the Internet/World Wide Web	1	2	3	4	5
6. Participate in online chat sessions	1	2	3	4	5
7. Participate in threaded e-mail discussions (i.e., use electronic bulletin boards)	1	2	3	4	5
8. Create or edit a World Wide Web site (using such programs as html, java, etc.)	1	2	3	4	5
9. Electronically send and receive files by way of the computer (over a modem, the Internet/WWW, etc.)	1	2	3	4	5
10. Program a computer using a programming language (such as Fortran, C, C++, or a database language such as Foxpro or Oracle, etc.)	1	2	3	4	5

11. What type of computer do you use? (Check all that apply.)

	Macintosh/ Apple	DOS/ Windows	Windows/ NT	Unix	Other (please specify)*	Not applicable
At home?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In college/university computer lab (either on campus or at a remote/ community site)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*Specify other type of computer: Work: _____ Home: _____

12. Which Internet/World Wide Web browser do you use? (Check all that apply.)

- Netscape
- Microsoft Internet Explorer
- Mosaic
- None/Not Applicable
- Don't Know
- Other (please specify: _____)

13. How satisfied are you with the speed with which your computer system connects to the Internet or World Wide Web...

	Very Dissatisfied	Dissatisfied	Satisfied	Very Satisfied	No Basis for Judgment/ Not Applicable
From work?	1	2	3	4	<input type="radio"/>
From home?	1	2	3	4	<input type="radio"/>

14. At work, I use computers mostly... (Select from the items below the top two items that you believe represent most of your computer use.)

- to find information
- for word processing
- for project management
- to use e-mail
- to access the Internet
- to do graphic design
- to create presentation materials (e.g., talk slides)
- to design web pages
- to do programming
- other _____

15. At home, I use computers mostly... (Select from the items below the top two items that you believe represent most of your computer use.)

- to play games
- to help my children with their homework
- to write personal letters
- to manage personal finances
- to find information
- for word processing
- for project management
- to find information
- to use e-mail
- to access the Internet
- to do graphic design
- to create presentation materials (e.g., talk slides)
- to design web pages
- to do programming
- other _____

16. How many hours per week do you use your computer for personal, study, or work-related reasons?

- Less than 1 hour
- 1 to 5 hours
- 5 to 10 hours
- 11 to 20 hours
- 21 to 40 hours
- over 40 hours/week

17. How many of the following information resources have you used during the past two months? (Check all that apply.)

- Browsed materials in corporate/university library
- Studied materials in corporate/university library
- Borrowed materials from corporate/university library
- Photocopied materials from corporate/university library
- Searched online library catalog
- Searched for scholarly/professional materials in printed abstract & index services
- Searched for scholarly/professional materials via CD-ROM databases
- Searched for scholarly/professional materials from the World Wide Web
- Received preprints or drafts of papers from colleagues/professors
- Shared scholarly/professional interests with colleagues/peers in face-to-face communication
- Shared scholarly/professional interests with colleagues/peers in electronic communication

Demographic Profile

18. Age: _____

19. Sex: Male Female

20. Race/Ethnicity: (Check all that apply.)

- American Indian/Alaskan Native
- African-American/Black
- Asian/Pacific Islander
- White
- Hispanic/Latino
- Other: _____

Thank you for completing this survey.

Post-Semester Survey: Students

The items in this survey came from the following sources:

FL = Flashlight Student Inventory, Version 1.0

HP = HP Telementor Program Evaluation

N/A = not applicable; item was developed for use in the current study.

Item number	Source
1	HP
2	HP
3	HP
4	HP
5	HP
6	HP
7	HP
8	HP
9	HP
10	HP
11	FL-0397S397
12	FL-0397S402
13	FL-0397S403
14	N/A
15	N/A
16	FL-0397S406
17	FL-0397S407
18	FL-0397S404/5
19	HP
20	HP
21	N/A
22	Rice & Tarin
23	FL-0397S112
24	FL-0397S110
25	FL-0397S113
26	FL-0397S114
27	FL-0397S115
28	FL-0397S116
29	FL-0397S117
30	FL-0397S118
31	FL-0397S121
32	FL-0397S119
33	FL-0397S120
34	FL-0397S122
35	FL-0397S123
36	FL-0397S124
37	FL-0397S125

38	FL-0397S127
39	FL-0397S128
40	FL-0397S129
41	FL-0397S130
42	FL-0397S145
43	FL-0397S138
44	FL-0397S139
45	FL-0397S140
46	FL-0397S142
47	FL-0397S143
48	FL-0397S144
49	FL-0397S131
50	FL-0397S132
51	FL-0397S135
52	FL-0397S136
53	FL-0397S137
54	FL-0397S315
55	FL-0397S316
56	FL-0397S317



POST-SEMESTER SURVEY: STUDENTS

(April/May 2000)

We appreciate you taking the time to complete the following questions. Your answers are important because they can shape the future of the E-Mentoring program by enabling us to build the best E-Mentoring system possible. Thank you very much.

Academic Profile/Expectations

1. Doing well in school is _____ to me.
 - important
 - somewhat important
 - somewhat unimportant
 - unimportant

2. I feel I have _____ amount of responsibility for my own learning at school.
 - a great
 - some
 - little
 - no

3. I feel _____ in my classwork at school.
 - very involved
 - somewhat involved
 - somewhat uninvolved
 - uninvolved

4. I feel I have the ability to pursue a career in science.
 - strongly agree
 - agree
 - am unsure
 - disagree
 - strongly disagree

Effects of the E-Mentoring Program

5. How were you affected by your mentor or your participation in the E-mentoring program? (Select from the items below the top three items that you believe represent the greatest impact areas.)
 - Increased interest in science
 - Increased science proficiency
 - Improved grades
 - Enhanced career choices
 - Increased motivation to succeed at school
 - Increased self-confidence
 - Increased involvement at school
 - Increased use of technology
 - Developed friendship, personal relationship with mentor
 - Other _____

Rate your level of agreement with each of the following statements:
 (Circle the appropriate number, from 1, strongly disagree, to 5, strongly agree.)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
6. My mentor was interested in me.	1	2	3	4	5
7. I was comfortable asking my mentor questions.	1	2	3	4	5
8. I am interested in continuing my relationship with my mentor.	1	2	3	4	5
9. I am interested in meeting my mentor face to face.	1	2	3	4	5
10. The overall quality of the mentor-student match was _____.					
	<input type="radio"/> very poor <input type="radio"/> poor <input type="radio"/> neutral <input type="radio"/> good <input type="radio"/> excellent				

Technology/Information Use

Rate your ability to do each of the following:
 (Circle the appropriate number, from 1, no knowledge/ability, to 5, expert user.)

	No knowledge/ ability	Some knowledge, but little ability	Novice user	Inter- mediate user	Expert user
11. Create a word processed document on a computer	1	2	3	4	5
12. Send and receive e-mail	1	2	3	4	5
13. Search for information on the Internet/World Wide Web	1	2	3	4	5
14. Participate in online chat sessions	1	2	3	4	5
15. Participate in threaded e-mail discussions (i.e., use electronic bulletin boards)	1	2	3	4	5
16. Create or edit a World Wide Web site (using such programs as html, java, etc.)	1	2	3	4	5

	No knowledge/ ability	Some knowledge, but little ability	Novice user	Inter- mediate user	Expert user
17. Electronically send and receive files by way of the computer (over a modem, the Internet/WWW etc.)	1	2	3	4	5
18. Program a computer using a programming language (such as Fortran, C, C++, or a database language such as Foxpro or Oracle, etc.)	1	2	3	4	5

19. At school and/or work, I use computers mostly... (Select from the items below the top two items that you believe represent most of your computer use.)

- to play games
- for word processing
- for class projects
- to use e-mail
- to access the Internet
- to do graphic design
- to design web pages
- to do programming
- other _____

20. At home, I use computers mostly... (Select from the items below the top two items that you believe represent most of your computer use.)

- to play games
- for word processing
- for class projects
- to use e-mail
- to access the Internet
- to do graphic design
- to design web pages
- to do programming
- other _____

21. How many hours per week do you use your computer for personal, study, or work-related reasons?

- Less than 1 hour
- 1 to 5 hours
- 5 to 10 hours
- 11 to 20 hours
- 21 to 40 hours
- over 40 hours/week

22. How many of the following information resources have you used during the past two months? (Check all that apply.)

- Browsed materials in corporate/university library
- Studied materials in corporate/university library
- Borrowed materials from corporate/university library
- Photocopied materials from corporate/university library
- Searched online library catalog
- Searched for scholarly/professional materials in printed abstract & index services
- Searched for scholarly/professional materials via CD-ROM databases
- Searched for scholarly/professional materials from the World Wide Web
- Received preprints or drafts of papers from colleagues/professors
- Shared scholarly/professional interests with colleagues/peers in face-to-face communication
- Shared scholarly/professional interests with colleagues/peers in electronic communication

Integration of Technology into Coursework

Think about a similar course you have taken that relied primarily on face-to-face discussions. Compared to that course, because of the way this course incorporated the E-Mentoring program, how likely were you to: (Check the appropriate circle, from much more likely to much less likely.)

	Much more likely	Somewhat more likely	About the same	Somewhat less likely	Much less likely	No basis for judgment/ Not applicable
23. ... <u>actively</u> participate in scheduled discussions about the course material (such as an in-class discussion section or a computer forum).	1	2	3	4	5	<input type="radio"/>
24. ...ask for clarification when you didn't understand something.	1	2	3	4	5	<input type="radio"/>
25. ...communicate with people from around the world.	1	2	3	4	5	<input type="radio"/>
26. ...discuss the ideas and concepts taught in <u>this course</u> with other students.	1	2	3	4	5	<input type="radio"/>
27. ...work on assignments with other students.	1	2	3	4	5	<input type="radio"/>
28. ...ask other students for comments on your course work.	1	2	3	4	5	<input type="radio"/>
29. ...feel isolated from other students.	1	2	3	4	5	<input type="radio"/>
30. ...obtain help understanding course material from students/peers who do not attend this university.	1	2	3	4	5	<input type="radio"/>

	Much more likely	Somewhat more likely	About the same	Somewhat less likely	Much less likely	No basis for judgment/ Not applicable
31. ...miss comments made during a discussion about the ideas and concepts taught in this course.	1	2	3	4	5	<input type="radio"/>
32. ...received <u>detailed</u> comments on assignments from the instructor.	1	2	3	4	5	<input type="radio"/>
33. ...receive comments from the instructor on assignments <u>quickly</u> .	1	2	3	4	5	<input type="radio"/>
34. ...tell the instructor when you have a complaint or suggestion about the course.	1	2	3	4	5	<input type="radio"/>
35. ...discuss your academic goals and/or career plans with the instructor.	1	2	3	4	5	<input type="radio"/>
36. ...feel isolated from the instructor.	1	2	3	4	5	<input type="radio"/>
37. ...discuss the ideas and concepts taught in <u>this course</u> with the instructor.	1	2	3	4	5	<input type="radio"/>
38. ...get to know people who are different from you in their cultural and socioeconomic background.	1	2	3	4	5	<input type="radio"/>

Indicate how strongly you agree or disagree with each of the following statements:
(Circle the appropriate number, from 1, strongly agree, to 4, strongly disagree.)

Because of the way this course uses electronic communication:

	Strongly agree	Agree	Disagree	Strongly disagree	No basis for judgment/ Not applicable
39. ...I put more thought into my comments.	1	2	3	4	<input type="radio"/>
40. ...I feel more comfortable asking an awkward question.	1	2	3	4	<input type="radio"/>
41. ...it is difficult to relate to the other students in <u>this class</u> .	1	2	3	4	<input type="radio"/>
42. ...it is easier to work with someone from a racial or cultural background different from my own.	1	2	3	4	<input type="radio"/>
43. ...I waste too much time sorting through my messages to find the few that are useful.	1	2	3	4	<input type="radio"/>

Because of the way this course uses electronic communication:

	Strongly agree	Agree	Disagree	Strongly disagree	No basis for judgment/ Not applicable
44. ...I waste too much time communicating with others on topics that are not directly related to my course work.	1	2	3	4	<input type="radio"/>
45. ...I usually must wait a long time to use a computer.	1	2	3	4	<input type="radio"/>
46. ...I spent too much time learning how to use the E-Mentoring Web site.	1	2	3	4	<input type="radio"/>
47. ...I am better able to juggle my course work with my work and/or home responsibilities.	1	2	3	4	<input type="radio"/>
48. ...I put in less time traveling to and from the campus.	1	2	3	4	<input type="radio"/>
49. ...I don't receive responses to my comments.	1	2	3	4	<input type="radio"/>
50. ...I feel more comfortable disagreeing with the instructor.	1	2	3	4	<input type="radio"/>
51. ...I am at a disadvantage, because I do not possess adequate <u>computer</u> skills.	1	2	3	4	<input type="radio"/>
52. ...I at a disadvantage because I do not possess adequate <u>typing</u> skills.	1	2	3	4	<input type="radio"/>
53. ...I spend more time studying.	1	2	3	4	<input type="radio"/>

Indicate how strongly you agree or disagree with each of the following statements:
(Circle the appropriate number, from 1, strongly agree, to 4, strongly disagree.)

The technologies used in this course (the E-mentoring Web site and the World Wide Web):

	Strongly agree	Agree	Disagree	Strongly disagree	No basis for judgment/ Not applicable
54. ...did not work the way they were supposed to.	1	2	3	4	<input type="radio"/>
55. ...were appropriate for performing the tasks required.	1	2	3	4	<input type="radio"/>
56. ...were overrated.	1	2	3	4	<input type="radio"/>

Thank you for completing this survey.

Post-Semester Survey: Mentors

The items in this survey came from the following sources:

FL = Flashlight Student Inventory, Version 1.0

HP = HP Telementor Program Evaluation

N/A = not applicable; item was developed for use in the current study.

Item number	Source
1	N/A
2	Rice & Tarin
3	FL-0397S315
4	FL-0397S316
5	FL-0397S317
6	HP
7	HP
8	HP
9	HP
10	HP
11	HP



POST-SEMESTER SURVEY: MENTORS

(April/May 2000)

We appreciate you taking the time to complete the following questions. Your answers are important because they may shape the future of the E-Mentoring program by enabling us to build the best E-Mentoring system possible. Thank you very much.

Technology/Information Use

1. How many hours per week do you use your computer for personal, study, or work-related reasons?

- Less than 1 hour
- 1 to 5 hours
- 5 to 10 hours
- 11 to 20 hours
- 21 to 40 hours
- over 40 hours/week

2. How many of the following information resources have you used during the past two months? (Check all that apply.)

- Browsed materials in corporate/university library
- Studied materials in corporate/university library
- Borrowed materials from corporate/university library
- Photocopied materials from corporate/university library
- Searched online library catalog
- Searched for scholarly/professional materials in printed abstract & index services
- Searched for scholarly/professional materials via CD-ROM databases
- Searched for scholarly/professional materials from the World Wide Web
- Received preprints or drafts of papers from colleagues/professors
- Shared scholarly/professional interests with colleagues/peers in face-to-face communication
- Shared scholarly/professional interests with colleagues/peers in electronic communication

Indicate how strongly you agree or disagree with each of the following statements:
(Circle the appropriate number, from 1, strongly agree, to 4, strongly disagree.)

The technologies used in this course (the E-mentoring Web site and the World Wide Web):

	Strongly agree	Agree	Disagree	Strongly disagree	No basis for judgment/ Not applicable
3. ...did not work the way they were supposed to.	1	2	3	4	<input type="radio"/>
4. ...were appropriate for performing the tasks required.	1	2	3	4	<input type="radio"/>
5. ...were overrated.	1	2	3	4	<input type="radio"/>

Effects of the E-Mentoring Program

6. How was your student(s) affected by his/her interactions with you or their participation in the E-mentoring program? (Select from the items below the top three items that you believe represent the greatest impact areas.)

- Increased interest in science
- Increased science proficiency
- Improved grades
- Enhanced career choices
- Increased motivation to succeed at school
- Increased self-confidence
- Increased involvement at school
- Increased use of technology
- Developed friendship, personal relationship with mentor
- Other _____

Rate your level of agreement with each of the following statements:
(Circle the appropriate number, from 1, strongly disagree, to 5, strongly agree.)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
7. My student(s) were interested in me.	1	2	3	4	5
8. I was comfortable answering my students' questions.	1	2	3	4	5
9. I am interested in continuing my relationship with my student(s).	1	2	3	4	5
10. I am interested in meeting my student(s) face to face.	1	2	3	4	5

11. The overall quality of the mentor-student match(es) was _____.

- very poor
- poor
- neutral
- good
- excellent

Thank you for completing this survey.

PRE-PROGRAM INTERVIEW STUDENTS

(June 2000)

Introduction

- *Thank you for participating.*
- *It's from talking with you and getting your responses on surveys that we learn about electronic mentoring and how people search for and use information. You're the expert, and we hope to learn from your experiences and perceptions.*
- *I'd like to talk about mentoring and electronic mentoring.*
- *Do you have any questions at this point? Feel free to ask questions as we go along.*

1. You may have heard about the E-Mentoring program that will be part of the Frontiers in Biology course. [describe the program as needed.] What are your expectations of the program? What impact do you expect that your mentor will have on you?
2. What academic and personal areas or topics would you like to discuss with your mentor?
3. What characteristics do you expect your mentor to have?
4. What sort of relationship do you anticipate having with your mentor?
5. What impact do you expect to have on your mentor?
6. Do you have any concerns as you begin the E-Mentoring program? Are there specific things that you expect to find challenging?
7. What have been your previous experiences with respect to mentoring? E.g., have you participated in a formal (or informal) mentoring program before? Either as a mentor or protégé?
8. [Ask participant to talk about these experiences, e.g., were they satisfying/dissatisfying, and why?]
9. Is there anything you'd like to ask me?

Thank you very much! I appreciate your time and your willingness to discuss these things with us. It will help us design and plan future e-mentoring programs as well as better understand what impacts these types of programs have or don't have.

PRE-PROGRAM INTERVIEW: MENTORS

(June 2000)

Introduction

- *Thank you for participating.*
 - *It's from talking with you and getting your responses on surveys that we learn about electronic mentoring and how people search for and use information. You're the expert, and we hope to learn from your experiences and perceptions.*
 - *I'd like to begin talking about finding and using information in general, and then about mentoring and electronic mentoring in particular.*
 - *Do you have any questions at this point? Feel free to ask questions as we go along.*
1. Why are you volunteering to participate in the E-Mentoring program?
 2. What characteristics do you expect your students to have?
 3. What impact would you *like* to have on your student(s)? What impact do you *expect* to have on your student(s)?
 4. Do you expect your student to have an impact on you? How?/Why?
 5. Do you have any concerns about the E-Mentoring program? What are they?
 6. Are there specific things that you expect to find challenging?
 7. What have been your personal experiences with respect to mentoring? For example, have you participated in a formal (or informal) mentoring program before? Either as a mentor or protégé?
 - Ask participant to talk about these experiences, e.g., were they satisfying/dissatisfying, and why?
 8. Is there anything you'd like to ask me?

Thank you very much! I appreciate your time and your willingness to discuss these things with us. It will help us design and plan future E-Mentoring programs as well as better understand what impacts these types of programs have or don't have.

POST-PROGRAM INTERVIEW: STUDENTS

(June 2000)

Introduction

- *Thank you for participating.*
- *It's from talking with you and getting your responses on surveys that we learn about electronic mentoring and how people search for and use information. You're the expert, and we hope to learn from your experiences and perceptions.*
- *Do you have any questions at this point? Feel free to ask questions as we go along.*

I'd like to ask you about the E-Mentoring Program that you've participated in these past few months. We'd like to learn from your experiences. Your experiences and perspective will help us evaluate and improve the program.

What are the two *most* important outcomes of the E-Mentoring Program for you (e.g., something you learned or a way in which it changed your life or direction)?

Can you summarize how or why that happened? Perhaps a story about something that happened to you would help us understand what you mean.

Backup: What are the three most important things you accomplished by participating in the program?

What are the two *most* frustrating or wasteful consequence of the E-Mentoring Program for you?

Can you summarize how or why that happened? Perhaps a story about something that happened to you would help us understand what you mean.

Has your knowledge and skill level in science been impacted by your mentor relationship? If so, how? If not, why not? Your knowledge about scientific careers? If so, how? If not, why not?

You have used the Internet in the E-Mentoring program to communicate with mentors, other students, facilitators, and faculty. We'd like your help in understanding the strengths and weaknesses of using this technology.

For you, what are the advantages of using the Internet? Can you tell me/us a story that illustrates what you mean?

What are the disadvantages of using the Internet? Can you tell me/us a story that illustrates what you mean?

Is there anything we might do about those disadvantages or problems?

Are you aware of any technical problems that occurred during the E-mentoring project this term? Such as, discussion forums not working, etc.? Were these problems dealt with promptly? Do you have any suggestions for how we can improve our technical support services?

What did you think about the Kick-off event? What two things did you like most about the event? What two things would you change?

Please describe the top two changes you'd make to this program to assist you in your role as a student.

If possible, would you choose to participate in this program (or a similar one) next year?
[Would you recommend this program to other students? Why or why not?]

How would you characterize, or describe, your mentor?

How would you characterize the relationship you developed with your mentor?
What impact do you think you had on your mentor?

How has this experience compared to other experiences you've had in courses? With mentor programs?

Is there anything else you would like to tell me about your experience with the E-mentoring program?

Is there anything you would like to ask me?

Thank you very much! I appreciate your time and your willingness to discuss these things with us. It will help us design and plan future e-mentoring programs as well as better understand what impacts these types of programs have or don't have.

POST-PROGRAM INTERVIEW: MENTORS

(June 2000)

Introduction

- *Thank you for participating.*
- *It's from talking with you and getting your responses on surveys that we learn about electronic mentoring and how people search for and use information. You're the expert, and we hope to learn from your experiences and perceptions.*
- *Do you have any questions at this point? Feel free to ask questions as we go along.*

I'd like to ask you about the E-Mentoring Program that you've participated in these past few months. We'd like to learn from your experiences. Your experiences and perspective will help us evaluate and improve the program.

What are the two *most* important outcomes of the E-Mentoring Program for you (e.g., something you learned, or an outcome your interaction with a student had, or a way in which it changed your thinking)? Can you summarize how or why that happened? Perhaps a story about something that happened to you would help us understand what you mean.

Backup: What are the two or three most important things you accomplished by participating in the program?

What were the two *most* frustrating or wasteful consequence of the E-Mentoring Program for you? Can you summarize how or why that happened? Perhaps a story about something that happened to you would help us understand what you mean.

From your perspective, has your student's knowledge and/or skill level in science been impacted by the mentor programming? How? His/her knowledge about scientific careers? How?

You have used the Internet in the E-Mentoring program to communicate with students, and possibly other mentors, facilitators, and faculty. We'd like your help in understanding the strengths and weaknesses of using this technology.

For you, what are the advantages of using the Internet? Can you tell me/us a story that illustrates what you mean?

What are the disadvantages of using the Internet? Can you tell me/us a story that illustrates what you mean?

Is there anything we might do about those disadvantages or problems?

Are you aware of any technical problems that occurred during the E-mentoring project this term? Such as, discussion forums not working, etc.? Were these problems dealt with promptly? Do you have any suggestions for how we can improve our technical support services?

What did you think about the Kick-off event? What two things did you like most about the event? What two things would you change?

Please describe the two most important changes you would make to this program to assist you in your role as a mentor.

If possible, would you choose to participate in this program (or a similar one) again? [Would you recommend this program to other students? Why or why not?]

How would you characterize your student(s)?

How would you characterize the relationship you developed with your student(s)?
Would you like to continue interacting with your student(s)? If so, have you discussed this with your student(s)? What impact do you think you had on your student(s)?

Has your student(s) had an impact on you? For example, did you learn anything from your student? Or change your opinion about anything? If so, what?

How has this experience compared to other experiences you've had mentoring or working with students or interns?

Is there anything else you would like to tell me about your experience with the E-mentoring program?

Is there anything you would like to ask me?

Thank you very much! I appreciate your time and your willingness to discuss these things with us. It will help us design and plan future e-mentoring programs as well as better understand what affect these types of programs have or don't have.