UMBC Information Literacy Survey – 2003
Findings for Biology

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Introduction

The purpose of this report is to share key data from the UMBC Information Literacy Survey (UMBC Survey). This report contains findings for those students who identified Biology as their department. Biology had the highest numbers of participants, for the UMBC Survey overall (n=151). Each of the percentages reported in this document will be based on the number of students who actually responded to individual questions, and not the total number who completed the entire survey, with the exception of the Demographic section. In addition, since some questions allowed students to select more than one response, some results will be reported based on the number of students responding to a particular question. For information on the survey’s methodology, background, research questions, recommendations, and future directions, please refer to the Executive Summary available at: http://aok.lib.umbc.edu/reference/informationliteracy/results.php3. The complete findings (raw data) are also posted on the Information Literacy Web site.

Brown Bags to discuss the survey findings will be held on Tuesday, November 18th, from 12:00 to 1:00 pm, and Monday, November 24th from 1:00 to 2:00 pm, in the A.O.K. Library & Gallery, 3rd floor, Administration Suite, conference room.

Demographic Profile

Although 427 individuals logged into my.UMBC.edu, the University’s portal, to begin the survey, only 424 submitted responses for questions. As noted previously, all participating students did not answer all of the questions. This demographic profile is based on the number of students who responded to at least some of the questions. Of the 424 respondents, 35.61% (151) of those agreeing to take the survey selected Biology as their department. The following is a demographic breakdown of those respondents.

Gender and College Classification

Of those participating in the survey, 67.55% (102) were female, while 31.13% (47) were male. Two respondents (1.32%) did not indicate their gender. The majority of those participating, 66.23% (100), were freshmen, 16.56% (25) were sophomores, 7.28% (11) were juniors, and one was a senior (0.66%). The remaining students did not answer or chose “other.” Over 19% (29) of respondents identified themselves as transfer students.

Ethnic Heritage

Figure 1 shows the ethnic heritage of Biology respondents as collected by the University during the admissions process. Ethnic heritage is not necessarily related to country of citizenship, e.g., ‘Asian’ could mean either Asian American or Japanese. Almost half of those participating identified their ethnic heritage as Caucasian (72), while Black (20.53%) and Asian (26.49%) heritage made up most of the remaining students.
Note that even though only five respondents (3.31%) identified their heritage as Hispanic, this is comparable to the UMBC population.¹

Figure 1

![Racial and Ethnic Data](image)

### Citizenship and Country of Birth

The majority of those participating (84.11%) identified as U.S. citizens, 9.93% were permanent residents, and 3.97% held visas. Of those respondents born in the U.S., an impressive 84.11% reported they were born in Maryland, with 9.27% born in another state or the District of Columbia.²

In addition to those who listed the U.S. as their country of birth, 5.30%, representing seven different countries, were foreign born. Citizenship data was not available for three individuals.

### High School Graduation/Previous College Experience

Ninety-four traditional freshmen, 62.25%, graduated in 2003 and immediately enrolled at UMBC. This total includes five students who indicated they had attended other colleges or universities prior to attending UMBC.

Among the Biology respondents, 24.50% (37) had taken the CEEB (Advanced Placement—College Entrance Examination Board) which consists of either the College

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¹ Minority undergraduate enrollment at UMBC for Fall 2003 was 37.8%: African American 15% (bio—20.53%), Asian 19.4% (bio—26.49%), Hispanic 3% (bio—2.89%). Office of Institutional Research. “Databook” (online) http://www.umbc.edu/oir/IENRL/ienrl03.pdf (Accessed 11/10/03).

² Additional statistics on citizenship and country of birth were obtained from the Office of Information Technology. Country of birth entries also contained Maryland counties, and other states. Sixteen of those respondents indicating they were born in Maryland also responded that they were not U.S. citizens.
Level Exam Program (CLEP) that allows students to test out of courses, or the Advanced Placement Test in high school.

Of the 151 respondents, 48.34% (73) did not attend college prior to coming to UMBC, while 27.15% (41) did.

**Age**

Figure 2 shows that 52.98% (80) of those surveyed were between the ages of 18 and 20, while 28.48% were under 18, and 13.91% fell between the ages of 21 and 25. In total, 81.46% of the respondents were ages 20 and under.

![Age Group](image)

**Academic Majors**

The most frequently listed majors were in the biological sciences (50), professional and allied health (25), and chemistry and biochemistry (16). Nearly 20% listed their major as undeclared or did not indicate a major.

The next section of this report will present, discuss and analyze key findings from questions representing each of the Standard areas and the Relationship with Faculty section.

**Standard I: The information literate student determines the nature and extent of the information needed.**

Key components of this Standard include defining and articulating a need for information, identifying a variety of types and formats of potential sources, considering the costs and benefits of acquiring the needed information, and reevaluating the nature and extent of the information need. All of the questions in the survey written for this
Standard were attitudinal, none of the questions required students to demonstrate their skills.

The very first question asked students to indicate their comfort levels with a variety of skills associated with the research process. Two of the skills directly relate to Standard I, particularly the concepts of articulating an information need and identifying a variety of types of potential sources. Students were asked to indicate their level of comfort “formulating questions based on information needs.” Just under 23% percent of those responding to this question (n=147) selected “very comfortable,” and 56.46% selected “comfortable.” Very few students (4.08%) indicated they were “uncomfortable” with this skill and no students selected “very uncomfortable.”

Additionally, students were asked to indicate their level of comfort identifying potential sources of information. Results for this were similar to those reported for “formulating questions,” with 25.17% “very comfortable,” and 57.14% “comfortable.” Minimal figures (4.01%) were reported for “uncomfortable” or “very uncomfortable.”

Another question asked students to specify their level of comfort when seeking information from a variety of sources, including search engines, a library Web page, a friend, a professor/TA/GSA, a faculty or class Web site, or the library. Overwhelmingly, students responded that they were most comfortable seeking information from a search engine, with 89.58% selecting “very comfortable” or “comfortable.” The search engine receiving the most frequent mention was www.google.com. Only six students indicated they were “uncomfortable” or “very uncomfortable” using a search engine. Comparatively, only 23.94% of the respondents felt “very comfortable” seeking information from a library Web page. This is worrisome considering the Web page for the Albin O. Kuhn Library & Gallery (UMBC Library), like most library Web sites, is an access point for over 180 subscription indexes and databases, the online catalog, and many other research tools. Interestingly, more students (74.12%) selected “very comfortable” or “comfortable” regarding seeking information from a library itself than from a library Web site (63.38%). Another telling comparison involves the responses to seeking information from a “friend” or a “professor/TA/GSA.” More students (33.10%) responded that they felt “very comfortable” seeking information from a friend than from a professor, TA, or GSA (22.53%). This question did not specify the kind of information that was being sought, though, and it is believed that if the question had specified a type of information, e.g. information for research purposes, the responses may have been different.

Students were given a sample topic (violence in American high schools) and asked to indicate the order they would perform various steps when conducting research on this topic. There was an option for not taking a particular step, as well. Three of the steps involved the early stages of the research process that fall under Standard I. More than one half (50.71%) of those responding selected “brainstorm the concept, using the terms of the topic” as their first step in the research process, but just under than 8% indicated they would not take this particular step at all. Regarding the step to “formulate question(s) based on the information needed to begin the research,” 19.29% of the respondents selected this as their first step, 47.86% of the respondents selected this as their second step, and 5 respondents (3.57%) indicated they would not take this particular step at all. Only 1.4% of the respondents indicated that they would never use “reference material that provides an overview of violence and teenagers,” while 73.57% selected this.
section as their third, fourth, or fifth step. It is refreshing to see that a great number of the students surveyed realize the value in using reference sources.

The Task Force was interested in learning about students’ understanding of the value of using a variety of types (such as primary and secondary) and formats (such as multimedia, database, Web site, or book) of resources. One question provided a list of 15 types of resources, excluding basic resources such as books and journals, and asked students to select those that they were familiar with/or might use in a research project. The list included resources that the Task Force believed to be underutilized in general as resources for undergraduate students, such as speeches and conference proceedings. Students were able to select as many types of resources that were applicable. The results were not surprising, with only 29 of the respondents selecting dissertations/theses, 16 selecting conference proceedings, 37 selecting manuscripts, and 44 selecting television/radio transcripts. Conversely, 126 selected Web sites, the most of any selection. The results of this question confirmed the authors’ theory that many excellent sources of information (most of which are easily accessible through the Library and via the Library’s Web site) are underutilized by undergraduates.

Students were also asked “To what extent do you feel comfortable asking your professors for assistance in locating resources to support your research?” Responses to this question demonstrate that most students are comfortable asking their professors for some basic research assistance, but most are not comfortable asking for in-depth consultation and some are not comfortable approaching their professors for assistance with research at all. Eighty-one of the respondents selected “I feel comfortable asking my professors for a few recommended title/authors in the field,” while only 42 respondents selected “I feel comfortable setting up an appointment with a professor for in-depth consultation regarding resources.” Unfortunately, 29 students selected “I don’t feel comfortable asking professors for assistance in this area.”

**Standard II: The information literate student accesses needed information effectively and efficiently.**

Standard II addresses the selection of appropriate research methods, including investigative retrieval systems (databases and catalogs); the construction and implementation of effective search strategies; and the retrieval of information in a variety of formats using a variety of classification schemes. The UMBC survey questions for this Standard focused primarily on the students’ knowledge of search strategy techniques, their ability to construct an effective search strategy, and their ability to identify citations. When asked to indicate their comfort level with two skills related to this Standard, 71% reported that they were “very comfortable,” or “comfortable” “developing successful search strategies;” however, 66% of those responding to a related question reported ‘infrequent’ or ‘never’ use of “Truncation,” 66% reported ‘infrequent’ or ‘never’ use of “Proximity operators,” and nearly 74% reported ‘infrequent’ or ‘never’ use of “Library of Congress Subject Headings, ERIC descriptors, or some other form of controlled vocabulary.” ‘Occasional’ use of “Cross and multiple field searching” (27%), and “Limiters” (25.7%) was reported by less than 30% of those participating. Forty-two
percent used “Cross and multiple field searching” ‘frequently’ or ‘very frequently,’ however less than 32% used “Limiters” ‘frequently’ or ‘very frequently.’ Significant percentages of ‘infrequent’ or ‘never’ use of other searching techniques included Boolean operator ‘OR’ (49.6%); and Boolean operator ‘NOT’ (65.7%).

Less than 80% of those participating reported that they were “very comfortable” or “comfortable” “accessing sources of information, including computer-based technologies.” A related question provided 12 options and asked students to respond to “Where would you go or what would you do to find current information on the following topic?—‘Terrorism on college campuses.’” Students were not asked to rank the order, and were able to select as many options as were applicable. Overwhelmingly, students selected “Online—Internet” as the place they would go to find current information on this popular topic. This option was selected by 137 students. One hundred and four students selected “newspaper archives,” 100 selected “magazines,” and 94 selected “television news.” Fewer students would seek information from “friends/colleagues” (66), “radio news” (56), “librarian” (54), “faculty/professors” (48), and “television/radio transcripts” (42). Even fewer would consider accessing “abstracts and indexes (databases)—electronic” (32), “encyclopedias” (21), and “abstracts and indexes—print” (20).

On the other hand, when asked when they would consult a librarian for assistance, the majority of those participating (125 students) reported they would when they “needed advice about where to look for information,” 110 would when “they didn’t know how to use an information source,” and 97 would when “they needed help choosing the best information source.” Eighty-four students selected the “all of the above option,” and 2 students admitted they “didn’t know when they would consult a librarian for assistance.”

When given a list of citations and asked to identify what each citation referred to, on two separate occasions, 43% or less of those participating (n=141), correctly identified the citations for journal articles. Less than 85% correctly identified the citation for a newspaper (83%), a government document (73.7%), and a master’s thesis (75%), even though the newspaper citation listed The New York Times, the government document citation included the words, United States Congress as the author, and the thesis citation listed “master’s thesis.” Only 55% correctly identified a citation as representing a book, 32% correctly identified a book chapter, and less than 45% correctly identified a citation as representing a conference proceeding, even though the citation included the word “conference.”

In general, students in Biology are able to correctly identify the parts of a bibliographic citation. Students were asked to identify the parts of a citation taken from a journal index. Significant percentages ranging from 87.9% (page numbers) to 98.6% (date) were reported for all elements. Of note, 15 students incorrectly chose the part of the citation listing page numbers when asked for the “volume of journal” and 2 students confused date with page numbers despite the fact that the date is listed as “May ’91.” Ten students chose the journal title when asked for the “title of article.”
Standard III: The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.

Standard III focuses on the student’s ability to evaluate information and sources. The majority of the questions written for this Standard were designed to ascertain students’ perceptions of the reliability, credibility, and usefulness of resources and sources of information. Additional questions were developed to determine how students evaluate information.

In terms of evaluating information, 73.4% of those participating reported feeling “very comfortable” or “comfortable” evaluating information. However, when asked to rate the usefulness of resources when doing research, on a scale of 1 to 5 where 1=least useful and 5=most useful, “published in a refereed journal” received a ranking of #5 from only 14% of those participating (n=140); “theses and dissertations,” and “written by a university faculty” received a ranking of #5 from the least number of students (12.85% and 2.28% respectively). “Published in a textbook” received the highest #5 ranking with slightly more than 47%, followed by “available in a research library (35.7%), and “indexed in a computer database” (23.57%). The majority of the responses, ranging in the 20th to 30th percentile, were ranked at #3 and #4 for each of the categories, with the exception of “published in a textbook,” which was ranked at #3 by 12%, and “theses and dissertations” ranked #4 by 15%.

When asked if one could evaluate an article for bias before reading it, 31.4% selected, “No. I need to read an article to find bias;” 15% selected “Yes. The abstract usually evaluates the article and notes any bias;” nearly 21% selected “Yes. If the article is reporting research, it should be unbiased,” and 17.8% selected “I don’t know.” Only 15% selected the correct response, “Yes. The reputation of a journal publisher or author may indicate bias.”

When asked how they would choose the best five articles from a search of an electronic database that yielded 77 citations to journal articles, 40.7% reported they would “Read the abstracts and or review the subject/descriptors to find the articles most relevant to your topic.” More disconcerting is the nearly 29% who selected “All of the above” which also included “Select the most recent articles” (5.7%), “Look for articles published in scholarly journals” (17.85%), and “Select articles with full text only” (3.57%).

In terms of students’ perceptions of reliable sources, a list of resources was provided to find out when students felt resources where reliable. Seventy-seven percent reported that they would “always” consider “sources recommended by professors, librarians, and teaching assistants” reliable; and 81.4% reported they would “sometimes” consider “sources found on the Internet” reliable. Slightly more than 17% would “always” consider “sources found on the Internet” reliable. Of slight significance, 7 students indicated that “conference proceedings or publications by professional associations” were “never” reliable.

Students were also asked to indicate, from a list of circumstances, when they would use an article located on the Internet in a research project. Significant numbers were reported for articles “written by a well-known scholar in the field” (115), “listed in
the syllabus of a professor” (110), “available from a Web site ending in .edu and/or connected to a school, college or university” (96). Items selected by fewer students were an “article written by an individual with no known subject-related credentials,” selected by 29 students; and an “article available from a free Web site accessible via the World Wide Web,” selected by 23 students. One student indicated they would not use an article located on the Internet under any of the circumstances listed. Seventy students would use an article if the “full text of article is available,” and 68 would if it was “published as part of proceedings of a professional organization on their Web site.”

In an effort to ascertain what sources and resources of information students believe are reliable and credible, the Task Force asked students which news resources they would consider credible for doing their research. At least 59% each reported that “CNN News/Headline News” (70%), “Cnn.com/Headline news.com” (67.8%), and “World News Tonight with Peter Jennings/CBS Evening News with Dan Rather, etc.” (59.2%) were “always” credible sources. Interestingly, little more than 7% (7.14%) “always” consider “Black Entertainment Television News/BET Tonight with Ed Gordon” credible; and slightly more than 20% (21.4%) reported that they felt “The Today Show/Good Morning America/The Early Show” was “always” credible. At least 25% of all students responding to this question felt that all of the sources listed were credible “sometimes” with the exception of “Saturday Night Live’s Weekend Update with Tina Fey and Jimmy Fallon” which was felt to be a credible resource “sometimes” by 12%.

In terms of credible print sources, students were asked to respond similarly to a list of print resources that they would consider using in their research. More than 50% felt that “Time or Newsweek” (57.8%), “The New York Post” (52.8%), and “The New York Times/The Washington Post/The Los Angeles Times/The Baltimore Sun” (62.8%) were “always” credible. The majority of the mainstream journals and publications listed were considered credible “sometimes” by 40% or more of those responding including “Ebony” (48.5%), “Time or Newsweek” (41.4%), “New York Post” (44.2%), “Rolling Stone/Vibe” (51.4%), “Sports Illustrated” (58.5%), “People” (50%), and “Entertainment Weekly” (42.1%). More than 55% “never” considered “The National Enquirer” (70.7%), “Seventeen or Vogue” (63.5%), or “Entertainment Weekly” (55.7%) credible. “Ebony” was “never” considered credible by 49%.

**Standard IV: The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose**

Key concepts for this Standard are the ability to organize information that has been acquired, and the ability to communicate that information effectively and efficiently to accomplish a specific purpose. In other words, it is important for students to be able to think critically about the information they have acquired, in order for them to be able to communicate it in some meaningful way. A number of questions in the survey pertained to this Standard. As was the case with Standard I, it should be noted that these questions did not require students to demonstrate skills; questions were strictly attitudinal in nature.
As noted previously, the very first question of the survey asked students to indicate their level of comfort with eight information literacy skills. The abilities to think critically and successfully problem solve are major components of information literacy. Students were asked to respond regarding their comfort levels when “using information in critical thinking and problem solving.” Sixty seven percent of the respondents reported feeling “very comfortable” or “comfortable” with this skill. Almost one third (31.29%) specified “neutral” or “uncomfortable,” and two students selected “very uncomfortable.”

Students were also asked about their level of comfort when organizing information for practical application. Twenty-one percent of the respondents were “very comfortable” with this skill, and 21% indicated they were “undecided/neutral.” Few students (5.44%) indicated they were “uncomfortable” or “very uncomfortable.” Another skill was integrating new information into an existing body of knowledge. A little more than 65% of the respondents specified they were “very comfortable” or “comfortable,” while over 30% specified “neutral/undecided,” “uncomfortable,” or “very uncomfortable.”

In terms of the research process, students responded with the level of frequency with which they complete certain related tasks. Over 63% of the respondents indicated that they “revise outline based on research findings” “very frequently” or “frequently.” Less than 2% selected “never,” while 9.29% selected “infrequently.” Slightly more than 22% indicated they “synthesize major points and concepts under outline headings” “very frequently,” while 44% reported doing so “frequently.” Less that 8% (7.15%) selected “infrequently” or “never” for this skill.

A major part of Standard IV is if and how students “use information effectively for presentations and assignments.” A list of nine methods/formats were provided for students to select from and indicate whether they had had the opportunity to use them in their academic career. Students were able to select any of the responses that were applicable. The most commonly selected method was a “written research paper,” selected by 133 students. Two other selections that received a great deal of responses were “visual projects” (113) and “presentation using PowerPoint or other presentation software” (109). Fewer students indicated they had the opportunity to present their research in Web format (40) or an audio/visual format such as CD, DVD, or VHS, which received 21, 9, and 50 responses respectively.

In response to a related question which asked students which of the options, if given the opportunity, they would feel comfortable using, 119 students reported they would feel comfortable producing a “written research paper,” 92 students chose “visual project,” and 94 students selected “presentation using PowerPoint or other presentation software.” Only 63 respondents selected “presentation using non-technical methods (flip charts, overhead transparencies, etc.).” These responses indicate that students are quite comfortable using presentation software such as PowerPoint, and also that students are less comfortable presenting without technology, using only flip charts or overheads. Thirty-five students indicated they were comfortable presenting their research findings as a Web page/site; and 26 respondents indicated that they would feel comfortable presenting using a CD, while 26 selected DVD and 33 selected VHS. It is unclear if the low number of responses is related to the technological skills needed to make/burn a CD, DVD, or VHS, or the act of presenting information using these mediums.
Standard V: The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.

Standard V focuses primarily on the student’s understanding of concepts such as privacy, security, censorship, copyright, fair use, and plagiarism.

In order to determine if students understood the concept of plagiarism, the Task Force allowed them to self-select their own common practices when developing a research project. Students were provided multiple options for selection. The majority of respondents did choose options that show an understanding of the research process. Ninety-six students reported that they would “present a combination of reflection and opinions (theirs, and the authors), from previously read material” when writing up information found for a research project or a research presentation. Seventy-five would “present the opinions of the author(s) verbatim in quotation marks.” Unfortunately, 32 students responded that they would “present what they thought their instructor wanted to hear,” 22 would “present the opinions of the author(s) verbatim” (presumably without quoting since that was listed in another option), and 21 would “present their own opinions, only.”

A subsequent question directly introduced the concept of plagiarism and asked students to identify examples of plagiaristic activity from a list of choices. Only 3 students admitted that they “didn’t know” which options were examples of plagiarism, and 1 selected the “none of the above” option. The largest majority (135) selected “using phrases and sentences of others as if they were your own without giving credit (to the author).” The second highest (133) chosen option was “copying text written by someone else and using it without quotation marks.” The lowest (109) of the chosen options was “rewording someone else’s information and using it without giving credit (to the author).” Since all of the options provided were examples of plagiaristic activity, these results indicate that not all UMBC students understand fully how to use information legally in an academic environment. If we assume that 138 students answered this question, which was the number responding to the question after this one, that means that 33 students or 24% did not answer correctly and do not understand what constitutes acts of plagiarism.

Standard V also includes the concept of copyright. The Survey question addressing copyright introduced the concept and required students to respond to a list of examples as to whether or not they could legally use them on their own Web page without permission. The option that revealed the highest number of “No” responses (71.7%) involved scanning in text from a *Harry Potter* book. It is good to see that the majority of the students respect copyright laws in print, however, there are still 13 students (9.4%) who don’t see this as a violation of copyright, and 26 (18.8%) who “don’t know.” There were several options that created the least doubt in students (had the highest numbers of “No” responses), but still reveal a portion of the students who don’t understand copyright violations. One example, “the theme song from *Titanic* by Celine Dion” revealed a slight majority (56.5 %) who reported that it would be illegal to use it on their own Web page without permission. Since the enforcement of music downloading is strictly enforced on the campus, it seems unusual that 21% said “Yes” to...
using the Celine Dion song, and 22.5% admitted they “didn’t know.” More than 20% reported that they could legally use pictures from the Internet (32.6%), and pictures they scanned in from a magazine (21%) on their Web sites without permission. Although more than 30% of those responding reported that they could legally use the text of the **Homeland Security Act** (31.8%) on their Web site without permission, it is not clear whether they understood the concept of “public domain” since it was not specifically defined or mentioned in the survey.

Although 92% of those participating indicated that Plagiarism was not the same thing as Fair Use policy, the findings show that students in Biology are, in general, unfamiliar with the concept of Fair Use. Students were given a definition of fair use and asked to respond whether or not they could legally use the examples provided when preparing an assignment for class. The first option details quoting from an article without citing a source, a clear example of plagiarism. Only 76% responded that they could not do this legally; 11.5% of the respondents chose “Yes” believing that it was legal, and 12.3% indicated they “did not know.” More than 64% reported that they could legally use unrelated background music during a presentation (64.5%). When students were presented with the option to use a video clip from The Rosie O’Donnell Show as part of a class presentation on talk shows, 70% correctly identified that they could legally do this, for purposes directly related to the course of study. Due to the fact that 15.9% responded “No,” and 13.7% “didn’t know,” it is clear there is still confusion about fair use as it applies to students in a classroom setting. Other responses further reveal this uncertainty, such as the example of copying a reserve item “your professor” placed in the library. Only a slight majority (55%) responded “Yes” to this clear example of fair use; do the other 45% think they might be committing a crime when they, and their classmates, photocopy reserve items? Does it make a difference that the item in question was a book chapter placed on reserve by a faculty member?

An additional survey question asked students to identify correct citation behavior necessary to avoid acts of plagiarism. The majority of responses indicated that most students can identify instances that require citation, however, the number dropped by 37 or more responses when the example involved rewriting article research in their own words. This means that from 116 responses for citing “when you quote one sentence from the article, using quotation marks,” and 108 responses for “when you copy a whole paragraph,” responses dropped to 79 for “when you write it over in your own words.” This indicates that an unfortunate number of students may use research in their studies, but incorrectly represent that research as their own, having not taken into consideration that they must cite it as the work of others.

### Relationship with Faculty

The UMBC Survey included several questions on the relationship between faculty and students. Faculty are in a key position to provide exposure to and experience in information literacy directly to students. It should be pointed out that students were able to select more than one answer for this particular question.
Students were asked to consider their experience(s) with faculty in completing required assignments for courses. Thirty students reported that “Faculty member requires no use of outside materials for completing course assignments,” and 95 students reported that “Faculty member requires use of only lectures and assigned textbook(s) for completing course assignments.” Fifty-eight students reported that “Faculty member requires use of library to retrieve reserve materials.” Sixty-nine reported that “Faculty member makes use of library materials (print and/or electronic) when presenting course material and lectures,” and the same amount reported that “Faculty member requires or suggests use of library materials (print and/or electronic) when assigning coursework.” Only 25 students reported that “Faculty member invites librarians to introduce course-related library materials (print and/or electronic).”

Nine students reported that a faculty member had “Referred them to a specific librarian,” 24 reported a faculty member had “Encouraged them to seek a librarians’ assistance,” 27 reported that a faculty member had “taken their class to the library for a librarian-led tour/orientation,” and 28 reported that a faculty member had “taken their class to the library for one or more instruction sessions in the library and/or classroom. More disconcerting is the 100 students who selected the “None of the above” category, indicating that their interaction with faculty had not resulted in exposure to model library use behavior.

Summary

The majority of the students participating in the survey were white freshmen born in the United States, age twenty and under. More than 60% graduated from high school in 2003 and less than 20% had not declared a major at the time of the survey. More than half were female, and about 19% were transfer students. Including the United States, 7 countries were represented. After comparing the survey population with that of the campus overall, the respondents to the survey adequately represent the racial makeup of the campus.

The findings indicate that Biology students will seek information from the Web before they will go to other sources of information (such as the library). Particularly, students self-report very high comfort levels seeking information from a search engine. However, nearly 10% report that they are more comfortable seeking information from the library itself than from the Library’s homepage. Findings also indicate that students underutilize a number of quality resources such as dissertations/theses, conference proceedings, and manuscripts.

The data shows that students over estimate their comfort levels with many skills represented in the survey. In particular, students indicated that they were comfortable developing successful search strategies, yet they were unfamiliar with basic search concepts such as Boolean operators, truncation, and controlled vocabulary. A significant number of the respondents had difficulty identifying citations for sources such as journal articles, books, newspaper articles, and book chapters.

Students indicated high levels of comfort with evaluating information. However, when presented with questions that allowed them to rate the usefulness of sources, several key forms of quality research, such as theses/dissertations and refereed journals, were rated lower than less scholarly resources. Many students could not identify that the
reputation of the journal or author may indicate bias. When determining when they would use an article located on the Internet in a research project, the majority of responses showed positive results, but many respondents indicated they would use an article from a Web page ending in .edu. The concern is whether or not students understand the difference between personal/student Web pages housed on education Web sites and legitimate research. More than two-thirds of the respondents reported that they would always consider sources recommended by professors/librarians/TAs reliable. However, not all students reported feeling comfortable asking professors for research assistance.

The survey included a question about steps taken after gathering research. The majority of students indicated that they review their original research questions and determine if additional resources are needed and discard irrelevant information. Results show that nearly a quarter of the respondents are not comfortable when synthesizing the information they gather or integrating new information into an existing body of knowledge.

Other results show that students are comfortable presenting their research findings using technological methods, such as PowerPoint, but less are comfortable using a Web page.

When presented with questions relating to copyright and plagiarism, the majority of responses indicate that students understand basic legal issues in the use of information. However, there are a significant number of students who clearly cannot or will not apply basic principles of ethical information use in their role in the academic environment. Overall, students responded favorably to a question about how they used information for a research project, such as directly quoting a source and citing it. Although many responses were positive, there were a number of students who indicated that they would present what they thought their instructors wanted to hear, and others who would present only their own opinion when creating research projects. Also, there were a number of students who would use information without giving credit to the author/creator, or would violate laws by placing copyrighted works on their personal web sites without asking permission.