

Alumni Survey

Department of Biological Sciences

Lock Haven University of Pennsylvania

Jonathan Lindzey, Ph.D

Biological Sciences

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Background

The Department of Biological Sciences conducts numerous assessments and evaluations designed to i) improve the quality of education that our Biology majors receive, and ii) document both discipline-specific and cross-discipline learning outcomes. One of our assessments is a periodic survey of Biology graduates from LHUP. This is the third survey conducted by our department with prior surveys conducted in 1995 and 2000.

In early spring 2007, surveys were sent to 459 alumni for whom the Alumni Office could provide mailing addresses. The initial mailing was followed by a reminder postcard and a second mailing of the survey. The 459 alumni graduated between the years of 1989 and 2006 with BS degrees in Biology: Cell and Molecular option; Ecology and Environmental option; Secondary Education: Biology, Biology/Chemistry 4-year program and the Medical Technology option; and the BA Natural Science with emphasis in Biology.

A total of 176 alumni responded to the survey and thirteen surveys were returned due to bad addresses, giving us a 39.5% response rate from the 446 addresses assumed to be valid. The Department is aware that biology graduates who return to take additional courses after graduation are assigned a new code. Such students were not included in this survey as they could not be identified as biology majors during computer searches completed by the Alumni Affairs Office.

The alumni survey consisted of two types of questions, those which asked for yes/no or rating responses which could be analyzed mathematically and those asking alumni about experiences. The questions solicit information on i) the employment status

of the graduates, ii) opinions of the education they received and how well their education prepared them for their employment, iii) opinions of lectures and labs taken by students, and iv) suggestions for improving class offerings in Biology. The following report summarizes the quantitative results for the current survey. (Note: Although 176 surveys were returned, some questions were not answered by all alumni. In such instances, percentages were calculated and reported based on the number of individuals that responded to a particular question. In instances where percentages are not based on N=176, the different N are specified.)

Responses to Categorical or Ratings Questions

Biographical and Professional Information

Alumni responding to this survey graduated between 1989 and 1994 (27%), 1990-2000 (35%), 2001-2006 (36%), or did not specify (2%). No record was provided by the alumni office of numbers of graduates for each year, so the percentages provided are the percentage of the 176 respondents across all years.

Self-reported grade point averages were distributed such that 4%, and 29% were in the 2.0-2.49 and 2.5-2.99 ranges, respectively (Fig.1). The largest percentage fell into the upper quartiles with 37% and 29% in the 3.0-3.49 and 3.5-4.0 ranges, respectively (Fig.1). Thus, compared to all alumni, respondents with higher grade point averages are over-represented in this survey.

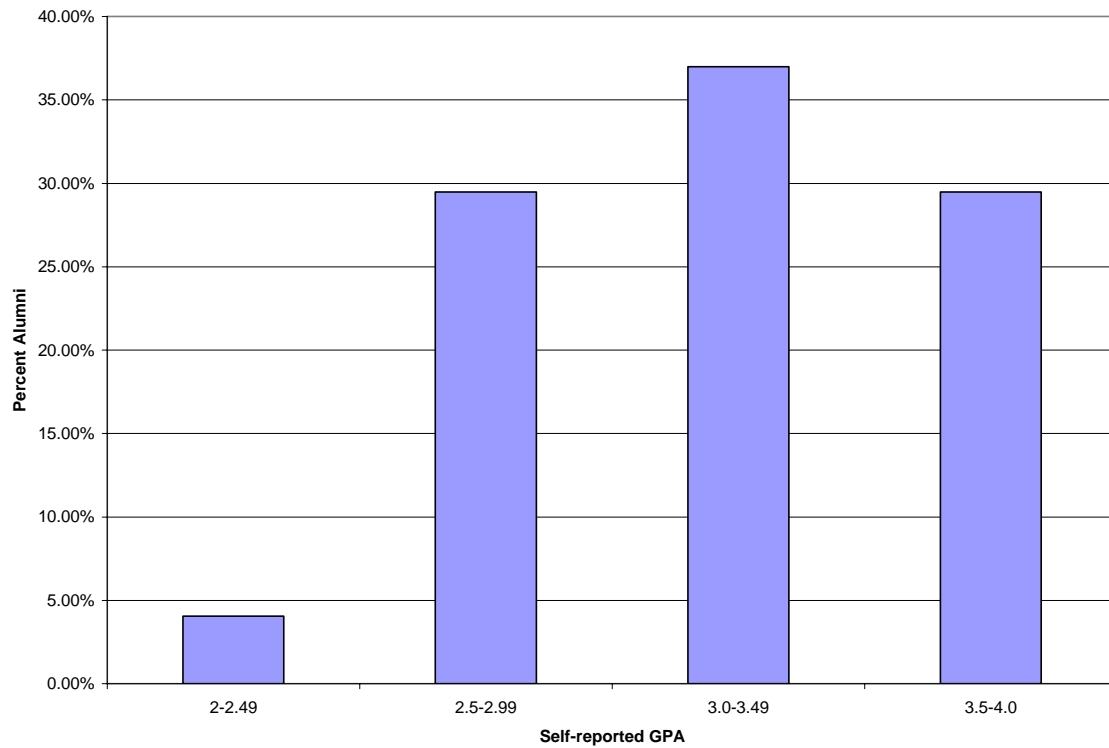


Fig. 1. Self reported GPA range of respondents. Shown are the percentage of respondents falling into each GPA range. Sample size was N=176. A total of 3 respondents failed to clearly identify their GPA.

The majority of respondents earned BS degrees in Ecology (30%) or Biology/Chemistry (41%) with lower numbers graduating in BS Cell and Organismal (15%), Secondary Education-Biology (10%) or BS Natural Science with Biology emphasis (3%) (Fig. 2). Minor areas of study were completed by 38 respondents with 27 in chemistry, 0 in geology and 11 in other areas.

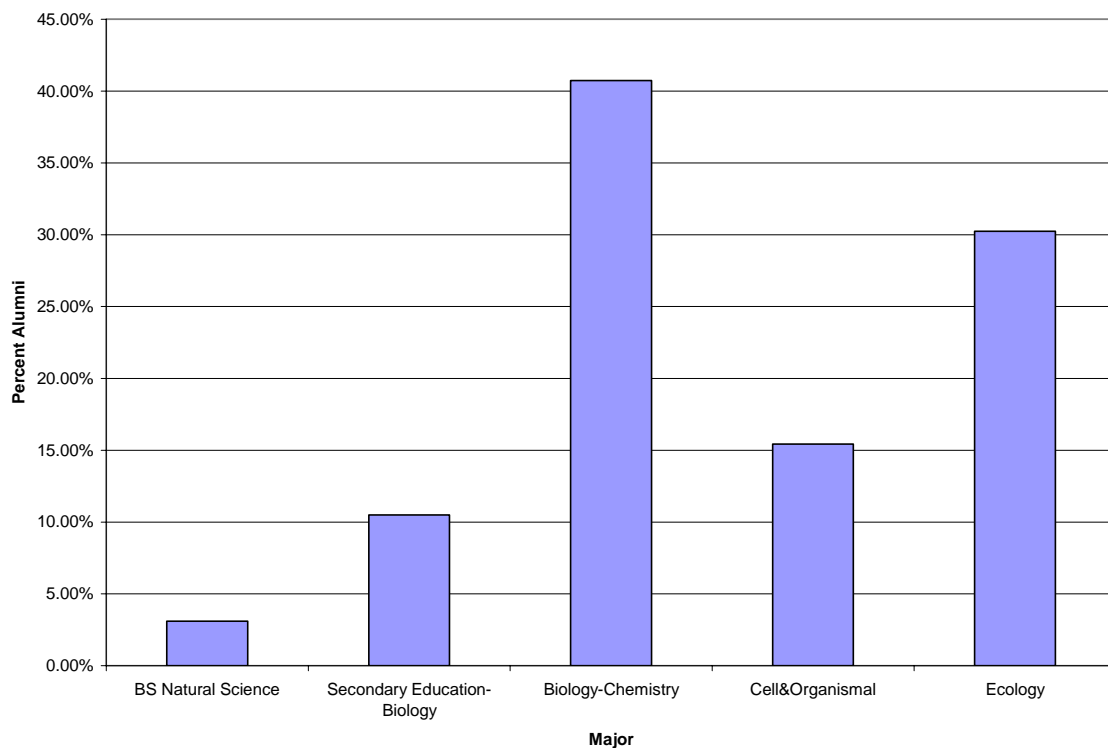


Fig. 2. Concentration areas of Biology Alumni. Shown are the percentages of respondents graduating in the different concentration areas offered by the Biology program. Sample size was N=162. Fourteen of the respondents failed to clearly specify their major. Note: Biology-Chemistry is a separate program.

Occupational Information

The majority of alumni are working in science related occupations (82%, 142 of 173), with only 18% (31 of 173) considering their current occupation not related to science. Of those working in a science area, 61% (87 of 142) reported occupations or postgraduate training directly related to their biology training. Of the 31 not employed in Science, only 23% (7 of 31) would prefer to be working in science whereas 52% (16 of 31) did not have an interest in pursuing a career in science.

While a surprising number of respondents (21%, 36 of 175) were not willing to relocate to find employment in a biology related area, a large majority (79%, 139 of 175) were willing to relocate to find biology related employment. Of those willing to relocate, a small number of respondents limited their job searches to either their local area (5%, 6 of 135) or to within a 100 mile radius of home (13%, 17 of 135) (Fig. 3). However, the largest percentages were willing to relocate farther from Lock Haven; anywhere in PA (20%, 26 of 135), the Eastern United States (36%, 48 of 135), or the entire United States (26%, 34 of 135) (Fig. 3). A small percentage (3%) indicated a willingness to leave the United States for employment in a biology field.

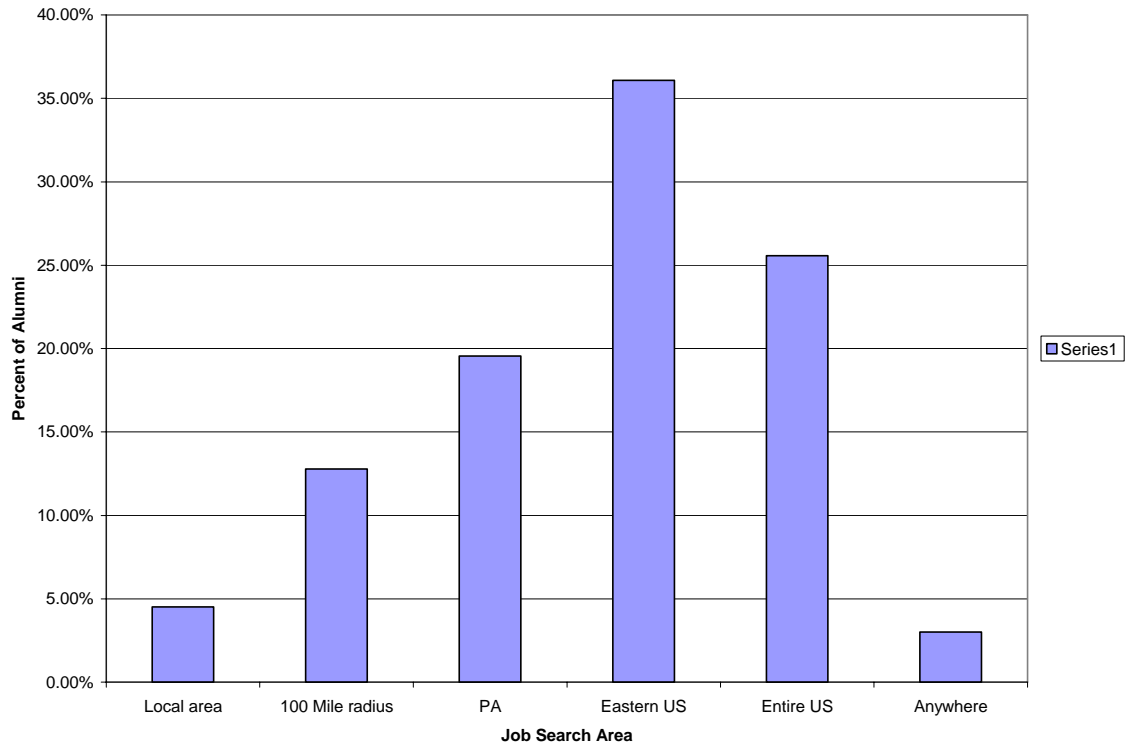


Fig. 3. Job search areas of alumni. Shown are percentages of alumni willing to relocate to various distances or geographic areas. Percentages were based on the number of alumni that were willing to relocate for employment and that answered this question. N=135. Four alumni failed to specify a search area.

Assessment of Biology Program and Courses

A large majority of alumni (92%, 154 of 168) felt that their biology education at Lock Haven University prepared them to be competitive for the job market or graduate school. Only 8% of respondents (14 of 168) did not feel adequately prepared. A slight majority of alumni not employed in a science related field (57%, 8 of 14 that responded to this question) still believed their science background to be a benefit..

Lecture presentations and information were judged to be important in preparing alumni for the workplace in most cases. Only 12% (20 of 168) felt that lecture material was of less than moderate value on a scale of 1 (no value) to 5 (very valuable). Thus, a

large majority found lectures to be of moderate to high value (88%, 148 of 168) (Fig. 4). An even smaller percentage (6%) of the alumni considered lab work to be below moderate value. Indeed, lab experiences were rated as valuable or very valuable by over 80% of alumni responding to this question (Fig. 4).

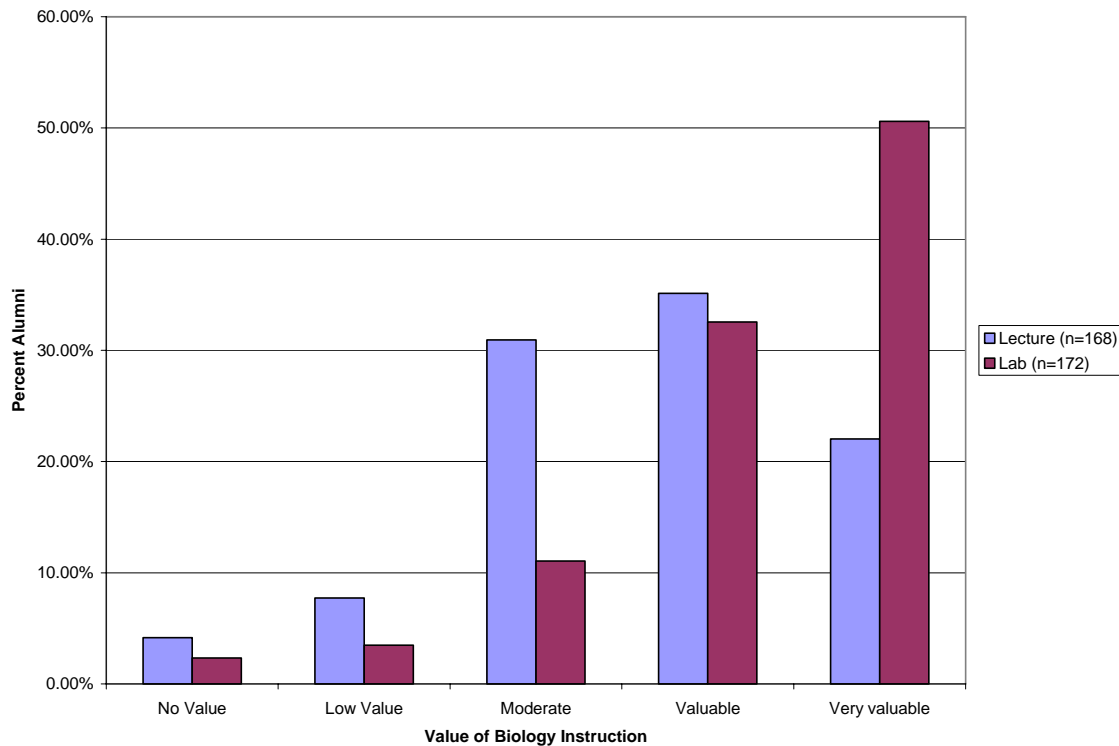


Fig. 4. Alumni assessment of lecture and laboratory value. Students were asked to assess the importance of Biology lectures and laboratories in preparing them for the workplace. Shown are the percentages of respondents ranking lectures and laboratories. Sample sizes were 168 and 172 for lecture and laboratories, respectively. Eight and four alumni failed to answer the lecture and lab questions, respectively.

Alumni were asked to rate the biology curriculum on a 5 point scale (5 being positive and 1 being a negative rating). Only 3% (5 of 172) rated the curriculum in a negative way while approximately 19% (33 of 172) of respondents felt the curriculum was in the middle with regard to being current or modern in context (Fig. 5). A large

majority, 78% (133 of 172), rated the curriculum as being modern and up to date.

Similarly, 81% (140 of 173) of alumni rated depth of coverage in a very positive way (Fig. 5). Breadth of coverage was also ranked highly, with 81% giving highly positive ratings, and only 3% (4 of 173) (Fig. 5).

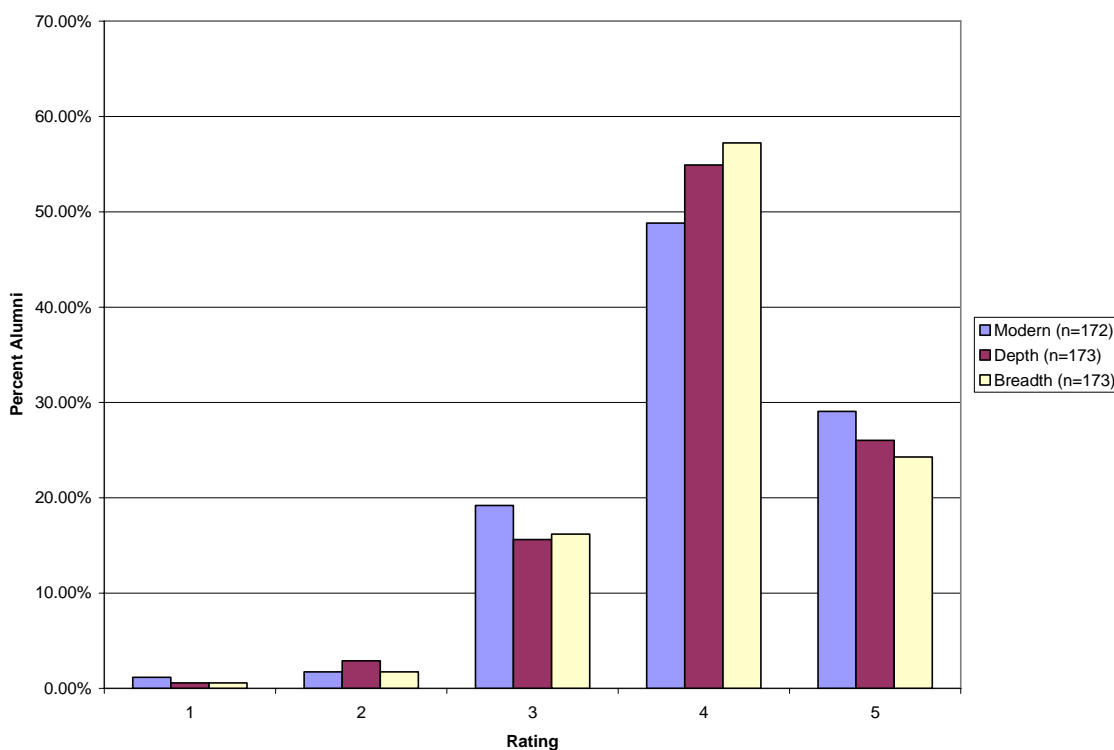


Fig. 5. Alumni assessment of biology curriculum. Alumni were asked to assess biology courses on whether they were modern, provided depth of coverage, and provided breadth of coverage. A five point scale was used with 1 being negative and 5 being positive. Sample sizes are shown above. Four, three and three alumni failed to answer the modern, depth and breadth questions, respectively.

Biology faculty members were rated on a 5 point scale as above. No respondents rated the faculty as not knowledgeable, and only 1 of 174 alumni responding assigned a negative score of 2. Over 94% of the alumni responding gave highly positive ratings to our faculty on their knowledge of the subject matter (Fig. 6). Similarly, faculty members were judged as interested in student progress by all but 1% (6 of 174) respondents (Fig.

6). Ninety-seven percent of alumni felt faculty cared about them as individuals while studying at Lock Haven University (171 of 176 respondents) (Fig. 6).

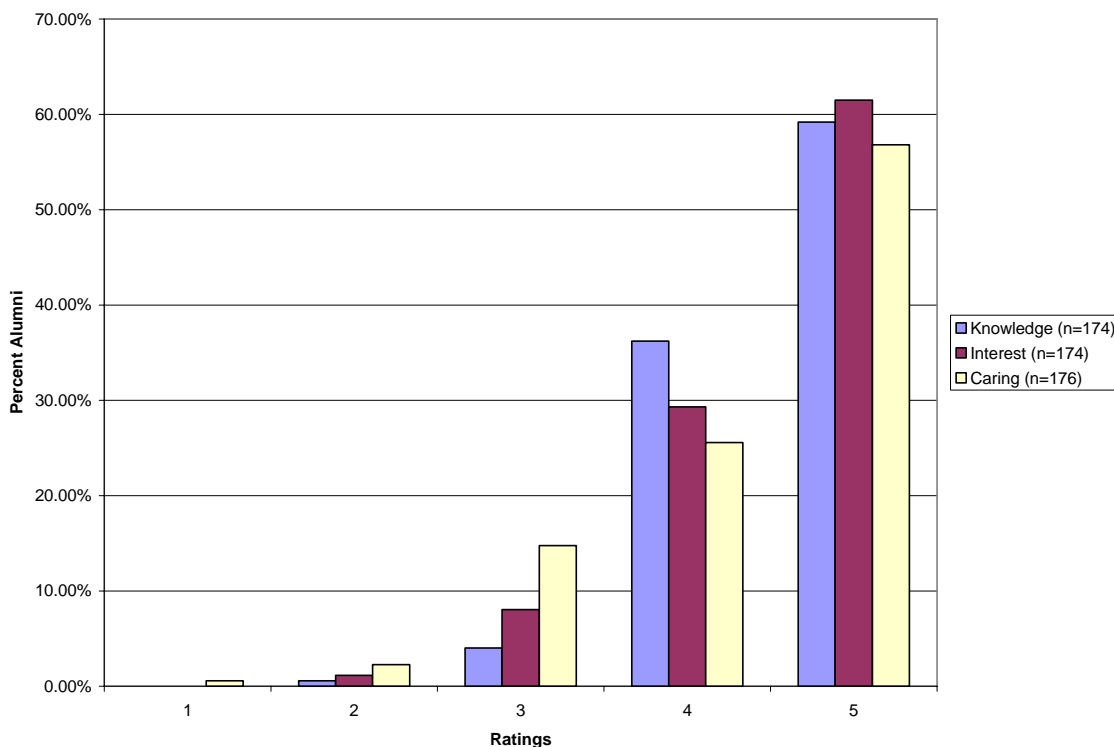


Fig. 6. Alumni assessment of biology faculty. Alumni were asked to assess faculty knowledge of subject matter, interest in student progress, and care for students. A five point scale was used with 1 being negative and 5 being positive. Sample sizes are shown above. Two students failed to answer questions on knowledge and interest.

Slightly over half of the respondents (53.1%, 85 of 160) did not pursue undergraduate research via independent studies or internships whereas approximately 47% of eligible respondents pursued undergraduate research opportunities while at Lock Haven University. The majority of those participating in research (97.3%, 71 of 73) rated the research experience as being of moderate to great value whereas only two of 73 (2.7%) gave negative ratings to their research experiences.

Alumni were also asked about their opportunities for intellectual exchange with fellow students. In the majority of cases (90%, 153 of 170), alumni felt they had significant opportunities for such interactions.

Course work in various disciplines of science and non-science was ranked by on a 5 point scale with 5 being most valuable and 1 being not valuable. Biology courses were rated highly with 86% rating our courses at 4 or 5 (Fig. 7). A very small percentage (2%, 4 of 173) gave biology courses negative scores of either 1 or 2. In contrast, 8% (14 of 171) ranked chemistry courses in a negative way; 45% (67 of 148) rated physics courses negatively; 38% (52 of 134) rated geosciences negatively and 12% (21 of 169) rated non-science general education courses as of limited or no value (Fig. 7).

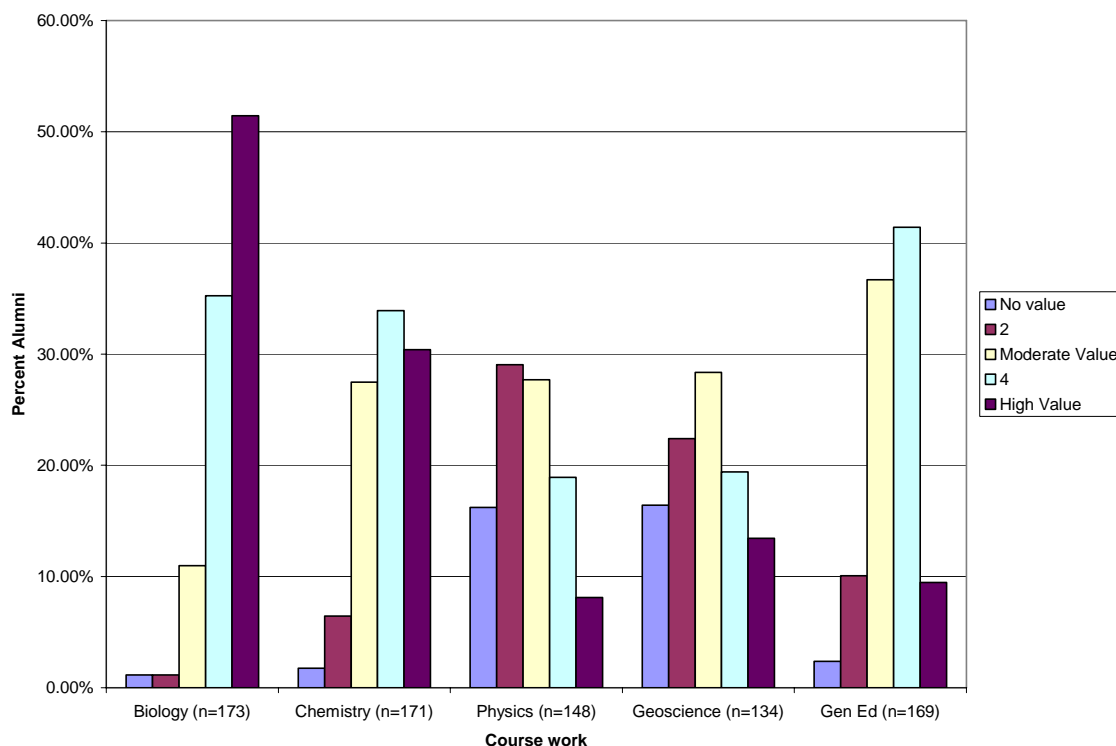


Fig. 7. Alumni assessment of courses. Alumni were asked to assess value of courses in different fields. A five point scale was used with 1 being negative and 5 being positive. Sample sizes are shown above.

Alumni were also asked to assign an overall grade to the Biology program with A assigned for superior and E for failing. A large number of alumni gave strong overall ratings to the Department with 44% A scores (75 of 170) and 51% B scores (86 of 170). There were eight (5%) Cs, one (1%) D and zero E grades assigned (Fig. 8).

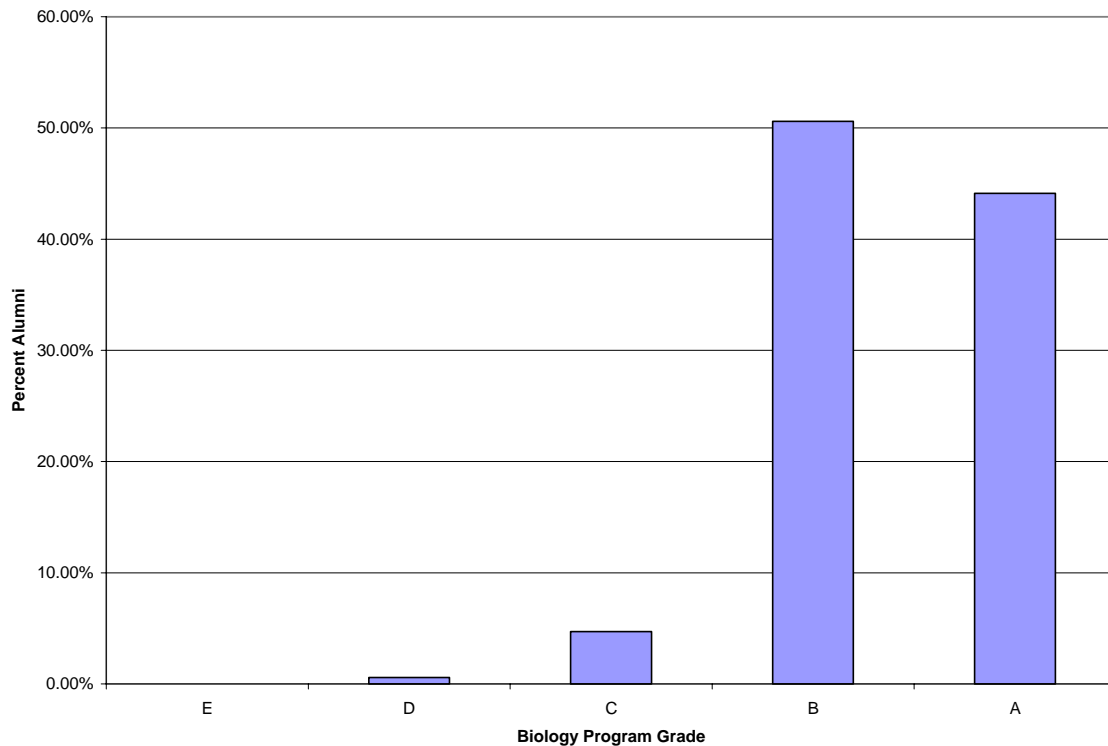


Fig. 8. Alumni grade assigned to Biology program. Alumni were asked to assign an overall grade to the Biology program. A five point scale was used with 1 being negative and 5 being positive. Sample size was 170 alumni. Six students failed to answer questions on knowledge and interest.

Extracurricular Information

A large number of alumni (n=119) lived on campus at some point, spending an average of 2.7 years on campus. Thirty-five students reported commuting from outside of Lock Haven at some point, averaging 3 years of commuting. A large number of students (n=88) also reported living off campus within Lock Haven.

Students were also asked about their work during college. Only 23 of 75 (30.7%) responding did not work while attending college. Sixteen percent worked, on average, more than 20 hours per week with another 30.7 percent working from 1-10 hours and 22.7% working 11-20 hours per week.

Survey mode.

When asked if they would prefer future surveys be administered on-line or as a hard copy, 117 of 168 (69.6%) respondents preferred on-line forms, 41 of 168 (24.4%) preferred hard copy and 8 (4.8%) had no preference.

Concluding comments.

The responses of our Biology alumni demonstrate a high degree of satisfaction with the breadth, modernity and quality of Biology instruction received at LHUP. Given our department's emphasis on lab instruction, it is particularly gratifying that our alumni found the labs to be of very high value. Importantly, a majority of respondents are employed in science and feel that our Biology program did a very good job of preparing them for employment. They also feel the faculty members are quite knowledgeable and concerned about student progress and welfare. Thus, a large majority of our alumni have

very favorable opinions of the Biology training received at LHU. Since most of these alumni have been working in science and/or receiving post-graduate educations, these survey results provide a very strong “consumer” endorsement of our Biology program and department.