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Learning from our Friends:

An Interdisciplinary Look at Health Science Internships at Idaho State University in the Medical Laboratory Sciences, Pharmacy, Physician Assistant and Nursing Programs

By Lily A Killian, BS in Biology, MLS (ASCP)

A thesis

submitted in partial fulfillment

of the requirements for the degree of

Master of Science in the Department of Medical Laboratory Sciences

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Committee Approval

To the Graduate Faculty:

The members of the committee appointed to examine the thesis of Lily A Killian find it satisfactory and recommend that it be accepted.

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November 17, 2015

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RE: regarding study number IRB-FY2016-136: Learning from Our Friends: An Interdisciplinary Approach for Evaluating Clinical Internships

Dear Ms. Killian:

I agree that this study qualifies as exempt from review under the following guideline: Category 2: Anonymous educational tests, surveys, interviews, or observations. This letter is your approval, please, keep this document in a safe place.

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Sincerely,

Ralph Baergen, PhD, MPH, CIP
Human Subjects Chair

Acknowledgements

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List of Abbreviations

ACCP – American College of Clinical Pharmacy

BLS – Bureau of Labor Statistics

CE/CME – Continuing Education/Continuing Medical Education

ISU – Idaho State University

MLS – Medical Laboratory Science/Scientist

MLT – Medical Laboratory Technician

MT – Medical Technologist

NP – Nurse Practitioner

PA – Physician Assistant

PGY1 – Post Graduate Year 1

RN – Registered Nurse

Abstract

Many health science programs rely on clinical internships as a means to provide on-the-job experiences for students. However, due to pressures such as workplace shortages, increasing job demands, and an increasing number of students needing internships, preceptors and clinical sites have become increasingly difficult to obtain and maintain. This study focuses on perceptions of preceptors and students who participated in clinical internships with the Nursing, Medical Laboratory Science, Physicians Assistant, and Pharmacy Programs at Idaho State University. Both preceptors and students were asked a series of survey questions designed to evaluate demographic variables, program structures, and internship perceptions. Responses suggest that preceptors are satisfied precepting for Idaho State University and feel qualified and prepared to teach and feel that students are prepared for internships. Preceptors are most motivated by increasing professional knowledge with CE credits and financial gain showing a variety of motivational levels. The type and effectiveness of learning tools were also compared across multiple fields. Participating programs use similar learning tools, with consensus that one-on-one instruction is the most common and effective teaching method. Survey results were compared to data collected in 2006, which showed little has changed with regards to preceptor satisfaction, suggesting preceptors are satisfied precepting for ISU despite increasing challenges over the last decade. Communication between clinical sites and ISU to clarify preceptor expectations remains the major area of concern. The data suggests the need to increase communication, potentially by clinical coordinators,

which may be addressed by consulting with other departments, since internship structures and methodologies are similar in various health science fields.

Introduction

Many health science programs across the United States rely on clinical internships in order to help teach students hands-on skills needed to be successful in their professions. Such programs include but are not limited to Medical Doctor, Pharmacy, Physician Assistant, Nursing, Physical Therapy, Dietetics, and Medical Laboratory Science (1,2,7,10,13-17). Although internship experiences have become fundamental parts of these programs, making these experiences a reality has become increasingly difficult.

Previous researchers have hypothesized many explanations for challenges associated with internships, including increasing demand for clinical sites and preceptors, competing demands for employers and preceptors, poor preceptor satisfaction, and lack of incentives for preceptors to work with students (2,6,9,11,13,17). In an effort to identify and suggest remedies to preceptor and site shortages, many surveys have been done, in a variety of fields, aimed at exploring preceptor attitudes.

The Bureau of Labor Statistics (BLS) predicts that there will be an increasing growth rate for many health science professions from 2014-24 with a predicted 30% increase for PAs, a 16% increase for Registered Nurses, a 16% increase for MLS and a 3% increase for Pharmacists, with most of the job demand due to the aging population needing medical care (3). The increasing demand for healthcare is exacerbated by workforce shortages (the MLS Community is seeing an increasing rate of retirement with a shortage of certified MLS to fill the positions), healthcare workers are forced to take care of more patients and have more responsibilities. This is in addition to preceptors being asked to

take on more students as the number of students needing internship positions steadily increases as programs expand and more programs are born (8). Idaho State University, specifically, started as an Academy in 1901 and was deemed a 4-year University in 1963. It started in Pocatello, ID and has since expanded to two other offsite campuses in Meridian, ID and Idaho Falls, ID with online students attending across the United States (18). With university expansion, student enrollment has increased thus putting added pressure to find clinical affiliates to take ISU health science students for internships.

An added pressure is created as many health science programs change the structures of their internship components. For example, the PGY-1 year in Pharmacy has increased the amount of internship time while other programs shorten their internship time (9,13), such as MLS's move from 12-month clinical rotations to much smaller quantities (480 hours at ISU)(11,16). Lengthening internship time requires sites to commit to students for longer periods of time and potentially limits the number of students they can take on. Alternatively, shortening internship time requires the same material to be compressed into fewer hours. With all of these stressors at play, many have hypothesized that preceptors would become dissatisfied over time as they try to fit training students in with their other demands. In addition, the increasing pressures and changes in program requirements also directly affect the students, thus making it important to understand their perceptions of the internship experience as well.

Many health science fields report issues with student placement; therefore, this study aims to understand current preceptor attitudes and compares these attitudes across

several health science disciplines. Additionally, MLS preceptor perceptions are specifically compared between these 2016 survey results and Heather Roy's MLS preceptor perception data gathered in 2006. Roy's (2006) primary objective was to analyze the current status of precepting attitudes considering MLS shortages and the need for clinical sites to hire students once clinical rotations are complete. Based on her findings, Roy (2006) concluded there was a need for preceptor workshops and a need for a clinical coordinator to better facilitate student placement and to maintain ongoing communication between the clinical sites and ISU. Following her survey, MLS preceptor workshops have not been implemented; however, an ISU MLS clinical coordinator has been hired and utilized for 1 year prior to the 2016 survey.

Research Questions

1. Are clinical preceptors satisfied with their jobs teaching Idaho State University health science students?
2. How do internship structures compare across multiple health science disciplines at Idaho State University?
3. How do student perceptions compare to preceptors perceptions?
4. Have MLS preceptor attitudes changed since Heather Roy's survey in 2006?

Definitions

1. Internship – though many programs use different terms (rotation, clinical, residency, etc.), here, internship is used to describe any experience where

students spend time learning from professionals on-the-job as a required part of their educational program

2. PGY1 – a term used to designate the postgraduate year/residency for the Pharmacy Program. Though not all pharmacy programs currently use this format there has been a shift to using the PGY1 format and is currently used by ISU
3. Preceptor – a health science professional that works with ISU students to provide them on-the-job training in their respective fields

Assumptions/Limitations

1. The structure of the various health science programs discussed in this study vary across the country (for example many programs remain hospital-based), thus the results of this study may only be generalizable to those programs with similar structures.
2. To increase the number of responses, the surveys were sent out as a live links that could be forwarded for additional preceptors and students to use with the assumption that everyone who took the survey was qualified to do so and only took the survey one time.
3. Due to low participation from ISU Nursing and PA programs, data analysis comparing programs was primarily done using the Pharmacy and MLS responses.

Literature Review

Most clinical internships from university based health science programs do not occur at the respective college/university, but generally take place at local hospitals and clinics. The success and continuation of many of these programs depends upon the availability and participation of local clinical sites and the availability of preceptors at those sites. As a result, building and maintaining strong relationships with these community partners is of utmost importance. In order to ensure that programs maintain a quality internship experience with satisfied preceptors, many programs regularly survey participating clinical preceptors in an effort to learn the efficacy of internships and assess how they can be improved in the future.

A major challenge in maintaining qualified and satisfied preceptors is overcoming pressure that stems from both health science programs experiencing an increase in student enrollment as well as students requiring placement from newly emerging programs (9,13). Often programs limit student admissions based on their limited ability to obtain clinical sites for internship placement (6). Other programs report that preceptor shortages stem from economic pressures at the clinical sites themselves and increasing workload demands on preceptors, which interferes with their ability to work with students (9).

A portion of the reported increase in students actually comes from a change in the structure of clinical internships. In the past decade, Pharmacy programs have recently shifted to include mandatory internship portions. These internships, termed *residencies*

in 1962, began when the internship first became an accredited process with the release of the new American College of Pharmacy Standards. The field has also seen a new initiative from the ACCP to require pharmacy programs to include a residency experience by 2020. With these new standards there has been a shift from learning managerial type skills on the job to fully engaging in the community pharmacy "patient-centered" approach. This shift not only increases the number of preceptors required but has also increased the amount of material preceptors are expected to cover with students (13).

Other programs, including Medical Laboratory Science, have experienced a shortening of clinical internship hours (11, 16). It has been suggested that shortening internships helps alleviate financial burden on clinical sites and perhaps allows for increased volume of student placement. However, this strategy comes with its own disadvantages, such as the inability for students to experience multiple clinical sites, and the inability for students to become competent with less frequently performed tasks (15, 16). This can be detrimental to student learning as first-hand clinical experience is often the best way to learn required skills. This is especially evident with nursing students who prefer simulation and repetition to learn necessary skills and information (4, 5). After a semester long internship was added to their nursing program, Casey *et al.* performed a survey that demonstrated nurses feel more satisfied and better prepared to work after being given more hands on opportunities provided by their clinical internships (4).

In order to assist with the aforementioned challenges, many health science programs have begun to rely on a clinical coordinator position to place students, recruit new clinical sites, maintain positive relationships, and oversee contractual agreements. As with preceptors, clinical coordinator shortages have also been reported and Snyder *et al*. have shown, overall, that coordinators are pleased with their jobs and don't require many incentives to stay motivated with their professions, despite suggestions that coordinators have decreased job satisfaction due to similar challenges preceptors face. Coordinator perceptions are on par with the findings from preceptor surveys, confirming shortages but showing that these working professionals may not be as dissatisfied as expected (12).

Health science professionals report increasing employment demand for various reasons. Some programs, like MLS, struggle with employment vacancies largely due to the lack of professional transparency. Nursing vacancies are far more publicized, yet high turnover exacerbates workplace shortages. In fact, 30-60% of nurses quit the profession within their first year of employment, citing poor preparation as a major contributor to job dissatisfaction (4). Gonzalez *et al*. confirmed reported preceptor shortage in the PA field, with only 25% of their 11,722 PA respondents being active preceptors (6). Because of these shortages, many studies have sought to find out what motivates preceptors to teach, and what incentives could entice them to continue teaching with the intention that understanding these factors will allow education institutions to better recruit and maintain preceptors for student internships.

Through satisfaction/research surveys, preceptors have suggested many ways to improve the precepting experience, with university-led workshops being a common request (2, 6, 11). In terms of motivation, preceptors have reported that their primary incentives for precepting include the desire to give back to the profession, rewarding sentiments, and because precepting keeps their knowledge current (6,17). Additional incentives include CE/CME credits (6), financial compensation (6, 9, 17), and adjunct faculty appointments (6,12). Interestingly, only a small number of preceptors cite the lack of financial compensation as a barrier to precepting (6, 9). Latessa *et al.* predict that the benefits of precepting must outweigh the increasing costs (not necessarily financial) of precepting, or a "tipping point" is going to be reached, whereby the number of students needing clinical internships will outweigh the availability of willing preceptors to teach them. Latessa *et al.* further suggests that monetary incentives are going to be increasingly important in order to obtain and maintain clinical preceptors (9).

Another strategy in understanding the challenges of maintaining preceptors is to conduct multiple longitudinal surveys, to assess how preceptor perceptions change over time. One might predict that preceptor satisfaction would decline as new challenges and demands arise, but many researchers have reported that attitudes have not changed drastically over time, and that preceptors report overall satisfactions with their jobs as preceptors (2, 6, 9, 12, 16). This implies that internship challenges may not necessarily shift the overall dynamic of the clinical internship experience.

Some have suggested that more research is needed to further explore the perceptions of those working directly with students, as opposed to those in management positions (11). Additionally, further studies are needed to learn about student perceptions of internship opportunities (13) . Kairuz *et al*. surveyed both students and preceptors as part of their accreditation process for a pharmacy program in New Zealand. Their findings proved to be useful in understanding both sides of the internship experience, reporting a disconnect between the student perceptions and the preceptor perceptions of the internship experience. Specifically, interns perceived themselves to be better prepared, more professional, and more competent than their clinical preceptors perceived them to be. Furthermore, preceptors considered students to be more organized than the students perceived themselves to be (8). Similar disconnect between student and preceptor perceptions was also described by a survey of a recent MLS program, whereby Valdez *et al.* (16) demonstrated the importance of studying both sides of the internship experience, especially when using perception surveys for internship and program process improvement.

Research Methodology

Participant Selection

Students – Student participants were selected based on their previous or current enrollment in any of the four participating programs (MLS, PA, Pharmacy, and Nursing) at ISU with completion of an internship experience within the three years prior to the study. For MLS, an email was sent directly to students who participated in clinical rotations in the last 3 years (2012 – 2015). For PA, Pharmacy, and Nursing, an email was sent with the survey instructions and the survey link to a faculty member or clinical coordinator in each of the programs who were then asked to send the email out to those students who met the qualifications.

Preceptors – Preceptors were identified as anyone who has worked with ISU students on-the-job, participating at clinical sites in conjunction with any of the four participating programs. For the MLS program, an email with the survey instructions and survey link was sent to laboratory managers, clinical coordinators, and known preceptors directly with instructions to forward the email to bench MLS/MT/MLT who work with ISU students. For the PA program, the survey instructions and link were sent via email to two clinical coordinators working for local hospitals that take ISU students (St. Alphonsus Regional Medical Center and St. Luke's Regional Medical Center), who were then asked to email the instructions to participating preceptors for the PA program. For the Pharmacy Program, the instructions and link were sent via email to the Director of Experiential Education who then emailed the information to pharmacy preceptors. The

Nursing Program declined to contact participating preceptors or coordinators directly and suggested using the Idaho NP Locator website (http://www.npidaho.org/idaho-nurse-practitioners-np-locator-boise). Using this site, self-reported NP preceptors were identified and the survey instructions and link were sent via the contact option through the website with the request to forward the survey to any other NPs that may work with ISU students.

Instrumentation

The two surveys were created using the RedCap survey program with access through Washington State University made possible by grants UL1TR000423, KL2TR000421, and TL1TR000422 from the NIH National Center for Advancing Translational Sciences through the Clinical and Translational Sciences Awards Program (CTSA). Responses were then downloaded from Redcap for further analysis.

Survey Structure

The study consisted of two surveys, one sent to ISU health science students and one sent to ISU health science preceptors. Both surveys were divided into three sections. The first section was comprised of demographic questions, the second contained questions about learning tools and evaluation of learning, and the third section focused on overall program and precepting perceptions. The questions consisted of multiple choice questions, yes/no questions, Likert scale questions, with some open ended questions.

Design and Analysis

Analysis was performed using JMP Pro Statistical Software as well as Microsoft Excel. T-test were used to compare means with a statistical significance of $p<0.05$.

Results

Preceptors Demographics:

A total of 76 preceptor surveys were initiated, with 68 filling out the survey in its entirety. Of 73 respondents, 40 (54.8%) identified themselves as preceptors for the Pharmacy Program, 32 (43.8%) identified themselves as preceptors for the MLS Program and 1 (1.4%) identified themselves as a preceptor for the Nursing Program, with no representation from the PA Program (table 1).

Across all participating programs, 90.3% of all respondents have been working in their respective fields for 6 or more years, with 52.8% of total respondents working in their fields for >15 years (19 reporting from Pharmacy, 19, reporting from MLS), and 75.3% of respondents reported precepting students for more than 6 years, of those 30.9% precepting students for >15 years (table 2 and 3).

Also of note, 84.5% of the respondents choose to precept, whereas only 15.5% precept because it is required as part of their job description. 25.8% of the MLS preceptors reported being required to precept compared to 7.7% of Pharmacy preceptors (table 4).

Student Demographics:

A total of 82 student surveys were initiated, with 58 filling out the survey in its entirety. Of the 82 student respondents, 14 (17.1%) interned with the PA Program, 50 (61.0%) interned with the Pharmacy Program, 5 (6.1%) with the Nursing Program, and 13 (15.9%) with the MLS Program (figure A).

Across all programs the majority of students ranged from 20 to 40 years old, with 39% in the 20-25 age range, 25.6% in the 26-30 range, 30.5% in the 31-40 range, and 4.9% in the 41-50 range (n=82) (table B).

Overall, 71.1% of respondents interned at 2 or more clinical sites, with 34.8% of students interning at 5 or more sites (n=66). 40.3% of respondents (n=65) reported that they traveled greater than 40 miles to the furthest site (table C). 95.5% of total respondents (n=66) said that the clinical site covered none of their traveling expenses, and 98.5% of students said that none of their expenses were covered by ISU. The three respondents that reported the site covering some of the expenses were from the PA program, and the 1 respondent that reported ISU paying for some of the travel expenses was from the Pharmacy Department. Of 66 respondents, 53% were offered a job by one of their clinical sites upon completion of their internships with 77% of the respondents who were not offered a job coming from the Pharmacy Department (table D).

Preceptor satisfaction:

Perception questions were asked using a Likert scale of 1-5 with 1 corresponding to "disagree", 2 corresponding to "somewhat disagree", 3 corresponding to "neutral", 4 corresponding to "somewhat agree", and 5 corresponding to "agree" (table 5).

When asked if preceptors feel like they have enough time to work with students, the most frequently picked answers were somewhat agree ("4") and agree ("5"), with the MLS preceptors more inclined to be neutral (average response 3.06) (with 20% of MLS

choosing “disagree”) and Pharmacy preceptors more inclined to agree (average response 3.95), showing a statistically different response (p = 0.006) (table 6).

When asked if preceptors felt like they were adequately prepared to teach students, 69% agreed, and 22% somewhat agreed, with no statistical difference between MLS preceptors and Pharmacy preceptors (p=0.75). The MLS average response was 4.6 and Pharmacy’s was 4.54 (table 7). When asked if preceptors felt qualified to teach, the responses turned out similar with the MLS average being 4.83 and Pharmacy being 4.84, demonstrating no statistical difference (p=0.96). Also, 100% of respondents responded either “somewhat agree” or “agree” (table 8).

Preceptors were also asked if students came to internships adequately prepared. Respondents tended to respond that they agree, with Pharmacy (3.95) showing no statistical difference from MLS (3.5) with p=0.08 (table 15). In addition preceptors were asked if they feel appreciated by ISU for precepting students. In response to this question most agreed with the statement, with the average MLS response being 4.5 and Pharmacy being 4.3 and no statistical difference (p=0.23) (table 9).

While both departments tended to agree on most issues, when asked if a university led precepting class would be useful, MLS and Pharmacy showed a statistically different (p=0.013) response with the MLS average response being 3.53 showing overall more neutrality and the Pharmacy average response being 4.24 (table 10) showing that they were more likely to somewhat agree with the statement, overall.

When asked to provide additional information about how ISU could improve clinical internships, MLS preceptors contributed the following:

- "…communicate with the sites more often to check on the students.. Clinical site do not have any follow-up from either the students nor the instructors at ISU."
- "Good orientation and communication of expectations on both sides."
- "More checking in with preceptor sites to make sure there is adequate space for the amount of students allowed into the program."

In addition, Pharmacy preceptors added the following additional comments:

- "Touch base with preceptors at least once per year, in person, at their respective sites. "
- "The emails to preceptors are often lacking details and I need to follow up with ISU to clarify."
- "More interaction between teaching staff and preceptors"

A series of questions was also asked in regards to what motivates preceptors to continue teaching students with a 6-point Likert scale; 1 corresponding to "does not motivate me", 2 corresponding to "somewhat motivates me", 3 corresponding to "neutral", 4 corresponding to "motivates me", 5 corresponding to "strongly motivates me" and 6 corresponding to "NA – not applicable" (table 11).

When asked whether a pay increase motivates preceptors to continue teaching, both programs showed no statistical difference in average responses with the average MLS response being 2.71 and the average Pharmacy response being 2.21 (p=0.26)(table 12). When asked, yes or no, if ISU should provide compensation/incentives, 51.5% of respondents answered "yes" and 48.5% answered "no." However, when asked whether keeping their professional knowledge current motivates them to teach, the average MLS response rate was 4.06 and Pharmacy was 4.35 (p=0.24) (table 14). When asked about continuing education credits, responses were spread across the Likert scale with no clear level of motivation being selected more than another. The average response was 3.04 for MLS and 3.04 for Pharmacy (p=0.99)(table 13), not necessarily meaning that respondents are neutral about the subject but showing that many disagree about the level of motivation that CE credits provide.

When asked to provide additional feedback about what motivates them to teach respondents added the following comments:

- "Some students are very nice to deal with and can help with work load."
- "Serving others is important to me. This is a way to do that and help educate the future generations,"
- "I would like the next generation to be successful"
- It is an opportunity to help improve the program"
- "New employee opportunities"

Pharmacy preceptors included the following additional comments:

- "Provides good educational/precepting experience for my resident, with supervision and assistance readily available."
- "I want ISU to wave the fees for Pharmacy CE seminar no matter the number of students they precept"
- "Keeps me young, (class of 1975)"

Internship Structure comparison across multiple fields:

To gauge whether the different health science programs use similar internships structures in their programs, preceptors and students were asked a series of Likert questions about how often specific learning tools were used during clinical internships (1 – never, 2 – not very often, 3 – about half the time, 4 – often, 5 – most of the time, 6 - NA)(table 16). Overall, one-on-one instruction is the most widely used learning tool (4.71 average for preceptors and 4.19 for students) with no statistical difference among programs (p=0.30 for preceptors and p=0.23 for students). Pharmacy preceptors and students report that wet samples/mock scenarios were the least used learning tool (average of 2 and 2.5, respectively) whereby MLS preceptors and students both reported case studies/exercises as the least frequently used (average 3.13 and 1.67, respectively)(table 18).

Preceptors and students were also asked about the effectiveness of learning tools used on a Likert scale (table 17) with one-on-one instruction being reported as the most effective, overall, with no statistical difference between groups (preceptor average of

3.61 and student average of 4.39 with p=0.09). Preceptors for both programs reported the reading procedures/textbooks/etc. as the lest effective learning tool (3.4 MLS, 3.44 Pharmacy, p=0.82), with MLS students reporting case studies and other exercises as the least effective (2.5) and Pharmacy students reporting wet samples/mock scenarios as the least effective method (3.21)(table 19).

When learning tools are sorted from the highest level agreement to the lowest level of agreement (table 20), the top three used tools were one-on-one instruction, see-one-do-one, and reading procedures/textbooks/etc., as reported by both MLS and Pharmacy preceptors. In addition, both the MLS and Pharmacy students deemed these same tools as the top three most effective tools, in that order.

Preceptor VS Student perceptions:

In order to compare the internship experience from both the preceptor and the student perspective, a series of perceptions questions were asked on both surveys to help gauge whether students see their preparation and approach to the internship the same as how the preceptors see their approach, using a Likert scale (table 5). Nursing and PA student answers were omitted since there is no preceptor data to compare the student responses to. Overall, students and preceptors did not show a statistically different level of agreement with the students' critical thinking skills or the student preparedness for internships (p=0.60 and 0.48, respectively)(table E). The two things they did not agree on overall was that students have a positive attitude while out on clinicals (p=0.001) and the preceptors appear qualified to teach (p=0.022).

MLS perceptions 2006 VS 2016:

Roy reported that the average years working in the field for preceptors in 2006 was 24 years for Western Idaho clinical sites (n=48) and 19 years for Eastern Idaho clinical sites (n=29). The current study shows that 52.8% of MLS respondents have worked in the field for >15 years.

On a similar Likert scale (1 – strongly disagree, 2 – disagree, 3 – neutral, 4 – agree, 5 – strongly agree)(table F), in 2006, preceptors were inclined to agree-strongly agree that students showed a willingness to learn and that students have a positive attitude (4.63 and 4.65, respectively), while in 2016 responses fall between the somewhat agree and agree categories (4.47 and 4.40 respectively)(table G).

In 2006 responses falling between neutral and agree were “student had adequate knowledge of laboratory material” (3.57), “student had adequate skills pertaining to basic laboratory technique” (3.48), and “students exhibited critical thinking skills” (3.94) while similar corresponding responses in 2016 fell about the same, between neutral and somewhat agree. These were “students are ready for clinical internships when they get to my site” (3.75) and “students display good critical thinking skills” (4.03)(table G).

Discussion and Recommendations

Preceptor satisfaction:

When asked preceptor satisfaction questions, most respondents seemed pleased with the ISU internship experience and Pharmacy and MLS preceptors tended to agree on most topics. Both departments not only feel prepared to teach, but also feel qualified to teach students, which corresponds with the >15 year reported experience level and number of years spent precepting students (75.3% responded 6-15 years). Respondents also tend to mostly agree that students are adequately prepared to start internships, suggesting that the students get the proper didactic foundation prior to internships. However, improvements could still be explored in order to improve internship experiences. When asked about motivations to continue precepting in the future, there was no statistical difference between the MLS and Pharmacy departments, indicating that health science preceptors tend to be like-minded and have similar motivations for precepting, with increasing their professional knowledge being the most motivational incentive, and increased pay being the least motivational. These findings are on par with findings reported by Latessa *et al*., Gonzalez *et al*., and Snyder *et al*. Motivation through earning CE credits resulted in a broad range of responses. However, the clarity of the questions about financial compensation and CE motivation may be suspect as there were 15 N/A (not applicable) responses when asked about financial motivations, and 7 N/A responses when asked if CEs motivate them. This could suggest that they don't get financial incentives or CEs currently – and are thus not motivated by it, or perhaps

respondents were unclear about where these incentives would be coming from (ISU or their employers). However, with 51.5% of respondents reporting that ISU should provide compensation/incentives to precept, perhaps ISU is getting close to the "tipping point" whereby preceptors will have to be enticed in order to precept as was suggested by Latessa *et al*.

MLS and Pharmacy preceptors did show a statistical difference in several topics. When asked if they have enough time to teach students, Pharmacy preceptors were more inclined to agree while MLS preceptors only somewhat agreed overall, with 20% of MLS selecting that they disagree with the statement and 0% of Pharmacy saying they disagree, while 30.8% of Pharmacy and only 10% of MLS "agree" with the statement. This may be attributed to reported job shortages for MLS certified employees and 16% BLS growth statistics for the profession, indicating that job vacancies put pressure on employees to fulfill their normal job requirements in addition to the pressure on employees to make time to precept students. MLS and Pharmacy preceptors also disagreed about the necessity and efficacy of a precepting workshop provided by ISU. Pharmacy was more inclined to agree with the statement overall. This may be due to precepting instructions and expectations being unclear, with preceptors requesting (in open ended questions) more communication between ISU and clinical sites as well as updated evaluation tools.

Internship Structure comparison across multiple fields:

Both Pharmacy and MLS respondents reported using similar learning tools during clinical internships, implying that while the content may differ, health science programs rely on the same methodologies to teach students out on rotations. With this in mind, programs could potentially benefit from one another's experiences with internships in order to improve their own programs.

The most widely used and effective learning tool was on- on-one instruction, indicating that while technology may be advancing the basic shadow-style internship is still frequently and effectively used. This structure requires one preceptor for every student and reflects the increasing demand for preceptors as the number of students in health science programs increases.

Preceptor VS Student perception:

The student demographic questions demonstrate that students attending ISU for health science related fields are not necessarily the traditional student with 61% of respondents being over the age of 26. The demographic questions also demonstrate that students are visiting many sites that aren't necessarily close to campus with travel expenses not being covered by the clinical site or the University. This may reflect the need for additional clinical sites due to the saturation of local sites with students although it should be noted that additional sites that may be further from campus and may require increase costs, which the students bare. However, the travel may be worth it for both clinical site and students as around 50% of students reported being hired by one of the sites they interned at. It is also important to note that although 77% percent

of Pharmacy students did not get hired by clinical sites this may reflect the BLS growth statistics noting the field has a low growth rate – meaning less jobs available for students.

Despite student stresses with regards to traveling to internship sites and the prospect of being hired at those sites, preceptors showed a strong level of agreement with the students having a positive attitude and willingness to learn out on clinical internships. They also tended to somewhat agree with the students' ability to show clinical thinking skills and somewhat agree that students were prepared for internships showing no statistical difference between students and preceptors. This suggests that both students and preceptors tend to be like-minded with regards to student preparedness for interning.

Preceptors and students did disagree about students having a positive attitude, and preceptors' being qualified to teach. This confirms, as suggested by Kairuz *et al*., that there may be a disconnect between how the two groups perceive each other with preceptors more inclined to think they are qualified (as compared to student perceptions) and students more inclined to think that they have a positive attitude (as compared to preceptor perceptions). The disconnect concerning preceptor qualifications may be due to students' lack of knowledge about the requirements preceptors have to meet in order to precept. As the data shows most preceptors have more than 6 years' experience in their respective fields and more than 6 years' precepting, with a large portion of those with 6 or more years' experience actually

having greater than 15 years' experience. Further, the disconnect concerning students' attitude may be the preceptors misunderstanding student stresses regarding traveling and paying for internship expenses as having a poor attitude when out on clinical internships.

MLS perceptions 2006 VS 2016:

In 2006, preceptors had more years of experience as compared to 2016. This may be due to the high rate of retirement of MLS professionals, thus requiring vacancies to be filled with younger, less experienced individuals.

In addition, although the two Likert scales used in 2006 and 2016 varied slightly, the responses from preceptors were quite similar, despite the ten year gap (with the average responses on the "agreement" side of the scales). This suggests that preceptor perceptions have not drastically changed over time despite the current MLS job demands, workplace shortages, and increase in student numbers.

Future Research Possibilities

A future study looking into the same concepts explored in this study would be useful in order to adequately compare *multiple* health science disciplines. It would also be useful to explore how different departments approach projects conducted by other departments, in order to understand why participation with the current study was so low. Was communication not conducted properly? Was there a lack of interest in the

project content? Was the survey not live long enough- thus not giving respondents an adequate amount of time to participate?

Additionally, with the recently appointed MLS Clinical Coordinator, it may be useful to conduct a survey in a year or so gauging whether the Clinical Coordinator has improved communication between ISU and its clinical sites and also whether the student placement process has gone smoother for all involved (ISU, students, and clinical sites).

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Appendices

Appendix 1: Preceptor Figures and Tables

Figure 1: ISU Program Representation (preceptor) – shows which ISU health sciences program the participating respondents precept for. Of 73 responses, 40 came from Pharmacy, 32 came from MLS, 1 came from Nursing, and 0 came from PA.

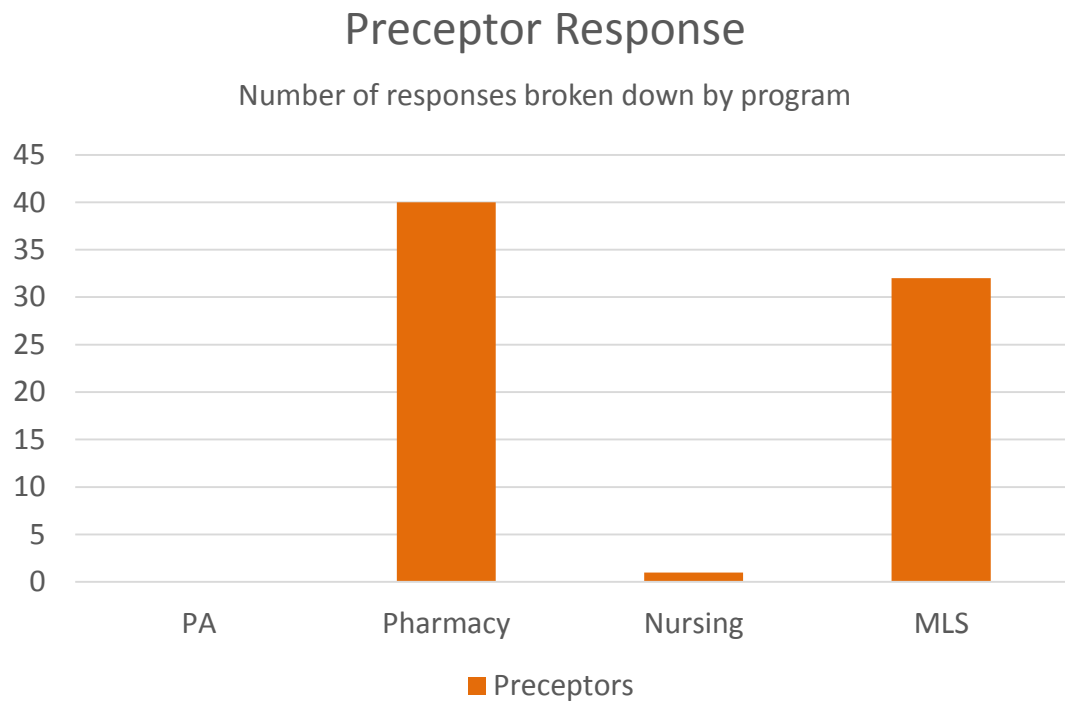

Table 2: Years employed in current profession – years working in each preceptor's given profession with a majority of preceptors having been in the profession >15 years with half of those respondents from the Pharmacy program and half from the MLS program

	Total #	Total %	MLS #	MLS %	Pharm #	Pharm %	Nurse #	Nurse %
<1	0	0%	0	0	0	0	0	0
1-2	3	4.2%	1	3.2%	2	5%	0	0
3-5	4	5.6%	1	3.2%	3	7.5%	0	0
6-10	14	19.4%	5	16.1%	9	22.5%	0	0
11-15	13	18.1%	5	16.1%	7	17.5%	1	100%
>15	38	52.8%	19	61.3%	19	47.5%	0	0
N	72		31		40		1	

Table 3: Years precepting students – years spent precepting students for each field with 75.3% of all respondents having precepted students for 6 or more years and of those 30.9% precepting students for more than 15 years

	Total #	Total %	MLS #	MLS %	Pharm #	Pharm %	Nurse #	Nurse %
<1	1	1.4%	0	0	1	2.5%	0	0
1-2	7	9.6%	3	9.4%	4	10%	0	0
3-5	10	13.7%	4	12.5%	6	15%	0	0
6-10	26	35.6%	13	40.6%	12	30%	1	100%
11-15	12	16.4%	5	15.6%	7	17.5%	0	0
>15	17	23.3%	7	21.9%	10	25%	0	0
N	73		32		40		1	

Table 4 – Required to precept – 84.5% of preceptors choose to precept with 25.8% of MLS being required to precept and 7.7% of Pharmacy being required to.

	Total #	Total %	MLS #	MLS %	Pharm #	Pharm %	Nurse #	Nurse %
Required	11	15.5%	8	25.8%	3	7.7%	0	0
Choose	60	84.5%	23	74.2%	36	92.3%	1	100%
n	71		31		39		1	

Table 5– Likert perception response key

1	2	3	4	5
Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree

Table 6 – Enough time to work with students – taken together, most preceptors agree or somewhat agree with the statement “I have enough time to work with students” with Pharmacy preceptors more inclined to somewhat agree and MLS more inclined to be neutral and the difference between the MLS and Pharmacy responses being statistically significant (average 3.95 versus MLS average 3.06 with a p = 0.0065).

	Total (n)	1	1(%)	2	2(%)	3	3(%)	4	4(%)	5	5(%)
Total	68	6	8.82	11	16.2	10	14.7	20	29.4	21	30.88
MLS	30	6	20	4	13.3	5	16.7	12	40	3	10
Pharm	37	0	0	7	18.9	5	13.5	8	21.6	17	45.95

Table 7 – Adequate preparation for precepting – most preceptors felt prepared to start precepting showing strong agreement with the statement "I felt adequately prepared to start precepting" showing no statistical difference between MLS and Pharmacy responses (average MLS response of 4.6 and Pharmacy 4.54 with a p=0.75)

	Total (n)	1	1(%)	2	2(%)	3	3(%)	4	4(%)	5	5(%)
Total	68	0	0	2	2.94	4	5.88	15	22.1	47	69.12
MLS	30	0	0	0	0	3	10	6	20	21	70
Pharm	37	0	0	2	5.41	1	2.7	9	24.3	25	67.57

Table 8 – Qualified to precept – most preceptors agree with the statement "I feel qualified to teach students" showing no statistical difference between MLS and Pharmacy (average MLS response of 4.83 and Pharmacy 4.84 with a p=0.96)

	Total (n)	1	1(%)	2	2(%)	3	3(%)	4	4(%)	5	5(%)
Total	68	0	0	0	0	0	0	11	16.2	57	83.82
MLS	30	0	0	0	0	0	0	5	16.7	25	83.33
Pharm	37	0	0	0	0	0	0	6	16.2	31	83.78

Table 9 – ISU appreciation – most respondents agree with the statement "I feel appreciated by Idaho State University because I precept" showing no statistical difference between MLS and Pharmacy (average MLS response of 4.5 and Pharmacy of 4.30 with p=0.23).

	Total (n)	1	1(%)	2	2(%)	3	3(%)	4	4(%)	5	5(%)
Total	68	1	1.47	3	4.41	13	19.1	17	25	34	50
MLS	30	0	0	2	6.67	8	26.7	8	26.7	12	40
Pharm	37	1	2.7	1	2.7	5	13.5	9	24.3	21	56.76

Table 10 – ISU provided workshop – MLS and Pharmacy differed in their agreement with the statement "a preceptor workshop provided by ISU would be beneficial" showing statistically different responses (average MLS response of 3.53 and Pharmacy of 4.24 with p=0.013) with the Pharmacy department more inclined to desire an ISU-led precepting workshop

	Total (n)	1	1(%)	2	2(%)	3	3(%)	4	4(%)	5	5(%)
Total	68	5	7.35	0	0	16	23.5	20	29.4	27	39.71
MLS	30	4	13.3	0	0	9	30	10	33.3	7	23.33
Pharm	37	1	2.7	0	0	7	18.9	10	27	19	51.35

Table 11 - Likert motivation key

1	2	3	4	5	6
Does not motivate me	Somewhat motivates me	Neutral	Motivates me	Strongly Motivates me	NA -Not Applicable

Table 12 – Monetary motivation – both MLS and Pharmacy preceptors tended to be more neutral or somewhat disagree when asked if "increased pay" motivates them to precept, showing no statistical difference between the two fields (MLS average response at 2.71 and Pharmacy at 2.21 with p=0.26), with 15 selecting NA.

	Total (n)	1	1(%)	2	2(%)	3	3(%)	4	4(%)	5	5(%)	NA	NA(%)
Total	68	27	39.7	1	1.47	8	11.8	10	14.7	7	10.29	15	22.06
MLS	30	9	30	1	3.33	6	20	4	13.3	4	13.33	6	20
Pharm	37	17	45.9	0	0	2	5.41	6	16.2	3	8.108	9	24.32

Table 13 – CE motivation – the responses to continuing education motivating preceptors to continue precepting ranged across the Likert scale with MLS and Pharmacy showing no statistical difference in average response (MLS average response was 3.04 and Pharmacy was 3.04 with p=0.99) with 7 saying the question was not applicable to them

	Total (n)	1	1(%)	2	2(%)	3	3(%)	4	4(%)	5	5(%)	NA	NA(%)
Total	68	14	20.6	8	11.8	12	17.6	17	25	10	14.71	7	10.29
MLS	30	7	23.3	1	3.33	8	26.7	6	20	5	16.67	3	10
Pharm	37	7	18.9	6	16.2	4	10.8	11	29.7	5	13.51	4	10.81

Table 14 – Professional knowledge motivation – most respondents tended to agree that "keep(ing) their own professional knowledge current" motivates them to continue precepting with no statistical difference between MLS and Pharmacy preceptors (MLS average response was 4.06 and Pharmacy was 4.35 with p=0.24)

	Total (n)	1	1(%)	2	2(%)	3	3(%)	4	4(%)	5	5(%)	NA	NA(%)
Total	68	2	2.94	2	2.94	3	4.41	32	47.1	28	41.18	1	1.471
MLS	30	2	6.67	1	3.33	1	3.33	14	46.7	11	36.67	1	3.333
Pharm	37	0	0	1	2.7	2	5.41	17	45.9	17	45.95	0	0

Table 15 – Students are adequately prepared for internships – most preceptors agreed or somewhat agreed with the statement "students are ready for clinical internships when they get to my site" with no statistical difference between MLS and Pharmacies level of satisfaction (average MLS response of 3.5 and Pharmacy 3.95 and p=0.08)

	Total (n)	1	1(%)	2	2(%)	3	3(%)	4	4(%)	5	5(%)
Total	68	1	1.47	9	13.2	12	17.6	21	30.9	15	22.06
MLS	30	1	3.33	7	23.3	4	13.3	12	40	6	20
Pharm	37	0	0	2	5.41	7	18.9	19	51.4	9	24.32

Table 16 – Likert learning tools key

1	2	3	4	5	6
Never	Not very often	About half the time	Often	Most of the time	NA -Not Applicable

Table 17 – Likert effective tools key

1	2	3	4	5
We don't use	Not effective	Mildly effective	Effective	Very effective

Table 18 and 19- Learning tools and their effectiveness – this table shows average responses and p values to how often specific learning tools are used and how effective those learning tools are. Students and preceptors reported that one on one instruction was used that most often and also tended to be the most effective learning tool used during clinical internships with no statistical difference between the preceptors and the students (p=0.31, p=0.23, p=0.48, p=0.39) but there is a statistical difference between the student and the preceptors responses to how often the tool is used and how effective this tool is (p=0.001 and p=0.09).

All pharmacy picking "2" for wet samples/mock scenarios

Learning tools used	Preceptor MLS	Preceptor Pharmacy	P	Student MLS	Student Pharmacy	P	Preceptor Total	Student Total	P
One on one instruction	4.8	4.64	0.31	4.42	4.1	0.23	4.71	4.19	0.001
See one – do one	4.0	3.86	0.60	4.25	3.69	0.09	3.93	3.85	0.71
Reading procedures /texts/etc.	4.3	3.39	0.00	3.25	3.57	0.41	3.79	3.39	0.04
Case studies/other exercises	3.13	3.16	0.94	1.67	3.17	0.00	3.14	2.52	0.007
Wet samples/mock scenarios	3.73	2	0.00	2.42	2.55	0.70	3	2.29	0.001

How effective are the learning tools	Preceptor MLS	Preceptor Pharmacy	P	Student MLS	Student Pharmacy	P	Preceptor Total	Student Total	P
One on one instruction	4.67	4.56	0.48	4.5	4.26	0.39	4.61	4.39	0.09
See one – do one	4.13	4.28	0.49	4.42	3.97	0.01	4.22	4.21	0.95
Reading procedures /texts/etc.	3.4	3.44	0.82	3.0	3.24	0.54	3.42	3.09	0.048
Case studies/other exercises	3.57	3.66	0.77	2.5	3.43	0.07	3.7	3.04	0.006
Wet samples/mock scenarios	4.2	3.51	0.06	3.58	3.21	0.45	3.78	3.11	0.009

Table 20 – Tools frequency ranks – learning methods and effectiveness were ranked from 1 to 5 with one being most used/most effective and 5 being the least used/least effective. All groups agree that one-on-one instruction is the most used and most effective learning tool, whereas the other tools vary by program and perspective (student vs preceptor). Top three tools used are 1 on 1 instruction, see-one-do-one, and reading procedures/textbooks with students ranking those three as most effective, in that order.

Rank	MLS Preceptor Frequency	Avg.	Pharmacy Preceptor Frequency	Avg.	MLS Student Effectiveness	Avg.	Pharmacy Student Effectiveness	Avg.

1	1 on 1	4.8	1 on 1	4,71	1 on 1	4.42	1 on 1	4.1
2	Reading	4.3	See 1	3.93	See 1	4.25	See 1	3.69
3	See 1	4.0	Reading	3.79	Reading	3.24	Reading	3.57
4	Wet/mock	3.73	Case studies	3.14	Wet/mock	2.42	Case studies	3.17
5	Case studies	3.13	Wet/mock	3.0	Case studies	1.67	Wet/mock	2.55

Appendix 2: Student Figures and Tables

Figure A: ISU program representation (students) - shows which ISU health sciences program the participating student respondents interned with. Of 82 respondents there were 14 PA, 50 Pharmacy, 5 Nursing and 13 MLS.

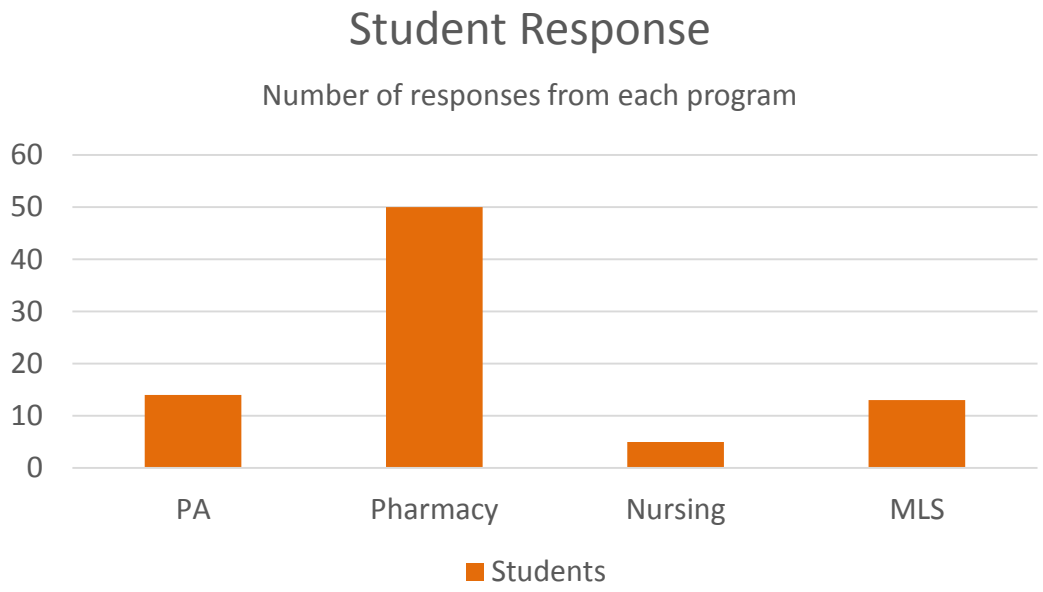

Table B – Student age – most students range from 20-40

N=82	Total #	Total &	MLS # N=13	MLS %	Pharm # N=50	Pharm %	Nurse # N=5	Nurse %	PA # N=14	PA %
<20	0	0%	0	0	0	0	0	0	0	0
20-25	32	39.0%	3	23.1%	27	54%	0	0	2	14.3%
26-30	21	25.6%	4	30.8%	12	24%	2	40%	3	21.4%
31-40	25	30.5%	5	38.5%	10	20%	3	60%	7	50%
41-50	4	4.9%	1	7.6%	1	2%	0	0	2	14.3%
>50	0	0%	0	0	0	0	0	0	0	0

Table C - Number of clinical sites visited during student internships – most students are hosted at multiple clinical sites with 34.8% interning at >5 sites and 71.1% interning at more than 2.

N=66	Total #	Total &	MLS # N=12	MLS %	Pharm # N=36	Pharm %	Nurse # N=4	Nurse %	PA # N=14	PA %

0	3	4.5%	1	8.3%	2	5.5%	0	0	0	0
1	16	24.2%	8	66.7%	8	22.2%	0	0	0	0
2	7	10.6%	1	8.3%	6	16.8%	0	0	0	0
3	11	16.7%	2	16.7%	8	22.2%	1	25%	0	0
4	3	4.5%	0	0	1	2.8%	0	0	2	14.3%
5	3	4.5%	0	0	2	5.5%	1	25%	0	0
>5	23	34.8%	0	0	9	25%	2	50%	12	85.7%

Table D - Student internship expense coverage and job offers – most expenses are not covered by the hosting clinical site(s) or by ISU and about half of students are offered a job by one of their hosting clinical sites with Pharmacy students being the least likely to be offered a job

N=66	Total Y/N	Total Y/N %	MLS Y/N	Pharm Y/N	Nurse Y/N	PA Y/N
Travel expenses covered by site	3/63	4.5%/95.5%	0/12	0/36	0/4	3/11
Travel expenses covered by ISU	1/65	1.5%/98.5%	0/12	1/35	0/4	0/14
Offered a job by a site	31/35	47.0%/53.0%	11/1	9/27	1/3	10/4

Table E - Preceptor and student comparisons –shows the average responses of the MLS students and preceptors and the Pharmacy students and preceptors to a series of perception questions. Also displayed are the p values comparing the two groups. Overall students and preceptors did not show a statistically different agreement level with being comfortable with critical thinking skills and their preparedness for internships (p=0.60 and p=0.48, respectively). The only two things they did not agree on overall was that students have a positive attitude while out on clinical (p=0.001) and the preceptors appear qualified to teach (p=0.022).

	Preceptor MLS	Student MLS	P	Preceptor Pharmacy	Student Pharmacy	P	Preceptor Total	Student Total	P
Students have positive attitude	4.37	5.0	0.000	4.43	4.74	0.06	4.40	4.82	0.001
Student are comfortable with critical thinking skills	3.93	4.33	0.21	4.11	4.33	0.24	4.03	4.33	0.60

Students are prepared for internships when they get there	3.5	3.41	0.86	3.95	4.12	0.40	3.75	3.89	0.48
Preceptors are qualified to teach students	4.83	4.42	0.06	4.84	4.53	0.12	4.84	4.5	0.022

Table F – Likert scale Roy VS Killian – compares Likert perception scales used by Roy in 2006 and Killian in 2016

	1	2	3	4	5
Roy (2006)	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Killian (2016)	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree

Table G - MLS Program feedback 2006 versus 2016 – comparing agreement with similar statements from 2006 to 2016 with reported average responses. All responses averaged over 3 showing varying degrees of agreement with the given statements.

Roy 2006	Avg.	Killian 2016	Avg.
“students had adequate knowledge of laboratory material”	3.57	“students are ready for clinical internships when they get to my site”	3.50
“ students has adequate skills pertaining to basic laboratory technique”	3.48	“students are ready for clinical internships when they get to my site”	3.50
“the student was willing to learn”	4.63	“students are willing to learn”	4.47
“the student exhibited a positive attitude”	4.65	“students have a positive attitude”	4.37
“student exhibited critical thinking skills”	3.94	“students display good critical thinking skills”	3.93

Appendix 3: Preceptor Survey

Confidential

Preceptor Survey

You are being asked to participate in the following survey because you have been identified as a clinical preceptor who works with students from Medical Laboratory Science, Pharmacy, Physician Assistant, or Nursing Program at Idaho State University. The survey is anonymous and there will be no way to associate your answers with your identity. Participation in the survey is completely voluntary. You may choose not to take the survey, stop the survey, or skip any questions you do not want to answer. Completion of the survey serves as your voluntary agreement to participate in this research project and certifies that you are 18 years or older.

If you have any questions or concerns please contact:

Lily Killian

Graduate Student

Medical Laboratory Sciences

strulily@isu.edu

or

Rachel Hulse

Medical Laboratory Sciences

Program Director

Clinical Assistant Professor

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Preceptor Demographics

Which ISU campus do your interning students primarily attend?
- ○ Pocatello
- ○ Meridian
- ○ Idaho Falls
- ○ Twin Falls
- ○ Online
- ○ Other

Please describe _____

Which Health Sciences Department do you precept for?
- ○ PA
- ○ Pharmacy
- ○ Nursing
- ○ MLS
- ○ Other

Please describe. _____

What title best describes you?
- ○ PA
- ○ Pharmacist
- ○ Nurse
- ○ MLS
- ○ MLT
- ○ Other

Please describe _____

How many years have you been working as a __(see previous question)___?
- ○ < 1
- ○ 1-2
- ○ 3-5
- ○ 6-10
- ○ 11-15
- ○ >15

How many years have you been precepting students?
- ○ < 1
- ○ 1-2
- ○ 3-5
- ○ 6-10
- ○ 11-15
- ○ >15

Are you required to precept or do you choose to precept?
- ○ Required
- ○ Choose to

What are the requirements to be a preceptor at your site?

	Yes	No
A certain amount of years working in the field	○	○
Online preceptor training/class/workshop	○	○
In-person preceptor training/class/workshop	○	○
Recommendations from peers/supervisors	○	○
Good performance reviews	○	○

Are there any other requirements for precepting that were not already listed?

Preceptor Learning Tools

How often do you use the following learning tools at your site?
Please pick the best answer to the following questions:

	Never	Not very often	About half the time	Often	Most of the time	NA
One-on -one Instruction	○	○	○	○	○	○
Group Instruction	○	○	○	○	○	○
"See-one-do-one"	○	○	○	○	○	○
Reading procedures/text/etc.	○	○	○	○	○	○
Computer learning modules	○	○	○	○	○	○
Case studies/other exercises	○	○	○	○	○	○
"Wet samples"/mock scenarios	○	○	○	○	○	○

How effective (at helping students learn) do you find the following learning tools if used at your site?

Please pick the best answer to the following questions:

	We don't use	Not effective	Mildly effective	Effective	Very effective
One-on-one Instruction	○	○	○	○	○
Group Instruction	○	○	○	○	○
"See-one-do-one"	○	○	○	○	○
Reading procedures/text/etc.	○	○	○	○	○
Computer learning modules	○	○	○	○	○
Case studies/other exercises	○	○	○	○	○
"Wet samples"/mock scenarios	○	○	○	○	○

Are there any other learning tools that your site uses that you find effective at helping students learn? _____

How often are the following methods used to measure whether learning has occurred?
Please pick the best answer to the following questions:

	Never	Not very often	About half of the time	Often	Most of the time	NA
Direct Observation	○	○	○	○	○	○
Checklists	○	○	○	○	○	○
Quizzes	○	○	○	○	○	○
Case Studies	○	○	○	○	○	○
Training checklists/documents provided by ISU	○	○	○	○	○	○

How effective do you find the following methods used to measure whether learning has occurred?

Please pick the best answer to the following questions:

	We don't use	Not effective	Mildly effective	Effective	Very effective
Direct Observation	○	○	○	○	○
Checklists	○	○	○	○	○
Quizzes	○	○	○	○	○
Case Studies	○	○	○	○	○
Training checklists/documents provided by ISU	○	○	○	○	○

Does your site use any other effective methods to measure whether learning has occurred?

_____

Does your site incorporate "study-time" into your internship - specific time where students can study on their own what was learned that day and/or study for school exams or certification exams?

○ Yes
○ No

On average how many hours per week (during internship time) do students spend studying?

○ 0-5
○ 5-10
○ 10-15
○ 15-25
○ >25
○ NOT APPLICABLE

How often do you have students do the following when the workload is too busy for observation/training:

Please pick the best answer to the following questions:

	Never	Not very often	About half of the time	Often	Most of the time
Go home	○	○	○	○	○
Read procedures	○	○	○	○	○
Study on their own	○	○	○	○	○
Help with tasks already performed and deemed competent	○	○	○	○	○

What other activities do the students do when the workload is too heavy for one-on-one training?

_____

Preceptor Perceptions

Please rate how much you agree with the following statements:

	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree
I feel like I have enough time to work with students	○	○	○	○	○
I look forward to working with students	○	○	○	○	○
My company uses student rotations as a way to seek out new employees	○	○	○	○	○
Students are ready for clinical internships when they get to my site	○	○	○	○	○
Students are grateful to be interning at my site	○	○	○	○	○
Students have a positive attitude	○	○	○	○	○
Students are willing to learn	○	○	○	○	○
Students display good critical thinking skills	○	○	○	○	○
I felt adequately prepared to start precepting	○	○	○	○	○
I feel qualified to teach students	○	○	○	○	○
I feel comfortable contacting ISU if I have any problems/concerns with a student	○	○	○	○	○
I feel appreciated by my employer because I precept	○	○	○	○	○
I feel appreciated by Idaho State University because I precept	○	○	○	○	○
A preceptor workshop provided by ISU would be beneficial	○	○	○	○	○

What could Idaho State University do to make you feel more appreciated?

_____

What do you think would help prepare a new preceptor to start precepting?

_____

What motivates you to continue precepting?

	Does not motivate me	Somewhat motivates me	Neutral	Motivates me	Strongly motivates me	NA
Increased pay	○	○	○	○	○	○
Continuing Education	○	○	○	○	○	○
Opportunity to work with new people	○	○	○	○	○	○
Keep my own professional knowledge current	○	○	○	○	○	○
Looking for promotion	○	○	○	○	○	○
Looks good on my resume	○	○	○	○	○	○
Personal satisfaction	○	○	○	○	○	○
Help the future generation of professionals	○	○	○	○	○	○
It is required by my employer	○	○	○	○	○	○

Is there anything else that motivates you to precept students?

How often do you experience the following challenges when precepting?

	Never	Not very often	About half of the time	Often	Most of the time
Feel physically tired afterwards	○	○	○	○	○
Feel emotionally tired afterwards	○	○	○	○	○
Work longer than normal shifts	○	○	○	○	○
Feel distracted from my normal duties	○	○	○	○	○
Feel like I don't have enough time to focus on my work	○	○	○	○	○
Feel like I am behind	○	○	○	○	○

Are there any other challenges you face while precepting?

_____

How many more years do you foresee yourself continuing to precept students?

○ 0
○ 1-5
○ 5-10
○ 10-15
○ >15

Please pick the primary reasons for why you would no longer act as a preceptor:

☐ Change careers
☐ Promotion
☐ Stop enjoying precepting
☐ Challenges outweigh the benefits
☐ Other

Please describe

_____

Are there any other reasons why you would choose not to precept in the future?

_____

Should ISU provide compensation/incentives for precepting?

○ Yes
○ No

What kind of incentives would you like ISU to provide (click all that apply):

☐ Pay
☐ Access to educational materials
☐ Affiliate faculty status
☐ Recognition lunch
☐ Thank you card
☐ Other
☐ None

Please describe

_____

What incentives do you think an employer could provide to make precepting more appealing?

_____

What could Idaho State University do to make the student precepting experience go more smoothly?

_____

If there is any other feedback you would like to share please do so here:

_____

Would you like to be entered into a drawing for a $25 Amazon gift card?

○ Yes
○ No

Please provide an email address for the drawing below:

_____

Appendix 4: Student Survey

Confidential

Student Survey

You are being asked to participate in the following survey because you have been identified as a current or recent student from the Medical Laboratory Science, Pharmacy, Physician Assistant, or Nursing Program at Idaho State University. The purpose of the survey is to compare clinical internships across health science programs in order to identify strengths and weaknesses and explore areas for improvement. The survey is anonymous and should take less than 10 minutes. Participation is completely voluntary. You may choose not to take the survey, stop the survey, or skip any questions you do not want to answer. Completion of the survey serves as your voluntary agreement to participate in this research project and certifies that you are 18 years or older.

If you have any questions or concerns please contact:

Lily Killian

Graduate Student

Medical Laboratory Sciences

strulily@isu.edu

or

Rachel Hulse

Medical Laboratory Sciences

Program Director

Clinical Assistant Professor

921 S. 8th Ave., Stop 8288, Pocatello, ID 83209

208-282-4456 phone

hulsrach@isu.edu

Student Demographics

Which ISU campus did/do you primarily attend?

- ○ Pocatello
- ○ Meridian
- ○ Idaho Falls
- ○ Online
- ○ Other

Please Describe _____

Which Health Sciences Program did you recently internship with?

- ○ PA
- ○ Pharmacy
- ○ Nursing
- ○ MLS
- ○ Other

Please describe _____

What is your age?

- ○ < 20
- ○ 20-25
- ○ 26-30
- ○ 31-40
- ○ 41-50
- ○ >50

What degree are you currently seeking or recently obtained (connected with your internship experience):

- ○ No degree
- ○ Bachelor's
- ○ Master's
- ○ Doctorate
- ○ Other

Please describe _____

How many other degrees did you have prior to starting your current/recent program at ISU?

	0	1	2	3	4	5
Associates	○	○	○	○	○	○
Bachelor's	○	○	○	○	○	○
Master's	○	○	○	○	○	○
Doctorate	○	○	○	○	○	○

How many different sites did you complete your ISU clinical internship at?

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ >5

How many miles away from home was the furthest site you had to travel to?

- ○ < 10miles
- ○ 10-20miles
- ○ 20-30miles
- ○ 30-40miles
- ○ >40miles

How much time, on average, did you spend traveling to and from clinical sites for your clinical internship PER WEEK?

- ○ < 1 hour
- ○ 1-5 hours
- ○ 5-10 hours
- ○ 10-20 hours
- ○ >20 hours

Were any of your travel expenses covered by the site?

- ○ Yes
- ○ No

Were any of your travel expenses covered by Idaho State University?

- ○ Yes
- ○ No

Have you been offered a job by one of the clinical sites you interned at?

- ○ Yes
- ○ No

Student Learning Tools

How often were the following learning tools used at the clinical sites you precepted at?

	Never	Not very often	About half of the time	Often	Most of the time	NA
One-on-one Instruction	○	○	○	○	○	○
Group Instruction	○	○	○	○	○	○
"See-one-do-one"	○	○	○	○	○	○
Reading procedures/text/etc.	○	○	○	○	○	○
Computer learning modules	○	○	○	○	○	○
Case studies/other exercises	○	○	○	○	○	○
"Wet samples"/mock scenarios	○	○	○	○	○	○

How effective do you find the following learning tools if used at your site?

	Was not used	Not effective	Mildly effective	Effective	Very effective
One-on-one Instruction	○	○	○	○	○
Group Instruction	○	○	○	○	○
"See-one-do-one"	○	○	○	○	○
Reading procedures/text/etc.	○	○	○	○	○
Computer learning modules	○	○	○	○	○
Case studies/other exercises	○	○	○	○	○
"Wet samples"/mock scenarios	○	○	○	○	○

Are there any other tools that were used at the clinical sites you visited that you found effective?

How often were the following methods used to measure and track whether learning had occurred?

	Never	Not very often	About half of the time	Often	Most of the time	NA
Direct Observation	○	○	○	○	○	○
Checklists	○	○	○	○	○	○
Quizzes	○	○	○	○	○	○
Case Studies	○	○	○	○	○	○
Training checklists/documents provided by ISU	○	○	○	○	○	○

How effective did you find the following methods used to measure and track whether learning had occurred?

	Was not used	Not effective	Mildly effective	Effective	Very effective
Direct Observation	○	○	○	○	○
Checklists	○	○	○	○	○
Quizzes	○	○	○	○	○
Case Studies	○	○	○	○	○
Training checklists/documents provided by ISU	○	○	○	○	○

Were there any other useful learning measurement tools used at the clinical sites you visited?

_____

How often were you asked to do the following when the workload was too busy for student observation/training:

	Never	Not very often	About half of the time	Often	Most of the time
Go home	○	○	○	○	○
Read procedures	○	○	○	○	○
Study on your own	○	○	○	○	○
Help with tasks already performed and deemed competent	○	○	○	○	○

What else did sites have you do if the workload was too busy for one on one training?

_____

Did your site(s) incorporate "study-time" into your internship - specific time where students can study on their own what was learned that day and/or study for school exams or certification exams?

○ Yes
○ No

On average how many hours per week did you spend studying as part of your internship (NOT AFTER YOU WENT HOME)?

○ 0-5
○ 5-10
○ 10-15
○ 15-25
○ >25
○ NOT APPLICABLE

Were you required to "pass" one area/task before moving onto another?

○ Yes
○ No

How did your site(s) determine whether you passed (click all that apply):

☐ Direct Observation - approval of preceptor
☐ Completed Checklist
☐ Quizzes
☐ Completion of case study/exercise
☐ Other

Please describe.

_____

Are there any other ways clinical sites checked your competency before moving on to another department or topic?

_____

Student Perceptions

Please pick the best answer to the following questions:

	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree
I felt adequately prepared for my clinical internship(s)	○	○	○	○	○
My preceptors enjoyed working with me	○	○	○	○	○
I enjoyed my clinical internship(s)	○	○	○	○	○
I felt comfortable with applying my critical thinking skills	○	○	○	○	○
I displayed a positive attitude while out on my internship	○	○	○	○	○
I showed a willingness to learn while out on my internship	○	○	○	○	○
I felt comfortable asking questions	○	○	○	○	○
I would like to be hired at any of my internship sites	○	○	○	○	○
I feel like my preceptors were qualified to be teaching students	○	○	○	○	○
I felt like I was part of the team while doing my internship(s)	○	○	○	○	○

How did you prepare yourself for the clinical internship experience?

_____

What suggestions do you have that would better prepare future students for clinical internships?

_____

Would you like ISU to provide mock certification exams and/or other certification preparation (material/classes/workshops)? If so, what would be the most helpful?

_____

If there are is any other feedback you would like to share please do so here:

_____

Would you like to be entered into a drawing for a $25 Amazon gift card?

○ Yes
○ No

Please provide your email address for the drawing.

_____

Student Perceptions

Please pick the best answer to the following questions:

	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree
I felt adequately prepared for my clinical internship(s)	○	○	○	○	○
My preceptors enjoyed working with me	○	○	○	○	○
I enjoyed my clinical internship(s)	○	○	○	○	○
I felt comfortable with applying my critical thinking skills	○	○	○	○	○
I displayed a positive attitude while out on my internship	○	○	○	○	○
I showed a willingness to learn while out on my internship	○	○	○	○	○
I felt comfortable asking questions	○	○	○	○	○
I would like to be hired at any of my internship sites	○	○	○	○	○
I feel like my preceptors were qualified to be teaching students	○	○	○	○	○
I felt like I was part of the team while doing my internship(s)	○	○	○	○	○

How did you prepare yourself for the clinical internship experience?

_____

What suggestions do you have that would better prepare future students for clinical internships?

_____

Would you like ISU to provide mock certification exams and/or other certification preparation (material/classes/workshops)? If so, what would be the most helpful?

_____

If there are is any other feedback you would like to share please do so here:

_____

Would you like to be entered into a drawing for a $25 Amazon gift card?

○ Yes
○ No

Please provide your email address for the drawing.

_____

Appendix 5: Preceptor Data

68 COMPLETED ENTRIES AND 8 INCOMPLETE ENTRIES

	Number	Percentage	MLS #	MLS %	Pharm #	Pharm %	Nurse #	Nurse %
Pocatello	29	40.3%	14	45.2%	15	37.5%	0	0
Meridian	35	48.6%	13	41.9%	21	52.5%	1	100%
Idaho Falls	3	4.2%	2	6.5%	1	2.5%	0	0
Twin Falls	2	2.8%	1	3.2%	1	2.5%	0	0
Online	1	1.4%	1	3.2%	0	0	0	0
Other	2	2.8%	0	0	2	5%	0	0

Primarily precept students from which campus (n=72)

(others were “couer d'alene” and “regulatory rotation in Nevada” and both from Pharm)

	Number	Percentage
PA	0	0%
Pharmacy	40	54.8%
Nursing	1	1.4%
MLS	32	43.8%
Other	0	0%

Precept for which health sciences program (n=73)

	Number	Percentage
PA	0	0%
Pharmacist	40	54.8%
Nurse	0	0%
MLS	29	39.7%
MLT	1	1.4%
Other	3	4.1%

What title best describes you (n=73)

(Others were administrator, lab tech/phlebotomist, and nurse practitioner)

	Total #	Total %	MLS #	MLS %	Pharm #	Pharm %	Nurse #	Nurse %
<1	0	0%	0	0	0	0	0	0
1-2	3	4.2%	1	3.2%	2	5%	0	0
3-5	4	5.6%	1	3.2%	3	7.5%	0	0
6-10	14	19.4%	5	16.1%	9	22.5%	0	0
11-15	13	18.1%	5	16.1%	7	17.5%	1	100%
>15	38	52.8%	19	61.3%	19	47.5%	0	0
n	72		31		40		1	

Years employed in current profession

	Total #	Total %	MLS #	MLS %	Pharm #	Pharm %	Nurse #	Nurse %
<1	1	1.4%	0	0	1	2.5%	0	0
1-2	7	9.6%	3	9.4%	4	10%	0	0
3-5	10	13.7%	4	12.5%	6	15%	0	0
6-10	26	35.6%	13	40.6%	12	30%	1	100%
11-15	12	16.4%	5	15.6%	7	17.5%	0	0
>15	17	23.3%	7	21.9%	10	25%	0	0
n	73		32		40		1	

Years precepting students (n=73)

	Total #	Total %	MLS #	MLS %	Pharm #	Pharm %	Nurse #	Nurse %
Required	11	15.5%	8	25.8%	3	7.7%	0	0
Choose	60	84.5%	23	74.2%	36	92.3%	1	100%
n	71		31		39		1	

Required or Choose to precept

	Total #	Total %	MLS #	MLS %	Pharm #	Pharm %	Nurse #	Nurse %
X amount of time in field	25 N=70	35.7%	15	20.5%	10	19.2%	0	0
Online training class/workshop	16 N=67	23.9%	9	12.3%	7	13.5%	0	0
In-person training class/workshop	13 N=67	19.4%	8	11%	5	9.6%	0	0
Recommendations from peers/supers	36 N=66	54.5%	19	26%	16	30.8%	1	100%
Good Performance reviews	36 N=68	52.9%	22	30.2%	14	26.9%	0	0
n			73		52		1	

Requirements to precept

(Other (19): desire to teach 2, knowledgeable and experienced 3, certified MLS (2), teaching certificate, approval by residency committee, residency trained, expected as part of job, board of pharmacy registration, no formal requirements p/m/n(3), licensure-p, student contact personally-p (2))

How often are the following learning tools used?

PRE - 1 on 1 instruction	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	70	0	0	2	2.857	1	1.4286	12	17.143	55	78.5714	0	0
MLS	30	0	0	1	3.333	0	0	3	10	26	86.6667	0	0
Pham	39	0	0	1	2.564	1	2.5641	9	23.077	28	71.7949	0	0
Nurse	1	0	0	0	0	0	0	0	0	1	100	0	0

PRE - Group instruction	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	69	14	20.2899	31	44.93	5	7.2464	14	20.29	3	4.34783	2	2.899
MLS	30	12	40	11	36.67	1	3.3333	4	13.333	1	3.33333	1	3.333
Pham	39	2	5.12821	20	51.28	4	10.256	10	25.641	2	5.12821	1	2.564
Nurse	0	0	#DIV/0!	0	#####	0	######	0	#DIV/0!	0	#DIV/0!	0	#####

PRE - See one	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	70	0	0	10	14.29	6	8.5714	31	44.286	21	30	2	2.857
MLS	30	0	0	6	20	2	6.6667	8	26.667	14	46.6667	0	0
Pham	39	0	0	4	10.26	4	10.256	22	56.41	7	17.9487	2	5.128
Nurse	1	0	0	0	0	0	0	1	100	0	0	0	0

PRE - Reading	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	69	0	0	10	14.49	13	18.841	27	39.13	19	27.5362	0	0
MLS	30	0	0	1	3.333	4	13.333	10	33.333	15	50	0	0
Pham	38	0	0	9	23.68	9	23.684	16	42.105	4	10.5263	0	0
Nurse	1	0	0	0	0	0	0	1	100	0	0	0	0

PRE - Computer	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	69	16	23.1884	33	47.83	7	10.145	8	11.594	3	4.34783	2	2.899
MLS	30	6	20	14	46.67	1	3.3333	6	20	3	10	0	0
Pham	38	9	23.6842	19	50	6	15.789	2	5.2632	0	0	2	5.263
Nurse	1	1	100	0	0	0	0	0	0	0	0	0	0

PRE - Case study	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	70	6	8.57143	20	28.57	15	21.429	16	22.857	12	17.1429	1	1.429
MLS	30	2	6.66667	9	30	7	23.333	7	23.333	5	16.6667	0	0
Pham	39	3	7.69231	11	28.21	8	20.513	9	23.077	7	17.9487	1	2.564
Nurse	1	1	100	0	0	0	0	0	0	0	0	0	0

PRE - Wet Samples	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	69	0	0	0	0	0	0	0	0	0	0	0	0

MLS	30	2	6.66667	5	16.67	3	10	9	30	11	36.6667	0	0
Pham	38	3	7.89474	19	50	8	21.053	5	13.158	0	0	3	7.895
Nurse	1	1	100	0	0	0	0	0	0	0	0	0	0

Any other learning tools used at your site?

MLS - Great variation between preceptors
MLS - Discussions of how each area of the field relates to other areas. ie If the patient has a low hemoglobin, what do you expect to see in chemistry and blood bank if the mean cell volume has changed dramatically? What if the patient is a cancer patient? A trauma patient? etc. Relate all the areas to be sure your answers fit the entire picture.
MLS - watching closely
MLS - Quizzes

How effective do you find the following learning tools?

PRE - 1 on 1 instruction	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective
Total	70	0	0	0	0	4	5.714286	19	27.14286	47
MLS	30	0	0	0	0	1	3.333333	8	26.66667	21
Pham	39	0	0	0	0	3	7.692308	11	28.20513	25
Nurse	1	0	0	0	0	0	0	0	0	1

PRE - Group instruction	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective
Total	68	22	32.35294	3	4.411765	20	29.41176	19	27.94118	4

MLS	29	13	44.82759	1	3.448276	8	27.58621	7	24.13793	0
Pham	38	8	21.05263	2	5.263158	12	31.57895	12	31.57895	4
Nurse	1	1	100	0	0	0	0	0	0	0

PRE - See one	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective
Total	70	1	1.428571	1	1.428571	9	12.85714	30	42.85714	29
MLS	30	1	3.333333	1	3.333333	3	10	13	43.33333	12
Pham	39	0	0	0	0	6	15.38462	16	41.02564	17
Nurse	1	0	0	0	0	0	0	1	100	0

PRE - Reading	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective
Total	70	0	0	4	5.714286	35	50	29	41.42857	2
MLS	30	0	0	2	6.666667	15	50	12	40	1
Pham	39	0	0	2	5.128205	19	48.71795	17	43.58974	1
Nurse	1	0	0	0	0	1	100	0	0	0

PRE - Computer	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective
Total	68	26	38.23529	5	7.352941	20	29.41176	14	20.58824	3
MLS	29	12	41.37931	4	13.7931	5	17.24138	7	24.13793	1
Pham	38	13	34.21053	1	2.631579	15	39.47368	7	18.42105	2
Nurse	1	1	100	0	0	0	0	0	0	0

PRE - Case study	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective
Total	71	9	12.67606	1	1.408451	12	16.90141	32	45.07042	17
MLS	30	5	16.66667	0	0	3	10	17	56.66667	5
Pham	40	3	7.5	1	2.5	9	22.5	15	37.5	12
Nurse	1	1	100	0	0	0	0	0	0	0

PRE - Wet or mock	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective
Total	68	8	11.76471	0	0	14	20.58824	22	32.35294	23
MLS	30	3	10	0	0	2	6.666667	11	36.66667	14
Pham	37	5	13.51351	0	0	12	32.43243	11	29.72973	9
Nurse	1	1	100	0	0	0	0	0	0	0

How often do you use the following to measure whether learning has occurred?

PRE - Direct observation	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	71	1	1.40845	0	0	5	7.0423	8	11.268	57	80.2817	0	0
MLS	30	0	0	0	0	1	3.3333	3	10	26	86.6667	0	0
Pham	40	1	2.5	0	0	4	10	5	12.5	30	75	0	0
Nurse	1	0	0	0	0	0	0	0	0	1	100	0	0

PRE - Checklists	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	71	4	5.6338	11	15.49	14	19.718	25	35.211	15	21.1268	2	2.817
MLS	30	1	3.33333	3	10	2	6.6667	11	36.667	13	43.3333	0	0
Pham	40	2	5	8	20	12	30	14	35	2	5	2	5
Nurse	1	1	100	0	0	0	0	0	0	0	0	0	0

PRE - Quiz	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	68	18	26.4706	22	32.35	10	14.706	12	17.647	5	7.35294	1	1.471
MLS	30	4	13.3333	9	30	3	10	8	26.667	5	16.6667	1	3.333
Pham	37	13	35.1351	13	35.14	7	18.919	4	10.811	0	0	0	0
Nurse	1	1	100	0	0	0	0	0	0	0	0	0	0

PRE - Case study	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	70	11	15.7143	19	27.14	9	12.857	18	25.714	12	17.1429	1	1.429
MLS	30	5	16.6667	8	26.67	4	13.333	8	26.667	5	16.6667	0	0
Pham	39	5	12.8205	11	28.21	5	12.821	10	25.641	7	17.9487	1	2.564
Nurse	1	1	100	0	0	0	0	0	0	0	0	0	0

PRE - ISU provided	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	70	11	15.7143	15	21.43	13	18.571	13	18.571	18	25.7143	1	1.429

MLS	30	0	0	4	13.33	4	13.333	9	30	13	43.3333	0	0
Pham	40	10	25	11	27.5	9	22.5	4	10	5	12.5	1	2.5
Nurse	1	1	100	0	0	0	0	0	0	0	0	0	0

How effective do you find the following methods to measure whether learning has occurred?

PRE - Direct Observation	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective	Very effective %
Total	70	0	0	0	0	1	1.428571	25	35.71429	44	62.85714
MLS	30	0	0	0	0	0	0	12	40	18	60
Pham	39	0	0	0	0	1	2.564103	13	33.33333	25	64.10256
Nurse	1	0	0	0	0	0	0	0	0	1	100

PRE - Checklists	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective	Very effective %
Total	69	7	10.14493	7	10.14493	27	39.13043	20	28.98551	8	11.5942
MLS	30	1	3.333333	6	20	5	16.66667	12	40	6	20
Pham	38	5	13.15789	1	2.631579	22	57.89474	8	21.05263	2	5.263158
Nurse	1	1	100	0	0	0	0	0	0	0	0

PRE - Quiz	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective	Very effective %
Total	68	21	30.88235	4	5.882353	18	26.47059	22	32.35294	3	4.411765
MLS	30	7	23.33333	1	3.333333	7	23.33333	12	40	3	10

Pham	37	13	35.13514	3	8.108108	11	29.72973	10	27.02703	0	0
Nurse	1	1	100	0	0	0	0	0	0	0	0

PRE - Case study	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective	Very effective %
Total	69	12	17.3913	0	0	11	15.94203	31	44.92754	15	21.73913
MLS	30	5	16.66667	0	0	7	23.33333	12	40	6	20
Pham	38	6	15.78947	0	0	4	10.52632	19	50	9	23.68421
Nurse	1	1	100	0	0	0	0	0	0	0	0

PRE - ISU provided	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective	Very effective %
Total	69	0	0	0	0	0	0	0	0	0	0
MLS	30	0	0	7	23.33333	11	36.66667	8	26.66667	4	13.33333
Pham	40	10	25	5	12.5	14	35	7	17.5	4	10
Nurse	1	1	100	0	0	0	0	0	0	0	0

Does your site use any other effective methods to measure whether learning has occurred?

MLS - evaluation by staff
MLS - Oral tests about procedures and problem solving along with written scenarios. This helps us to evaluate students from several angles. Some are better at written, some oral. (MLS)
Nursing - Look at the student goals and requirement
Pharm - Reflection
Pharm - Student will perform the tasks taught with over site by the pharmacist.
MLS - Re: these methods.....yes, they help, but **more TIME** in the actual laboratory (instead of just 3

months thru ALL departments) would help them PUT TOGETHER all the isolated things they learn with all these methods. That way, they would 'hit the floor running'....instead of as it is now where they still have quite a bit of on-the-job training after being hired.....

	Total #	Total %	MLS #	MLS %	Pharm #	Pharm %	Nurse #	Nurse %
Yes	41	59.4%	13	43.3%	28	73.7%	0	0
No	28	40.6%	17	56.7%	10	26.3%	1	100%
n	69		30		38		1	

Does your site incorporate study time?

	Total #	Total %	MLS #	MLS %	Pharm #	Pharm %	Nurse #	Nurse %
0-5	19	46.3%	7	53.8%	12	42.9%	0	0
5-10	14	34.1%	2	15.4%	12	42.9%	0	0
10-15	8	19.5%	4	30.8%	4	14.2%	0	0
15-25	0	0%	0	0	0	0	0	0
>25	0	0%	0	0	0	0	0	0
n	41		13		28		0	

Hours spent studying

How often do students do the following when workload is too busy?

PRE - 45 Home	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %

Total	69	45	65.2174	22	31.88	1	1.4493	0	0	0	0
MLS	30	18	60	11	36.67	1	3.3333	0	0	0	0
Pham	38	27	71.0526	11	28.95	0	0	0	0	0	0
Nurse	1	0	0	0	0	0	0	0	0	0	0

PRE - 46 Read	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %
Total	68	9	13.2353	31	45.59	14	20.588	11	16.176	3	4.41176
MLS	29	1	3.44828	7	24.14	8	27.586	10	34.483	3	10.3448
Pham	38	7	18.4211	24	63.16	6	15.789	1	2.6316	0	0
Nurse	1	1	100	0	0	0	0	0	0	0	0

PRE - 47 Use study time	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %
Total	68	2	2.94118	6	8.824	11	16.176	27	39.706	22	32.3529
MLS	28	1	3.57143	4	14.29	5	17.857	12	42.857	6	21.4286
Pham	39	1	2.5641	1	2.564	6	15.385	15	38.462	16	41.0256
Nurse	1	0	0	1	100	0	0	0	0	0	0

PRE - 48 Help	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %
Total	68	2	2.94118	6	8.824	11	16.176	27	39.706	22	32.3529
MLS	28	1	3.57143	4	14.29	5	17.857	12	42.857	6	21.4286
Pham	39	1	2.5641	1	2.564	6	15.385	15	38.462	16	41.0256
Nurse	1	0	0	1	100	0	0	0	0	0	0

What other activities do students do when the workload is too busy?

MLS - Watch the activities
MLS - Observe and Follow along and learn how things work.
MLS - Written case scenarios to solve and trouble shoot.
MLS - We have not experiences this situation. Our commitment is to the student.
MLS - Follow and observe
NURSE - I am never too busy. They can follow me and help with the visit.
MLS - Mock patient testing
Pharm - total involvement in what we do
Pharm - Review patient cases for the next clinic day, work on projects (either ISU or preceptor assigned)
Pharm - worksheets, research and answer question
Pharm - work independently
Pharm - they have to be effective when it hits the fan, that is a great training experience
Pharm - Help in central pharmacy to triage tasks, answer questions, drug info reviews, etc
Pharm - My students have to work as hard as me.
MLS - Observe/shadow so can get the feel for what happens ...especially in Blood Bank with demand for products in Trauma.
Pharm - Work on a project.

PRECEPTOR PERCEPTIONS

PRE - 50 Time	Total	Disagree	Disagree %	Somewhat disagree	Somewhat disagree %	Neutral	Neutral %	Somewhat Agree	Somewhat Agree %	Agree	Agree %
Total	68	6	8.82353	11	16.18	10	14.706	20	29.412	21	30.8824

MLS	30	6	20	4	13.33	5	16.667	12	40	3	10
Pham	37	0	0	7	18.92	5	13.514	8	21.622	17	45.9459
Nurse	1	0	0	0	0	0	0	0	0	1	100

PRE - 51 Look forward	Total	Disagree	Disagree %	Somewhat disagree	Somewhat disagree %	Neutral	Neutral %	Somewhat Agree	Somewhat Agree %	Agree	Agree %
Total	68	1	1.47059	1	1.471	10	14.706	18	26.471	38	55.8824
MLS	30	1	3.33333	0	0	8	26.667	10	33.333	11	36.6667
Pham	37	0	0	1	2.703	2	5.4054	8	21.622	26	70.2703
Nurse	1	0	0	0	0	0	0	0	0	1	100

PRE - 52 Seek new emp	Total	Disagree	Disagree %	Somewhat disagree	Somewhat disagree %	Neutral	Neutral %	Somewhat Agree	Somewhat Agree %	Agree	Agree %
Total	68	9	13.2353	5	7.353	13	19.118	17	25	24	35.2941
MLS	30	0	0	2	6.667	2	6.6667	8	26.667	18	60
Pham	37	8	21.6216	3	8.108	11	29.73	9	24.324	6	16.2162
Nurse	1	1	100	0	0	0	0	0	0	0	0

PRE - 53 Prepared	Total	Disagree	Disagree %	Somewhat disagree	Somewhat disagree %	Neutral	Neutral %	Somewhat Agree	Somewhat Agree %	Agree	Agree %
Total	68	1	1.47059	9	13.24	12	17.647	21	30.882	15	22.0588
MLS	30	1	3.33333	7	23.33	4	13.333	12	40	6	20
Pham	37	0	0	2	5.405	7	18.919	19	51.351	9	24.3243
Nurse	1	0	0	0	0	1	100	0	0	0	0

PRE - 54 Grateful	Total	Disagree	Disagree %	Somewhat disagree	Somewhat disagree %	Neutral	Neutral %	Somewhat Agree	Somewhat Agree %	Agree	Agree %
Total	68	0	0	3	4.412	7	10.294	20	29.412	38	55.8824
MLS	30	0	0	2	6.667	3	10	5	16.667	20	66.6667
Pham	37	0	0	1	2.703	4	10.811	15	40.541	17	45.9459
Nurse	1	0	0	0	0	0	0	0	0	1	100

PRE - 55 Attitude	Total	Disagree	Disagree %	Somewhat disagree	Somewhat disagree %	Neutral	Neutral %	Somewhat Agree	Somewhat Agree %	Agree	Agree %
Total	68	1	1.47059	1	1.471	6	8.8235	21	30.882	39	57.3529
MLS	30	1	3.33333	0	0	3	10	9	30	17	56.6667
Pham	37	0	0	1	2.703	3	8.1081	12	32.432	21	56.7568
Nurse	1	0	0	0	0	0	0	0	0	1	100

PRE - 56 Willingness	Total	Disagree	Disagree %	Somewhat disagree	Somewhat disagree %	Neutral	Neutral %	Somewhat Agree	Somewhat Agree %	Agree	Agree %
Total	68	1	1.47059	1	1.471	3	4.4118	23	33.824	30	44.1176
MLS	30	1	3.33333	0	0	0	0	12	40	17	56.6667
Pham	37	0	0	1	2.703	3	8.1081	11	29.73	22	59.4595
Nurse	1	0	0	0	0	0	0	0	0	1	100

PRE - 57 Critical Thinking	Total	Disagree	Disagree %	Somewhat disagree	Somewhat disagree %	Neutral	Neutral %	Somewhat Agree	Somewhat Agree %	Agree	Agree %
Total	67	1	1.49254	3	4.478	11	16.418	29	43.284	23	34.3284

MLS	30	1	3.33333	1	3.333	6	20	13	43.333	9	30
Pham	36	0	0	2	5.556	5	13.889	16	44.444	13	36.1111
Nurse	1	0	0	0	0	0	0	0	0	1	100

PRE - 58 Preparation	Total	Disagree	Disagree %	Somewhat disagree	Somewhat disagree %	Neutral	Neutral %	Somewhat Agree	Somewhat Agree %	Agree	Agree %
Total	68	0	0	2	2.941	4	5.8824	15	22.059	47	69.1176
MLS	30	0	0	0	0	3	10	6	20	21	70
Pham	37	0	0	2	5.405	1	2.7027	9	24.324	25	67.5676
Nurse	1	0	0	0	0	0	0	0	0	1	100

PRE - 59 Qualified	Total	Disagree	Disagree %	Somewhat disagree	Somewhat disagree %	Neutral	Neutral %	Somewhat Agree	Somewhat Agree %	Agree	Agree %
Total	68	0	0	0	0	0	0	11	16.176	57	83.8235
MLS	30	0	0	0	0	0	0	5	16.667	25	83.3333
Pham	37	0	0	0	0	0	0	6	16.216	31	83.7838
Nurse	1	0	0	0	0	0	0	0	0	1	100

PRE - 60 Contact ISU	Total	Disagree	Disagree %	Somewhat disagree	Somewhat disagree %	Neutral	Neutral %	Somewhat Agree	Somewhat Agree %	Agree	Agree %
Total	68	2	2.94118	3	4.412	7	10.294	9	13.235	47	69.1176
MLS	30	1	3.33333	3	10	5	16.667	4	13.333	17	56.6667
Pham	37	1	2.7027	0	0	2	5.4054	5	13.514	29	78.3784
Nurse	1	0	0	0	0	0	0	0	0	1	100

PRE - 61 Appreciated by emp	Total	Disagree	Disagree %	Somewhat disagree	Somewhat disagree %	Neutral	Neutral %	Somewhat Agree	Somewhat Agree %	Agree	Agree %
Total	68	4	5.88235	6	8.824	14	20.588	14	20.588	27	39.7059
MLS	30	0	0	4	13.33	8	26.667	8	26.667	10	33.3333
Pham	37	4	10.8108	2	5.405	8	21.622	6	16.216	17	45.9459
Nurse	1	0	0	0	0	1	100	0	0	0	0

PRE - 62 Appreciated by ISU	Total	Disagree	Disagree %	Somewhat disagree	Somewhat disagree %	Neutral	Neutral %	Somewhat Agree	Somewhat Agree %	Agree	Agree %
Total	68	1	1.47059	3	4.412	13	19.118	17	25	34	50
MLS	30	0	0	2	6.667	8	26.667	8	26.667	12	40
Pham	37	1	2.7027	1	2.703	5	13.514	9	24.324	21	56.7568
Nurse	1	0	0	0	0	0	0	0	0	1	100

PRE - 63 Workshop	Total	Disagree	Disagree %	Somewhat disagree	Somewhat disagree %	Neutral	Neutral %	Somewhat Agree	Somewhat Agree %	Agree	Agree %
Total	68	5	7.35294	0	0	16	23.529	20	29.412	27	39.7059
MLS	30	4	13.3333	0	0	9	30	10	33.333	7	23.3333
Pham	37	1	2.7027	0	0	7	18.919	10	27.027	19	51.3514
Nurse	1	0	0	0	0	0	0	0	0	1	100

What could Idaho State University do to make you feel more appreciated?

MLS - This is not my only opinion but I agree : ISU should pay a preceptor at least some amount of

money- will be easy to place a student.
MLS - Provide a detailed learning module for each department and not just a checklist. Each day should have goals and objectives defined essentially to assess, to plan, to implement and to evaluate and to provide effective feedback. Supplemental case studies from ISU would be very helpful. Provide on site ISU instructor during the student internship to oversee the curriculum.
MLS - I have inquired about the students having the opportunity to evaluate the clinical site and ISU does not have this. I have implemented a survey for the students which I feel is beneficial. I would appreciate feedback from the students on their rotation experience and how the site can improve.
MLS - The staff do a good job of that
MLS - My problem is time and/or compensation - of which there is none - and I don't believe ISU can change that. We work alone in very busy departments and I do not feel that the students are getting their fair attention.
MLS - Keep us more in the loop with regards to the number of students in the program. If I was a student there and ended up having to do my internship out of state or on a waiting list basis, I would be pretty upset. Working with the internship sites more frequently to see how their schedules/staffing looks like would be very helpful.
Nurse - Offer some incentive that is useful to the preceptor
Pharm - Provide access to medical library
Pharm - Some kind of benefit, like providing admittance to a local continuing education conference for free.
Pharm - Provide full access to more resources (ie. Pharmacist Letter's full version0
Pharm - Another states college of pharmacy that I preceptor for mails me a check for $500 at the end of each students rotation to help me cover costs such as learning materials, new versions of drug references, and help cover the cost for me to attend CE. The ISU pharmacy college already offers a Preceptor CE with a nice free breakfast that is great.
Pharm - Give me hugs.
Pharm - Money
Pharm - Explain the school use of facilities we could have access to, or ISU activities we could attend to be involved in games (ect.)
Pharm - They don't wave the fee for their Pharmacy CE seminar for preceptors that only have one student. My preceptor site is not convenient for many students and therefore I typically have one student a year.

MLS - Sonja did a very good job with the Blood Bank - we had a working relationship. If the next person does that same thing, that is all that is needed.
Pharm - Change the student evaluation tool, to reflect the actual rotation.

What do you think would help prepare a new preceptor to start precepting?

MLS - I believe a preceptor should be able to meet a student prior to assignment and decide if they are a good match
MLS - At St Luke's Magic Valley our appointed preceptors participate in a 4 hour education that includes learning styles, generational differences, adult learning, encouraging and evaluating critical thinking, communication, reflection, discussion, teach back and role play. The problem lies in that about half the time
MLS - The checklist is nice but could be more detailed. I have inquired about quizes and was informed that it is the sites responsibilty to write quizes. This does not allow continuity with the clinical rotation sites.
MLS - I would love to attend and/or send my employees to a precepting workshop. I think we would all feel better knowing what ISU wants/expects from us and vice-versa.
MLS - Following other preceptors while they train to see how they do what they do. Give them a variety of institutions to visit and experience.
MLS - Give them time to do it!
MLS - training class. every student should get the 'same' type of training experience.
MLS - knowledge of what is expected precepting a student is not the same as training a new employee
Nurse - Training if available
MLS - Guidelines and check points to make sure the student is learning what they're intended to learn.
MLS - Instruction on learning styles & evaluation methods
Pharm - Listing expectations for students/preceptors. Possibly providing quizzes/exams for respective rotations?
Pharm - A general preceptor workshop provided through ISU
Pharm - Require 1-3 years practicing in the field first.
Pharm - Workshops.
Pharm - Make sure they take advantage of the help that ISU provides

Pharm - a preceptor class listing expectations. Could be done online
MLS - desire to study and learn plus experience
Pharm - Provide preceptor workshops to help preceptors become familiar with ISU expectations and how to find resources in the ISU preceptor website as well as tools for educating students.
MLS - I think precepting has less to do with ISU than with the workplace.....ISU can't prepare the students like more time in the actual laboratory would because ISU is simulation. Preceptors are good teachers when first of all they are effective technologists themselves and when they love the teacher's task of teaching.
Pharm - training and practice.

What motivates you to continue precepting?

PRE - 66 Pay	Total	Does not motivate	Does Not %	Somewhat motivate	Somewhat mot %	Neutral	Neutral %	Motivates	Motivate %	Strongly motivate	Strongly %	NA	NA%
Total	68	27	39.7059	1	1.471	8	11.765	10	14.706	7	10.2941	15	22.06
MLS	30	9	30	1	3.333	6	20	4	13.333	4	13.3333	6	20
Pham	37	17	45.9459	0	0	2	5.4054	6	16.216	3	8.10811	9	24.32
Nurse	1	1	100	0	0	0	0	0	0	0	0	0	0

PRE - 67 Cont Edu	Total	Does not motivate	Does Not %	Somewhat motivate	Somewhat mot %	Neutral	Neutral %	Motivates	Motivate %	Strongly motivate	Strongly %	NA	NA%

Total	68	14	20.5882	8	11.76	12	17.647	17	25	10	14.7059	7	10.29
MLS	30	7	23.3333	1	3.333	8	26.667	6	20	5	16.6667	3	10
Pham	37	7	18.9189	6	16.22	4	10.811	11	29.73	5	13.5135	4	10.81
Nurse	1	0	0	1	100	0	0	0	0	0	0	0	0

PRE - 68 New People	Total	Does not motivate	Does Not %	Somewhat motivate	Somewhat mot %	Neutral	Neutral %	Motivates	Motivate %	Strongly motivate	Strongly %	NA	NA%
Total	68	3	4.4117 6	2	2.941	10	14.706	37	54.412	16	23.5294	1	1.471
MLS	30	3	10	1	3.333	3	10	16	53.333	7	23.3333	0	0
Pham	37	0	0	1	2.703	7	18.919	19	51.351	8	21.6216	1	2.703
Nurse	1	0	0	0	0	0	0	0	0	1	100	0	0

PRE - 69 Knowledge	Total	Does not motivate	Does Not %	Somewhat motivate	Somewhat mot %	Neutral	Neutral %	Motivates	Motivate %	Strongly motivate	Strongly %	NA	NA%
Total	68	2	2.9411 8	2	2.941	3	4.4118	32	47.059	28	41.1765	1	1.471
MLS	30	2	6.6666 7	1	3.333	1	3.3333	14	46.667	11	36.6667	1	3.333
Pham	37	0	0	1	2.703	2	5.4054	17	45.946	17	45.9459	0	0

Nurse	1	0	0	0	0	0	0	1	100	0	0	0	0

PRE - 70 Promotion	Total	Does not motivate	Does Not %	Somewhat motivate	Somewhat mot %	Neutral	Neutral %	Motivates	Motivate %	Strongly motivate	Strongly %	NA	NA%
Total	68	29	42.6471	4	5.882	15	22.059	7	10.294	2	2.9418	11	16.18
MLS	30	12	40	2	6.667	8	26.667	4	13.333	1	3.3333	3	10
Pham	37	17	45.9459	2	5.405	6	16.216	3	8.1081	1	2.7027	8	21.62
Nurse	1	0	0	0	0	1	100	0	0	0	0	0	0

PRE - 71 Resume	Total	Does not motivate	Does Not %	Somewhat motivate	Somewhat mot %	Neutral	Neutral %	Motivates	Motivate %	Strongly motivate	Strongly %	NA	NA%
Total	68	27	39.7059	7	10.29	13	19.118	15	22.059	3	4.4117	3	4.412
MLS	30	10	33.3333	2	6.667	8	26.667	6	20	2	6.6667	2	6.667
Pham	37	17	45.9459	4	10.81	5	13.514	9	24.324	1	2.7027	1	2.703
Nurse	1	0	0	1	100	0	0	0	0	0	0	0	0

PRE - 72 Satisfaction	Total	Does not motivate	Does Not %	Somewhat motivate	Somewhat mot %	Neutral	Neutral %	Motivates	Motivate %	Strongly motivate	Strongly %	NA	NA%

Total	68	1	1.47059	2	2.941	2	2.9412	23	33.824	39	57.3529	1	1.471
MLS	30	1	3.33333	1	3.333	2	6.6667	10	33.333	15	50	1	3.333
Pham	37	0	0	1	2.703	0	0	13	35.135	23	62.1622	0	0
Nurse	1	0	0	0	0	0	0	0	0	1	100	0	0

PRE - 73 Future	Total	Does not motivate	Does Not %	Somewhat motivate	Somewhat mot %	Neutral	Neutral %	Motivates	Motivate %	Strongly motivate	Strongly %	NA	NA%
Total	68	1	1.47059	0	0	2	2.9412	18	26.471	44	64.7059	3	4.412
MLS	30	0	0	0	0	1	3.3333	10	33.333	18	60	1	3.333
Pham	37	1	2.7027	0	0	1	2.7027	8	21.622	25	67.5676	2	5.405
Nurse	1	0	0	0	0	0	0	0	0	1	100	0	0

PRE - 74 Required by emp	Total	Does not motivate	Does Not %	Somewhat motivate	Somewhat mot %	Neutral	Neutral %	Motivates	Motivate %	Strongly motivate	Strongly %	NA	NA%
Total	68	25	36.7647	4	5.882	11	16.176	6	8.8235	3	4.41176	19	27.94
MLS	30	8	26.6667	2	6.667	7	23.333	5	16.667	2	6.66667	6	20
Pham	37	16	43.2432	2	5.405	4	10.811	1	2.7027	1	2.7027	13	35.14

Nurse	1	1	100	0	0	0	0	0	0	0	0	0	0

Is there anything else that motivates you to precept students?

MLS - Some students are very nice to deal with and can help with work load. MLS - Serving others is important to me. This is a way to do that and help educate the future generations. MLS - New employee opportunities MLS - I felt let down by my education, it is an opportunity to help improve the program Pharm - Provides good educational/precepting experience for my resident, with supervision and assistance readily available. Pharm - keeps me young, (class of 1975) Pharm - I want ISU to wave the fees for Pharmacy CE seminar no matter the number of students they precept. MLS - I would like the next generation to be successful.

How often do you experience the following challenged?

PRE - 76 Phys tired	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %
Total	68	10	14.7059	26	38.24	16	23.529	13	19.118	3	4.41176
MLS	30	3	10	11	36.67	9	30	6	20	1	3.33333
Pham	37	7	18.9189	15	40.54	7	18.919	6	16.216	2	5.40541
Nurse	1	0	0	0	0	0	0	1	100	0	0

PRE - 77 Emo tired	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %
Total	67	7	10.4478	26	38.81	16	23.881	15	22.388	3	4.47761
MLS	30	2	6.66667	10	33.33	11	36.667	6	20	1	3.33333
Pham	36	5	13.8889	16	44.44	5	13.889	8	22.222	2	5.55556
Nurse	1	0	0	0	0	0	0	1	100	0	0

PRE - 78 Long shifts	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %
Total	67	10	14.9254	26	38.81	12	17.91	14	20.896	5	7.46269
MLS	29	3	10.3448	12	41.38	5	17.241	7	24.138	2	6.89655
Pham	37	7	18.9189	14	37.84	6	16.216	7	18.919	3	8.10811
Nurse	1	0	0	0	0	1	100	0	0	0	0

PRE - 79 Distracted	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %
Total	68	0	0	0	0	0	0	0	0	0	0
MLS	30	1	3.33333	8	26.67	8	26.667	9	30	4	13.3333
Pham	37	3	8.10811	15	40.54	9	24.324	7	18.919	3	8.10811
Nurse	1	0	0	0	0	1	100	0	0	0	0

PRE - 80 No time	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %
Total	68	5	7.35294	33	48.53	13	19.118	10	14.706	7	10.2941

MLS	30	1	3.33333	14	46.67	4	13.333	6	20	5	16.6667
Pham	37	4	10.8108	19	51.35	8	21.622	4	10.811	2	5.40541
Nurse	1	0	0	0	0	1	100	0	0	0	0

PRE - 81 Behind	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %
Total	66	5	7.57576	24	36.36	19	28.788	11	16.667	7	10.6061
MLS	30	1	3.33333	12	40	6	20	7	23.333	4	13.3333
Pham	35	4	11.4286	12	34.29	12	34.286	4	11.429	3	8.57143
Nurse	1	0	0	0	0	1	100	0	0	0	0

Are there any other challenges you face while precepting?

MLS -
Unprepared , unwilling students are disaster .
MLS -
Asking preceptors to perform their technical duties and adding precepting on top is very stressful. The best learning happens when the preceptor can give full attention to the trainee. I would absolutely love precepting in that scenario.
MLS -
It's always challenging to take on a student and get work done while teaching and making them feel valued. It's difficult to give them the time and attention we'd like to and sometimes it can come across that we don't want them there which is not the case.
MLS -
Many of the students at ISU don't have an adequate education in the details of med teching. Conventional, BS in Medical Technology with a one year internship programs, produce MUCH better prepared students for working the real world. The experience I've seen hiring students from this program is that they take 1yr to 18 months longer to be truly competent as a generalist.

MLS - we are expected to do our regular work as usual and just fit it in
MLS - Students that just want to get thru rather than learn what I have to teach them. I don't need them to impress me. I need them to be in my space to learn and listen. They are taking up my space and time and I am not being compensated for that. They need to shut their mouth and act like they want to learn, not hit check points so they can get out as fast as possible. If I feel like I am a means to an end for them, I'm not going to spend my precious time on them. And not recommend them to my supervisor.
Pharm - Not adequate time to spend with students as I have to keep up on daily duties
Pharm - Students social and customer service skills lacking.
Pharm - It is just difficult when some students have poor attitudes or need a lot of energy.
MLS - Often times the challenge for me is that it is a never ending line of new students and new employees to precept. There is a fast burnout rate for myself and co-workers when we are teaching back to back students/employees with little opportunity to just do our normal job.
Pharm - Attitudes of millennials
Pharm - Bad attitudes from students
MLS - Depends greatly on the personality, self-motivation, and competency level of the individual student.
Pharm - Keeping my student busy when it is slow.
MLS - Truthfully, I feel like the last 2 groups of students were very focused on their 'ladder climbing': wanted masters degrees, doctorate degrees, etc.....not that interested in the lab work.....and a tad cocky. I got the impression they felt 'I've got this'.....yeah, until a trauma happens in the ER and OR at the same time.....and they all need blood now....oh, yeah, and they have antibodies.

How many more years do you foresee yourself precepting students?

	Total #	Total %	MLS #	MLS %	Pharm #	Pharm %	Nurse #	Nurse %
0	2	2.9%	2	6.7%	0	0	0	0
1-5	15	22.1%	7	23.3%	7	19%	1	100%
5-10	20	29.4%	11	36.7%	9	24.3%	0	0
10-15	7	10.3%	1	3.3%	6	16.2%	0	0
>15	24	35.3%	9	30%	15	40.5%	0	0

n	68		30		37		1	

Primary Reason you would no longer act as preceptor?

Other - Please describe

MLS - If our lab decides not to take any more students Pharm - hopefully wont be woking full time MLS - When students are abrasive why would I want to work with them MLS - we will not longer perform full-service microbiology MLS - NO time MLS - workload often does not allow teaching and and you have to choose between. 17 people said retire

Other reasons you would not precept?

Pharm - Non-motivated students or difficult students: for me, the effort would no longer be worth my time. Pharm - Students are work and take time. If ISU demanded I take more students, I would close my site. Pharm - Students seem entitled and unappreciative Pharm - Dealing with unmotivated, demanding millennials MLS - There is no choice. Pharm - lawsuit maybe? Pharm - If not able to in current position. MLS - We do not expect students to know...really anything about anything, we were students, we expect them to show up with respect and a desire to be there to learn. This seems to be a fading attitude. Nursing - If it requires more hours. I think 96 hours Is sufficient for pediatrics MLS - staffing challenges MLS - No, I love it MLS - Unable to keep up with hospital workload while precepting.

MLS - a reason above is why a lot of my coworkers refused to do it.

Should ISU provide compensation/incentives for precepting?

	Total #	Total %	MLS #	MLS %	Pharm #	Pharm %	Nurse #	Nurse %
Yes	34	51.5%	10	34.5%	23	63.9%	1	100%
No	32	48.5%	19	65.5%	13	36.1%	0	0
n	66		29		36		1	

What incentives would you like ISU to provide?

Other – Please describe

See below

What incentives do you think an employer could provide to make precepting more appealing?

MLS - Pay. This compensation does not have to be huge , let it be symbolic. MLS - Use the pay from ISU to employ our per diem and part time employees, so the trainer could be freed up from technical duties. MLS - It would be nice if hospital employer could provide coverage when intense 1:1 precepting is needed. MLS - In todays market, employers are running a business first, PR second. They most likely will not do any incentives. MLS - time and / or money MLS - make sure you have the time to precept Nurse - Encourage it more by recognizing it in their performance evaluation

MLS - additional funding of salaries
Pharm - Increased time to precept
Pharm - Pay for 1 continuing education conference per year?
Pharm - paid CE (not on Sundays), lunch benefits, some form of payment
Pharm - Intermountain works with a few pharmacy schools and some stipend is provided with other schools, if not co-funded positions where precepting is required. In Idaho we are not privy to have the same options. We provide every opportunity we can to our students, often a laptop, paper to print from, It takes resources to grant computer access and other items. I do not think this should be some grand payment, but some money towards covering administrative work on our side would be welcome.
Pharm - Bonus, gift card, recognition at yearly meeting.
Pharm - Access to Reed Gym and sporting events, (like the students have)
Pharm - more interdepartmental acceptance
MLS - We already have a program in place, but you have to apply for it and will be required to train even if you don't apply.
Pharm - merit pay, tuition reduction for my children.
Pharm - Time
Pharm - discounted/waived fee for ISU CE programs
Pharm - To be able to obtain an ISU student like activity card to be able to attend games and other ISU events for free like a student
Pharm - ISU clothes, hats, hoodys.
MLS - Our employer already gives us 'points' for precepting.

What could ISU do to make the student precepting experience go more smoothly?

MLS - do not allow unprepared and unethical students in clinical rotation. Please, do strong selection based on academic achievement. Best students should get into best clinical sites.
MLS - communicate with the sites more often to check on the students. Clinical site do not have any followup from either the students nor the instructors at ISU. Checklists could be more specific and quizes to monitor the students.
MLS - Good orientation and communication of expectations on both sides.

MLS - It goes pretty well as currently performed
MLS - Increase the education requirements to standard, conventional schools. Two years of study to include a semester each of Microbiology, Mycology, Parasitology, Bacteriology, Hematology, Serology, Microbial Physiology,and a Year of Biochemistry to be admitted to the program. Then guarantee the students a year of internship with 3 mo each of blood bank/serology, bacteriology/virology/mycology/parasitology, hematology/urinalysis/body fluids and chemistry/electrophoresis
MLS - more checking in with preceptor sites to make sure there is adequate space for the amount of students allowed into the program.
MLS - make sure they have a longer time precepting in the laboratory not just 3 months
MLS - need more time. 4-6 months
MLS - Maybe the sites should be more involved with what is being taught in the program and who is accepted
Pharm - Touch base with preceptors at least once per year, in person, at their respective sites. Previously, I was working in Reno, and I rarely saw someone from ISU there, though there were tons of pharmacy preceptors in that area.
Pharm - paid CE (not on Sundays), lunch benefits, some form of payment
Pharm - The emails to preceptors are often lacking details and I need to follow up with ISU to clarify.
Pharm - Teach customer service, listening, and empathy.
Pharm - Seems fine to me.
Pharm - more interaction between teaching staff and preceptors
MLS - The checklists the students bring with them from the program are outdated and irrelevant on many topics. They need to be cleaned up and made more concise. They should be updated to reflect what is currently being performed in their field.
MLS - As above, the experience epends greatly on the personality, self-motivation, and competency level of the individual student.
Pharm - It is pretty smooth now.
MLS - Give them more time in the hospital laboratory; there are a lot of untangibles that are gleaned from the workplace that you can't learn in the classroom lab. Choose students who want to primarily practice laboratory medicine vs. those primarily seeking management and using laboratory as a stepping stone. Program could/should be more competitive? Like the Physical Therapy

program.....NOT easy to get into.

Is there any other feedback you would like to give?

MLS - The best way I see for improving clinical rotation experience is to assign an individual preceptor to a student and this person should get paid accordingly. I am sure we will not have any problem with a placement if this happens. A preceptor should interview a student and decide if he or she wants to teach him. There is a lot of people on the field who hates to have students and who loves to have them. Students usually placed in this mixed group and get confusing experience. Individual approach to precepting will eliminate this problem. Good Luck, my dear friend Lily.
MLS - We love having the ISU-CLS students!
MLS - It would be nice to see student evaluations on how we could improve our precepting
MLS - I think I've expressed my concerns above. I really do enjoy students, but I am not given the time to teach.
MLS - Clinical rotations are just too short. I've found that, over the years, the shorter the rotation, the less well prepared the student is to face the real world as a clinical lab scientist. I acquired my Bachelor's of Science Degree and then did a full year at St. Alphonsus back in 1987. Each rotation was at least 4 months long. I was much better prepared to work as an MLS when I graduated than what I see now. It takes former students at least 2 years to acquire the critical thinking skills (while they are working on shift) to be as prepared as I was when I graduated. This leads to a higher error rate with our new graduates and this can be costly (as far as patient care) in certain areas such as the transfusion service. I feel like ISU's approach is because of lack of finances but it certainly gives more of a 'fast food MLS training' approach. I also feel ISU takes in entirely too many students and then expects the hospitals to, somehow, accommodate requests for rotations. The hospital's primary focus is patient care. Our staffing is in place for patient care. Taking too many students at one site affects patient care in a negative way. This shouldn't come down to facilities having to reject several candidates. I believe, again, ISU does this because of the financial benefit. But, in the end, it is unfair to the hospital staff who are prepepting AND to the CLS students who are trying to find placement for clinical rotations.
Pharm - Precepting is one of three reasons I still practice pharmacy. The other two are our customers

and insurance.

Pharm- The student evaluations should be more relevant to each site. ie. they no longer have a pharmacy management evaluation. Current evaluations do not cover management task knowledge

Pharm - Tuition waver for ISU CE would be a lovely incentive. I understand that this available but only if you take a certain number of students per year. I take students because I want to help them but there is really no other compensation other than personal satisfaction. Offering free CE would be a very nice reward for the HUGE amount of time I spend with just one student. Also, I feel that the school of pharmacy does not need to send me holiday and birthday cards. While this is a nice gesture, they should save the money spent on these items for the students and for curriculum development.

Appendix 6: Student Data

58 COMPLETED RESPONSES 27 INCOMPLETE RESPONSES

	Total #	Total %	MLS #	MLS %	Pharm #	Pharm %	Nurse #	Nurse %	PA #	PA %
Pocatello	43	52.4%	5	38.4%	31	62%	0	0	7	50%
Meridian	30	36.6%	6	46.2%	17	34%	0	0	7	50%
Idaho Falls	2	2.4%	1	7.7%	1	2%	0	0	0	0
Online	6	7.3%	1	7.7%	0	0	5	100%	0	0
Other	1	1.3%	0	0	1	2%	0	0	0	0
n	82		13		50		5		14	

ISU campus primarily attend

(Other – Reno (Pharm))

N= 82	Number	Percentage
PA	14	17.1%
Pharmacy	50	61.0%
Nursing	5	6.1%
MLS	13	15.9%
Other	0	0%

Health Sciences Program

N=82	Total #	Total &	MLS # N=13	MLS %	Pharm # N=50	Pharm %	Nurse # N=5	Nurse %	PA # N=14	PA %
<20	0	0%	0	0	0	0	0	0	0	0
20-25	32	39.0%	3	23.1%	27	54%	0	0	2	14.3%

26-30	21	25.6%	4	30.8%	12	24%	2	40%	3	21.4%
31-40	25	30.5%	5	38.5%	10	20%	3	60%	7	50%
41-50	4	4.9%	1	7.6%	1	2%	0	0	2	14.3%
>50	0	0%	0	0	0	0	0	0	0	

Student Age

N=82	Total #	Total &	MLS # N=13	MLS %	Pharm # N=50	Pharm %	Nurse # N=5	Nurse %	PA # N=14	PA %
No degree	2	2.4%	0	0	2	4%	0	0	0	0
Bachelor	13	15.9%	13	100%	0	0	0	0	0	0
Master	14	17.1%	0	0	0	0	0	0	14	100%
Doctorate	49	59.8%	0	0	44	88%	5	100%	0	0
Other	4	4.9%	0	0	4	8%	0	0	0	0

Degree obtaining connected with internship

Other (4) – 4 PharmD responses

N=44	Total #	Total &	MLS # N=8	MLS %	Pharm # N=27	Pharm %	Nurse # N=3	Nurse %	PA # N=6	PA %
0	28	63.6&	5	62.5%	16	59.3%	2	66.7%	5	83.3%
1	15	34.1%	3	37.5%	11	40.7%	0	0	1	16.7%
2	0	0%	0	0	0	0	0	0	0	0
3	1	2.3%	0	0	0	0	1	33.3%	0	0
4	0	0%	0	0	0	0	0	0	0	0
5	0	0%	0	0	0	0	0	0	0	0

Prior Associates

N=64	Total #	Total &	MLS # N=12	MLS %	Pharm # N=34	Pharm %	Nurse # N=4	Nurse %	PA # N=14	PA %
0	14	21.9%	5	41.7%	9	26.5%	0	0	0	0
1	45	70.3%	6	50%	23	67.6%	4	100%	12	85.7%
2	5	7.8%	1	8.3%	2	5.9%	0	0	2	14.3%
3	0	0%	0	0	0	0	0	0	0	0
4	0	0%	0	0	0	0	0	0	0	0
5	0	0%	0	0	0	0	0	0	0	0

Prior Bachelor's

N=39	Total #	Total &	MLS # N=6	MLS %	Pharm # N=22	Pharm %	Nurse # N=2	Nurse %	PA # N=9	PA %
0	33	84.6&	5	83.3%	20	90.9%	2	100%	6	66.7%
1	6	15.4%	1	16.7%	2	9.1%	0	0	3	33.3%
2	0	0%	0	0	0	0	0	0	0	0
3	0	0%	0	0	0	0	0	0	0	0
4	0	0%	0	0	0	0	0	0	0	0
5	0	0%	0	0	0	0	0	0	0	0

Prior Masters

35 answered that they have no Doctorate – 100%

N=66	Total #	Total &	MLS # N=12	MLS %	Pharm # N=36	Pharm %	Nurse # N=4	Nurse %	PA # N=14	PA %
0	3	4.5%	1	8.3%	2	5.5%	0	0	0	0
1	16	24.2%	8	66.7%	8	22.2%	0	0	0	0
2	7	10.6%	1	8.3%	6	16.8%	0	0	0	0
3	11	16.7%	2	16.7%	8	22.2%	1	25%	0	0
4	3	4.5%	0	0	1	2.8%	0	0	2	14.3%
5	3	4.5%	0	0	2	5.5%	1	25%	0	0
>5	23	34.8%	0	0	9	25%	2	50%	12	85.7%

# of sites interned at

N=67	Total #	Total &	MLS # N=12	MLS %	Pharm # N=37	Pharm %	Nurse # N=4	Nurse %	PA # N=14	PA %
<10	11	16.4%	3	25%	7	18.9%	0	0	1	7.1%
10-20	13	19.4%	3	25%	7	18.9%	1	25%	2	14.3%
20-30	11	16.4%	1	8.3%	10	27%	0	0	0	0
30-40	5	7.5%	3	25%	0	0	2	50%	0	0
>40	27	40.3%	2	16.7%	13	35.2%	1	25%	11	78.6%

Miles to furthest site interned at

N=65	Total #	Total &	MLS # N=12	MLS %	Pharm # N=35	Pharm %	Nurse # N=4	Nurse %	PA # N=14	PA %
<1	19	29.2%	1	8.3%	13	37.1%	3	75%	2	14.3%
1-5	30	46.2%	7	58.3%	16	45.7%	1	25%	6	42.9%
5-10	12	18.5%	4	33.3%	5	14.3%	0	0	3	21.4%
10-20	3	4.6%	0	0	1	2.9%	0	0	2	14.3%
>20	1	1.5%	0	0	0	0	0	0	1	7.1%

Time spent traveling PER WEEK (hours)

N=66	Total Y/N	Total Y/N N=35/163	MLS Y/N	MLS Y/N N=11/25	Pharm Y/N	Pharm Y/N N=10/98	Nurse Y/N	Nurse Y/N N=1/11	PA Y/N	PA Y/N N=13/29
Travel expenses covered by site	3/63	8.6%/38.7%	0/12	0%/48%	0/36	0%/36.7%	0/4	0%/36.4%	3/11	23.1%/37.9%
Travel expenses	1/65	2.9%/39.9%	0/12	0%/48%	1/35	10%/35.7%	0/4	0%/36.4%	0/14	0%/48.3%

covered by ISU										
Offered a job by a site	31/35	88.5%/21.4%	11/1	100%/4%	9/27	90%/27.6%	1/3	100%/27.2%	10/4	76.9%/13.8%

Yes/No questions

How often do you use these tools? And How effective do you find these learning tools?

STU - 19 1 on 1 inst	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	60	0	0	2	3.333333	6	10	20	33.33333	32	53.33333	0	0
PA	14	0	0	0	0	0	0	2	14.28571	12	85.71429	0	0
Pham	30	0	0	2	6.666667	5	16.66667	11	36.66667	12	40	0	0
Nurse	4	0	0	0	0	0	0	2	50	2	50	0	0
MLS	12	0	0	0	0	1	8.333333	5	41.66667	6	50	0	0

STU - 26 1 on 1 inst	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective	Very effective %
Total	58	1	1.724138	0	0	4	6.896552	22	37.93103	31	53.44828
PA	13	0	0	0	0	1	7.692308	4	30.76923	8	61.53846
Pham	29	1	3.448276	0	0	2	6.896552	13	44.82759	13	44.82759
Nurse	4	0	0	0	0	0	0	1	25	3	75
MLS	12	0	0	0	0	1	8.333333	4	33.33333	7	58.33333

STU - 20 group inst	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	60	7	11.66667	29	48.33333	6	10	12	20	4	6.666667	2	3.333333
PA	14	2	14.28571	9	64.28571	1	7.142857	2	14.28571	0	0	0	0
Pham	30	2	6.666667	10	33.33333	5	16.66667	8	26.66667	4	13.33333	1	3.333333
Nurse	4	2	50	2	50	0	0	0	0	0	0	0	0
MLS	12	1	8.333333	8	66.66667	0	0	2	16.66667	0	0	1	8.333333

STU - 27 group inst	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective	Very effective %
Total	58	9	15.51724	4	6.896552	16	27.58621	24	41.37931	5	8.62069
PA	13	2	15.38462	1	7.692308	3	23.07692	6	46.15385	1	7.692308
Pham	29	3	10.34483	2	6.896552	7	24.13793	14	48.27586	3	10.34483
Nurse	4	1	25	0	0	2	50	1	25	0	0
MLS	12	3	25	1	8.333333	4	33.33333	3	25	1	8.333333

STU - 21 See one	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	60	1	1.666667	7	11.66667	10	16.66667	22	36.66667	19	31.66667	1	1.666667
PA	14	0	0	4	28.57143	0	0	4	28.57143	6	42.85714	0	0
Pham	30	1	3.333333	2	6.666667	9	30	10	33.33333	7	23.33333	1	3.333333
Nurse	4	0	0	0	0	1	25	2	50	1	25	0	0
MLS	12	0	0	1	8.333333	0	0	6	50	5	41.66667	0	0

STU - 28 See one	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective	Very effective %
Total	57	2	3.508772	1	1.754386	3	5.263158	26	45.61404	25	43.85965
PA	12	0	0	1	8.333333	0	0	4	33.33333	7	58.33333
Pham	29	2	6.896552	0	0	3	10.34483	16	55.17241	8	27.58621
Nurse	4	0	0	0	0	0	0	1	25	3	75
MLS	12	0	0	0	0	0	0	5	41.66667	7	58.33333

STU - 22 Reading proc	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	60	3	5	13	21.66667	13	21.66667	22	36.66667	9	15	0	0
PA	14	2	14.28571	3	21.42857	2	14.28571	5	35.71429	2	14.28571	0	0
Pham	30	1	3.333333	4	13.33333	7	23.33333	13	43.33333	5	16.66667	0	0
Nurse	4	0	0	2	50	1	25	1	25	0	0	0	0
MLS	12	0	0	4	33.33333	3	25	3	25	2	16.66667	0	0

STU - 29 Reading proc	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective	Very effective %
Total	58	6	10.34483	8	13.7931	25	43.10345	15	25.86207	4	6.896552
PA	13	2	15.38462	2	15.38462	5	38.46154	4	30.76923	0	0
Pham	29	2	6.896552	3	10.34483	12	41.37931	10	34.48276	2	6.896552
Nurse	4	1	25	0	0	3	75	0	0	0	0
MLS	12	1	8.333333	3	25	5	41.66667	1	8.333333	2	16.66667

STU - 23 Comp learning	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	60	16	26.66667	30	50	7	11.66667	7	11.66667	0	0	0	0
PA	14	6	42.85714	7	50	0	0	1	7.142857	0	0	0	0
Pham	30	3	10	14	46.66667	7	23.33333	6	20	0	0	0	0
Nurse	4	1	25	3	75	0	0	0	0	0	0	0	0
MLS	12	6	50	6	50	0	0	0	0	0	0	0	0

STU - 30 Comp learning	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective	Very effective %
Total	58	15	25.86207	11	18.96552	18	31.03448	10	17.24138	4	6.896552
PA	13	4	30.76923	1	7.692308	7	53.84615	1	7.692308	0	0
Pham	29	5	17.24138	7	24.13793	6	20.68966	9	31.03448	2	6.896552
Nurse	4	1	25	0	0	3	75	0	0	0	0
MLS	12	5	41.66667	3	25	2	16.66667	0	0	2	16.66667

STU - 24 Exercises	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	60	15	25	21	35	7	11.66667	13	21.66667	4	6.666667	0	0
PA	14	4	28.57143	9	64.28571	0	0	1	7.142857	0	0	0	0
Pham	30	6	20	3	10	5	16.66667	12	40	4	13.33333	0	0
Nurse	4	1	25	1	25	2	50	0	0	0	0	0	0
MLS	12	4	33.33333	8	66.66667	0	0	0	0	0	0	0	0

STU - 31 Exercises	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective	Very effective %
Total	57	14	24.5614	3	5.263158	14	24.5614	21	36.84211	5	8.77193
PA	13	3	23.07692	1	7.692308	6	46.15385	3	23.07692	0	0
Pham	28	6	21.42857	0	0	3	10.71429	14	50	5	17.85714
Nurse	4	1	25	0	0	1	25	2	50	0	0
MLS	12	4	33.33333	2	16.66667	4	33.33333	2	16.66667	0	0

STU - 25 Wet Mock Scen	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	59	17	28.81356	21	35.59322	12	20.33898	8	13.55932	1	1.694915	0	0
PA	14	6	42.85714	7	50	1	7.142857	0	0	0	0	0	0
Pham	29	8	27.58621	5	17.24138	9	31.03448	6	20.68966	1	3.448276	0	0
Nurse	4	2	50	2	50	0	0	0	0	0	0	0	0
MLS	12	1	8.333333	7	58.33333	2	16.66667	2	16.66667	0	0	0	0

STU - 32 Wet Mock Scen	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective	Very effective %
Total	57	15	26.31579	0	0	14	24.5614	20	35.08772	8	14.03509
PA	13	5	38.46154	0	0	6	46.15385	1	7.692308	1	7.692308
Pham	28	7	25	0	0	5	17.85714	12	42.85714	4	14.28571
Nurse	4	1	25	0	0	1	25	2	50	0	0
MLS	12	2	16.66667	0	0	2	16.66667	5	41.66667	3	25

Any other learning tools used at your site?

MLS - I was able to work closely with pathologists at two of the sites. This was very insightful as the pathologists were able to broaden my vision of clinical laboratory science and were great teachers.
MLS - Direct patient contact
MLS - Very hands-on, very encouraging. Wanted us to jump in and do it.
Pharm - Daily work-up of patients coming into clinic and discussion of issues to be addressed

How often are the following used to measure whether learning has occurred? And How effective do you find the following methods to measure whether learning has occurred?

STU - 34 Direct Obs	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	58	1	1.724138	3	5.172414	6	10.34483	19	32.75862	29	50	0	0
PA	13	1	7.692308	1	7.692308	0	0	5	38.46154	6	46.15385	0	0
Pham	29	0	0	2	6.896552	5	17.24138	10	34.48276	12	41.37931	0	0
Nurse	4	0	0	0	0	0	0	1	25	3	75	0	0
MLS	12	0	0	0	0	1	8.333333	3	25	8	66.66667	0	0

STU - 39 Direct Obs	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective	Very effective %
Total	58	2	3.448276	1	1.724138	6	10.34483	27	46.55172	22	37.93103
PA	13	1	7.692308	1	7.692308	1	7.692308	4	30.76923	6	46.15385
Pham	29	1	3.448276	0	0	4	13.7931	16	55.17241	8	27.58621
Nurse	4	0	0	0	0	0	0	2	50	2	50
MLS	12	0	0	0	0	1	8.333333	5	41.66667	6	50

STU - 35 Checklist	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	58	14	24.13793	17	29.31034	10	17.24138	9	15.51724	7	12.06897	1	1.724138
PA	13	7	53.84615	4	30.76923	0	0	2	15.38462	0	0	0	0
Pham	29	6	20.68966	10	34.48276	7	24.13793	3	10.34483	2	6.896552	1	3.448276
Nurse	4	1	25	2	50	1	25	0	0	0	0	0	0

MLS	12	0	0	1	8.333333	2	16.66667	4	33.33333	5	41.66667	0	0

STU - 40 Checklist	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective	Very effective %
Total	58	17	29.31034	10	17.24138	15	25.86207	11	18.96552	5	8.62069
PA	13	6	46.15385	2	15.38462	4	30.76923	1	7.692308	0	0
Pham	29	8	27.58621	6	20.68966	7	24.13793	7	24.13793	1	3.448276
Nurse	4	1	25	1	25	0	0	2	50	0	0
MLS	12	2	16.66667	1	8.333333	4	33.33333	1	8.333333	4	33.33333

STU - 36 Quizzes	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	58	16	27.58621	28	48.27586	3	5.172414	5	8.62069	5	8.62069	1	1.724138
PA	13	6	46.15385	3	23.07692	0	0	2	15.38462	2	15.38462	0	0
Pham	29	6	20.68966	16	55.17241	2	6.896552	2	6.896552	2	6.896552	1	3.448276
Nurse	4	1	25	3	75	0	0	0	0	0	0	0	0
MLS	12	3	25	6	50	1	8.333333	1	8.333333	1	8.333333	0	0

STU - 41 Quizzes	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective	Very effective %
Total	58	16	27.58621	7	12.06897	19	32.75862	13	22.41379	3	5.172414
PA	13	3	23.07692	4	30.76923	3	23.07692	3	23.07692	0	0
Pham	29	9	31.03448	2	6.896552	8	27.58621	8	27.58621	2	6.896552
Nurse	4	1	25	1	25	0	0	2	50	0	0
MLS	12	3	25	0	0	8	66.66667	0	0	1	8.333333

STU - 37 Case studies	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	58	19	32.75862	16	27.58621	9	15.51724	11	18.96552	3	5.172414	0	0
PA	13	6	46.15385	6	46.15385	0	0	1	7.692308	0	0	0	0
Pham	29	7	24.13793	3	10.34483	7	24.13793	10	34.48276	2	6.896552	0	0
Nurse	4	1	25	2	50	1	25	0	0	0	0	0	0
MLS	12	5	41.66667	5	41.66667	1	8.333333	0	0	1	8.333333	0	0

STU - 42 Case studies	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective	Very effective %
Total	58	20	34.48276	3	5.172414	7	12.06897	19	32.75862	9	15.51724
PA	13	6	46.15385	2	15.38462	2	15.38462	2	15.38462	1	7.692308
Pham	29	6	20.68966	0	0	2	6.896552	14	48.27586	7	24.13793
Nurse	4	1	25	0	0	1	25	2	50	0	0
MLS	12	7	58.33333	1	8.333333	2	16.66667	1	8.333333	1	8.333333

STU - 38 ISU material	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %	NA	NA%
Total	58	11	18.96552	15	25.86207	9	15.51724	9	15.51724	12	20.68966	2	3.448276
PA	13	2	15.38462	4	30.76923	1	7.692308	3	23.07692	2	15.38462	1	7.692308
Pham	29	7	24.13793	7	24.13793	6	20.68966	4	13.7931	4	13.7931	1	3.448276
Nurse	4	1	25	2	50	1	25	0	0	0	0	0	0
MLS	12	1	8.333333	2	16.66667	1	8.333333	2	16.66667	6	50	0	0

STU - 43 ISU material	Total	Don't use	Don't use %	Not Effective	Not Effective %	Mildly Effective	Mildly Effective %	Effective	Effective %	Very effective	Very effective %
Total	58	15	25.86207	10	17.24138	17	29.31034	13	22.41379	3	5.172414
PA	13	2	15.38462	4	30.76923	4	30.76923	3	23.07692	0	0
Pham	29	10	34.48276	3	10.34483	7	24.13793	7	24.13793	2	6.896552
Nurse	4	1	25	1	25	1	25	1	25	0	0
MLS	12	2	16.66667	2	16.66667	5	41.66667	2	16.66667	1	8.333333

Does your site use any other effective methods to measure whether learning has occurred?

MLS - I was allowed to use previous CAP samples to demonstrate knowledge and skill to my preceptors - helpful as the correct results were easily accessible for evaluation.
MLS - Verbal quizzes

How often do students do the following when workload is too busy?

STU - 45 sent home	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %
Total	58	51	87.93103	4	6.896552	1	1.724138	2	3.448276	0	0
PA	13	13	100	0	0	0	0	0	0	0	0
Pham	29	23	79.31034	3	10.34483	1	3.448276	2	6.896552	0	0
Nurse	4	4	100	0	0	0	0	0	0	0	0
MLS	12	11	91.66667	1	8.333333	0	0	0	0	0	0

STU - 46 Read	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %
Total	58	25	43.10345	21	36.2069	9	15.51724	3	5.172414	0	0
PA	13	10	76.92308	3	23.07692	0	0	0	0	0	0
Pham	29	10	34.48276	10	34.48276	6	20.68966	3	10.34483	0	0
Nurse	4	3	75	0	0	1	25	0	0	0	0
MLS	12	2	16.66667	8	66.66667	2	16.66667	0	0	0	0

STU - 47 Study	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %
Total	58	23	39.65517	23	39.65517	4	6.896552	7	12.06897	1	1.724138
PA	13	8	61.53846	5	38.46154	0	0	0	0	0	0
Pham	29	10	34.48276	7	24.13793	4	13.7931	7	24.13793	1	3.448276
Nurse	4	3	75	1	25	0	0	0	0	0	0
MLS	12	2	16.66667	10	83.33333	0	0	0	0	0	0

STU - 48 Help	Total	Never	Never %	Not very often	Not very %	About half the time	Half %	Often	Often%	Most of the time	Most %
Total	58	8	13.7931	8	13.7931	13	22.41379	18	31.03448	11	18.96552
PA	13	5	38.46154	2	15.38462	2	15.38462	3	23.07692	1	7.692308
Pham	29	3	10.34483	4	13.7931	7	24.13793	12	41.37931	3	10.34483
Nurse	4	0	0	1	25	1	25	2	50	0	0
MLS	12	0	0	1	8.333333	3	25	1	8.333333	7	58.33333

What to do when work was too busy?

MLS - work areas of the lab that we had been trained in already. PA - Let me see one at a time and present them. Ie, I was allowed to help with the work load. PA - I didn't really have a problem with any of my preceptors being too busy. PA - I was never asked to do something other than see patients. MLS - Workload was never too busy Pharm - I don't think sites were ever too busy to teach. Sometimes it was busy, but during those times I was still given opportunities to learn. Pharm - Ask another clinician to supervise the student for that time Pharm - write papers, document study information, and talk with patients. Pharm - Work on weekly assignments or projects Nursing - Much of my training was learn as you go, there was never a time that was so busy I could not participate.

	Total #	Total %	MLS #	MLS %	Pharm #	Pharm %	Nurse #	Nurse %	PA #	PA %
Yes	21	36.2%	5	41.7%	13	44.8%			3	23.1%
No	37	63.8%	7	58.3%	16	55.2%	4	100%	10	76.9%
n	58		12		29		4		13	

Did your site(s) incorporate study-time

N=21	Total #	Total %	MLS # N=5	MLS %	Pharm # N=13	Pharm %	Nurse # N=0	Nurse %	PA # N=3	PA %
0-5	15	71.4%	4	80%	9	69.2%	0	0	2	66.7%
5-10	5	23.8%	1	20%	4	30.8%	0	0	0	0
10-15	1	4.8%	0	0	0	0	0	0	1	33.3%
15-25	0	0	0	0	0	0	0	0	0	0
>25	0	0	0	0	0	0	0	0	0	0

Average hours spent per week studying at internship

N=56	Total #	Total %	MLS #N=11	MLS %	Pharm # N=28	Pharm %	Nurse # N=4	Nurse %	PA # N=13	PA %
Yes	13	23.2%	6	54.5%	6	21.4%	0	0	1	7.7%
No	43	76.8%	5	45.5%	22	78.6%	4	100%	12	92.3%

Required to “pass” one area before moving on to another

N=24	Total #	Total %	MLS # N=13	MLS %	Pharm # N=10	Pharm %	Nurse #N=0	Nurse %	PA # N=1	PA %
Direct Observation	11	45.8%	5	38.4%	5	50%	0	0	1	100%
Completed Checklist	5	20.8%	4	30.8%	1	10%	0	0	0	0

Quizzes	6	25%	4	30.8%	2	20%	0	0	0	0
Completions of study/exercise	2	8.4%	0	0	2	20%	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0

How did site determine whether you passed a section

Are there other ways a site checked your competency before moving on to another department or topic?

MLS - Most of my competency was through direct observation and/or in a question & answer form. MLS - checklists PA - I had a few preceptors who would ask me to review a disease or condition and present on it either before seeing the patient or just the next day at clinic which was very helpful but this was only a handful of time Pharm - Each of are 7 rotation sites are in a specific department or competency. As you show more skill or knowledge you are given more responsibilities within the scope of practice. Nursing - Yes, my current site has a competency checklist that they expect every provider to complete by the end of the program. This list is maintained by the preceptor and shared with the trainee periodically through the year.

N=55	Total #	Total %	MLS # N=12	MLS %	Pharm #27	Pharm %	Nurse # N=4	Nurse %	PA # N=12	PA %
Disagree	2	3.6%	1	8.3%	1	3.7%	0	0	0	0
Somewhat disagree	4	7.3%	3	25%	1	3.7%	0	0	0	0
Neutral	6	10.9%	1	8.3%	3	11.1%	0	0	2	16.7%
Somewhat agree	28	50.9%	4	33.4%	14	51.9%	2	50%	8	66.6%
Agree	15	27.3%	3	25%	8	29.6%	2	50%	2	16.7%

I felt adequately prepared for my clinical internship(s)

N=56	Total #	Total %	MLS # N=12	MLS %	Pharm # N=27	Pharm %	Nurse # N=4	Nurse %	PA # N=13	PA %
Disagree	0	0	0	0	0	0	0	0	0	0
Somewhat	0	0	0	0	0	0	0	0	0	0

disagree										
Neutral	3	5.4%	1	8.3%	1	3.7%	0	0	1	7.7%
Somewhat agree	11	19.6%	1	8.3%	6	22.2%	0	0	4	30.7%
Agree	42	75.0%	10	83.4%	20	74.1%	4	100%	8	61.6%

My preceptors enjoyed working with me

N=56	Total #	Total %	MLS # N=12	MLS %	Pharm # N=27	Pharm %	Nurse # N=4	Nurse %	PA # N=13	PA %
Disagree	0	0%	0	0	0	0	0	0	0	0
Somewhat disagree	1	1.8%	0	0	1	3.7%	0	0	0	0
Neutral	1	1.8%	0	0	1	3.7%	0	0	0	0
Somewhat agree	20	35.7%	4	33.3%	12	44.5%	0	0	4	30.8%
Agree	34	60.7%	8	66.7%	13	48.1%	4	100%	9	69.2%

I enjoyed my clinical internship(s)

N=56	Total #	Total %	MLS # N=12	MLS %	Pharm # N=27	Pharm %	Nurse # N=4	Nurse %	PA # N=13	PA %
Disagree	0	0%	0	0	0	0	0	0	0	0
Somewhat disagree	1	1.8%	1	8.3%	0	0	0	0	0	0
Neutral	4	7.1%	0	0	2	7.5%	0	0	2	15.4%
Somewhat agree	25	44.6%	5	41.7%	14	51.9%	2	50%	4	30.8%
Agree	26	46.4%	6	50%	11	40.7%	2	50%	7	53.8%

I felt comfortable applying my critical thinking skills

N=56	Total #	Total %	MLS # N=12	MLS %	Pharm # N=27	Pharm %	Nurse # N=4	Nurse %	PA # N=13	PA %
Disagree	0	0%	0	0	0	0	0	0	0	0
Somewhat disagree	0	0%	0	0	0	0	0	0	0	0
Neutral	1	1.8%	0	0	1	3.7%	0	0	0	0

Somewhat agree	6	10.7%	0	0	5	18.5%	0	0	1	7.7%
Agree	49	87.5%	12	100%	21	77.8%	4	100%	12	92,3%

I displayed a positive attitude while out on my internship

N=56	Total #	Total %	MLS # N=12	MLS %	Pharm # N=27	Pharm %	Nurse # N=4	Nurse %	PA # N=13	PA %
Disagree	0	0%	0	0	0	0	0	0	0	0
Somewhat disagree	0	0%	0	0	0	0	0	0	0	0
Neutral	1	1.8%	0	0	1	3.7%	0	0	0	0
Somewhat agree	3	5.4%	0	0	3	11.1%	0	0	0	0
Agree	52	92.9%	12	100%	23	85.2%	4	100%	13	100%

I showed a willingness to learn while out on my internship

N=56	Total #	Total %	MLS # N=12	MLS %	Pharm # N=27	Pharm %	Nurse # N=4	Nurse %	PA # N=13	PA %
Disagree	0	0%	0	0	0	0	0	0	0	0
Somewhat disagree	0	0%	0	0	0	0	0	0	0	0
Neutral	2	3.6%	0	0	2	7.4%	0	0	0	0
Somewhat agree	13	23.2%	1	8.3%	7	25.9%	1	25%	4	30.8%
Agree	41	73.2%	11	91.7%	18	66.7%	3	75%	9	69,2%

I felt comfortable asking questions

N=56	Total #	Total %	MLS # N=12	MLS %	Pharm # N=27	Pharm %	Nurse # N=4	Nurse %	PA # N=13	PA %
Disagree	3	5.4%	2	16.7%	0	0	0	0	1	7.7%
Somewhat disagree	8	14.3%	1	8.3%	1	3.7%	1	25%	5	38.4%
Neutral	8	14.3%	1	8.3%	6	22.2%	0	0	1	7.7%
Somewhat agree	13	23.2%	1	8.3%	9	33.3%	1	25%	2	15.4%
Agree	24	42.9%	7	58.4%	11	40.8%	2	50%	4	30.8%

I would like to be hired at one of my internship sites

N=55	Total #	Total %	MLS # N=12	MLS %	Pharm # N=26	Pharm %	Nurse # N=4	Nurse %	PA # N=13	PA %
Disagree	3	5.5%	0	0	1	3.8%	0	0	2	15.4%
Somewhat disagree	0	0%	0	0	0	0	0	0	0	0

Neutral	4	7.3%	1	8.3%	1	3.8%	0	0	2	15.4%
Somewhat agree	17	30.9%	5	41.7%	6	23.1%	0	0	6	46.1%
Agree	31	56.4%	6	50%	18	69.3%	4	100%	3	23.1%

I feel like my preceptors were qualified to be teaching students

N=55	Total #	Total %	MLS # N=12	MLS %	Pharm # N=26	Pharm %	Nurse # N=4	Nurse %	PA # N=13	PA %
Disagree	1	1.8%	0	0	0	0	0	0	1	7.7%
Somewhat disagree	2	3.6%	1	8.3%	0	0	0	0	1	7.7%
Neutral	7	12.7%	2	16.7%	2	7.8%	0	0	3	23.1%
Somewhat agree	19	34.5%	2	16.7%	13	50%	1	25%	3	23.1%
Agree	26	47.3%	7	58.3%	11	46.2%	3	75%	5	38.4%

I felt like I was part of the team while doing my internship(s)

How did you prepare yourself for the clinical internship experience?

MLS - Classes and labs. Study material
MLS - I brought textbooks and course material relating to the area I would be rotating through so that I could study and have a point of reference when not confident. I also made sure that I was eating right and getting good sleep.
MLS - Took professor advice to heart.
Nursing - studying and printing off practice guidelines
Nursing - Dressed professionally and practiced good hygiene and grooming. Took appropriate equipment with me. Worked to establish rapport with preceptors and patients. Prepared with a ready for anything attitude.
Nursing - I took time to independently teach myself things I felt would be helpful.
MLS - reviewed material from classes
MLS - Studying the material related to the area I was going to be in.
PA - Previous life experience and the didcatic year.
PA - Studying ahead of each rotation for rotation specific conditions
MLS - Don't think I really prepared specifically for the internship as I didn't really know what to expect.
MLS - Reviewed my school notes pertaining to that section before starting that rotation.
Pharm - 3 years of pharmacy school, reading up on guidelines.
Pharm - Studying the material that was learned that day after I go home
Pharm - Got up to date on my readings.
Pharm - Studied hard for 3 years, reviewed guidelines and lectures for specific practice sites
Pharm - Studied.
Nursing - I would brush up on basic knowledge concerning the specialty i.e. womens health, peds, geriatrics, etc. and expect to actively learn as we go.

What suggestions do you have that would better prepare future students for clinical internships?

MLS - I think lab time in class should be set up more like a real lab. Order tests, perform tests. When I was in lab, it was mostly like 'here are some slides, there are some urines, go look at stuff'
MLS - Be able to take notes quickly
MLS - Have fun. Be polite & professional. Don't be intimidated.
MLS - Study hard, listen to preceptors, take notes. If your preceptor gives you a heads up for a procedure you will do the next day, study to be ready.
Nursing - Classwork should be geared towards what we are going to learn in clinical instead of on minute facts that hold no value
MLS - shadow or become more familiar with the actual atmosphere of a working hospital
MLS - Study study study!
PA - I think some more previous year students coming in and explaining the process and expectations would be more helpful.
PA - In the PA program that's really hard to do just because you are already trying to cram so much into the didactic year that I don't think you can really prepare more.
PA - Allow them to contact sites prior to arrival so they know if all the paperwork has been taken care off. Rather than showing up to find out the 2nd year staff did not do there job.
MLS - I don't really feel as though you need to be prepared for the internship as it's another learning tool and every site is different. Just going through the program and getting the basic knowledge from there is sufficient.
Pharm - Figure out expectations early, establish a routine, and work hard.
Pharm - Be prepared to study
Pharm - Made more time for research.
Pharm - Ask questions whenever you don't understand something, learning a providers thought process will help you understand how they approach different patients and treatments.
Nursing - The clinical experience is just like undergrad, so keep studying, show up prepared, and ask appropriate questions.

Would you like ISU to provide mock certification exams or other certification preparation workshops? If so, what would be the most helpful?

Yes - 2
No - 3
MLS - Yes. Test prep would help.
MLS - I think it would be immensely helpful if MLS program required a us to take mock exams a few times during the year to track improvement. Although most of my class passed their exam the first time so the program did alright.
MLS - The ASCP BOC study guide was the most helpful when preparing for the exam. Also, the

mock exam on https://www.medialabinc.net/ was very helpful. I do not think it's the responsibility of ISU to provide these resources to students, but it would be helpful if these resources are recommended. (Which they were).
MLS - I don't think that is necessary. The classes and exams were preparation enough.
Nursing - Yes that would be awesome to have a mock board
MLS - Yes, mock exams and classes.
PA - I don't remember exactly what the required testing was during the clinical year. I know we did take a practice PANCE at least once which I found to be really helpful. That material provided was mostly what I used to study for my boards and was very successful. Im not sure what I would do differently.
MLS - It might be helpful. I know other students I was with had four days of clinical training and day five was used to take an exam. I think once a week may be too much but maybe every other week or once you've finished in an area (i.e. Blood bank or chemistry rotation) then have a mini exam. Think it would help keep up with studying for boards. Certification prep would have been nice too.
PA - They provided a PANCE prep class, very helpful. Keep doing it.
PA - No. The test prep we were supplied was completely inadequate and irrelevant. I would recommend students look elsewhere for help.
MLS - Yes, mock tests would have been nice.
MLS - Yes--mock exams and workshops
Pharm - Practice NAPLEX exams
PA - We are provided with a free pre-naplex
Nursing - Yes, a mock exam for licensure would be fantastic. Set up through our final practicum course.

If there is any other feedback you would like to provide, please do so here:

MLS - I wonder if it might be more effective to lay out the curriculum in sections, rather than in semesters. For example, intense lecturing/training/lab time in micro for a month, followed by a month of coag, then heme, etc. More like how training is done in the real lab.
MLS - The only improvement I would suggest is to set up the internships automatically. A computer matching system works very well. Students submit resume, application and top 5 picks. The sites select their top students and the system makes the match. Dates to submit applications are clear and internship assignment date is the same for everyone. Dietetics uses D&D Digital.
PA - I thought my clinical experience was great. I will say traveling to Walla Walla, Blackfoot, and SLC was tough, but the rotations there were excellent.
PA - I feel like the program is so desperate for preceptors that there are people precepting that really should not be. However as a student, you don't get the option to genuinely say that you feel a preceptor wasn't appropriate for the job. Despite being told you can bring up concerns, etc, you really can't. I look back and feel like at least two of my rotations I really could have benefited from more appropriate preceptors.
PA - At least where the PA program is concerned, there needs to be better monitoring of internship locations and instructors. I was placed at a site with an inappropriate instructor and a site that didn't fulfill requirements. Other students were at sites out of their scope of training (at

the time) and still others were at sites where there was no work to be done. Very disorganized for such a hefty price.
MLS - I did my internship at a small hospital and I feel as though I did not get the necessary experience needed to work anywhere but a small hospital. I felt cheated in a way. And when I asked ISU staff in charge of placing me at a site to go somewhere larger to get a microbiology experience, as my site sent all micro to an outsource, I was denied. So all in all, I think small hospitals should not be used unless the student has an agreement with the hospital.
Pharm - I was disappointed with some of the rotations. I wish ISU would do a better job vetting some of the sites to make sure they actually want students or give ideas on how to utilize or train students while at the clinic.
Pharm - The internships I participated in are ones that we do during the school year. Our last year of clinicals we get graded on and have more of a structured internship. Before that it is mostly shadowing.