

# An Initial Assessment of the Internship Program for School of Nutrition and Food Sciences Students - Exposure and Decision Making Factors

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## RESEARCH

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## ABSTRACT

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The objective of this study was to assess the exposure and decision making factors of Nutrition and Food Sciences college students regarding taking internship opportunity (non-dietetic internship). It was designed as a survey study using a self-administered paper questionnaire. There were a total of 167 participants, which consisted of adult ( $\geq 18$  years old) undergraduate students from the School of Nutrition and Food Sciences. Frequencies and percentages were calculated to describe the study participants. Results showed that the initial awareness of internship was high, but the gaps between knowledge, willingness, and actions need to be addressed. Identifying the decision making factors (type of internship provider,

payment, timing, and location) can narrow the scope of the opportunity search, as well as advertising, and promotional effort of internship program managers. Targeted promotion of preferred internship opportunities is more likely to achieve success.

**Key Words:** food industry; food science; nutrition; university students.

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## INTRODUCTION

Internships as voluntary, temporary work placements, often undertaken by students at the university and college level, have been hailed as win-win situations for both employers and internees [1]. Association of American Colleges and Universities and Hart Research Associates [2] conducted a survey among 400 employers who were executives at private sector and non-profit organizations, including owners, CEOs, presidents, C-suite level executives, and vice presidents. The results showed that 73% of the respondents believed that requiring college students to complete a significant applied learning project before graduation would improve the quality of preparation for their career. Not only have internships been hailed to propel careers, findings from Binder and others' study showed that internships also have a crucial effect on subsequent academic outcomes, which held controlling for prior academic achievement for both advantaged and disadvantaged students [3]. Gomez et al. [4] found that for bioscience students undertaking a one-year placement (40



weeks work-based learning), there was a demonstrable improvement in terms of their final-year mark that was independent of gender and earlier measures of performance.

Nutrition and Food Sciences is a multidisciplinary subject involving the application food science that trains students in the quality, processing, and safety of foods for the multibillion dollar food industry, and nutrition discipline that provide training in nutrition science, community nutrition, clinical nutrition with a focus on improving health and well-being of all citizens. While there is little doubt that internships can have a direct and positive effect on a number of career indicators [5, 6], limited knowledge has been reported on the effect of internships specifically relating to students in the field of nutrition and food sciences. The overall objective of this study was to assess the exposure and decision making factors towards internships among students in School of Nutrition and Food Sciences (SNFS). This study will provide a benchmark and directions for the Nutrition and Food Sciences academic programs when developing and strengthening the internship component, which as a result can enhance the career preparedness of the SNFS students.

## **MATERIALS AND METHODS**

### **Questionnaire design**

A questionnaire was designed to assess the college students' exposure and decision making factors towards internships within the SNFS. Initial questions were developed by authors. The survey was reviewed for face validity by five colleagues who have undergraduate teaching appointments in SNFS. Grammatical corrections were made, and the wording of the questionnaire was modified based on the feedback. A pilot test was conducted with five undergraduate students who was working as student workers in SNFS, two of whom were males while the other three were females. A paper format of the questionnaire was used with the pilot group. Other than gender, no demographic information was taken into consideration when select the pilot group. The average time of completion was approximately one and half minutes. Observation

suggested that the paper format of the questionnaire was an acceptable mode of data collection.

Our questionnaire consisted of four sections including belief of benefits, past internship exposure, decision making factors, and demographics regarding major and concentration. In belief of benefits section, a single - items-"Do you believe that an internship will help you with your future career?" was developed to gauge students' belief of the positive effect of internships. Three response options were given including "agree," "neutral," and "disagree". In the prior internship exposure section, students were asked whether they completed an internship while in college. Detailed information regarding their internship's sponsor was also included. The following options were given: company, non-profit organization, undergraduate research group, or other. In the decision making factor section, type of internship sponsors, payment, time of the year, as well as location on students' decision making regarding taking an internship were evaluated. Demographic questions included students' major, minor, and study concentration.

### **Questionnaire administration**

The survey was distributed within SNFS from 2016 to 2018. The questionnaire was filled out by 167 undergraduate students (over 18 years old) who were in their sophomore, junior, or senior years of study.

### **Data entry and analysis**

Questionnaire responses were entered into Excel, and entry-validation checks were performed on all questionnaires by manually comparing the database and hard-copy versions. In the belief of benefits section, answers were coded 1 = disagree, 2 = neutral, and 3 = agree. In the prior internship exposure section, answers were coded 1=yes, and 2=no for exposure questions, and 1=company, 2= undergraduate research group, and 3= non-profit organization for type of internship sponsors. In the decision making section, three items were included. For the payment of the internship, options were coded 1 = offer payment, 2 = offer credit, and 3 = volunteering but gain

experience. For the time of the year item, options were coded 1= summer, 2 = fall, 3 = spring, 4 = all of the above, and 0 = none of the above. Regarding students' preferred location for an internship, the responses were 1 = only Baton Rouge area, 2 = 150 miles or less from Baton Rouge, 3 = preferred Louisiana region, and 4 = no preference on location. Baton Rouge, La is the city where our university is located. Data was described using frequencies and percentages.

## RESULTS AND DISCUSSION

The majority of participants were nutrition and food science majors with a concentration in dietetics. Biology, psychology, and health science were the most commonly named minors (Table 1). The Didactic Program is accredited by the Accreditation Council for Education in Nutrition and Dietetics. After graduation, students are eligible to apply for a dietetic internship, which leads to a Registered Dietitian (RD) credential. While the largest percentage of participants (67.3%) were in the dietetics program and needed to complete a dietetics internship, majority of the students (76.0%) were open to non-dietetics internship opportunities. This was a positive indicator that students were motivated to acquire internship experiences outside of the academia requirement.

Although the vast majority of students (89.8%) believed that an internship would be beneficial in their future career (Table 3), most of the participants (79.0%) had not yet completed an internship (Table 2). This inconsistency or gap has been observed in not only educational but also healthcare settings. Researchers who examined the acceptance and potential barriers for general public to screen for colorectal cancer revealed that neither knowledge nor willingness to undergo screening predicted accepting the invitation to screening [7]. Similarly, as suggested by this study, "knowing the importance of internship" and "willing to take an internship" did not directly translate into the action of "taking an internship". To overcome the gap, it was critical to understand the students' decision making factors and identify potential barriers by comparing the preference and available

opportunities. Thus, we evaluated the students' preference on type of the internship provider, payment, timing, and location of the opportunity.

Three types of internships were listed in the survey including company (Table 2), undergraduate research program, and non-profit organization. They were the most frequent taken and/or advertised opportunities in the past. Of those who had taken internships, company (43.3%) and non-profit (40.0%) opportunities were the most frequently cited. Students who planned to complete an internship before graduation reported that they prefer a corporate-type internship (72.7%), followed by the undergraduate research program (18.2%), and non-profit organization (9.1%). Nutrition and food sciences are applied sciences that are distinctively different but interconnected. Besides the traditional product development, quality assurance, and processing line opportunities, food industry intentionally incorporates nutrition students into their R&D and outreach programs to promote healthy eating. Company opportunities are appealing to students from both nutrition and food sciences because it provides the real-life experience in industry. Different from the non-profit organizations and undergraduate research in the laboratory, company internships also help students understand the business side of the world.

As shown in Table 3, while the largest percentage of students wants a paid internship (69.1%), the next largest percentage indicated that volunteering to gain experience (23.0%) was a more attractive option than working for course credit (7.9%). This finding was consistent with Madigan and others [8] who examined Occupational Health and Safety (OHS) students' internship. Their results showed that factors that mediate outcomes from internship are supervision, learning opportunities, and payment. Besides the financial benefits, receiving payments may also increase students' feelings of educational preparedness [9]. Relatively lower interests in unpaid opportunities (volunteering and earning credits) may exist due to the financial constraint of the students or the implication of the paycheck as career preparedness. This information is useful for curriculum development of the SNFS because it

indicated that setting up accredited course for internship would be unnecessary. It may be wise for the internship program manager to purposefully searching for and promoting the paid internship opportunities.

The largest percentage of students who preferred a summer internship (46.2%, Table 3). This number was closely followed by the next largest group who indicated that time of year was not a factor (42.2%). Regarding location, most students preferred either an internship experience that was in the same city (31.2%) or did not have a location preference (39.6%). The preference of timing and location was a mix-match due to the heavier course load in the Spring and Fall semesters. Students who preferred summer internships normally did not have a location preference. No course constraints during the summer allow more flexibility to explore internship opportunities away from the university location. Students who do not have a preference on timing of the internship generally preferred internships taking place in the same city as the university. Benefits of an opportunity close to the university may include a shorter commute and/or the savings on rent since no additional housing is needed. This result provides directions for advertising and promoting internship opportunities. When promoting summer opportunities, the internship program managers can expand the target geographic areas knowing that students who take summer internships are less restricted by locations. When promoting internship in the spring and fall, the managers can save resources by focusing on local opportunities.

Finally, another factor that plays an important role in Louisiana students is the TOPS (Taylor Opportunity Program for Students) funds. TOPS is a program of state scholarships for Louisiana residents who attend either one of the Louisiana Public Colleges and Universities, schools that are a part of the Louisiana Community and Technical College System, Louisiana approved Proprietary and Cosmetology Schools, or institutions that are a part of the Louisiana Association of Independent Colleges and Universities [10]. From 2018 to 2019, 52,053 students received tuition payments through TOPS. Potential cuts to state funding for student tuition prompted us to ask

students if the cuts had led them to seek in-school jobs outside their field of study. Students were split fairly equally with those indicating “yes” slightly outnumbering those who said no (Table 3).

## CONCLUSION

These findings provided useful information for the internship program manager in SNFS or at the College level. The initial awareness of internship is high, but the gap between knowledge, willingness and action needs to be overcome. Decision making factors including type of internship providers, payment, timing and locations can narrow the scope of the opportunity searching, advertising, and promoting. Targeted promotion of preferred internship opportunities is more likely to achieve success other than the non-preferred mechanism such as curricula integration.

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## TABLES

**Table 1: Participants' major, concentration, and minor.**

Major <sup>a</sup>	<i>n</i>	%
Nutrition & Food Sciences	157	94.6
Biological Sciences	3	1.8
Kinesiology	2	1.2
Animal Sciences	1	0.6
Biochemistry	1	0.6
Chemistry	1	0.6
Dental Hygiene	1	0.6
Concentration <sup>b</sup>		
Dietetics	103	67.3
Pre-Med	19	12.4
Food Science & Technology	18	11.8
Nutrition, Health & Society	9	5.9
Animal Sciences	1	0.7
Dental Hygiene	1	0.7
Human Movement	1	0.7
Polymers	1	0.7
Minor <sup>c</sup>		
Biological Sciences	10	23.3
Psychology	7	16.3
Health Science	5	11.6
Business Administration	5	11.6
Spanish	4	9.3
Communication Studies	2	4.7
Dance	2	4.7
Animal, Dairy & Poultry Sciences	1	2.3
English	1	2.3
Human Nutrition	1	2.3
Kinesiology	1	2.3
Music	1	2.3
Physical Theatre	1	2.3
Religious Studies	1	2.3
Sociology	1	2.3

<sup>a</sup>1 person had missing data for Major.

<sup>b</sup>14 people had missing data for Concentration.

<sup>c</sup>124 people had missing data for Minor.



**Table 2: Participants' Internship Experiences.**

Dietetics Program Member <sup>a</sup>	<i>n</i>	%
Yes	105	63.6
No	60	36.4
Open to Non-RD Internship Opportunities <sup>b</sup>		
Yes	76	76.0
No	24	24.0
Completed an Internship in College		
Yes	35	21.0
No	132	79.0
Type of College Internship <sup>c</sup>		
Company	13	43.3
Non-profit organization	12	40.0
Undergraduate research group	5	16.7
Plan to Do an Internship Before Graduation <sup>d</sup>		
Yes	102	65.0
No	55	35.0
Type of Planned Internship <sup>e</sup>		
Company	32	72.7
Undergraduate research group	8	18.2
Non-profit organization	4	9.1

<sup>a</sup>2 people had missing data for Dietetics Program Member.

<sup>b</sup>67 people had missing data for Open to Non-RD Internship Opportunities.

<sup>c</sup>137 people had missing data for Type of College Internship.

<sup>d</sup>10 people had missing data for Plan to Do an Internship Before Graduation.

<sup>e</sup>123 people had missing data for Type of Planned Internship.

**Table 3: Participants' Internship Preferences and Other Work Experiences.**

Believe that an Internship Will Help Their Future Career	<i>n</i>	%
Agree	150	89.8
Neutral	15	9.0
Disagree	2	1.2
Most Appealing Type of Internship <sup>a</sup>		
Offer payment	96	69.1
Volunteering but gain experience	32	23.0
Offer credit	11	7.9
Preferred Time of Year to Complete an Internship <sup>b</sup>		
Summer	73	46.2
All of the above	67	42.4
None of the above	11	7.0
Spring	6	3.8
Fall	1	0.6
Preferred Internship Location <sup>c</sup>		
Location doesn't matter	61	39.6
Only BTR area	48	31.2
Preferred Louisiana region	24	15.6
150 miles or less from BTR	21	13.6
Prompted to Seek Employment During School in an Unrelated Field Because of Reduced TOPS Funding <sup>d</sup>		
Yes	75	52.4
No	68	47.6

<sup>a</sup>28 people had missing data for Most Appealing Type of Internship.



<sup>b</sup>9 people had missing data for Preferred Time of Year to Complete an Internship.

<sup>c</sup>13 people had missing data for Preferred Internship Location.

<sup>d</sup>24 people had missing data for Prompted to Seek Employment During School in an Unrelated Field Because of Reduced TOPS Funding.

### **PEER REVIEW**

Not commissioned. Externally peer reviewed.

