AC 2012-3532: A PROFESSIONAL INTERNSHIP: DON'T GRADUATE WITHOUT ONE

Dr. John Marshall, University of Southern Maine

John Marshall received his Ph.D. from Texas A&M University and is the Departmental Internship Coordinator at the University of Southern Maine. His areas of specialization include power and energy processing, applied process control engineering, automation, fluid power, and facility planning.

©American Society for Engineering Education, 2012

A Professional Internship:
Don't Graduate Without One

Introduction

Professional internships are not a new concept to college and university programs. However, to require this experience in the form of a demanding, well designed and implemented internship is a very time consuming investment, which will yield excellent returns for your students and for your program. Students, both traditional and non-traditional, are given an opportunity to demonstrate, advance, and refine technical and supervisory competencies learned in the classroom and in the laboratories. "Internships give you on-the-job experience, help you learn whether you and that industry are a good match, and can provide you with valuable connections and references." [1]

Graduates with this type of resume-worthy experience have a substantial advantage over peers with no internship experience. "Once, having an internship or two on your resume made you a real standout in the marketplace. Today, internships are really the only way to make sure you get on the career track of your choosing." [2]

Engineering programs and the hosting industries also benefit in many ways. "The programs possess several advantages and provide benefits to all stakeholders." [3] The Internship program is a perfect vehicle to network into many different types of businesses and industries. This working relationship often results in program benefits such as state-of-the-art equipment donations, sources of student scholarships, recruiting tool for current industrial employees wishing to upgrade their skill set, a job placement highway for graduates, faculty industrial sabbaticals, advisory board members, and an excellent vehicle for some great community public relations.

Internships are also very profitable for industries as they struggle to maintain an adequate supply of technically oriented employees during market swings. "With many functions within the engineering process needing oversight or 'leg work', interns are a valuable asset that many large engineering companies love to leverage and use the collaboration to gain a better understanding of an intern's work ethic and potential to identify possible employees." [1]

Internships truly are a mutually beneficial partnership. Employers who create internship programs get the benefit of the time and efforts of young people eager to learn the inner working of a job, while interns have the chance to see what a job is all about before entering the job market. It also provides the opportunity for a company to potentially have a trained employee waiting in the wings after college graduation.

Purpose

The purpose of this manuscript is three fold. First, it will provide the *rationale* for implementing a *mandatory* professional internship within your engineering program. Secondly, it will present a typical *Internship Portfolio* documentation package of assignments that each intern completes as an integral part of the internship experience. And thirdly, the crucial role of the *Professional Internship Coordinator* is examined.

Distinctions Between Internships, Cooperative Education, and Fellowships

Internships are frequently a student's first step into the professional work force and provides them with what employers are seeking: professional experience. Internships are a system of on-the-job training for white-collar jobs, similar to an apprenticeship. Employers often look for interns that have had some major-related course work. This allows the intern to participate in the company's operations.

Cooperative Education is a structured method of combining classroom-based education with practical work experience. Alternating work semesters with school semesters, a student can work towards career goals in a meaningful job while going to school and testing degree interests in real-world situations. Co-op students frequently qualify for higher starting salaries after graduation because of their experience. Many organizations participate in the co-op program to develop future employees, offering permanent positions to numerous former co-op students after graduation.

Fellowships are typically a merit-based scholarship, or form of academic financial aid. They may provide students and scholars with support to pursue independent or guided research projects of value to the granting agency.

Rational for a Graduation Requirement

Networking

One of the most powerful networking tools available for engineering programs is the professional internship program. A well designed and carefully structured industrial internship will not only provide a job placement highway for graduates, but is also a recruiting tool for potential students with a desire to upgrade their skill sets. The very presence of the interns on site, and the working relationship between the industry and your program will foster much interest and motivation within the ranks of industrial employees as they consider the benefits of a Bachelor's degree.

According to Bela Dereskei, who completed an industrial internship at Merck Chemical Company, "The real world was very different from academia. I quickly discovered how important written and oral communication skills are in industry. In spite of the steep

learning curve in some areas, this last semester was one of my most interesting, most rewarding and most challenging semesters." [7] Cynthia Harwood commented that "I felt much more prepared for what I might see and experience in industry after going through the internship program, I have also found that having the internship on your resume makes employers much more interested in you as a job candidate." [8] Haitao Cheng interned at the Bayer Corporation and felt that "the approaches taken in industry are quite different and this experience let me see how the 'real world' problems are tackled. It's also clear that the internship is very valuable when seeking employment." [7]

In practice, the internship is "the new rung on the corporate ladder." [2] It is essential that the student intern demonstrate professionalism and accountability in all aspects of their agreement. They must fulfill their commitments to the best of their ability, and make consistent contributions to the hosting firm. In addition to the hosting firm's technical and supervisory responsibilities, the intern is required to integrate formal internship assignments into daily routines and participate in weekly seminars on campus. Presented in the next section are required assignments that guide and document the internship experience.

In several instances, what has started as merely an internship-hosting firm has led to a "satellite" teaching opportunity for an entire class of new students. Larger companies often have provisions to pay for college tuition and supplies for interested employees. "An intern program can foster closer interaction between the employers and the university, making employers more aware of the educational opportunities and ensuring that the program is responsive to the needs of employers." [3]

The intern's presence, coupled with visits by the internship coordinator, keep the Engineering program in the forefront when equipment was tagged for resale or donation. Frequently, state-of-the-art equipment would be donated or "semi-permanently" lent to the department when the industry retooled or modified a production line. In two instances, local companies sponsored $500.00 student scholarships that were eligible our majors. These types of events are highlighted in both the campus and the local newspaper, providing welcomed exposure and public relations.

Additional networking benefits include industrial sabbaticals for faculty members wishing to keep abreast of current trends and technologies, and an excellent source of new members for advisory boards. The opportunities are endless as new doors open to your program that you never knew existed.

Traditional and Nontraditional Student Growth

Many traditional students lack resume worthy industrial experience and may be unsure of the valuable contributions they are capable of making. Placing this type of student under the supervision of an experienced manager will clarify their role and provide a better understanding of the "bigger picture". Understanding this "bigger picture" enhances the ability to gain meaningful, resume worthy experiences, and "provides students with

valuable exposure to current practices." [4] Even non-traditional students who may have years of military or industrial experience will grow, learn, and become a greater contributor. In other words, regardless of their entry level, each intern will grow professionally and will return more "focused on their future studies." [4]

The professional experience encourages the intern to *advance* their technical and supervisory skills. Engineering students have interned in a wide variety of businesses and industries including: aircraft engine manufacturers; furniture manufacturers; industrial equipment manufacturers; high-tech composite industries; construction companies; robotics; and industrial distributors.

The internship provides an opportunity for the student to link theory to practice and to reflect on situations outside the classroom where problems are real, solutions complex, and individualized challenges are possible. Regardless of the skill level the intern begins with, an internship with a major industry will provide a substantial advantage upon graduation, and "can help to clarify their future career decisions." [4] A survey conducted by Patrick Scheetz, author and director of the Collegiate Employment Research Institute at Michigan State University, found that "of the previous year's new hires, nearly 50% had completed career-related internships." [2]

Upper-class standing is important to optimize the internship experience. It is actually an extension of the classroom, where the intern transitions the theory they have learned into practice. In order to accomplish this, the intern needs to have the majority of curriculum accomplished affording them a wide knowledge base. It is interesting to note that "statistics show industrial internship students' GPAs improve after completing a work term." [5] Good communication skills, dependability, and an adult level of maturity are essential intern attributes.

The internship is structured around self-directed learning experiences that will allow each student to transfer academic knowledge and skills into competencies required for successful careers. Each student is expected to take control of the learning experience and manage the learning process. The self-directed experience develops critical management abilities such as decision-making, time management, and scheduling. In addition to developing technical job related competencies, interns "grow and develop in a professional environment." [6] Although self-directed, insuring the optimum environment for this growth necessitates close and frequent coordinator interaction and monitoring.

Major Internship Goals and Ramifications

1. Provide the opportunity to integrate and apply the knowledge, skills and attitudes developed in the college or university curriculum.

2. Provide the opportunity to work within an on-going business enterprise, meeting the performance standards set for regular employees and management, as well as

completing the learning experiences that are integrated into the daily work routines of the organization.

3. Refine planning, communication, and technical abilities in real world situations while establishing resume-worthy experience for future reference.

4. To demonstrate professionalism and accountability in meeting all commitments required of the intern and make consistent contributions to their employer.

Curriculum Requirements and Logistics

Catalog Description

> This experience is designed to advance technical and supervisory skills during employment with a business or industry. Interested students must meet with the internship coordinator prior to the job search process, and the hosting firm must be approved by the coordinator prior to course registration. Securing employment is the student's responsibility. Formal assignments will be discussed during the weekly seminars. Contact the internship coordinator for additional information. [9]

Can't Find a Professional Job?

The great majority of our students are already working in some capacity. Often however, the job is more physically oriented than intellectually challenging. Frequently, an employer / employee discussion relating to the graduation requirement of a professional internship results in our student gleaning more professional responsibilities with the company. The ability to use this requirement as a fulcrum for advancement has been a reoccurring theme.

Still can't find an appropriate position? Advisors, in consultation with the associate dean, have the ability to substitute the internship requirement for a prescribed course that would benefit the student in securing gainful employment upon graduation.

Weekly Seminars

Interns are required to attend a weekly class meeting (one evening). These sessions are essential for several reasons. All interns are able to gain insights into the routines and procedures followed by other hosting firms as weekly logs are presented and discussed. These weekly seminars provide the students with a forum to share concerns and questions, and to learn from each other's experiences. It is important to be able to discuss events they find difficult or frustrating, or enjoyable. Many of these interns are experiencing a steep learning curve with greater levels of responsibility and stress then

previously experienced. A substantial amount of maturing and professional growth is taking place. At the conclusion of the semester, each intern presents a formal overview of their hosting firm and their experience. Colleagues, administrators, and potential intern students are invited to attend this session.

Another advantage of the weekly meeting is that the coordinator quickly gains insights into desirable or sometimes undesirable situations as they develop, not weeks later. This enables the coordinator to provide timely guidance and monitor all internships very closely. I have found it is simply not enough to visit them at the job. Interns find it easier to be candid when off-site. This quicker reaction time has made the difference between a good internship experience and a poor one.

Specific deliverables are required from the intern throughout the semester. These structured assignments allow the intern to experience many different aspects of the industry as opposed to being "pigeonholed" in one role. Presented below is a typical *Professional Internship Portfolio* [11] documentation package of assignments that each intern completes as an integral part of the internship experience.

This professional portfolio frequently accompanies the graduate during employment interviews. The literature consistently underscores the importance of portfolio assessment relating to hiring practices. In fact, one of the conclusions in the study conducted by the Collegiate Employment Research Institute at Michigan State University strongly suggested that "work experience had a higher value than most educational experiences." [2]

Professional Internship Portfolio

Two comprehensive, indexed notebooks containing assignments are required of all interns. Interns will formally present their portfolios at the conclusion of the experience. The quality of the portfolio (spelling, grammar, and format) is very important. It is essential that all pages are contained within "top-loading" clear page protectors and that the hosting firm's name is easily readable on the spine of the notebook. The purpose of two identical portfolios is to allow a copy for both the department and one for the intern. Each of the following sections should be indexed. The major sections of the portfolio are presented in Table 1, with comprehensive descriptions of each section included below.

Table 1 - Major Sections of the Professional Internship Portfolio

A. Table of Contents

B. Credentials
   1. Networking Document
   2. Resume
   3. Transcript
   4. Internship Employment Agreement

C. Demographic
    1. Community
    2. Firm's History
    3. Chart Showing Organizational Structure
    4. Mission Statement
    5. Analysis of Company Policies

D. Activity Sheets
    1. Weekly Logs

E. Internship Analysis
    1. Two Analyses of Activity Sheets (1 to 2 pages)

F. Self Analysis
    1. Two Self Analyses (1 to 2 pages)

G. Special Topic Papers (3 to 5 pages each)
    1. Product Line
    2. Plant Layout and Material Handling
    3. Management Information Systems
    4. Quality Control
    5. (Your Supervisor's Choice)

H. Conclusions
    1. Impact of Internship
    2. Suggestions for Improvement
    3. Closure Letter to Hosting Firm

A. Credentials

Submit a resume that includes work experience, related course work, honors received, extracurricular activities, career goals and attach an updated transcript. The coordinator should already have the "Intent to Participate Form" you submitted several months ago. The "Credentials" assignment is due at the second class meeting.

B. Demographic Information

Describe the community in which you are located, the firm's history, general philosophy, the firm's organizational structure (chart), and their mission statement or goals. Provide an analysis of the company's methods of promotion and publicity, personnel and safety practices and procedures, an inventory of the various services and products provided by the company, and any problems or weakness that have been identified.

C. Activity Sheets

Keep written notes that will help you analyze your progress and evaluate your experience. These detailed daily logs should identify the intern's activities and responsibilities including daily procedures, significant and on-going events, and work accomplished towards the course assignments. They will be typed and brought to class each week. These detailed activity sheets will be discussed during visitations.

D. Internship Analysis

This assignment involves the analysis of the "Activity Sheets" and a description of the most significant "Learning Experiences" obtained during the internship. In no more than four pages (two page minimum, typed, double spaced), include in this analysis the number of hours completed toward the required 200 hours, and an identification of "Performance Goals" that have been accomplished. Two internship analyses are required. The first is due near the 100 hour mid-point and the second upon completion of the internship.

E. Self Analysis

In no more than four pages (two page minimum, typed, double spaced), include an overview of problem areas; appropriate solutions to complex and on-going problems; a self-assessment of your strengths and weaknesses in different situations during the employment period; specific responsibilities you enjoyed and those you didn't enjoy doing; as well as strengths and weaknesses in the organization you observed during the employment period. Two self-analyses are required. The first is due near the 100 hour mid-point and the second upon completion of the internship.

F. Special Topic Papers

There are five special topics papers required of each intern. The subject of the papers can vary but must be approved by the internship coordinator. Typical topics are listed below. (These papers are to be three to five pages in length, typed, double-spaced, 12-pt font, very neat and professional.)

Topic One: Product Line - Describe the products being produced at this facility. Who do they compete with in the market? How is their product better / different? What were the sales figures for last year and what do they expect to sell this year? What new products are planned within the next two years?

Topic Two: Plant Layout and Material Handling - What are the raw materials and the original equipment manufacturer (OEM) buyouts. Using a process flow chart and a floor plan, trace the production cycle from receiving to storage to manufacturing, to warehousing, to shipping.

Topic Three: Management Information Systems - In this paper, describe the kinds of computer applications and whether they have been purchased on the market or designed for the company. What kinds of software programs are used, e.g., word processing, spreadsheet, database, etc.? Are the departments linked by a local area network? Does the business or industry utilize the computer system with any "just-in-time" or EDI arrangements with local distributors or OEM manufacturers?

Topic Four: Quality Controls and Quality Programs - In this paper, describe the quality enhancement programs utilized in the organization. Is there an overall quality program that addresses product and service quality? What are the basic elements of the program? What is the system for evaluating the quality of customer service? How is that system communicated to the workers? How is quality defined by the organization? What are the customers' expectations of quality from the organization? Do these expectations of quality actually match with the definition of quality in the organization? Are the ISO 9000 standards being addressed?

Topic Five: Your Supervisor's Choice- The topic of this fifth paper is selected in conjunction with the intern's supervisor. Typically the supervisor has insight into an area or project the company would like to explore or document.

G. Conclusions

1. Significance - Describe how the internship experience will assist you in achieving your career goals. Consider such factors as: initial employer; your short and long-term goals; advancement potential; and an estimate of your personal and professional potential and limitations.

2. Suggestions for Improvement -The last written assignment will be to offer suggestions on how to improve the internship experience. Specific suggestions such as topics for future "Special Topic Papers" should be included.

3. Closure Letter to Hosting Firm - Include a copy of the letter you write to the hosting firm that: 1) thanks them for the opportunity to gain outstanding experience and; 2) identifies the last day you will be at their facility working for them. This letter should be submitted to your employer two weeks in advance of your last day.

4. Presentation - Each intern will make a presentation based on his or her professional experience. The presentation format combines the formal presentation and round table discussion concepts. This should allow interactive participation from the audience and still permit the interning student to provide everyone with insight into their experience. These presentations will take place at the end of the internship and again for the new intern class next semester.

The Professional Internship Coordinator

The internship coordinator takes a proactive role in this curriculum. They represent the Department and perhaps even the School, and are the "point-of-contact" for both industries and students alike. They continuously search for new hosting firms while monitoring existing ones. Their role involves recruitment, administration, guidance, coordination, and a great deal of quality control. The coordinator must be readily available to assist the student or the hosting firm. Accessibility and prompt response times are essential. It is the foundation from which a quality Industry/University partnership matures and prospers.

Although most universities have co-op offices that assist students in finding jobs, they typically are unable to provide the expertise needed to represent the Engineering areas and to communicate effectively with industries. When companies contact the Engineering internship coordinator directly, they are speaking to a knowledgeable person who can immediately draw upon a pool of technically oriented individuals, who plan careers in the industrial sector. "In contrast with co-op students, an intern is with (the industry) long enough to learn how (they) work, and can therefore be effective in medium term or long term projects." [4]

The communication process between the hosting industry, the student, and the internship coordinator must occur prior to student registration. In fact, the design and logistics of the next semester's arrangements begins weeks and even months before the internship actually takes place. Although the legal burden of obtaining the industrial slot is placed upon the student, it is usually the coordinator that establishes liaisons with the industry, maintains the historical relationship, and insures the quality and consistency semester after semester. The coordinator assists the student in the entire process (see Table 2), from the initial interview, through to the completion of the internship.

Three important channels of communication exist between the coordinator, the intern, and the hosting firm. First, a weekly two-hour seminar brings most of the interns together on campus to share experiences and to turn-in assignments. Secondly, the coordinator visits each intern site at least once and perhaps twice. And thirdly, the intern's industrial supervisor completes a confidential evaluation (see Table 3) and mails it directly to the coordinator.

Generally, if the hosting firm is located within a 200 mile radius, the coordinator will make a site visit. Visits usually last for about two hours in addition to the associated travel time. The coordinator develops a written evaluation for each intern and each visit. During the visit, the coordinator will meet individually with the intern's supervisor, and then allow the intern to review the accomplishments and current assignment underway. An outcome from the visit should be an identification of performance strengths and specific performance goals for the remainder of the internship.

If personalized visits are not possible, the intern is required to prepare videotapes and arrange for telephone calls to the internship coordinator. Assignments that would normally be presented to the class during the weekly seminars should be mailed to the coordinator.

The Hosting Firm

Industrial visits to discuss the potential of hosting an intern provide an opportunity to establish dialogs with companies that may never have envisioned a relationship between their business and your students. Hosting industries have found that a "steady flow of work-experience students provides a continuous source of new ideas and approaches to the work place." [5]

The company who accepts and works with a student during the internship plays a vital role towards the success of this program. Their dedication and support of this educational process is greatly appreciated. The intern coordinator will serve as the contact point with the university, and will be available to assist the hosting firm in any manner possible. The hosting firm is requested to assign the intern professional responsibilities under the guidance of an experienced employee during the course of the internship. When this intern's term is completed, the hosting firm can select their next intern from a pool of candidates. "The program is self-sustaining. The outgoing students can train the new incoming students." [5]

The student will report to the hosting firm at pre-arranged hours, properly dressed, ready to work and learn. It is expected that the intern will be exposed to various aspects within the company and will be paid at a level agreed upon by the hosting firm. It is understood that no permanent employment is being offered to the intern and that the hosting firm may discontinue the process at any time. However, most industries view the "intern as a potential future employee - where you get a chance to see what they can do before hiring them." [4]

Conclusion

A major premise of Engineering is to provide students with the knowledge and skills necessary to succeed in modern day industries. This premise would be well served by ensuring first-hand industrial experiences for *all* graduates. In businesses and industries throughout the nation, the internship student is "the modern-day apprentice." [2] Requiring a significant internship of each student is a tremendous amount of responsibility and should be a priority for progressive programs.

If you are majoring in **engineering** you should apply for a summer internship to gain valuable work experience and apply the skills and theories that you learned in your classes." [6] A successful, high quality internship program develops strong links with dozens of industries. These links will keep the curriculum current and relevant. They provide our students and faculty with access to cutting-edge equipment. They formalize an avenue for industrial donations and scholarships. They serve as an important student

recruiting and retention tool. They encourage faculty industrial sabbaticals and projects. They provide our students with resume-worthy experience that vastly "improves post-graduation job opportunities." [7] In addition, they also ensure an exceptional network for graduate placement and advancement.

We have an excellent product for sale. Although the economic down-turn is making it more difficult to find long term employment, a rotation of technical-oriented interns enables company to build a data base of potential candidates to draw upon once market growth is reestablished. Look towards an internship program to greatly expand your institutions' horizons and your students' abilities. The industrial internship as a graduation requirement is a plan whose time has come.

Table 2 **- The Internship Process - Checklist**

THE INTERNSHIP PROCESS - CHECKLIST

1. Meet with the Department Internship Coordinator as early as possible (typically junior status).

2. Type or word process, and submit the completed "Intent to Participate" form with three professional quality resumes. Identify all relevant educational, industrial, and military experiences. The resume must be perfect or it will not be accepted!

3. Seek internship placement. Internships are not guaranteed. It is the student's responsibility to obtain the position.

4. Arrange the work schedule with the hosting firm. Twenty hours per week is usually the minimum requirement. Full time, summer long internships are very desirable.

5. Register for the course and work closely with the internship coordinator.

6. Participate in the internship. Three people are directly involved:

    a) The Intern is responsible for directing the learning process. The intern must ensure that academic knowledge and skills are being integrated into the daily experience in a manner that will result in the attainment of critical management abilities such as decision-making, time management, and scheduling.

    b) The Supervisor who will provide guidance and support while at the hosting firm.

    c) The Internship Coordinator who will assist in maintaining a high quality, productive experience for both the intern and the hosting firm.

Table 3 **- Supervisor Evaluation of Intern**

CONFIDENTIAL
Supervisor Evaluation of Intern

This form is to be completed by the intern's immediate supervisor twice during the internship. The intern will not have access to the responses. An accurate assessment will permit attention to be directed towards needed areas. Please circle the number that best reflects the intern's performance. Do not circle any number if you did not have the opportunity to observe that specific performance.

5 = Excellent
4 - Above average
3 = Average
2 = Below average
1 = Poor

Intern's Name: _____

Is punctual	1	2	3	4	5
Is dependable	1	2	3	4	5
Is creative/innovative	1	2	3	4	5
Can work independently	1	2	3	4	5
Can work under supervision	1	2	3	4	5
Can work as a member of a team	1	2	3	4	5
Meets deadlines	1	2	3	4	5
Is faithful to responsibilities	1	2	3	4	5
Is intellectually alert	1	2	3	4	5
Interacts easily with peers	1	2	3	4	5
Is congenial	1	2	3	4	5
Shows leadership ability	1	2	3	4	5
Shows initiative	1	2	3	4	5
Seeks additional work experience	1	2	3	4	5
Is motivated toward the profession	1	2	3	4	5
Readily accepts challenges	1	2	3	4	5
Takes education seriously	1	2	3	4	5
Readily applies instruction	1	2	3	4	5
Wholesome attitude toward learning	1	2	3	4	5
Dedicated to self improvement	1	2	3	4	5
Readily accepts constructive criticism	1	2	3	4	5
Appreciates the importance of intern	1	2	3	4	5

Please evaluate the quantity and quality of work accomplished by the intern.

Relative to the tasks assigned, what were the intern's strengths?

Relative to the tasks assigned, what were the intern's weaknesses?

Based on your experience with the intern, do you believe that the intern has the basic skills, intelligence and motivation needed to pursue a successful career in the field?

Supervisor: _____ Date: _____

Bibliography

1. Internships.com hired education (2011). *Engineering Internships,* [WWW document]. URL http://www.internships.com/intern/engineering.

2. Taylor, E. (1997). *The new rung on the corporate ladder.* Tools for Life. 1 (2), http://atmae.org/jit/Articles/mars0599.pdf, 12-19.

3. Faculty of Science (1998, August 15). *Industrial internship programs* [WWW document]. URL http://eta.sci.ualberta.ca/Detail/iip.html, p. 1.

4. York University (1998, August 13*). Industrial internship program employer information* [WWW document]. URL http://www.cs.yorku.ca/~intern/employee.html, p. 2.

5. University of Alberta (1998, August 13). *Industrial internship program* [WWW document]. URL http://web.cs.ualberta.ca/iip/ , p. 1-2.

6. Revenue Generators, Inc., (2011). *Engineering Internship*, [WWW document]. URL http://www.campusinternships.com/Engineering_Internships.cfm

7. McMaster Engineering Society (1998, August 15*). Faculty of engineering industrial internship program* [WWW document], URL http://eng.mcmaster.ca/ecs/intern.htm, p. 1.

8. Dereskei, B. (1998, August 15). *A graduate student Internship at Merck Chemical Company* [WWW document]. URL http://www.uta.edu/cos/SNS97Web/Bela.html, p. 1.

9. University of Texas at Arlington (1998, August 18). *Former Students* [WWW document]. URL http://utachem.uta.edu/html/former_studnents.html, p. 1-2.

10. Undergraduate Catalog 1998 -99. (1998). Portland, ME, University of Southern Maine.

11. Marshall, J. (1998). Professional Internship Portfolio. Unpublished manuscript, University of Southern Maine, Gorham, Maine.