

A REPORT ON HUMAN FACTORS CAREER ISSUES AND ANSWERS: CHOOSING AND PREPARING FOR A CAREER THAT WORKS FOR YOU

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The following paper was inspired by the discussion at the career panel that occurred at the 45th annual meeting of the Human Factors and Ergonomics Society. The panel consisted of seven professionals who work in various environments within the field of human factors. During this session, attendees asked the panelists a variety of specific questions about how to make academic and employment decisions. The essence of the ensuing discussion (both the questions and responses), rather than a strict transcript of the discussion, is conveyed in this paper. Five themes were recurrent in the panelists' responses throughout the discussion: (1) do your homework, (2) seek opportunities to demonstrate your skills, (3) network, (4) make school your number one priority, and (5) develop skills that make you unique. These themes are discussed, and clarifying examples are provided, in the summary at the end of this paper.

INTRODUCTION

This paper is based upon the discussion that took place at the annual career panel at the 45th annual HFES meeting. At the beginning of the session, the panelists were briefly introduced. The panel consisted of: (a) Ronald G. Shapiro of IBM Corporation; (b) Anthony D. Andre of San Jose State University and Interface Analysis Associates; (c) Arnold M. Lund of Sapient; (d) Jean E. Fox of the Bureau of Labor Statistics; (e) Steve P. Fadden of PeopleSoft (formerly a Human Factors Manager for Intel Corporation); (f) Jennifer D. Trich Kremer of Hewitt Associates, LLC; and (g) Carlos de Falla, Director of Member Services for HFES. Once the panelists were introduced, attendees were invited to ask the panelists questions.

QUESTIONS AND ANSWERS

What advice do you have for students who are trying to choose a graduate program? Is it really worth it to go to graduate school? (*Richard Yin, University of Washington*)

Arnie. A year ago, that was a harder question to answer because business was still booming. When people asked whether they should go to graduate school or to go to work so they could earn a lot of money and get stock options, that was a harder question to answer. Now, even if people are hiring, there are many candidates in the marketplace with experience. So to go back to your first question, we are looking for people who have had experiences in their graduate programs that they can bring to us that will add value to the company. We are looking for experiences that I can get from you but that I can't get from hiring someone else who is a more seasoned professional. We are also looking for diversity in our workforce.

Ron. To reinforce what Arnie said, companies are looking to hire people based upon their potential to contribute to the company. Typically, companies look at an individual's previous contributions, their skills, and

their interests. In some cases, an experienced professional may be able to contribute more to the company's needs, and in other cases a recent graduate might have a greater potential to do so. If you have had internships while you are in school or if you have published good work while you are in school, you would obviously be a more desirable candidate in a competitive marketplace, given all other things being equal, than someone who did not do those things in school.

Steve. About a year ago I was a hiring manager. Now that we have seen layoffs, the job market has changed a lot. One thing I can tell you from my experience in a hiring role, and from having talked to other people who make hiring decisions, is that the key thing that differentiates candidates is some kind of experience. Hiring managers are going to be looking for something that makes you unique, something that makes you stand out from someone who has a Bachelor's, Master's, or Ph.D. but has no experience. Regardless of whether you are deciding to go to graduate school or to take some time off from school, constantly ask yourself if what you are doing is going to make you stand out from someone else. Look for opportunities to gain experience such as designing a web portal, a cell phone, or a cockpit display to help you stand out by having something to show from the courses that you took.

Jean. There are many different domains within the field of human factors. A lot of the graduate schools have different specialty areas within the field. Therefore, if you are interested in a particular area, you should look for schools that offer a good match with your interests. If you don't know what some of these specialty areas are, then that is something you need to explore.

Arnie. Also, if you know where you are going with your career, you can make an effort to meet people who are doing the kind of work that you want to do, and obtain advice on academic decisions from them. Something you should realize is that job placement often happens through networking. One thing you can do is use your professors' contacts; have them introduce you to people they know when you are at conferences.

Ron. Continuing with that thought, you should also make an effort to get out and meet people (other students and professionals). You should go to the technical group meetings at the conference, pick up business cards, and get people interested in your resume. Networking gets you internships and post-degree jobs. If you make a good impression on people at these meetings, they may be instrumental in helping you obtain a job (even if they are not the ones hiring at that time). Remember that they know other people too and they may use their network of contacts to help you.

Jennifer. One of the big changes that we have seen in the field in the last year has been a shifting of focus away from internet experience. Therefore, if that is the only area in which you have skills, you should broaden your skill set. Just knowing about computers and programming is not going to get you a job anymore. Last year I had some offers for great jobs making great money, one of which I decided to take. Then my company had layoffs. When I reentered the job market, I found that it was not as easy to find work as it had been, and that I could not be as selective as I had been before. I started considering jobs and work environments that I was not willing to consider previously. It took me three-and-a-half to four months and 20 phone interviews to find a job. Now you are competing against people with significantly more experience and sometimes you are competing with your friends. At times, managing friendships and job hunting is difficult.

Is it better to have a Ph.D. or a Master's degree?
(Elizabeth Felton, University of Wisconsin at Madison)

Jennifer. I would have to say that right now, there are a lot more advantages to continuing your education than to getting out into the workforce immediately. The Ph.D. gives you more prestige, more experience, and a different set of skills than if you just have a Master's. Given the current job market, that is more important now.

Ron. Also, given the job market, it is my prediction that if you are still in a Master's program right now, job opportunities will be about optimal when you graduate with a Ph.D.

Jennifer. Even though job opportunities for professionals are challenging to find, some companies are still offering internships. Those are the best way for you to get experience.

Jean. Personally, I think that you really have to want the Ph.D. a lot. It is a lot harder to earn than a Master's degree and the respect level is certainly different if you have one. You will have to assess your own needs, but I will say that you should not necessarily do it just because the job market is bad. If it is something you want, then go ahead and do it. If you are not really sure that you want it, you should spend some time seriously thinking about it.

Arnie. Four or five years ago I was at a company where we were only hiring Ph.D.s because, at that time, there were so many available. I am now at a company that has hired people who only have a Bachelor's degree and some web experience. When we start to hire again, we will be looking for people who have more maturity and we will require that candidates have a Master's but not necessarily a Ph.D. degree.

Tony. We deal with this Master's versus Ph.D. question every year. One thing that we do not usually deal with, but I think is of equal importance, is how you get it. My advice to you is, once you have made the decision to continue your education, blaze through it and move on. You need to make it your first priority. Do not do it halfway and string it out for several years. It does not mean that you should not work or take six months off to do an internship, it just means that you should make it your number one priority to get out in the minimum number of years so that you can move on with your life.

Steve. A related question that many students ask me is how important the school's caliber is. My response is that it is more important to find a school that has a good match with your interests than to worry about the quality of the school. For example, if you are interested in aviation systems, you probably do not want to go to a school where the focus is on developing digital libraries. Getting the Ph.D. is an endurance test. Do not make it harder for yourself by choosing a school where doing your thesis or dissertation is an uphill battle because you do not have people going to bat for you. If you do not have the endurance and support, you will end up in the large pool of permanent ABDs (all but dissertation completed).

Tony. One thing I would like to add is that human factors is really popular right now and a lot of schools are jumping on the bandwagon, but not officially or in the right way. I offered to help a client of mine find a top-notch candidate for a human factors position. I never heard back from them about it and when I visited with them recently I discovered that they had hired someone as their head of usability who was from a university that did not have a legitimate HF program.

I have heard that there is a large difference between having a Master's versus a Ph.D. in terms of the jobs you get and the work that you do. I have heard that if you have a Master's, your work is hands-on, and if you have a Ph.D., your work is primarily management. Is this true? (Kristin Caufield, University of Idaho)

Arnie. I would say that there are some stereotypes when people walk in the door with different degrees. One assumption that is typically made is that someone with a Ph.D. should be able to figure things out on their own from day one, and that someone coming in with just a Master's might need some mentoring.

Ron. When you are talking about management, some people would say that you are really talking about growth, so I would suggest you change the word from management to growth. Companies may expect more growth from Ph.D.s (or believe that the Ph.D.s will be able to go higher). In that case, my answer to your question would be yes, the expectations are higher for people with Ph.D.s in terms of ultimate achievement. This would be true if you follow a management or a technical path. In some companies, people equate higher growth with management positions.

Jennifer. In many companies, if you have a Ph.D., you can stay on a technical path (doing the hands-on work) and still continue towards a more senior level, without necessarily having to take on a management role in order to move up.

Ron. Another option is to go in and out of management. Several of us on this panel have been in and out of management for years.

Some people say that having the Ph.D. actually closes doors for you. One possible reason for that would be because companies have to pay a higher salary because you have a Ph.D. Why else might having a Ph.D. close doors for you? (*Sandra Garrett, Purdue University*)

Arnie. That has not been an issue in any of the companies I have worked for.

Tony. Ninety-nine out of a hundred times it is opening doors for you. One theoretical negative is that some people may assume that because you have a Ph.D., you are more interested in research than application.

Arnie. I did have one experience with a company, a company whose job I did not take, where the interviewer made a comment about how many publications I had. He indicated he believed that people were either "doers" or "thinkers" and that he needed "doers." He asked me to prove to him that I was able to do something. So the reality is that sometimes people think that having publications is related to being a "thinker." As far as the salary issue goes, with the company that I have been working for, we make a decision about whether or not we wish to hire someone before we start considering what the appropriate salary would be.

Steve. I have to say that my experience has been a little bit more on the negative side. Most of the time people ask me if I am a theoretician or an applied worker. You need to show how you can do both, that is why internships and school projects are important. Although, it is harder to demonstrate if you go straight through and get the Ph.D., without doing a co-op or internship. If you take that path, it is fairly easy to navigate through some of the questions about the experiences you have had that make you a good candidate, you just have to be honest about it.

How do you become more competitive and marketable if you are not trained specifically in Human Factors? (*Christina Williams, University of Georgia*)

Jennifer. My degrees are all in Cognitive and Experimental Psychology. I sell that to companies that I am applying to by telling them that I have spent a lot of time and money learning about how people think, and that now I am going to apply that knowledge to the software that I design for the company. You need to show that you can apply your knowledge and that you can build a bridge between what you study in school and the work you will do in the real world. Internships are very good at helping you with that.

Arnie. You should also tell stories about working on teams and about instances of problem solving. One of the advantages of having a big boom in the internet and software business is that more people from a variety of educational backgrounds have been working in the field. As a result, a tendency towards a greater tolerance in getting to those issues during interviewing has been established.

Tony. I think you need to be more honest than the average person with a human factors education. Do not make the mistake of going into a company claiming to have that traditional human factors education because someone will uncover the truth. Try to figure out how your latest experience and education contributes to, and has a meaningful role in, the company you want to work for. Tell them what you do with your knowledge and skills, clearly indicate how it applies to product design, and describe how that will make more money for the company. No one can attack that.

What is the best way to find internships other than those available locally or advertised through email? (*Skye Pazuchanics, New Mexico State University*)

Carlos. Use the HFES placement service web site. You can post your resume on it and you can search through companies who are actively looking for applicants.

Jean. You can learn about a lot of jobs by networking with your advisers and the people you meet at conferences.

Jennifer. All of my internships came about either by contacting people I know, or creating the opportunity myself. In the latter case, I saw that I had a skill set to offer so I contacted companies and told them how we could both benefit from working together. When you contact someone at a company, try talking to someone in a human factors group or a specific product area, rather than going directly to someone in Human Resources.

Ron. Another good alternative is to learn about what internships others have done.

Arnie. Some of the interns I have hired were people who networked with me (not just for an internship) at

conferences and built a relationship with me. They had asked me various questions via email about careers, or about being a human factors person. When I was looking to hire an intern, the ones who had made a good impression on me were the ones that I contacted to see if they were interested. Something you might also consider if you really need to get some experience on your resume is to offer to work for free for a few months just to get some experience.

Ron. Working for free may be okay for a non-profit organization or a university but I would not be too quick to work for free for other companies.

Tony. One suggestion I have relates to how to make contact with companies that look really interesting to you. You need to be sensitive to the many demands that the people you contact are faced with every day, and you need be considerate of their time. If you are looking for an internship, you should write a letter indicating that you are looking for an internship and answer as many questions as you can up front (e.g., desired duration of internship, salary, etc.). Let the reader of your letter know that you have thought everything out (including logistical issues such as transportation and living arrangements), rather than using a totally open-ended approach.

Ron. If you are early in your program and not genuinely looking for work, then start doing some relationship building. If you are really looking for an internship, then take a more focused approach. Regardless of your status, make sure that you are honest about where you are at in your program and in your plans to find work.

Arnie. The HFES annual meeting is a great place to touch hands and look people in the eye. That gets around some of the problematic issues associated with making cold calls or emails. If I have met someone before, then I am more likely to respond to a communication from him or her later.

Steve. Some of us are total softies and, in spite of the number we receive, we always respond to cold emails. If someone strikes me as being driven and passionate about what they want to do and strikes me as being able to make a difference in the human factors community, I will hit my network and start talking to people I know to help someone find an internship. Also to reiterate some other points, be sure to research a company before you start making calls. Often when I was doing my searches, I would find out who the internship coordinator was for a company and start there.

Jennifer. I agree with Steve 100 percent. That's actually how I got into this field. I thought that I was going to be a professor and Ron brought me into the field. I had seen his name on a teaching of psychology list serve and I wondered how psychology fit at IBM and why he was on that list. Out of curiosity, I contacted him and he eventually brought me into the field. Now I am helping people I know (and/or meet) find jobs.

Ron. You should also volunteer at the conference. Sometimes getting a job depends upon being in the right place at the right time (e.g., in the placement service, a key workshop, or a session) and being seen by people.

Don Lassiter (Methodist College). I am the chair of the volunteerism committee for the society. One thing I would like to mention is that HFES has a volunteer database so you do not have to wait to volunteer at the conference. There are other opportunities to volunteer throughout the year. If you sign up in the database, you may be asked to take part in an activity (at a local, regional, or national level) that will allow you to network with other people at times other than the conference.

I am interested in human-computer interaction. Some of the job advertisements I have seen state that applicants should have prototyping and programming skills. What software applications, tools, or languages should I know? (David Strohm, University of California)

Jennifer. It varies. I have seen some job advertisements where they expect you to be a developer. I would not apply for those jobs because I do not have that caliber of coding skills. However, many of the jobs that I have seen that ask for prototyping skills are interested in you being able to represent your designs and your work in an environment that you can share with others, such as PhotoShop, Power Point, or HTML.

Ron. I think you are asking the wrong question. I think the right question to ask is what should you demonstrate you have accomplished with prototyping. Who cares what language you used? Since it is prototyped code the final product will probably use something else. You should focus on what you have prototyped and how you can prove that it has been effective in some way, shape, or form.

Arnie. At my company we have been restructuring our model for how we think about career growth in the user experience design area. At the starting level, you can come in pretty narrowly focused on the design side, the assessment side, or the prototyping side. However, we expect to see individuals grow by becoming deep in a couple of areas, but also by becoming general. They may spend most of their time doing the kind of work they love, but they should also be able to do some other tasks. When we hire people, if candidates come in and show that they have multiple skills in these different areas, that gives them an advantage. We are also looking at skills in the hottest languages (e.g., JAVA and Genie). The reason being that their knowledge will foster good communication with the developers during design and implementation.

Ron. If you want to work for a software company, programming skills may be required as well. Even though your primary focus will be on the human factors side and not on coding, good prototyping skills may not be enough. Make sure that you know software-

engineering principles, rather than worry about particular languages.

Tony. If you want to get into HCI, you need to be able to communicate your design ideas through graphics and prototyping tools just to get the job. More importantly, however, is the fact that you will go nowhere if you cannot do that. You will have no impact. Your words will never be listened to, your reports will never be read, and your arguments will not sustain themselves. Your real challenge is determining what materials to take into a one-hour meeting with a developer, so that he/she will carry out your design after you leave (but your materials remain in) the room. Think about what you have done in the past and think about what you can do to make sure that someone, who is going to do things that you have no control over, carries out your design (including the look, behavior, attitude, presence, and experience you want people to have). Often what you leave with developers needs to be in some sort of visual, and animated, form.

Ron. Here is a tip. You should be accomplishments-oriented in all of your communications. For example, in your resume, make sure that your resume reflects your accomplishments, not your job specifications. Do the same in your letters to people and in your discussions with others.

Arnie. You should also be sure to highlight the impact of your accomplishments.

If a student has an internship that is not entirely positive, how should they discuss that experience with potential employers? (*Kristin Caufield, University of Idaho*)

Ron. Students in such situations should focus on their accomplishments during the term. For example, if the student helped the managers specify how they should set up their internship program, then that would be an accomplishment to discuss.

Jean. Often in interviews, you are asked to talk about what went wrong and how you fixed it. Students should talk about how they identified the problems and tried to address them. I think being honest about the situation would be the way to go.

Arnie. I think a lot of us realize that often it is not the problems, it is how people respond to the problems, which tells a lot about them.

Tony. Students should turn apparent failures into positives. If you have a negative experience, you should use the knowledge you gained from that experience to identify things about a future employer. Turn it around and force a company to show you that the bad experiences that you had somewhere else are not going to happen there. In terms of your resume, keep your focus on what you have done and what you can do for the company, and just de-emphasize the details of what you did during a less-than-positive internship.

Jean. One problem that many human factors people face is that management often ignores our recommendations. Almost everyone you interview with will have faced this problem at one time or another. If you experienced this, talk about how you responded. Your interviewer will probably want to learn about your response, especially if it was successful (even moderately). We all want better solutions to that problem.

Ron. One of our failures as human factors people is that we cannot get management to listen to us. It is our problem and we need to work on it. We need to improve our communications so that this does not continue to happen.

If, for whatever reason (such as changes in your interests, for a different level of security, or to grow your career by moving from company to company), you decide to switch between companies, what are the most important experiences that you can get from the company you are at right now? (*Kris Hager, Virginia Tech*)

Ron. If I got the impression that you wanted to hop from job to job, I would not hire you. If you only want a temporary position, you need to be honest about it and look for that kind of position. On the other hand if someone wants to offer you twice your current salary and can offer greater job security, I can understand that. Accomplishments are what you should try to get out of your current job. Every time you do something you should sit down and write down everything you did and what you accomplished in terms of its value to the business.

Steve. I understand where your question is coming from, but I should tell you that industry is getting back to basics. A couple of years ago it did not matter, but now we are starting to look at job hoppers. For quite some time in the Bay Area of California, it was understood that that was what you did in order to get raises. People did not count on a company being around for very long and, as a result, people learned to hop from job to job. Now that we are getting back to basics, companies are evaluating whether candidates are people they can get results from, as well as people they can depend on. If an employee is not getting what he/she needs from a job, that employee is going to leave. If you are concerned that you might reach the ceiling of what you can learn in one place, you might want to look for companies that can offer multiple opportunities. I suggest you look for companies with multiple sites, divisions, and/or human factors teams so that you can tap into multiple skill sets and, if you are not getting what you want from a particular job, you can still stay within the same company. Try to develop skill sets that will allow you to be successful across different environments.

Jennifer. I have another word of caution for you in terms of choosing a job. If a company does not place any value on having employees develop their skills and continue their education, you probably do not want to be there. Human factors is not a field where you can learn everything at one point in time and have everything still apply twenty years later.

Ron. You may also want to consider doing something other than human factors work for a while (such as management or something that will give you broader exposure). Some of us have done that.

Arnie. Another supplemental piece of information that cuts to the edge of your question, rather than the heart of it, has to do with what your manager's viewpoint may be. From my personal experience, I have seen a trend in the development of employees over time. I think it takes about six months for a person to develop their legs and start to get into the job. Around the end of the first year I can tell whether or not that person is going to be really good at his/her job. After about 18 months, I see the leaders start to emerge. After the end of the second year, I start to see people really stepping up and taking on new responsibilities.

Ron. One of the other things that companies are often looking for when they are hiring is something that is commonly referred to as "soft skills" (e.g., communication skills, leadership skills, etc.). Many new employees do not realize how important these skills are. You should keep in mind how you can demonstrate these skills.

If you believe you might go into both industry and academia at some point in your career, how do you determine where to work first? (*Sandra Garrett, Purdue University*)

Steve. For a while, I was teaching at night and working in industry during the day. I think that is a great way to explore this. You probably need to at least have a Master's, and having a Ph.D. makes you an even better candidate for this. You could try to make contact with a school and tell them that you have some great practical knowledge and that you also know the theory behind it, and then ask to teach one class. If you find that you dread going to work but love going to class, then you have learned something about yourself.

Arnie. I like to teach too and I wondered when I first started my career if I was going to have to give that up. In Chicago, I taught on Saturdays. Now that I am in Denver, I have found that there is no shortage of opportunities, and that I can teach as much as I want to (or at least as much as I can handle on top of my job).

Jennifer. I do believe it requires some extra work for you to go from industry to academia as opposed to vice versa.

Ron. The part-time teaching thing does work depending upon the job. I used to teach and work in

industry at the same time but I cannot anymore.

However, there are still the presentations that you can make at conferences, and often the student chapters (or even the local high schools) are happy to give you the opportunity to come talk to them. It is easier to move from academics to industry than the other way around. The same schools that would have hired you right out of graduate school may not be willing to hire you after you have worked in industry. However, there are other schools where your practical experience may give you an advantage that you would not have had before. There are some people who have made successful transitions from industry to academia.

Tony. The right person can go either way, so I do not know if that is a question to really worry about. I think that academia could probably be improved by increasing the mix of academic skills and experience. I think it helps you be a better teacher if you can give tangible examples. I think we will all benefit from people first practicing and then sharing their knowledge with students.

Carlos. One thing that I would like to mention is the fact that you may find yourself doing something several years down the road that you had no idea you would end up doing. I did not know that I would end up going in the direction of management that I have, and I certainly never thought I would change careers. So keep in mind that you can change your direction at any time.

Is there anything I should look for in a graduate program if I want to go into academia? (*Michelle Harper, University of Central Florida*)

Tony. Let me give you a warning because a lot of human factors programs are split between two departments. Split appointments between departments can be dangerous for tenure. Each department sees you only half of the time and that can really work against you. Therefore, you should be sure that the tenure process respects your situation if you are looking at a split appointment.

Jennifer. When you pick your graduate program, you should choose a mentor who can give you the core area of expertise and the core research skill set.

Ron. Be sure that you learn how to teach. It may sound silly and obvious but it is not. You also need to consider what kind of school you want to work for, a major research institution that focuses on graduate education or a teaching college or community college that focuses on undergraduate education. Your preparation would be substantially different depending upon which direction you would like to go. If you want to be a researcher, consider whether academia is really the best place to be.

Steve. I suggest that you also consider some of the up-and-coming schools using the directory on the HFES web site. The directory can tell you what schools are starting

human factors programs. It could be a good experience to be at a school that is starting from the ground up.

Jennifer. One thing I would like to mention, that is related to the graduate program directory, is that the specific departments (e.g., Psychology, Industrial Engineering, etc.) at the particular schools write the material that is in it. I suggest you verify that the information in the program descriptions is true. Talk to students from that school and find out if what you are interested in is true. For example, if it is a psychology department with lots of engineering faculty listed, find out if the psychology students really do get to work with the engineering faculty.

Tony. One thing you should realize is that not all of the schools in the directory are really HF programs. You might want to consider this so that you do not end up as the only person studying human factors. It may make you feel like an outcast.

Ron. So the moral here is to be an informed consumer.

When, with respect to their graduate program, should students do internships? How can students get professors to support them in this? (*Douglas Gardner, LexisNexis*)

Tony. Be sure to get at least a year of your program under your belt so that you actually have some knowledge to offer the company. The more you have to offer them the more they will let you do, and that makes the experience a real growth opportunity. However, you should do an internship before you start the thesis process. You can injure your relationship with your professors if you keep telling them that you will come back and finish the thesis but you continue to make work your priority. Also, make sure that the internship is a moderate amount of time. I will say this again, you should finish school as fast as possible. I think that anything longer than a six-month internship will defeat your purpose.

How do you combine HF and the law? (*Daniel Smith, University of Michigan*)

Tony. There are lots of opportunities to do that right now. It is one of my favorite areas to work in.

Ron. You should get involved with and talk to people in the forensic technical group, because a lot of those people do that kind of work.

Is it necessary that your Ph.D. topic be related to your post-degree work? (*Paul Picciano, San Jose State University*)

Jean. My Ph.D. has nothing to do with the work that I do now. The important thing is that you develop the skills that you will need to be successful in the future.

Ron. It might be helpful if it is somehow related to the kind of work you want to do in the future.

Arnie. It might catch someone's attention if it is related. It might get someone to look twice at you, but it all boils down to developing the right skill set. Everyone knows that the jobs are going to change. What we will ask you to do tomorrow is likely to be different from what we ask you to do today.

Tony. Sometimes you can get mileage out of the title of your thesis. I had one student whose title helped him have a broader level of attractiveness as a candidate because he crossed three different areas with his title that were potentially of interest to employers.

What advice do you have for students who go straight through school and do not do internships, but are trying to get jobs with employers who want experience? (*Marianne Paulsen, Embry-Riddle Aeronautical University*)

Steve. I went straight through my program and did not do an internship. What I did that helped me and what I encourage other people to do is to make a list of what job skills and abilities you have and take it with you on interviews. More importantly, make it clear on your resume what job skills and abilities you have demonstrated in graduate school and how such skills and abilities are directly applicable in the job world (e.g., leadership in projects, managing details, taking responsibility, developing things, designing things, etc.).

Tony. Students in this situation kind of have to intern now, and I do not necessarily mean formally. They should not be looking at jobs where the company is looking to hire a single individual to be the head of human factors, because they do not have the experience. They should look for a job in a group with other human factors professionals where the expectance levels are not so high and they can be mentored.

Arnie. At my last job, we had post-graduate internships. Students in this situation might want to look for something like that.

CONCLUSIONS

After the last question, a few brief remarks were made by the session chair, Ron Shapiro, about other activities occurring at the meeting that attendees may have been interested in. Students who did not have time to ask their questions, due to the time constraints for the session, were invited to speak with the panelists individually after the session.

SUMMARY

Five themes were recurrent in the panelists' responses throughout the discussion: (1) do your homework, (2) seek opportunities to demonstrate your skills, (3) network, (4) make school your number one priority, and (5) develop skills that make you unique.

The first theme of the panel was to do your homework. This was suggested for all of the decisions one might make as a student. This could be “homework” involving self-exploration, learning about graduate programs in human factors, or investigating possible job opportunities. For example, when choosing a graduate program, be sure to learn about all of the different possible schools, what the faculty at the schools are interested in, what the culture and environment is like at the school, etc. This same advice holds true when deciding whether to pursue a graduate degree or when pursuing job opportunities.

The second theme was to look for opportunities to demonstrate your skills. This is especially important for students and new graduates. In your school or work projects, look for opportunities to show what skills you have, create a portfolio containing tangible items that show these skills (e.g., project deliverables), and take this portfolio to interviews.

Networking was the third major theme that was consistently discussed throughout the panel. No matter what stage of your career you are at, you should be making an effort to meet new people either through preexisting contacts, such as those of your mentors, or by contacting new people directly. The annual meeting, student and/or local chapter meetings, and other volunteer

activities are a great way to do that. You never know when the person you just met might help you find a job.

Making school your number one priority was another major theme of the discussion. Do not allow yourself to get off track and lose your focus during graduate school. You may waste a significant amount of time and burn bridges with your advisers if school is not your number one priority.

Developing skills that make you stand out and/or unique was the last major theme. One particular skill that will serve you well is a strong ability to communicate with people from other disciplines, particularly engineers and programmers. Offering a unique set of skills and abilities will increase your chances of getting the job you want when you want it.

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