Family, Education, and Careers
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Women in Math, Science and Engineering
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What Will Be Relevant?

When I was called as a General Authority of the Church, I was asked the question: Why do you think we are called "General Authorities?" I gave the reasons that I thought were reasonable but was told the "real" reason is because we only are allowed to answer general questions. I appreciate the invitation to be with you and will try to answer some general questions.

Professor Halverson shared with me that the purpose of our hour together this morning is to "give encouragement and support to . . . undergraduate women as they pursue their education in the areas of math, science and engineering." Further, it was pointed out to me that a concern many of you have is the perceived conflict between women preparing for a career in the hard sciences and the Church teachings on family. I will attempt to address this issue, together with some other counsel, for you. I must confess that I believe I know more about preparing for a career in the hard sciences and Church teachings on the family than I do about being a woman. Nevertheless, I'll do my best.

I do believe that I know a little about women from a wonderful mother, a terrific and supportive wife and exceptional daughters and daughters-in-law. I now have three granddaughters and am learning anew some things about the way females see things as well. Having said this, I do know that I can't know exactly how you feel. Thus, if I say something that displays my lack of understanding or betrays my masculine limitations as we tread on tender and sacred ground, I hope that you will forgive me and still try to gain something from what I will say.

Let me, for a moment, return to my statement about general questions or statements. While some of you may have found that a little humorous, it also has some important kernels of truth that need to be understood. In addition to dealing with generalities, we, as general Church officers, are also taught to focus on teaching the ideal, rather than being distracted ourselves or distracting others by focusing on exceptions.

Some of you have probably, if only to yourselves, been predicting that I would say something about THE FAMILY: A PROCLAMATION TO THE WORLD. If this was your anticipation, then it is now fulfilled. I'll not read these special paragraphs to you, but hope that you have and will do so regularly yourselves. I mention it not for its specifics, but rather for its generalities. It addresses basic doctrine and principles and focuses primarily on the ideal.

Do the Brethren not know that many or perhaps even most do not live in perfect or ideal family situations? Of course they do. They also know that it is important to keep the ideal before us so that we can make the best approximations to the ideal that our individual circumstances allow.

By the way, I have not read anything in the Proclamation that makes any statements about math, science, or engineering. I'm candidly nervous when I hear well-meaning people make extrapolations from the scriptures or from the statements of the prophets and then seem to feel authorized to tell the rest of us what the prophets really meant, had they only been wise enough to say it clearly. When anyone says more than the scriptures or the prophets have said on a particular doctrine, principle or practice, I consider them to be on dangerous ground. Thus, I shall try very hard to avoid such a mistake myself as I encourage you to do likewise.
There are some things that have been stated very clearly that are germane to our occasion this morning. First, President Hinckley has repeatedly said in various situations and places that we, both men and women, should get all the education we can. He has not been prescriptive about the discipline, but he has been clear about both the need for and value of education.

Second, fundamental to our theology is the notion that "The glory of God is intelligence, or, in other words, light and truth (D & C 93:36)." A corollary doctrine is that whatever useful knowledge or understanding or wisdom or "principle of intelligence" that we acquire in this life will rise with us in the resurrection. (See D & C 130:18). I am old enough that I am beginning to take the next life more seriously than ever before.

My primary professional occupation was, before my call to the Seventy, that of a medical doctor with a specialty in internal medicine and sub-specialty certification in rheumatology. While my career has brought me much personal satisfaction and I believe some help to others, I have no illusions that there will be a need for rheumatologists in the next life. That may also be true for university presidents!

I have asked myself, and ask you to do the same, "If I strip away what will become the obsolete knowledge and facts that I have gained in mortality, what will be the relevant knowledge and wisdom that will rise with me in the resurrection?" There are many answers, but let me again go to the scriptures for some clues that seem appropriate to the issues of our discussion today.

At the end of 1832 and the beginning of 1833, the Prophet Joseph Smith received a wonderful, far-reaching and significant revelation now known as Section 88 of the Doctrine and Covenants. Several scholars have opined as to the intended audience for this revelation. Let me suggest it is my conviction that much of it applies to BYU and those of us privileged to be here. Think carefully of the verses that I will read. You will recognize them but also need to "liken them" to your own situations.

"And I give unto you a commandment that you shall teach one another the doctrine of the kingdom."
"Teach ye diligently and my grace shall attend you, that you may be instructed more perfectly in theory, in principle, in doctrine, in the law of the gospel, in all things that pertain unto the kingdom of God, that are expedient for you to understand,"
(now comes the really interesting and significant part!)
"Of things both in heaven and in the earth, and under the earth;"
(it sounds a lot like hard science, math and engineering to me!)
"things which have been, things which are, things which must shortly come to pass; things which are at home, things which are abroad; the wars and the perplexities of the nations, and the judgments which are on the land; and a knowledge of countries and kingdoms-"
"That ye may be prepared in all things when I shall send you again to magnify the calling whereunto I have called you, and the mission with which I have commissioned you" (D & C 88:77-80).

I think this covers the entire BYU curriculum.

Some may be comfortable in telling you what you should not study or learn, but I am not willing to do so and will not suggest that anyone else has that right for you. Further, I would suggest that the scriptures are supportive of your studying math, science, engineering and, indeed, all of the disciplines that are available for you here at BYU and other great universities.

I feel a little, but only a little, sorry for my friend at Harvard, President Larry Summers, because not only is he politically incorrect, he does not have a clear knowledge of the Restored Gospel. Had he this understanding, in my estimation, he would not have made the foolish mistake he made when he said the silly things about women and their aptitudes. I will not say more because I am sure that this group understands
exactly what I am talking about. I have, therefore, much less patience for anyone who has the light of the Restoration available and still makes the erroneous judgments that some might make.

Having clarified my personal feelings about you and your potential, your right and responsibility to choose for yourselves what you will study and what career paths you will follow, let me now share some other views and then give you some counsel that I hope will be useful and helpful.

I began my academic faculty career with part-time administrative duties while I was also involved in teaching, research and patient care. I was the Dean of Admissions for the medical school where I was employed. In that role, I was surprised at how often I was asked to talk to a young woman, usually the daughter or sister of the requester, and either encourage her to pursue a career in medicine even if she was not personally inclined to do so, or conversely, discourage her from a career in medicine if that was her inclination. I typically declined on the basis that this was not my role or right and also because most young people, female or male, typically pay no attention to such advice anyway. I suspect that some of you have had others who care about you ask someone similar to me to give you the same kind of counsel.

When I have been asked by young women, or young men, themselves, for advice, I have and do try to be helpful. When asked the question, "Should I pursue a career in medicine or something else?" I invariably respond that you should do something else. This is usually a surprising answer and is then followed by another question like, "Don't you like medicine?" or "Do you wish you had done something else?" My answer is always, "No, I loved and continue to love medicine, but if you have to ask, medicine is likely not for you because it will not be worth the price you are asked to pay to become a first-rate physician." By the way, for this discussion, "engineer," "mathematician" or "scientist" substitutes very nicely for "physician" because, in my view, the principles are exactly the same.

I often follow up with the observation that if one really is committed to a specific discipline or profession, then it won’t matter much what advice is given anyway. If a student is ambivalent, then she should continue to search until she finds the thing that really excites her.

One of the questions that seems to be at the crux of many of your concerns is the issue, "Do I have to give up everything else important to me to become (you fill in the blank)?" My short answer is no. But that is also my same short answer when I am asked, "Can I have it all and still be a (again you fill in the blank)?" In other words, every choice that we make means that there will be inclusions as well as exclusions. I believe we all understand that the doctrine of agency is paramount in our mortal experiences and that we are constantly faced with decisions that have multiple options, but also attendant restrictions.

Sometimes our options, like which major to choose, are all positive and that makes choosing difficult. Sometimes also, our options for a particular challenge all seem to have key negatives and this also makes choosing very hard. I have come to understand that Heavenly Father fully intends this to be the case as He tries and challenges us in our quest to return to Him. Of course it is a hard set of decisions to make when you are required to think about both career and family and all that goes with these important variables. Most of us will have some external limitations placed on some of our preferences and this will cause us to deal with necessary alternatives that are not fully our first choices. A key thing to remember is that these choices are still ours and while we need to be sensitive to others, we must make them ourselves and then learn to live with the consequences.

Some of you perhaps have heard my wife, Sharon, say that she was sure she would never marry a doctor. She didn't - I was still a student when we got married. Somehow, she decided that something—my career choice—which was so important to me just might be less important to her than she had originally thought. Likewise, my mother took some time to get used to my choice of a profession but she got over it and eventually seemed truly proud and pleased with my career. I am not saying you should completely disregard the opinions of
those whose opinions matter to you. I am saying that you must make the decisions yourselves because you will have to live with what you decide for a long, long time.

It is important, if you have the option, to pick a marriage companion who not only loves you, but loves, or is willing to learn to love, the things that are most important to you. Likewise, it is important for you to love someone so much that you are willing to make real sacrifices yourself.

Since I have opened the tender topic of marriage just a little, I might as well jump in and say a word or two about children as well. You know that our doctrine is in favor of them. This means not only having them, but caring for and rearing them in righteousness. You also know that the scriptures and the prophets have not been explicit about things such as numbers, timing and so forth. This is because not only are these things intensely personal in terms of decisions, they are absolutely unique in terms of our customized, individual circumstances. Some do not have the opportunity, in mortality at least, to approach the ideal of a wonderful marriage. Some who marry do not have the blessings and challenges of children in their homes. Unfortunately, even in our community there is far too much insensitivity on these matters.

Parenthetically, I have a daughter who has had problems in having a family and motherhood is still a future dream for her and her husband after almost six years of marriage. While they were here at the "Y", she would often confess to her mother that their student ward was difficult for them because a few ward members, apparently sincere in their concerns, made comments or suggestions about not delaying starting their family that were very hurtful when I'm sure they were meant to be helpful.

All must remember that we never fully know the circumstances of others, nor should we. Only we ourselves can know how to put all of the complicated pieces of our individual puzzles together and, in consultation with the Lord, make the proper judgments. I could give further examples about the difficult issues of mothers who need to work and the like. Again, focus on the ideal - in general, and for you - and then make your decisions in the right way with the understanding that your situation, and therefore your conclusions, may give you answers that are not like those suited to anyone else.

We live in a wonderful age and have many opportunities with respect to education and career that were not possible even a generation or two ago. Still, no chosen path, particularly in math, engineering or the sciences, is an easy one. Likewise, in my judgment, there are some things more important than the specifics of a career. I, myself, have taken some unexpected career turns, not the least of which is my current assignment, and have been blessed most when I have been able to remember to keep my feet firmly on the ground and my ears and heart open toward Heaven with respect to making the most important decisions. I encourage you to do the same with all that you face in your bright, but challenging, futures.

Because you are all so typically talented, able, and committed, I worry that you may have expectations that are occasionally unrealistic. This is a difficult issue to address because it is so multi-faceted for all of you and so individual for each of you. This is also compounded because as time and circumstances change, so too do the needs for adjustments in our expectations.

One of your professors has commented to me that her observation is that some of you have less confidence in your abilities and prospects than do your male peers, even when the evidence may suggest that this is not justified. You do need to recognize your talents, skills, aptitudes and strengths and not be confused about the gifts that God has given you. I recognize that some of you feel that you receive negative feedback on your choices and aspirations too often. I suggest that you not pay too much attention to the nay-sayers. Remember this verse of scripture that describes the Savior's approach. "He suffered temptations but gave no heed unto them" (D & C 20:22). You would be well advised to emulate Him in this respect too.
A favorite quote of mine is that of Anatole France of many years ago. "If fifty million people say a foolish thing, it is still a foolish thing." If you demean yourself in any way, you need to remember your theology about who you are really criticizing.

As I counsel you not to sell yourselves short, let me also remind you that meekness and modesty, in the context of objective realism, are also cardinal virtues that need to be practiced even in the face of others who may not treat or regard you properly.

While we all care what others think of us, a lesson I have learned over time that now is very helpful to me is that I care a whole lot more about what some people think than I do about others. In my office I have a picture of the First Presidency that I can see as I struggle to make correct decisions and respond to the multiple requests and sometimes criticisms that pass over my desk. Since I report to them, the First Presidency, it matters much more what they think than what a particular newspaper writer may opine about specific decisions made in administering BYU. Likewise, while you may hear or witness gratuitous comments or attitudes about your career or major choices, you do not need to let the opinions of the less important influence what you do or how you see yourself.

As you contemplate what it is you want to accomplish, please consider this scriptural advice. I will share two verses that Elder Maxwell used to describe as "companion scriptures." Just as personal context is important in your own decisions, so is context in the scriptures. The first is the advice of King Benjamin in his most famous address. He had just taught the reality of the Atonement of Jesus Christ, which was yet to be enacted by the Savior, and then emphasized that in order to achieve fully the promised blessings of the atonement, a person needs not only to be worthy and pure in his or her own life, but also must do all that one can to care for the poor and the needy. These are no small tasks! Listen now to his counsel to those whom he had just challenged so heavily.

"And see that all these things are done in wisdom and order; for it is not requisite that a man [or woman] should run faster than he [or she] has strength" (Mosiah 4:27).

Note the emphasis on wisdom and order as Benjamin teaches we should try not to do more (run faster is how he describes it) than we have strength.

The prophet Joseph was engaged in vital work literally from the time of the First Vision throughout his entire life. While he suffered much and almost constantly for various reasons, perhaps one event was as painful as any because it involved a serious mistake he made. You remember the circumstances. It was in the early days of the translation of The Book of Mormon. Martin Harris repeatedly asked to take the newly translated pages of manuscript and Joseph reluctantly finally agreed to let him have them temporarily, against his better judgment. As you know, the 116 pages were lost. Joseph Smith was devastated and lost his power to translate for a season. After he completed his repentance and his gift was restored, the Lord then gave him some badly needed correction, counsel and encouragement. Listen, and liken to yourselves, these words of the Master.

"Do not run faster or labor more than you have strength and means provided . . . but be diligent unto the end" (D & C 10:4).

In spite of Joseph's error and reproof, the Lord still wanted him to apply the "strength and means" test to whatever he yet had to do. When "strength and means" are coupled with King Benjamin's "wisdom and order," we have an excellent formula for proceeding with our decisions and with our life's work.

Let me offer now some final suggestions that I believe will assist you in making these most important and significant decisions. Someone once said to me, after I had talked to a group about the importance of
listening to the Spirit in the making of important decisions, "You have mentioned the great advantages of knowing that the Holy Ghost can help you in getting answers to your most important questions. Why does no one speak of the disadvantages of this knowledge?" When I then asked for clarification, it was explained that not only do we need to listen to the Spirit but also to determine if it is really the Spirit, or is it the adversary, or is it just our own preferences that we are trying to blame on the Spirit.

This person had a good point, I believe. I have thought a lot about it and have reached the following conclusion: It is much easier to be sure when it is not the Spirit speaking than it is when the Holy Ghost is truly teaching us. The only way I know for sure when the Holy Ghost is speaking to us is to live in such a way that we can regularly gain experience that ratifies for us the inspiration as truly from the Spirit. I think you know how to do it, but it is work and requires consistent, regular and intense effort. Sporadic or episodic attempts only when we are in big trouble is not enough.

The service club, Rotary International, has what they call their "Four Way Test." These are four measurements of things that they think, say or do. Let me mention them briefly.

- First, Is it the Truth?
- Second, Is it fair to all concerned?
- Third, Will it build goodwill and better friendships?
- Fourth, Will it be beneficial to all concerned?

These are good standards by which good people can and do conduct their lives. In addition, I would like to share a similar four way test that I believe will be helpful in your quest to make sure that you are using the Spirit properly to guide the important decisions you will make with respect to career, family and all the other significant steps in your lives.

First, Does the impression that you believe comes from the Spirit square with what you find in the scriptures? Of course, this means that you need to be familiar with what is in the scriptures. Most often, it is my experience that the scriptures, like those that I have shared this morning, help with principles but not often do they directly address specific, narrow or technical questions. Nevertheless, the doctrines and principles outlined in scripture do clarify impressions and invite the attendance of the Spirit to be with us as we deliberate.

Second, Does the impression that you believe comes from the Spirit square with what is being taught by the Lord's living oracles? Let me give an example. You might feel that you want to go to graduate school. President Hinckley has told us that we should each get all of the education we can. (So far, so good!) He has not told us to study chemistry, but avoid physics. He has not said that we should be statisticians but avoid theoretical mathematics. He has said we should get as much education as we can. While he has not been specifically prescriptive, he has told us that as much education as is possible and practical is a good thing.

Let's complicate the matter a little more. Suppose that in addition to graduate school you also have an interest in getting married or are already married. You are all aware that the Prophet also has spoken in favor of that proposition as well. What do you do? You think you may know the answer, but it isn't any easier. Nevertheless, you can’t afford to make the mistake that Oliver Cowdery made when he "took no thought save it was to ask . . ." (D & C 9:7). You "must study it out in your mind; then you must ask [Heavenly Father] if it be right, and if it is right [He] will cause that your bosom shall burn within you; therefore, you shall feel that it is right" (D & C 9:8). You also know that if it is not right, then you will not feel the same way and will have a "stupor of thought" (D & C 9:9) that should send you back to the drawing board to re-think and to re-consider.
Like the scriptures, the prophets have not spoken in detail on every matter or issue. Beware of those who suggest, as I have said earlier, that they know for you what the prophets really mean about the specific details of your life.

This brings me to my third point or test. Does the inspiration that you believe you are receiving deal with your own sphere of responsibility or stewardship? This is an important question to ask yourself and it is also vital to ask when others claim to receive revelation for you. On occasion, I have been asked by a person to pray and ask the Lord what they should do. I consistently refuse, but do offer to pray for them so that they will receive, themselves, the direction that they seek should the Lord be willing to give direction. (Incidentally, I am quite convinced that on occasion, He chooses not to become involved, however critical we think our pleas are!)

If someone, including you, claims to have a revelation of insight that is outside of his or her realm of responsibility, then you have every right to consider that the inspiration may be bogus. I must add at this point that I do consider that your parents, spouses and even siblings, as well as priesthood leaders, still have some responsibility for you even when you are old enough to vote, so I advise that you listen carefully and weigh the advice even when you feel that they are inappropriate in the specifics of their counsel or direction.

This brings me to the fourth point of my "inspiration test." That is, does the purported inspiration infringe on the agency of another? Most often in my BYU experience, this principle comes to bear when a young man (but it applies to young women too!) may feel that he has had a revelation that he is to marry some remarkable, beautiful young woman of his acquaintance. If any of you encounter such a convinced young man, be flattered but also beware. You need to have the same revelation and when you both do, then it is wonderful and right. Neither of you can receive this insight for the other. Likewise, you have, and are responsible for, your own agency in matters of major and career as well.

By now, some of you are saying to yourselves, although I appreciate some of what has been said, you still haven't answered my most vexing question. If you suspect that I will not, then you are right if your question is specific and particular to you. Hopefully, you understand better why I won't and why I can't.

If your question is more general and is something like this: "Is there really a conflict between my desires in math, science or engineering and the basic doctrines of the Church?" my answer is no. You should be aware that BYU has never and will never consciously be a party to leading anyone away from the things that are most precious to us. BYU will try to provide legitimate and honorable opportunities for students to study and progress in many of the spheres of knowledge that are available at this wonderful time in the history of the world. We won't cover every discipline - don't hold your breath for a medical school, for example - but you can be satisfied that what is available here is viewed with honor and respect as viable fields of study for women and for men.

My message to you is that the choices are yours and that if you will make them properly, you will be blessed and find joy and satisfaction in your studies, in your careers, in your families and in your lives which will eventually be eternal when you have done your best in the ways that you know you should follow.