

SWE GRASSROOTS ORAL HISTORY PROJECT

Diana Madden Interview

October 15, 2009

Society Of Women Engineers National Conference

Long Beach, California

Reuther Library Oral History ID: LOH002111.9

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Diana Madden and Troy Eller Interview

Diana Madden is a senior electrical engineer at Schiller and Hersh Associates, where she designs lighting, power, and fire protection systems. She received an electrical engineering degree from Drexel University in 2004. Madden is actively involved in the Society of Women Engineers and received its Outstanding Counselor Award in 2009 for her active support of its Drexel University collegiate section.

During her 2009 SWE Grassroots Oral History Project interview, Madden described her experiences in high school CAD classes, Drexel University, and in her career; her involvement in the Drexel and Philadelphia sections of SWE; and why that involvement has been meaningful to her.

- July 2016

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Troy Eller: Today is October 15, 2009. This is an oral history interview with Diana Madden for the Society of Women Engineers Grassroots Oral History Project. Diana is the 2009 Society of Women Engineers Outstanding Counselor Award recipient. She is a Senior Electrical Designer at Schiller and Hersh Associates, and she has been there since 2000. The interviewer is Troy Eller. We are the SWE National Conference in Long Beach, California. Thank you for joining me today.

Diana Madden: Thank you.

TE: To begin with, can you tell me a little bit about where you were born and raised, and your family?

DM: I was born in Maryland about 15 miles north of Washington, D.C. I have an older brother, an older sister. I'm the youngest. We lived there until my sophomore year. We moved up to Pennsylvania about 30 minutes west of Philadelphia. So—.

TE: Okay. Were your parents engineers?

DM: No. My dad is a scientist. He does research on immunology and viruses and all that kind of stuff. My mom worked for the school system while we were in Maryland. She originally was a nurse, but once my brother was born she stopped. So there was a kind of scientific background, and help with all of that but—.

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TE: Okay. Can you tell me how you first became interested in math and science and engineering when you were a kid?

DM: I think I always excelled in math, and so I always enjoyed it. Numbers—math was fun in high school. I loved doing my math homework (laughs). And actually when we moved I got into—they had different classes that I got introduced into different curriculum than I would have been in Maryland. And I took a computer aided drafting [CAD] course, was one of two girls in that class. I did that for two years. It was actually that teacher that got me interested and recommended that I, you know, go look at Drexel, think about engineering, and to this day I still do CAD as my everyday job. And so that kind of helped push me into that.

TE: Okay. Do you still stay in touch with this teacher?

DM: No. I did—actually it was kind of weird, I interviewed for one of my co-ops and they asked a very similar question and I said this one teacher, and he happened to work for that company. It was kind of weird. But after that I actually haven't really kept in touch with him.

TE: Okay. Was it strange being one of two women in this high school class?

DM: Um, not really. The only setback was they talked about football for the first, like, 15 minutes of class, (laughs) which was not my forte. But, other than that, it was—I always liked being different, so being in that situation wasn't difficult or—the guys were welcoming. There wasn't too much picking on me or anything like that.

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TE: Okay. So, what year did you go to Drexel?

DM: I started in 1999, and it's a five year program with a co-op so I graduated in 2004.

TE: Okay. And why did you decide to study electrical engineering?

DM: Well, when I went to Drexel I was considered "undecided" in engineering. And I actually thought that I would lean more towards the civil [engineering], but the electronics lab that we took, I did well on the test, was my highest grade. So, I kind of went that way. It was highly math-based, which I loved, and was able to then minor in math because most of the requirements—I only had to take 3 or 4 extra classes. I never liked chemistry. It was never my strong point, so that one kind of got ruled out pretty quick. So that's how I picked electrical.

TE: Okay, okay. What was it like to be a woman engineering student at Drexel at the turn of the 21st century?

DM: As an electrical engineer, as I got further into my classes and I specialized in power, I was actually the only girl in those concentrated classes, where the civil [engineers] and a lot of the mechanical [engineers], they had some of the support. But, I never—I don't think I had any difficulties. I had, I mean, a lot of the guys made fun that I was in SWE and said that we were going to take over the world (laughs) and all of that stuff. But that's common, it was nothing that I couldn't really handle and it got you ready for the job place.

TE: Okay. What about your math classes? Were there many other women in your math classes?

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DM: Yes. The math classes, because they were for math majors and computer science. There was a lot more females in the computer science field so I—yeah, I did get a chance to hang out with those women and meet them.

TE: Okay. What about your professors? Did you have many women professors?

DM: I had two. There might have been a few—the math teachers there were more, but in electrical engineering and actually the discipline that I took we were actually lucky that we had two female professors. I know that the mechanical department has been trying to get more female faculty advisors. And so in that sense I was very lucky to have—to experience that these women have done all their research and are working, and a support system in that sense.

TE: Do you feel like it was—do you feel like you benefitted more by having female professors as opposed to not having any? Do you think that there was any value to you as a woman engineer to have a role model like that?

DM: I think, technically, no. But I think on a personal level it's nice to see that we are getting in there. That, you know, it's not just all male professors and there are a few female TAs that were coming in for their doctorates or whatever and helping out, as well. So, in that sense, but I don't think necessarily from a strictly educational standpoint there was any value. But, personally, yeah.

TE: Okay. Did you have any mentors in college? Any professors or advisors who you feel helped to prepare you for your career?

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DM: Well, I would say the faculty advisor that we had for a few years for the collegiate section [of SWE] at Drexel. She was not an engineer, but she worked for the College of Engineering department doing the, like, scheduling and—you know, you came to them if they had problems, and she was our advisor. And even though she wasn't an engineer she made the time to actually sign up for membership and show her support. And she was always there for us and she stood by even though we did an event she was not very fond of. But I think that she was a good example of, you know, helping other women no matter what their background may be, technically or whatever.

TE: Okay. Could you tell me about your involvement in the Drexel Section of SWE, some of the activities that you did and your positions and responsibilities?

DM: So, I started out in Drexel SWE. Drexel requires you to do a university seminar class, and my teacher at that time, she was the faculty advisor for SWE. So, she always convinced or—you know, advertised SWE and the events and told guys it's a great place to meet girls and whatever. So that was the first year that the Drexel Section started the Pocono Plateau trip, which they continue to do today, and I still go when I am able. It's up in the Poconos for the weekend. They do high and low ropes courses. We usually get a seminar—somebody to come and talk to us about varying topics and leadership. And it's just a good team building experience.

And so that was my first avenue into the section, and then after that the officers were kind of at a standstill and I was kind of made president of the section my

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sophomore year, if that's what it was. From then one of the events, big events, that we tried to do was a Mr. Drexel pageant. Kind of based off of what a lot of high schools like to do, and I know that the Penn State students are very successful in this. We had a lot of criticism from the female faculty about doing this event. So, after that—we didn't really make the money that we were hoping to, so they've done it once or twice and they've made it more into a Mr. Engineer as opposed to open to the whole campus of students. So that was one event.

I also started a web page for the Drexel girls as well as an email listserv so that we could communicate electronically and reach more people. I think that we really, at that time, rebuilt the section because we had trouble with not having a faculty advisor. We were in between at one point and without that support you really—it really hurts the section in a way. So, we also didn't really have a collegiate counselor, professional advisor, much. So when I graduated I wanted to give that support back. And that's kind of how I made my way back in to still help support the section now as much as I can to make sure that, you know, they don't dwindle because there is so much history with our section.

TE: Okay. Can you tell me how being involved in the Drexel Section, did that have any impact on your schooling, on how you negotiated projects and classes?

DM: Well, for me, I dedicated a lot of time for SWE because I wasn't your straight-A student, (laughs) and I knew that I was never going to be. So I felt that that would balance me out, and have that on my resume and get the leadership skills and other things. And so, I think it worked out well with the balance, because I wasn't,

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you know—study, study, study personality or very stressed over those types of things like some people can be. So I made it work, but I definitely think that SWE was a very large focus of my time to balance out, you know, academically.

TE: Okay. Were you involved in other groups at Drexel?

DM: No.

TE: Okay, okay. When did you start work—well, you started working at Scheller and Hersh in 2000, while you were still a student?

DM: Yes. Drexel has a co-op program—so 6 months in school, 6 months working. There's 3 co-ops, and I chose to work with this company those 3 times and I continued to work part-time in between my co-ops, and then when I graduated they offered me a job and I've been there since.

DM: Okay. What did you start off working on when you were there? What types of projects were you working on?

TE: The first project that we worked on was a—two schools for the Spring-Ford School District. They had a large increase of students. So, instead of just having an elementary school, there was a K-4 [grade] school and a 5-7 [grade] school with plans to have additions put on that got built even before the building was complete, just because of that. So, I remember we did a little miniature golf course. So, my company, there's about 12 of us. So, I did get to work a good bit on all of the projects, as opposed to doing other things that some co-ops may have had to do—paperwork or busy work. But I got to get right in.

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TE: Okay. Did that settle in your mind your career choice, or the path that you wanted to take?

DM: Yeah. I mean, I think mainly the company—I don't think I'd work well in the large corporate setting. So, this 12-people—we have open offices, we don't have cubicles. It was the environment that I liked, because I remember interviewing at one office and I thought it felt like a doctor's office. And I was like, You know, this isn't the atmosphere that I want to be in. And so through then the people that I've worked with have been close, too, and it's a good group. My boss is extremely smart and so a great person to learn from.

TE: Okay. Were there, or are there, other women engineers at your company?

DM: Currently, now there is one mechanical female engineer, she's been there for maybe 3 years. Some of the other co-ops have been female. The actual founding of Schiller and Hersh was Judy Schiller, and she was obviously a female engineer. And then Hersh, Dave, he's still around. So, we actually had a women and minority business until she retired, so I got to work with her for a little bit. She's from Romania, so that was a little different lifestyle, or "culture" I should say.

TE: Right. Okay. Do you ever have to work with contractors?

DM: Yes.

TE: I have heard some stories about contractors not necessarily working well with women engineers. Has that been your case?

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DM: Nobody's really said anything. I think—our company is, I think, a little stricter than some others. When we review shop drawings that come in. We're critical. We like to see what we specify actually come in, that we're not getting shortchanged on anything. So, the review process can be tedious and they may not be happy with us for that. But, as far as just being a female—not to my face I haven't really gotten, you know, anything. You know, different—you know, they're like, Oh, there's a female. Or some people just don't really acknowledge it, or that I notice, anyway. But, in general, it can be difficult working with contractors just on a different point of view from the engineering field, because everybody thinks they're right, when somebody isn't.

TE: Okay (laughs). So, being one of few women in your office at various times, and being one of I assume few women, I assume that there aren't many women who you deal with amongst the contractors—

DM: Correct.

TE: —does that feel strange to you? Is it something that you are used to?

DM: I'm definitely used to it. But it's definitely nice when you get to go out and there is a female architect or, you know, you're not the only female in the meeting of 15 other guys or whatever it may be. But, yeah, you get used to it.

TE: Okay, okay. What best prepared you for your position? I get—you've been working with them for most of your college career, right?

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DM: Mm-hmm.

TE: So what best—did your classes help to prepare you? Did your involvement in SWE help to prepare you for the interpersonal communications? How do you think—what do you think makes you succeed in your position?

DM: Well, I know that a lot of stuff we learned in school is not what I do (laughs) with our profession. But it was actually the one female faculty advisor senior year who taught the power classes, also taught my boss. So, there was a connection there. And so I knew that that's what he had gone through, so that helped, because the other guys in my office did not major in power. They majored in other facets of electrical engineering. So, in that sense, I'm a little more knowledgeable to them. But, I think just being in the co-op situation prepared me—you know, understand and now that I've been there so long I know all the ins and outs of the company and that definitely helps you see, you know, what's out there. And I did interview for other jobs, but I felt that this one was the one that I wanted to stay with.

TE: Okay. Where do you see your career going next? Do you want to head into management? Do you want to go back to school? Do you want to stay where you are?

DM: That's a very good question (laughs). I've definitely thought about it. I'm really not the kind of person—school's not my thing, though I think that I might need to go back for something. I question where our company is going to go, because the other half of the company is almost at retirement. But, I don't know when or if that

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will go. So I think that will change the structure of the company greatly. And so, because we're so small, there isn't really a ladder to move up or advance, per se. So, I think if that structure changes, that I would like to get more management or more on the proposal side of bringing people in, in that sense. And helping just organize the company. But, I always did say that if I went back to school it would be for something different. But, maybe management, yeah. Still working on that (laughs).

TE: So, if you went back to school for something different, would it be something different but still along the lines of engineering, or would it be—?

DM: You know, it would be so hard. I'd like to always like to say I want to go back and be a pastry chef (laughs) because I do like to bake. But there's so much that I've learned about now that I didn't know of in school.

TE: Okay.

DM: Like all of the web page stuff that I've done now kind of interests me into graphic design. History, and the family tree, and preserving and archiving, and that kind of stuff—so those things really interest me now that I didn't know about back in school. So you kind of wonder, What could I do with those kinds of things?

TE: Okay, okay. Can you tell me about your—when did you first join the SWE Philadelphia Section?

DM: I upgraded right after I graduated, but I don't think I was active for that first year. I remember going on to their website, and it hadn't been updated for three years or

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so. And, I'm like, Hmm. So I didn't really know what was going on with the section all that much. I think I got a few e-mails here and there. And at that point in time we were getting ready to host the regional conference at Drexel. So, I contacted the president and I was like, "Do you need a webmaster?" And from then on that's kind of how I got in. I started with that, and then I did the website for the conference, worked with them—with the Drexel students, since I had a good knowledge of the campus, and was able to provide that insight. So, that's how I started with the Philly section.

TE: Okay. So, after working on that conference, what was the next thing that you got involved in? You know, you had the connection with Drexel, so what kept you involved in the Philadelphia Section?

DM: Well, I think just my—because I was president of the Drexel Section, I was highly involved in that, and I wanted to keep that. And so now that I had met people in the section and been to the meetings I was, you know, more comfortable with them. And so from then you start working with some of the other girls on revising our bylaws and doing officer retreats now, helping with that. I was VP [vice president] of communications for a while. We redid the by-law structure to have 3 VPs now, which I think helped, so the president wasn't responsible for everything. And so, in that position, helped—redid the newsletter, so we're doing a lot of stuff to get information out there to the people.

TE: Okay. And you redid the website?

DM: Yes. Mm-hmm.

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TE: Okay. How did—did your employer support your activities in SWE? Did they give you time off to go to the events? Did they notice that you were in SWE?

(laughter)

DM: They know that I'm in SWE but I wouldn't necessarily say that—or I guess I really haven't had the conversation as to how much they would support. I haven't really needed to take off the time, but I could use—we have flex time, so I could leave and come back and make up my time if I needed to. They know that I'm here at conference because of the award, and I think with this next conference I think they'll be more aware of that. And so it's not that they don't support me, and I think that they're happy. They do use it on the resumes that go out that I am part of the Society of Women Engineers.

TE: Okay. Can you tell me about your being a counselor for Drexel? When did you first take up that position?

DM: So when I graduated, the Philadelphia Section was at a point where they kind appointed people to be counselors because the sections were required to have them, but technically by bylaws the counselor's supposed to be a voted-on position. And I knew that the girl who had been appointed wasn't doing anything for the section. And so I really tried to get in there as best that I could because I knew that I would be a better benefit for the section. And I think—so that happened in 2005 or 2006. But I had worked with them because I was still close with a lot of the girls because, you know, they were there when I was still there and I had done a mentor-mentee program and my mentee was still there. And so

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I had those connections and I wanted to get back in and help them because I feel that the connection to the professional section is very valuable because, as a collegiate section, you don't really know what's going on outside of your section, per se, and that there's so much larger with SWE and, you know, to kind of keep those girls—because I noticed a lot of people that don't upgrade and rejoin into the professional section because I don't think they know what it's about. So, I felt that that was important, to get that message out there and work with them.

TE: Okay. You said that you were the mentor in the mentor-mentee program.

DM: Yes.

TE: Were you ever a mentee at some point?

DM: No.

TE: Do you think you would have benefited from that?

DM: Um, I think so. I think with my relationship with my mentee, I think she greatly benefited hearing from my personal stories. She had actually started out kind of in the same field but now she's in environmental, and so I think that that's helped her understand what kind of goes on in that field and what not. So, helping see somebody else kind of in the same path would have been nice.

TE: Okay. So, as the Drexel Counselor, how do you work with the section?

DM: I'm on their email list, so I constantly know what's going on with the section. I try to make it to as many meetings as I can. I'm there for support whenever they

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need it. I know they just had an issue recently because one of the girls canceled to go to conference and so there's this \$400 flight ticket that nobody can use and they're going to now have to eat the price and so they needed some advice with that. And so I helped give them advice with that. I've traveled with them to conferences on various times. You know, just supporting them, showing up I think makes a big difference so that they know that they have the support, that somebody's there for them. Remind them when their bylaws are due, because they're going to lose their dues soon (laughter). You know, keep them in the loop of what goes on and make sure that they're following the national guidelines.

TE: Okay, okay. What do you hope that they will get out of this relationship? Or what do you hope that they will learn from you?

DM: I hope that they know that SWE goes beyond the collegiate section and they'll continue to help inspire those younger girls that they've been working with and continue doing that throughout their profession and that, you know, no matter what you do you have a role in helping those other women.

TE: Okay. Have you gotten anything personally out of the relationship with them?

DM: Yes. I think because—especially with the awards package for this counselor award, seeing the—what's the word I'm looking for—the letter of recommendations coming from the students, and just seeing how much I affected them, that I don't think I ever really noticed before, or realized that I had such an impact with them. So, knowing that, I think, is good for personal growth.

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TE: That's good, that's good. Why have you chosen to spend so much time volunteering with SWE? Working on all these committees when you could be baking pastries? (laughter)

DM: To me SWE's important just in—I think that women and equality is a big issue for me, and that things do need to be equal. And though I think that it's coming along, I don't think it's necessarily there. And so just the support that the women give, it's another way of meeting people and helping, you know, advance either the collegiate or the professional section to be the best that they can, I think really benefits me, you know, on that personal level more so than baking. But you know, being out there, I think the equality thing and making people know that there are women engineers, that we are smart, we're intelligent, and we're everyday people, so—.

TE: Okay. Being involved in your job and in SWE and then, you know, with your family, how do you balance all of that?

DM: It gets busy (laughs). It definitely gets busy. I know that SWE is a good time for me to get out and have, you know, kind of the alone time from my husband and let him have his own personal time to do what he wants. So, I think that helps that we're not constantly with each other and that we can be independent from each other and do our own things. The thing I'm thankful for work that, though we are extremely busy I'm not bogged down in overtime, so I do have that free time after work that I can dedicate to SWE. I mean it's busy nights, and you make

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your sacrifices for not doing necessarily all the other things that you might want to do, but there's better benefit for it for taking the time to do it.

TE: Okay. I know that you have been very interested in the history of SWE, the history of women engineers. Why have you been so interested in that? What has attracted you to—?

DM: Well, recently, the last 3 or 4 years, I've been working on my own family genealogy project. And so from that standpoint it kind of ties into the Philadelphia Section, because I have that greater knowledge of preserving, and knowing that there's not a lot of stuff around now. And that when I went to Drexel I didn't know that we were the first section of SWE, and that the Philadelphia Section had that impact, until just recently. So, there are so many people that don't know that that I wanted to get that message out there, make sure that that is preserved and that people can find things easily because I know that our documents are in such [dis]array. And so organization, to me, is key. So, I think preserving the past makes it better for the future because you can learn from that—from what they did, how they started, and just be proud to know that we are a part of those founding sections.

TE: Mm-hmm. You have been doing oral history interviews with some of those founders.

DM: Yes.

TE: What have you learned from them?

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DM: Oh, all kinds of things. The two founders—and actually one just passed away this summer, so I was very glad that we got to interview her and I got to meet her and learn from her experiences. It's interesting to see the pictures of her then, all dressed up in skirts, and now she's in pants and would never want to be caught dead in a skirt again. And to see them—how they dressed back then, that was required for their jobs and everything, and they talked about wearing the white gloves and coming to conference in navy suits. And one of the other women, she's more on the academic side—and just seeing how intelligent the women are. I mean, you know that they're smart, but some of the stuff that still comes out of her mouth really amazed me at her level of intelligence even at an older age. And just knowing that, I think, back then when they started the section, it was very fun and outgoing and they wanted to socialize. And I think that some of the members today think that we're more professional and we tend to lose balance of—we can still have fun, and we can still do social things together, and professional. And so it's kind of nice to see that they did that back then, and that we shouldn't, you know, focus on strictly professional aspects.

TE: Okay. Have you heard from them, what they thought about being interviewed?

DM: Actually, I did make it to the funeral service for the one founder and the other woman was there, and her husband was also an engineer and was part of the Men's Artillery that the Philadelphia Section—so he had seen the website and they were just so happy with what I had put together. And one of the other women told me how much Doris [McNulty], who's the one that passed away,

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really appreciated meeting the younger girls and seeing the interest that they had and hoping that she had left a mark, you know, with us. So they seemed extremely pleased and happy that they could do it.

TE: What do you hope to do next in Philadelphia SWE?

DM: Someday I do see that I'll be president. I'm just not exactly sure at which point in time I want to dedicate all of that time to it and, you know, help the section with that. I do a lot now, but I just don't feel that it's my time to be in that position. So, definitely continue getting us awards. I think that that's extremely important and I think this year we submitted some great stuff and I think that it's important that, nationally, we get known. And I think that's a big key for me, is that we get known as being a good section, a large section. And you know we're doing conference at the University of Pennsylvania this year, and other things like that. And maybe hopefully someday we'll have national conference in Philly, which hasn't happened yet, so I think those would be some of my bigger goals.

TE: Okay. Why do you want to be a section president? What do you think that—how do you think you would benefit from that, or what experience do you think you would gain?

DM: Well, I know that it will definitely be different than the collegiate president. I think at a professional level you meet with—I think it's a good networking tool with all of the other engineering societies as well as on a corporate level because people always want to come and sponsor meetings or whatever. So, I think in that sense I would gain, you know, the knowledge of all the other aspects of, you know, kind

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of the engineering world, per se. And so I think that I have the leadership skills needed for the section to help them continue to move on and advance.

TE: Are you involved in any other professional technical societies?

DM: No (laughs).

TE: Is there any particular reason why or just that you're—

DM: I think because I dedicate so much time to SWE and SWE's so important to me. And I know that I probably should get involved in some of the other ones, but I'm kind of the person that I get comfortable in one thing and I'm not great at branching out and doing different things or being that first person to step forward. I tend to be shy at times when I don't know people, and so going out there and being the only person to get into another section can be, you know, kind of fearful for me, so—. I'm comfortable with SWE. I spend a lot of time there and I feel that, you know, that's okay.

TE: Okay. I think that was it for my questions. Is there anything else that you want to add?

DM: I don't think so.

TE: You don't think so? Okay, well thank you very much for doing this interview, and we will conclude.

END OF INTERVIEW