

Exploring Women in Engineering Leadership: A Case Study



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PIP Research Committee

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PROCESS
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Introduction

Only 14% of working engineers are women.¹ We struggle to increase girls' interest in pursuing an engineering career, but we are also challenged with retaining women engineers in the workforce. Studies have found that women leave engineering when they feel that they cannot advance in their careers.² A recent report from McKinsey & Company highlighted a weak leadership pipeline that negatively impacts women's career trajectories, noting the continued attrition of women from middle management rather than a glass ceiling.³

If we are serious about closing the gender gap in engineering, we need to understand what engineering organizations could do to increase women's retention. Specifically, organizations must address the barriers that women face when advancing into leadership. Organizational, cultural, economic, and political barriers affect women's pursuit and attainment of leadership positions.⁴ We can learn from engineering organizations where women have successfully moved into leadership ranks.

Process Industry Practices (PIP) noticed that a relatively high number of their leadership positions were held by women. Given that PIP is focused on developing technical standards and best practices for companies in engineering and construction industries, where few women hold technical positions, the PIP Research Committee sought to understand how and why the environment within their organization was so conducive to women leaders. This study was conducted to answer the following questions:

1. What factors influence women's decisions to join and pursue a leadership position with PIP?
2. Does participating as a PIP leader help women achieve their professional goals?
3. Has women's involvement in PIP leadership impacted the organization's culture?

A purposeful sample of PIP leaders was selected to participate in this study. Twelve interviews were conducted during the PIP Annual Conference and virtually in May 2023 with two men and ten women, some with a long history with PIP and others relatively new to the organization. Leadership roles vary from Function Team and Committee Leaders to individuals serving on the Executive Committee or as Sponsors.⁵

This study was conducted to answer the questions posed by the PIP Research Committee, but the findings offer ideas for other engineering organizations to consider when focused on increasing gender diversity in their leadership ranks. Research indicates that increasing women in leadership roles will help retain more women in the engineering profession.

¹ U.S. Department of Labor, BLS: 11. Employed persons by detailed occupation, sex, race, and Hispanic or Latino ethnicity.

² Society of Women Engineers. (2017). *Climate Control: Gender and Racial Bias in Engineering*.

³ McKinsey & Co. (2023). *Women in the Workplace*.

⁴ AAUW. (2016). *Barriers and Bias: The Status of Women in Leadership*.

⁵ Interview quotations have been lightly edited for clarity.

PIP Overview

"Being involved in PIP allows us to catch the trends that are happening in the industry in terms of manufacturing, in terms of design. So, we're not at the cutting edge. We're right behind it." – Male Committee Lead

Founded in 1993, Process Industry Practices (PIP) is a self-funded consortium of process industry owners (Owners) and engineering, procurement, and construction (EPC) companies. PIP was created to publish guideline Practices involving design, construction, and procurement for the process industry. PIP member representatives (referred to as volunteers) write standards, processes, and best practices for Member Companies to use. PIP develops recommended Practices based on Member Companies' existing internal standards, not seeking to compete or overlap with traditional industry standards but rather to use existing technical standards to produce engineering guidelines, criteria, and specifications. To date, PIP has written over 560 engineering and construction Practices. These Practices are available on their website to Member Companies and are available to purchase for non-member companies.⁶

PIP operates under the Construction Industry Institute (CII), an organized research unit of the Cockrell School of Engineering at The University of Texas at Austin.

About PIP Membership

PIP offers two membership types. Active Member Companies contribute to the development of guidelines and specifications. They are expected to provide a minimum of two volunteers: one to represent the company on the Steering Team and a second to serve on either a Function Team or Committee. There are 13 technical Function Teams and 10 Committees. Approximately 80% of volunteers serve on a Function Team, while 20% serve on Committees. Membership fees are discounted by the participation of active volunteers from the Member Company.

Active membership has almost doubled in the last 10 years. As of September 2023, PIP has 116 member companies, with approximately two Owners to every one EPC. More than 900 volunteers from various Process Industries, including chemical, refining, energy, food & beverage, pharmaceuticals, and automotive, collaborate to produce a library of engineering Practices.

PIP membership is at the company level, not the individual level. If a volunteer leaves their company and moves to a non-member company, they can no longer participate in PIP activities. If a volunteer retires from a Member Company, they may continue to participate in PIP as an Emeritus volunteer.

According to a membership survey conducted in 2020, approximately 12% of volunteers are women.⁷

⁶ PIP website: <https://pip.org/>

⁷ Demographics data were voluntarily reported. Respondents could select "Prefer not to answer" as an option.



About PIP Leadership

Appendix A shows the PIP organizational chart as of November 2023. Each Member Company has one representative on the Steering Team. The Steering Team provides operational direction for the organization.

Each Function Team has a Sponsor, who serves as a direct connection between the Steering Team and the Executive Committee. Each Function Team has a Leader and a Co-Leader. Most Function Team Leaders and Co-Leaders come from within their respective teams. Committee Leaders and Co-Leaders serve on the Executive Committee, which includes the PIP Chairs and Officers, Committee Leaders, and Function Team Sponsors.

PIP Chairs include Membership Chair, Vice-Chair, Chair, and Immediate Past Chair. The Membership Chair is recommended by the Nominating Committee and elected by the Steering Committee. Accepting the Membership Chair position is a four year commitment, moving through leadership roles in succession. Specifically, the Membership Chair serves as the leader of the Awards & Recognitions Committee for one year, then steps into the Vice-Chair position. The Vice-Chair is responsible for planning and leading the Annual Conference Planning Committee. After serving one year, the Vice-Chair becomes the Chair and is tasked with implementing the organization's strategic plan. After one year of service, the Chair becomes the Immediate Past Chair and serves one year in an advisory capacity.

PIP Officers include the Financial Officer and Legal Officer, both of whom are approved by the Steering Team and serve without a term limit.

At the time of this study, approximately half of PIP's leadership positions were held by women.

Time Investment for PIP Participation

Active PIP membership requires attendance at quarterly Steering Team meetings and Function Team or Committee meetings. Meetings are held quarterly in Houston, TX with an option to attend most meetings virtually if travel isn't feasible. The PIP Annual Conference is held one day each spring in-person in Houston and includes keynote and special interest speakers, workshops, awards, and reports from PIP leadership. Interim virtual meetings between quarterly meetings are at the discretion of team and committee leaders.

About PIP Staff

PIP is staffed by a Director, Assistant Directors, and support staff. All are university employees. The PIP Director, Assistant Directors, and select staff members serve on many committees as nonvoting participants.

Why Do Women Choose to Join PIP?

"I've gotten to hear war stories that I didn't have to then experience. I could just take notes from their story and go, 'Okay, don't do that ever.'" – Female Executive Committee Member

PIP is not discipline-specific or tightly connected with one specific industry. Rather, its focus is on developing practices and guidelines for engineers, which are widely used across many engineering and construction companies around the world. One of the first questions asked during the interviews was how individuals found out about PIP and joined the organization.

Awareness of PIP

Those interviewed for this study often indicated that they were aware of PIP because their company uses their Practices, but they were less aware of the volunteer opportunities:

"I knew who [PIP was]. I knew what they did... I just didn't really know everything they had to offer. I certainly didn't know how the meetings were structured, even about the annual conference or anything like that."
– Female Team Lead

It's Who You Know

While many engineers were aware of PIP Practices, having used them in their jobs, joining PIP as an active volunteer was often not on their radar until someone they knew suggested it. Many interviewees were introduced to PIP volunteering opportunities through a colleague or a manager:

"I think [my manager] saw PIP and he said, 'Okay, here's someplace you can go and you can talk to people like you. You can talk about what you do. You can learn from them, and you can kind of network and get to know people.' I do appreciate that." – Female Committee Lead

"I was introduced through a colleague of mine who has set up our technical rules group here in North America. She introduced me to PIP as being part of an external society that [helps us understand] what's going on in the industry around our regulations...." – Female Sponsor

The Chosen One

PIP volunteers come from Member Companies, who then select who will represent them in the PIP organization. Some of those interviewed discussed their different pathways into PIP, varying from being “voluntold” or feeling pressured into it to proactively requesting to join:

“After I got hired, [my colleague] met me when he was down here in Houston. He said, ‘You’re going to start going to these because you’re local, you don’t have to travel.’” – Female Team Lead

*“[My sponsor] talked to three of us. And he wanted two of us to do it. And the man pretty quickly was like, ‘Sounds like a good idea. But no, I’m not going to do it.’ So he talked to me in engineering, and then he talked to a male and female from the process safety group. And the male in the process safety group is the one that said he just had too much on his plate. He couldn’t do it. [Women] say, yes, we’ll do these things. Somehow we make it happen. We are good at multitasking.”
– Female Team Lead*

*“My manager had told me that I should try out PIP, and I was very intimidated. I knew it was a lot of subject matter experts, a lot of older gentlemen. I knew there were not going to be a lot of women there.”
– Female Executive Committee Member*

*“The department manager...was the one that the company assigned to represent [my company] in the electrical function team.... The moment I heard he resigned, the first thing [that came] to my mind was to get an email to the chief engineer and tell him, ‘... I really want to participate and represent [the company] there.’”
– Female Team Lead*

PIP vs Other Organizations

There are many options available to engineers seeking to give their time to an external organization, including many technical engineering societies. When asked why they chose PIP over others, most indicated that PIP offered them more opportunities to actively participate and increase their technical knowledge in a non-competitive environment:

"We used [PIP] specs and I wanted to know how they come up with the specs, what's the decisions, why this material versus that material?... [There is] all sorts of information that you can glean from [the specs] versus going to ASME or API or any of the other standards. You're getting a limited amount of information. With these specs, you're getting all information, including the ASME API standards and stuff like that."
– Female Task Team Lead

"I've been involved with IEEE... it's a huge empire. You get lost, don't know who's who. Not criticizing them, but it was not the place that I could feel that I am serving something or getting from it to build my growth and help me. With PIP the people, the people are this solid base. That they're good people, very generous and very kind and very caring." – Female Team Lead

"[At PIP], no one is trying to get a financial advantage. Everyone is here because they're trying to learn and make their companies better and help each other. It's just a different mindset."
– Female Executive Committee Member

Of note is the fact that there is a level of anonymity involved with the development of PIP Practices, highlighting the non-competitive nature of the organization:

"You look at ASME committees or the ASME practices and you look at those authors and it's just pages of men on those, names of who was involved in writing or updating. I think there's a little bit of a barrier when you have a really formidable, entrenched group of men doing something. It's hard as a woman to break into that."
– Female Team Lead

Why Do Women Become PIP Leaders?

"Something about the organization has said, 'You're still underrepresented, but you can be a leader really easy. Come on and do it.' And women seem to be putting their hands up." – Female Executive Committee Member

Once individuals decide to join PIP as a volunteer, representing their Member Company, the reasons for pursuing a leadership role varied.

A Desire to Learn

Some noted their curiosity and desire to increase their technical knowledge and leadership skills was what led them to volunteer for leadership positions at PIP:

*"I've been in many meetings where I'm the only female person in there. Sometimes to be seen, you have to be heard. And to do that, you need to raise your hand, volunteer for things that might be outside of your comfort zone. And that's the only way I see that you can move up."
– Female Team Lead*

"... I have that opportunity now to develop some of my skills in a fairly safe environment. I don't have a boss. I don't have anybody judging. Everybody works together. But I have that opportunity to lead a team and grow as a leader, grow as a strategic person, so that's why I decided to stay longer than any other organization." – Female Committee Lead

Pursuing Growth Opportunities Not Offered Through Their Employment

Others noted that PIP offers opportunities to gain management and leadership skills when those opportunities are unavailable in their current career path:

"I'm never going to be an overall engineering manager or anything like that. So these are kind of ways where I can highlight myself or do something different, and do something extra." – Female Committee Lead

*"[I] knew I was not going to do my whole career in purely chemical engineering, that I really wanted to get into management... The opportunities at PIP were there to try out being a leader and sort of managing people."
– Female Executive Committee Member*

Growing Your Network

It's all about who you know, and PIP offers volunteers access to hundreds of professional contacts. For some interviewees, PIP leadership offers the opportunity to increase their professional network. Those professional contacts really get to know you and your work:

"The thing it's really given me is a network. And if for some reason I said, 'I'm done with [my current company], I know people at a hundred other companies and they know me.'" – Female Executive Committee Member

Making an Impact

Some interviewees indicated they felt that their PIP involvement was meaningful, and that their work makes a difference in their profession:

"The standards mean something. They're not just a glorified place to get together and meet with the same people and chew through things.... The specifications help to define what you're going for and they're good training.... They're good for training engineers on what to be looking for in their designs and in the review of equipment they see." – Male Committee Lead


"...I know there's a lot of other people that are coming behind me. And if we can get some of these Practices documented, then they're going to have those to work with when they're doing their designs or they're doing their evaluations." – Female Team Lead

Leadership is Manageable

Many of the leaders interviewed highlighted the organizational structure, reasonable time commitment, and level of support as features that made their PIP involvement manageable:

"I knew that I was going to be well supported by the PIP staff, that I'm not operating in a vacuum. There are people there to help. I had a vision for things I wanted to do with the group. I wanted to write a new Practice, and then not having to take it on single-handedly... I had people that were not going to let me fail." – Female Executive Committee Member

"The organization is [better organized] and I think a lot of the leadership is better organized, be they man or woman. I think there's more opportunity that's given to people without a hierarchy. Here, if you want to be on a committee, this position's open. If you'd like to be part of this, you're more than welcome to join our committee...." – Male Committee Lead



"I have a very strong desire to maintain a work-life balance because I have two young children still. My husband works. So we definitely are always trying to balance that. And I don't like to commit my evening times, because again, it's trying to balance it.... As an engineer, I want to provide value for the company. I also want to know that my knowledge is put to use and that I am utilized and supported the right way. And so I think that's a lot of why I've gravitated to this role too, is because I can use my value with my engineering background, but it's also not something that takes me away from my family, so I can actually have that work-life balance." – Female Sponsor

"It's an organization that supports you and then it brings on other people who also have that same sort of support and want PIP to succeed and want all of us to be knowledgeable and talk through different aspects of design or construction or guidelines or just things to help the industry for safety and reliability. It's a good organization, good people." – Female Team Lead

Few Barriers to Leadership

Many of those interviewed indicated that becoming a PIP leader was relatively easy compared to what they have experienced in other organizations. There seem to be few barriers for those interested in pursuing a leadership role, and there was little or no opposition from the men in the organization:

"There's not really a barrier to have a whole ton of experience to be in a leader role, which I think oftentimes as women, we feel like we have to prove ourselves in something before we can step in and be a leader.... There's just less of an entrenched male dominance within PIP for whatever reason."
– Female Team Lead

"It could just be that there's so many opportunities for leadership. There's so many different function teams...." – Female Team Lead

"Working in an engineering firm, I was scared to death. It's a man's field. It really is. Trying to get in to get your foot in the door and things like that. Here, it's volunteer. I didn't have to get my foot in the door. They already wanted me in. And then I just kept going along. The more I came here, the more knowledge I got. It was just easier to be around that kind of environment with people being open about the knowledge instead of in our own offices where we're competing against one another for a higher position." – Female Task Team Lead

I Was Asked

Overall, one of the biggest factors that appeared to draw most of those interviewed into leadership roles was just being asked:

"I think when I got tagged as the co-lead, it was the leader and one of the other experienced members of the team thought, 'Hey, [she] might be good at this' and asked me if I wanted to do it. So that was all that it really was, was kind of just a little internal conversation with the current leaders of the team bringing on someone else." – Female Team Lead

"I try to think about would I have even volunteered to lead a function team if I had been here already? I don't know if I would've raised my hand to tell you the truth. I feel like the fact that somebody that I already knew asked me to do it went a long way with me. I don't know how many leadership positions are filled that way. But I've heard at least a couple of other people say that, 'Oh, look for people that are active in your function team and pull them into certain assignments, and then be looking to them for future leadership.' So I have a feeling people get talked to and encouraged to step up." – Female Team Lead

Role Models and Critical Mass

There is something to be said about critical mass. Some researchers find that gender equality shifts when a 30% threshold of women is reached, while others believe it is as low as 15%.⁸ While women are not yet at 15% among PIP volunteers, women's representation in leadership positions is well above this threshold. A critical mass helps to make women more comfortable pursuing a leadership role because they can see other women in those positions:

"I think there is something to be said for once there's one, then there's two, and you start going, 'Okay, well yeah, I clearly fit here because look all around me.'" – Female Sponsor

*"I am on the meetings and I'm not the only [woman] at the meeting - there will be at least one or two others depending on the area. I think that's wonderful because then you start feeling, okay, I'm not the only one against all these wild males because that's what [engineering usually is]...."
– Female Committee Lead*

"I think you see people like you and you want to make sure that they feel included also, because it helps you feel included. If there's more people like you, then it feels better. It's kind of like a self-fulfilling prophecy. You bring more people into the group and then you feel better, they feel better, and then they bring more people into the group." - Female Executive Committee Member

⁸ Funk, K.D., Paul, H.L., Philips, A.Q. (2021). Point break: Using machine learning to uncover a critical mass in women's representation. *Political Science Research and Methods*, 10(2), 372-390.

What Do Women Gain from Serving as a PIP Leader?

*"A lot of it is the network and the learning which you take back."
– Female Executive Committee Member*

Serving as a PIP volunteer offers a number of benefits, but moving into a leadership role within the organization provides women with additional benefits that help them achieve their professional goals.

Exercising Technical Expertise

For many of those interviewed, the opportunity to delve into the technical aspects of engineering processes offered an opportunity that was not always available in their workplaces.

"I think if you're technical, that's already a tough choice as a woman, because... we get told [we] have better soft skills, even though that's not always true. So, you go into sales or you go into management.... PIP is sort of where you end up because it's for technical people." – Female Executive Committee Member

*"Our [company] engineers are a little stuffy. They don't want to share their information because they're afraid that you'll go above them or make more money than them or something like that.... But here, everybody shares. It's nice to hear different views.... I get more out of PIP than I do at home."
– Female Task Team Lead*

Applying Their Skills to Make an Impact in Their Industry

While gaining technical skills was important for some interviewees, others noted that serving as a PIP leader allowed them to exercise other strengths and explore areas of interest:

"I think as I've grown up through my own career, that was always very important to me – making sure that if I know something, then I've also shared that knowledge with someone else." – Female Sponsor

"...I'm really well organized, detail focused or detail-oriented. And this is what you need to put together Practices, standards, bring together the team.... But this is a very technical organization. You have that technical expertise, that's why you're here.... It's documenting things and bringing consensus, getting consensus on things. That's people management." – Female Team Lead

Learning New Skills

The technical skills are important in the development of guidelines and Practices, but there are other skills that leaders need to be successful. In some cases, these are skills that engineers do not learn in their day-to-day jobs. PIP leadership offers a way to add to an engineer's toolbox:

*"I'm definitely at times challenged with some of the discussions we have. Especially the strategic planning, it's a different concept than doing a project."
– Male Executive Committee Member*

"I also learned how the quiet people who sit there in the corner, how to drag them in slowly, get them to the table and push them very gently to speak.... And I'm noticing I'm getting better going back to my home office, and my team is also noticing it." – Female Team Lead

"There is lots of presenting in front of the big group, 80-people, 100-people steering teams.... That definitely helped me with my presentation [skills], with confidence to speaking to an audience. [It's] a very technical audience so they know what I'm talking about, they know the details and everything, which brings your speaking to the next level." – Female Committee Lead

Gaining Knowledge for Individual and Company Benefit

PIP service exposes volunteers to representatives from more than 100 companies. For many of those interviewed, this exposure provides an opportunity to increase their professional network, learn about what other companies are doing, and highlight their employer's contributions to the organization:

"PIP is full of our competitors and our clients, so it's really nice to be in the room when everybody's talking about stuff." – Female Executive Committee Member

*"[My managers] have been very supportive. They see the benefit of what we bring back with the Practices that we've integrated into our internal requirements, design basis, documents and things."
– Male Executive Committee Member*

*"I don't think [my colleagues] fully understand what [PIP does].... I do try to put the light on, so if [my company] gets any recognition through PIP, I will make sure to put that in my social media and share at work."
– Female Committee Lead*

The Influence of Women Leaders on the PIP's Organizational Culture

"Long story short, PIP actually is the example of inclusion because we are doing it and not just talking about it." – Female Team Lead

When considering ways to be more inclusive of diverse individuals in the workplace, a welcoming and inviting culture in an organization that values their contributions are important requirements. Women who leave engineering organizations often cite feeling isolated, undervalued, and overlooked as factors in their decision.⁹ PIP leaders pride themselves on the organizational culture that they have developed – despite the fact that diversity and inclusion efforts do not influence the leadership identification process.

Changes in PIP Staff

Some interviewees commented on the change they've observed among PIP staff. While women have been on staff for years, there appears to have been a shift in the role that they play in supporting the volunteers – and women leaders have noticed:

"[About] 90% of the PIP staff is female. If you're walking into these rooms that are mostly men for our function teams and our breakout groups, if you're checking in at the PIP desk, if you're sending emails, asking them questions, there's going to be a female on the end of that conversation that you're going to be talking to, which doesn't hurt. I think getting women in engineering involved where there's kind of a little bit of camaraderie like, 'I'm not the only woman in the room,'..." – Female Team Lead

*"They're very strong, very confident women in the PIP staff. They're not engineers, but they know the technical stuff. They've worked with the organization a long time, and they can go toe-to-toe with any of us on organizational stuff. They're confident, they're inclusive.... They each have an important role in this organization, and you will respect them."
– Female Executive Committee Member*

⁹ Fouad, N.A., Chang, W., Wan, M., and Singh, R. (2017). Women's reasons for leaving the engineering field. *Frontiers in Psychology*, 8(875).

Appreciating the Strengths of Women Leaders

Beyond the technical skills that women leaders offer, there are other strengths that the organization values. Interviewees highlighted some of the “soft skills” that help make women successful in leadership roles:

“She’s very good about letting people get to a discussion, but she’s also very good at, ‘Hey, we need to stay focused on this, not get into other stuff.’... She, like a lot of the team leaders, doesn’t take control of the job. They keep it on track and they keep it focused.” – Male Committee Lead

“I think because women, when you give them the chance, women are very organized and they think with their emotions, but it’s not in a negative way. We look at people as people, not as a label or a position.” – Female Team Lead

*“When you let women do their thing, this is what you get. Collaboration, there’s innovation, there’s creativity. Everybody gets heard and we support each other and look out for each other.... You set the role, be a role model.”
– Female Team Lead*

Recruiting More Women into PIP

Women leaders indicated that they have served in a recruitment role for PIP, seeking to encourage more women to join the organization:

*“The people I’ve gotten involved in PIP, they’ve all enjoyed the networking... they appreciate the support and what they learned in the networking.”
– Female Executive Committee Member*

“So I’m trying to encourage more, and especially women. We have some women who have moved up in engineering leadership and I’ve told them, ‘This is a cool place. You won’t feel like this in any other industry organization. There are opportunities.’” – Female Executive Committee Member

Organizational Culture

One of the top reasons that women leave engineering is because of an unwelcoming culture, where they feel that they are isolated or do not belong. Many interviewees commented on the welcoming and supportive culture within PIP, with people who were there because they believed in the work:

“I think it’s because there’s no competition. It’s voluntary, right? It’s not like you are going to get ahead of somebody or you are getting better than somebody.... The quality of the people you are dealing with here, they are beyond that... They’re above that level of discriminating or undermining people for how they look like or who they are.” – Female Team Lead

"PIP is a good group of people, and it's very comfortable in the way that family's very comfortable. It was like, once a quarter, I would get to go see people that I like and eat good food and work on something that felt like it had meaning.... I think it was just because it was a safe, close-knit group of people, and not in a creepy way, but it was just everybody was friendly and was working toward the same goal.... So, I think it was because it was positive, it was purposeful, and it was kind of fun." – Female Executive Committee Member

"When you start having steering team meetings or an executive team meeting, you see a quite good representation of females. Why do I think? Because they encourage females to apply. They really do encourage. They make you feel equal. Nobody really judges you because at the end of the day we don't compete for anything." – Female Committee Lead


"Maybe you don't see as many female engineers. You see a lot more now, but you also see them and they're critical to [PIP]. I think their attitudes and their kind of leadership also pushed it in a positive direction and made it feel like this is an organization we want to be a part of."
– Female Executive Committee Member

Diversity, Equity, Inclusion, and Belonging (DEI&B)

Many engineering organizations in the public, private, and nonprofit sectors have incorporated DEI&B into their strategic efforts, highlighting the importance of increasing diversity within the engineering profession. They actively work towards increasing DEI&B within their organizations. Surprisingly, PIP does not use DEI&B initiatives to influence or promote within the organization. When asked about DEI&B, many of those interviewed stated that it was not a topic that had ever come up in their PIP discussions. Rather, DEI&B is intrinsic to the organization.

"PIP should be the example to look at because it's not talking, it's the living, the acting.... We are not advertising that we are inclusive and we don't discriminate. We are doing it by action, right? You see us doing it, and it's like a second nature here. I never even thought about it to be honest with you. It's very natural. I get in, I don't feel the difference." – Female Team Lead

"You don't find [diversity and inclusion] as an agenda item when we talk about new Member Companies coming in. The demographics we're interested in are, are they an engineering firm or are they an owner-operator?"
– Male Executive Committee Member



I can't say that there's an overall D&I mantra or mindset, or we have it posted everywhere, but I also don't believe that we have to do that in order to work in a respectful environment that is diverse and inclusive. So I definitely believe that we have a very diverse and inclusive group, both from the perspective of gender, race,... but also from the cognitive and the background and what we bring to the table with the different environments that we've grown up in and where we're coming from and our backgrounds. So I think that that comes together to support an innovative environment.” – Female Sponsor

However, PIP staff do make a point of highlighting their women leaders:

“Even though we're all self-conscious about it, or some of us are self-conscious about it, they are wonderful at International Women's Day, Women in Engineering. They are constantly putting stuff on LinkedIn with all of our little pictures like, 'Look at these ladies. They're all in leadership.'... It feels really good. It makes me self-conscious, but it also feels good that someone is noticing you. That's a big deal.” – Female Executive Committee Member

What stood out during the interviews was the expressions of inclusion and belonging at PIP. Women engineers are engineers; they are valued for the expertise that they bring to the table:

“So I was the only woman in the room, but I never felt it.... And that's why I'm sticking to it because of that, you are valued for what you bring to the table, not how you look or what you are.” – Female Team Lead

“It doesn't matter if you're man or woman, if you've got something to say and knowledge about this particular specification, we'll take it. It's always an inclusion. I haven't ever felt excluded. I felt excluded in my own company, but not here.” – Female Task Team Lead



Key Takeaways

"I think one of the unwritten values that PIP takes seriously is being welcoming to anyone, everyone." – Male Executive Committee Member

Invite Women into Leadership

Organizations that want more women in leadership must offer opportunities for their voices to be heard. One takeaway from the conversations that took place with PIP leaders was how many of them said that someone within PIP leadership encouraged them to consider a leadership role. In a way, PIP leaders serve as mentors, identifying women volunteers with potential and encouraging them to pursue leadership positions.

Focus on Productivity in a Flexible Workspace

Women have a lot going on. In addition to their work responsibilities, they are more often tasked with caregiving responsibilities than men. Work-life balance can be challenging, and introducing additional responsibilities from an external organization like PIP can be an unwelcome burden. However, those interviewed commented on the flexibility that PIP offers with regards to meetings and in-person activities. Outside of the Annual Conference, most meetings can be attended virtually. Even holding the Annual Conference every year in Houston simplifies planning, allowing most volunteers traveling from out-of-town to attend. Houston also has a high density of process industries, which makes it local for many volunteers.

Provide the Supports Necessary for Success

Almost every individual interviewed commented on the level of support they receive from PIP staff. Staff make sure that leaders have what they need to manage their responsibilities and are on hand to respond to any questions leaders and volunteers may have. In addition to a supportive staff, the PIP Operations Manual was revised in 2023 and provides the guidance material needed by the Member Companies. The manual outlines the organizational structure, the responsibilities of each team, committee, lead, and officer position, and the processes involved with publishing the Practices that each team is tasked with developing. The use of co-leaders also ensures that leaders can share the responsibilities rather than be expected to manage everything themselves, whether that be a Function Team of 50+ volunteers or one of less than 15. No PIP leader is left to figure things out on their own.

Appreciate and Value Women's Expertise

While many of those interviewed shared how much knowledge they gained from other PIP volunteers, they also noted how important it was to feel that they could share what they know with others. They expressed that, even when they are not the subject matter expert in the room, their PIP colleagues made them feel that their thoughts and ideas still matter. Everyone's feedback is heard. Some interviewees commented on how Function Team Leaders try to ensure that those who have not spoken have the opportunity to contribute to discussions during meetings. There is a concerted effort on the part of Leaders to be inclusive to all, as well as to maintain a non-competitive and safe environment that encourages knowledge sharing.

Recommendations

Each person interviewed was asked what PIP could do better to improve diversity in leadership. The following recommendations are offered based on suggestions expressed by those interviewed and from identified barriers revealed from the conversations.

Encourage Companies to Support Women's Participation

PIP is a member organization for companies, not individuals. As such, it is the Member Companies who ultimately determine the makeup of the volunteers and, hence, who is available to serve in a PIP leadership role. One interviewee said it best:

"I think there are a lot of companies that are recognizing that it behooves us to hire a diverse group of people, which then, you have more diversity for volunteering for these organizations. I think it comes back to the companies really to have that diversity within their company...." – Female Team Lead

An additional observation from this study is the variance among companies on the level of support volunteers receive to participate in PIP activities. For example, some indicated that their PIP volunteering fell under their work responsibilities, so their travel costs and hours spent on PIP activities was covered by their employer. Others said that their PIP responsibilities often had to be handled on their own time. The level of employer support typically aligned with the level of understanding that their managers had for the work they were doing with PIP. Understandably, those managers who valued the PIP Practices and the influence their employees had on the development of those Practices were more supportive of the time spent on PIP activities. The ability to charge the company for the time allotted to PIP volunteering also affected recruitment efforts, as engineers working for companies that required them to volunteer on their own time were less likely to volunteer.

PIP meetings are scheduled during business hours versus evenings or weekends – a benefit for volunteers seeking to maintain work-life balance. Volunteers can choose when and how to fit PIP meetings into their work schedules. However, support from Member Company management can help reduce the need for employees to make up time taken for PIP activities.



Highlight the Inclusive Environment as a Benefit to Engineering Organizations

Many of those interviewed noted that PIP is action-oriented when it comes to encouraging an inclusive culture. PIP could promote their welcoming culture to companies seeking inclusive professional development opportunities for their employees:

*"I truly believe that [DEI&B is achieved] by just doing and by example. You can talk about things and you can make lots of initiatives and you can make a strategy, but if you don't have the execution... so basically walk the talk. I would say [PIP is] walking without even talking."
– Female Committee Lead*

To help bring more visibility to the inclusive nature of organization, PIP could more consistently collect and report data about their volunteers and Member Companies. Member data helps tell the story and can be a valuable recruitment tool.

Address Technical Barriers

Though this suggestion is technical in nature, it does impact the ease with which leaders and volunteers can conduct their work for PIP. Some of those interviewed noted that PIP was slow in adopting new technologies that could make their tools less cumbersome. While there was acknowledgement that PIP was not “cutting edge,” interviewees expressed a desire to ensure that their PIP work was easily accessible:

"Some sort of constant vigilance on that is important because if our engineering standards are our PDF, and they always stay PDF, at some point, somebody's going to go, 'Here's a shiny database, and your PDFs are obsolete.' So, we just always have to keep an eye on that." – Female Executive Committee Member

"There's things we need to do from IT, our Practices, getting them more into a system in a digitalized format." – Female Executive Committee Member

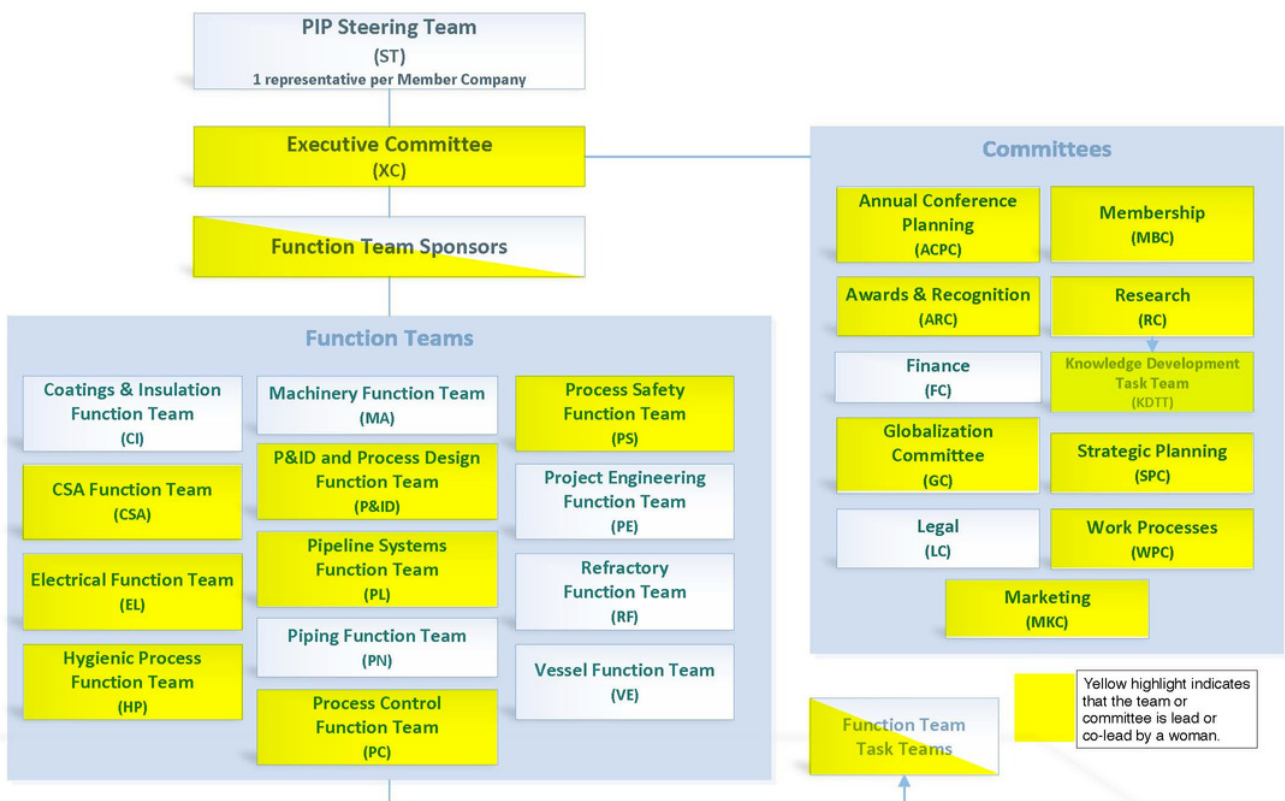
Offer More Flexibility to be More Globally Inclusive

PIP Practices are not just used in the United States, but globally. As such, PIP includes global volunteers. However, attendance to certain PIP activities can be a challenge for those residing outside of Texas. One interviewee noted that PIP could “become a bit more flexible with their model and how they work” to better accommodate those participating from outside the Houston area – especially as the organization expands outside the United States.

Appendix A: PIP Organization Chart

Each Member Company has one volunteer serving on the PIP Steering Team. At least one other volunteer must serve on either a Function Team or a Committee. Highlighted areas in the organization chart indicate the Function Teams and Committees that are led or co-led by women. Note that Function Team Sponsors are different from the Function Team Leaders and while not highlighted, a few of the Sponsors are currently women.

PIP Organizational Chart



About SWE



The Society of Women Engineers (SWE), founded in 1950, is the world's largest advocate and catalyst for change for women in engineering and technology. The not-for-profit educational and service organization is the driving force that establishes engineering as a highly desirable career aspiration for women.

To ensure SWE members reach their full potential as engineers and leaders, the Society offers unique opportunities to network, provides professional development, shapes public policy and provides recognition for the life-changing contributions and achievements of women engineers. As a champion of diversity, SWE empowers women to succeed and advance in their personal and professional lives.

The recommendations made in this report may not reflect the views of the individual participants or PIP leadership, except as specifically ascribed.

