## GET CITIES

A GET Cities Report, 2023

# TECHNOLOGIST RETENTION AT THE INTERSECTIONS

**WHY PEOPLE ACROSS VARIOUS OR MULTIPLE RACIAL AND GENDER IDENTITIES STAY IN THEIR ROLES, JOB HOP, OR LEAVE THE TECH INDUSTRY**

### Author:

Serwah (Rose) Afriyie, GET Cities
Entrepreneur-in-Residence

### Contributing Analysts:

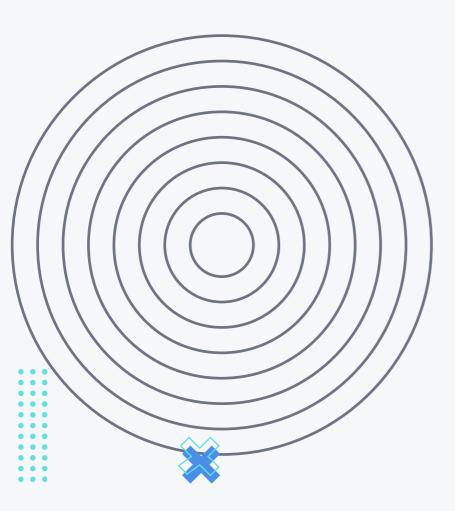Taylor Wilson, Valeria Lagos, Sneha Verma, Dan Kheloussi and Tom Wilseck

# PARTNERS

Technologist Retention
at the Intersections

# DESIGN PARTNERS

GET
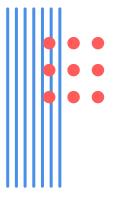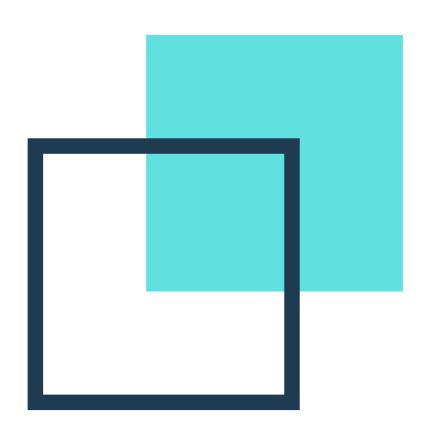CITIES

GET Cities is an initiative designed to accelerate the representation and leadership of women, transgender, nonbinary, and genderqueer people in tech through the development of inclusive tech hubs across the United States. Launched in 2020, GET Cities is led by SecondMuse Foundation and Break Through Tech, in partnership with Pivotal Ventures, the investment and incubation company created by Melinda French Gates. Now in Chicago, the DC Metro Area, and Miami, GET Cities leverages collaboration across its national ecosystem of city hubs to drive positive social and economic change.

**DataKind**

DataKind brings high-impact organizations together with leading data scientists to use data science in the service of humanity. From one-hour events to year-long engagements, DataKind designs programs that enable data scientists and social changemakers to address tough humanitarian challenges together. Their work involves assisting organizations in developing evidence-based decision-making, increasing efficiency, and enhancing their data literacy. It also introduces data scientists to the Data-for-Good movement and shows them how valuable their skills can be. DataKind envisions a world where organizations tackling issues ranging from sustainability to ensuring access to basic human needs have the same access to data science resources that Wall St. and Silicon Valley have. Data scientists in DataKind's network based in the Chicagoland area and the District of Columbia analyzed this study.

Technologist Retention
at the Intersections

# ENGAGEMENT PARTNERS

Technologist Retention
at the Intersections

The Chicago Tech Survey is a community initiative to understand the experiences of women, transgender, nonbinary, and genderqueer (WTGN) Technologists in the Chicagoland area. Together, the following partners distributed the survey throughout their membership organizations or made it possible for GET Cities Chicago to reach historically marginalized technologists in the Chicagoland area.

**The National Society of Black Engineers (NSBE)** is one of the largest student-governed organizations based in the United States. NSBE, founded in 1975, supports and promotes the aspirations of collegiate and precollegiate students and technical professionals in engineering and technology. With more than 1600 members in Chicago, NSBE's mission is "to increase the number of culturally responsible black engineers who excel academically, succeed professionally and positively impact the community."

**Latinas in Tech** is a non-profit organization with the mission to connect, support and empower Latina women working in technology. Today, the group is comprised of more than 22,000 women globally, representing more than 35 countries, working at more than 300 technology companies. With more than 900 women from Latin America/Brazil/Spain in the Latinas in Chicago Facebook group, Latinas in Tech Chicago connects and supports the professional career growth of Latinas in the Chicago area.
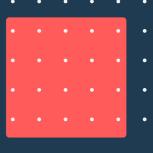
**The Society of Hispanic Professional Engineers (SHPE)** has a mission to change lives by empowering the Hispanic community to realize its fullest potential and to impact the world through STEM awareness, access, support and development.

**Muslim Women in Technology** aims to create a network for current and future female leaders across all industries by developing connections, learning together, and sharing opportunities for career advancement. Their vision is to support, empower, and increase the confidence of Muslim women and other marginalized groups in a tech-centric world.

**Out in Tech** is the world's largest non-profit community of LGBTQ+ tech leaders. We create opportunities for our 40,000 members to advance their careers, grow their networks, and leverage tech for social change.

**UserTesting.com** is a company that believes that the path to human understanding starts with shared insight— seeing and hearing how another person engages with the world around them and taking in their perspective. UserTesting's One World Program helps charitable organizations dedicated to humanitarian and inequality related causes increase their impact through free user tests, support and resources.

Together this effort was undertaken to try to understand what lessons we might learn from technologists about what it has been like to work in the Chicagoland area in the Covid era.

Engagement Partners

# EXECUTIVE SUMMARY

**The Chicagoland area is a place where findings show that women, transgender, and nonbinary technologists stay in the field of technology.**
• Retention rates in the field are as high as 93.1 percent.
• Role retention rates are 68 percent.

**Top drivers of field retention are as follows:**
• Compensation - 67.7 percent of all respondents cited compensation as a reason for staying in tech.
• Advancement - 65.3 percent cited advancement for why they stay in tech.
• Management - 88.7 percent of people who stay in their role report that they work well with their manager.

**Race and gender can impact retention rates.**
• Black technologists are retained in their role at a rate of 67.9 percent compared to 71 percent of white technologists.
• Transgender, nonbinary and genderqueer respondents stay in their role at a rate of 71.7 percent compared to 73 percent of cisgender women technologists.

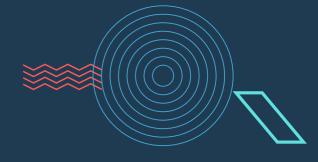**Despite high retention, there are other growth opportunities in the field:**
• A considerably lower percentage (51 percent) report a positive experience in the tech field.
• 33.6 percent of technologists who plan to stay in the fielddo not have someone with whom they can strategize their next promotion.

**Amid this era of recession and pandemic, key recommendations include:**
• **Mentorship to support promotions**
• **Management resources to enable good working relationships between managers and reports**
• **Bring an intersectional lens to data collection**

**Note:** With regard to gender, this study is centered on women, transgender, genderqueer and nonbinary technologists. We did not analyze a control groupof men alongside this effort and hope to explore a more in-depth analysis in future work.

Technologist Retention
at the Intersections

# CONTENTS

# DEMOGRAPHICS OF PARTICIPANTS.01

Technologist Retention
at the Intersections

GET Cities Chicago created and disseminated a survey to understand the experiences of women, transgender, genderqueer and nonbinary technologists in the Chicagoland area. We separated the 406 respondents by categories of the aforementioned genders, race (Exhibit A), parental status, and employment status. We further divided the analysis by individuals planning to stay and exit their roles and the technology field altogether.

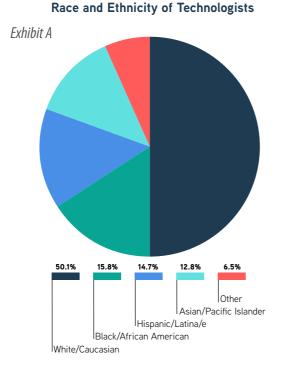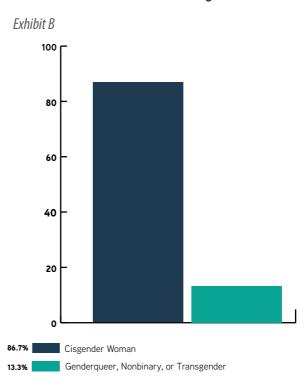For much of our analysis, we divided the survey respondents into either cisgender women or those who are genderqueer, nonbinary, or transgender (Exhibit B) Survey results indicated that 86.7 percent of respondents (or 352 people) were cisgender, and 13.3 percent (or 54 people) identified as nonbinary, genderqueer, or transgender and other gender minorities.

**While previous studies have had less gender diversity in their sample, we achieved this through conducting a survey in partnership with organizations such as Out in Tech and Usertesting.com**

**Demographics of Participants**

**Race and Ethnicity of Technologists**

*Exhibit A*
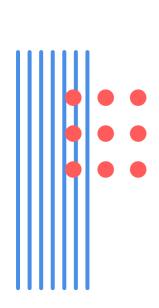
**Gender of Technologists**

*Exhibit B*

| | | |
|---|---|---|
| 50.1% | White/Caucasian | |
| 15.8% | Black/African American | |
| 14.7% | Hispanic/Latina/e | |
| 12.8% | Asian/Pacific Islander | |
| 6.5% | Other | |

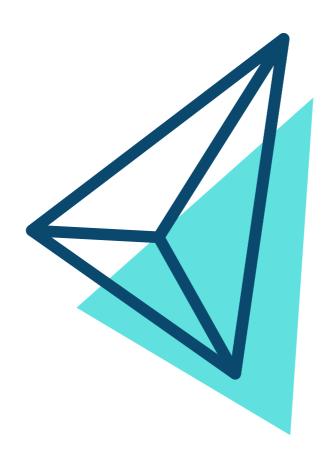| | |
|---|---|
| 86.7% | Cisgender Woman |
| 13.3% | Genderqueer, Nonbinary, or Transgender |

# A STORY OF RETENTION IN CHICAGO.02

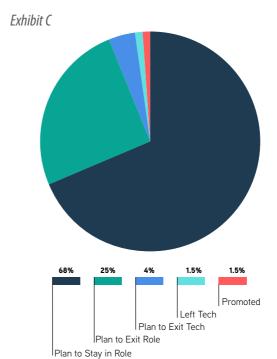Technologist Retention
at the Intersections

# 93.1 PERCENT OF WOMEN, TRANSGENDER, NONBINARY & GENDERQUEER TECHNOLOGISTS STAY IN TECH

The Chicagoland area has had some successes regarding the retention of women, transgender, nonbinary, and genderqueer (WTNG) people in the technology field. Overall, findings from the report show a 93.1 percent planned retention rate in the technology field among this demographic.

A smaller percentage, 1.5 percent, was promoted to another role where they do not use design, science, engineering, or math daily. Another 1.5 percent left technology altogether.

However, 25.12 percent of respondents plan to exit their role, and 3.94 percent of technologists plan to transition from the field altogether (Exhibit C).

**A Story of Retention in Chicago**

**POLL**

Plan to Stay in the Field

0          50          100

Plan to Stay in their Role

0          50          100

**93.1%** of Chicago women, transgender, genderqueer, and nonbinary technologists plan to stay in the field over the next 12 months and **68%** of technologists in these demographics plan to stay in their roles.

**Retention**

*Exhibit C*



| 68% | 25% | 4% | 1.5% | 1.5% |
|-----|-----|-----|------|------|

Plan to Stay in Role
Plan to Exit Role
Plan to Exit Tech
Left Tech
Promoted

There was a significant difference in role retention among parents and non-parents. Parents have a role retention rate of 80.9 percent compared to non-parents, who have a role retention rate of 70.4 percent.

There were also differences in role retention when considering race. Asian and Latina/e technologists are more likely to stay in their roles than their white counterparts, with 77.6 percent and 78.6 percent retention rates, respectively.

Black technologists had the lowest role retention rates at 67.9 percent compared to 71 percent among white technologists.



**77.6%**
of Asian technologists

**78.6%**
of Latina/e technologists

**71%**
of white technologists

**67.9%**
of Black technologists

Compared to **71%** of white technologists, **78.6%** of Latina/e technologists and **77.6%** of Asian technologists who are women, transgender, nonbinary and/or genderqueer plan to stay in their roles over the next 12 months.

A Story of
Retention in Chicago

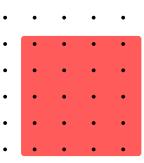Technologist Retention
at the Intersections

Black technologists of all surveyed genders stay in their role less than all other group at **67.9%**.

Overall, cisgender women technologists had a role retention rate of 73 percent compared to 71.7 percent among those who identified as nonbinary, genderqueer, transgender or other. However, it is worth noting that those who identified exclusively as men were not included in the analysis.

**In future work, the disproportionate retention of parents compared to non-parents, white technologists compared to Black technologists, and between cisgender technologists and other historically marginalized genders merits further exploration.**
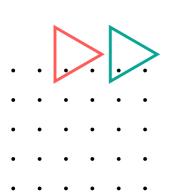
# WHY DO TECHNOLOGISTS STAY? .03

Technologist Retention
at the Intersections

# WHY DO MARGINALIZED TECHNOLOGISTS STAY IN THEIR ROLE AND THE FIELD?

## THE MOST CITED REASON IS COMPENSATION.

Compensation was selected the most by technologists who were asked, "Which of the following factors contribute to your current decision to stay in technology?" More than two-thirds or 67.7 percent of all respondents cited compensation as a reason, and compensation was most frequently selected at a rate of 23.6 percent of all answers given by technologists for why they plan to stay in the field.

Compensation was followed by "advancement in your role", which had a frequency rate of 22.8 percent. Advancement was selected by 65.3 percent of respondents who reported that they would stay in their roles. Management support was the third most selected on the list at a frequency rate of 14.7 percent out of respondents. Management was selected by 42.1 percent of those who chose to stay (Exhibit D).
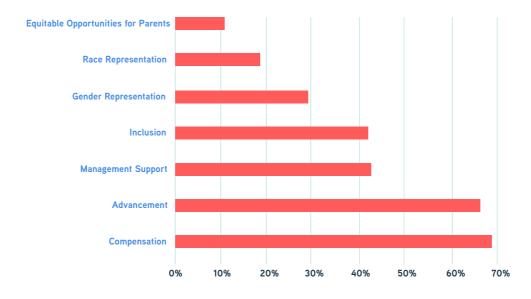
**Percent of Respondents who listed a Particular Reason to Stay in Technology**

*Exhibit D*



Technologist Retention at the Intersections

Similar trends hold for compensation and advancement when we tabulate exclusively technologists who plan to stay in their roles. In this case, compensation had a 22.7 percent frequency rate, and advancement had a 22.1 percent rate.

However, one difference between those who stay in their roles and those who leave is that "Inclusion at your workplace" was ranked third and had a frequency rate of 16.1 percent and 46.7 percent of respondents who planned to stay in their role selected inclusion as a reason they stay.

Why Do
Technologists Stay?

Technologist Retention
at the Intersections

# INTERSECTIONAL LENS .04

Technologist Retention
at the Intersections

# WHY DO WOMEN, TRANSGENDER, NONBINARY, & GENDERQUEER TECHNOLOGISTS OF COLOR STAY?

## ADVANCEMENT AND COMPENSATION LEADING REASONS

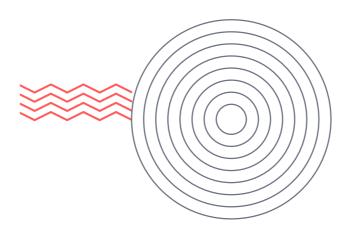Compensation is not equally ranked, and race impacts whether it is the most important.

**While compensation and advancement are leading factors that drive role retention, there are key nuances behind why technologists of color stay.**

Advancement and compensation are tied first for Black technologists, with a 19.4 percent frequency rate.

These lead factors contribute to their retention in the field. Inclusion and management support at a 15.7 percent frequency rate tied as second for Black technologists. For Latina/e technologists, advancement ranks first at a 21.6 percent frequency rate among respondents as a factor for why they stay in the field. However, compensation is slightly behind advancement for this group at a frequency rate of 20.9 percent. Advancement ranks slightly higher for Asian technologists at a 22.1 percent frequency rate as a factor for retention, and compensation has a 20.6 percent selection rate.
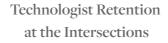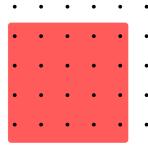
Intersectional Lens

Technologist Retention
at the Intersections

# NEW INSIGHTS ON COMPENSATION AND MANAGEMENT.05

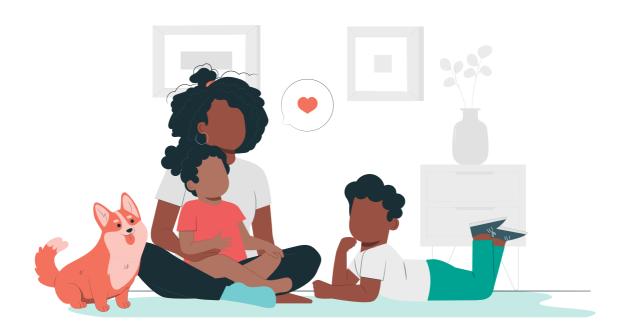Technologist Retention
at the Intersections

# ROLE OF PARENTING ON COMPENSATION SATISFACTION

A new insight from this analysis is the extent to which compensation correlates with retention among parents. When considering compensation satisfaction, 71.3 percent of parents who plan to stay in their role strongly agree or agree that they are satisfied with their compensation compared to 65.2 percent of all technologists who plan to stay in their roles.

Two-thirds or **66.66%** of respondents who are staying in technology cited compensation as a reason. **Seventy percent** of parents who stay strongly agree or agree that they are satisfied with compensation compared to **65.2%** of all technologists who plan to stay in their jobs.

**New Insights on Compensation & Management**

## INCREASED COMPENSATION THROUGH JOB HOPPING

We gain additional insights about compensation when considering where increases come from. We asked technologists in the Chicagoland area: "The last time you saw an increase in your compensation at work, where did it come from?" Among full-time technologists, they were most likely to report a raise as the number one source of an increase in compensation, with 36.9 percent reporting a raise.

**The second leading source of increase in compensation was switching a role, reported by 20.9 percent of these technologists. Both raises and switching were higher sources than promotions, bonuses, and other sources of increase.**
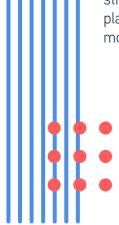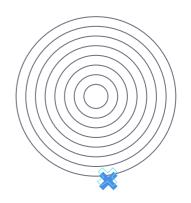
## IMPORTANCE OF RELATIONSHIPS

Another key insight from the analysis was the importance of relationships between technologists and their managers and how this is correlated with retention. Technologists were asked to indicate their level of agreement with the statement, "My manager and I have a good working relationship." Results showed that 88.7 percent of technologists who agreed or strongly agreed with this statement also plan to stay in their role for the next 12 months.

**The *only* thing that has kept me working for the company is actually my relationship with my manager, because he greatly respects me (while some of my other coworkers on my level do not), and he understands work/life balance and helps in that realm a lot.**

**A Data Analyst in Chicago**

New Insights on
Compensation & Management

Thus, if a technologist stays in their role, there is an 88.7 percent chance they have a good working relationship with their manager. Conversely, those who indicate they plan to leave their role like their manager 22.6 percent less than those who stay with 66.1 percent of technologists reporting that they agreed or strongly agreed that they had a good working relationship with their manager.

**I currently have a manager that I am not the biggest fan of so I know that I will probably not stay there forever if my compensation does not go up significantly.**

**A Senior Graphic Designer in Chicago**

New Insights on
Compensation & Management
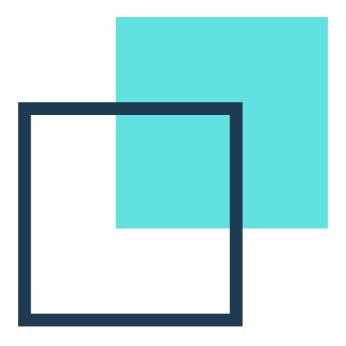
If you are staying in your role, there is an 88.7% chance you and your manager have a good working relationship.

Technologist Retention
at the Intersections

# WHY DO SOME TECHNOLOGISTS LEAVE? .06

Technologist Retention
at the Intersections

# WHY DO MARGINALIZED TECHNOLOGISTS LEAVE?

## COMPENSATION, MANAGEMENT, AND LACK OF REMOTE WORK

Our survey only had 16 technologists, or 3.9% of our respondents, who reported that they were planning to leave the field. However, their experiences in the field are worthy of mention. Compensation was the most selected response, with a frequency of 22 percent, and 50 percent of technologists in the sample cited this. Management support immediately followed this with a frequency rate of 19.4 percent and 43.7 percent of technologists mention this.

## We also asked these technologists:

**"What would have stopped you from transitioning out of technology?"**

- The option to work remotely (32%)
- Increased benefits/policy transparency (24%)

Technologist Retention
at the Intersections

In addition, the concept of "worth" came up for multiple technologists who plan to leave when technologists in this group were asked to share their overall experiences in the technology field.
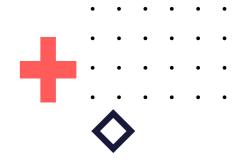
I think most people expect to deal with a man or expect men to be more proficient with technology and math, so often times I feel like I have to prove my worth and skills.
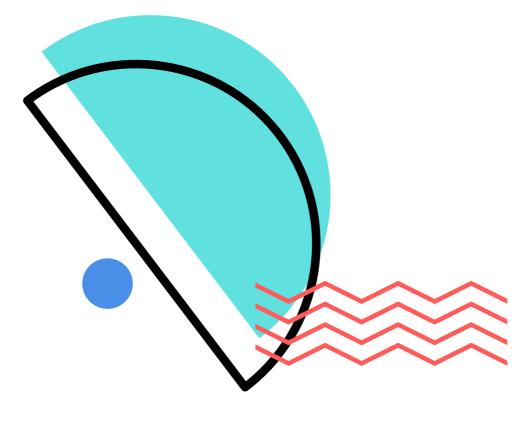
**A Data Analyst in Chicago**

# CHURN RISK FACTORS.07

Technologist Retention
at the Intersections
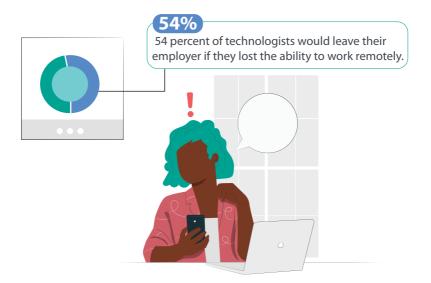
# LOSING REMOTE WORK

We define churn as an event where a technologist leaves the sector. While an overwhelming majority of technologists (93.1 percent) report plans to stay in the field, the study also revealed some potential risks to retention in other areas. Of full-time technologists working remotely or in a hybrid capacity, 54 percent of technologists would leave their employer if they lost the ability to work remotely.

**54%**
54 percent of technologists would leave their employer if they lost the ability to work remotely.

## NOTABLE HEALTH BENEFITS

Another notable area of mention is healthcare. A 2018 national study by Indeed[1] cited that health insurance was the most crucial benefit to women in tech (37 percent). Our study chose to explore further which health benefits were the most important.

Another question on our survey was: Which of the following are the most important healthcare-related benefits in the workplace?
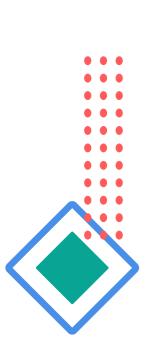
**The top three benefits included**

• having 100% of my plan covered by my employer (31.6 percent frequency)
• comprehensive plan options spanning vision, dental, and overall healthcare (22.9 percent frequency)
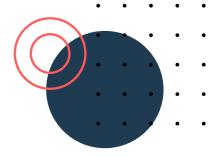• diverse options for PPO plans (13.3 percent frequency)

Churn
Risk Factors

# RETENTION VS POSITIVE EXPERIENCE .08

Technologist Retention
at the Intersections

# RETENTION VS POSITIVE EXPERIENCE

**93.1 PERCENT STAY IN THE FIELD, BUT 51 PERCENT REPORT POSITIVE EXPERIENCES.**

Despite retention, there is a significant gap between those who choose to stay in their roles (68 percent) and those who have a positive experience (51 percent). From the analysis, we can see the majority of the data is presented as positive or slightly positive.

**The three most positive responses, according to sentiment analysis, are as follows:**

## 01

"Very positive for the most part. The people in my department are very supportive and treat me like any other person. Of course, there are a few who don't see me as an equal because I am not a man, but **for the most part, everyone else is very supportive and treats me the same way I treat others with kindness and respect.**"

## 02

"It has always been complicated to be accepted in the technology field if you do not identify with the traditional genders but I am happy to say that since I started working in my actual company everything has been great, **everyone is very respectful and I believe that the values of the organization have a lot to do with that.**"

## 03

"Yes, it's overall been a good experience. I haven't really been in any work environments that I've felt discriminated against based on my gender. **I've felt like I've had great opportunities to learn and present my work with helpful feedback and encouragement.**"

**The three most negative responses, according to sentiment analysis, are as follows:**

## 01

"I do not work in the tech field, but I work in the science field, and I am extremely outnumbered by men. **I often feel intimidated and undervalued by the men I work with.**"

## 02

"A lot of the stereotypes are simultaneously true and false. As a more senior tech employee, I don't face as much peer discrimination. However, during meetings **I am frequently spoken over or my thoughts are ignored. During code reviews or other "hard" tech engagements, I'm taken seriously, but during 1:1 many conversations I feel my voice is often lost in the background unless I am uncomfortably, overly assertive.**"

## 03

"I would say not terrible as a straight woman of color. No one has treated me any different or has actively been rude recently. In the past I have experienced mild sexual harassments, mild racism. **Since I have graduated from college I have yet to work with a female engineer.**"

*Retention vs Positive Experience*

Despite the favorable insights of a 93.1 percent field retention rate and a 68 percent role retention rate, additional indicators point to some challenges.

We selected all the answers that contain the word "positive" and "experience"

together and created a bag of words to visualize which words are frequent in answers that contain those two words. There are trends of the following words being used together: "women", "female", "treated", "opportunities", and "respectful."

**Three notable positive responses are as follows:**

• I've learned tons since starting out in the field
• Generally, fairly positive
• My overall experience has been very positive and inclusive as a woman

**Three notable negative responses are as follows:**

• I feel my voice is often lost in the background
• I have to work triply as hard as everyone else to prove myself
• I feel like people disregard me or my opinion before even knowing me

*Retention vs Positive Experience*

*Exhibit E*



*Exhibit F*
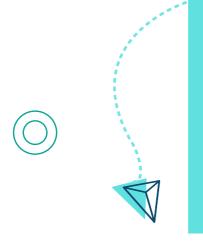
Further analysis of word pairs showed that those who used "discrimination" in their answers also included words like "uncomfortably" and "lost," which can be related to negative experiences. Finally, "hard" and "experience" are also shown as patterns among negative answers to the question, "What has your overall experience been in the technology field as a woman, trans, nonbinary person or [person] of another gender?"

**The most common pairs of words were as follows:**

- "felt discriminated", "feel intimidated", "feel respected"
- "taken seriously"
- "positive experience", "good experience"
- "sexual harassment"
- "treated differently"
- "work harder"

Retention vs Positive Experience

*Exhibit G & H*



Technologist Retention
at the Intersections

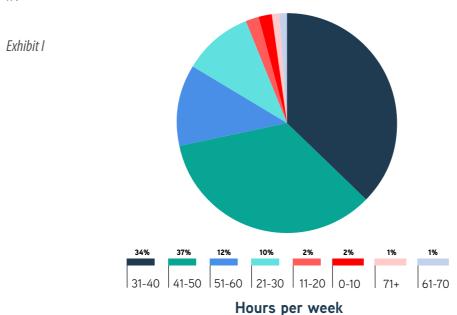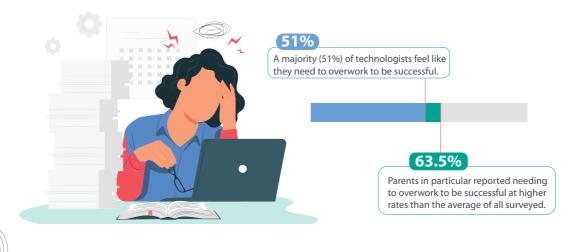One notable insight is the percentage of technologists who report they need to work more than 40 hours to be successful. Technologists were asked: "On average, how many hours do you think you have to work each week to be successful at your role?" A majority (51 percent) of technologists feel like they need to work more than 40 hours to be successful. Hours in the range of 41-50 had the highest frequency in the survey at 36.5 percent. Still, this was followed by 12.1 percent in the 51-60 hours range (Exhibit I).

*Exhibit I*



| 34% | 37% | 12% | 10% | 2% | 2% | 1% | 1% |
|-----|-----|-----|-----|-----|-----|-----|-----|
| 31-40 | 41-50 | 51-60 | 21-30 | 11-20 | 0-10 | 71+ | 61-70 |

**Hours per week**

Technologists who were parents were more likely to attribute hours greater than 40 with success at work, with 63.5 percent of frequencies associated with hours in the range of 41-60.



**51%**
A majority (51%) of technologists feel like they need to overwork to be successful.

**63.5%**
Parents in particular reported needing to overwork to be successful at higher rates than the average of all surveyed.

Technologist Retention
at the Intersections

*Retention vs
Positive Experience*

31

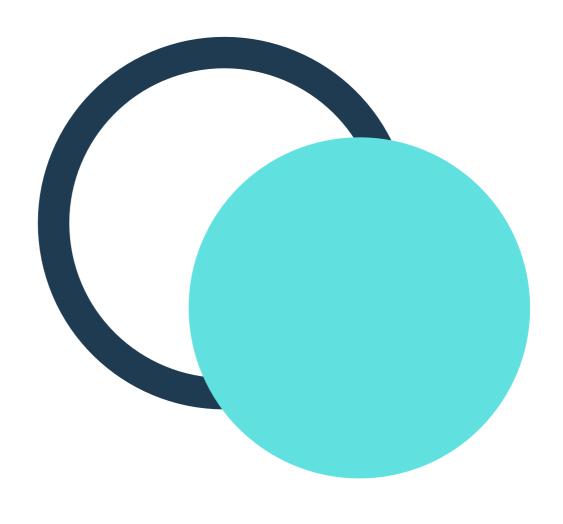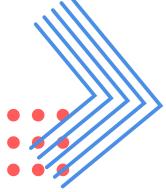# RECOMMENDATIONS.09

Technologist Retention
at the Intersections

# RECOMMENDATIONS & POTENTIAL MENTORSHIP NEEDS

## AFFINITY GROUP INVESTMENT, ADVANCING BEST PRACTICES IN MANAGEMENT, AND BRINGING INTERSECTIONALITY TO DATA COLLECTION



### PROMOTION STRATEGY AND PLANNING

Two groups that have a particularly high need for additional support in having someone they trust to help them develop a plan for promotion are Latina/e technologists and technologists who are transgender, genderqueer, and/or nonbinary. 38.6 percent of Latina/e technologists and 51% of transgender, genderqueer, or nonbinary technologists reported not having someone they trust to help them get promoted, which suggests an opportunity for more targeted mentor outreach to support these demographics of technologists.

For Latina/e technologists
38.6% do not have someone they can trust to help them get promoted, compared to 34.9 % of white technologists.

**When considering technologists who are transgender, genderqueer, and/or nonbinary, an alarming majority (51 percent of 49 respondents) do not have someone they can trust to help them develop a plan to get promoted.**

Recommendations

## AFFINITY GROUP INVESTMENT FOR RETENTION & ADVANCEMENT

One positive area to highlight is the impact that technology affinity groups have in supporting technologists in the field. 76 percent of technologists who plan to stay in the field have someone they trust that can give them career advice. Respondents associated with affinity groups were more likely to have someone they trusted that can field career decisions, with 81 percent of technologists in this group having this person in their network. This represents an important area for continued investment as these same groups can be mobilized to support the promotion outcomes of marginalized technologists.

## HIRING AND RE-ENTRY EFFORTS FOR EMPLOYERS

Additionally, there is a case for focusing on hiring to ensure that the 102 technologists who plan to leave their roles in 12 months, but not the industry, do not ultimately end up abandoning tech for lack of good options. In addition, 50 percent of the 16 technologists who left the field answered yes to the following question:

**"Would you consider working with a mentor to help you develop a plan to stay in the technology field on different terms?"**

These are important areas for programming to support technologists returning to the field and to support technologists who want to be hired in technology in a different capacity.

Recommendations

## MORE SUPPORT NEEDED FOR UNDERESTIMATED MID-CAREER WOMEN

Further, mid-career women, transgender, genderqueer, and nonbinary technologists are least satisfied with the advancement opportunities available, with 54 percent reporting satisfaction, compared to 57 percent of entry-level technologists, 64.5 percent of senior technologists, and 66.7 percent of intermediate technologists.
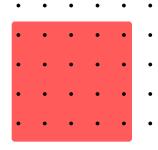
AnitaB.org's landmark study in 2008 was the first to spotlight the challenges faced by this demographic when they highlighted that 56 percent of mid-career women in high-tech companies leave their organizations at this point. Fourteen years later, efforts must continue to support this demographic of women, as well as transgender, genderqueer, and nonbinary technologists.



When you are affiliated with a community based organization that supports technologists you are **81%** likely to have someone you trust to soundboard career decisions, which is **5%** more technologists who were referred to our survey from channels that were not affiliated with affinity groups that support technologists.

Technologist Retention
at the Intersections

Recommendations

# RECOMMENDATIONS FOR THE INDUSTRY

As of December 9, 2022, there have been an estimated 147,444 layoffs in the technology sector.[2]

Layoffs in the tech industry combined with a possible pending recession may pose challenges in changing compensation in the near term. But investors can play a role in empowering companies to provide equitable compensation by encouraging a census of salary and promoting equity among leaders of companies in their portfolio.

## BRING AN INTERSECTIONAL LENS TO DATA COLLECTION

One of the key recommendations that came out of these insights is the need for an intersectional analysis in data collection when considering the identity markers of those in the tech workforce. Intersectionality, first theorized by Kimberlé Crenshaw, is a concept that calls us to focus on those who are "multiply burdened," or those who have faced discrimination on the basis of not just gender or race but the overlapping identities of the two[3].

Currently the trend within company demographic reports and citywide surveys on tech workforces is to publish demographics on race and gender as mutually exclusive categories. Further, very few workforce reports are emphasizing the diversity of gender within technology.  Our data shows the differences in experience for people across various or multiple racial and gender identities have with regard to retention. For example, we highlighted key differences in the experiences of women, trans, genderqueer, and nonbinary technologists when considering needs around promotion strategy. This lack of data collection is a missed opportunity within organizations to tailor employee retention and satisfaction initiatives to the unique needs of employees that have overlapping identities. Similar to the hazard pointed out by Crenshaw in anti-discrimination law, the "single-axis framework" that prevails in annual tech workforce surveys makes the tech field in danger of erasing groups at the intersections of multiple identities, like Black women who have the lowest retention rates of all of our respondents.

Recommendations

Technologist Retention
at the Intersections

36

In technology what gets managed or addressed, must first be measured. Removing technologists at the intersections from how we formulate problem statements about diversity and inclusion means that our solutions will always be insufficient at remediating these challenges.
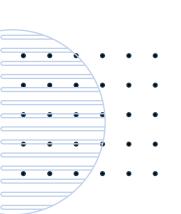
We call on organizations to collect and make public the overlapping identities of technologists in their workforce as well as to go beyond the gender binary in their annual census.
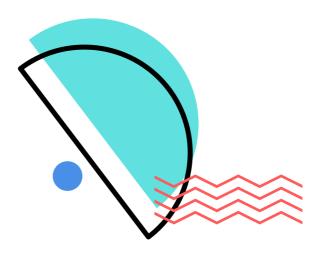
## OVERALL RECOMMENDATIONS ━━

Managers should also consider the following resources when fostering good working relationships, which are correlated with retention. LifeLabs Learning and The Management Center have been notable resources. The Management Center[4] has a plethora of free resources on its website and the Harvard Business Review also maintains a directory of notable resources on management.[5]

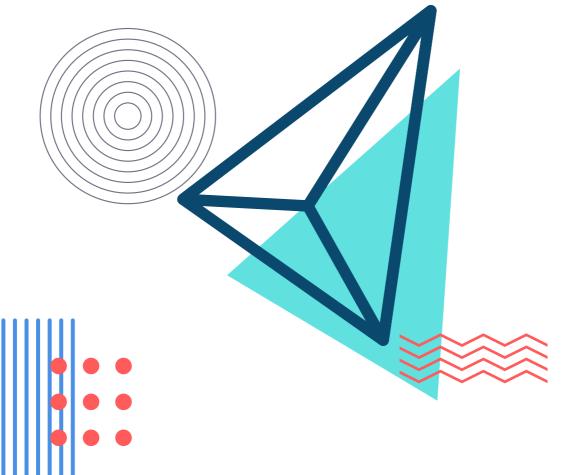In our assessment, efforts would be best spent:
**1. empowering affinity groups to carry out effective hiring and promotion strategies,**
**2. advancing best practices in management, and**
**3. bringing an intersectional lens to data collection.**

Recommendations
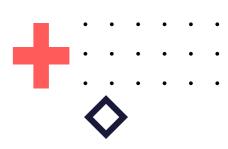
Technologist Retention
at the Intersections

37

# APPENDIX.10

Appendix

Technologist Retention
at the Intersections

# BACKGROUND: REVIEW OF LITERATURE

## BACKGROUND ON CHURN AND RETENTION

Across an array of almost a dozen studies, the range of women who exited technology is as low as 11.3 percent of women[6] and as high as 41 percent of attrition of women[7] in studies where technology is represented among sectors surveyed. Overall, the most comprehensive dataset shows that the net result has shown that after climbing annually since March 2018, 2021 resulted in 18.2 percent fewer tech women being brought into technology organizations this year.[6]

Only 4 of 54 companies provided data on nonbinary employees (and data was not collected on people who were genderqueer or transgender). Of the technical personnel who identify as nonbinary:
• 1.9 percent are interns
• 65.3 percent are white, 10.4 percent are Black, and 4.2 percent are Latina/e[6]

Another study on technologists showed that 83 percent of Lesbian, Bisexual, and Transgender women in more inclusive cultures say they love their jobs, compared with just 35 percent of their peers working in less inclusive organizations.[8]

Another analysis showed that 46% of LGBTQIA+ workers reported receiving unfair treatment at some point in their careers because of their sexual orientation or gender identity. This included but was not limited to: being fired, harassment at work, denial of a promotion or raise, and exclusion from company events. This same study shows that LGBTQIA+ employees of color were more likely to report harassment and being denied jobs.[9]

Considering women of color, representation of Black and Latina/e women in leadership is higher for companies that provide childcare support. According to the AnitaB.org Institute for Women[6], which analyzed 56 companies with small to large technical workforces, 87.3 percent of companies offer caregiving support as a benefit to their technical employees, with backup childcare being the most frequently provided benefit. In turn, 69.6 percent of companies provide two or more supports and those that do have a significantly higher representation of Asian, Black, and Latina/e technical women.

## MOTIVATIONS BEHIND TRANSITIONING OUT OF TECHNOLOGY

Much of the national data revealed insights behind these transitions, which primarily focused on a lack of advancement and inclusion, poor management, issues with compensation, a lack of diverse representation, and parenting challenges. In the arena of advancement, women technologists cited a lack of opportunities for advancement (52 percent).[10]

Inclusion or the culture of inclusion at a company was a motivating factor behind ones' transition out of technology. "Poor company culture" accounts for 37 percent of churn; the likelihood of women leaving technology in "less-inclusive" workplace culture is 21 percent compared to 1 percent of

Technologist Retention
at the Intersections

churn in "more inclusive" work cultures[8]. Earlier studies on this score showed that 32 percent of women in the US were likely to quit within a year and cited: hostile macho cultures[11].

Additional factors that caused women to consider leaving their technology careers were "weak management support" (23 percent) and "little support from management" (22 percent)[12]. Earlier studies also pointed to poor management as the second most common reason for leaving (25 percent)[1]. Slow salary growth has also been reported as a common reason among technologists for leaving at 24 percent.[1]

## OVERALL CHALLENGES IN THE TECH SECTOR

The "pay gap" was listed in the top five challenges for women in technology[10]. Another challenge was a lack of women role models reported by 48 percent of women in previous studies[10], and 38 percent claimed a lack of women in the tech industry makes them wary of entering the sector[13]. Further, modeling showed that 385,000 more women would be retained if there was a Parental Leave policy[8]. Additionally, 28 percent believe they've been passed up for a promotion because they are a parent or have another family responsibility[1].

### ◊ SURVEY METHODOLOGY

In Q1 2022 - we began a review of literature focusing on women, transgender, nonbinary and genderqueer technologists in the technology field.
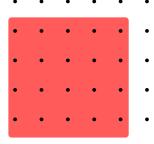Q2 2022 - Q3 2022
• In March, we focused on establishing distribution partners and designing our surveys in partnership with Latinas in Tech Chicago and NSBE Chicago.

Together, we developed the survey to understand why technologists leave or stay in the field.
• In partnership with the Chicagoland Chamber of Commerce and using an interactive approach to finalizing this data by benchmarking it against LinkedIn Marketing data, we set parameters on which technologists were of interest by allowing technologists to identify with one of the following jobs:

» Chief Technical Officer, Chief Information Officer (CIO), Computer & Information Research Scientist, Computer & Information Systems Manager, Computer Hardware Engineer, Computer Machine Repairs, Computer Network Architect, Computer Programmer, Computer Scientist, Computer support specialist, Computer Systems Administrator, Computer Systems Analyst Cybersecurity, Data Analyst, Data Scientist, Database Administrator, Database Architect, Digital interface Designer, Graphic Designer, Information Research Scientist, Information Security Analyst, IT Manager, IT Project Manager, IT Support Specialist, Network administrator, Network Architect, Network Support Specialist, Operations Research Analyst, Product Designer, Product Manager, Senior Product Designer, Senior Product Manager, Senior UI Designer, Senior User Experience Designer, Senior Visual Designer, Software Developer, Software QA, Software Quality Assurance Analyst, Systems Administrator, Systems Analyst, Systems Engineer, UI Designer, User Experience Designer, Visual Designer Web Developer, and Other. People in the "Other" category were asked to confirm whether they are currently or were previously in a technical role in which they use design, science, engineering, or math on a daily basis.

• Through these efforts, we ultimately forged partnerships with an array of affinity organizations that convene underrepresented technologists: Latinas in Tech Chicago, NSBE Chicago, Society of Women Engineers in Chicago (SWE), Out in Tech Chicago, Muslim Women in Technology, Society of Hispanic

Appendix

Professional Engineers in Chicago, and Muslim Women in Technology. Each organization distributed the survey throughout their membership listservs.

• In addition to affinity organizations that convene underrepresented technologists, we partnered with the UserTesting One World Program. Also, we ran ads on Facebook, LinkedIn, and on Google.

• In March, we conducted five respondent interviews to revise all survey questions for clarity and used an iterative process to finalize our questions.

• To determine our sample size, we analyzed newly released studies including one citing 37,000 Chicago area technologists[14] who are women and another national study[6] citing 1.5% of technologists are Latina and 1.7% of Black technologists are women. After using Geo Poll[15] to project a reasonable threshold to begin the analysis, it showed that using 37,000 as the population size for women in technology at a 95% confidence level with a confidence interval of 5 gave a sample size of 380. Thus, we strived to get as many survey respondents as possible with an eye toward reaching 380 surveys completed to achieve a 95% confidence level. We achieved 406 after deduplication and removing survey respondents outside of the demographic of women and gender groups underrepresented in technology.

• In April, we began the distribution of the survey. Due to reCAPTCHA issues, we had to verify 13 of the 406 responses on LinkedIn and through distribution partners. However, all other respondents were not impacted. Two were also the source of re-engaging respondents who started the survey but did not complete it.

• Our qualitative responses were sourced entirely from Usertesting.com, and we successfully matched 177 to our quantitative dataset.

• In August, we identified DataKind as our analysis partner to synthesize data results.

◊ In Q4, DataKind began analysis utilizing the DataDive method of sourcing data scientists within their community to analyze the data. Taylor Wilson, one notable Data Scientist volunteer in their network, did a substantial analysis in python. They also employed the Valence Aware Dictionary for Sentiment Reasoning (VADER) analysis for all qualitative responses.

Using a Valence Aware Dictionary for Sentiment Reasoning (VADER) analysis with a tool commonly used for evaluating the sentiment of human-expressed language in social media and other online domains we assessed responses to the question: "What has your overall experience been in the technology field as a woman, trans, genderqueer, or nonbinary person?" We had a total of 177 respondents who shared feedback on this score. The VADER analysis considers a wide range of English language nuances, including punctuation differentiation (e.g., I love it vs I love it!!), augmentation words, and superlative language. We used this model to parse and classify human responses to survey questions based on sentiment. Then we utilized the method of analyst-augmented predictions to reclassify any responses the model missed.

Serwah (Rose) Afriyie has co-founded multiple Chicago-based organizations, including mRelief and BYP100, and has served as a technologist for nearly a decade. She served as the subject matter expert to complete analyst-augmented predictions and reclassified any entries the model missed. The above report is a synthesis of this analysis.

Appendix

# BIBLIOGRAPHY

1. Indeed Editorial Team. "Women in Tech: How to Attract and Retain Top Talent."
Indeed for Employees, 6 Nov. 2018. https://www.indeed.com/lead/women-in-tech-report

2. Lee, Roger. "Employees Laid O." 9 Dec. 2022.
https://layoffs.fyi/

3. Crenshaw, Kimberlé."Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics." University of Chicago Legal Forum, 1989.
 https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1052&context=uclf

4. "Resources." Management Center, 2022.
https://www.managementcenter.org/resources/

5. "Management." Harvard Business Review, 2022.
https://hbr.org/topic/subject/management

6. AnitaB.org. (2021). Top Companies for Women Technologists Key Findings & Insights Report.
https://anitab.org/research-and-impact/top-companies/2021-results/

7. Bloomberg Professional Services. Invest in a More Equal Future. Gender-Equality Index, 2022.
https://assets.bbhub.io/company/sites/46/2021/01/992304_GEI_Booklet_FNL.pdf

8. Accenture and Girl Who Code. Resetting Tech Culture: 5 Strategies to Keep Women in Tech.
Culture Reset, 2020.
https://www.accenture.com/_acnmedia/PDF-134/Accenture-A4-GWC-Report-Final1.pdf#

9. Sears, Brad, et al. "LGBT People's Experiences of Workplace Discrimination and Harassment."
The Williams Institute at the UCLA School of Law, 2021.
https://williamsinstitute.law.ucla.edu/publications/lgbt-workplace-discrimination/

10. Peters, Kerry R. "Gender Inequality Issues in the Technology Industry."
New View Strategies, 4 Nov.2021.
https://getyournewview.com/tech-industry-gender-inequality/

11. Hewlett, Sylvia Ann, et al. Athena Factor 2.0: Accelerating Female Talent in Science, Engineering & Technology. Center for Talent Innovation, 2014.

12. Capital One. Women in Technology Survey. 2019.
https://ecm.capitalone.com/DevExchange/assets/PDFs/WIT_Report_2019.pdf

13. Kapersky. Women in Tech. AO Kaspersky Lab, 2021.
https://media.kasperskydaily.com/wp-content/uploads/sites/85/2021/01/18101159/Kaspersky-Women-in-Tech-2021-Report-V2-Final.pdf

14. Chicagoland Chamber of Commerce and HR&A Advisors. The Chicago Tech Effect. 2022.
https://media.chicagolandchamber.org/wp-content/uploads/2022/06/06155716/The-Chicago-Tech-Effect.pdf

15. Kibuacha, Frankline. "How to Determine Sample Size for a Research Study." Geo Poll, 6 Apr. 2021.
https://www.geopoll.com/blog/sample-size-research/#Conde%20ce_Interval_(Margin_of_Error)

Technologist Retention
at the Intersections