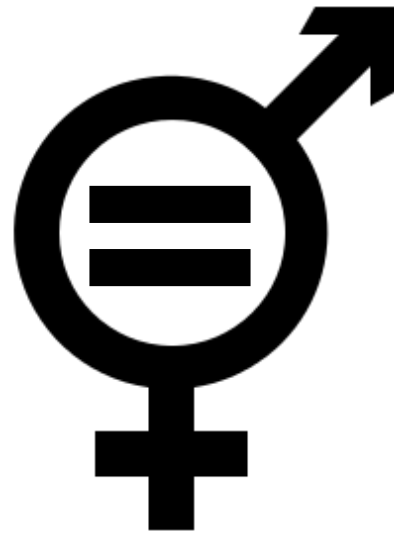


# More than Choice?

A Review of the Gender Pay  
Gap



A report prepared by the Economic and  
Labor Market Information Division of the  
Vermont Department of Labor



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## Reader Guidance

The intention of this report is to provide a comprehensive review of the gender pay gap. For the purpose of this report, the terms gender pay gap and gender wage gap are used interchangeably. In the subsequent sections, the discussion will revolve around the nature of the debate, differences between the politically fueled raw gender pay gap and the more nuanced adjusted gender pay gap, and central facts pertaining to working women. The purpose is not to fully explain all contributing factors, but to highlight seminal and contemporary work and to focus on areas of contention and consensus where they exist.

One of the many challenges in discussing the gender pay gap is the different approaches in which researchers “adjust” the raw gender pay gap to capture other factors (e.g. hours worked, education level, etc.) that may influence an individual’s earnings. The lack of consistent benchmarking makes it difficult to compare these calculated gender wage gaps, which allows room for some pundits to deplore the gap as a “myth”.

For the purpose of this report, the gender pay gap for the U.S and Vermont are based on median annual earnings of full-time, year-round workers. This produces a raw gender pay gap of 21% nationwide (DeNavas-Walt & Proctor, 2015). Technically, this is an adjusted gender wage gap measure. If part-time and seasonal workers are included, the gap expands to 30% (U.S Census Bureau, 2014b). Likewise, the gender pay gap may be lower using median hourly or weekly earnings. As of the first quarter of 2016, the U.S Bureau of Labor Statistics (BLS) reported a gender pay gap of 18% based on the median weekly earnings of full-time, year-round male and female workers. As you read through the report, be mindful of the different measures applied in a given instance.



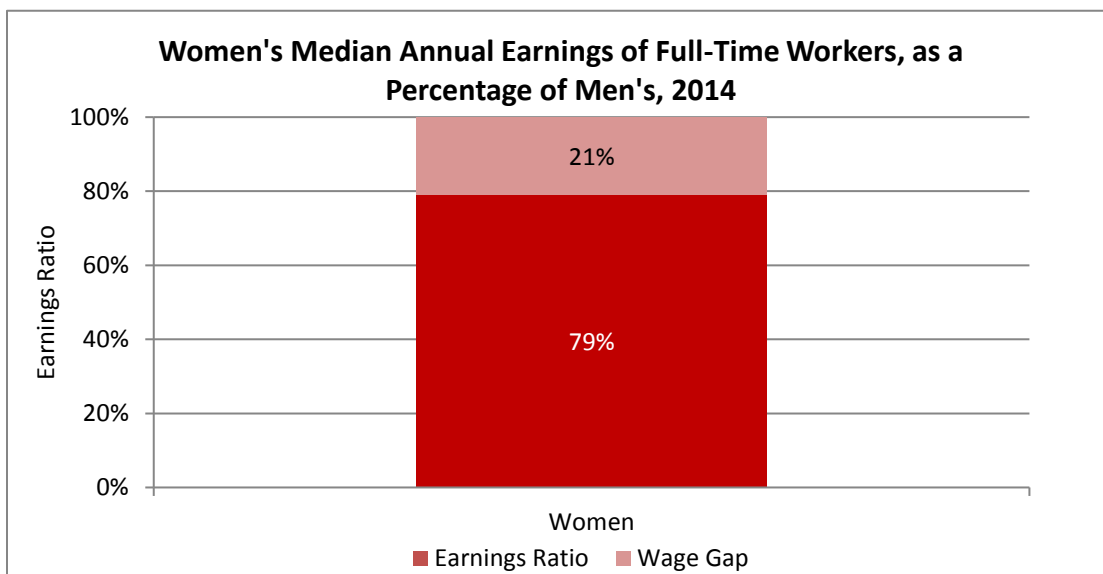
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## Introduction

Despite advancements in labor force participation, educational attainment and overall greater female autonomy over the last several decades, the gender pay gap persists. As of 2014, the U.S Census Bureau reported the median annual earnings of female full-time, year-round wage and salary workers was \$39,621 compared to the \$50,383 median for male full-time, year-round wage and salary workers, a disparity of 21% (DeNavas-Walt & Proctor, 2015). Alternatively framed, women in the U.S currently earn about 79 cents for every dollar men earn. The National Partnership of Women and Families (2014) dissected the aggregate in a state by state breakdown. In Vermont, as of 2014, the gender wage gap is 16%—one of the lowest wage gaps in the nation. Figure 1 visually depicts the national earnings ratio and subsequent gender pay gap.

Figure 1: Women's to men's earnings ratio and wage gap in 2014



Source: ELMI analysis of Current Population Survey reported by the U.S Bureau of Labor Statistics, 2014

The gender wage gap is a statistical measure, often expressed as a percentage, denoting an index of the status of women's earnings relative to men's. It is often perceived as a basic measure of women's economic well-being. According to CONSAD, an independent think tank commissioned by the U.S Department of Labor, the gender wage gap is "the observed difference between wages paid to women and wages paid to men", which takes into account a multitude of factors (2009). Typically, the gender wage gap is approximated as an earnings ratio of the median (weekly or annual) earnings of full-time female workers as a percentage of men's. The proportion of median earnings women receive relative to men is translated into the raw gender pay gap. This differs from the adjusted gender wage gap in which explanatory variables have been accounted leaving a residual, "unexplained" portion. It is important to note that the unadjusted ratio is an aggregation of all male and female workers; the gender wage gap varies by age, race, geography, etc.

In light of growing attention surrounding the gender wage gap—the size of the wage discrepancy between men and women—several studies raise concerns that the mere comparison of raw median earnings between male and female workers provides an incomplete picture because it does not capture other characteristics that may affect earnings. In an introduction to the widely cited CONSAD (2009) report, the U.S Department of Labor notes that many studies inflate the raw gender wage gap, which may “be used in misleading ways to advance public policy agendas without fully explaining the reasons behind the gap”.

Taking a variety of factors into account, an adjusted wage gap may actually present a much smaller gap. Nonetheless, reports corroborate that even with the inclusion of explanatory factors, a discernable gender wage gap exists that cannot be explained by observable differences. When differences in employment characteristics (e.g. occupation, industry, male- or female-dominated field) and personal characteristics (e.g. level of education, marital status, age) are incorporated, the American Association of University Women (AAUW) estimates that the adjusted or “unexplained” gender wage gap is 7% one year out of college (Corbett & Hill, 2012). In other words, data indicates that women are paid less than their male counterparts for the same job, holding all other factors constant. This suggests that bias and discrimination, in addition to other unknown factors, persevere as obstacles for women in the labor market, *qualitative factors that are not completely captured in available data*.

Using a recent Economic Policy Institute (EPI)<sup>1</sup> report as a guiding template, this report aims to demystify the debate surrounding the gender pay gap and provide key facts about working women to foster a broader, more meaningful conversation regarding pay equity at a state level.

### **Summary of key findings**

- The raw pay gap is instructive, but incomplete; it illustrates a basic measure of women’s economic well-being compared to men’s
- Reports consistently find unexplained pay differences even after controlling for measurable factors that influence earnings
- Most of the discussion is centered around the interpretation of the “unexplained” residual: disagreement arises as to whether the residual is reflective of choice or discrimination
- The gender pay gap is present even *within* occupations, holding all other factors constant
- Though some choices may be inherently innate, others are socially constructed; decisions women make about their occupation are the result of individual choices, as well as societal norms, discrimination and other forces outside the control of the individual
- The pervasive gendered division of labor continues to hinder women’s mobility up the occupational hierarchy and ability to succeed in time-consuming, high-paying jobs
- Many women work in low-paying jobs and many jobs become low-paying after the entrance of women

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<sup>1</sup> “Women’s work” and the gender pay gap by Jessica Schieder and Elise Gould of EPI

## Background

### Nature of the debate

*“Too often it is assumed that this pay gap is not evidence of discrimination, but is instead a statistical artifact of failing to adjust for factors that could drive earnings differences between men and women”*

- Schieder & Gould, 2016

As mentioned above, there is a polarizing distinction between the raw, or unadjusted gender pay gap, and the residual, or adjusted gender pay gap. The *unadjusted gender pay gap* is the initial comparison between the median wages of men and women. Notable researchers from both sides of the debate (CONSAD, 2009; Hill, 2016; Blau & Kahn, 2016) agree that the current national raw gender pay gap is between 18% and 21%. In Vermont, the raw pay gap is 16%<sup>2</sup>. Employing raw data, researchers use statistical analysis to decompose the measured, explanatory factors contributing to the gender pay gap. The *adjusted gender pay gap* is the gap left after removing the impact of explanatory variables. In other words, the adjusted pay gap is the difference between observationally identical men and women. Based on an analysis of formative, robust studies, the adjusted wage gap, all else equal, varied from 4.8% to 12.4%.

Combing through available literature dating from the late 1970s to 2016, there appears to be no consensus on the exact size of the adjusted gender pay gap or the measurable factors underlying it. Often the hype surrounding the raw pay gap—the rally call that women make 79 cents for every dollar men make<sup>3</sup>—detracts from the real argument; the widely-cited statistic is misleading because it does not control for a multitude of factors such as the number of hours worked. Discussions involving this raw figure often devolve into two sides: one amplifying the disparity as evidence of discrimination and the other denouncing the disparity as a consequence of choices carried out by women. Some argue that once the gender pay gap is controlled for factors such as occupational category, the gap shrinks to much smaller digits than the raw figure. While this is true, it does not mean that the adjusted gender pay gap does not exist. So although, the debate is centered on the size of the disparity and the variables that may explain it, the main point of contention is dependent on the interpretation of the adjusted, or “unexplained” wage gap.

Extensive research indicates that differences in occupations (the tendency for women to gravitate towards characteristically lower-paying jobs) and related wage structures, childcare responsibilities and the number of hours worked explain some or all of the raw gender wage gap. Skeptics infer these differences are a result of personal preferences and decisions. They believe the pay discrepancy between men and women is driven by a culmination of discrete, voluntary choices and dismiss the idea that the adjusted pay gap is evidence of discrimination. Instead they propose that the adjusted pay gap reflects omitted, unknown variables that influence earnings. Though reports concur that the gender pay gap

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<sup>2</sup> Research concerning the gender pay gap in Vermont is minimal. The unadjusted pay gap of 16% relies on annual earnings. Currently, there is no estimate of an adjusted gender pay gap for Vermont.

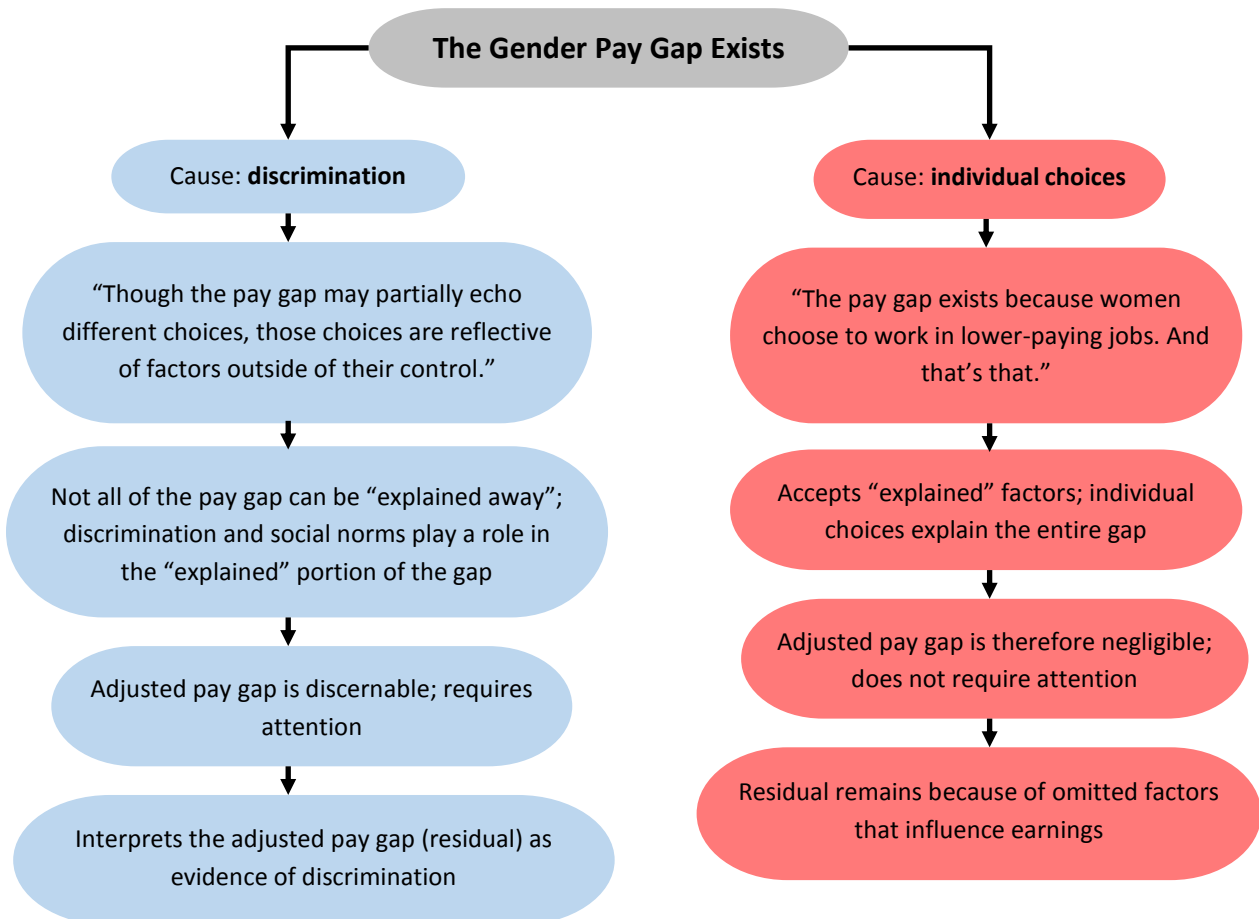
<sup>3</sup> The debate persists in part because earnings “often signify how individuals are valued socially and economically”; it acts as a “summary statistic for an individual’s education, training, prior labor force experience, and expected future participation” (Goldin, 2014).

partially echoes differences in individual choices, those who believe discrimination is a driving force dismiss conclusions that the gender wage gap may be entirely attributed to different life decisions by men and women. They contend that regression isolates discrimination in the form of an “unexplained” pay gap.

Several reports criticize researchers who accept “explained” factors without exploring how personal choices reflect societal expectations, socialization and implicit/explicit bias. The Montana Department of Labor offers a new lens in their 2013 report, “The Wage Gap: Economic Causes and Prevalence”, noting that explanatory variables often mask underlying discrimination, which in turn distorts the adjusted wage gap. In their review, Isabel Huff assesses each variable to see “whether choice, discrimination, or some combination of the two causes men and women to differ in that characteristic” (Huff, 2013). Consequently, even “explained” variables may be muddled with implicit bias.

Figure 2 provides a visualization of the breakdown of the gender pay gap debate in order to clarify both sides of the discussion as to allow the public to draw their own conclusions.

Figure 2: Visual breakdown of the gender pay gap debate



## Basic methodologies

The majority of studies rely on data from the Current Population Survey (CPS) and/or the American Community Survey (ACS). Both the ACS and CPS offer reliable estimates based on large sample sizes and very high response rates. The CPS has an average response rate of 90%, and the ACS has an average response rate of 96.4%<sup>4</sup>. Most federal data concerning workforce participation and wages is derived from the CPS, a national monthly survey of approximately 60,000 households conducted by the U.S Census Bureau for the Bureau of Labor Statistics (BLS). The ACS (also conducted by the U.S Census Bureau) is a robust source primarily used for state-level data because it includes more households than the CPS; the ACS collects data monthly for an annual sample of about 3.54 million households. However, unlike the CPS, which produces and publishes monthly estimates, the ACS results are published on an aggregated annual basis, in addition to 3 and 5-year estimates<sup>5</sup>.

Besides a larger sample size, the ACS is often utilized for state-level purposes because it offers a broader picture of social, economic, housing and demographic profiles. The CPS was designed to collect detailed information on the labor force characteristics of the U.S population to produce current monthly employment and unemployment data, as well as annual income and poverty data. Employment and income estimates from the ACS and CPS usually differ because the surveys use different questions, samples and collection methods<sup>6</sup>. For instance, the U.S Census Bureau (2014a) concluded that the earnings ratio, by gender, was 79.9% for full-time, year-round workers in 2014 using ACS data. However, when CPS data was utilized, the earnings ratio, by gender, decreased to 78.6% for full-time, year-round workers (DeNavas-Walt & Proctor, 2015). Though the CPS is the primary source typically employed, authors tend to use other sources in collaboration for the purpose of comparing and merging discrepant datasets. In an attempt to depict a more complete picture of the status of working women, the report uses both the CPS and ACS. For this reason, it is important to note that the sample and measures may differ throughout the report depending on the dataset used.

Equally important as the distinction between the ACS and CPS is model specificity (i.e. different classifications and inclusion of variables). Using the same 2012 CPS data, three separate organizations found different pay discrepancies based on differing definitions of “median earnings”. The Pew Research Center (2013) concluded that the earnings ratio was 84% based on median hourly earnings. The U.S BLS (2014) determined the earnings ratio was 80.9% based on median weekly earnings. The U.S Census Bureau found that the earnings ratio was 76.5% based on median annual earnings (DeNavas-Walt, Proctor, & Smith, 2013). The size of the pay gap tends to be smaller with greater specificity of differences in hours worked as women are more likely to work part-time than men (CONSAD, 2009). The years under

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<sup>4</sup> Unlike the CPS, which relies on voluntary participation, the ACS is mandatory.

<sup>5</sup> This means that ACS yields income data as a 12-month estimate. The CPS affords greater granularity, because respondents are able to report income on a monthly, quarterly or yearly basis.

<sup>6</sup> A notable difference between the two surveys is the reference week in which interviews are undertaken. The CPS uses a fixed reference period, as compared to the ACS, where the reference period is respondent dependent (i.e. rolling reference period). The ACS also allows for greater flexibility; respondents can answer the ACS at different times throughout the month and year. This, however, makes it difficult to decipher economic trends in relation to a period in time.



observation will also generate different variations of the pay gap as demographic profiles, public attitudes and occupational makeup transform over time.

## Extrapolating the Data

### Gap persists within occupations

*“The wage gap is not just a function of being clustered in low-wage work”*

- *Change The Story VT, 2016b*

Several reports underscore occupational differences, the high concentration of women in low-paying jobs like education and administrative and office support (i.e. occupational segregation), as the central determinant of the gender wage gap. Occupation and industry account for approximately half of the overall gap by some regression estimates (Blau & Kahn, 2016). Those who tend to downplay the gender wage gap justify the gap as a remnant of individual decisions. They claim that women voluntarily “choose” lower-paying jobs by disproportionately working in traditional “lower-skilled”, “female” professions.

Yet, occupational differences do not fully explain the gender pay gap. Differences aside, studies consistently find a pay discrepancy remains between equally qualified women and men with the same job. In a 2015 study published in the Journal of the American Medical Association (JAMA), Ulrike Muench and his colleagues found a surprising pay disparity in nursing, a profession with a 90% concentration of women (U.S BLS, 2015c). Accounting for differences in hours worked, job position, clinical specialty and other factors, the authors determined that male nurses on average make about \$5,000 more annually than their female counterparts. For nurse anesthetists, the disparity grows to \$17,290. The authors also found that this adjusted pay gap has not significantly changed over time, which suggests that the barriers women experience remain unchanged (Muench, Sindelar, Busch, & Buerhaus, 2015).

Moreover, Harvard economist and gender pay gap expert, Claudia Goldin (2014) stresses “what happens within each occupation is far more important than the occupations in which women wind up”. Goldin suggests that 58% to 68% of the pay gap would close if earnings were equalized within occupations<sup>7</sup>. Again, that is not to say that occupational crowding<sup>8</sup> and subsequent “pink-collar ghettos” are no longer relevant. In another study published in JAMA, researchers studied a homogenous cohort of mid-career physician researchers and found a considerable adjusted gap. If women retained their “measured” characteristics, but their gender was male, Reshma Jagasi et al. (2012) estimated that their earnings would be \$12,194 higher.

This empirical evidence is made even more confounding by the fact that greater educational achievement does not equate to a smaller gender pay gap. Gender differentials have decreased as the individual

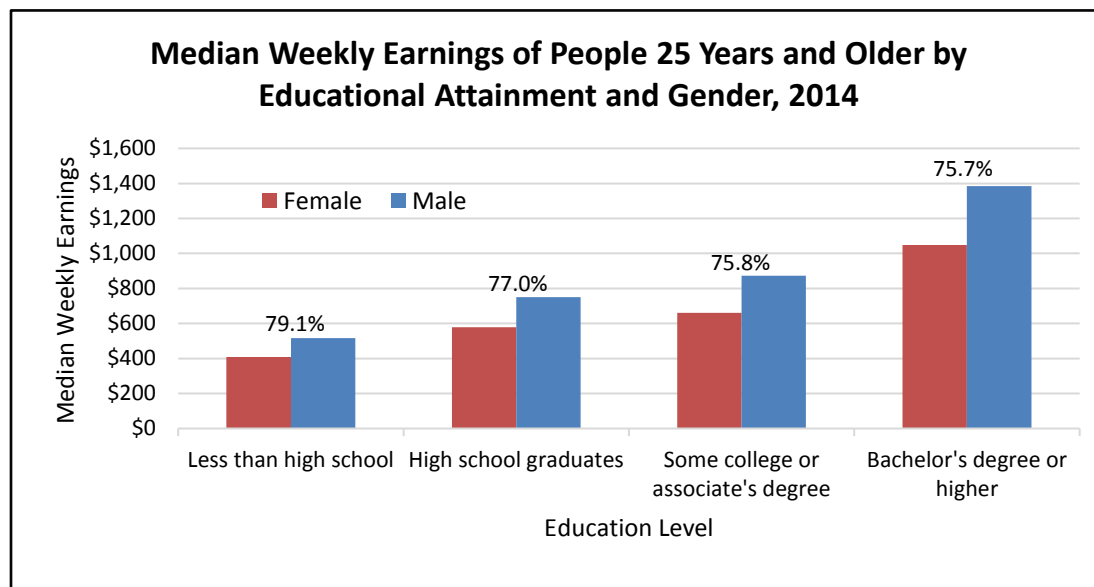
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<sup>7</sup> Goldin does not conclude that discrimination is the central cause of pay differences within occupations. She suggests higher penalties for temporal flexibility are the main culprit.

<sup>8</sup> Occupational crowding is the process that engenders occupational segregation, the gendered distribution of male and females in occupations that are characteristically “male” and “female”. In other words, women are typically “crowded” into female-dominated professions and men are typically “crowded” into male-dominated professions.

characteristics of men and women, in terms of schooling and labor market experience/qualifications, have converged. Though the gender education gap has reversed—women hold 57% of bachelor’s degrees and 61% of master’s degrees—women still make less than men at every educational level as shown in Figure 3 (Blau & Kahn, 2016). Even at the start of one’s career when labor market experiences are still comparable, one-year post college, women earn less than their male counterparts—\$4 less per hour (Kroeger, Cooke, & Gould, 2016).

Figure 3: Education and earnings by gender



Source: ELMI analysis of CPS data reported by the U.S Bureau of Labor Statistics in *The Economics Daily*, 2015b

### Decisions are shaped by society

*“Explaining or accounting for a portion of the pay gap simply means that we understand the effect of certain factors, not that the gender differences related to those factors are necessarily fair or problem-free. Both discrimination and cultural gender norms can play a role in the “explained” portion of the pay gap”*

- Corbett & Hill, 2012

It is commonly believed that the pay disparity is in part driven by individual preferences and choices, but these choices are the result of the cumulative impact of differential treatment and expectations. For instance, a woman’s decision to enter a lower-paying position may account for pay differences, but occupational crowding is influenced by factors other than personal choice, such as the demands of family and childcare, deep-rooted social conventions and a woman’s comfort level and sense of identity. The American Association of University Women (AAUW) reiterates this point: “personal choices are never made in a vacuum. Organizational, cultural, economic, and policy barriers shape both men’s and women’s choices and opportunities” (Hill, Miller, Benson, & Handley, 2016).

In every society, differences between what is expected, allowed and valued in a woman and in a man produce different life outcomes. Cultural expectations and gender socialization are present at a young

age, when boys' and girls' behaviors and identities are most susceptible to priming and molding. Married research couple, Myra and David Sadker illustrate the academic platform that sets the stage for future dispersion in their 1995 book. Drawing on naturalistic observations, the Sadkers witness the unequal treatment of male and female pupils in elementary school. In particular, they note clear evidence of a double standard. Boys were more than eight times more likely than their female classmates to call out answers. However, unlike girls who were reprimanded, boys were almost always reinforced for their self-confidence and assertiveness<sup>9</sup>. In turn, teachers reward girls' passivity.

Many uphold that this double standard also manifests in the form of role congruity, where men and women must operate between the fine lines of what is considered masculine and feminine. A woman who aligns within a group's typical social role is evaluated positively. However, when a woman takes on a role, perceived as incompatible with the "feminine" domain, prejudice ensues. For instance, leadership and femininity are often perceived as incongruous because stereotypes about leadership are masculine (Hill et al., 2016). In a study focusing on gender influences on leadership in a medical setting, the authors observed that women often felt uncomfortable violating behavioral gender norms when acting as "code leader", which entails communicating with a deep, loud voice. To compensate for their counter-normative behavior, some "adopted rituals to signal the suspension of gender norms", while others apologized (Kolehmainen, Brennan, Filut, Isaac, & Carnes, 2014). This results in attitudes that are less favorable towards female leaders and in turn makes it more difficult for women to become leaders and succeed in that role (Eagly & Karau, 2002).

### Stereotypes ≠ Bias ≠ Discrimination

AAUW defines a *stereotype* as a "cognitive shortcut that categorizes people on the basis of characteristics such as gender, race or age" without obtaining factual knowledge (Hill et al., 2016). A *bias* is "a belief that a stereotype is true" (Bolton, 2014).

*Discrimination* is the application of such beliefs (Fiske, 2010).

Furthermore, the Sadkers (1995) consistently observed that girls were "taught to speak quietly, to defer to boys, to avoid math and science, and to value neatness over innovation, appearance over intelligence" (qtd. in ERIC database). These gender normative expectations and biases may negatively affect the self-perception of impressionable girls and boys, which in turn steer them towards gender-normative careers. Cultural beliefs about gender aptitude and "quantitative" capabilities are a highly-publicized example of the effect of bias on occupational projections and outcomes. Exposure to stereotyping at school, home and in the media typifies women as "bad at math". In a longitudinal study, girls rated their math competencies lower than boys, as soon as the third grade. Parents also rated boys' math competencies higher than girls, despite no differences in actual mathematic performance (Herbert & Stipek, 2005). The stereotype ("math is for boys") is incongruous with the gender identity ("I am a girl") which influences one's self-concept ("math is not for me") (Cvencek, Meltzoff, & Greenwald, 2011). These economic and psychological findings suggest that the math-gender stereotype develops early and has a strong influence on children's judgment of their abilities, setting the stage for a self-fulfilling prophecy.

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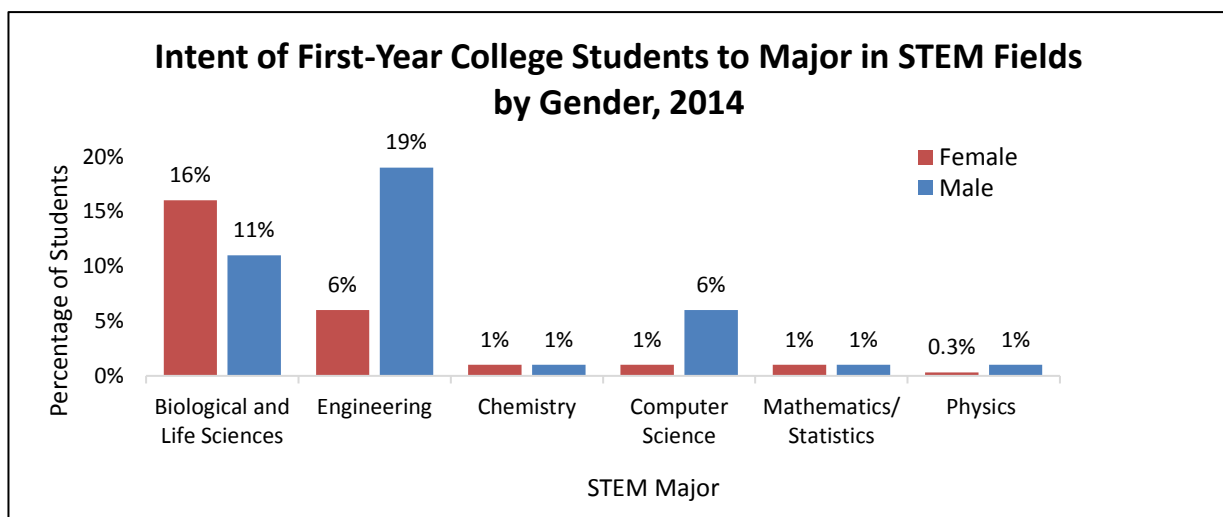
<sup>9</sup> Teachers, while well-intentioned, afforded greater attention to these "misbehaved" male pupils. Likewise, boys were more likely to receive precise, constructive feedback (in the form of praise, help, correction or criticism) from teachers, while girls were more likely to receive "superficial", unclear feedback.

By the time women reach college, evidence suggests that they already evaluate their career opportunities differently. Men are much more likely to begin college intending to major in engineering or computer science (see Figure 4). This is despite the fact that female high schoolers are taking math and science classes at the same rate as male high schoolers, in addition to earning slightly higher grades in these courses (Hill, Corbett, & St. Rose, 2010). Evidently, stereotypes constrain behaviors in ways that cause women to behave in accordance with those stereotypes. Together, this research infers that girls are systematically deterred in areas where boys are encouraged to excel. Girl’s ability to enter remunerative STEM (i.e. science, technology, engineering and math) professions is thwarted, undermined by their own perceptions of ineptitude and lack of self-confidence.

Besides socialization and implicit bias, overt discrimination and intimidating work environments discourage women from entering male-dominated, high-paying professions. The tech industry serves as widely cited evidence of sexism. An alarming study focusing on women, with at least 10 years of experience in Silicon Valley, discovered that 60% of respondents experienced unwanted sexual advances (Vassallo et al., 2016). Another study found that 52% of highly-qualified women in private SET (science, engineering and technology) companies left their jobs because of “hostile work environments and extreme job pressures” (Hewlett et al., 2008).

Coupled together, exposure to socialization and discrimination influences human capital acquisition, job choice and earning inequities. Some estimate that discrimination may account for 38% of the gender pay gap (Blau & Kahn, 2016). Discrimination could also indirectly cause an even larger portion of the pay gap, for instance, by discouraging women from pursuing high-paying, male-dominated careers in the first place.

Figure 4: Interest in STEM majors



Source: EMLI adaptation of Corbett and Hill (2015) analysis of Eagan et al. (2014)

## **Historically gendered division of labor hinders women’s movement up the career ladder**

*“Women are more likely than men to have primary responsibility for family, and as a result, working women with family responsibilities must make a variety of decisions to manage these responsibilities. For example, these decisions may include what types of jobs women choose as well as decisions they make about how, when, and where they do their work. These decisions may have specific consequences for their career advancement or earnings”*

- U.S General Accounting Office (since renamed Government Accountability Office), 2003

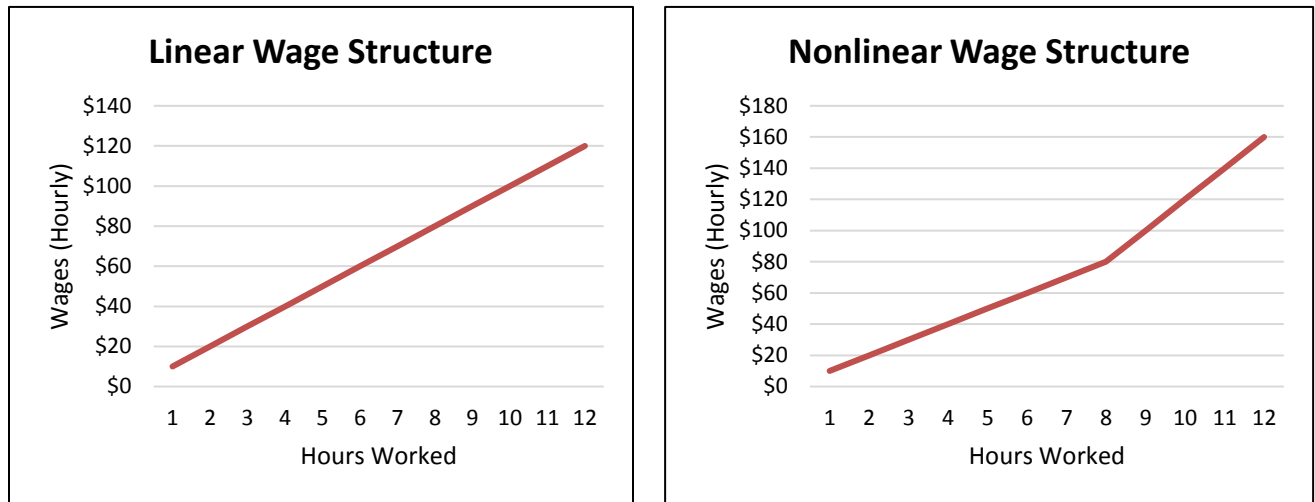
Those intent on downplaying the gender wage gap often infer that women’s decision to work less hours or in a more flexible, “family-friendly” workplace is reflective of women’s nurturing temperaments. Likewise, critics of the gender wage gap argue that qualified women can “do it all” through hard work and perseverance. Facebook COO Sheryl Sandberg’s rally cry for women to “lean-in” echoes this sentiment, which ignores concrete obstacles the average woman (especially a woman of color) faces in balancing work and family life. Tenacity is not enough as evident by the larger pay disparity among top wage earners; Blau and Kahn (2016) note in 2010 the earnings ratio was 6 to 11 percentage points less at the top distribution than the middle or bottom percentile.

Claudia Goldin (2014) suggests that the dearth of female top-wage earners (women make up 4.6% of CEO positions at S&P 500 companies<sup>10</sup>) is not intrinsic to females’ personality, but instead the organizational practices of certain occupations. She examines the pay differences within occupations with a linear and nonlinear wage structures (see Figure 5 for a hypothetical example). A linear wage structure is one in which workers are paid the same hourly rate, unrelated to the number of hours worked. Jobs with a linear wage scheme, such as pharmacists, are often characterized by greater temporal flexibility and substitution in the workplace. In comparison, nonlinear wage structures experience very elastic earnings in regards to hours worked. Jobs with a nonlinear wage scheme—such as business, law and surgery—typically place a high value on long hours, extreme time pressures and being on call; flexibility comes at a high cost. Goldin argues that nonlinear wage structures disproportionately reward individuals—typically men—who work long and particular hours. The value of an extra hour worked increases as one works more hours. This means that for every extra hour a woman forgoes, she loses more money. Since women typically work shorter hours and experience greater workforce interruptions, as a consequence of family responsibilities, she postulates that the gender pay gap could be eradicated if employers place greater value on human capital and tangible achievements rather than the value they place on long hours.

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<sup>10</sup> (Catalyst, 2015)

Figure 5: The compensating differentials of a linear vs. nonlinear wage structure



Because childcare responsibilities are still unequally shared among partners<sup>11</sup>, requirements of the highest-paid occupations are incompatible with family responsibilities. The traditional division of labor—conventional roles delineating the male breadwinner and the female homemaker/caregiver—disadvantages women in the labor market because “workers who put their careers first are typically rewarded; [while] workers who choose their families are overlooked, disbelieved, or accused of unprofessionalism” (Slaughter, 2012). Despite the growth of the dual-earner household, social norms and expectations predicate that women bear a disproportionate share of household work and childcare. The Pew Research Center found that the traditional view of the gendered division of labor continues to be upheld: 51% of survey respondents believed children’s well-being was better off when mothers were at home and didn’t hold a job (Wang, Parker, & Taylor, 2013).

These social pressures make it difficult for women to pursue lucrative careers. In a widely-read article in “The Atlantic”, Ann-Marie Slaughter (2012), a highly decorated academic and civil servant who left her post as the Director of Policy Planning to take care of her teenage sons, expresses her frustration over preserving a work-family balance. She contends that fathers are less likely to make the compromises and sacrifices that mothers make to establish a career and family. She references the U.S Supreme Court as a tangible example: every male Supreme Court justice has a family, while two of the three female justices are single and childless. An equal playing field is unattainable if women still have to decide between a career and a family, because, to some degree, men can have both<sup>12</sup>.

This expectation that women will give up their careers in favor of family is reinforced in a self-perpetuating feedback loop. For instance, if a gender wage gap already exists among a married couple, it is “rational”

<sup>11</sup> According to the U.S Bureau of Labor Statistics’ (2015a) American Time Use Survey, women spend three times more of their average day caring for and helping household children than men.

<sup>12</sup> Just as mothers may sacrifice career advancements, fathers may also sacrifice childcare time. However, a working father is typically socially exonerated from childcare duties by providing financially, as opposed to a working mother, who is typically seen as negligent of her childcare responsibilities.

for a dual-earner householder to prioritize the husband's career when a childcare emergency arises or if the husband's position is transferred to another location. This is both a cause and response to the pay gap because it propagates the expectation that it is sensible for women to bear the majority of domestic work.

### **A relationship exists between occupational gender composition and earnings**

*"The central idea is that our culture devalues women, and this leads to devaluation or stigmatization of all things associated with women—styles of clothing, names, leisure activities, fields of study, or jobs"*

- England & Li, 2006

Occupational segregation, the gendered composition of stereotypical male and female professions, is a persistent feature of the U.S labor market, despite improved integration of traditional "male" and "female" work. Women continue to enter low-paying jobs such as secretaries and home health aides. In general, female-dominated occupations pay less than male-dominated occupations. According to the think tank Third Way's interpretation of 2014 Current Population Survey (CPS) data, 26 of the 30 jobs in the top earnings decile are male-dominated, as opposed to 23 of the 30 jobs in the bottom earnings decile, which are female-dominated (Liner, 2016).

Though occupational segregation is a driving factor of the gender pay gap, it implies that women might be able to increase their absolute earnings by working in male dominated occupations. Some research suggests this is not necessarily true. The Economic Policy Institute proposes that "female-dominated professions pay less, but it's a chicken-and-egg phenomenon" (Schieder & Gould, 2016). They emphasize a 2002 report, in which Melinda Pitts finds that "While it is true that workers in FD [female-dominated] occupations earn, on average, less than workers in NFD [non-female-dominated] occupations, the wage differential would not decrease by significant amounts or could actually increase in some circumstances if the workers in FD occupations switched to NFD occupations". Pitts suggests that women optimize their earnings, given existing constraints, by entering female-dominated occupations because they are not likely to experience a significant boost in earnings from entering fields heavily concentrated with men<sup>13</sup>. Take for example a maid (female-dominated occupation) and a janitor (male-dominated occupation). Female Maids and Housekeeping Cleaners earn \$400 per week compared to male Maids and Housekeeping Cleaners, who earn \$404. On the other hand, female Janitors and Building Cleaners earn \$15 more per week than female Maids and Housekeeping Cleaners, compared to male Janitors and Building Cleaners, who earn \$136 more per week than male Maids and Housekeeping Cleaners (U.S BLS, 2015c).

To make matters more complicated, some research posits that when women increasingly enter a field, the average pay for all workers typically decreases, holding all other factors constant. Levanon, England and Allison (2009) found that a 10% increase in the proportion of females in a given occupation is associated with a 0.5% to 5% decrease in hourly wages each decade. Their empirical evidence is consistent with the theory of devaluation, the speculation that wages depress as women enter occupations because

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<sup>13</sup> This phenomenon does not necessarily hold true for highly-educated women, who are more likely to earn more in a male-dominated profession such as chief executive or computer hardware engineer.

women’s work is implicitly devalued. Both experimental and survey research indicates that work performed by men is attributed a greater value than work performed by women (Cohen & Huffman, 2003).

Evidence suggests the opposite occurs when men enter female-dominated fields in large numbers: wages increase. For instance, computer programming was once a mixed profession, with a large proportion of women working as typists and programmers in the 1940s and 1950s<sup>14</sup>. Starting in the 1960s, computer programming transformed from what was understood at the time as low-paying clerical “women’s work” into a high-paying, technically-advanced specialty field. The masculinization and professionalization of computer programming deterred women through the addition of personality and mathematical tests as prerequisites (Frink, 2011). Subsequently, the amicable, dexterous female programmer was soon replaced by the anti-social, mathematically-inclined male “computer geek” as the ideal computer programmer. In other words, as the gender composition shifted and men entered the field, a new conception of computer programming emerged, one of prestige and advanced mathematical facility (Cohen, 2016). Women’s share of jobs in software and computing decreased from 34% in 1990 to 27% in 2011, and baccalaureate degrees awarded to women in computer and information sciences has fallen from 37% in 1985 to 18% in 2010 (Wooldridge, 2015). Accompanying this gendered transformation was a rise in pay.

In short, regardless of a profession’s gender composition, “the gender wage gap is an almost universal feature of the labor market, regardless of where women work” (Hegewisch, Liepmann, Hayes, & Hartmann, 2010). Women earn less than men in nearly every occupation. In 2014, of the 149 detailed occupations measured in the CPS with available data<sup>15</sup>, women earned more than men in only one occupational category: store clerks and order fillers (U.S BLS, 2015c). While wages decrease as the percentage of females in an occupation rises, a statistically significant relationship between the gendered composition of an occupation and the earnings ratio does not exist<sup>16</sup>. That is to say, the more women in a profession, the lower the wages, but not necessarily the higher the wage disparity.

## Discussion

### What does this mean for Vermont?

*“Occupational segregation, the uneven distribution of labor across and within sectors by gender, is the norm—not the exception—in Vermont”*

- *Change the Story VT, 2016a*

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<sup>14</sup> By some estimates, women made up between 30% and 50% of programmers in the 1950s (Cohen, 2016). Men often worked on hardware, while women were often delegated to software programming, which was perceived at the time as less-masculine and less intellectually rigorous (Frink, 2011).

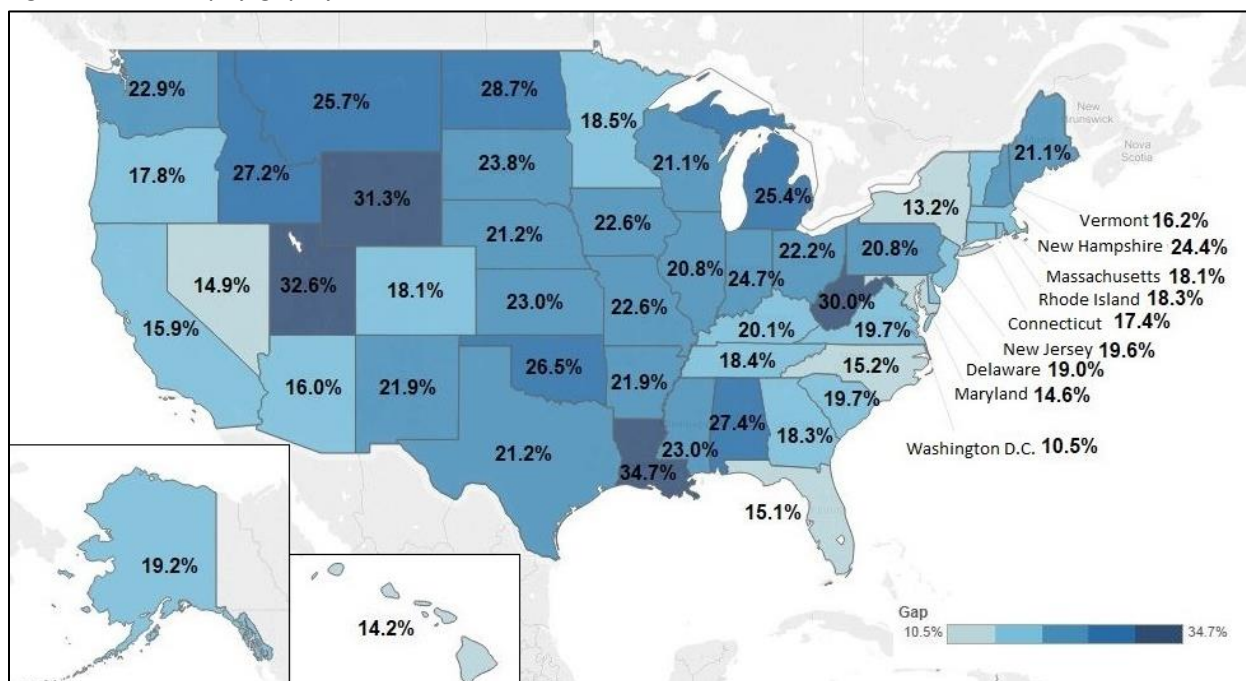
<sup>15</sup> There are 565 detailed occupations measured in the CPS, but of those only 149 have data or data that meets publication criteria (base is above 50,000).

<sup>16</sup> Though some studies imply a relationship between the gender earnings ratio and the gendered composition of an occupation (i.e. female-dominated jobs have a higher pay gap than male-dominated jobs), Jennifer Cheeseman Day and Barbra Downs of the U.S Census Bureau confirm that no significant relationship exists (2007). The presence of outliers may create the impression that the smaller the proportion of women in an occupation, the smaller the pay disparity.



With a gap of 16%<sup>17</sup>, Vermont ranks among the most equitable states in regards to gender pay equity (see Figure 6). Vermont also has one of the lowest rates of U.S Equal Employment Opportunity Commission (EEOC) charges for sex-based discrimination, which may signal discrimination is not a sole cause of the pay disparity in Vermont. However, the low level of EEOC charges may be reflective of a lack of knowledge of formal, protective retaliation services, rather than an outright absence of discrimination (U.S EEOC, 2014). Using several indicators as a measure of well-being, the “Status of Women in the States” project conducted by the Institute for Women’s Policy Research (IWPR) ranks Vermont as the 2<sup>nd</sup> best state for women, tied with Massachusetts and Connecticut and trailing only Minnesota (Hess et al., 2015).

Figure 6: Gender pay gap by state in 2014



Source: ELMI analysis of CPS data reported by the U.S Bureau of Labor Statistics, 2014

So why does Vermont have a lower gender pay gap? Vermont is well-known for its progressive and tolerant landscape. With a rich history of egalitarian values—the first sovereign state to ban slavery and the first state to recognize same sex unions—Vermont’s legislature is more gender balanced than most (Harper, 2003; Reuters, 2016). Behind Colorado, Vermont has the second highest percentage of women in the legislature at 40.6% (National Conference of State Legislatures, 2013). However, the proportion of statewide elected executive offices held by women in Vermont is 20%, well below the national average of 27% (IWPR, 2016d). Vermont women are also generally better off than the national average. 93.4% of women in Vermont had health insurance in 2013, compared to 81.3% of all American women (IWPR, 2016c). An IWPR analysis of micro data, procured from the American Community Survey (ACS), also indicates that women in Vermont are more educated (38.4% of VT women aged 25 and older hold

<sup>17</sup> Gap may be lower since earnings ratio is based on average annual earnings, a less accurate proxy for hours worked.

bachelor's degrees or higher compared to 29.7% of American women aged 25 and older) and have a greater labor force participation rate than the national average (63.9% of VT women are in the labor force compared to 58.8% of American women) (IWPR, 2016b; IWPR, 2016a).

While Vermont's earnings gap is 5 percentage points fewer than the national level, many state-level labor market trends coincide with national patterns. Using ACS data, the authors of the Change the Story VT initiative found that women make up only 45% of Vermont's full-time workforce, but greater than 70% of its year-round, part-time workforce (2016b). Women also remain segregated in typical "female" professions. 60% of the 25 major occupational categories (recognized by the U.S Census Bureau) in Vermont are male- or female-dominated (Change the Story VT, 2016a). As of 2014, Vermont women make up 70% or more of workers in the following occupations: Education, Training & Library; Community & Social Services; Health Diagnosing & Treating Practitioners; Health Technologists & Technicians; Healthcare Support; Personal Care & Service; and Office & Administrative Support (U.S Census Bureau, 2014c). Out of these 7 occupational categories, Health Diagnosing & Treating Practitioner occupations are the only female-dominated occupations that meet Vermont's individual basic needs budget of \$34,118 (U.S Census Bureau, 2014c; Change the Story VT, 2016a). Moreover, women make less than men in Vermont in every major occupation category except in Construction & Extraction; Installation, Maintenance & Repair; and Fire-Fighting & Prevention occupations (U.S Census Bureau, 2014c).

### **Why it matters**

*"Women's phenomenal purchasing power and critical role as financial decision-makers for their households means that when a woman is cheated out of a portion of her paycheck, the whole economy suffers"*

- U.S Joint Economic Committee, 2010

According to the U.S Census Bureau, women make up 50.8% of the total U.S population and 58.7% of women participate in the U.S labor force (U.S Census Bureau, 2010). Between 1967 and 2012, the number of mothers, who brought in at least a quarter of family earnings, rose from 27.5% to 63.3%. Among those households, 40.9% of mothers were their households' primary breadwinners in 2012 (Glynn, 2014). Despite their contributions, women's earnings remain marginal. Female wage earners make up two-thirds of minimum wage workers (National Women's Law Center, 2016). Women also make up 58% of adults whose income falls below the federally defined poverty level (U.S Census Bureau, 2014d).

When women are paid less than men for comparable work, their families and the entire economy suffer. Income inequity threatens the welfare of children, especially because single mothers disproportionately bear the full responsibility of childcare. In 2014, female householders with no husband present had a poverty rate of 30.5%. When children were introduced, the poverty rate among single, female householders climbed to 40.6% (U.S Census Bureau, 2014e). Women are also more likely to live longer and have a lower income in retirement than men. Women ages 65 and older are almost two times as likely to live in poverty (Cubanski, Casillas, & Damico, 2015). Elderly women's relative economic insecurity not only increases financial burdens placed on older individuals and their families, it also increases dependence on federal and state subsidies and benefits; 25% of elderly, unmarried women depend on

Social Security as their only source of income (National Economic Council Interagency, 1998). Addressing the gap is a crucial economic development strategy for alleviating poverty.

Closing the gender pay gap may also promote economic growth. Pay inequity results in the misallocation of human capital when women's skills and talents are underutilized or misused. Lower pay, in conjunction with factors such as discriminatory barriers to entry and the gendered division of labor, may encourage women to seek less productive pursuits by working in lower-skilled, lower-paying positions or by leaving the workforce altogether<sup>18</sup>. In turn, greater pay equity would increase output by maximizing the productive capacity of women. Likewise, greater pay would most likely encourage greater labor force participation and retention (Hartmann, Hayes, & Clark, 2014).

Multiple studies also conclude that firms perform better when women are involved. Companies with greater gender diversity outperform those with predominantly male boards. A 2007 Catalyst report on the S&P 500 found that greater female representation on boards was positively correlated with higher returns on equity, sales and invested capital (Joy, Carter, Wagner, & Narayanan). Other studies suggest that women possess a higher quality of decision making, which make them more effective at risk management (Bart & McQueen, 2013). Nick Wilson and Ali Altanlar (2009) of the University of Leeds showed that the presence of at least one female director on a corporate board reduces the risk of bankruptcy by 20%; the insolvency risk continues to decrease as more women are included. Diversity also enhances the talent pool and innovation.

## **Recommendations**

This is a pivotal time. While the gap has narrowed, progress has been stagnant since the early 2000s (Blau & Kahn, 2016). Common objective measures of women's progress—their employment rate, their entrance into male-dominated professions, their proportion as executive heads and leaders—mirrors the slow convergence of the gender pay gap. Equally striking, a University of Pennsylvania study found that women's overall happiness has declined, despite an increase in objective well-being (Stevenson & Wolfers, 2009). Several attempts to eliminate pay inequity in the form of federal legislation including The Equal Pay Act (1963) and Title VII (1964) have had a minor impact. Many executive mandates have focused on the gap in government sectors and federally contracted work. Though some stress the need for greater legislation, states with stronger protections do not necessarily experience a smaller pay gap (Hill, 2016).

While many have reviewed the plausibility of comparable worth and pay equity studies, these do not confront the core issues that emerge as early as childhood. Tangible examples of solutions that work are also limited and sweeping claims like “more paid parental leave”<sup>19</sup> and a “higher minimum wage” should

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<sup>18</sup> Hersch (2013) highlights the underutilization of educated women. When comparing the labor force participation rates of female graduates from elite and less-selective schools, she discovered that “female graduates of elite institutions have lower labor market involvement”. Female MBA graduates of elite schools are 30 percentage points less likely to be employed full-time than their counterparts from less-selective schools.

<sup>19</sup> Some research suggests that paid parental leave does not equate to a smaller gender pay gap. In some countries with generous parental leave packages, such as Austria and Finland, the pay disparity is greater because mothers are more likely to use parental leave, and that workforce interruption is associated with lower wages (Livingston, 2013).

be examined with scrutiny. Many of the proposed solutions, as they stand, are broad and fail to acknowledge the negative externalities they may generate. Because the underlying mechanisms influencing the gender pay gap are confounding and subtle, solutions require a multi-strategy approach.

For the reasons listed above, possible recommendations are not exhaustive. They present a mix of legislative- and individual-specific suggestions. They include:

1. Collect more reliable pay and gender data: Many researchers and academics cite pay data as the most pressing concern because data is paramount to assessing and analyzing the gender wage gap. The shortage of gender statistics makes it difficult to evaluate the root causes, gauge progress and take formidable, measurable steps in equalizing the gender pay gap. As former Director for Gender and Development at the World Bank, Mayra Buvinic encapsulates: “not having data on a certain area, behavior or society means that you cannot design the right policies, you cannot track progress, you cannot evaluate,” (Bill & Melinda Gates Foundation, 2016).
2. Support pay transparency: In light of a recent Massachusetts law that forbids employers from inquiring about a potential employees’ salary or wage history, in addition to protecting employees’ right to discuss salaries from employer retaliation, supporters cite Massachusetts’ precedent as a step in the right direction. When colleagues cannot freely discuss pay, women cannot tell if they are being paid less than their male counterparts for the same position. Researchers identify greater pay transparency in public and nonprofit sector jobs as a central contributor to the lower gender pay gaps these sectors experience (General Accounting Office, 2003; Hill, 2016).<sup>20</sup> Likewise, prohibiting wage history inquiries will help improve the wage trajectory of women, who often experience lower earnings than men, and help ensure that pay is based on merit.
3. Don’t play the blame game: Too often it is assumed that the gender pay gap is caused by a) discriminatory employers or b) females’ innate choices. However, the ways in which discrimination manifest are myriad and complex. As Professor Taylor of Macalester College summarizes: “Discrimination isn’t one phenomenon. It can happen at different points. It can happen in different characteristics of the labor market. It can happen with customers or with coworkers...It’s not enough to blame the employers” (2005). Implicit bias is unconsciously imbedded as a result of socialization; “just as the status quo is holding women back from leadership roles, it is holding men back from embracing caretaking and support roles” (Hill, Miller, Benson, & Handley, 2016).
4. Invest in affordable, accessible and quality childcare: 65% of children under the age of 6 live with a single, working parent or two working parents (Glynn, Fisher, & Baxter, 2014). Affordable, high-quality childcare programs are a necessity for working moms to maintain employment, especially those who are low-income and cannot afford to miss work because of childcare issues.
5. Reevaluate how society values care jobs: Caring labor is a public good, in which the positive externalities are significant. Yet, caring labor does not follow the creed of traditional economics:

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<sup>20</sup> Though Vermont has made steps in increasing pay transparency—Vermont passed a Wage Disclosure Law in 2005—strengthening anti-retaliation protections and increasing support systems for those affected by unequal pay may help reduce wage inequities.

a high demand for care services does not reflect a high cost. Research indicates that care services, which are predominantly comprised of women, pay less than other occupations. Professors Paula England and Nancy Folbre (1999) found that “people feel queasy about putting a price on something as sacred as care”. They speculate that care labor is associated with low earnings because: 1) society associates care labor with feminine roles, which are culturally devalued, 2) low pay in care labor reflects an intrinsic reward of helping others, 3) like other public goods, care labor experiences a free rider problem 4) many recipients of care services are low-income and 5) commodification of care is a philosophical blunder.

6. Reflect on your own biases: Take a moment to think about your upbringing, the opportunities you were granted, the adversity you confronted. How did your experiences inform your identity? How did society, your parents, your teachers and your own expectations influence your outcomes? When you think of a scientist do you think of a man or woman? Think of the stories you grew up with. How many portrayed a female protagonist as the hero? When there was an incident of sexual misconduct at school, which gender was penalized? Explore your hidden biases with Harvard’s Project Implicit: <https://implicit.harvard.edu/implicit/selectatest.html>

## Conclusion

Despite remarkable gains in labor force participation, education and workplace parity, women’s earnings remain modest. Experts continue to debate the magnitude and causes of a pervasive pay disparity. Some evidence implies gender-specific differences (e.g. differences in hours worked, occupations, etc.) “explain” the gap, “leading some to believe that they are justifiable outcomes of different choices made by men and women” (Jagsi et al., 2012). In turn, skeptics of the gap surmise the adjusted pay gap is the result of intangible variables, which influence earnings, omitted from statistical analysis. Yet, statistical controls demonstrate how the gender pay gap operates, not that it does not exist. These factors are not impervious to bias, nor are researchers’ interpretation and analysis of such. Regardless of your personal stance in the gender pay gap debate, a visible gender pay gap exists.

These contentions, coupled with the observation that the gender pay gap is a multi-dimensional, complex issue, require serious scrutiny and introspection. Though it is inherently women-focused, the gender pay gap is more than a women’s issue. Just as women are susceptible to discrimination and socialization, so are men. Instead of blaming women for “not earning more”, or men for “keeping women down”, attempts to understand (and close) the adjusted gender pay gap should entail an investigation of how social norms influence and shape economic outcomes for women over a life cycle.

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