

**Investigating Bathroom Equity in STEM  
at the U  
Symposium Report  
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SCI 3900/HONOR 3990 - Spring 2023**

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### Introduction

During a lab for Mechanical Engineering within the Merrill Engineering Building, Stokelie had discovered that there was only one female restroom and three male restrooms within the entire building. She then brought this concern to a couple other women majoring in engineering and noticed that this was a common theme within the University of Utah STEM buildings.

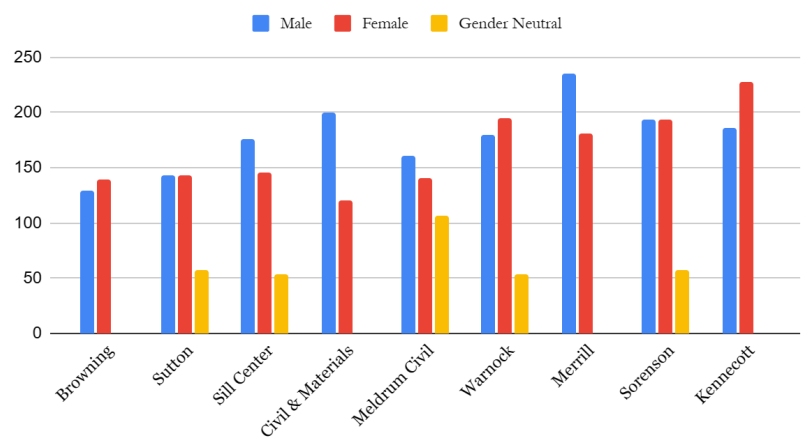
The issue we see is a lack of equity with female restrooms and gender neutral bathrooms. This prompted our group to research the ratio between male, female, and gender neutral restrooms for the College of Engineering and College of Science. With these factors in mind, the data we focused on collecting was the number of restrooms, square footage of restrooms, stall count, and the time it took to walk from class to the restroom.

### Methods

The initial collection of information were blueprints and quantitative data that was requested from members of Space & Planning, College of Engineering, and Facilities Support. The data received were a mix of stall and urinal counts, blueprints of the building floors, square footage of restrooms, and amount of restrooms. The College of Engineering buildings restroom square footage was collected from Space & Planning manager, Matt Yurick. The data regarding blueprints, amount of restrooms, and stall count for the College of Engineering buildings were provided by the construction manager, Andrew Elkins. Andrew Elkins also provided a stall count for the Merrill Engineering building, which we had initially believed showed the highest inequity. The College of Science building data which included the square footage of the restrooms and stall/urinal count was provided by facilities support, Thanasay Vilaipan.

We created data to match the experience a University of Utah student has attempting to find a restroom within the College of Science and College of Engineering restrooms. The walking time data was collected by our group and in order to make the data accurate there were several factors we took into account. We acknowledged the walking rate and the potential obstacles that a student may encounter on their way to the bathroom. Having these factors in mind, we had to determine the most efficient way to take the walking time data. The manner in which we took the walking time data was to measure the duration it took to walk from clusters of classrooms and labs to the restrooms located on the same floor. Having collected several points of data from both the College of Science and the College of Engineering, we compiled the data: **stall/urinal count, bathroom square footage, number of restrooms, and the walking time data** collected by our group.

Average Sq Ft for Bathrooms in Engineering Buildings



**Number of Bathrooms in Selected Engineering Buildings**

| Building Name     | Male | Female | Gender Neutral |
|-------------------|------|--------|----------------|
| Browning          | 8    | 7      | 0              |
| Sutton            | 4    | 4      | 1              |
| Sill Center       | 1    | 1      | 1              |
| Civil & Materials | 2    | 2      | 0              |
| Meldrum Civil     | 3    | 4      | 2              |
| Warnock           | 8    | 8      | 4              |
| Merrill           | 6    | 5      | 0              |
| Sorenson          | 6    | 6      | 1              |
| Kennecott         | 8    | 7      | 0              |

**Average Square Footage for Bathrooms in Selected Engineering Buildings**

| Building Name     | Male           | Female         | Gender Neutral |
|-------------------|----------------|----------------|----------------|
| Browning          | 128.875 sq. ft | 139.714 sq. ft | 0 sq. ft       |
| Sutton            | 143 sq. ft     | 142.75 sq. ft  | 57 sq. ft      |
| Sill Center       | 176 sq. ft     | 146 sq. ft     | 54 sq. ft      |
| Civil & Materials | 199.5 sq. ft   | 120.5 sq. ft   | 0 sq. ft       |
| Meldrum Civil     | 161 sq. ft     | 140.75 sq. ft  | 106.5 sq. ft   |
| Warnock           | 179.125 sq. ft | 194.5 sq. ft   | 53.25 sq. ft   |
| Merrill           | 235.83 sq. ft  | 181 sq. ft     | 0 sq. ft       |
| Sorenson          | 193.83 sq. ft  | 193.83 sq. ft  | 58 sq. ft      |
| Kennecott         | 186.25 sq. ft  | 227.42 sq. ft  | 0 sq. ft       |

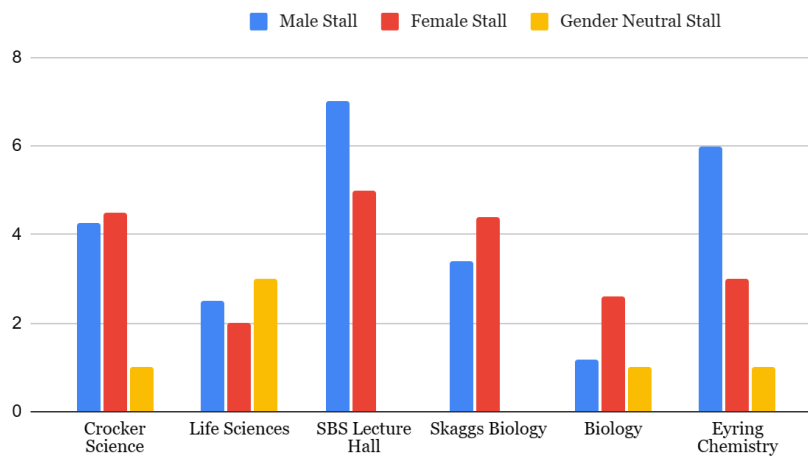
The University of Utah made the campus restroom data restricted access. With this barrier, it required group members to collect different data sets from University staff that were oftentimes outdated or lacking. The findings collected showed the inadequate square footage in the very limited gender neutral bathrooms that the campus has to offer.

Square footage between the Male and Female restrooms does provide insight on the equity within our gendered STEM bathrooms. The discovery pointed towards the **Women’s restrooms overall carrying more square footage than the Men’s restrooms overall in the Science buildings. Engineering Buildings showed the opposite result, holding a significantly higher square footage in the Men’s restroom.**

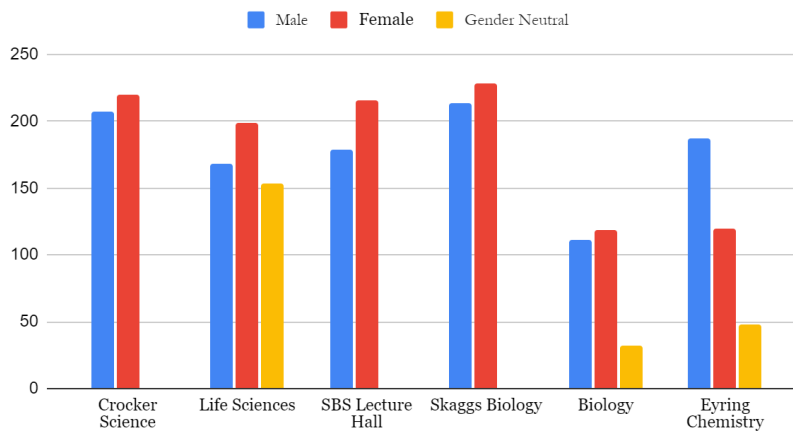
### Number of Bathrooms in Selected Science Buildings

| Building         | Male | Female | Gender Neutral |
|------------------|------|--------|----------------|
| Crocker Science  | 4    | 4      | 1              |
| Life Sciences    | 2    | 1      | 1              |
| SBS Lecture Hall | 1    | 1      | 0              |
| Skaggs Biology   | 5    | 5      | 0              |
| Biology          | 6    | 5      | 2              |
| Eyring Chemistry | 6    | 6      | 2              |

### Stall Count in Science Buildings



### Average Sq Ft in Science Buildings



### **Average Square Footage and Stall Count for Bathrooms in Selected Science Buildings**

| Building         | Male           |                 | Female         |       | Gender           | Neutral |
|------------------|----------------|-----------------|----------------|-------|------------------|---------|
|                  | Square Footage | Stall (Urinals) | Square Footage | Stall | Square Footage   | Stall   |
| Crocker Science  | 207.25 sq. ft  | 2 (2.25)        | 219.75 sq. ft  | 4.5   | n/a <sup>1</sup> | 1       |
| Life Sciences    | 168.5 sq. ft   | 1 (1.5)         | 199 sq. ft     | 2     | 153 sq. ft       | 3       |
| SBS Lecture Hall | 179 sq. ft     | 4 (3)           | 216 sq. ft     | 5     | 0 sq. ft         | 0       |
| Skaggs Biology   | 213 sq. ft     | 1.8 ( 1.6)      | 228 sq. ft     | 4.4   | 0 sq. ft         | 0       |
| Biology          | 110.67 sq. ft  | 1.167           | 118.2 sq. ft   | 2.6   | 32 sq. ft        | 1       |
| Eyring Chemistry | 186.67 sq. ft  | 2.83 (3.167)    | 119.67 sq. ft  | 3     | 47.5 sq. ft      | 1       |

Although with findings pointing towards more square footage provided to Women's restrooms, the Eyring building exhibited a different inequity between the gendered restrooms. The given square footage showed that gender neutral bathrooms were small, Eyring data showing that the men's bathrooms are significantly bigger than the Women's. The gender neutral restrooms data held steady at a low capacity and number overall within all buildings. It must be acknowledged that Men's restrooms had both stalls and urinals, which would give them a larger capacity than women's bathrooms with the same stall count, so we added the stall and urinal counts together in the chart above.

### **Average Walking Time between Classrooms and Bathrooms for Crocker Science Center**

|         | Male    | Female  | Gender Neutral   |
|---------|---------|---------|------------------|
| Floor 0 | 35.84 s | 31.97 s | 29.35 s          |
| Floor 1 | 26.20 s | 28.00 s | n/a <sup>2</sup> |
| Floor 2 | 31.27 s | 31.91 s | n/a              |
| Floor 3 | 19.00 s | 21.00 s | n/a              |

<sup>1</sup> This data was unavailable to us

<sup>2</sup> n/a means that there were no bathrooms of this type on this floor

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Overall average walking times to female restrooms are longer. With one gender neutral restroom only being present on the basement floor, times would be much longer if one started from a different floor.

It is also important to note that the average stall count (including urinals) is much higher for male restrooms as compared to female restrooms, and especially gender neutral, since the gender neutral restroom does not contain a stall as it is a private restroom.

### **Average Walking Time between Classrooms and Bathrooms for Eyring Chemistry**

|         | Male    | Female  | Gender Neutral |
|---------|---------|---------|----------------|
| Floor 1 | 21.20 s | 20.53 s | n/a            |
| Floor 2 | 23.23 s | 19.06 s | n/a            |
| Floor 3 | 20.55 s | 25.14 s | n/a            |
| Floor 4 | n/a     | n/a     | 13.95 s        |

Walking time between Men and Women's restrooms was shown to be a longer walk to the Women's restroom. The stall counts for Men were higher than Womens, which also resulted in higher capacity allowed for Men's restrooms.

We found value in the knowledge that lines of people often form to enter the Henry Eyring Chemistry building Women's restrooms before and after regular lecture hours. This does deduce to less classroom time for students that use the women's restroom in the Eyring building.

For a comparison against a non-STEM focused building, we collected walking time data from the Social and Behavioral Science Building. The average times are much lower, and almost all restrooms are gender neutral restrooms and are located in the same place of the building once reaching the third floor.

All of the data for the Social and Behavioral Science Building follows below.

### **Number of Bathrooms, Bathroom Square Footage, and Stall Count in Social and Behavioral Science Building**

|                     | Male          | Female     | Gender Neutral      |
|---------------------|---------------|------------|---------------------|
| Number of Bathrooms | 2             | 2          | 13                  |
| Avg Sq. Footage     | 187.5 sq. ft  | 174 sq. ft | 64.15 sq. ft        |
| Avg Stall Count     | 2 (3 urinals) | 4.5        | 1.38 (0.46 urinals) |

### Walking Time for Social and Behavioral Science Building

|          | Male             | Female  | Gender Neutral |
|----------|------------------|---------|----------------|
| Floor 1  | 10.52 s          | 12.13 s | 15.82 s        |
| Floor 3  | n/a <sup>3</sup> | n/a     | 14.22 s        |
| Floor 4  | n/a              | n/a     | 15.40 s        |
| Floor 5  | n/a              | 13.44 s | n/a            |
| Floor 6  | n/a              | n/a     | 18.70 s        |
| Floor 7  | n/a              | n/a     | 16.61 s        |
| Floor 8  | n/a              | n/a     | 14.63 s        |
| Floor 9  | n/a              | n/a     | 13.71 s        |
| Floor 10 | n/a              | n/a     | 11.70 s        |
| Floor 11 | n/a              | n/a     | 12.32 s        |
| Floor 12 | n/a              | n/a     | 14.16 s        |
| Floor 13 | n/a              | n/a     | 10.72 s        |
| Floor 14 | 4.87 s           | 4.24 s  | n/a            |

### Conclusion

#### Key Findings

The findings were heavily reliant on the measurements that the University of Utah had provided, the acquired knowledge was difficult in itself to get. These barriers put in question the accuracy and age of the data. With the resources available, we will rely on this given information to conclude our investigation.

The findings were conflicting between the Engineering and Science buildings. Engineering buildings had a disparity in the Women's restrooms whilst the Science restrooms had inequity in the Men's restrooms. The received and acquired data provided insight on the lack of gender neutral restrooms throughout the studied buildings and a discrepancy within the time to find said restrooms. This walking time data was obtained with the knowledge of where the restrooms are located. Our collected walking time data was integrated with the stall counts we were given by members of Space & Planning and Facilities Support.

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<sup>3</sup> n/a means that there were no bathrooms of this type on this floor

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The Merrill Engineering building which showed the worst equity amongst bathrooms is a common building for first year students, which could have an effect on women entering the major and their motivation to stay. The Engineering field is not welcoming to women with its lack of representation within the student body and the educational staff, adding the lack of bathroom access may contribute to women turning away from continuing engineering.

### **Potential Solutions**

In order to be more inclusive of everyone and improve overall experience, we believe that having signage throughout buildings that direct people towards the nearest restrooms would be helpful. The Merrill Engineering Building is a difficult building to navigate and would especially benefit from using signs pointing towards the women's restroom.

A proposed solution would be to move first year labs for Engineering students to a more equitable building. Doing this would help with retention of female undergraduate engineering students, since they would feel more comfortable and accepted. Another recommendation would be to change excess male restrooms to gender-neutral restrooms, where it can be done. Similar to what is shown by the Social and Behavioral Sciences building, having majority gender neutral restrooms would increase equity. This would allow for there to be more gender-neutral restrooms, while still keeping male restrooms. Also the amount of female restrooms and male restrooms would be more equal while creating more gender neutral bathrooms.

### **Acknowledgements**

We acknowledge and appreciate the assistance of Matt Yurick (Space Planning & Management), Thanasay Vilaipan (Facilities Support), and Andrew Elkins (College of Engineering) for providing us with our data for this project. We also appreciate the support and guidance from the instructors of SCI 3900/HONOR 3990 Being Human in STEM.