2017 FINAL REPORT

ASSESSING INDOOR AIR QUALITY (PM2.5) IN UCLA RECREATION FACILITIES

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Sustainability Action Research

www.ioes.ucla.edu/project/air-quality/

MEET THE TEAM

AIR QUALITY SUSTAINABILITY ACTION RESEARCH

The Air Quality Sustainability Action Research Team is comprised of a diverse team of passionate environmentalists and public health enthusiasts.

The team includes one stakeholder who provides advice, mentorship, and support such as connecting the team with key community members, gathering relevant information, and providing important decision-making guidance.

There are two team leaders who make the gears turn and keep everyone on task. The Air Quality Team leaders act as the liaison between the team and the stakeholder, track the team's progress toward quarterly goals, organize team logistics, and foster an environment that promotes growth and personal development for team members. In addition, there are four team members who each contributed their own expertise and experiences toward the research.

STAKEHOLDER: KATIE ZELLER

Katie is the Sustainability Coordinator for UCLA Recreation Sport Venues and Event Operations, and the stakeholder for the Air Quality Sustainability Action Research (SAR) Team. She is responsible for developing and implementing sustainability initiatives throughout UCLA Recreation, including the John Wooden Center, Pauley Pavilion, the Student Activities Center and Sunset Canyon Recreation Center. Her focus involves zero waste, energy use reduction, air quality and outreach. She graduated from UCLA with a Bachelor's degree in Geography/Environmental Studies and a minor in Environmental Systems and Society. As a student, she led the Zero Waste Pauley Team.

TEAM LEADER: KIANA CHAN

Kiana is one of the Team Leaders for the Air Quality SAR Team, and will be graduating this spring with a major in Geography and a minor in Asian Languages. In addition to SAR, she has also volunteered as an American Conversation & Culture Facilitator and interned at the UCLA Women's Health Education & Resource Center. After graduation, Kiana will be working for a non-profit that provides low-income communities in New York City with fresh, sustainably-sourced produce and nutrition education. Next January, she will be teaching English in Malaysia with the Fulbright U.S. Student Program. Kiana hopes to combine her interests in health and the environment into a public health career.

TEAM LEADER: ALEX WOLFSON

Alex is the leftover leader of the Air Quality Team. He is a graduating senior with a major in Environmental Sciences and a minor in Environmental Systems and Society. At UCLA he has performed with Shenanigans Comedy Club, produced arts education events with the Student Committee for the Arts, volunteered with youth with Unicamp and Mentorship, and done lots of other, weirder, clubs and activities. After graduation he will be working as an Environmental Consultant at Orion Environmental in Long Beach, California.

TEAM MEMBER: STEPHANIE GONZALEZ

Stephanie is a junior majoring in Geography and Environmental Studies, with a minor in Geospatial Information Systems and Technology. She is one of the members of the Air Quality SAR Team. This experience has sparked an interest in Stephanie in the fields of public health and the environment. Over the summer, Stephanie will be participating in an Linked Applied Knowledge in Environmental Sustainability Research Undergraduate Experience program. This program will touch up on researching toxic algal blooms in the Menomonie, Wisconsin.

TEAM MEMBER: HELEN LU

Helen is a sophomore studying Environmental Science with a minor in Environmental Engineering. Air quality is a topic that she is interested in because she spends the majority of her free time dancing in dusty parking lots with her team, NSU Modern. Over the summer, she will be working with UCLA Dining on various sustainability initiatives. She will also be conducting research on pulsed field magnetometry at the Los Alamos National Laboratory.

TEAM MEMBER: SARAH HUANG

Sarah is a graduating senior with a major in Geography and Environmental Studies and a double minor in GIS and Public Affairs. While conducting research on street conversion and environmental justice for the Sustainable LA Grand Challenge, she saw the significant role public health played in framing environmental issues. Along with her involvement as a member of the Air Quality SAR Team, Sarah has served as a student facilitator for Bruin Leaders Project and will continue working at Plug in America as a Policy and Communications Intern after graduation.

TEAM MEMBER: JONATHAN TEDJAKUSNADI

Jonathan is a graduating senior with a major in Environmental Science and a minor in Environmental Health. His interests in public health have led him to pursue a career in dental public health. Jonathan is involved in various volunteer organizations on campus that provide health services to lower income communities. In his spare time, Jonathan enjoys lifting weights and cracking open a cold one with the boys.

THE BASICS

Air quality refers to how healthy and clean the air is, mainly measured by presence or absence of various pollutants in the air, and is an important public health and environmental issue.

Many places around the world suffer from poor air quality with few methods to address the issue as air pollutants are often caused by several sources, including Los Angeles, known for its infamous layer of smog from ozone released from automobile tailpipes. In addition to outdoor air quality, there are also issues with indoor air quality, which that has fewer regulations and standards despite the fact that people spend a majority of their time indoors. Therefore, the Air Quality Sustainability Action Research (SAR) Team was developed to conquer these issues at UCLA, picking up where the previous team left off.

DID YOU KNOW?

There are 6 criteria pollutants that are monitored and regulated by government agencies. The 6 pollutants are carbon monoxide, lead, nitrogen oxides, ozone, particulate matter and sulfur oxides.

STARTING LINE

Last year's Air Quality SAR team originally planned on conducting research on the air filtration systems within the John Wooden Center. However, they changed the course of their project after discovering that the system was broken. Instead, they shifted their project to investigate the overall air quality at Wooden. Using the Q-trak and DustTrak devices, they collected data on carbon dioxide and PM2.5 concentrations in 10 locations within the facility, three times a day, for one week.

Their results showed elevated PM2.5 levels in the weight room. Although the results were concerning, the sample size was not large enough to declare it an issue and further research was recommended.

The findings of the previous team provided the foundation for the Air Quality team this year. Our goal was to conduct more extensive research on the air quality at the John Wooden Center, especially in the weight rooms, where elevated rates of carbon dioxide and PM2.5 had previously been detected.

We expanded the project to include the Bruin Fitness Center to identify any trends in the air quality between the two facilities and determine if the issue found last year was John Wooden Center specific. Rather than collect data on both carbon dioxide and PM2.5, our team decided to focus solely on PM2.5 because of its negative human health effects.

WHAT IS PM2.5?

Particulate Matter 2.5 (PM2.5) is a serious air pollutant with major health impacts. Any particle that is 2.5 micrometers or less is identified as PM2.5, which can include smoke, soot, organic compounds and metals. PM10 is anything less than 10 micrometers and includes things like pollen, dust and mold in addition to the examples listed for PM2.5.

After collecting and analyzing our data, we planned to either provide suggestions to improve the indoor air quality of the facilities if we found an air quality issue or explore ways to improve sustainability relating to air quality and public health within UCLA Recreation if we did not.

AIR QUALITY 101

Previous research on air quality has emphasized the significance of indoor air quality on health, because people spend about 90 percent of their time indoors (The Inside Story). Maintaining a healthy indoor air quality is especially important in fitness centers because they are high-traffic areas where strenuous activity takes place. Factors such as poor ventilation, issues controlling temperature, high or low humidity, recent construction or renovation, and the presence of mold, cleaning supplies, pesticides, and airborne chemicals all affect air quality, and human health as a result (The Inside Story).

Among these different factors, there is a general consensus in scientific literature that pollutants classified as PM2.5 and PM10 have the greatest effect on indoor air quality and public health (Binder et al; Branis et al, 2005; Fromme et al, 2008). Since indoor particulate matter is primarily generated by human activities, high levels of PM2.5 can be mitigated with appropriate countermeasures (Fromme et al, 2008). Particulate matter is especially concerning because of its ability to damage lung tissue. Research has shown that the tiny particles can cause throat and lung irritation, coughing, sneezing, and even worsen medical conditions such as asthma (Ambient). PM2.5 affects various people in different ways, but overall has a negative effect on human health.

RESEARCH QUESTION:

Is there an air quality issue at UCLA Recreation Centers?

GOAL:

To promote human health and clean air for UCLA students and community members who utilize John Wooden and Bruin Fitness Recreation Centers.

Although the Occupational Safety and Health Administration currently does not have standards defining the maximum limit of indoor PM2.5, other agencies have established guidelines to maximize indoor air quality by regulating outdoor air quality and proper air ventilation inside. The Environmental Protection Agency has 24-hour and primary and secondary annual standards for outdoor PM2.5, of 35g/m3,12 g/m3 and 15 g/m3 respectively, which are the benchmarks we will compare our findings to (Ambient Air).

The most common method to improve indoor air quality is the installation of an air filtration system. Studies have used models to estimate percent reduction in indoor particle mass concentration taking into account air flow rates, indoor air volution, particle removal efficiency of various filters, and many other factors, to create the most accurate models. They also estimated the overall cost of each type of filter over its lifetime, including the energy cost, filter replacement frequencies, and cost per filter. Although the results showed that the highest grade of filter, HEPA, was the most effective at reducing particulate matter concentrations, it had modest difference from the second filter, MERV, which can be more energy efficient and is used in UCLA Recreation Facilities (Fisk et al, 2001).

GAME PLAN

Stage 1: Planning & Strategies

We decided to measure PM2.5 in John Wooden Center and the Bruin Fitness Center for a period of 6 weeks to improve our dataset and get more conclusive results. Our stakeholder, Katie Zeller, provided us with room count data for the John Wooden Recreation Center. This data included the number of people in each room every day and every hour for 2016. Our team randomly chose and analyzed 26 days out of the year to determine the minimum and maximum usage times of this facility.

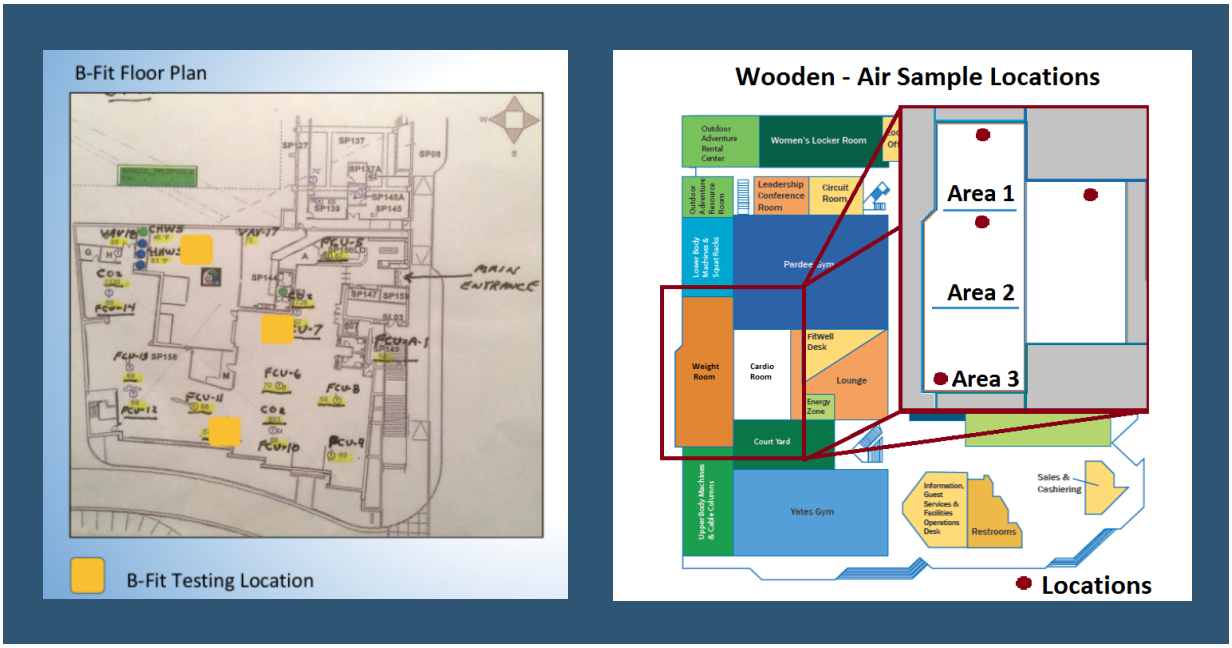
We also used this data to decide which rooms in the facility we wanted to measure. We chose to measure the weight room and cardio room because they are the most heavily used rooms in the facility. As such, any air quality issue in those locations would potentially have adverse effects on members of the UCLA community.

We used a similar measurement methodology as last year's team, measuring multiple areas in large rooms and a single area in smaller rooms. However, we switched it up by testing the rooms twice a day - once during the peak hours, and once during non-peak hours - as opposed to three 20 minute tests, three times a day.

Based on the room count data, we decided to measure once during off-peak usage between 7:00 a.m and 8:00 a.m. and once during usage hours between 5:00 p.m. and 6:00 p.m. Monday through Friday. Our initial measurement period was between February 13th, 2017 and March 17th, 2017. We also took measurements during the first week of Spring quarter from April 3rd to April 7th to gather data to account for changes in gym usage due to the start of a new quarter.

In addition to testing three locations in the weight room and one location in the cardio room in John Wooden Recreation, we decided to test two locations in the weight room and one location in the cardio room at the Bruin Fitness Center to determine if any potential issue in Wooden was localized or UCLA Recreation-wide. Later in the quarter, beginning February 28th, we added an additional measurement location outside each gym to normalize our data based on ambient air quality - bringing our total measurement locations to 9.

Testing Locations



Eon Lee, a postdoctoral scholar at the UCLA Fielding School of Public Health, gave us a Dylos DC1700 Standard Laser Air Quality Monitor to take samples of PM 2.5. We used the monitor to take 3 minute air samples in each location, which we averaged to get each data point. From February 13th to March 8th we placed the Dylos monitor on the ground level at each gym and outside testing location. In order to asses the validity of our samples taken from February 13th-March 8th, we took an additional measurement at both ground level and at 1.6 meters above in one location of the weight rooms of both facilities to compare the two.

WHO IS EON LEE?

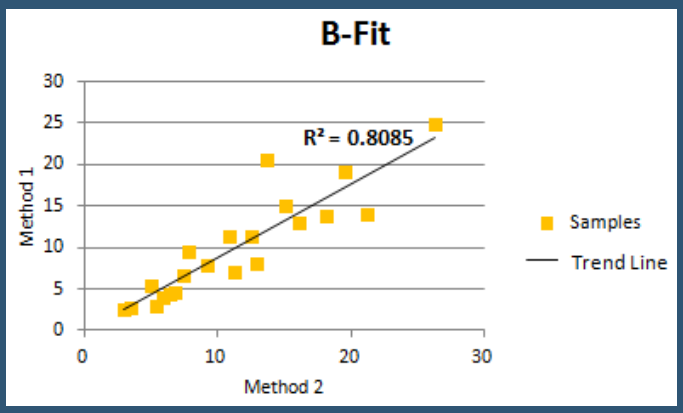
Eon Lee is a Postdoctorate Scholar who works with Professor Yifang Zhu at the UCLA Fielding School of Public Health. He holds a PhD in Environmental Engineering UCLA, with a focus in Air Quality, and a MS from the University of Texas at Austin. Before UCLA, he worked as an air quality engineer for the Texas Commission on Environmental Quality.

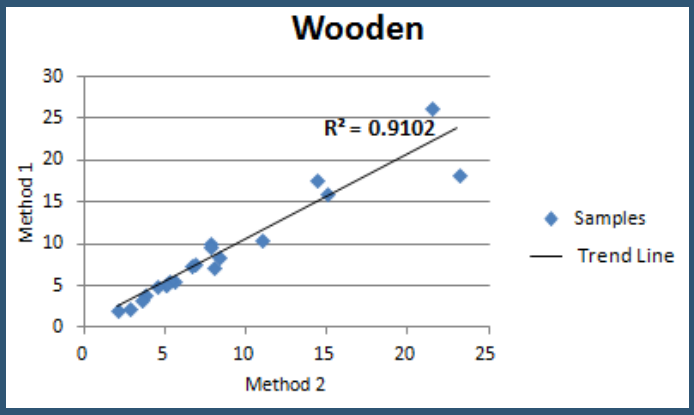
We took this extra measurement from March 9th-March 17th and will continued from April 3rd-April 7th. After consulting with UCLA Geography Professor Kyle Cavanaugh, we determined the difference in our measurements was not statistically different and thus usable. From March 9th to March 17th we corrected our sampling methodology and started taking samples at about 1.6 meters above ground level at each gym and outside. This change was made after talking to Mr. Lee, who counseled us to measure at 1.6 meters off the ground since that was the level at which most students breathe during exercise.

STATISTICALLY SIGNIFICANT?

Professor Kyle Cavanaugh from the Geography Department explained to us how to do a regression analysis in order to test if their is a difference in PM 2.5 sample measurements when taken with method one or two. Method one is taking air samples 5-6 feet above the ground. Method two is taking air samples at ground level. We did both methods in Wooden and BFit Area 1. The high r-squared values indicates that there is no statistical significance between air sample data using the two methodologies.

NOT STATISTICALLY SIGNIFICANT!





Stage 2: Data Collection

We also interviewed the building engineers for both gyms as they were giving us a tour of the facilities. The main three questions that we asked the building engineers were:

QUESTION 1

Can you explain how air filtration, circulation, and exhaust work inside this facility?

QUESTION 2

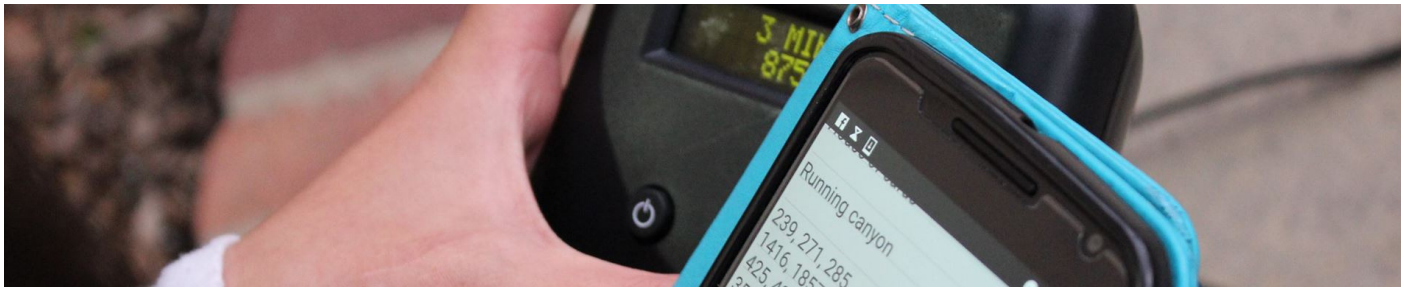
What are the factors that influence indoor air quality at this facility and can you describe them?

QUESTION 3

If there was a air quality issue, what steps can be taken in order to find a solution?

Both building engineers were skeptical that there would be an air quality issue in the building. UCLA uses MERV 12 filters, which, while not the highest quality possible, are several times better than required and are energy efficient. There are steps that can be taken in the case of an air quality issue, but they are expensive and invasive – requiring an extra circulation system to be installed directly into a particular room or area. The building engineers advised us to formulate a solution to the air quality issue in the case that we found on. However, they were confident that we would not.

The air filtration systems of each building had interesting differences. The Bruin Fitness Center has no central air circulation system; because of its design, air circulates naturally through traffic out the main entrance. Air from the outside passes through a MERV 12 filter, and sensors throughout the facility automatically open additional exhaust ports if they detect an issue. John Wooden Center, the older building, has a large central air circulation system with many filters and exhaust. Like the Bruin Fitness Center, most rooms in John Wooden Center use outside air, the highest quality air for an exhaust system.



Unlike Bruin Fitness Center, John Wooden Center must keep its circulation system on at full power to always accommodate the maximum capacity of the gym. This is important during peak usage as the staff there does not keep track of current occupancy. However, it is less important during the new additional hours after 1:00 a.m., where building occupancy is below 20. This represents a potential area for energy savings that we decided to recommend for future investigation among SAR air quality teams.

FOCUS GROUP

One of the focal points of our project was to incorporate a focus group to better understand various factors affecting students that use recreational facilities. Specifically, we wanted to narrow our approach to both health risks and potential quality of life improvements.

To reach these ends, we asked questions such as:

> “Aside from health issues, how do you feel about the comfort level of the air quality?”

> “What do you think about air quality in general?”

> “Is there anything about air quality in John Wooden Center that you would like to improve?”

The input we received provided us with insights on how to improve air quality and increase general awareness. After analyzing the results, we came up with three main takeaways.

General Misinformation

One of the greatest insights we received from the focus group was that there is a general unawareness and misinformation regarding air quality and how it affects human health. We received a number of responses similar to:

> “I think I only notice it if air quality is visible–and that is only if it is really bad. So that just goes to show that I really don’t think about air quality at the gym at all.”

Air quality is an issue that can affect human health regardless of whether it can be seen or not– in times when it can be seen, it indicates extreme and unhealthy air quality. Considering this gap in knowledge, we highly recommend employing outreach and communication techniques to spread awareness about the health effects of poor air quality as well as ways to remain healthy in poor conditions.

Comfort in the Gym

In addition to a general lack of awareness about air quality, we also learned about air comfort in the gyms. With responses such as:

> “If there is too much dust, I get irritated, watery eyes and it affects my exercise routine.”

and others that commented on bad smells in certain areas, we came to the conclusion that perhaps some areas of the facilities require more circulation than others, if not for a human-health concern then for a comfort one. This can be tested with further research to determine whether more circulation in certain areas will ameliorate these concerns.

Recommendations

At the end of our focus group, we asked participants if they had any recommendations to improve UCLA's recreational facilities. One response in particular noted that:

> "Running the lights 24/7 seems like such a waste of energy."

We ran with this idea of decreasing energy usage during graveyard hours and applied it to air quality. It led us to a question: If the air quality is fine as is and there are no discernable health risks, could recreational centers shut off circulation during non-peak hours to save energy? This was an important point which we decided would be an area for future research.

THE NUMBERS

We looked at our data by putting it into a series of graphs. We had three main types:

EPA STANDARDS

These graphs compare our data to EPA standards for PM2.5

INSIDE/OUTSIDE RATIO

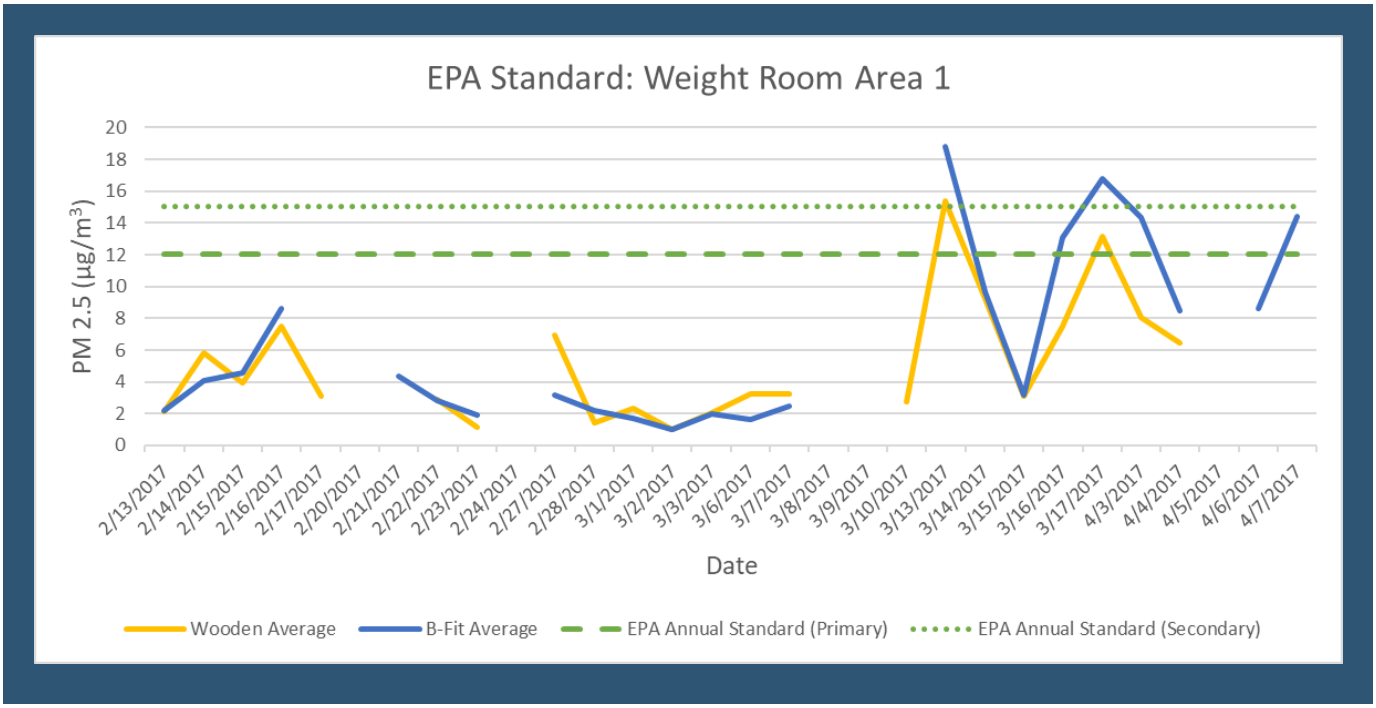
This ratio shows how well the filtration system is working and whether or not there is an inside source of pollution

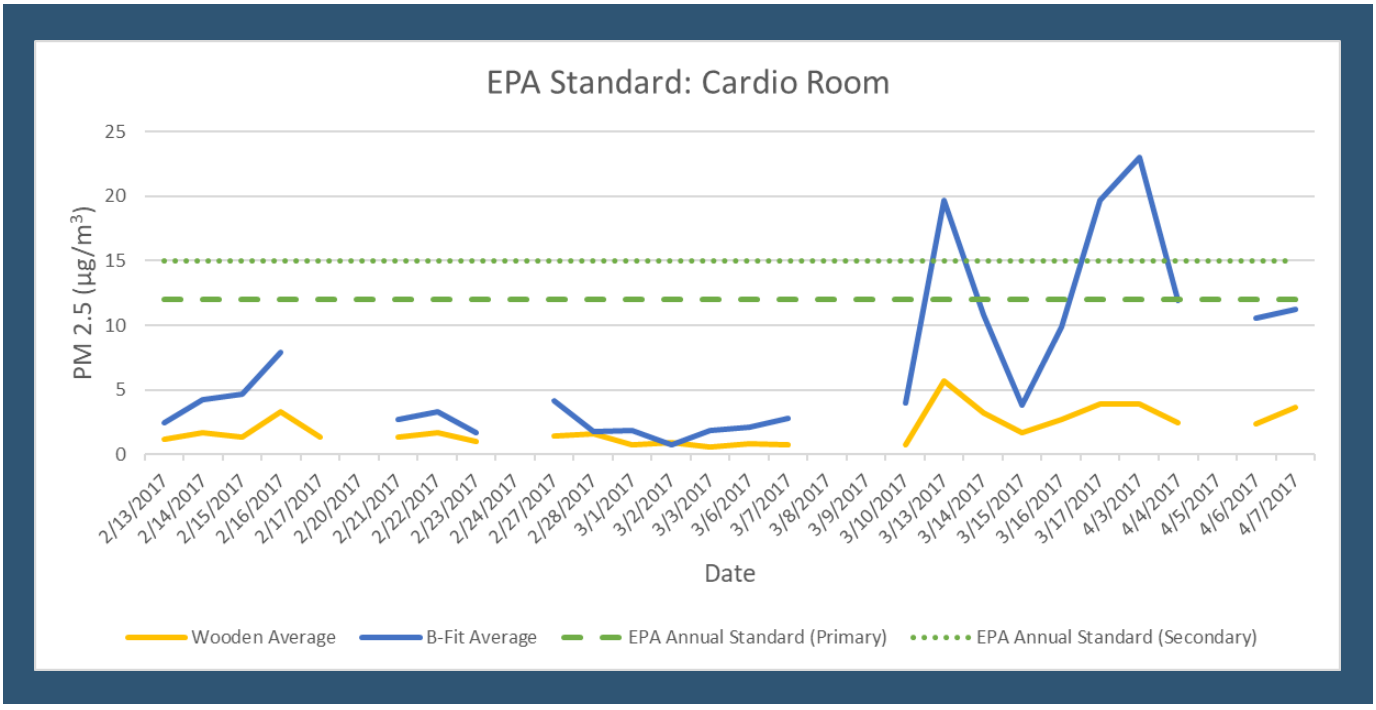
MORNING VS EVENING

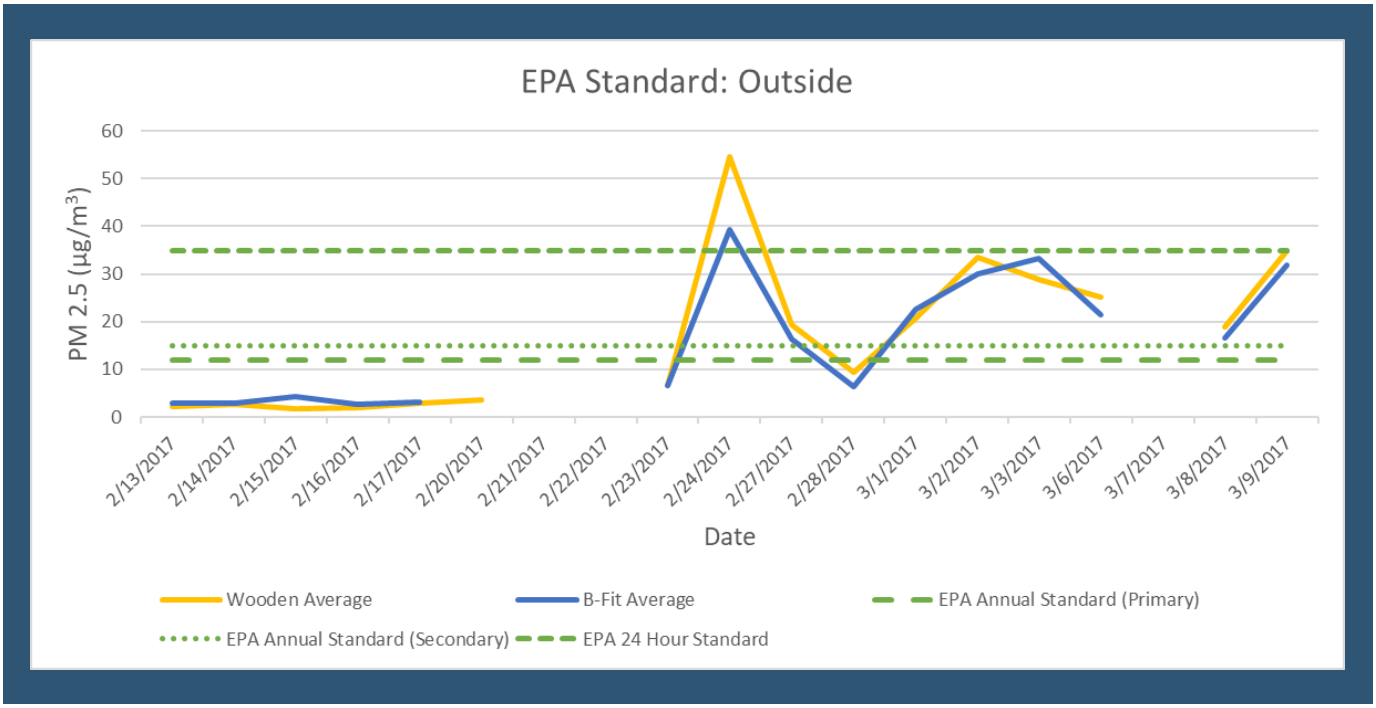
These graphs show how similar our morning (off-peak) and evening (peak) measurements are, and explains why we averaged them

Several graphs chosen for analysis are included here. See Appendix A for all graphs, Appendix B for our converted data set, and Appendix C for the raw measurement data straight out of the Dylos.

EPA Standards

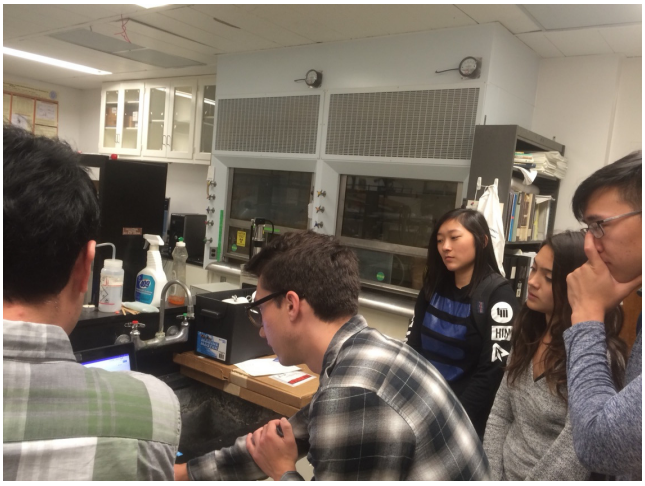




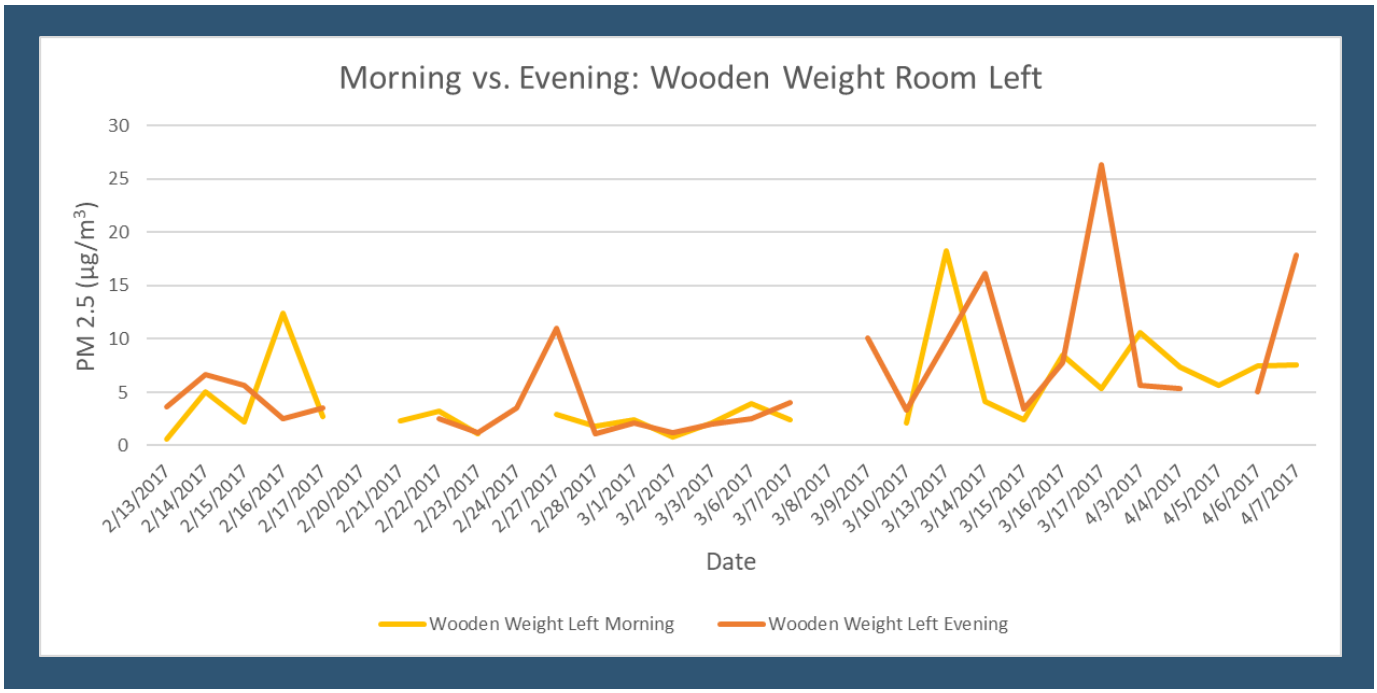


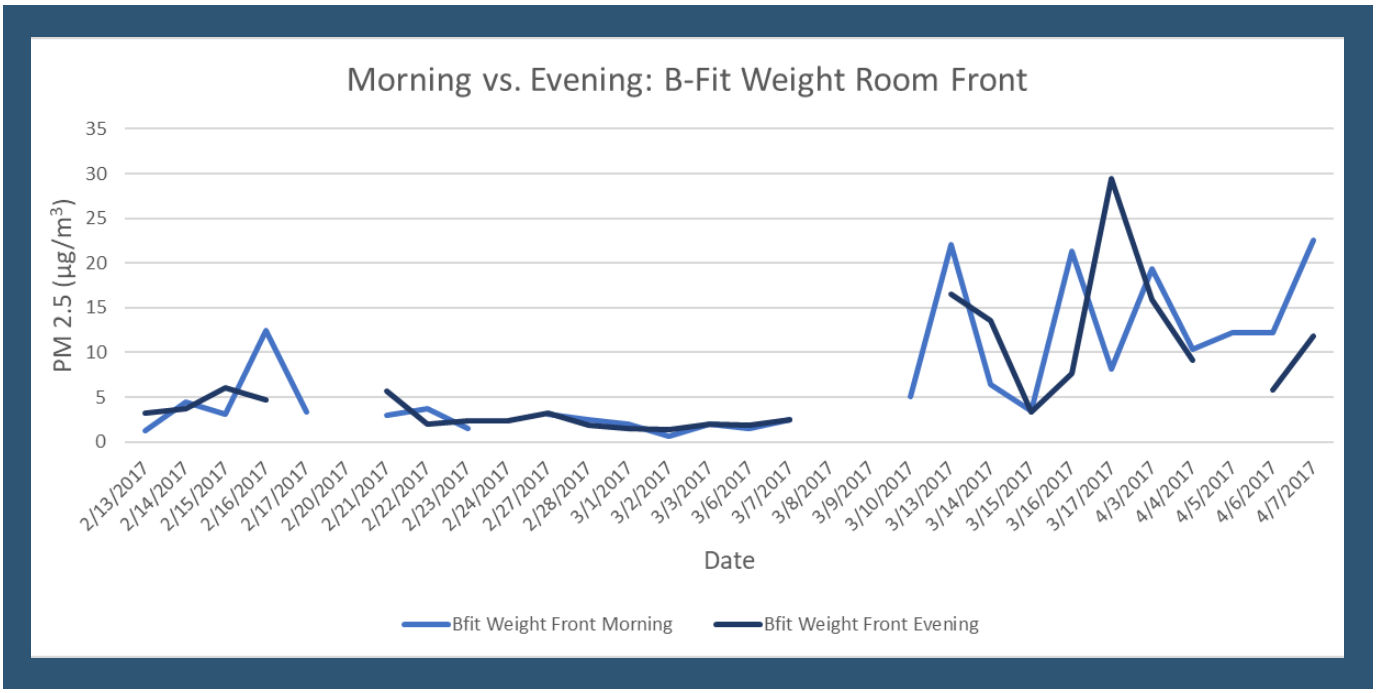
The first two graphs show our measurements in Weight Room Area 1 and the Cardio Room of each gym. In general, PM2.5 concentrations are lower than the EPA Standards, 12 g/m3 and 15 g/m3, shown in green dashed lines - which is a good thing! Although certain time periods saw PM2.5 concentrations that crossed these thresholds, there is no air quality issue in either facility. This is because the standards given are for annual exposure - if you breathed air of that quality averaged over a year. Because not even the biggest gym rats spend that much time in recreation facilities, crossing that threshold occasionally does not constitute an air quality issue.

The third graph shows PM2.5 outside of both gyms. They are highly correlated, which makes sense because outdoor air is well mixed. Outdoor air quality is on average higher than indoor, at some points crossing the EPA 24 hour standard of 35 g/m3. This is more concerning as it presents a greater risk of exposure to unsafe levels of PM2.5, but is not surprising considering Los Angeles has some of the worst air quality in the country.



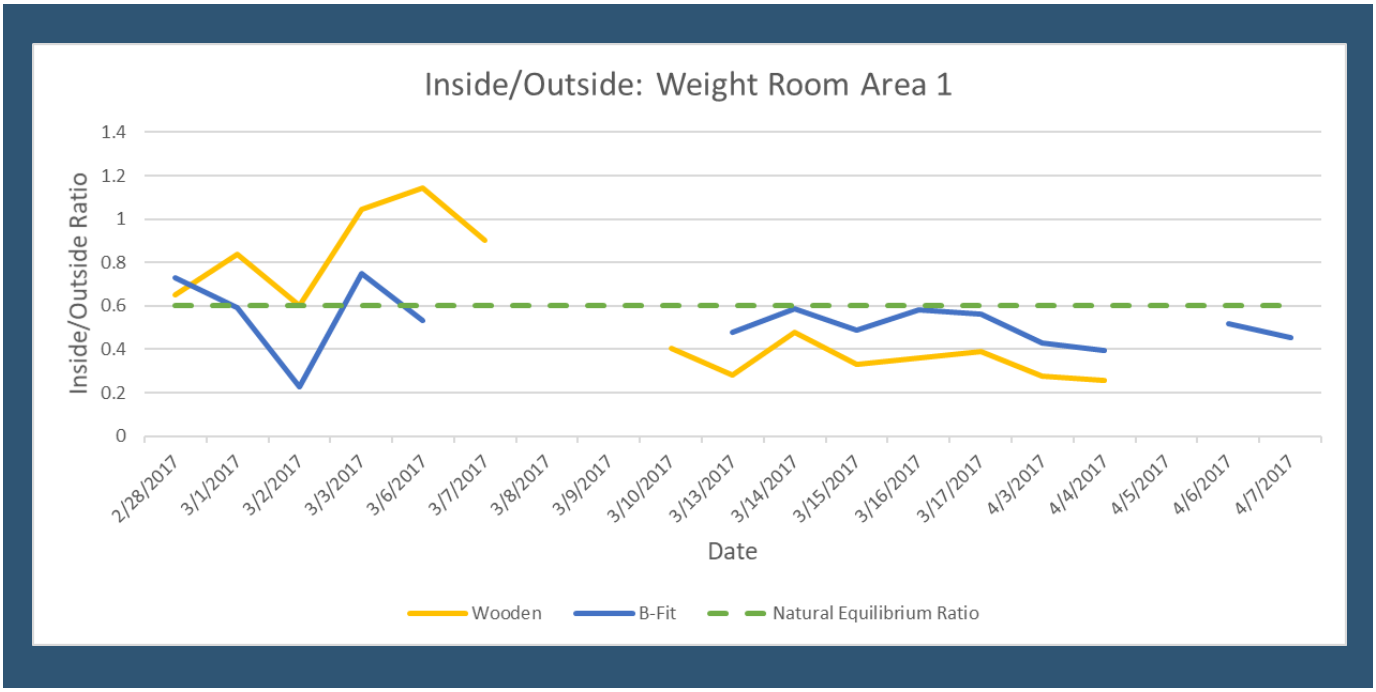
Morning vs Evening

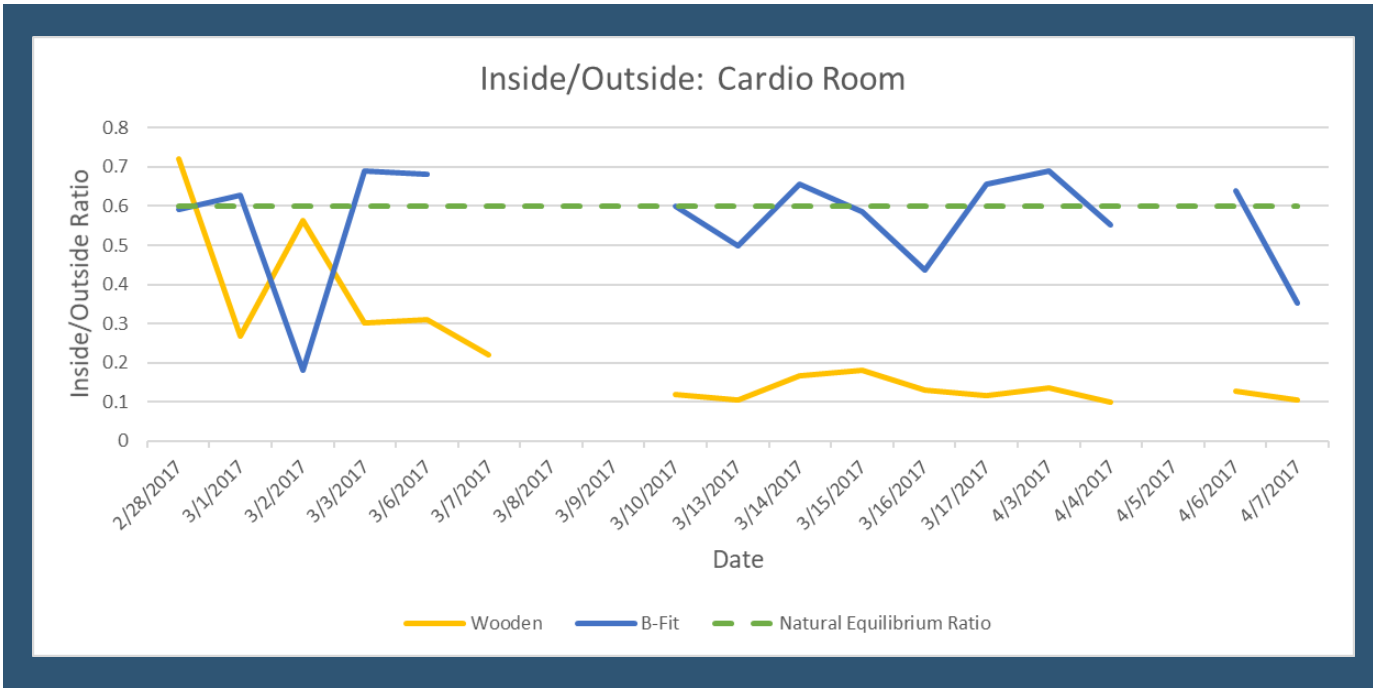




Morning vs Evening comparison graphs were created because, initially, we thought that evening measurements were going to be higher than morning measurements because evening measurements occurred during peak usage. However we found that, in both gyms, morning and evening measurements are very similar to each other.

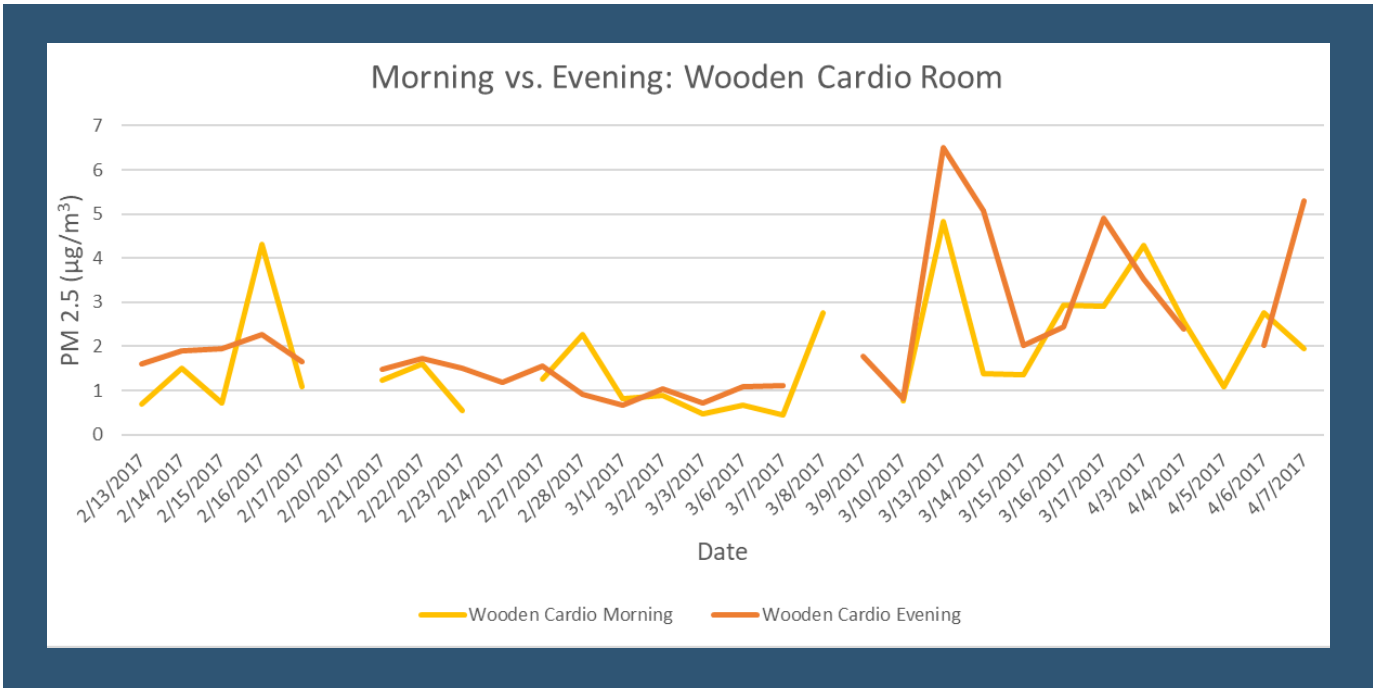
Inside/Outside Ratio

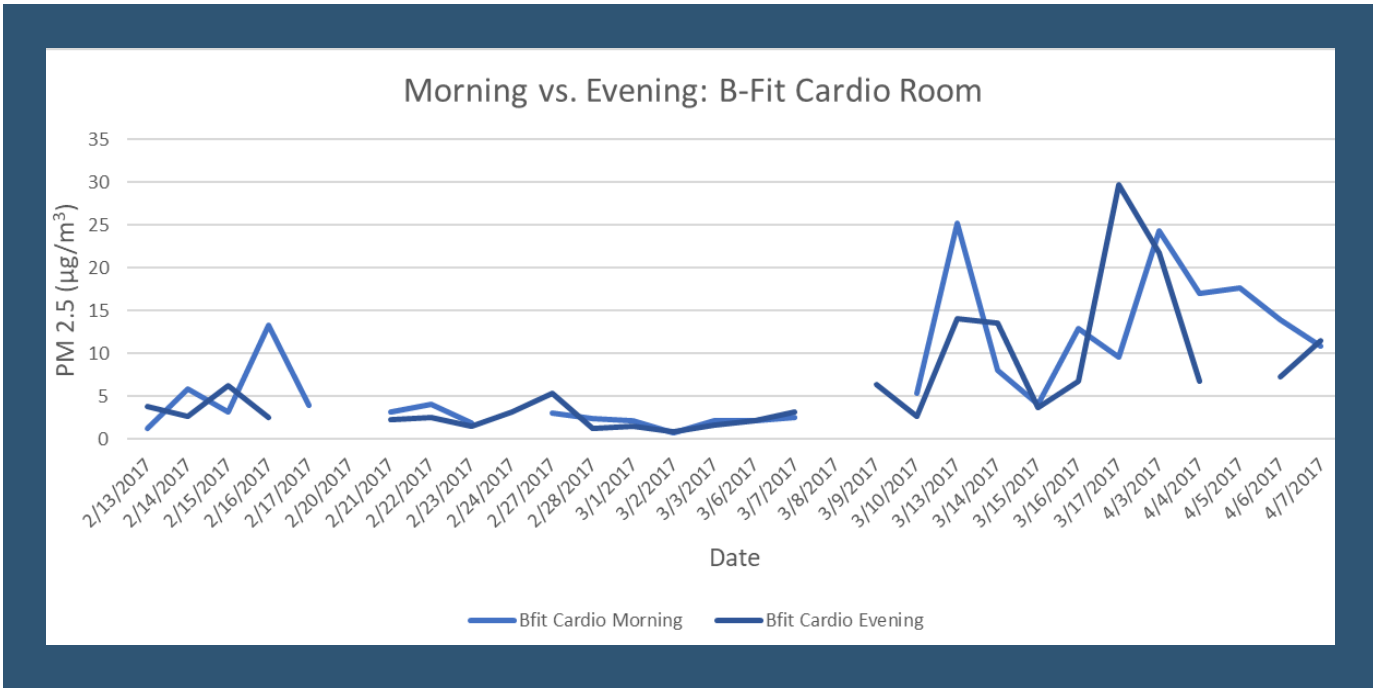




The Inside/Outside ratio graphs were recommended to us by postdoctoral hero, Eon Lee. The natural equilibrium ratio of indoor PM2.5 to outdoor PM2.5 without any air filtration is 0.6. This means that a ratio lower than 0.6 means air filtration is occurring and a value higher than 0.6 means there is an indoor source of pollution. In general, both Wooden is below 0.6 - good news - and B-Fit is at 0.6 - also good news. The difference between the gym and a possible explanation for this difference is explained in the next section.

There is some fluctuation occurring in mid February, late February and in early April. For this reason, we decided to average morning and evening together to make our other graphs more readable without losing as much data resolution as dropping either morning or evening measurements.





LET'S TALK

EPA Stanards

All areas of the weight room in Wooden and BFit experienced high PM2.5 values in early march for a couple of days as well as in early April. This steep rise from about 5 g/m3 to 20 g/m3 can be associated with the start of Spring. We discovered that pollen is the culprit; although not initially classified as PM2.5, it can be considered PM2.5 if it is broken down to smaller particles. Pollen was not completely filtered out through the HVAC units and affected indoor air quality.

This seasonal event caused PM2.5 concentration to cross the EPA Primary Standard and Secondary Standard. This rise is also seen in the cardio room of both gyms on the same days. These PM2.5 levels are high but they are not a cause for alarm because they still only occasionally cross an annual standard. Furthermore, given that the outside air quality compared to the EPA Standard is about 20 or more g/m3higher on average than indoor air quality, the filtration system is removing pollen well.

Inside/Outside Ratio

The difference in inside/outside ratio between gyms stems from the fact that Wooden has an active filtration system and B-Fit relies primarily on passive air circulation. This difference is particularly seen in the cardio room. B-Fit air quality fluctuates closely to the inside/outside ratio of 0.6 because B-Fit does not contain a standard air filtration system, instead its air exchanges occur when doors open to the outside during normal use, though it does contain sensors that will automatically vent the building if CO2or CO passes a certain threshold. Wooden is generally lower than the equilibrium ratio because the facility circulates ten air exchanges every hour.

Wooden, however, experienced a much higher ratio from 2/28/2017 to 3/7/2017. One possible explanation for this is that the filtration system in the weight room for Wooden may have not been working properly during this period. Further investigation into this could explain what was occurring late February and early March, but because the EPA Standard graphs for this period of time show no air quality issue, there was likely no major air filtration failing.

IT'S SAFE!

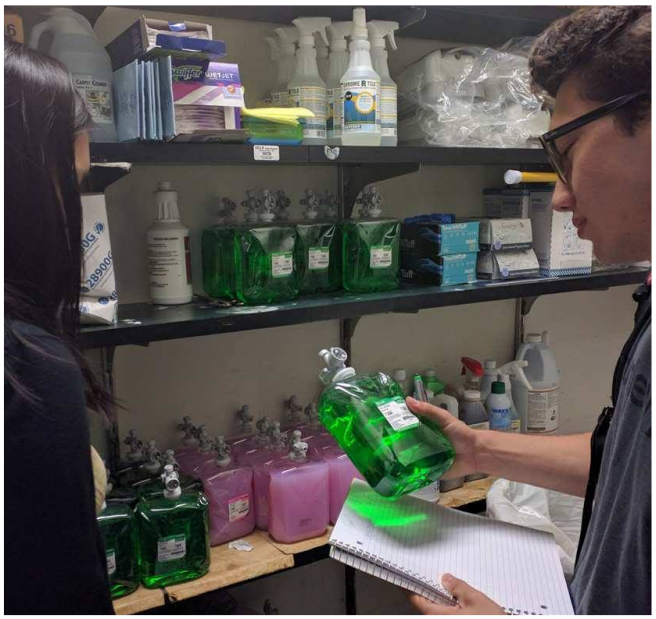
We had our data analyzed by postdoctoral wizard, Eon Lee. He checked our data both for accuracy and for results, and said that our data set is detailed enough to conclude that there is no air quality issue in either of these gym facilities.

ON THE SIDE: CLEANING AUDIT

While we were making graphs of our data and analyzing our results, we also conducted a cleaning audit of the most frequently used cleaning supplies at the John Wooden Center. Cleaning products and household products such as disinfectant, air fresheners, floor polishes, paint, among many other things, contain volatile organic compounds (VOCs), which can have immediate and long-term negative effects on human health. This is directly connected with our main project because it examines the role of cleaning supplies on overall indoor air quality.

WHAT ARE VOC'S?

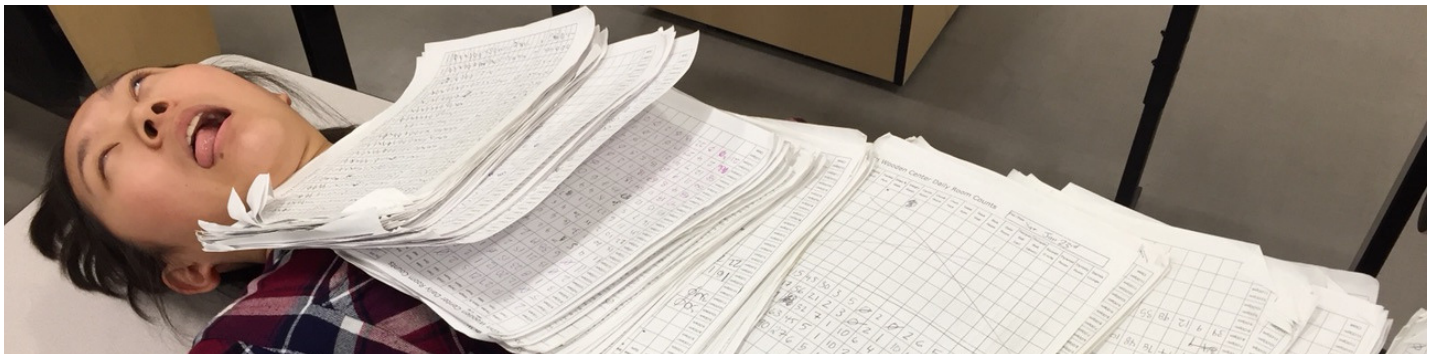
VOCs are volatile organic compounds, and are found in many common household products. They are an air pollutant that can cause many health issues. In the short term, VOCs can cause irritation, headaches, and asthma. Chronic exposure can cause more serious health issues such as liver and kidney damage or even cancer!



It continues with our project's mission to promote good health and a healthy environment at UCLA Recreation Facilities. After researching the chemical compositions and the costs of the most frequently used products at Wooden, we compiled our research into a green product purchasing guide, which included recommendations for greener alternatives with a cost-benefit analysis of the products. We plan on adding our green product purchasing guide to the one that last year's SAR Housing team created for sustainable and environmentally friendly office supplies.

CHALLENGES

Throughout the course of our project, we faced several challenges. We originally had a straightforward goal for the scope of our research project, since the preliminary data from the previous SAR team demonstrated a need for further investigation of indoor air quality in the weight room of John Wooden Center. However, we ran into several issues both in the development and duration of our research project.



One issue we faced early on was not having the proper equipment to continue testing the air quality in various rooms off John Wooden Center. We reached out to Professor Yifang Zhu, from the UCLA Fielding School of Public Health. We knew from last year's team that she had the necessary equipment, but our email correspondence with her took longer than anticipated. In the meantime, we utilized this time learn more about indoor air quality and tour the recreational facilities to gain a deeper understanding of the buildings and how the air filtration and circulation systems impacted air quality.

When we picked up the Dylos air quality monitor during 5th week, we were unfortunately unable to meet with Eon Lee at the time. Therefore, we were unable to receive proper instruction and guidance on how to conduct proper air quality measurements. Instead, we watched online tutorials from YouTube and the device's website to learn how to operate the device through trial and error. Because we taught ourselves how to use the machine, we had an imperfect understanding of it, which was not corrected until we met with Mr. Lee during 9th week.

During the first week of testing, we realized the importance of pointing the air intake area of the machine away from the wall and toward the open space. Because the battery mode did not work, our measurement locations were limited to areas near power outlets, and we were unable to take measurements in the center of the rooms. In addition, our team also had to change our methodology during the middle of our testing period, where we added two outside air measurements during 8th Week to serve as a baseline for indoor air quality. This measurement was taken at 1.6 meters above ground, close to where we breathe during exercise.

In addition to the challenges we had measuring the data, we had difficulty implementing changes to the current filtration systems. After we analyzed our data and concluded that air quality was not an issue in either recreational facility, we looked towards reducing the air filtration rate in an effort to reduce energy consumption while still maintaining healthy air quality. However, the timeline of this endeavour was out of the scope of our project, and we were unable to make changes in air filtration.

THE FUTURE

Despite these challenges, our team gained a much deeper understanding about air quality in relation to environmental health at the UCLA Recreation Facilities. With our findings of no air quality issue at either John Wooden and B-Fit, what is the future of air quality research for the Sustainability Action Research Program? After discussing possible projects and areas for improvement among key stakeholders in the community as well as focus group participants, our team has gained valuable insight on how future teams can move forward to continue working towards UCLA's 2020 Sustainability Goals while contributing to a greener future. We hope that this research project will inform future investigation and interest in environmental health related to air quality, as well as serve as a model for sustainability initiatives at universities across the U.S.

Reducing Air Exchanges at Wooden

As mentioned earlier in this report, the filtration system at Wooden conducts ten air exchanges per hour in order to facilitate the proper circulation of air throughout the building, thus contributing to the overall air quality of the facility. However, based on the room-count data provided to us by our stakeholder, there are periods of time between 12am-5am, where the gym experiences very low usage. Despite low usage, the filtration system continues to conduct air exchanges at the same frequency.

In order to save energy and contribute to a more sustainable recreation facility, we recommend future teams look into how we can reduce the number of air exchanges while maintaining a good standard of air quality for the individuals who do use the gym at the minimum usage times. This initiative is an opportunity for large savings of energy at Wooden.

Educational Outreach about Air Quality

During our focus group, we found that many of the participants rarely thought about air quality and had very little understanding about how PM2.5 can impact human health. Los Angeles ranks as the city with the worse air quality in the United States. With this in mind, it is imperative that future teams continue to incorporate education and outreach into their project in order to spread awareness about the importance of environmental health.

Additional Testing Sites

Just because we did not find an issue with air quality in any of our testing sites, it does not necessarily mean that air quality it is not an issue at UCLA. Our last recommendation for future air quality teams would be to continue testing in other rooms of Wooden and various recreation sites throughout campus where there is a high concentration of UCLA community members who engage in physical exercise.

This map of UCLA parking lots depicts areas where dance teams most commonly practice (Daily Bruin).

PARKING LOTS

Based on comments we received during our focus group, one area of interest for air quality testing is the parking lots. According to a focus group participant, many dance teams who practiced late resorted to rehearsing in the parking lots due to a lack of available space. When Wooden became open for 24 hours in 2016, it provided many dance teams throughout campus with a safe and comfortable place to practice. According to Jeffrey Davis, the UCLA Health director of respiratory care services and pulmonary function, dust and dirty air such as car exhaust, can have unhealthy effects on breathing (Daily Bruin).

In addition, Davis commented on how poisonous gasses such as carbon monoxide and engine exhaust can have a negative effect on our body's tissues, blood vessels, and possibly lead to lung disease (Daily Bruin). Therefore, we would recommend to continue investigating the air quality of parking lots, including: Parking Structure 2, Parking Structure 4, and Parking Lot DD, which are locations where UCLA dance teams continue to practice (Daily Bruin).

WOODEN, KINROSS, PAULEY AND SAC

We also recommend continuing to test other rooms in Wooden which have not been testing by previous air quality teams. Furthermore, it would be beneficial to look into testing other recreation facilities on campus, such as the Kinross Recreation Center, Pauley Pavilion, and the Student Activities Center. By continuing testing at UCLA Recreation Facilities, we are furthering our team's mission to ensure good health, clean air, and a healthy environment for UCLA students and community members.

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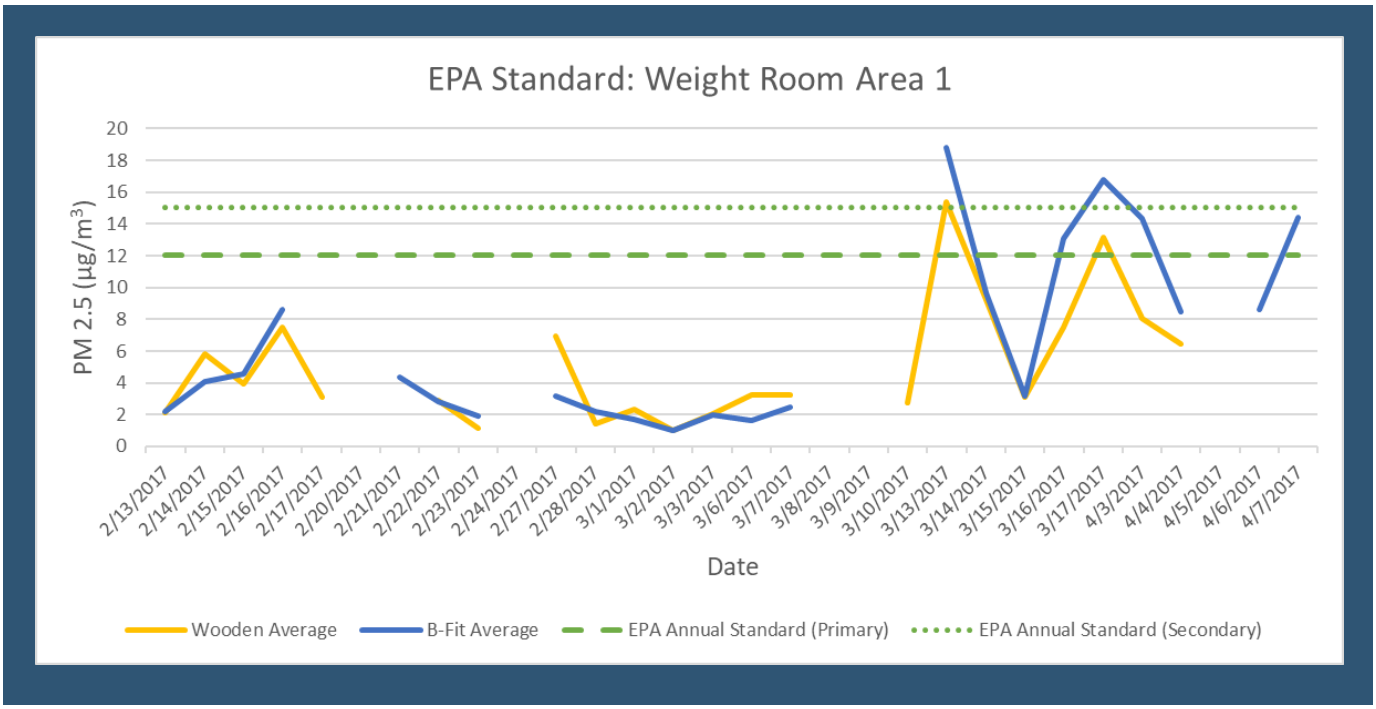
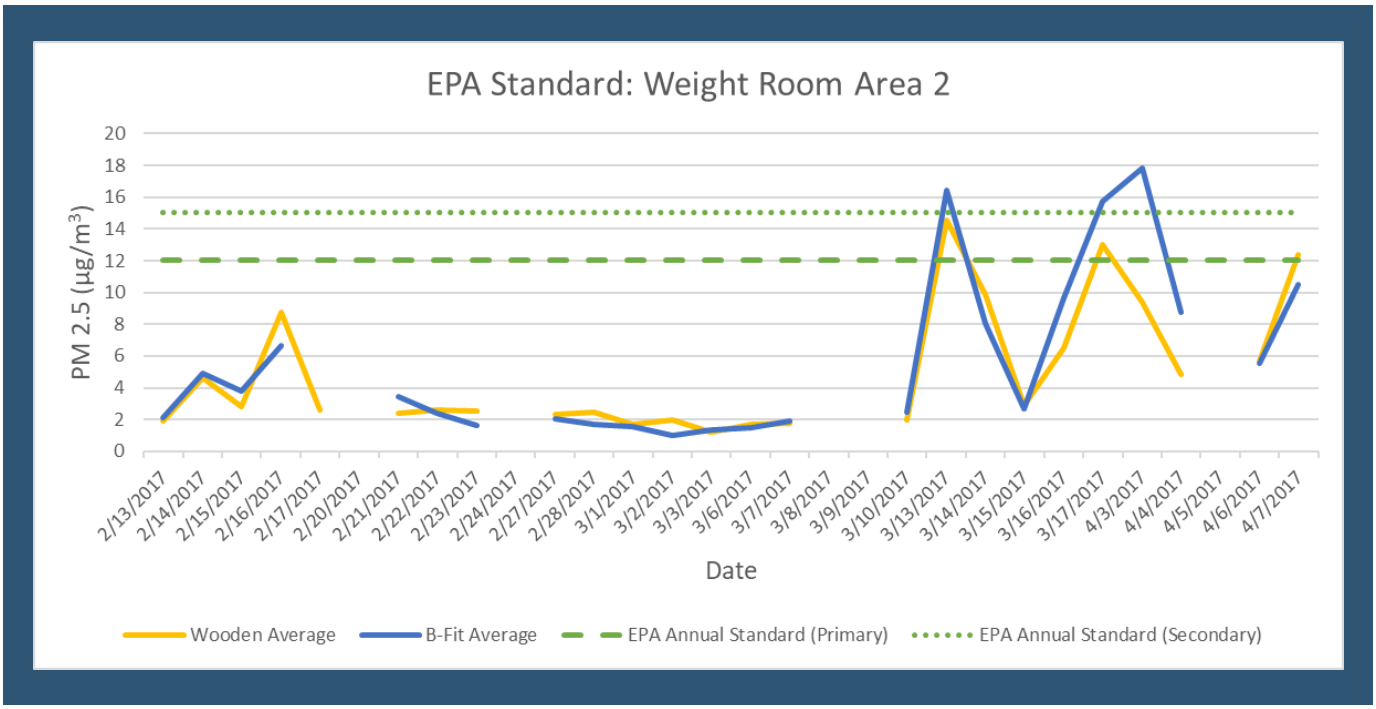
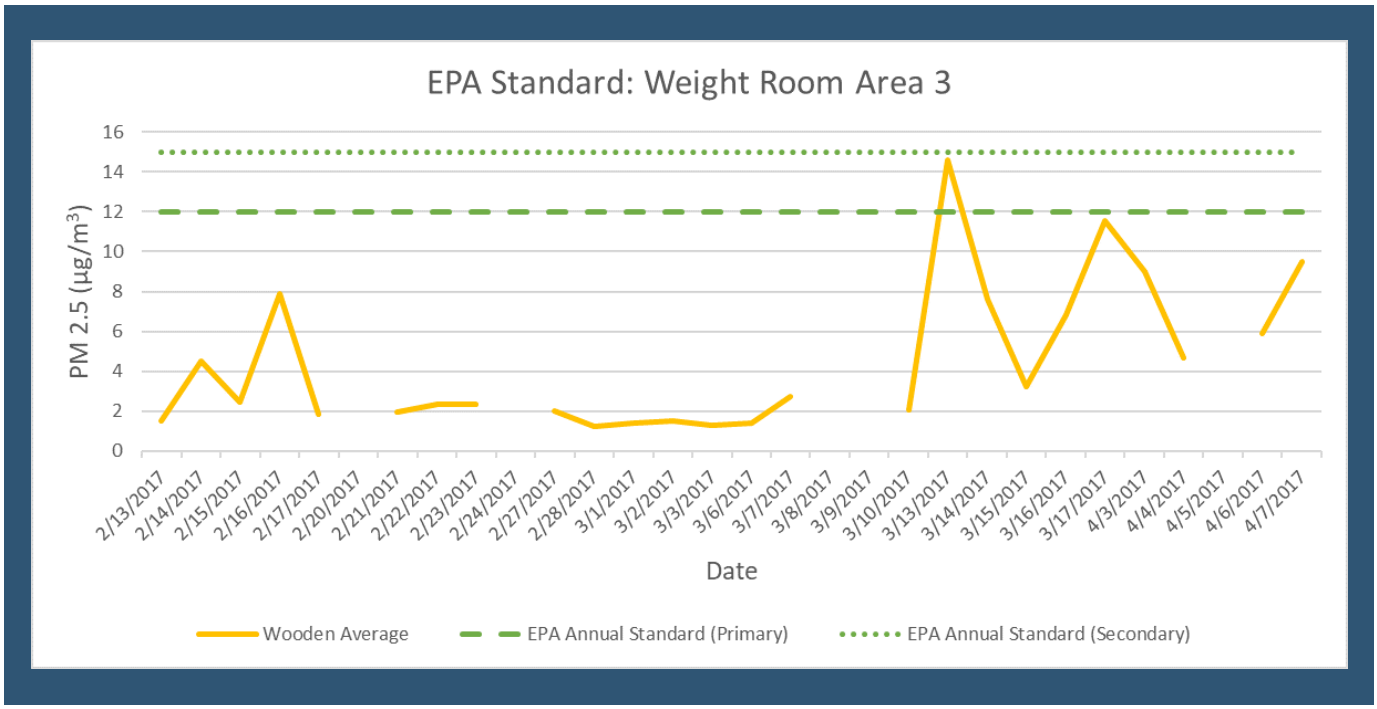
UCLA Sustainability Action Research

APPENDIX A (GRAPHS)

EPA Standards






EPA Standard: Weight Room Area 3
PM 2.5 (µg/m³)
16
14
12
10
8
6
4
2
0
2/13/2017
2/14/2017
2/15/2017
2/16/2017
2/17/2017
2/20/2017
2/21/2017
2/22/2017
2/23/2017
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2/28/2017
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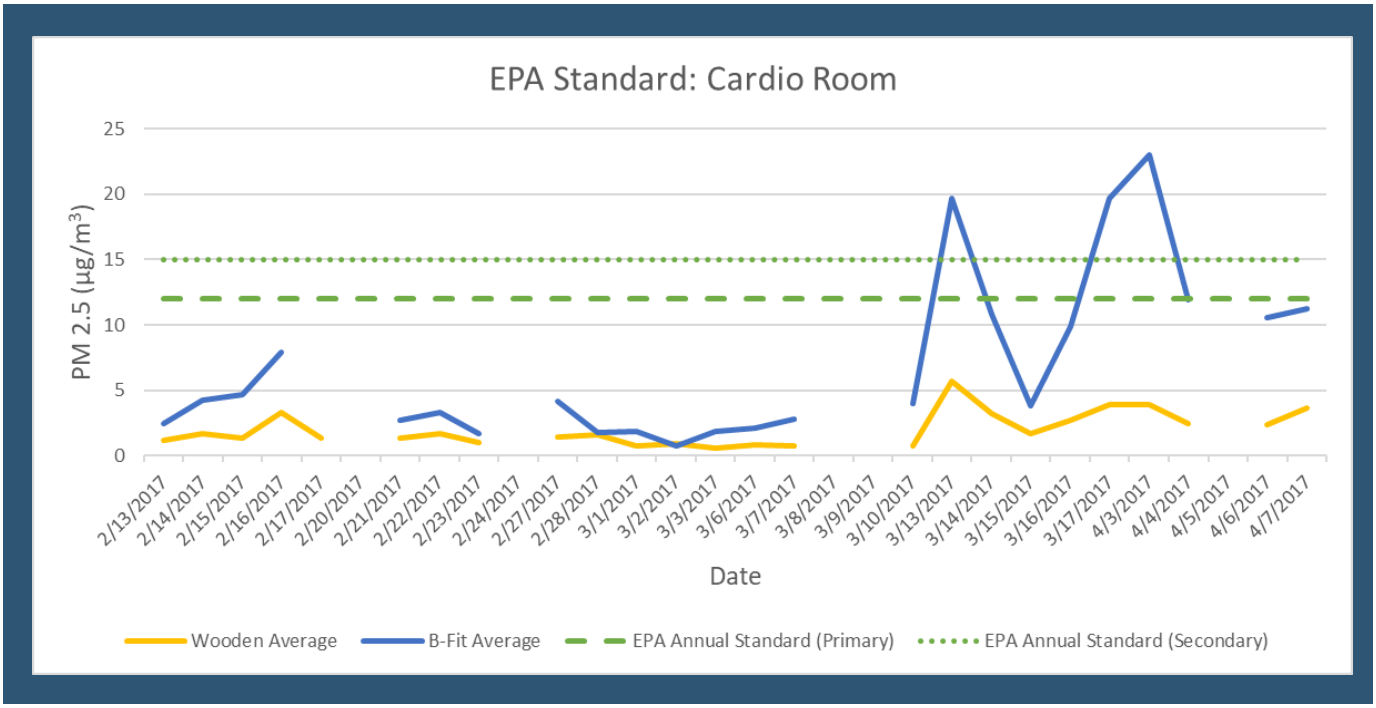
3/3/2017
3/6/2017
3/7/2017
3/8/2017
3/9/2017
3/10/2017
3/13/2017
3/14/2017
3/15/2017
3/16/2017
3/17/2017
4/3/2017
4/4/2017
4/5/2017
4/6/2017
4/7/2017
Date
Wooden Average
EPA Annual Standard (Primary)
EPA Annual Standard (Secondary)


EPA Standard: Cardio Room
PM 2.5 (µg/m³)
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20
15
10
5
0
2/13/2017
2/14/2017
2/15/2017
2/16/2017
2/17/2017
2/20/2017
2/21/2017
2/22/2017
2/23/2017
2/24/2017
2/27/2017
2/28/2017
3/1/2017
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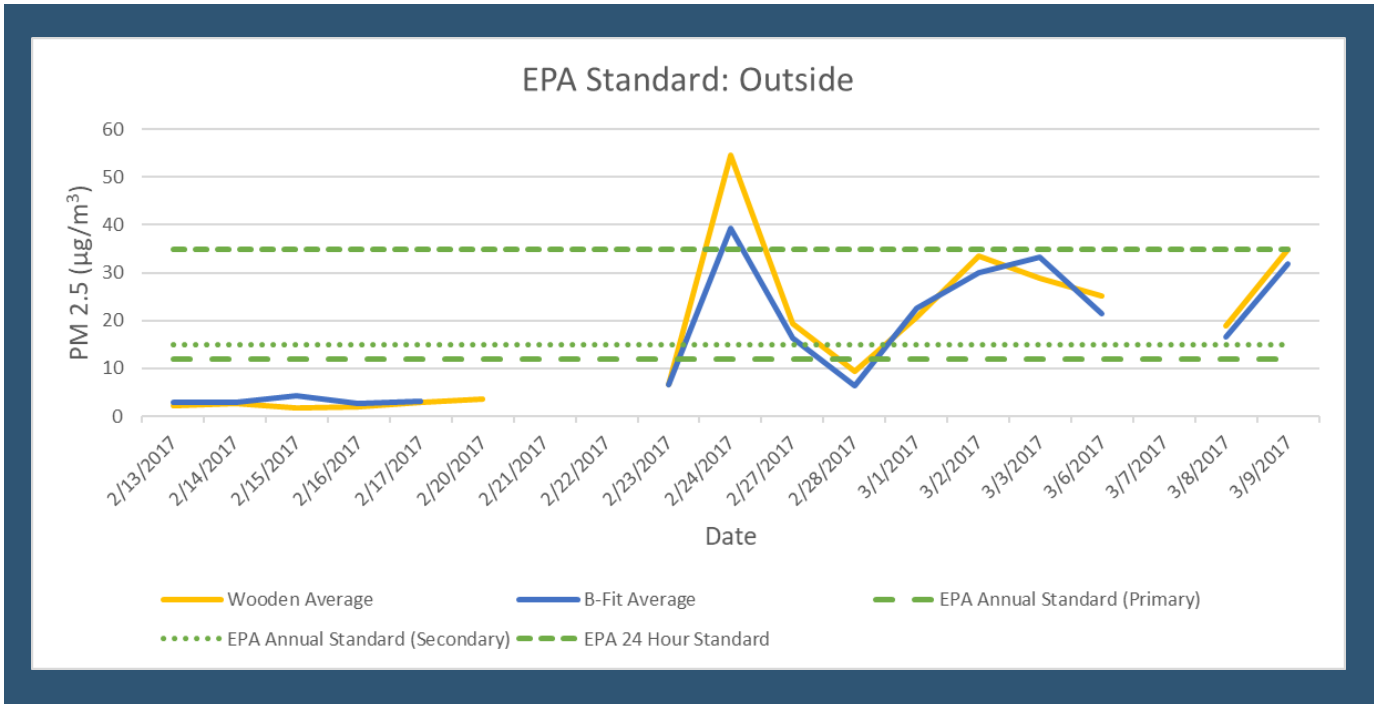
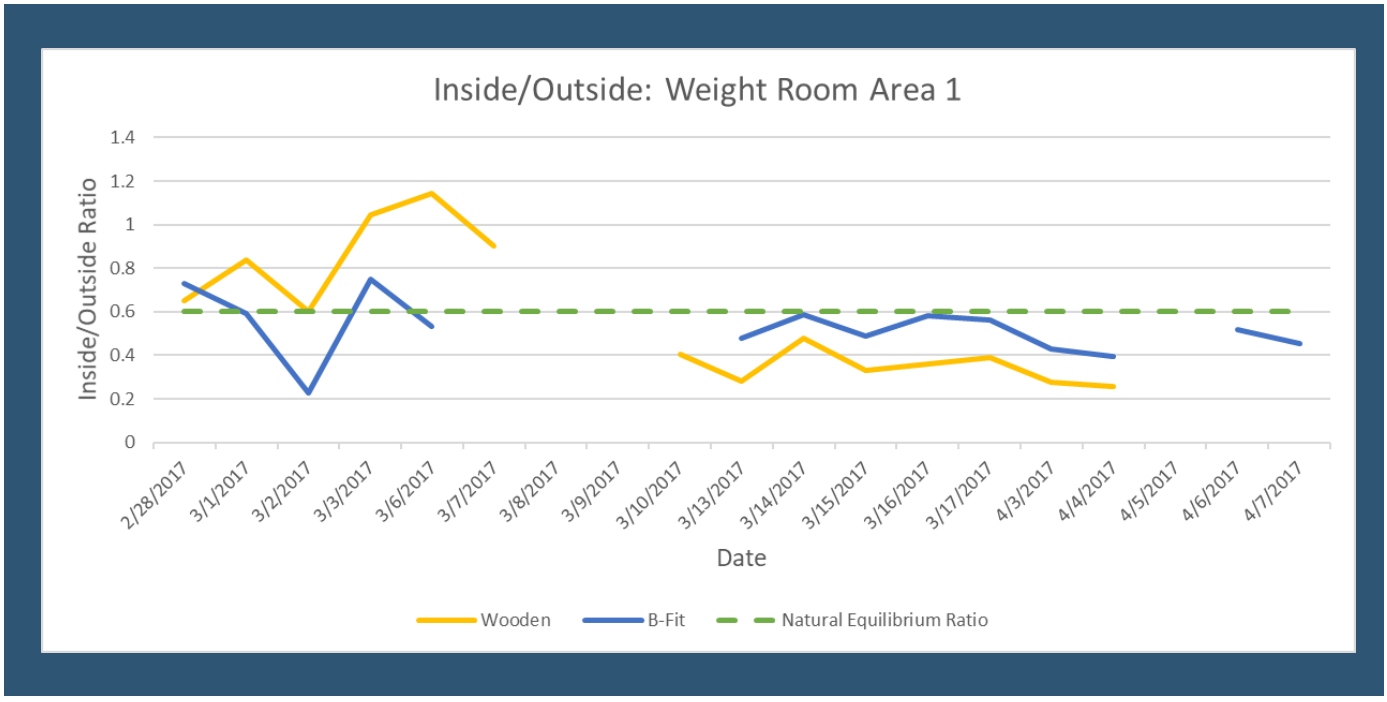
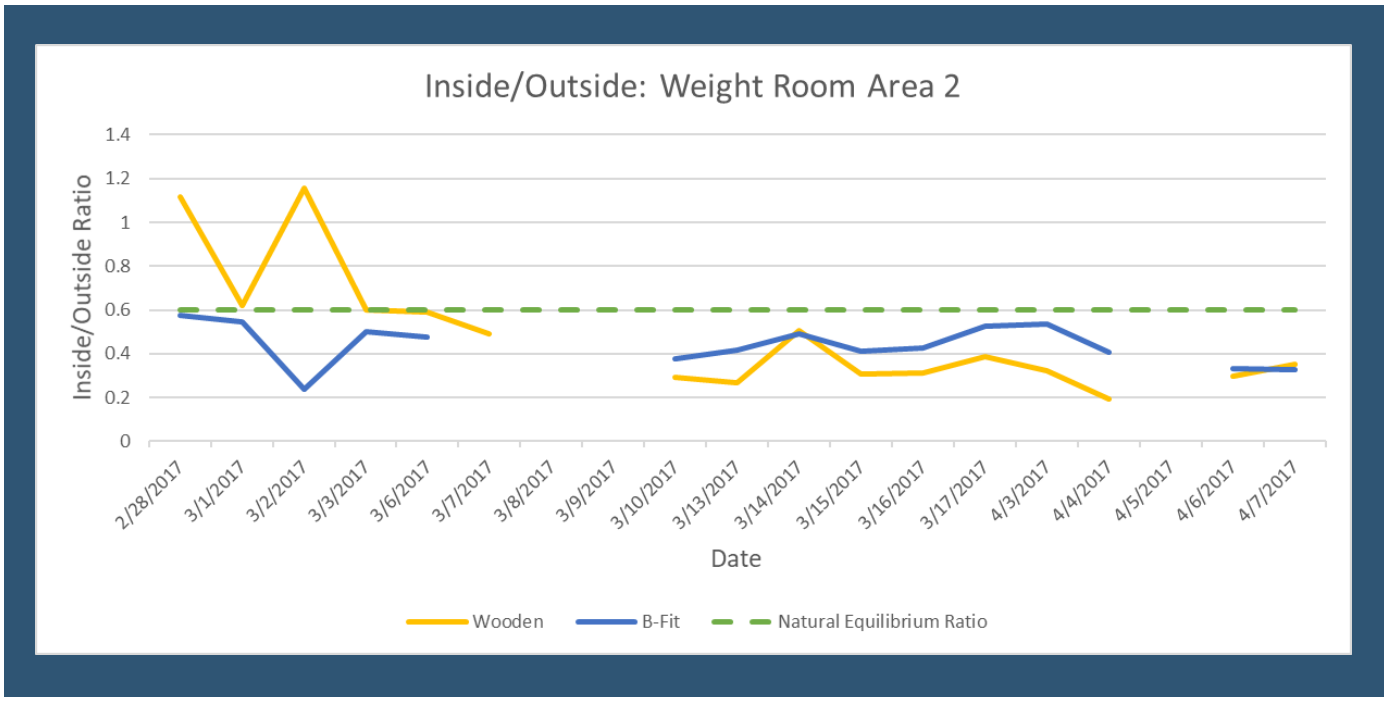
3/7/2017
3/8/2017
3/9/2017
3/10/2017
3/13/2017
3/14/2017
3/15/2017
3/16/2017
3/17/2017
4/3/2017
4/4/2017
4/5/2017
4/6/2017
4/7/2017
Date
Wooden Average
B-Fit Average
EPA Annual Standard (Primary)
EPA Annual Standard (Secondary)



Inside/Outside




Inside/Outside: Weight Room Area 2
Inside/Outside Ratio
1.4
1.2
1
0.8
0.6
0.4
0.2
0
2/28/2017
3/1/2017
3/2/2017
3/3/2017
3/6/2017
3/7/2017
3/8/2017
3/9/2017
3/10/2017
3/13/2017
3/14/2017
3/15/2017
3/16/2017
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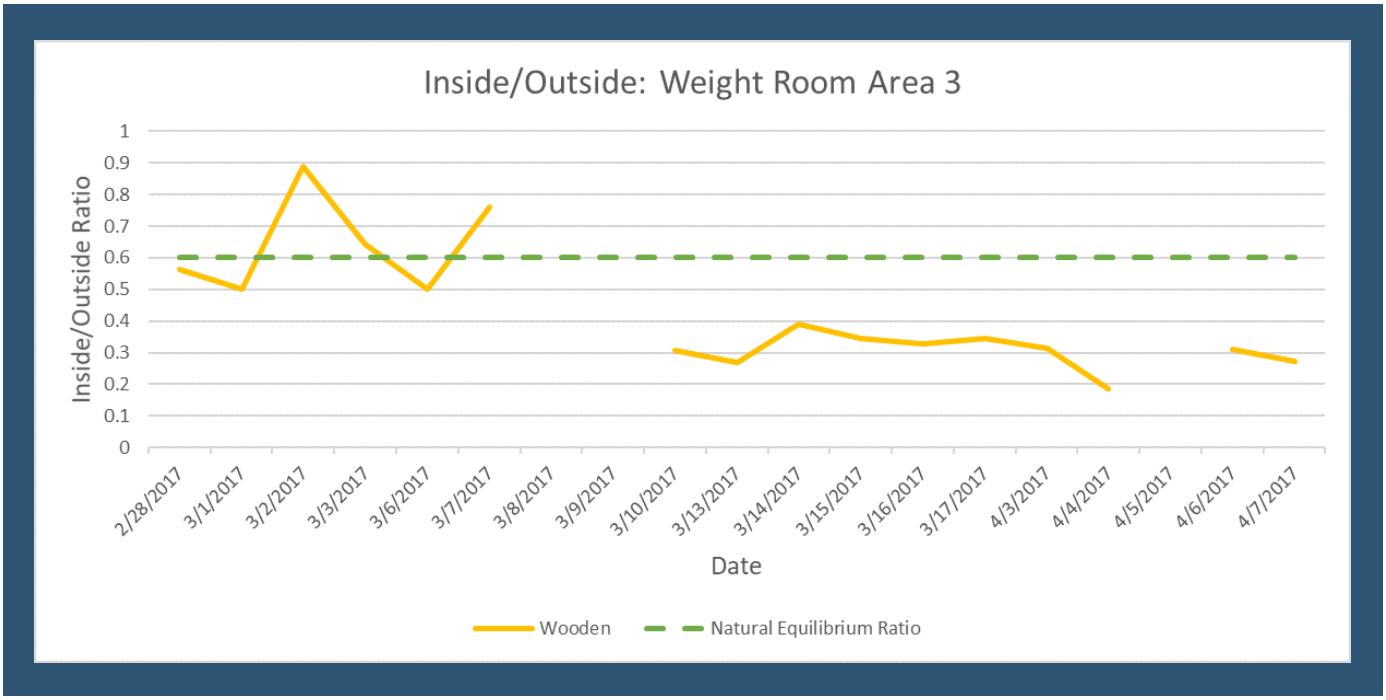
4/7/2017
Date
Wooden
B-Fit
Natural Equilibrium Ratio


Inside/Outside: Weight Room Area 3
Inside/Outside Ratio
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
2/28/2017
3/1/2017
3/2/2017
3/3/2017
3/6/2017
3/7/2017
3/8/2017
3/9/2017
3/10/2017
3/13/2017
3/14/2017
3/15/2017
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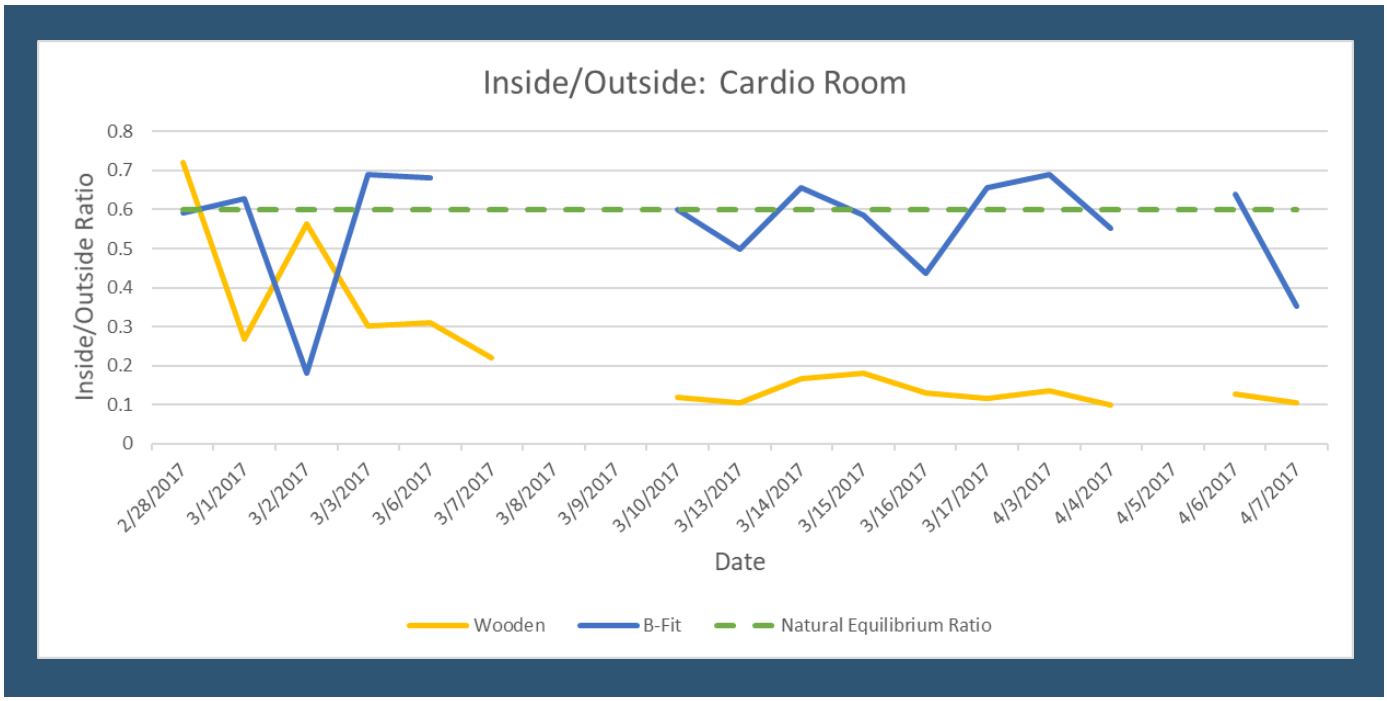
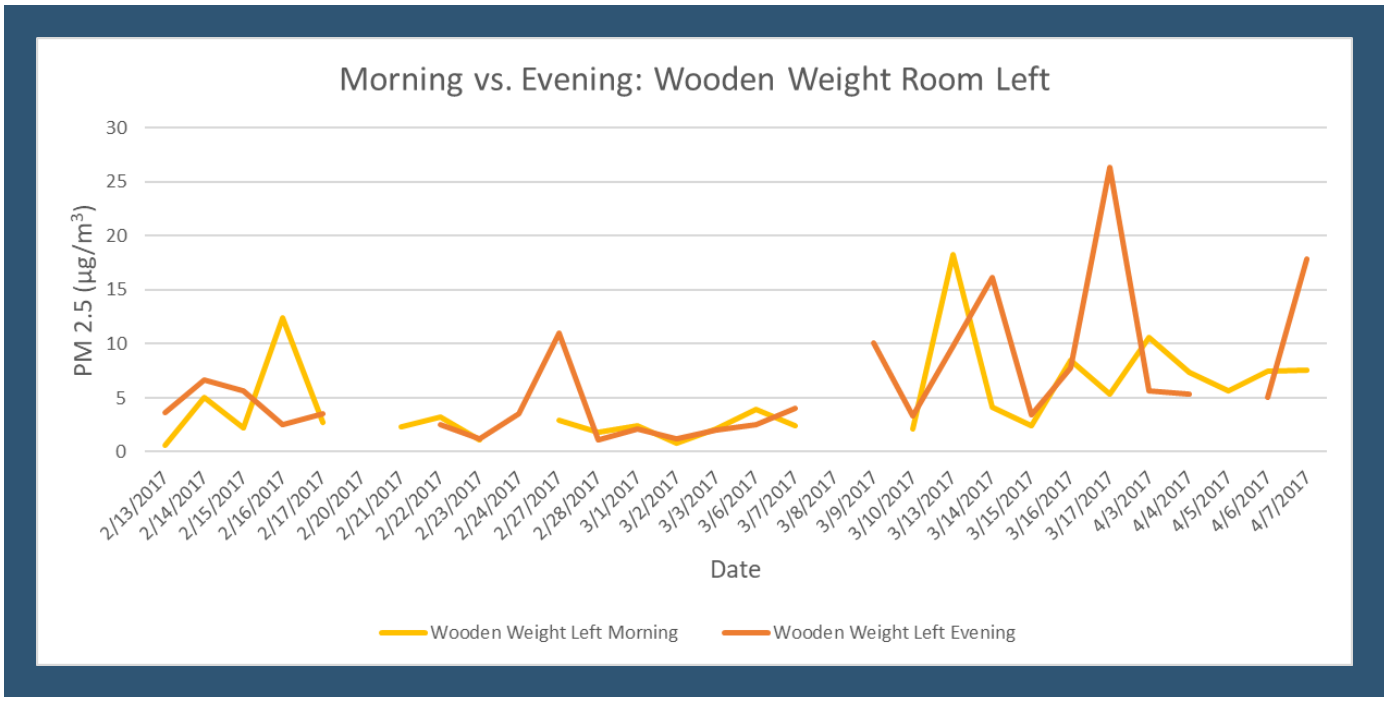
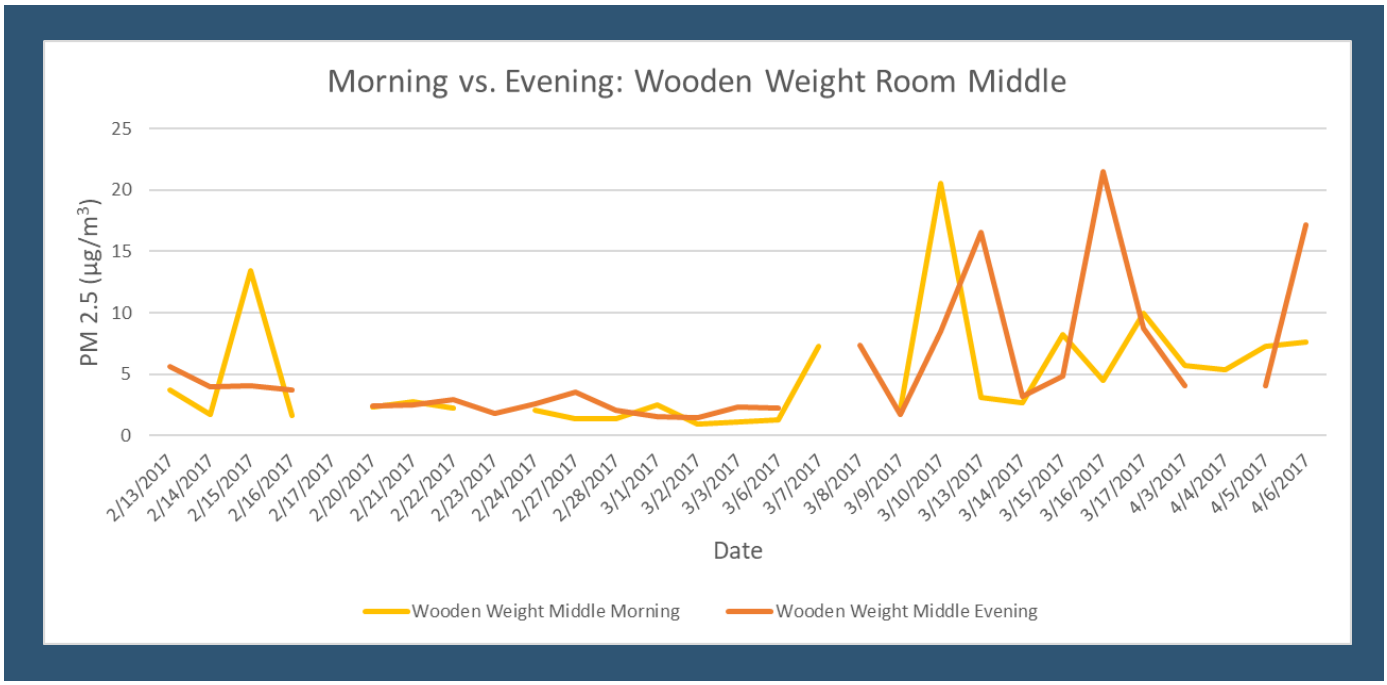
4/6/2017
4/7/2017
Date
Wooden
Natural Equilibrium Ratio



Morning vs Evening




Morning vs. Evening: Wooden Weight Room Middle
PM 2.5 (µg/m³)
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20
15
10
5
0
2/13/2017
2/14/2017
2/15/2017
2/16/2017
2/17/2017
2/20/2017
2/21/2017
2/22/2017
2/23/2017
2/24/2017
2/27/2017
2/28/2017
3/1/2017
3/2/2017
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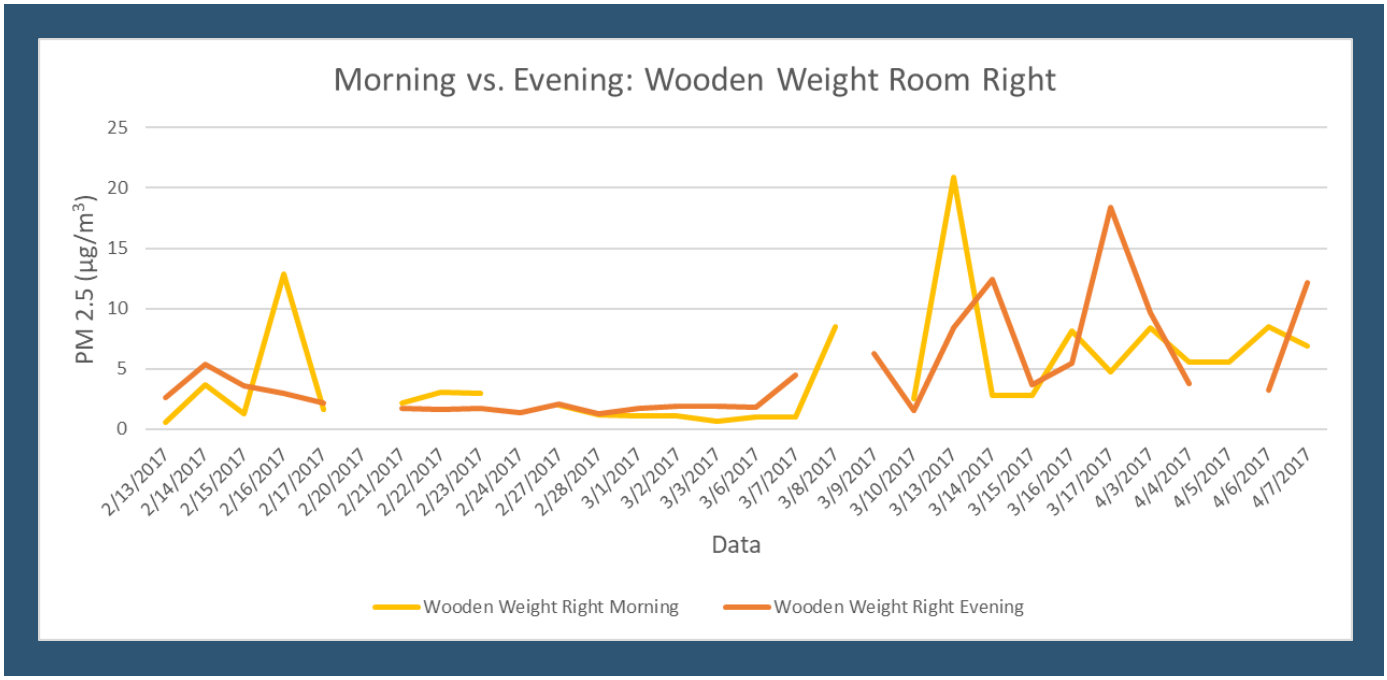
3/6/2017
3/7/2017
3/8/2017
3/9/2017
3/10/2017
3/13/2017
3/14/2017
3/15/2017
3/16/2017
3/17/2017
4/3/2017
4/4/2017
4/5/2017
4/6/2017
Date
Wooden Weight Middle Morning
Wooden Weight Middle Evening


Morning vs. Evening: Wooden Weight Room Right
PM 2.5 (µg/m³)
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20
15
10
5
0
2/13/2017
2/14/2017
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2/20/2017
2/21/2017
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2/23/2017
2/24/2017
2/27/2017
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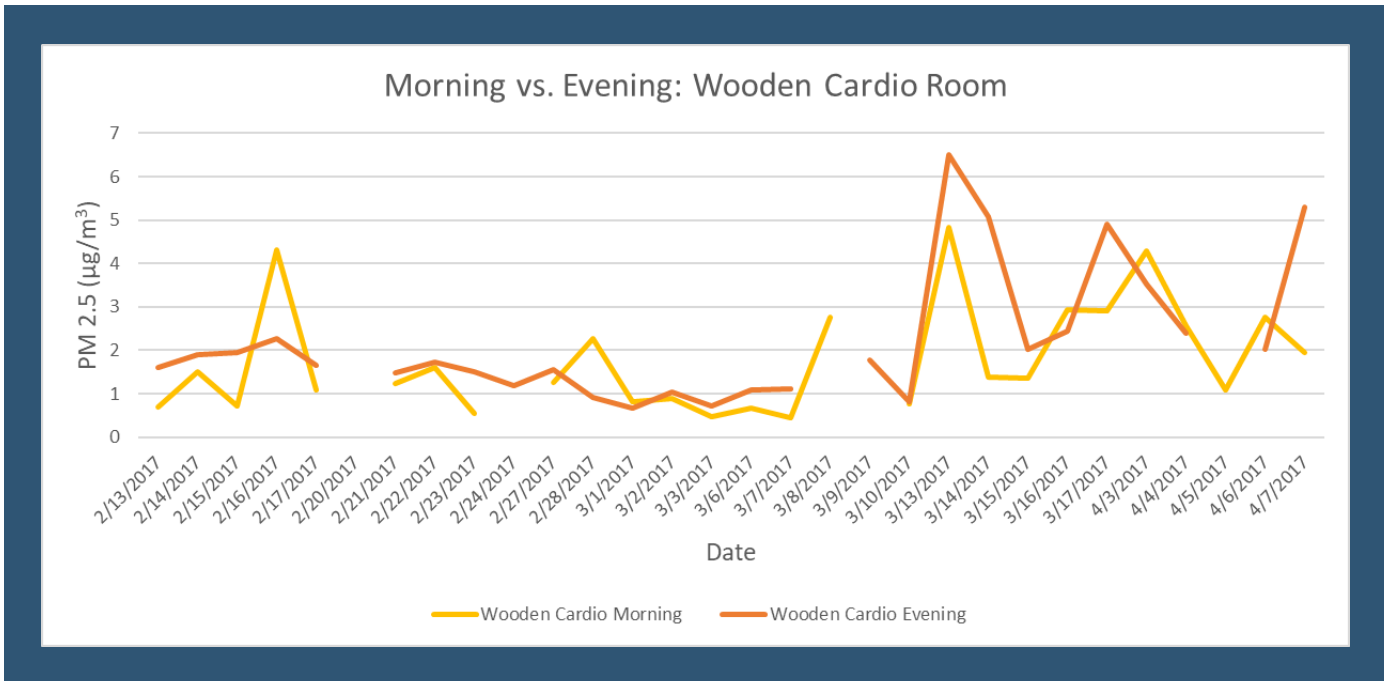
3/14/2017
3/15/2017
3/16/2017
3/17/2017
4/3/2017
4/4/2017
4/5/2017
4/6/2017
4/7/2017
Data
Wooden Weight Right Morning
Wooden Weight Right Evening


Morning vs. Evening: Wooden Cardio Room
PM 2.5 (µg/m³)
0
1
2
3
4
5
6
7
2/13/2017
2/14/2017
2/15/2017
2/16/2017
2/17/2017
2/20/2017
2/21/2017
2/22/2017
2/23/2017
2/24/2017
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3/14/2017
3/15/2017
3/16/2017
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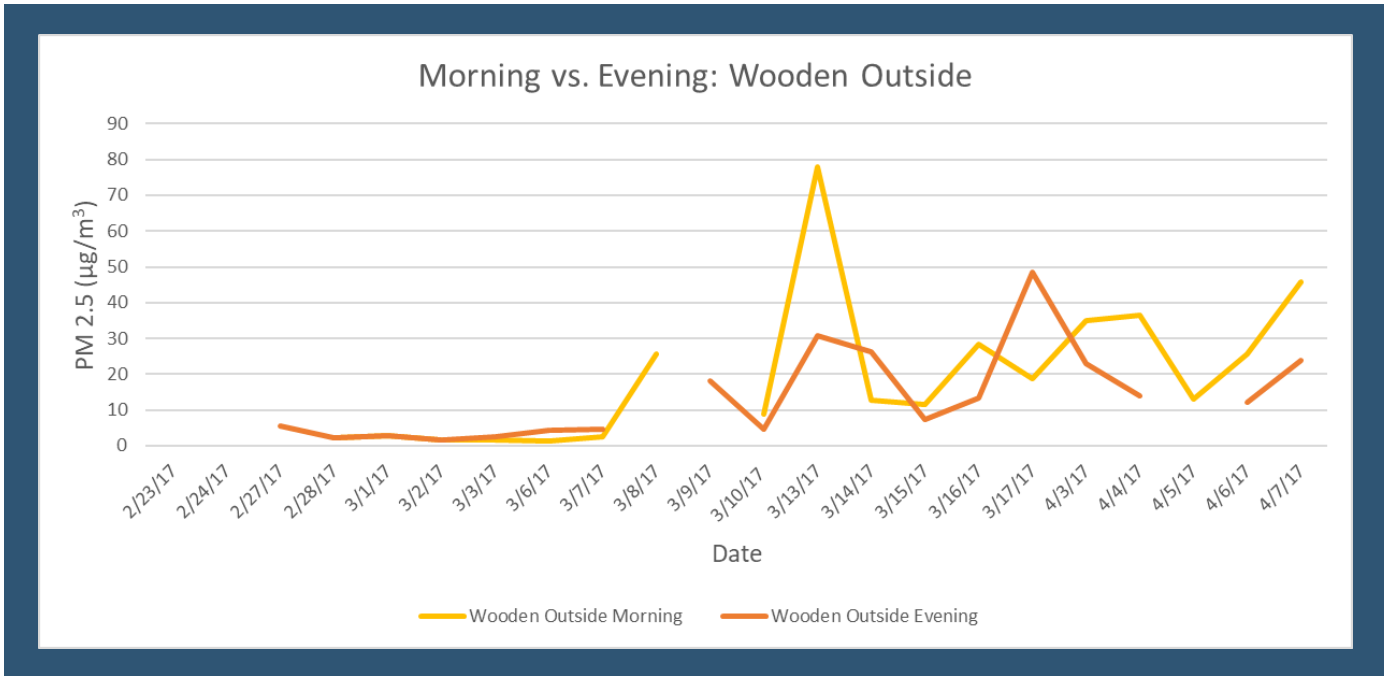
4/5/2017
4/6/2017
4/7/2017
Date
Wooden Cardio Morning
Wooden Cardio Evening


Morning vs. Evening: Wooden Outside
PM 2.5 (µg/m³)
0
10
20
30
40
50
60
70
80
90
2/23/17
2/24/17
2/27/17
2/28/17
3/1/17
3/2/17
3/3/17
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3/7/17
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3/14/17
3/15/17
3/16/17
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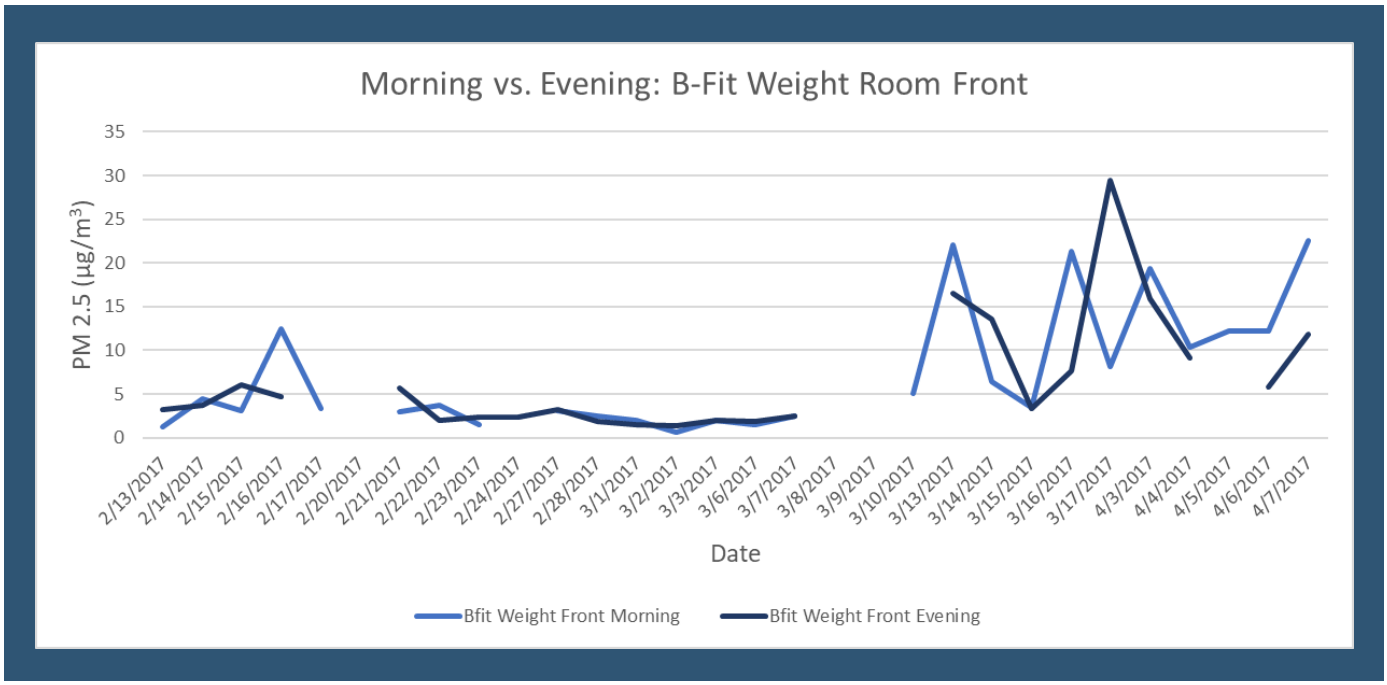
4/5/17
4/6/17
4/7/17
Date
Wooden Outside Morning
Wooden Outside Evening


Morning vs. Evening: B-Fit Weight Room Front
PM 2.5 (µg/m3)
35
30
25
20
15
10
5
0
2/13/2017
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2/15/2017
2/16/2017
2/17/2017
2/20/2017
2/21/2017
2/22/2017
2/23/2017
2/24/2017
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3/14/2017
3/15/2017
3/16/2017
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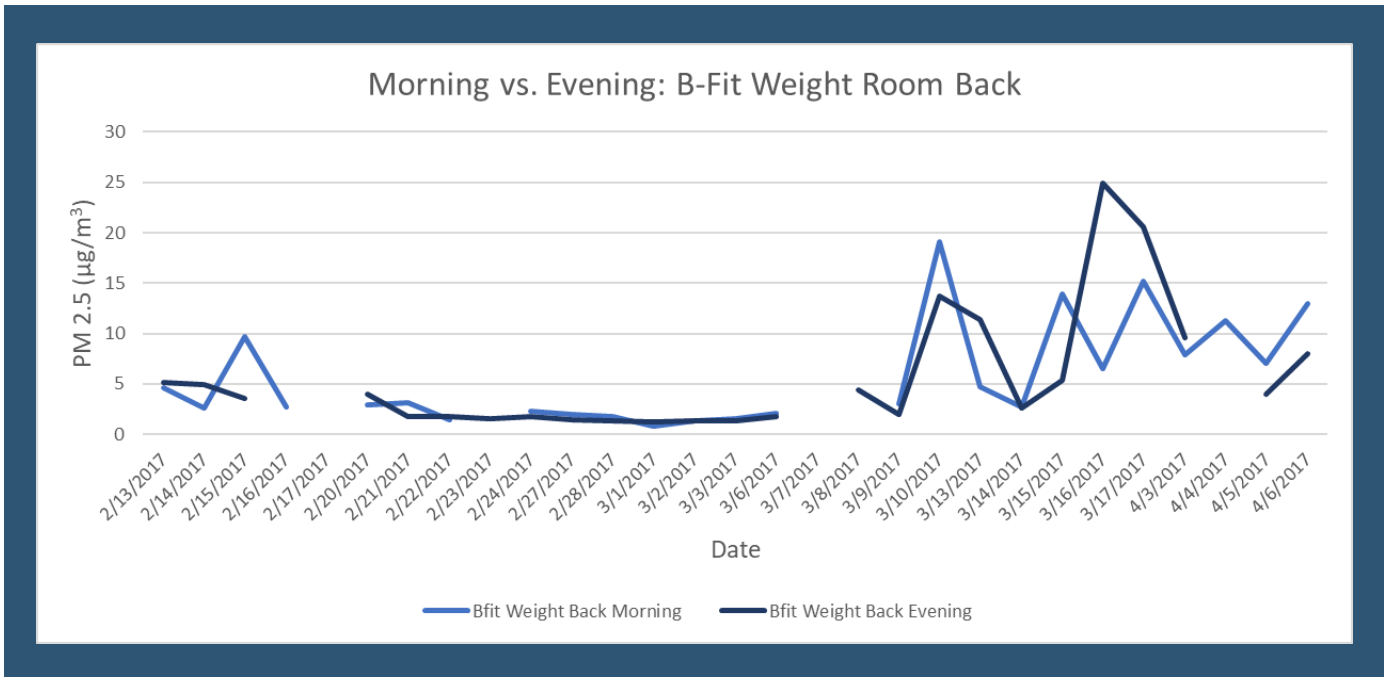
4/5/2017
4/6/2017
4/7/2017
Date
Bfit Weight Front Morning
Bfit Weight Front Evening


Morning vs. Evening: B-Fit Weight Room Back
PM 2.5 (µg/m3)
30
25
20
15
10
5
0
2/13/2017
2/14/2017
2/15/2017
2/16/2017
2/17/2017
2/20/2017
2/21/2017
2/22/2017
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3/13/2017
3/14/2017
3/15/2017
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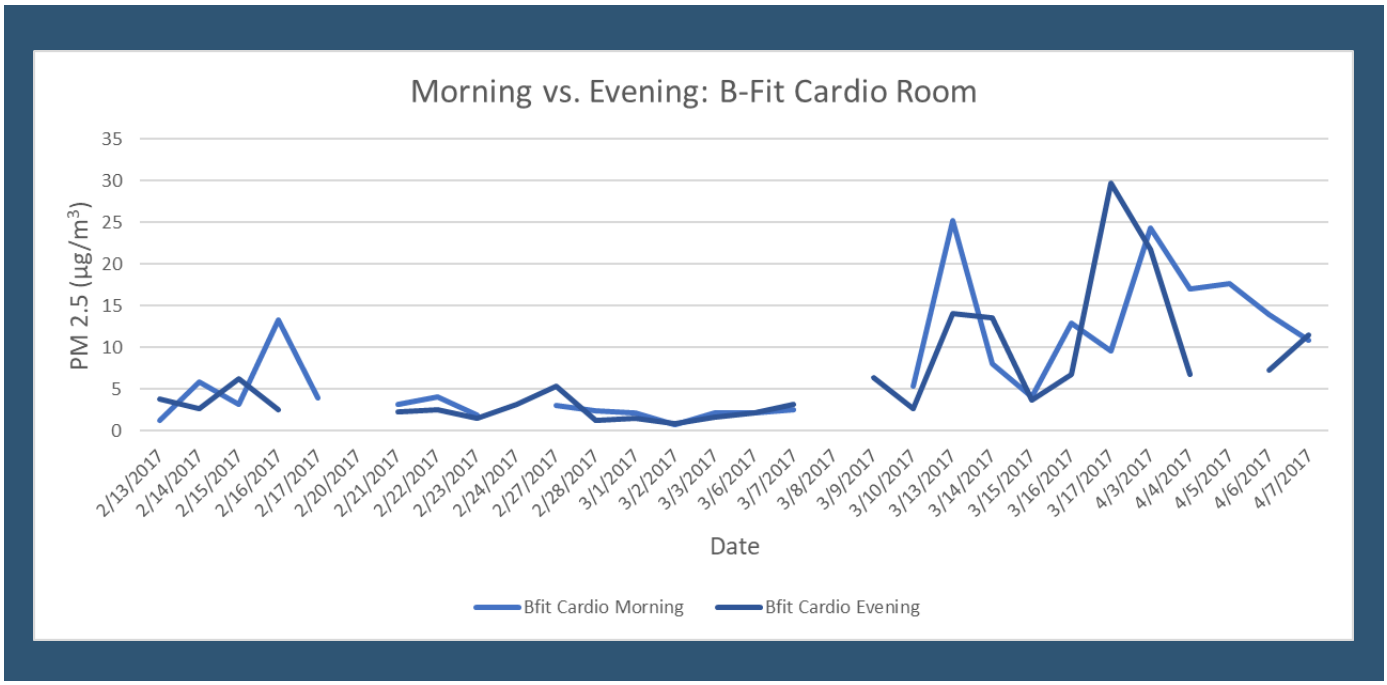
4/6/2017
Date
Bfit Weight Back Morning
Bfit Weight Back Evening


Morning vs. Evening: B-Fit Cardio Room
PM 2.5 (µg/m3)
35
30
25
20
15
10
5
0
2/13/2017
2/14/2017
2/15/2017
2/16/2017
2/17/2017
2/20/2017
2/21/2017
2/22/2017
2/23/2017
2/24/2017
2/27/2017
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3/14/2017
3/15/2017
3/16/2017
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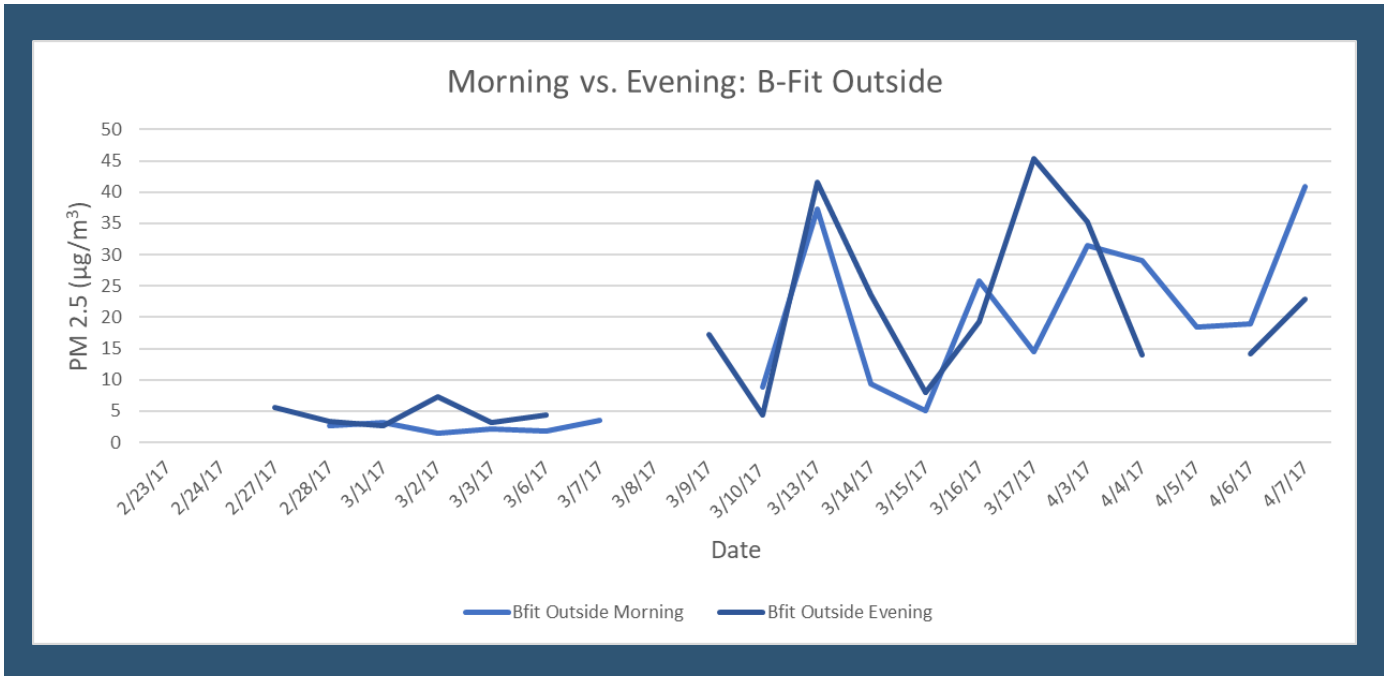
4/5/2017
4/6/2017
4/7/2017
Date
Bfit Cardio Morning
Bfit Cardio Evening


Morning vs. Evening: B-Fit Outside
PM 2.5 (µg/m3)
50
45
40
35
30
25
20
15
10
5
0
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2/24/17
2/27/17
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3/7/17
3/8/17
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3/14/17
3/15/17
3/16/17
3/17/17
4/3/17
4/4/17
4/5/17
4/6/17
4/7/17
Date
Bfit Outside Morning
Bfit Outside Evening

APPENDIX B (CONVERTED AND AVERAGED DYLOS DATA)

Dylos in ug/m3	W-Weight Left (face)	W-Weight Left Ground (feet)	W-Weight Middle	W-Weight Right	W-Cardio	W-Outside
W6M - 2/13/17 - Morning	0.64		0.62	0.52	0.69	
W6T - 2/14/17	5		3.72	3.67	1.51	
W6W - 2/15/17	2.18		1.7	1.31	0.72	
W6H - 2/16/17	12.44		13.47	12.85	4.32	
W6F - 2/17/17	2.71		1.58	1.63	1.09	
W7M - 2/20/17						
W7T - 2/21/17	2.28		2.35	2.12	1.24	
W7W - 2/22/17	3.2		2.79	3.09	1.61	
W7H - 2/23/17	1.1		2.2	2.92	0.54	
W7F - 2/24/17						
W8M - 2/27/17	2.88		2.05	1.98	1.27	
W8T - 2/28/17	1.78		1.4	1.21	2.28	2.23
W8W - 3/1/17	2.47		1.34	1.06	0.82	2.7
W8H - 3/2/17	0.81		2.46	1.11	0.88	1.74
W8F - 3/3/17	2.16		0.92	0.67	0.47	1.56
W9M - 3/6/17	3.94		1.06	1.03	0.67	1.38
W9T - 3/7/17	2.44		1.27	0.98	0.46	2.44
W9W - 3/8/17			7.3	8.5	2.75	25.81
W9H - 3/9/17						
W9F - 3/10/17 - 1.5 m	2.12	1.98	2.18	2.53	0.78	8.71
W10M - 3/13/17	18.29	23.06	20.57	20.87	4.82	78.04
W10T - 3/14/17	4.12	3.65	3.09	2.77	1.39	12.77

Dylos in ug/m3	B-Weight Front	B-Weight Front Ground	B-Weight Back	B-Cardio	B-Outside
W6M - 2/13/17 - Morning	1.25		0.76	1.23	
W6T - 2/14/17	4.5		4.58	5.78	
W6W - 2/15/17	3.06		2.58	3.16	
W6H - 2/16/17	12.51		9.7	13.33	
W6F - 2/17/17	3.34		2.67	3.88	
W7M - 2/20/17					
W7T - 2/21/17	3.03		2.89	3.09	
W7W - 2/22/17	3.72		3.1	4.1	
W7H - 2/23/17	1.5		1.49	1.88	
W7F - 2/24/17					
W8M - 2/27/17	3.14		2.25	3.06	
W8T - 2/28/17	2.46		2.01	2.38	2.71
W8W - 3/1/17	1.98		1.81	2.15	3.24
W8H - 3/2/17	0.62		0.81	0.71	1.45
W8F - 3/3/17	2.03		1.37	2.11	2.19
W9M - 3/6/17	1.46		1.58	2.14	1.8
W9T - 3/7/17	2.46		2.06	2.48	3.53
W9W - 3/8/17					
W9H - 3/9/17					
W9F - 3/10/17 - 1.5 m	5.08	5.36	3.01	5.32	8.82
W10M - 3/13/17	22.09	19.49	19.08	25.2	37.24
W10T - 3/14/17	6.46	6.72	4.71	8.05	9.4

APPENDIX C (RAW DATA)

John Wooden Center

	A	B	C	D	E
1	KEY - John Wooden Center	Weights L T1	Weights L T2	Weights L T3	Average
2	W6M - 2/13/17 - Morning	95	109	121	108.3333333
3	W6T - 2/14/17	824	829	902	851.6666667
4	W6W - 2/15/17	365	373	378	372
5	W6H - 2/16/17	2109	2081	2170	2120
6	W6F - 2/17/17	443	460	483	462
7	W7M - 2/20/17	Skip (President's Day)			#DIV/0!
8	W7T - 2/21/17	375	388	402	388.3333333
9	W7W - 2/22/17	521	620	495	545.3333333
10	W7H - 2/23/17	172	190	199	187
11	W7F - 2/24/17	Overslept :(			#DIV/0!
12	W8M - 2/27/17	440	500	532	490.6666667
13	W8T - 2/28/17	287	321	300	302.6666667
14	W8W - 3/1/17	404	423	434	420.3333333
15	W8H - 3/2/17	130	140	145	138.3333333
16	W8F - 3/3/17	348	357	402	369
17	W9M - 3/6/17	787	654	572	671
18	W9T - 3/7/17	392	443	415	416.6666667
19	W9W - 3/8/17	Cord stopped working			#DIV/0!
20	W9H - 3/9/17				#DIV/0!
21	W9F - 3/10/17 - 1.5 m	318	385	383	362
22	W10M - 3/13/17	4319	4313	724	3118.666667
23	W10T - 3/14/17	639	718	751	702.6666667
24	W10W - 3/15/17	405	394	463	420.6666667
25	W10H - 3/16/17	1438	1444	1445	1442.333333
26	W10F - 3/17/17	892	907	927	908.6666667
27	S1M - 3/20/17				#DIV/0!
28	S1T - 3/21/17				#DIV/0!
29	S1W - 3/22/17				#DIV/0!
30	S1H - 3/23/17				#DIV/0!
31	S1F - 3/24/17				#DIV/0!

	A	B	C	D	E
32	KEY - John Wooden Center	Weights L T1	Weights L T2	Weights L T3	Average
33	W6M - 2/13/17 - Evening	621	613	620	618
34	W6T - 2/14/17	1266	1130	1001	1132.333333
35	W6W - 2/15/17	1043	765	1104	970.6666667
36	W6H - 2/16/17	397	418	475	430
37	W6F - 2/17/17	544	615	632	597
38	W7M - 2/20/17	(Skip- President's Day)			#DIV/0!
39	W7T - 2/21/17				#DIV/0!
40	W7W - 2/22/17	407	458	447	437.3333333
41	W7H - 2/23/17	208	210	208	208.6666667
42	W7F - 2/24/17	529	699	580	602.6666667
43	W8M - 2/27/17	1416	1857	2341	1871.333333
44	W8T - 2/28/17	199	193	169	187
45	W8W - 3/1/17	342	333	417	364
46	W8H - 3/2/17	224	201	213	212.6666667
47	W8F - 3/3/17	383	362	277	340.6666667
48	W9M - 3/6/17	501	446	353	433.3333333
49	W9T - 3/7/17	541	517	1002	686.6666667
50	W9W - 3/8/17				#DIV/0!
51	W9H - 3/9/17 - 1.5 m	1485	1607	2065	1719
52	W9F - 3/10/17	529	574	602	568.3333333
53	W10M - 3/13/17				#DIV/0!
54	W10T - 3/14/17	2576	2712	2985	2757.666667
55	W10W - 3/15/17	589	598	582	589.6666667
56	W10H - 3/16/17	1296	1382	1300	1326
57	W10F - 3/17/17				#DIV/0!
58	S1M - 3/20/17				#DIV/0!
59	S1T - 3/21/17				#DIV/0!
60	S1W - 3/22/17				#DIV/0!
61	S1H - 3/23/17				#DIV/0!
62	S1F - 3/24/17				#DIV/0!

	F	G	H	I	J
1	KEY	Weights Ground T1	Weights Ground T2	Weights Ground T	Average
2	W6M - 2/13/17 - Morning				#DIV/0!
3	W6T - 2/14/17				#DIV/0!
4	W6W - 2/15/17				#DIV/0!
5	W6H - 2/16/17				#DIV/0!
6	W6F - 2/17/17				#DIV/0!
7	W7M - 2/20/17				#DIV/0!
8	W7T - 2/21/17				#DIV/0!
9	W7W - 2/22/17				#DIV/0!
10	W7H - 2/23/17				#DIV/0!
11	W7F - 2/24/17				#DIV/0!
12	W8M - 2/27/17				#DIV/0!
13	W8T - 2/28/17				#DIV/0!
14	W8W - 3/1/17				#DIV/0!
15	W8H - 3/2/17				#DIV/0!
16	W8F - 3/3/17				#DIV/0!
17	W9M - 3/6/17				#DIV/0!
18	W9T - 3/7/17				#DIV/0!
19	W9W - 3/8/17				#DIV/0!
20	W9H - 3/9/17				#DIV/0!
21	W9F - 3/10/17 - 1.5 m	338	338	339	338.3333333
22	W10M - 3/13/17	3907	3888	3997	3930.666667
23	W10T - 3/14/17	620	634	613	622.3333333
24	W10W - 3/15/17	473	431	467	457
25	W10H - 3/16/17	1400	1402	1410	1404
26	W10F - 3/17/17	829	820	856	835
27	S1M - 3/20/17				#DIV/0!
28	S1T - 3/21/17				#DIV/0!
29	S1W - 3/22/17				#DIV/0!
30	S1H - 3/23/17				#DIV/0!
31	S1F - 3/24/17				#DIV/0!

	F	G	H	I	J
32	KEY	Weights Ground T1	Weights Ground T2	Weights Ground T	Average
33	W6M - 2/13/17 - Evening				#DIV/0!
34	W6T - 2/14/17				#DIV/0!
35	W6W - 2/15/17				#DIV/0!
36	W6H - 2/16/17				#DIV/0!
37	W6F - 2/17/17				#DIV/0!
38	W7M - 2/20/17				#DIV/0!
39	W7T - 2/21/17				#DIV/0!
40	W7W - 2/22/17				#DIV/0!
41	W7H - 2/23/17				#DIV/0!
42	W7F - 2/24/17				#DIV/0!
43	W8M - 2/27/17				#DIV/0!
44	W8T - 2/28/17				#DIV/0!
45	W8W - 3/1/17				#DIV/0!
46	W8H - 3/2/17				#DIV/0!
47	W8F - 3/3/17				#DIV/0!
48	W9M - 3/6/17				#DIV/0!
49	W9T - 3/7/17				#DIV/0!
50	W9W - 3/8/17				#DIV/0!
51	W9H - 3/9/17 - 1.5 m	1276	1268	1395	1313
52	W9F - 3/10/17				#DIV/0!
53	W10M - 3/13/17				#DIV/0!
54	W10T - 3/14/17	2570	2598	2449	2539
55	W10W - 3/15/17	554	625	589	589.3333333
56	W10H - 3/16/17	1112	1091	1234	1145.666667
57	W10F - 3/17/17				#DIV/0!
58	S1M - 3/20/17				#DIV/0!
59	S1T - 3/21/17				#DIV/0!
60	S1W - 3/22/17				#DIV/0!
61	S1H - 3/23/17				#DIV/0!
62	S1F - 3/24/17				#DIV/0!

	K	L	M	N	O
1	KEY	Weights M T1	Weights M T2	Weights M T3	Average
2	W6M - 2/13/17 - Morning	94	114	109	105.6666667
3	W6T - 2/14/17	629	625	648	634
4	W6W - 2/15/17	296	282	290	289.3333333
5	W6H - 2/16/17	2145	2306	2437	2296
6	W6F - 2/17/17	263	269	276	269.3333333
7	W7M - 2/20/17				#DIV/0!
8	W7T - 2/21/17	390	403	409	400.6666667
9	W7W - 2/22/17	463	479	485	475.6666667
10	W7H - 2/23/17	368	381	374	374.3333333
11	W7F - 2/24/17				#DIV/0!
12	W8M - 2/27/17	342	344	360	348.6666667
13	W8T - 2/28/17	242	227	248	239
14	W8W - 3/1/17	223	225	239	229
15	W8H - 3/2/17	415	420	423	419.3333333
16	W8F - 3/3/17	151	155	162	156
17	W9M - 3/6/17	183	176	183	180.6666667
18	W9T - 3/7/17	255	197	197	216.3333333
19	W9W - 3/8/17				#DIV/0!
20	W9H - 3/9/17				#DIV/0!
21	W9F - 3/10/17 - 1.5 m	343	392	380	371.6666667
22	W10M - 3/13/17	3430	3563	3525	3506
23	W10T - 3/14/17	490	532	557	526.3333333
24	W10W - 3/15/17	450	448	452	450
25	W10H - 3/16/17	1397	1405	1409	1403.666667
26	W10F - 3/17/17	781	743	758	760.6666667
27	S1M - 3/20/17				#DIV/0!
28	S1T - 3/21/17				#DIV/0!
29	S1W - 3/22/17				#DIV/0!
30	S1H - 3/23/17				#DIV/0!
31	S1F - 3/24/17				#DIV/0!

	K	L	M	N	O
32	KEY	Weights M T1	Weights M T2	Weights M T3	Average
33	W6M - 2/13/17 - Evening	541	552	554	549
34	W6T - 2/14/17	932	1011	914	952.3333333
35	W6W - 2/15/17	648	672	699	673
36	W6H - 2/16/17	576	717	761	684.6666667
37	W6F - 2/17/17	612	630	645	629
38	W7M - 2/20/17				#DIV/0!
39	W7T - 2/21/17	422	417	380	406.3333333
40	W7W - 2/22/17	377	444	436	419
41	W7H - 2/23/17	341	527	627	498.3333333
42	W7F - 2/24/17	304	321	307	310.6666667
43	W8M - 2/27/17	425	432	472	443
44	W8T - 2/28/17	554	584	674	604
45	W8W - 3/1/17	343	348	369	353.3333333
46	W8H - 3/2/17	246	261	259	255.3333333
47	W8F - 3/3/17	241	260	244	248.3333333
48	W9M - 3/6/17	407	407	359	391
49	W9T - 3/7/17	377	387	391	385
50	W9W - 3/8/17				#DIV/0!
51	W9H - 3/9/17 - 1.5 m	1181	1227	1333	1247
52	W9F - 3/10/17	314	287	286	295.6666667
53	W10M - 3/13/17				#DIV/0!
54	W10T - 3/14/17	2664	2859	2959	2827.333333
55	W10W - 3/15/17	526	523	557	535.3333333
56	W10H - 3/16/17	780	745	960	828.3333333
57	W10F - 3/17/17				#DIV/0!
58	S1M - 3/20/17				#DIV/0!
59	S1T - 3/21/17				#DIV/0!
60	S1W - 3/22/17				#DIV/0!
61	S1H - 3/23/17				#DIV/0!
62	S1F - 3/24/17				#DIV/0!

	P	Q	R	S	T
1	KEY	Weights R T1	Weights R T2	Weights R T3	Average
2	W6M - 2/13/17 - Morning	87	80	98	88.33333333
3	W6T - 2/14/17	640	621	616	625.6666667
4	W6W - 2/15/17	224	233	213	223.3333333
5	W6H - 2/16/17	2154	2165	2254	2191
6	W6F - 2/17/17	261	282	292	278.3333333
7	W7M - 2/20/17				#DIV/0!
8	W7T - 2/21/17	350	366	370	362
9	W7W - 2/22/17	522	536	522	526.6666667
10	W7H - 2/23/17	514	514	466	498
11	W7F - 2/24/17				#DIV/0!
12	W8M - 2/27/17	327	342	344	337.6666667
13	W8T - 2/28/17	218	206	196	206.6666667
14	W8W - 3/1/17	183	183	176	180.6666667
15	W8H - 3/2/17	185	189	195	189.6666667
16	W8F - 3/3/17	118	113	112	114.3333333
17	W9M - 3/6/17	179	164	186	176.3333333
18	W9T - 3/7/17	161	179	161	167
19	W9W - 3/8/17				#DIV/0!
20	W9H - 3/9/17				#DIV/0!
21	W9F - 3/10/17 - 1.5 m	447	427	420	431.3333333
22	W10M - 3/13/17	3554	3690	3430	3558
23	W10T - 3/14/17	477	460	478	471.6666667
24	W10W - 3/15/17	468	474	498	480
25	W10H - 3/16/17	1380	1387	1392	1386.333333
26	W10F - 3/17/17	848	810	791	816.3333333
27	S1M - 3/20/17				#DIV/0!
28	S1T - 3/21/17				#DIV/0!
29	S1W - 3/22/17				#DIV/0!
30	S1H - 3/23/17				#DIV/0!
31	S1F - 3/24/17				#DIV/0!

	P	Q	R	S	T
32	KEY	Weights R T1	Weights R T2	Weights R T3	Average
33	W6M - 2/13/17 - Evening	434	451	430	438.3333333
34	W6T - 2/14/17	879	933	937	916.3333333
35	W6W - 2/15/17	602	632	590	608
36	W6H - 2/16/17	501	510	498	503
37	W6F - 2/17/17	398	380	306	361.3333333
38	W7M - 2/20/17				#DIV/0!
39	W7T - 2/21/17	282	320	294	298.6666667
40	W7W - 2/22/17	276	282	268	275.3333333
41	W7H - 2/23/17	286	297	300	294.3333333
42	W7F - 2/24/17	225	241	241	235.6666667
43	W8M - 2/27/17	352	355	337	348
44	W8T - 2/28/17	237	212	206	218.3333333
45	W8W - 3/1/17	252	273	343	289.3333333
46	W8H - 3/2/17	296	318	374	329.3333333
47	W8F - 3/3/17	394	288	285	322.3333333
48	W9M - 3/6/17	294	306	319	306.3333333
49	W9T - 3/7/17	584	1301	397	760.6666667
50	W9W - 3/8/17				#DIV/0!
51	W9H - 3/9/17 - 1.5 m	1085	1037	1086	1069.333333
52	W9F - 3/10/17	269	273	260	267.3333333
53	W10M - 3/13/17				#DIV/0!
54	W10T - 3/14/17	2192	2191	1981	2121.333333
55	W10W - 3/15/17	634	706	526	622
56	W10H - 3/16/17	940	979	896	938.3333333
57	W10F - 3/17/17				#DIV/0!
58	S1M - 3/20/17				#DIV/0!
59	S1T - 3/21/17				#DIV/0!
60	S1W - 3/22/17				#DIV/0!
61	S1H - 3/23/17				#DIV/0!
62	S1F - 3/24/17				#DIV/0!

	U	V	W	X	Y
1	KEY	Cardio T1	Cardio T2	Cardio T3	Average
2	W6M - 2/13/17 - Morning	117	118	118	117.6666667
3	W6T - 2/14/17	263	253	258	258
4	W6W - 2/15/17	132	118	119	123
5	W6H - 2/16/17	709	710	791	736.6666667
6	W6F - 2/17/17	175	192	192	186.3333333
7	W7M - 2/20/17				#DIV/0!
8	W7T - 2/21/17	202	210	222	211.3333333
9	W7W - 2/22/17	265	271	288	274.6666667
10	W7H - 2/23/17	100	91	85	92
11	W7F - 2/24/17				#DIV/0!
12	W8M - 2/27/17	227	209	214	216.6666667
13	W8T - 2/28/17	397	392	377	388.6666667
14	W8W - 3/1/17	134	164	121	139.6666667
15	W8H - 3/2/17	146	151	155	150.6666667
16	W8F - 3/3/17	86	70	85	80.33333333
17	W9M - 3/6/17	126	131	84	113.6666667
18	W9T - 3/7/17	75	81	80	78.66666667
19	W9W - 3/8/17				#DIV/0!
20	W9H - 3/9/17				#DIV/0!
21	W9F - 3/10/17 - 1.5 m	132	126	141	133
22	W10M - 3/13/17	709	846	908	821
23	W10T - 3/14/17	219	230	263	237.3333333
24	W10W - 3/15/17	194	219	278	230.3333333
25	W10H - 3/16/17	498	502	505	501.6666667
26	W10F - 3/17/17	452	512	529	497.6666667
27	S1M - 3/20/17				#DIV/0!
28	S1T - 3/21/17				#DIV/0!
29	S1W - 3/22/17				#DIV/0!
30	S1H - 3/23/17				#DIV/0!
31	S1F - 3/24/17				#DIV/0!

	U	V	W	X	Y
32	KEY	Cardio T1	Cardio T2	Cardio T3	Average
33	W6M - 2/13/17 - Evening	256	276	289	273.6666667
34	W6T - 2/14/17	329	325	317	323.6666667
35	W6W - 2/15/17	327	364	309	333.3333333
36	W6H - 2/16/17	383	391	380	384.6666667
37	W6F - 2/17/17	260	290	299	283
38	W7M - 2/20/17				#DIV/0!
39	W7T - 2/21/17	262	257	239	252.6666667
40	W7W - 2/22/17	303	291	291	295
41	W7H - 2/23/17	271	251	248	256.6666667
42	W7F - 2/24/17	195	214	202	203.6666667
43	W8M - 2/27/17	239	271	285	265
44	W8T - 2/28/17	164	124	176	154.6666667
45	W8W - 3/1/17	115	109	115	113
46	W8H - 3/2/17	156	195	187	179.3333333
47	W8F - 3/3/17	117	128	130	125
48	W9M - 3/6/17	189	182	184	185
49	W9T - 3/7/17	192	178	199	189.6666667
50	W9W - 3/8/17				#DIV/0!
51	W9H - 3/9/17 - 1.5 m	299	302	308	303
52	W9F - 3/10/17	142	134	138	138
53	W10M - 3/13/17				#DIV/0!
54	W10T - 3/14/17	726	831	1040	865.6666667
55	W10W - 3/15/17	305	320	415	346.6666667
56	W10H - 3/16/17	361	418	469	416
57	W10F - 3/17/17				#DIV/0!
58	S1M - 3/20/17				#DIV/0!
59	S1T - 3/21/17				#DIV/0!
60	S1W - 3/22/17				#DIV/0!
61	S1H - 3/23/17				#DIV/0!
62	S1F - 3/24/17				#DIV/0!

	Z	AA	AB	AC	AD
1	KEY	Outside T1	Outside T2	Outside T3	Average
2	W6M - 2/13/17 - Morning				#DIV/0!
3	W6T - 2/14/17				#DIV/0!
4	W6W - 2/15/17				#DIV/0!
5	W6H - 2/16/17				#DIV/0!
6	W6F - 2/17/17				#DIV/0!
7	W7M - 2/20/17				#DIV/0!
8	W7T - 2/21/17				#DIV/0!
9	W7W - 2/22/17				#DIV/0!
10	W7H - 2/23/17				#DIV/0!
11	W7F - 2/24/17				#DIV/0!
12	W8M - 2/27/17				#DIV/0!
13	W8T - 2/28/17	392	373	377	380.6666667
14	W8W - 3/1/17	452	479	452	461
15	W8H - 3/2/17	285	299	306	296.6666667
16	W8F - 3/3/17	263	257	279	266.3333333
17	W9M - 3/6/17	240	216	252	236
18	W9T - 3/7/17	418	414	414	415.3333333
19	W9W - 3/8/17				#DIV/0!
20	W9H - 3/9/17				#DIV/0!
21	W9F - 3/10/17 - 1.5 m	1409	1483	1565	1485.666667
22	W10M - 3/13/17	13241	13367		13304
23	W10T - 3/14/17	2131	2211	2188	2176.666667
24	W10W - 3/15/17	1954	2059	1817	1943.333333
25	W10H - 3/16/17	4831	4840	4842	4837.666667
26	W10F - 3/17/17	3172	3145	3245	3187.333333
27	S1M - 3/20/17				#DIV/0!
28	S1T - 3/21/17				#DIV/0!
29	S1W - 3/22/17				#DIV/0!
30	S1H - 3/23/17				#DIV/0!
31	S1F - 3/24/17				#DIV/0!

	Z	AA	AB	AC	AD
32	KEY	Outside T1	Outside T2	Outside T3	Average
33	W6M - 2/13/17 - Evening				#DIV/0!
34	W6T - 2/14/17				#DIV/0!
35	W6W - 2/15/17				#DIV/0!
36	W6H - 2/16/17				#DIV/0!
37	W6F - 2/17/17				#DIV/0!
38	W7M - 2/20/17				#DIV/0!
39	W7T - 2/21/17				#DIV/0!
40	W7W - 2/22/17				#DIV/0!
41	W7H - 2/23/17	405	391	360	385.3333333
42	W7F - 2/24/17				#DIV/0!
43	W8M - 2/27/17	975	912	875	920.6666667
44	W8T - 2/28/17	382	362	383	375.6666667
45	W8W - 3/1/17	483	490	458	477
46	W8H - 3/2/17	323	258	280	287
47	W8F - 3/3/17	376	510	353	413
48	W9M - 3/6/17	766	726	698	730
49	W9T - 3/7/17	852	792	769	804.3333333
50	W9W - 3/8/17				#DIV/0!
51	W9H - 3/9/17 - 1.5 m	3265	3517	2482	3088
52	W9F - 3/10/17	754	827	817	799.3333333
53	W10M - 3/13/17				#DIV/0!
54	W10T - 3/14/17	4013	4524	4837	4458
55	W10W - 3/15/17	1179	1271	1274	1241.333333
56	W10H - 3/16/17	2245	2253	2264	2254
57	W10F - 3/17/17				#DIV/0!
58	S1M - 3/20/17				#DIV/0!
59	S1T - 3/21/17				#DIV/0!
60	S1W - 3/22/17				#DIV/0!
61	S1H - 3/23/17				#DIV/0!
62	S1F - 3/24/17				#DIV/0!

Bruin Fitness Center

	AE	AF	AG	AH	AI
1	KEY - Bruin Fitness Center	Weights F T1	Weights F T2	Weights F T3	Average
2	W6M - 2/13/17 - Morning	205	215	219	213
3	W6T - 2/14/17	724	777	798	766.3333333
4	W6W - 2/15/17	519	518	529	522
5	W6H - 2/16/17	2081	2158	2159	2132.666667
6	W6F - 2/17/17	566	560	581	569
7	W7M - 2/20/17				#DIV/0!
8	W7T - 2/21/17	504	515	529	516
9	W7W - 2/22/17	661	629	614	634.6666667
10	W7H - 2/23/17	269	253	246	256
11	W7F - 2/24/17				#DIV/0!
12	W8M - 2/27/17				536
13	W8T - 2/28/17	424	418	418	420
14	W8W - 3/1/17	326	350	336	337.3333333
15	W8H - 3/2/17	100	106	110	105.3333333
16	W8F - 3/3/17	320	333	385	346
17	W9M - 3/6/17	285	294	168	249
18	W9T - 3/7/17	399	420	437	418.6666667
19	W9W - 3/8/17				#DIV/0!
20	W9H - 3/9/17				#DIV/0!
21	W9F - 3/10/17 - 1.5 m	867	852	877	865.3333333
22	W10M - 3/13/17	3468	3785	4046	3766.333333
23	W10T - 3/14/17	1009	1171	1126	1102
24	W10W - 3/15/17	563	593	598	584.6666667
25	W10H - 3/16/17	3633	3635	3640	3636
26	W10F - 3/17/17	1336	1413	1420	1389.666667
27	S1M - 3/20/17				#DIV/0!
28	S1T - 3/21/17				#DIV/0!
29	S1W - 3/22/17				#DIV/0!
30	S1H - 3/23/17				#DIV/0!
31	S1F - 3/24/17				#DIV/0!

	AE	AF	AG	AH	AI
32	KEY - Bruin Fitness Center	Weights F T1	Weights F T2	Weights F T3	Average
33	W6M - 2/13/17 - Evening	539	582	498	539.6666667
34	W6T - 2/14/17	602	627	657	628.6666667
35	W6W - 2/15/17	1008	1078	1025	1037
36	W6H - 2/16/17	767	726	886	793
37	W6F - 2/17/17				#DIV/0!
38	W7M - 2/20/17				#DIV/0!
39	W7T - 2/21/17	932	995	996	974.3333333
40	W7W - 2/22/17	330	350	336	338.6666667
41	W7H - 2/23/17	404	400	399	401
42	W7F - 2/24/17	393	378	449	406.6666667
43	W8M - 2/27/17	508	477	651	545.3333333
44	W8T - 2/28/17	334	380	262	325.3333333
45	W8W - 3/1/17	238	242	269	249.6666667
46	W8H - 3/2/17	239	233	217	229.6666667
47	W8F - 3/3/17	334	317	359	336.6666667
48	W9M - 3/6/17	320	329	297	315.3333333
49	W9T - 3/7/17	451	382	428	420.3333333
50	W9W - 3/8/17				#DIV/0!
51	W9H - 3/9/17 - 1.5 m	1071	1086	981	1046
52	W9F - 3/10/17				#DIV/0!
53	W10M - 3/13/17				#DIV/0!
54	W10T - 3/14/17	2408	2375	2127	2303.333333
55	W10W - 3/15/17	539	562	624	575
56	W10H - 3/16/17	1325	1284	1308	1305.666667
57	W10F - 3/17/17				#DIV/0!
58	S1M - 3/20/17				#DIV/0!
59	S1T - 3/21/17				#DIV/0!
60	S1W - 3/22/17				#DIV/0!
61	S1H - 3/23/17				#DIV/0!
62	S1F - 3/24/17				#DIV/0!

	AJ	AK	AL	AM	AN
1	KEY	Weights Ground T	Weights Ground T	Weights Ground T	Average
2	W6M - 2/13/17 - Morning				#DIV/0!
3	W6T - 2/14/17				#DIV/0!
4	W6W - 2/15/17				#DIV/0!
5	W6H - 2/16/17				#DIV/0!
6	W6F - 2/17/17				#DIV/0!
7	W7M - 2/20/17				#DIV/0!
8	W7T - 2/21/17				#DIV/0!
9	W7W - 2/22/17				#DIV/0!
10	W7H - 2/23/17				#DIV/0!
11	W7F - 2/24/17				#DIV/0!
12	W8M - 2/27/17				#DIV/0!
13	W8T - 2/28/17				#DIV/0!
14	W8W - 3/1/17				#DIV/0!
15	W8H - 3/2/17				#DIV/0!
16	W8F - 3/3/17				#DIV/0!
17	W9M - 3/6/17				#DIV/0!
18	W9T - 3/7/17				#DIV/0!
19	W9W - 3/8/17				#DIV/0!
20	W9H - 3/9/17				#DIV/0!
21	W9F - 3/10/17 - 1.5 m	797	928	1014	913
22	W10M - 3/13/17	3496	3313	3158	3322.333333
23	W10T - 3/14/17	1138	1175	1124	1145.666667
24	W10W - 3/15/17	570	600	576	582
25	W10H - 3/16/17	3600	3611	3615	3608.666667
26	W10F - 3/17/17	1240	1244	1275	1253
27	S1M - 3/20/17				#DIV/0!
28	S1T - 3/21/17				#DIV/0!
29	S1W - 3/22/17				#DIV/0!
30	S1H - 3/23/17				#DIV/0!
31	S1F - 3/24/17				#DIV/0!

	AJ	AK	AL	AM	AN
32	KEY	Weights Ground T	Weights Ground T	Weights Ground T	Average
33	W6M - 2/13/17 - Evening				#DIV/0!
34	W6T - 2/14/17				#DIV/0!
35	W6W - 2/15/17				#DIV/0!
36	W6H - 2/16/17				#DIV/0!
37	W6F - 2/17/17				#DIV/0!
38	W7M - 2/20/17				#DIV/0!
39	W7T - 2/21/17				#DIV/0!
40	W7W - 2/22/17				#DIV/0!
41	W7H - 2/23/17				#DIV/0!
42	W7F - 2/24/17				#DIV/0!
43	W8M - 2/27/17				#DIV/0!
44	W8T - 2/28/17				#DIV/0!
45	W8W - 3/1/17				#DIV/0!
46	W8H - 3/2/17				#DIV/0!
47	W8F - 3/3/17				#DIV/0!
48	W9M - 3/6/17				#DIV/0!
49	W9T - 3/7/17				#DIV/0!
50	W9W - 3/8/17				#DIV/0!
51	W9H - 3/9/17 - 1.5 m	981	1071	1184	1078.666667
52	W9F - 3/10/17				#DIV/0!
53	W10M - 3/13/17				#DIV/0!
54	W10T - 3/14/17	2173	2155	2095	2141
55	W10W - 3/15/17	513	458	536	502.3333333
56	W10H - 3/16/17	114	1241	1223	859.3333333
57	W10F - 3/17/17				#DIV/0!
58	S1M - 3/20/17				#DIV/0!
59	S1T - 3/21/17				#DIV/0!
60	S1W - 3/22/17				#DIV/0!
61	S1H - 3/23/17				#DIV/0!
62	S1F - 3/24/17				#DIV/0!

	AO	AP	AQ	AR	AS
1	KEY	Weights B T1	Weights B T2	Weights B T3	Average
2	W6M - 2/13/17 - Morning	121	135	131	129
3	W6T - 2/14/17	771	804	766	780.3333333
4	W6W - 2/15/17	458	435	424	439
5	W6H - 2/16/17	1952	1094	1916	1654
6	W6F - 2/17/17	437	455	475	455.6666667
7	W7M - 2/20/17				#DIV/0!
8	W7T - 2/21/17	488	492	499	493
9	W7W - 2/22/17	494	537	553	528
10	W7H - 2/23/17	263	257	244	254.6666667
11	W7F - 2/24/17				#DIV/0!
12	W8M - 2/27/17				384
13	W8T - 2/28/17	336	344	346	342
14	W8W - 3/1/17	304	303	317	308
15	W8H - 3/2/17	130	137	145	137.3333333
16	W8F - 3/3/17	231	229	243	234.3333333
17	W9M - 3/6/17	274	241	295	270
18	W9T - 3/7/17	357	349	348	351.3333333
19	W9W - 3/8/17				#DIV/0!
20	W9H - 3/9/17				#DIV/0!
21	W9F - 3/10/17 - 1.5 m	477	540	525	514
22	W10M - 3/13/17	3110	3230	3416	3252
23	W10T - 3/14/17	757	816	837	803.3333333
24	W10W - 3/15/17	408	461	494	454.3333333
25	W10H - 3/16/17	2372	2377	2380	2376.333333
26	W10F - 3/17/17	1073	1112	1170	1118.333333
27	S1M - 3/20/17				#DIV/0!
28	S1T - 3/21/17				#DIV/0!
29	S1W - 3/22/17				#DIV/0!
30	S1H - 3/23/17				#DIV/0!
31	S1F - 3/24/17				#DIV/0!

	AO	AP	AQ	AR	AS
32	KEY	Weights B T1	Weights B T2	Weights B T3	Average
33	W6M - 2/13/17 - Evening	575	600	588	587.6666667
34	W6T - 2/14/17	899	915	846	886.6666667
35	W6W - 2/15/17	836	852	856	848
36	W6H - 2/16/17	612	608	610	610
37	W6F - 2/17/17				#DIV/0!
38	W7M - 2/20/17				#DIV/0!
39	W7T - 2/21/17	673	675	694	680.6666667
40	W7W - 2/22/17	297	292	294	294.3333333
41	W7H - 2/23/17	294	305	304	301
42	W7F - 2/24/17	265	261	273	266.3333333
43	W8M - 2/27/17	312	291	315	306
44	W8T - 2/28/17	260	261	220	247
45	W8W - 3/1/17	209	191	305	235
46	W8H - 3/2/17	207	192	235	211.3333333
47	W8F - 3/3/17	229	213	222	221.3333333
48	W9M - 3/6/17	240	241	225	235.3333333
49	W9T - 3/7/17	294	278	360	310.6666667
50	W9W - 3/8/17				#DIV/0!
51	W9H - 3/9/17 - 1.5 m	616	559	1071	748.6666667
52	W9F - 3/10/17	342	359	317	339.3333333
53	W10M - 3/13/17				#DIV/0!
54	W10T - 3/14/17	1794	1860	2173	1942.333333
55	W10W - 3/15/17	473	443	439	451.6666667
56	W10H - 3/16/17	936	933	876	915
57	W10F - 3/17/17				#DIV/0!
58	S1M - 3/20/17				#DIV/0!
59	S1T - 3/21/17				#DIV/0!
60	S1W - 3/22/17				#DIV/0!
61	S1H - 3/23/17				#DIV/0!
62	S1F - 3/24/17				#DIV/0!

	AT	AU	AV	AW	AX
1	KEY	Cardio T1	Cardio T2	Cardio T3	Average
2	W6M - 2/13/17 - Morning	198	218	213	209.6666667
3	W6T - 2/14/17	929	996	1033	986
4	W6W - 2/15/17	553	500	561	538
5	W6H - 2/16/17	2175	2271	2374	2273.333333
6	W6F - 2/17/17	612	659	711	660.6666667
7	W7M - 2/20/17				#DIV/0!
8	W7T - 2/21/17	521	528	532	527
9	W7W - 2/22/17	672	703	720	698.3333333
10	W7H - 2/23/17	319	326	318	321
11	W7F - 2/24/17				#DIV/0!
12	W8M - 2/27/17				521
13	W8T - 2/28/17	372	450	395	405.6666667
14	W8W - 3/1/17	347	360	392	366.3333333
15	W8H - 3/2/17	115	122	128	121.6666667
16	W8F - 3/3/17	360	381	337	359.3333333
17	W9M - 3/6/17	322	365	408	365
18	W9T - 3/7/17	410	425	434	423
19	W9W - 3/8/17				#DIV/0!
20	W9H - 3/9/17				#DIV/0!
21	W9F - 3/10/17 - 1.5 m	807	927	986	906.6666667
22	W10M - 3/13/17	3913	4310	4664	4295.666667
23	W10T - 3/14/17	1265	1359	1494	1372.666667
24	W10W - 3/15/17	554	678	808	680
25	W10H - 3/16/17	2198	2200	2204	2200.666667
26	W10F - 3/17/17	1436	1616	1859	1637
27	S1M - 3/20/17				#DIV/0!
28	S1T - 3/21/17				#DIV/0!
29	S1W - 3/22/17				#DIV/0!
30	S1H - 3/23/17				#DIV/0!
31	S1F - 3/24/17				#DIV/0!

	AT	AU	AV	AW	AX
32	KEY	Cardio T1	Cardio T2	Cardio T3	Average
33	W6M - 2/13/17 - Evening	669	665	572	635.3333333
34	W6T - 2/14/17	450	429	486	455
35	W6W - 2/15/17	1078	1065	1011	1051.333333
36	W6H - 2/16/17	439	429	424	430.6666667
37	W6F - 2/17/17				#DIV/0!
38	W7M - 2/20/17				#DIV/0!
39	W7T - 2/21/17	382	373	401	385.3333333
40	W7W - 2/22/17	430	431	424	428.3333333
41	W7H - 2/23/17	236	235	260	243.6666667
42	W7F - 2/24/17	547	508	534	529.6666667
43	W8M - 2/27/17	892	903	899	898
44	W8T - 2/28/17	213	178	208	199.6666667
45	W8W - 3/1/17	302	293	175	256.6666667
46	W8H - 3/2/17	149	148	145	147.3333333
47	W8F - 3/3/17	278	256	270	268
48	W9M - 3/6/17	341	375	361	359
49	W9T - 3/7/17	543	515	527	528.3333333
50	W9W - 3/8/17				#DIV/0!
51	W9H - 3/9/17 - 1.5 m	1084	1115	1072	1090.333333
52	W9F - 3/10/17	411	472	453	445.3333333
53	W10M - 3/13/17				#DIV/0!
54	W10T - 3/14/17	2102	2279	2569	2316.666667
55	W10W - 3/15/17	605	632	609	615.3333333
56	W10H - 3/16/17	1111	1225	1138	1158
57	W10F - 3/17/17				#DIV/0!
58	S1M - 3/20/17				#DIV/0!
59	S1T - 3/21/17				#DIV/0!
60	S1W - 3/22/17				#DIV/0!
61	S1H - 3/23/17				#DIV/0!
62	S1F - 3/24/17				#DIV/0!

	AY	AZ	BA	BB	BC
1	KEY	Outside T1	Outside T2	Outside T3	Average
2	W6M - 2/13/17 - Morning				#DIV/0!
3	W6T - 2/14/17				#DIV/0!
4	W6W - 2/15/17				#DIV/0!
5	W6H - 2/16/17				#DIV/0!
6	W6F - 2/17/17				#DIV/0!
7	W7M - 2/20/17				#DIV/0!
8	W7T - 2/21/17				#DIV/0!
9	W7W - 2/22/17				#DIV/0!
10	W7H - 2/23/17				#DIV/0!
11	W7F - 2/24/17				#DIV/0!
12	W8M - 2/27/17				#DIV/0!
13	W8T - 2/28/17	462	415	507	461.3333333
14	W8W - 3/1/17	516	538	604	552.6666667
15	W8H - 3/2/17	240	248	252	246.6666667
16	W8F - 3/3/17	397	358	367	374
17	W9M - 3/6/17	272	313	337	307.3333333
18	W9T - 3/7/17	545	580	679	601.3333333
19	W9W - 3/8/17				#DIV/0!
20	W9H - 3/9/17				#DIV/0!
21	W9F - 3/10/17 - 1.5 m	1389	1572	1548	1503
22	W10M - 3/13/17	6818	6373	5853	6348
23	W10T - 3/14/17	1634	1598	1576	1602.666667
24	W10W - 3/15/17	939	808	834	860.3333333
25	W10H - 3/16/17	4400	4402	4407	4403
26	W10F - 3/17/17	2316	2545	2530	2463.666667
27	S1M - 3/20/17				#DIV/0!
28	S1T - 3/21/17				#DIV/0!
29	S1W - 3/22/17				#DIV/0!
30	S1H - 3/23/17				#DIV/0!
31	S1F - 3/24/17				#DIV/0!

	AY	AZ	BA	BB	BC
32	KEY	Outside T1	Outside T2	Outside T3	Average
33	W6M - 2/13/17 - Evening				#DIV/0!
34	W6T - 2/14/17				#DIV/0!
35	W6W - 2/15/17				#DIV/0!
36	W6H - 2/16/17				#DIV/0!
37	W6F - 2/17/17				#DIV/0!
38	W7M - 2/20/17				#DIV/0!
39	W7T - 2/21/17				#DIV/0!
40	W7W - 2/22/17				#DIV/0!
41	W7H - 2/23/17	395	413	616	474.6666667
42	W7F - 2/24/17				#DIV/0!
43	W8M - 2/27/17	931	928	993	950.6666667
44	W8T - 2/28/17	562	553	561	558.6666667
45	W8W - 3/1/17	410	541	369	440
46	W8H - 3/2/17	309	452	2933	1231.333333
47	W8F - 3/3/17	502	603	505	536.6666667
48	W9M - 3/6/17	690	710	871	757
49	W9T - 3/7/17				#DIV/0!
50	W9W - 3/8/17				#DIV/0!
51	W9H - 3/9/17 - 1.5 m	2965	2953	2927	2948.333333
52	W9F - 3/10/17	753	737	777	755.6666667
53	W10M - 3/13/17				#DIV/0!
54	W10T - 3/14/17	4044	4093	3894	4010.333333
55	W10W - 3/15/17	1449	1317	1290	1352
56	W10H - 3/16/17	3094	3511	3261	3288.666667
57	W10F - 3/17/17				#DIV/0!
58	S1M - 3/20/17				#DIV/0!
59	S1T - 3/21/17				#DIV/0!
60	S1W - 3/22/17				#DIV/0!
61	S1H - 3/23/17				#DIV/0!
62	S1F - 3/24/17				#DIV/0!