ABSTRACT
For many young people in the United States, college is the first chance to live independently. These individuals are now responsible for making a variety of choices about their behaviors including nutrition, exercise, and other health habits. The purpose of this study was to investigate the self-reported health behaviors (smoking, drinking, and exercise) made by the average student and compare to a physical fitness assessment. The expected outcomes were: there will be a high incidence of binge and heavy drinking, a high prevalence of smoking, and there will be a high correlation between those who drink heavily and smoke, and poor health assessment outcomes. When compared to the national and state averages, results showed a slightly lower average of smoking and binge drinking. However, heavy drinking was double the national and state averages for 2005. No significant differences were found between those who practice healthy behaviors and those who do not regarding fitness levels.

Introduction
For many young people in the United States, college is the first chance to live independently. These individuals are now responsible for making a variety of choices about their behaviors including nutrition, exercise, and other health habits. Particularly concerning is what the average college student chooses in regards to drinking, tobacco use, and exercise. Studies, such as those conducted by Simpson et al. (Simpson, Brehm, Rasmussen, Ramsay, and Probst) and the Centers for Disease Control and Prevention (United States, “Youth Risk Behavior”) determined some of the health behaviors of young adults. These studies can be used to raise awareness of prevalent unhealthy behaviors in order to make positive changes in public health. Colleges and universities are prime grounds for the initiation of public health policies because of the immediacy of effect and the ease in which those effects may be studied and modified. Behaviors such as smoking, poor diet, and sedentary lifestyle are shown to be significant health risk factors (Powers & Howley 291-2) and must be further addressed by future research in regards to the young adult.

According to a national survey conducted by the Centers for Disease Control and Prevention (CDC) in 2004 (United States, “Smoking, 2003”) the median prevalence of adult men and women who were current smokers was 22.1% for all 50 states including the District of Columbia. This means that nearly a quarter of the national population at that time smoked cigarettes. Wisconsin scored at the national median with 22.1% of the population reported as current smokers. Further, the study reports only a one percent decrease per annum in the national prevalence, leading to predictions that in 2007 the prevalence of smokers nationally should be approximately 18%.

In contrast, a similar study conducted by the CDC in 2005 (United States, “Secondhand Smoke Rules and Policies” 1149) totaled the national prevalence of cigarette smokers at a median of 20.6%, revealing a 1.5% decrease between 2003 and 2005 in the prevalence of smokers nationwide, or an average of 0.75% decrease per annum. The 2005 results also indicate that the prevalence of smokers in Wisconsin had decreased to 20.8%, or 0.2% below the national average. This shows decrease in the prevalence of smoking for the state of Wisconsin which is slightly lower than the national average. However, there is also evidence of an overall halt in the decline of tobacco use across the nation as evinced by another study of overall tobacco use conducted by the CDC in 2005 (United States, “Tobacco Use Among Adults” 1146).

The CDC also reported on smoke-free policies in the home and workplace in 14 states, including Wisconsin (United States, “Secondhand Smoke Rules and Policies”). The questions they used in their survey pertained to policies toward smoking in the home and workplace and were an attempt to ascertain
rates of secondhand smoke exposure. Results show that in the state of Wisconsin in 2005, 72.8% of households surveyed reported a complete restriction on smoking inside the home. This is shown to be slightly below the average of 73.7% for the 14 states reported. Similar rates were seen for workplace smoking with rates of 75.9% banning smoking in any public area, 82.2% banning smoking in work areas, and 70.9% banning smoking in the entire workplace. These rates were also below the averages of 79.0%, 85.5%, and 73.4% respectively for each category (United States, “Secondhand Smoke Rules and Policies”).

As for smokeless tobacco use which includes chewing tobacco and snuff, the CDC estimates that in 2005 there was a national prevalence of 2.3%. However, no results were presented for individual states (United States, “Tobacco Use Among Adults” 1145).

The detrimental effects of smoking have been thoroughly examined and continue to reveal new pathological links to tobacco as a whole (“Health Consequences, 2006”). Despite the growing body of evidence, many people continue to smoke and still more college students are among those who initiate smoking (Everett & Husten 59). A survey of college students found that most respondents agreed to the statement “smoking is hazardous to one’s health” (Biasco and Hartnett 444-5). Alternatively, those same individuals reported a reluctance to adopt tougher laws against smoking, indicating that they favor personal freedom (Biasco and Hartnett 445).

According to a study conducted by Everett and Husten in 1999, many adults initiate smoking during their college years (Everett & Husten 57). Additionally, the study indicates that in a comparison between ethnicities/races, American Indian and Alaska Natives represented 32.0% of current cigarette smokers and that 21.9% of college-aged smokers are white. However, there were no significant differences between genders in regards to initiation or continuance of smoking. Studies conducted by Patterson et al. (203-10) at the collegiate level, and the Centers for Disease Control and Prevention (“Tobacco Use Among Adults” 1145-48) at the national level, support the conclusion that between different ethnicities, a significant portion of current college-aged smokers are white.

The results from the 2002 and 2005 CDC studies (United States, “Smoking, 2003” and “Secondhand Smoke Rules and Policies”) reinforce the assumption that the decrease in prevalence for smoking in Wisconsin lags behind the national average and that it may be linked to the smoking policies set forth in the home and workplace. Indeed, according to the evidence presented here, there seems to be a general opinion supporting a less than average effort to decrease the number of people smoking.

The first item in the Major Conclusions section of the 2004 Surgeon General’s Report on the Health Effects of Smoking reads: “Smoking harms nearly every organ of the body, causing many diseases and reducing the health of smokers in general,” (“Health Consequences,” 25). In the respiratory tract, smoking causes damage to the cilia which retards the natural cleansing of the lungs. This damage eventually leads to the annihilation of the cilia which inhibits the elimination of mucus from the respiratory tract (Shier, Butler, and Lewis 735). The accumulation of mucus and subsequent inability to expel it can lead to diminished alveolar surface area and subsequently less viable area in the lungs for functional gas exchange. As such, based on this evidence, it may be surmised that someone with impaired respiratory function will have a more difficult time receiving the oxygen necessary to maintain sustained aerobic capacity.

Other significant effects of tobacco use can occur at the cardiovascular level. These may include atherogenic effects leading to atherosclerosis to include: endothelial damage, increased platelet adhesion to damaged endothelium, decreased high-density lipoprotein cholesterol, and increased blood viscosity (American College of Sports Medicine [ACSM], “Resource Manual,” 414-415). These factors may combine to thicken and constrict the vascular lumen, increasing peripheral resistance to blood circulation in turn forcing the heart to increase work to maintain a steady rate of circulation.

Another serious issue to consider in regards to college student health is the use of alcohol. A study conducted by Mokdad et al. concluded that alcohol was the third highest cause of death accounting for 3.5% of all deaths in the United States in 2000 (Mokdad, Marks, Stroup, and Gerberding 1238-40). This represents a significant number of deaths directly caused by alcohol. In terms of alcohol and its effect on college campuses nationwide, a study conducted by Turrisi et al. estimates that there is a greater...
risk of alcohol-related incidences among students who belong to Greek letter social organizations and college athletes, particularly male hockey players and female lacrosse players (Turrisi, Mallett, and Mastroleo 411). A study by Ford supports the estimates of increased alcohol use by athletes, stating that male hockey players and female soccer players reported the highest levels of binge drinking (Ford 369-71).

According to a 1995 study (United States, “Youth Risk Behavior Surveillance”), it is estimated that of all the individuals between the ages of 18 and 24 surveyed, 3.4% consumed alcohol on 20 or more days in the 30 days preceding the survey and that 41.8% consumed 5 or more drinks on more than one day during the 30 days preceding the survey. These numbers indicate a significant portion of students engaging in the excessive consumption of alcohol on a regular basis. In 2005, the CDC reported the state of Wisconsin as having the highest percentage, 22.1%, of binge drinkers (5 or more drinks on at least one occasion) aged 18 or above as well as having the highest percentage, 7.5%, of heavy drinkers (consuming an average of two or more drinks a day) aged 18 or above (United States, “Surveillance of Certain Health Behaviors”). This estimate, taken with the estimations of the studies mentioned previously in this study, puts Wisconsin students at an especially high risk for binge drinking and heavy drinking during their college years.

The negative health effects of alcohol overuse include those which are physical and mental and considerably involve a young age group. According to a study by Cargiulo, it is made clear that the highest prevalence of alcohol dependence occurs between the ages of 18 and 29 (Cargiulo S6), which may in turn be interpreted as largely encompassing college aged individuals. Cargiulo goes on to mention the increased rate of injury of those who consume alcohol or are dependant on it as well as brain damage, increased risk of cardiovascular disease, liver disease, and some forms of cancer caused by alcohol dependence. The health risks associated with alcohol abuse when paired with the risks associated with smoking cigarettes would seem to significantly increase the rate of morbidity in those who smoke and drink at the same time.

McKee, Hinson, Rounsaville, and Petrelli conducted a survey of college students’ subjective effects while drinking (McKee et al. 111-17). The study found overall that those who smoked while they drank reported having stronger subjective effects of concurrent alcohol and tobacco use, meaning they derived more pleasure from smoking when drinking than when not drinking. Furthermore, the study found that nearly 75% of all smoking occurred under the influence of alcohol and that those who smoked had a higher level of alcohol use (McKee et al. 115). The study also claims that although a higher rate of alcohol consumption correlates to a higher rate of smoking incidence, smoking has no direct correlation to the desire to consume alcohol (McKee et al. 115). Krukowski, Solomon, and Naud (341) support these claims in their 2004 study, reporting that “lighter smokers”, or those who smoke between 2 and 8 cigarettes a day, increased their smoking chiefly when consuming alcohol. These findings are interesting because in that study, alcohol is directly implicated in the initiation or escalation of cigarette smoking by college students (Krukowski, Solomon, and Naud 342).

One important mitigating factor on the negative health effects of smoking and alcohol abuse is the amount of regular exercise performed by the individual. Exercise has been shown to lessen, and in some cases reverse, the effects of unhealthy behaviors and some diseases (ACSM, “Guidelines” 7). The American College of Sports Medicine recommends that adults may obtain health benefits with as little as 30 minutes of moderate-level exercise per day (ACSM 6). This seems intuitive to most people, yet the problem of nationwide obesity continues to grow. In 2005 according to a survey conducted by the CDC, 60.5% of the population surveyed was overweight, 23.9% were obese, and 3.0% were extremely obese (United States, “State-Specific Prevalence of Obesity” 985) indicating that over half of the U.S. population was overweight and that nearly a quarter of the population was obese. This seems to indicate a prevalence of sedentary lifestyles in the U.S.

Risk factors such as the prevalence of obesity and drug use increasingly affect young adults and the population at large, although it is not the intent of this study to investigate their effects or prevalence here. Nevertheless, they should be considered part of a comprehensive health profile. Further study
The purpose of this study was to investigate the self-reported health behaviors (smoking, drinking, and exercise) made by the average student and compare them to a physical fitness assessment. The expected outcomes were:
1. There will be a high incidence of binge or heavy drinking.
2. There will be a high prevalence of cigarette use among the surveyed population.
3. There will be a high correlation between those who drink heavily, smoke, do not exercise regularly, and poor health assessment outcomes.

Methods
Students enrolled in a 100 level health and wellness course at a small public institution in the Spring Semester of 2007 were asked to volunteer for this study. Each volunteer was issued the informed consent form found in Appendix A. The Institutional Review Board reviewed and approved the protocols and survey used in this study.

All volunteers were considered in good health unless otherwise indicated by a physician and were issued an informed consent form for the assessment portion (Appendix C). Students were monitored throughout exercise testing. Testing discontinued if any indications for terminating exercise were ascertained including, but not limited to: significant drop in blood pressure, moderately severe angina, signs of poor perfusion, or subject’s desire to stop (ACSM, “Guidelines” 78). The total number of possible volunteers was 135 students and the number of participants totaled 80 (n=80), representing a 59.3% participation rate.

Fitness evaluations were conducted using the MicroFit® version 5.3.2 fitness evaluation computer program (MicroFit). Resting blood pressure (“The Fifth Report” 154-83) and heart rate were obtained using a MicroFit® FAS-2® blood pressure cuff (MicroFit). Body weight was calculated using the MicroFit® FAS-2® weight scale (MicroFit), and was entered along with the individual’s self-reported height to calculate BMI (ACSM, “Guidelines” 58). Three-site skin fold body fat percentage testing was carried out using MicroFit® FAS-2® skinfold caliper (MicroFit) and was calculated using Jackson & Pollock’s equation (76-90) for male or female subjects. Biceps strength was assessed using the MicroFit® FAS-2® strength scale (MicroFit). Flexibility was assessed using the MicroFit® FAS-2® flexometer electronic sit and reach apparatus (MicroFit). Due to administrative changes for time constraints midway through testing, either the Astrand (Astrand) protocol or the YMCA (Golding & ACSM, “Guidelines”) protocol for VO\textsubscript{2} submaximal cycle testing was used throughout testing. VO\textsubscript{2} testing was conducted using a Monark™ Ergomedic® 828 E cycle ergometer (Monark). A Monark™ electronic heart monitor (Monark) was used to continuously observe heart rate during exercise.

The survey found in Appendix B was issued to participants. Each student then participated in a fitness assessment and received a printout of their individual fitness test results. They then were instructed to remove all identifying materials from this printout and to include the printout with their completed survey. They then obtained instructions on filling out the survey by the attending laboratory student technician. After all materials were checked for anonymity, the survey and fitness printout were sealed in a numbered envelope until entered into a computerized database.

Tobacco users were identified and grouped by the mode of use (cigarette, cigar, pipe, or smokeless) and were defined as users if any combination of “cigarettes”, “cigars”, “pipe”, or “smokeless” was chosen on the survey. Alcohol use was divided into four categories: non-drinkers, light-to-moderate drinkers, binge drinkers, and heavy drinkers. Non-drinkers are defined as abstaining from alcohol. Light-to-moderate drinkers are defined as drinking three or less times per week and consuming four or less drinks per session. Binge drinkers are defined as drinking three or less times per week and consuming four or more drinks per session. Heavy drinkers are defined as drinking two or more times per week and consuming more than four drinks per session.

Data analysis was completed using SPSS® version 14.0 (SPSS).
Results

The sample population consisted of 80 participants, 79 valid entrants with one entry excluded on the basis of missing assessment data. Of the valid sample, there were 42 males (53.2%) and 37 females (46.8%). Table 1 illustrates the means of assessment data for the group.

Table 1. Means and σ (standard deviation) of assessment results. (n=79)

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>21.71</td>
<td>4.810</td>
</tr>
<tr>
<td>Body Fat%</td>
<td>19.303</td>
<td>8.8620</td>
</tr>
<tr>
<td>Aerobic Fit</td>
<td>40.184</td>
<td>12.9536</td>
</tr>
<tr>
<td>Aerobic x</td>
<td>3.18</td>
<td>1.607</td>
</tr>
<tr>
<td>Strength x</td>
<td>3.49</td>
<td>11.000</td>
</tr>
<tr>
<td>RHR</td>
<td>70.94</td>
<td>13.161</td>
</tr>
<tr>
<td>Systolic</td>
<td>118.66</td>
<td>16.753</td>
</tr>
<tr>
<td>Diastolic</td>
<td>76.24</td>
<td>6.865</td>
</tr>
<tr>
<td>BMI</td>
<td>28.804</td>
<td>20.9020</td>
</tr>
<tr>
<td>weight lbs</td>
<td>171.306</td>
<td>38.6166</td>
</tr>
<tr>
<td>height in.</td>
<td>68.101</td>
<td>3.7041</td>
</tr>
</tbody>
</table>

Of the sample population, 53 were drinkers (67.1%), 25 were non-drinkers (31.6%), and one person did not answer (1.3%). Of the drinking subpopulation, 9 (11.5%) were identified as binge drinkers and 13 (16.6%) were identified as heavy drinkers (Tables 2 & 3, Figures 1 & 2). The remainder of the drinking population was identified as light-to-moderate drinkers.

Table 2. Sample population prevalence of alcohol consumption. (n=78) 95% CI*

<table>
<thead>
<tr>
<th>Type of Use</th>
<th>Percent; CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drinker</td>
<td>0.68; 0.57-0.77</td>
</tr>
<tr>
<td>Non-drinker</td>
<td>0.32; 0.22-0.42</td>
</tr>
</tbody>
</table>

*Confidence interval (CI)

Table 3. Drinking subpopulation alcohol use prevalence. (n=78) 95% CI

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent; CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binge Drinker</td>
<td>0.12; 0.05-0.19</td>
</tr>
<tr>
<td>Heavy Drinker</td>
<td>0.17; 0.09-0.25</td>
</tr>
</tbody>
</table>
Figure 1. Self-reported alcohol use. (n=78)

![Self-Reported Alcohol Use](image)

Figure 2. Alcohol consumption levels of the drinking subpopulation. (n=53)

![Alcohol Use](image)

Of the population, 18 were tobacco users (22.8%) and 61 were non-users (77.2%). Of the subpopulation of tobacco users, 13 (16.5%) smoked cigarettes, 2 (2.5%) smoked cigars, and 3 (3.8%) used smokeless tobacco (Table 4, Figures 3 & 4).
Table 4. Sample population prevalence of tobacco use by type. (n=79)

<table>
<thead>
<tr>
<th>Type of use</th>
<th>Percent; CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-user</td>
<td>0.77; 0.68-0.86</td>
</tr>
<tr>
<td>Cigarettes</td>
<td>0.17; 0.09-0.25</td>
</tr>
<tr>
<td>Cigar</td>
<td>0.03; -0.01-0.07</td>
</tr>
<tr>
<td>Smokeless</td>
<td>0.04; 0.00-0.08</td>
</tr>
</tbody>
</table>

Figure 3. Sample population self-Reported Tobacco Use. (n=79)

Figure 4. Type of use by percent. (n=18)

A cross tabulation between drinkers and tobacco users revealed that 14 drinkers also used tobacco. Four individuals used tobacco but did not drink. 39 drank but did not use tobacco. 22 individuals abstained from both drinking and smoking.

Analysis of variance, (ANOVA), was used to reveal any differences between non-smokers/non-drinkers, smokers/non-drinkers, smokers/binge drinkers, smokers/heavy drinkers, non-smokers/binge
drinkers, and non-smokers/heavy drinkers with regards to body fat percentage, aerobic fitness, BMI, systolic and diastolic blood pressures, and resting heart rate. It was found that there were only significant differences in resting heart rate, F=2.561, p<.05. A Tukey post hoc test revealed this difference was between the smoker/heavy drinker group and the binge drinker/non-smoker group with significance of 0.36.

A separate ANOVA was conducted to reveal any differences between non-smokers/non-drinkers, smokers/non-drinkers, drinkers/non-smokers, and smokers/drinkers. This analysis revealed no significant differences within or between groups in regards to body fat percentage, aerobic fitness, BMI, systolic and diastolic blood pressures, and resting heart rate.

**Discussion**

The results of this study show that there is indeed a lower than average prevalence for smoking for this population; 19% of the surveyed population smoked cigarettes or cigars versus the reported 20.8% average reported in 2005 for the State of Wisconsin (United States, “Secondhand Smoke Rules and Policies” 1149).

The data also show a lower than average rate of binge drinking for this population; 11.5% of the surveyed population were binge drinkers versus the 22.1% reported in 2005 for the state (United States, “Surveillance of Certain Health Behaviors”).

However, in regards to heavy drinking, the surveyed population averaged a rate of 16.5%, a rate slightly over double the state’s 2005 rate of 7.5% (United States, “Surveillance of Certain Health Behaviors”). Given the mean age of the population surveyed, this shows an alarming rate of heavy drinking.

The assessment outcomes showed no significant negative results either within or between groups in regards to any of the smoking or drinking categories. The only exception to this is the difference between the smoker/heavy drinker group and the non-smoker/binge drinker group. Between these groups there was a minor level of significance.

The animus for this study was to discover any local prevalence of smoking or drinking which is higher than state or national averages and to compare those rates to discover any significance with respect to health assessment data collected per individual. The fact that smoking and binge drinking rates are lower than the state average shows promise for controlling certain health risks associated with acute alcohol abuse and tobacco use. Conversely, the rate of heavy drinkers in this population is quite disturbing considering the ages of those who participated in the study. However, it remains unclear whether any of those behaviors yet affects the fitness of this population.

Although there is hope for the limitation of smoking in the area, the rate of drinking should prompt more people to become more active in combating the abuse of alcohol by young adults. Institutions, such as universities and public offices, have a high responsibility to set the standards by which society must live. Yet it remains unclear whether the responsibility lay with the individual or with policies surrounding the individual. In either case, future research should seek the most viable and efficient ways to affect positive change to reduce smoking and alcohol abuse. Perhaps approaches that aim to explain symptoms of the effects of tobacco use and alcohol abuse may prove successful.

Despite not having found significant differences in smoking and drinking groups regarding personal fitness, future longitudinal research may better serve to illuminate any local trends in fitness in regards to health behaviors.
Works Cited


Appendix A

STATEMENT OF INFORMED CONSENT

**Project Title:** Health and Fitness Profiles of University of Wisconsin-Superior Undergraduate Students

**Researcher:** Brandon S. Thomason, bthomaso@uwsuper.edu, Dept. of Health and Human Performance, Health and Wellness Center, UW-SUPERIOR.

**Description:** The purpose of this study is to determine a general health profile of the average undergraduate student at the University of Wisconsin-Superior. It is intended to bring awareness to some of the growing risky health behaviors of some of the students that affect lifelong health. The information for this study will be collected from a survey and from data collected as part of exercise class participation. You may at any time without fear of disciplinary action withdraw from the study in whole or in part.

Each year, more studies conclude that more college students are participating in unhealthy practices such as smoking, binge drinking, and recreational drug use. Part of the intention of this study is to discover a trend in those practices in order to offer suggestions to counter those behaviors and ultimately replace them with healthy alternatives. In order to create a trend, information will be gathered each year from the same participants. In light of this, you may be contacted periodically in order to ask for your continued participation. Of course you will not be contacted further if you decide to withdraw from the study.

The results of each individual's participation will be anonymous. The results of your participation will be recorded by group only. No names or individual identifying information will be maintained. With the exception of the researchers involved in conducting this study, no one will your data. All survey responses will be combined and reported in group form. Your class grades are in no way affected by this study.

The risks to you are minimal. A summary report and explanation of the results will be made available to you when the study is completed if you so request.

**Authorization:** I have read the above and understand the nature of this study and agree to participate. I understand that by agreeing to participate in this study I have not waived any legal or human rights. I also understand that I have the right to refuse to participate and that my right to withdraw from participation at any time during the study will be respected with no coercion or prejudice.

If you have any concerns about your treatment as a subject in this study, please call or write:

Brandon S. Thomason  
Chief Researcher  
bthomaso@uwsuper.edu

or

Dr. William Simpson, PhD., CES, FACSM  
Director Exercise Physiology Laboratory  
HWC 1426  
395-4605  
wsimpson@uwsuper.edu

If after contacting either of the above you are not satisfied, you may contact Dr. Christopher L. Markwood, Provost, at 715-394-8449 or by e-mail at markwood@uwsuper.edu.
This research project has been approved by the UW-Superior Institutional Review Board for the Protection of Human Subjects, protocol #267.

_________________________________ ________________
Signature            Date
Appendix B

Survey of Health Practices for College Students

Note: All information obtained from this survey will remain confidential.

Instructions: Please answer all questions to the best of your knowledge and ability. Where indicated, please circle only one answer unless otherwise directed. Remember, all answers shall remain confidential and will not be linked to individuals.

Section I, Demographic and Background Information

Age: ____ Gender (circle one): Male Female Ethnicity: ____________
City and State of Birth: ________________________________
City and State of Longest Residence: ______________________
Marital Status (circle one): Single Married Divorced Other ____________________
Enrollment Status (circle one): Full Time Part Time
Major and Minor, if applicable: __________________________________________
Where do you currently reside? (circle one): College Dormitory With Parents
In a House In an Apartment Other ______________________________
Do you have roommates? (circle one): Yes No

Section II, Personal and Family Health History Survey

1. Have you or anyone in your family been diagnosed with or had a history of Coronary Heart Disease? (circle one): Yes No, skip to #2
   a. Please identify which members: ______________________________________
   b. Have any of those relatives died as a result? Yes No
   c. Please identify which members: ______________________________________
2. Have you or anyone in your family been diagnosed with or had a history of Cancer? (circle one): Yes No, skip to #3
   a. Please identify which members and type: _____________________________
   b. Have any of those relatives died as a result of Cancer? Yes No
   c. Please identify which members and type: _____________________________
3. Have you or anyone in your family been diagnosed with or had a history of Chronic Bronchitis or Emphysema? (circle one): Yes No, skip to Section III
   a. Please identify which members: _________________________________
   b. Have any of those relatives died as a result of Chronic Bronchitis or Emphysema? Yes No
   c. Please identify which members: ____________________________________

Section III, Personal Health and Fitness

1. About how many days per week do you participate in aerobic exercise? _________
2. About how many days per week do you participate in strength exercise? _________
3. On a scale of 1-10, with 1 being the lowest and 10 being the highest, how would you rate your overall health? __________
4. Would you rate your current body fat levels: Low Normal High
5. Would you rate your current body weight: Underweight Normal Overweight
6. Do you use tobacco products? (circle all that apply): Cigarettes Pipe Cigars Smokeless
7. If you live with others, do they smoke? (circle one): Yes No
8. How long have you been using tobacco? ________________________

9. Have you tried/succeeded at quitting the use of tobacco? (circle one): n/a Yes No

10. Are you exposed to tobacco smoke in your workplace? (circle one): n/a Yes No

11. Do you drink alcoholic beverages? (circle one): Yes No, skip to #12
   a. How often in a week do you drink? (circle one): Once 2-3 Times 4+ times
   b. How many drinks do you consume in the average drinking session? (circle all that apply):
      >1 drink 1-2 drinks 2-4 drinks 4-7 drinks < 7 drinks
   c. On which days do you usually drink? (circle all that apply):
      Monday Tuesday Wednesday Thursday Friday Saturday Sunday
   d. Do you most often drink...(circle one): As part of a meal To get drunk Socially

12. Do you now or have you ever used any of the following (circle all that apply): Marijuana Cocaine Crack Methamphetamines Ecstasy Other__________

13. Have you ever abused over-the-counter or prescription drugs? (circle one): Yes No a. Which drugs and how often?: _______________________________________

Section IV, For Women Only

1. Do you menstruate on a regular basis? (circle one): Yes No

2. How many days since your last menstrual period?_____________________________

3. Are you currently taking any oral contraceptives? (circle one): Yes No

4. How old were you when you had your first menstrual period?___________________

5. Have you ever had a stress fracture? (circle one): Yes No

Thank you for completing this survey! Please return this survey to the designated lab assistant for further instructions.
Appendix C

University of Wisconsin – Superior
Department of Health and Human Performance
Exercise Physiology Laboratory

Informed Consent For An Exercise Assessment

1. Purpose and Explanation of the Test
   You will perform a battery of assessments using a MicroFit® physical fitness assessment instrument which will include: Heart Rate [HR], Blood Pressure [BP], Height, Weight, Muscular Strength, Flexibility using a sit and reach box, Body Composition, and Cardiovascular Endurance. During the cardiovascular test, your heart rate and blood pressure will be monitored throughout the test. The cycle ergometer test is completed when you complete four, 3 minute stages, attain a heart rate which corresponds to 85 % of your predicted heart rate max [220 – age = predicted maximal heart rate], or request to stop the test. Additionally, if abnormal responses to the exercise test are observed [including but not limited to inappropriate HR or BP response, chest pain, etc], the test will also be terminated. It is important for you to realize that you may stop when you wish because of feelings of fatigue or any other discomfort.

2. Attendant Risks and Discomforts
   There exists the possibility of certain changes occurring during the assessment. These include abnormal blood pressure, fainting, irregular, fast or slow heart rhythm, and in rare instances, heart attack, stroke or even death. Every effort will be made to minimize these risks by evaluation of preliminary information relating to your health and fitness and by careful observation during testing. All persons in the laboratory are trained in both First Aid and CPR.

3. Responsibilities of the Participant
   Information you possess about your health status or previous experiences with cardiovascular experiences [e.g. shortness of breath with low-level activity, pain, tightness, heaviness in the chest, neck, jaw, back and/or arms] with physical effort may affect the safety of your exercise assessment. Your prompt reporting of these and any other unusual feelings with effort during the exercise test itself is very important. You are responsible for fully disclosing your medical history, as well as symptoms that may occur during the assessment. You are also expected to report all medications [including non prescription] taken recently and, in particular, those taken today, to the laboratory staff.

4. Benefits to Be Expected
   The results obtained from this assessment will give you an overall scientific profile of your physical fitness. The data obtained will then give you a baseline to build a lifelong fitness program. Although unlikely, if the results suggest early signs of abnormalities in HR or BP, the data could assist your health care professional in his/her assessment.

5. Inquiries
   Any questions about the assessment or procedures used including results of your test are encouraged. If you have any concerns or questions, please ask us for further explanation.

6. Use of Data
The information that is obtained during the assessment will be treated as privileged and confidential. It will not be released or revealed to any person except the laboratory director without your written consent. However, the information obtained may be used for statistical analysis or scientific purposes related to the class with your right to privacy retained.

7. **Freedom of Consent**
I hereby consent to voluntarily engage in a physical fitness assessment to determine my overall physical fitness. My permission to perform this assessment is given voluntarily. I understand that I am free to stop the assessment at any point if I so desire.

I have read this form and I understand the test procedures that I will perform and having had an opportunity to ask questions that have been answered to my satisfaction. I consent to participate in this assessment.

__________________________________________  _________________________________  
Date                                                                 Signature of Participant

__________________________________________  _________________________________  
Date                                                                 Signature of Witness

__________________________________________  _________________________________  
Date                                                                 Signature of Exercise Physiology Lab Director