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# Attendee attentiveness: Perceptions of the impact of menu selection

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Attendee Attentiveness:  
Perceptions of the impact of menu selection

HOA 791  
Professional Paper  
Dr. Gail Sammons  
Chair: Dr. Curtis Love

Elisa A. Hobbs  
April 4, 2006

## PART ONE

### Introduction

Most professional meeting planners are meticulous in planning everything about a meeting. Unfortunately, selecting the correct choices of food is often overlooked. If planners are informed of the role food plays on attendees' attention, energy and attitudes, they may come to realize that they are contributing not only to the well being of their attendees, but also to the impact of the meeting itself (Boisclair, 1997). As a meeting planner, it is important to serve attendees meals that produce high energy and attentiveness in order to ensure that attendees are alert and maintain the highest level of performance throughout the day.

Feeding the body particular foods for sustaining energy is important. The right combination of carbohydrates, fat and protein can help attendees sustain high performance levels (Cooper, 1996; Hall, 1988; Pratt, 1995; Wurtman, 1978). Alone, a high carbohydrate meal causes sluggishness, decreases pain, and induces calmness in the body. A meal that consists of high protein assists a person in having high concentration levels, productivity and reaction times. In general, high protein has shown to increase alertness and energy. Fat, on the other hand, takes longer than other foods to digest, and causes blood to divert from the brain to the stomach (Hall, 1988). Ultimately leaving a person unable and often unwilling to perform at maximum potential. As a meeting planner, providing high protein meals, served along with the right carbohydrates and fat can provide attendees with the correct fuel for maximizing their ability to learn and perform at the maximum potential (Boisclair, 1997; Hall, 1988; Williams, 2003).

Meeting planners will often order less expensive foods like pasta and rice, which are high in carbohydrates, instead of foods that enable the highest performance such as chicken and seafood (Williams, 2003). When served a high carbohydrate meal, it is likely attendees will not be able to get the most out of a meeting. Instead, their brain and body reacts to the carbohydrates causing them to slow down and feel tired and unwilling to learn. If meeting planners choose

foods that provide their attendees with the correct fuel to promote energy and attentiveness, attendees will most likely take more away from the meeting itself. These foods may help keep attendees from taking an afternoon nap during the 1:00 pm general session.

*Purpose.*

The purpose of this paper is to design a study that will help determine if menu selection affects attendees' attention span and energy level throughout the day.

*Statement of Problem.* The topic of menu choice is very important to meeting planners for many reasons. Most importantly, appealing nutritional meals can contribute to the energy levels of attendees and can increase attendee satisfaction of the meeting itself. As a result, attendees may leave the event having learned to their maximum potential.

If attendees are alert and content, the meeting planner may receive positive feedback from the meeting. This may result in a positive perception of the planner by his or her employer. This topic is also significant for the company either holding the meeting or sending an employee to a meeting. From the perspective of the company, a high return on investment is imperative for it to be worth spending the money to hold a meeting or to send an employee to one. If there is nothing learned at the meeting, the company has not only lost money, but time as well. In addition, this topic is important to the speakers that are hired for the meetings. It is much more difficult to speak to a group of people who are half asleep than people who are alert and ready to learn. Alert attendees are more likely to be enthusiastic about a topic that is being presented to them, which can make the job of the speaker much easier.

In addition to the learning opportunities meetings provide, they are also attended because they provide networking opportunities. Making business connections in a social setting can form great relationships between people. When attendees are tired and do not want to network, there may be reduced opportunity for conducting business and may negatively impact the return on investment from the meeting.

Lastly, this topic is important to the venue hosting the meetings. Nutritionally high-protein meals tend to be more expensive than high carbohydrate meals, which should result in higher food and beverage revenue from the meetings that are booked with more well-balanced or high-protein meals. It is also important to the venue because instead of returning to their rooms to take a nap after a meeting, attendees will be out spending their money, either in the venue itself or with other surrounding businesses.

It is clear that this topic is important to the meeting and hospitality industry for many reasons. If meeting planners are more aware of what type of foods attendees should be served for the highest level of attention not only will they personally benefit, but the company, the venue, the speakers, and each attendee will also benefit. Providing attendees with the right food for high performance is also a good way to anticipate a positive outcome of the meeting itself.

#### *Justification.*

There is no empirical research on the effects nutrition has on meeting attendees. There is also no empirical research on the effects nutrition has on the impact of a meetings success. Nutrition has been studied in many other fields and has proven to benefit performance, thus the meeting planning industry can learn from a lesson in nutrition. If meeting planners are provided with the knowledge of nutrition he/she will enable positive feedback from the meeting itself, and will also benefit attendees by providing them with the foods that enable maximum performance potential.

#### *Constraints.*

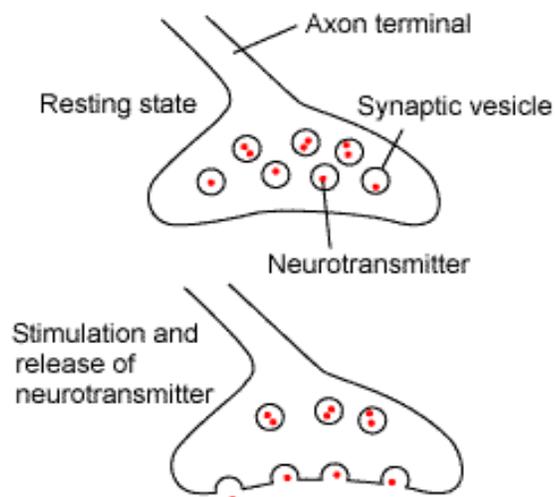
Although this topic has a high significance in the meeting planning and hospitality industries, this topic does have its limitations. The most significant limitation is the location of data collection. If the data is to be collected in a city such as Las Vegas, a 24-hour town, some of the data may be skewed because attendees may not be tired from the food that is being served at the meeting, but because of the amount of alcohol they consumed and/or the amount of sleep

they had the night before. In order to control for these issues, the number of hours slept and the amount of alcohol consumed the evening before will need to be collected. Those respondents who report to consuming more than three drinks or having less than five hours of sleep the night before should be discarded. There are other questions that have to be controlled for in this particular survey, including water and caffeine intake, irregular time zones, etc.

Another major limitation is based on the data collection method. When collecting data using surveys, there can be self reporting issues. If the attendees think their company will be receiving the results of the survey, they may provide answers they think the company is looking for as opposed to the actual truth. In addition, gaining access to this data may difficult because the surveys will have to be distributed at several meetings, and each meeting planner will have to agree to allow their attendees to participate in the study. Lastly, research has to be done a priori to determine what foods the attendees will be served, and each menu has to be approved by a nutritionist before the survey is to be distributed.

### *Glossary.*

**Neurotransmitter:** A chemical that carries messages between different nerve cells or between nerve cells and muscles, for example, usually to trigger or prevent an impulse in the receiving cell (Encyclopedia.com, 2006).



## Figure 1. Neurotransmitter Note

Note. Retrieved from [hhmi.org/.../images/neurotransmitter.gif](http://hhmi.org/.../images/neurotransmitter.gif).

### *Summary.*

It is clear that this topic is important to the meeting and hospitality industry for many reasons. If meeting planners are more aware of what type of foods attendees should be served to foster the highest level of attention, not only will they personally benefit, but the company, the venue, the speakers, and each attendee will also benefit. Providing attendees with the right food for high performance is also a good way to anticipate a positive outcome of the meeting itself.

## PART TWO

### Literature Review

#### *Introduction*

While growing up, most people probably remember their parents saying “fish makes you brainy” (Tufts University, 2003, p.1) or avocados are brain food (Williams, 2003). Today, clinical nutritionists and medical experts all over the world are studying just that (Kral, Roe & Rolls, 2002; Raben, Agerholm-Larsen, Flint, Holst & Astrup, 2003). The topics of consumption, energy and the affects of food on blood glucose levels have been widely researched in the fields of medicine and nutrition (“Dietary reference”, 2005; Kral, et al., 2002; Melanson, K.J., Westerterp-Plantenga, M.S., Saris, W.H.M, Smith, F.J. & Campfield, A, 1999; Raben, et al., 2003). Food intake has a chemical affect on energy levels throughout the body; the right combination of carbohydrates, protein and fat can affect a person’s ability to learn or to simply fuel his or her performance (Cooper, 1996; Kral, et al., 2002; Raben, et al., 2003). It has been argued that meetings in particular are vulnerable to the “afternoon slump” (Teplitz, 2004, p. 27) and hotels and meeting planners across the world are taking notice (Durocher, 2004). This paper studies nutrition and the impact foods have on a person’s energy level. After closely studying nutrition and energy, the effects on learning in the meeting industry will be examined. Finally, the responsibility of meeting planners to their clients and attendees will be addressed (Boisclair, 1997).

#### *Nutrition*

Today, many nutritional researchers are examining how changing diet can cause the human brain to be more receptive and attentive (Barker, 2000). It is important to feed the body particular foods for sustaining energy (Raben, et al., 2003). “Nature gives us food to meet our physical needs...but what we eat also has a profound and acute effect on our mental attitudes and emotional well-being” (Hall, 1988, p. 73). The right combination of carbohydrates, fat and

protein can help people sustain high energy levels, mood and learning ability throughout the day (Cooper, 1996; Hall, 1988).

In broad terms, a high carbohydrate meal produces an amino acid called tryptophan to be released in the body (Hall, 1988). This acid triggers a release of serotonin, a neurotransmitter that is known to cause sluggishness and calmness in the body (Hall, 1988; Pratt, 1995). Today, the role of carbohydrates in the human diet is receiving a lot of attention because so many people are obese and many more are being diagnosed with diabetes and heart disease (McInnis, 2005). The main confusion however lies in the fact that carbohydrates are “essential fuels for our bodies and brains” (McInnis, 2005, p.17). Carbohydrates are the body’s main source of glucose, often distinguished as the main fuel of the brain (Benton & Naab, 2003; Williams, 2003). Without carbohydrates in the diet, blood sugar levels can sink to unsafe levels causing certain individuals (in particular those with type I diabetes) to become comatose or even die (McInnis, 2005).

Proteins are formed by amino acids and are considered nitrogen-containing substances. They are the main source of muscle and other tissues in the body (Hoffman & Falvo, 2004). Amino acids are released in the bloodstream by whole food proteins, intact protein supplements, free form amino acids and protein hydrolysates (Manninen, 2004). A high protein meal causes two neurotransmitters to send signals to the brain. Dopamine and norephinerine, increase concentration levels, productivity and reaction times (Hall, 1988; Pratt, 1995; Williams, 2003). Protein can be used as a source of energy in the body, but is not the body’s primary choice of energy (Benton & Nabb, 2003; Hoffman & Falvo, 2005). Protein has been shown to increase alertness and energy to the brain which makes it a necessity during a test of memory or learning (Hoffman & Falvo, 2005; Pratt, 1995). In studies of protein and athletes, the intake of protein in combination with carbohydrates provides as much as 10% greater effect on energy level than the intake of carbohydrates alone (Manninen, 2004).

In contrast, a high level of fat in a meal can slow the dopamine and norephinerine neurotransmitters found in protein, but has no effect on serotonin (found in carbohydrates). Fat takes longer than other foods to digest and can cause blood to divert from the brain to the stomach (Hall, 1988). Even though certain fats can sometimes be considered deterrents to learning, they are also essential to body function (Williams, 2003). Essential fatty acids are required to help form nerve coatings, particularly those around the myelin sheath, which if broken down can slow nerve impulse level, memory and concentration (Williams, 2003).

By correctly combining the three substances, carbohydrates, protein, and fat, a counteractive effect will take place in the body (Pratt, 1995). For example, if a meat sandwich were served, the protein will block the serotonin levels in the carbohydrates, but the carbohydrates will not affect the dopamine or norephinerine produced by the meat protein (Pratt, 1995). In turn, a person should be alert and ready to learn after consuming a meat sandwich (Hall, 1988). Providing the body with the nutrition it needs enables maximum performance levels, if it is for learning or physical competition (Cooper, 1996).

*Attention, Energy, Mood, Learning and Peak Performance.*

Food and its effect on mood, energy, attentiveness and learning is also well researched in the fields of both nutrition and medicine (Cooper, 1996; Day, 1997; Hoffman & Falvo, 2005; Kral, et al., 2002; Manninen, 2004; Raben, et al., 2003; Wurtman, 1978). Research has been applied to a great deal of theory including the effects of protein, fats and carbohydrates on learning and performance. Some of these include the effects of nutrition on athletic performance (Manninen, 2004), students and test taking scores (Anonymous, 2004), childhood nutrition and academic achievement (Bierbauer, DeMicco, Sneed, 2000), and company training (Williams, 2003). In all of these studies nutrition was found to have a direct correlation with memory and learning.

In particular, meals high in carbohydrates were shown to have a short term increase on energy and mood (which is beneficial for an athlete needing a boost of energy), but drastically decreased energy levels among inactive subjects within a very short period of time (Benton, 2002; Benton & Nabb, 2003; Raben, et al, 2003). Protein, on the other hand, was shown to increase performance, alertness, and reaction times, as well as learning (Manninen, 2004; Pratt, 1995; Raben, et al, 2003, Williams, 2003). In order to keep the body productive and at peak performance levels, the necessary nutrients must be provided at the time the body requires them (Cooper, 1996; Hall, 1988; Wurtman, 1978). After a big Thanksgiving Day meal, or lunch at a meeting for example, most people will head straight to the couch, or into their own personal dreamland (Cooper, 1996). The main reason for this “Thanksgiving Day syndrome” (Cooper, 1996, p. 81) or the “graveyard shift after lunch” (Williams, 2003, p. 15) is overeating; however, eating the wrong foods when people are supposed to be learning can cause a similar trance and can virtually destroy productivity. Wurtman (1978), Hall (1988) and Williams (2003) found strong causal relationships between what one consumes and how he/she feels and performs after a meal.

Nutrients in food cause a chemical reaction in the brain (Wurtman, 1978). It is this chemical reaction or neurotransmitter that provides attendees with energy to be alert and equipped to learn, or ready for an afternoon nap (Helman, 1997). In order to promote high energy and peak performance, the right foods must be consumed not only at the right time of day, but also in smaller portions (Hall, 1988).

#### *Meetings.*

“You probably already know that if you give [attendees] a large lunch, there’s every likelihood they won’t do much learning for the first part of the afternoon. But did you also know that everything

[attendees] eat will have an effect on their learning?”(Williams, 2003, p.15)

The meeting industry in particular could definitely use a lesson in nutrition. Most companies feed attendees the food that is most cost effective as opposed to the food that will help attendees retain and learn the most information (Boisclair, 1997; Williams, 2003). As previously discussed, food can play a role in effecting a person’s attention level, mood, memory and learning ability. Ideally, the food provided to meeting attendees should enable the correct neurotransmitters in the brain for maximum learning to take place (Anonymous, 2004; Barker, 2000; Benton & Nabb, 2003; Boisclair, 1997; Cooper, 1996; Hall, 1988; Pratt, 1995; Teplitz, 2004; Wurtman, 1978).

Meeting planners must also learn more about the role of nutrition in order to contribute to the value and impact of the meeting itself (Boisclair, 1997). “Brain friendly lunch[es]...always get positive feedback” (Williams, 2003, p. 14). If attendees are in a good mood, are alert, and are learning new things, the conference itself will receive more positive responses than if the attendees are tired and ready for a nap (Hall, 1988; Williams, 2003). Nutrition training can help meeting planners contribute to the well-being of their attendees and the effectiveness of the meeting itself (Boisclair, 1997).

#### *Summary.*

In summary, nutrition is relevant to hospitality and meeting planning in particular for many reasons. Hospitality locations worldwide are beginning to pay more attention to the nutritional requests of guests, and meeting planners must do the same (Durocher, 2004). This paper examines a basic working knowledge of nutrition to show there is a direct correlation with attention level, mood, energy and learning capabilities of meeting attendees. After this brief examination of nutrition, this paper helps explain why it is important for meeting planners to

provide brain friendly meals in order to contribute to attendees' perception of the impact of meetings.

## PART THREE

*Methodology*

The data will be collected by distributing a survey at 60 meetings held at any convention center or hotel. The survey is two pages long and uses a five point Likert-type scale for the majority of the questions. It should clearly state at the top of the first page with what organization the survey is being conducted by in order to prevent respondent biases. The surveys will be distributed multiple days of the week, and should include questions that are based on the particular menu items for that meeting. Each meeting menu item offered at the meeting should be listed on the survey in questions 4 and 6 in order to correctly track individual respondent's consumption. For example, the questions in Figure 2 will have different items listed. Each question should list exactly what the meeting menu provides the attendee at breakfast or lunch as well as for the mid morning and afternoon break. As an example, one meeting may have bagels and cream cheese for breakfast, whereas another may have yogurt and fruit. Everything the meeting menu provides for the meal that day should be listed in these two questions.

Figure 2:  
Meeting Menu Items

4.) What did you have for breakfast this morning? Please **check all that apply**, and mark the number of servings of each item you had (about the size of a fist):

- Nothing     Egg \_\_\_\_\_     Cereal \_\_\_\_\_     Milk \_\_\_\_\_     Croissant \_\_\_\_\_  
 Muffin \_\_\_\_\_     Cheese \_\_\_\_\_     Yogurt \_\_\_\_\_     Fruit \_\_\_\_\_  
 Danish \_\_\_\_\_     Bagel \_\_\_\_\_     Juice \_\_\_\_\_  
 Other \_\_\_\_\_

6.) What did you have during the mid morning break and mark the number of servings of each item you had (about the size of a fist):

- Nothing     Cookie \_\_\_\_\_     Pieces of Candy \_\_\_\_\_     Soda \_\_\_\_\_  
 Cheese \_\_\_\_\_     Yogurt \_\_\_\_\_     Fruit \_\_\_\_\_  
 Juice \_\_\_\_\_  
 Other \_\_\_\_\_

The survey should include multiple questions to control for factors such as sleep deprivation, alcohol consumption levels, changes in time zones, age, engagement level of the speaker, etc. Each question will be asked of the respondent in order to assist the researcher to determine which surveys will be discarded before the analysis of the data is to take place. For example, if an attendee reports to have had more than three alcoholic drinks the night before the meeting, the survey should be discarded because the respondent is not an ideal candidate for a study looking at energy and attention levels.

Multiple other questions, such as the amount of sleep the respondent has the night before or the higher or lower amount of caffeine intake than normally consumed should also be asked of the respondent in order to facilitate the discovery of any unfavorable respondents. The respondents surveyed who drank too much alcohol (over three drinks) or had too little sleep (less than five hours of sleep) the night before, were in a different time zone than normal for 24 hours or less, etc should be discarded. This enables the researcher to target those individuals who are the best candidates for the study: those who are on a normal schedule, and are able to perform at the best of their ability.

There should be multiple questions on the survey that ask for the items the respondent has consumed before or during the meeting that day as described above in Figure 2. These questions are asked in order to determine the respondent's type of food consumed is in fact: high carbohydrate, high protein or well balanced. After the analysis of the type of meal is determined, the responses to the energy, attention and impact of the meeting questions are to be analyzed in order to determine the perception levels of attendees. This analysis is where the survey questions enable the researcher to determine the conclusions of the study.

### *Protocol*

Before the surveys are to be distributed, the Office for the Protection of Human Subjects at the researchers' university will need to be involved. The surveys and data collection methods

must be approved before any human subjects are approached. The form in Appendix A, is for the University of Nevada Las Vegas and must be completed and approved before any of the research is conducted. After the office for protection of Human Subjects approves the survey and data collection, the property where the surveys are to be distributed must also approve the distribution of the surveys.

### *Sample Selection*

After these approvals are acquired, a thorough analysis of the meetings that are to be held within a three month period (for example: December, 2006, January and February 2007) would be completed. In order to be included in the survey sample, the researcher must eliminate any meetings which are less than two days in duration. Only the longer meetings are to be used in order to control for the possibility of the meeting attendees consuming foods that were not listed on the survey. Fifteen high protein morning and afternoon meetings, 15 high carbohydrate morning and afternoon meetings, and 15 well-balanced morning and afternoon meetings are to be chosen for analysis. To ensure that these meeting menus are in fact high protein, high carbohydrate, and well-balanced, a nutritionist must be involved in analyzing each of the 90 meeting menus chosen and must approve the meetings that are best to survey for this particular project. When a menu or menu item is discarded by the nutritionist, an alternate meeting menu is to be chosen and approved.

After the meeting menus are chosen, each of the individual meeting planners must be approached in order to obtain approval for survey distribution at their meeting. The researcher must anticipate that not all of the meeting planners will allow for surveys to be distributed at their event. Allow fifteen menus of each type to be initially approved, but only use ten of each meeting menu type to survey (see Table 1 & 2). Once the approval from ten of each type of meeting menus are received, the survey questions 4 and 6 must be manipulated to match the exact items that were being served at the meeting itself.

Table 1

**Breakfast Groups**

High Protein <sup>a</sup>	High Carb <sup>b</sup>	Balanced <sup>c</sup>
HP/B Group 1	HC/B Group 11	B/B Group 21
HP/B Group 2	Group 12	Group 22
HP/B Group 3	Group 13	Group 23
HP/B Group 4	Group 14	Group 24
HP/B Group 5	Group 15	Group 25
HP/B Group 6	Group 16	Group 26
HP/B Group 7	Group 17	Group 27
HP/B Group 8	Group 18	Group 28
HP/B Group 9	Group 19	Group 29
HP/B Group 10	Group 20	Group 30

Note: Collection Dates :<sup>a</sup> December, 2006; <sup>b</sup> December, 2006; <sup>c</sup> December, 2006, etc.

Table 2

**Lunch Groups**

High Protein	High Carb	Balanced
HP/L Group 1	HC/L Group 11	Group 21
Group 2	Group 12	Group 22
Group 3	Group 13	Group 23
Group 4	Group 14	Group 24
Group 5	Group 15	Group 25
Group 6	Group 16	Group 26

Group 7

Group 17

Group 27

Group 8

Group 18

Group 28

Group 9

Group 19

Group 29

Group 10

Group 20

Group 30

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Note: Collection Dates :<sup>a</sup> December, 2006; <sup>b</sup> December, 2006; <sup>c</sup> December, 2006, etc.





### *Distribution and Data Analysis*

The manipulated surveys are to then be distributed at the researchers chosen hotel or convention center after the breakfast or lunch meeting. The number of expected surveys collected from the 60 meetings surveyed should be approximately 1,200, where at least half may be discarded for error. After the data is collected, the surveys must be coded and input into statistical software package that allows ANOVA tests, t-tests, correlations and regression analysis.

The research, once conducted will ultimately answer the following three research questions:

- 1.) Will attendees who have eaten high protein meals perceive themselves to be more alert than those who have eaten high carbohydrate meals?
- 2.) Will attendees who have eaten high protein meals perceive themselves to have learned more throughout the course of the day than those who have eaten high carbohydrate meals?
- 3.) Will attendees who have eaten high protein meals have a more positive view of the meeting itself than those who have eaten high carbohydrate meals?

### *Recommendations for Future Research*

In addition to conducting the previous study, there are multiple other recommendations for future research. First, an experimental design could be conducted where 50 subjects are fed their first meal of the day which consists of high protein, 50 will be fed a high carbohydrate meal and 50 will be fed a well balanced menu. After the meal, the subjects should be shown a video and tested on it. These tests will help the researcher to determine if those fed protein or carbohydrates perform better than the other. Lastly, another form of further research is to conduct actual blood tests to determine long term and short term effects of protein and carbohydrates on energy, attentiveness, and learning.

## *Conclusions*

In summary, this paper has been composed in order to provide the researcher with a complete study that may be conducted to help determine if nutrition plays a role in the attendee's perceptions of the success of a meeting. The need for research in this particular area is justified by the analysis of current studies on nutrition and the lack of attention to the meetings industry. The paper provides the researcher with the complete steps needed in order to conduct the research, and provides a survey that can actually be distributed after only a brief manipulation.

### *Recommended steps for research:*

- 1.) Obtain approval from the Office for the Protection of Human Subjects. Note approval number for your records.
- 2.) Choose a location where research will be conducted. Obtain the appropriate location approvals to hand out surveys.
- 3.) Choose 15 meetings that have each type of menu. You should end up with:
  - a. 15 high protein breakfast meetings
  - b. 15 high protein lunch meetings
  - c. 15 high carbohydrate breakfast meetings
  - d. 15 high carbohydrate lunch meetings
  - e. 15 well balanced breakfast meetings
  - f. 15 well balanced lunch meetings
- 4.) Have a nutritionist review each of these menus to verify that in fact the menus can be categorized as high protein; high carbohydrate and well balanced, and have him/her approve the menus for survey distribution.
- 5.) Approach the meeting planner of each particular meeting and obtain approval to distribute the survey at the end of their morning or afternoon session.

- 6.) Once you have 10 of each type of meeting menu approved by the nutritionist and the meeting planner, manipulate questions 4 and 6 on the survey to reflect the meeting menu items that are provided to attendees before the morning/afternoon session.
- 7.) Distribute the survey to the attendees before the session has concluded. Repeat for each of the 60 meetings that have been pre approved.
- 8.) Collect the completed surveys and code for analysis in any statistical software that will run ANOVA tests, t-tests, correlations and regression analysis.

## Appendix A: Example of the Protocol Proposal Form



IRB Received Date Stamp—Office Use Only

IRB Protocol Number—Office Use Only

## Research Protocol Proposal Form for Research Involving Human Subjects

**Evidence of CITI certification ([www.citiprogram.org](http://www.citiprogram.org)) must be submitted with this protocol proposal form.**

**Instructions:**

1. Complete all sections of this form. Do not reference other sections as a response (i.e. "see section..." or "see attached...")
2. Obtain all necessary signatures.
3. Submit one complete protocol package with all enclosures. You will be notified if additional copies are necessary.
4. Projects with funding/proposed funding must include copy of the application or proposal.

**Note:**

1. Handwritten forms **will not** be accepted.
2. **INCOMPLETE FORMS WILL BE RETURNED.**
3. For your records, it is important that you keep a copy of this completed form.

**1. Submittal Date:** 1/10/2006

**2. Duration of Study**

Anticipated Start Date: 1/05/2007  
Anticipated Termination Date: 5/19/2007

NOTE: Research Studies may not begin until you have received notification of IRB approval. All research proposals are approved for a maximum of 1 year and can be re-reviewed at any time within that year at the discretion of the IRB.

**3. Research Protocol Title** (Research Protocol Title must match the funding/proposed funding application or proposal):  
**Estimating the effects of menu selection on meeting attendees.**

**4. Investigator(s) Contact Information**

*(One person must be designated as the PI. The PI must be a UNLV faculty or professional staff member in all cases involving studies carried out by students or fellows.)*

**A. Principal Investigator** (Name and Credentials): Dr. Curtis Love

Faculty       Faculty Advisor       Professional Staff

School/College/Center: UNLV

Department: Hotel Administration      Mail Stop: 456023

Mailing Address: 4505 Maryland Parkway Las Vegas, NV 89154-6023

Phone Number: 702-895-3334      Fax Number: 702-895-4870

E-Mail Address: clove@unlv.edu

**B. Student/Fellow Investigator** (Name and Credentials): Elisa Hobbs

Undergraduate       Master       Doctorate       Fellow

School/College/Center: UNLV

Department: Hotel Administration Mail Stop: 456023  
 Mailing Address: 7400 W. Flamingo Rd. #2013 Las Vegas, NV 89147  
 Phone Number: 702-220-9630 Fax Number: N/A  
 E-Mail Address: elisaahobbs@cox.net

*NOTE: All student/fellow initiated research must be submitted as an independent project with the Faculty Advisor listed as the Principal Investigator. The Faculty Advisor must sign the Faculty Advisor Assurance statement in Section 27B. The Student/Fellow Investigator must sign the Student/Fellow Investigator Assurance statement in Section 27C.*

**C. PLEASE COMPLETE ONLY IF APPLICABLE**

**Co-Principal Investigator** (Name and Credentials): \_\_\_\_\_

- Faculty       Professional Staff

School/College/Center: \_\_\_\_\_

Department: \_\_\_\_\_ Mail Stop: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_

E-Mail Address: \_\_\_\_\_

**5. Research Team Members:** List all research team members who will be involved in this research project. Research team members are persons who have direct contact with subjects, contribute to the research in a substantive way, have contact with subjects' identifiable data or biological samples, or use subjects' personal information. (For additional guidance, refer to the sample form on the OPRS website.)

NAME and DEPARTMENT	ROLE IN PROTOCOL	ROLE IN CONSENT PROCESS	SPECIFIC EXPERIENCE WITH ROLE IN PROTOCOL
Dr. Curtis Love	Review protocol	Review forms	Conducted many research project using surveys and informed consent
Dr. Deborah Barrash	Review protocol	Review forms	Conducted many research project using surveys and informed consent
Ms. Elisa Hobbs	Develop protocol	Develop forms - distribute/collect forms	
Dr. Gail Sammons	Review Protocol	Review forms	Conducted many research projects using surveys and informed consent

**6. Project Site(s)** (Check all boxes indicating where the study is conducted.)

- University of Nevada, Las Vegas (UNLV)  
      Maryland Campus (main)  
      Paradise Campus  
      Shadow Lane Campus  
      UNLV leased property. Explain:  
 Other: (Specify and Explain): **Meetings and Events Center**

NOTE: If the project site is other than UNLV, Facility Authorization Letter must be submitted.

**7. Research Terms**

Provide up to three terms, keywords, or short phrases that describes the research to be performed using the guidelines below:

1. Research area (biomedical, social behavioral): social behavioral
2. Study topic area (e.g., physical therapy, psychology): nutrition
3. Subject class (e.g., healthy adults, prisoners): healthy adults

### 8. Proposal Summary

Summarize the proposed research project. The summary should be written in non-technical language that can be understood by non-scientific individuals. The summary must not exceed 200 words.

8.1 A brief statement of the research question (hypothesis) and related theory supporting the reason for the study.

The hypotheses will look at the perceptions of attendees alertness, ability to learn, and their perception of the meeting itself.

8.2 A brief description of the procedure(s) involving human subjects.

Subjects will be asked to fill out a survey about their meals at a meeting and their perceptions of the meeting itself.

**PLEASE NOTE: Complete description of the study procedure(s) must be specified in Section 26.**

### 9. Number of Research Subjects

Total number of subjects: 1200

### 10. Research Subject Classification

10.1 Check all applicable boxes

- |  |  |
|--|--|
| <input type="checkbox"/> UNLV Students (general student body)                                  | <input type="checkbox"/> Elderly Subjects            |
| <input type="checkbox"/> Student Subject Pool (Dept.): _____                                   | <input type="checkbox"/> Prisoners or Parolees       |
| <input checked="" type="checkbox"/> Healthy Adults - Age range: <u>18-65</u>                   | <input type="checkbox"/> Healthy Control Group       |
| <input type="checkbox"/> Minors (under age 18) - Age range: _____                              | <input type="checkbox"/> Pregnant Women              |
| <input type="checkbox"/> Clark County School District Students                                 | <input type="checkbox"/> UNLV Employees              |
| <input type="checkbox"/> Cognitively or Psychologically Impaired (See consent form guidelines) | <input type="checkbox"/> Institutionalized Residents |
| <input type="checkbox"/> Non-English Speaking (Include consents in the appropriate language)   | <input type="checkbox"/> Other - Describe: _____     |

10.2 Summarize the inclusion and exclusion criteria that must be met in order for a person to participate in the study.

Inclusion: Attend 2<sup>nd</sup> day of meeting where the hotel provides the food.

Exclusion: N/A

10.3 What is the gender of subjects?  Male  Female  Both

10.4 Are there any enrollment restrictions based on gender, pregnancy or childbearing potential?  Yes  No

If yes, please explain the nature of the restriction(s) and provide justification.

\_\_\_\_\_

10.5 Are there any enrollment restrictions based on race or ethnic origins?  Yes  No

If yes, please explain the nature of the restriction(s) and provide justification.

\_\_\_\_\_

### 11. Purpose of Study

**To determine if the menus provided for meeting attendees effect a person's perception of their attentiveness and ability to learn.**

## 12. Privacy and Confidentiality

*Privacy refers to a person's desire to control the access of others to themselves. Privacy concerns people.*

*Confidentiality refers to the researcher's agreement with the subject about how the subject's identifiable private information will be handled, managed, and disseminated. Confidentiality concerns data.*

- 12.1 What are the methods used to ensure confidentiality of participation and data obtained?  
Names of subjects will not be collected.
- 12.2 What safeguards are used to protect against identifying, directly or indirectly, the subject involved in the study? Names of the subjects will not be collected.
- 12.3 What safeguards are used to protect the information from disclosure?  
Surveys will be held in a locked box on the UNLV campus for 3 years.
- 12.4 What provisions exist for controls over access to data?  
Only faculty and student researcher will have access to the raw data.
- 12.5 Are subjects asked to fill out any materials that are shared with other groups (e.g. voluntary health organizations, advocacy groups) that provide identifiers?  Yes  No  
If yes, describe: \_\_\_\_\_
- 12.6 Will the subjects' data be coded?  Yes  No  
If yes, how? By using statistical data software to conduct anova tests, t-tests, etc.
- 12.7 Will data generated be used for purposes other than this research project?  Yes  No  
If yes, how? \_\_\_\_\_
- 12.8 Where will the data be stored? (For review/audit purposes, records must be stored on UNLV property.) In a locked box on campus, Beam Hall room # 358.
- 12.9 How long will the data be stored? *45CFR46.115(b)- Records relating to research which is conducted shall be retained for at least 3 years after completion of the research.* 3 years
- 12.10 What are the plans for the final disposition or destruction of the data? Surveys will be shredded and disposed of.

## 13. Recruitment Procedures

- 13.1 Describe below the processes used for selecting subjects and the methods of recruitment, including use of letters and/or advertising. Include, when, how and by whom the subjects will be recruited. Do not include inclusion and exclusion criteria which were already listed in Section 10.2.  
15 High protein, 15 high carbohydrate and 15 combination meeting menus will be selected. After each meeting - all participants will be asked to fill out a survey.
- 13.2 Will subjects be recruited from one or more schools, community centers, organizations, trade groups etc.?  Yes  No  
If yes, please specify the source(s): Each group will be using meeting space at the Wynn Las Vegas.
- NOTE: Provide a Facility Authorization Letter from the performance site facility giving the PI permission to perform the study at that site.
- 13.3 Indicate the types of recruitment materials to be used below (check all that apply). Attach copies of all recruitment materials to this application.
- Advertisements       Newsletters       Internet

- Brochures                       Radio                       Contact letters (Physician Letters, Teacher Letters)  
 Flyers/Posters                       Television                       Other (Describe) \_\_\_\_\_

This research study will not be using any of the above information.

13.4 Will subjects be recruited from a non-public registry?                       Yes     No

If yes, specify the source: \_\_\_\_\_

NOTE: Provide a letter from the director of the registry authorizing your access to the identifiable data for the purpose of this study. The letter needs to clearly describe how access to the identifiable information is ethically possible, (i.e. it confirms that subjects have given permission for contact and authorized the distribution of their names and address).

13.5 Are you studying pre-existing data? (e.g. academic records, medical records or specimens)                       Yes     No

If yes, specify the source: \_\_\_\_\_

13.6 Do you or any member of the research team have an authoritative role (i.e. Instructor, Counselor, etc.) over the research subjects?                       Yes     No

If yes, please explain: \_\_\_\_\_

#### 14. Research Activities (Part A)

Please check any/all that apply to the proposed research study.

- Collection of data is through **non-invasive procedures** routinely employed in clinical settings, excluding x-rays or microwaves (e.g., physical sensors that do not shock or invade the subject's privacy, weighing or testing sensory acuity, magnetic resonance imaging, EEG, EKG, moderate exercise or strength testing with healthy non-pregnant subjects).
- Collection of data involves review of data, documents, records or specimens that were originally collected for non-research purposes (e.g., medical records).
- Existing human biological specimens will be used.\*  
 Prospectively collected human biological specimens will be used. \*\*  
 Indicate source and dates when the data were collected: \_\_\_\_\_  
 \* Specimens must be "on the shelf" at the time of the submission of the application.  
 \*\* Specimens will be collected after the study has started.
- Collection of data is from audio or visual recordings.
- Research activities involve observing individual or group characteristics when considering the subject's own behavior (including perception, cognition, motivation, identity, language, communication, socio-cultural beliefs, practices or behavior).
- Research employing survey, interview, oral history, focus group or program evaluation measures for purposes of research.
- Research activities involve medical devices that have been approved for marketing and are used as prescribed.
- Identify device(s): \_\_\_\_\_
- Blood samples are collected by finger stick or venipuncture only from non-pregnant healthy adults in amounts less than 550 ml in an eight-week period and no more than twice per week.

Provide a brief description of blood collection methods. \_\_\_\_\_

- Prospective collection of biological specimens by non-invasive means (e.g., hair and nail clippings, extracted teeth, excreta and external secretions, uncannulated saliva, placenta removed at delivery, amniotic fluid obtained at rupture of membrane prior to or during delivery, dental plaque and calculus, mucosal and skin cells collected by swab and sputum collected after saline mist nebulization).
- None of the above categories apply to the proposed research study.

## 15. Research Activities (Part B)

15.1 Please check any/all that apply to the proposed research study

- False or misleading information to subjects (deceptive studies)
- Procedures for debriefing subjects: \_\_\_\_\_
- Invasive biomedical procedures  
Explain procedure: \_\_\_\_\_
- Are provisions for medical care necessary?
- Yes, please explain: \_\_\_\_\_
- No, please explain: \_\_\_\_\_
- Has a qualified UNLV Faculty Member participated in planning the study?
- Yes, please identify by name and qualifying credential: \_\_\_\_\_
- No
- Will the study involve drugs, radiation, lasers, high-intensity sound, etc.?
- Yes, please identify: \_\_\_\_\_
- No
- Sensitive questions will be asked about personal issues
- The study involves use of potentially hazardous materials (Explain): \_\_\_\_\_
- The research includes collection/storage of data/biological specimens for future research analysis. If yes, the consent document must address the possibility of future use.
- Procedures are novel or not accepted practice (if this category applies, explain in the Informed Consent Form how provisions are made to correct, treat or manage unexpected adverse effects)
- Risky procedures or harmful effects, including discomfort, risk of injury, invasive procedures, vulnerability to harassment, invasion of privacy, controversial information or information creating legal vulnerability (if this category applies, explain in the *Informed Consent Forms* how harmful effects will be addressed and how benefits outweigh risks)
- None of the above categories apply to the proposed research study.

15.2 Dissemination and Storage of Research Information

- Will the results of the research study be provided to the research subject?  Yes  No  
If yes, please explain: \_\_\_\_\_

15.3 Quantitative Design Elements (if applicable)

Describe the statistical procedures that will be used and specify the following:

Statistical design: Anova, t-tests, chi-square tests  
Dependent variables: mood, energy and ability to learn.  
Independent variables: Nutrients consumed

## 16. Medical Devices

16.1 Are you using a medical device?  Yes  No

If no, then continue to section 17. If yes, please complete the answers below.

16.2 Is this a **SIGNIFICANT RISK (SR)** or **NON-SIGNIFICANT RISK (NSR)** device?

SR  NSR

16.3 Is this an **INVESTIGATIONAL MEDICAL DEVICE**  Yes  No

**APPROVED MEDICAL DEVICE FOR AN UNAPPROVED USE.**  Yes  No

If yes, indicate DEVICE name: \_\_\_\_\_

IDE number: \_\_\_\_\_

Sponsor/Manufacturer: \_\_\_\_\_

NOTE: Please provide the investigator's brochure when using an investigational device.

**FDA APPROVED MEDICAL DEVICE FOR AN APPROVED USE:**  Yes  No

If yes, indicate DEVICE name: \_\_\_\_\_

Sponsor/Manufacturer: \_\_\_\_\_

NOTE: Please provide the package insert when using an approved device.

16.4 Is the IDE (Investigational Device Exemption) held by the sponsor or by the investigator?

Sponsor (Please forward copies of the annual report from the sponsor to the IRB.)

Investigator (Please provide a copy of the original IDE application and copies of the annual reports at the time of periodic review)

## 17. Risks

17.1 Summarize the nature and amount of risk (including side effects) or substantial stress or discomfort involved. There are only minimal risks involved in this study including discomfort in answering some of the survey questions.

17.2 What are the potential risks/discomforts associated with each intervention or research procedure? Brief uncomfot of participants when answering some of the survey questions.

17.3 Estimate the probability (i.e. not likely, likely, highly likely, etc.) that a given harm will occur, its severity, and its potential reversibility. Highly unlikely

17.4 What procedure(s) will be utilized to prevent/minimize any potential risks or discomfort? Examples of risk include physical risks, psychological risks (such as substantial stress, discomfort, or invasion of privacy) and social risks (such as jeopardy to insurability or employability). Subjects will be anonymous

17.5 What is the overall risk classification of the research?

Minimal  Greater than minimal  Significant

If unknown, please explain: \_\_\_\_\_

## 18. Benefits

18.1 Describe the probable benefits of the research for the individual subject(s).

No immediate benefit but long-term they may receive better-designed menus for learning at their meetings.

18.2 Describe the probable benefits of the knowledge gained for society. Societal benefits generally refer to the advancement of scientific knowledge and/or possible benefit to future subjects.

Society will obtain a better idea of what people need to eat in order to learn at the maxiumum potential.

**19. Risk-Benefit Ratio** (Explain how the potential benefits of the research outweigh the potential risks and how these risks are justified.)

There are very minimal risks in taking this survey. There is a high potential for benefit in the meetings, and/or hospitality industry if this research is conducted.

**20. Cost to Subjects** (Do not include financial costs in this section. See Section 22.)

20.1 Briefly describe the activity (i.e. laboratory testing, survey completion, travel time) that involves participation time: Survey completion

20.2 Amount of participation time: 5-10 minutes per day for 1 day(s)

20.3 Describe any additional costs: None

**21. Project Funding**

21.1 Funding Status:  Funded  Pending  None (go to section 22)

*Note: If funded/pending funding, please submit a copy of the application or proposal.*

21.2 Funding Source:

Federal/State  
 NIH  NSF  NASA  BRIN  DOE  Other: \_\_\_\_\_

UNLV Internal Grants  
 SITE  NIA  URA  ARI  Other: \_\_\_\_\_

Other: \_\_\_\_\_

Self-funded

21.3 Are there any other contributions or support (e.g. device, drugs, etc.) provided by a company/sponsor/granting agency?

Yes  No If yes, explain: \_\_\_\_\_

21.4 Is any other type of contribution (aside from devices or monetary funds) being made by a company/sponsor/granting agency?

Yes  No If yes, explain: \_\_\_\_\_

21.5 Has this project been submitted to the Office of Sponsored Projects (OSP)?

Yes  No Submission date: \_\_\_\_\_

If no, explain: \_\_\_\_\_

21.6 Sponsor: \_\_\_\_\_ Contract or Grant Number: \_\_\_\_\_

**22. Financial Information** (For additional guidance, refer to the sample form on the OPRS website.)

22.1 What are the financial costs involved as a result of participation in the research study. None.

22.2 Are there additional expenses for the subject related to this protocol?  Yes  No

If yes, please describe. \_\_\_\_\_

22.3 Will subjects be paid or otherwise compensated for research participation?  Yes  No

If yes, please respond to the following questions:

a) Describe the nature of any compensation to subjects. Include cash, gifts, travel reimbursements, etc. \_\_\_\_\_

- b) Provide a dollar amount, if applicable, and indicate method of payment. \_\_\_\_\_  
 Cash     Check     Other: \_\_\_\_\_
- c) When and how is the compensation provided to the subject? \_\_\_\_\_
- d) Schedule of payments: \_\_\_\_\_

**23. Consent**

Refer to the UNLV Informed Consent Template to ensure that your submission follows the current standard consent format. Attach a copy of all consent form(s) and/or informational letter(s) used to describe the research study to potential subjects. Note: Consent must be obtained from subjects prior to enrollment/participating in the research study.

- 23.1 Describe the consent process for enrolling subjects into this study. voluntary participation
- 23.2 Where will the consenting process take place? location of survey completion
- 23.3 Will there be an opportunity for the subject to take the consent form home to discuss their participation?  
 Yes     No    If no, explain why. Informed Consent form will/has been waived.
- 23.4 What method(s) will be used to educate and increase the potential research subjects' knowledge of the research project and their rights as a subject? Informative information will be provided
- 23.5 What method(s) will be used to evaluate the understanding of the potential research subject's comprehension about the research project and their rights as a subject? (Check all that apply)
- Verbal feedback of information  
 Pre and Post-test  
 Other (describe): \_\_\_\_\_
- 23.6 Please list all Consent Forms (Please compose all consent forms in a language appropriate to the study population.)
- | <u>Title of Consent Form</u> | <u>Purpose</u> |
|------------------------------|----------------|
| 1. <u>Informed Consent</u>   | <u>Survey</u>  |
| 2. _____                     | _____          |
| 3. _____                     | _____          |
| 4. _____                     | _____          |
- 23.7 Debriefing: If the study includes a debriefing script or information given to subjects, please attach with the submission.
- Is a debriefing script necessary?     Yes     No

**24. Conflict of Interest** (Conflict of interest refers to any situation in which financial, professional, or personal obligations may compromise or present the appearance of compromising an individual's professional judgment in designing, conducting, analyzing, or reporting research.)

Does a conflict of interest exist with this study?     No     Yes, explain: \_\_\_\_\_

**25. Project Enclosures** (Check all appropriate boxes and include the items with the Proposal Form)

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Informed Consent Form(s)                  | <input type="checkbox"/> Grant/Contract Application/Proposal                             |
| <input type="checkbox"/> Child/Youth Assent Form                              | <input checked="" type="checkbox"/> Facility Authorization Letter                        |
| <input type="checkbox"/> Debriefing Script                                    | <input checked="" type="checkbox"/> Research Instruments (Surveys, Questionnaires, etc.) |
| <input checked="" type="checkbox"/> <u>Waiver</u> of Documentation of Consent | <input type="checkbox"/> Recruitment Information (Ads, Web postings, letters, etc.)      |

Other items: \_\_\_\_\_

**26. Complete Description of the Study Procedures**

Meeting menus will be selected for survey distribution. Consent will be received from Wynn Las Vegas, as well as from the individual meeting planners holding the events. Surveys will then be handed out to meeting attendees after a breakfast or lunch meeting. After they are filled out, the surveys will be collected, coded and stored in a locked box.

**27. Investigator/Faculty Advisor/Student/Fellow Assurance**

**A. Investigator’s Assurance:**

I certify that the information provided in this application is complete and accurate. As Principal Investigator, I have ultimate responsibility for the conduct of this study, the ethical performance of the project, the protection of the rights and welfare of human subjects and strict adherence to any stipulations designated by the IRB. I agree to comply with all UNLV policies and procedures, as well as with all applicable Federal, State and local laws regarding the protection of human subjects in research including, but not limited to the following:

- Performing the project by qualified personnel according to the approved protocol.
- Not changing the approved protocol or consent form with out prior IRB approval (except in an emergency, if necessary, to safeguard the well-being of human subjects).
- Obtaining proper informed consent from human subjects or their legally responsible representative, using only the currently approved, stamped consent form.
- Promptly reporting adverse events to OPRS in writing according to IRB guidelines.
- Arranging for a co-investigator to assume direct responsibility, if the PI will be unavailable to direct this research personally, as when on sabbatical leave or vacation.

\_\_\_\_\_  
Principal Investigator’s Name

\_\_\_\_\_  
Principal Investigator’s Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Co-Principal Investigator’s Name

\_\_\_\_\_  
Co-Principal Investigator’s Signature

\_\_\_\_\_  
Date

**B. Faculty Advisor Assurance: (Faculty Advisor must sign below if this is a student initiated research project.)**

By my signature as advisor on this research application, I certify that the student/fellow investigator is knowledgeable about the regulations and policies governing research with human subjects and has sufficient training and experience to conduct this particular study in accordance with the approved protocol. In addition:

- I agree to act as the liaison between the IRB and the student/fellow investigator with all written and verbal communications.
- I agree to meet with the student/fellow investigator on a regular basis to monitor the progress of the study.
- I agree to be available and to personally supervise the student/fellow investigator in solving problems, as they arise.
- I assure that the student/fellow investigator will promptly report adverse events to OPRS according to IRB guidelines.
- I will arrange for an alternate faculty advisor to assume responsibility if I become unavailable, as when on sabbatical leave or vacation.

\_\_\_\_\_  
Faculty Advisor’s Name

\_\_\_\_\_  
Faculty Advisor’s Signature

\_\_\_\_\_  
Date

(The faculty advisor must be a member of UNLV faculty. The faculty member is considered the responsible party for legal and ethical performance of the project.)

**C. Student/Fellow Investigator Assurance: (if applicable)**

By my signature as Student/Fellow Investigator on this research application, I certify that I am knowledgeable about the regulations and policies governing research with human subjects and agree to conduct this particular study in accordance with the approved protocol. In addition:

- I agree to meet with my faculty advisor on a regular basis to discuss the progress of the study.

- I agree to meet with my faculty advisor to solve protocol issues, as they arise.
- I will promptly report adverse events to OPRS and my faculty advisor according to IRB guidelines.

\_\_\_\_\_  
Student/Fellow Investigator Name

\_\_\_\_\_  
Student/Fellow Investigator Signature

\_\_\_\_\_  
Date

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