

## **DREAM Initiative**

### *Dynamic Real-Time Ecological Ambulatory Methodologies*

The purpose of this document is to provide information about the budgeting process for studies interested in using DREAM services, and for researchers to provide the Survey Research Center (SRC) with information about study needs. Below is a description of the basic services that are included in a DREAM study budget estimate.

#### **Survey Development:**

DREAM staff creates custom surveys to be administered on the mobile devices using proprietary computer software. Survey development costs are based on the amount of time it takes for DREAM staff to program and test the surveys, and on the number of devices that will use the survey software. The number, length, and complexity of the surveys influence the cost of development. As part of the survey development process, DREAM staff also will setup and maintain a website on an SRC-owned server where the survey data will be stored and can be retrieved by investigators.

#### **Equipment Costs:**

Smartphones: The Penn State SRC owns Android smartphones that investigators can rent for the duration of their study. The rental fee is \$5-\$10 per month per phone; the cost varies based on the actual phone cost. The cost of each phone ranges from \$100-300, so this rental system was established in order to reduce equipment costs for investigators. Investigators are responsible for the full replacement cost for any phones that are not returned at the end of the study. In some cases it may be possible for the researchers to purchase the phones outright.

Tablets: The SRC does not currently rent tablet devices. The cost of tablets that DREAM is currently able to support is \$400-600 each.

Voice, Text, and Data Plans: Most studies use mobile devices that have voice, text, and/or data plans. Additional information about these plan options can be found on pages 6-7. Investigators are able to turn these services “on” and “off” for a given device as needed, and the cost is prorated based on actual use. DREAM staff will manage the activation and deactivation of mobile devices with Verizon. Device management costs are higher for studies that require service plans to be frequently be turned “on” and “off” and for studies with more devices and participants.

#### **Technical Support:**

Investigators will receive written information providing a general overview of the use of the mobile device and procedures for using the survey program. Instructions for installing the surveys on devices, accessing datasets, and managing data plans (when applicable) are included. The researchers are responsible for performing all of these tasks, but if problems arise, DREAM staff members are available to assist project staff. The budget will include an estimate of the anticipated cost of providing technical support based on study complexity and duration. Additional support for the preparation of devices, study-specific materials, and direct technical assistance for participants are available upon request (see page 9 for more information regarding these options and pricing).

## **DREAM BUDGET ESTIMATE REQUEST FORM**

The information provided on this form will be used to develop an estimate for the cost of DREAM services. Please complete all of the sections of this form and send it to [dream@survey.psu.edu](mailto:dream@survey.psu.edu). Once this form is completed and submitted, it will take approximately 1-2 weeks to develop an estimated budget for your project. After a budget is developed, if you require any changes from the information provided on this form, it will impact the estimated cost for your project. If substantial changes are made, it may be necessary to develop a revised budget estimate prior to beginning, or during, the study.

Any questions regarding DREAM, the budget process, or study-specific needs can be sent to [dream@survey.psu.edu](mailto:dream@survey.psu.edu).

### **GENERAL STUDY INFORMATION**

Study Name: \_\_\_\_\_

Principle Investigator(s) Information:

Name	College/Department	E-mail address

Co-Investigator(s) Information:

Name	College/Department	E-mail address

Primary Contact Person(s):

Name	Position/Role in Study	E-mail address

Purpose of estimate:

- Grant application                      Application deadline:  
 New study, already have funding  
 Other \_\_\_\_\_

Funding source(s):

Anticipated start date for study (month/year):

Anticipated start date for DREAM data collection (month/year):

Anticipated completion date for DREAM data collection (month/year):

### **SAMPLE, EQUIPMENT, AND DESIGN**

What is the anticipated sample size for this study? \_\_\_\_\_

Will this study use:

- Android smartphones  
 Android tablets

What is the estimated maximum number of devices that you will need at a given time (that is, the maximum number needed at any one point, **not** the total number of subjects unless all subjects will be using the devices simultaneously)? \_\_\_\_\_

What is the estimated number of additional devices (if any) that will be needed for the research team (e.g., for testing, training, etc.)? \_\_\_\_\_

What is the total duration of time that your research staff will need the devices (i.e., how many calendar months)? \_\_\_\_\_

Remember to include any time in advance of data collection if you would like the device for pilot testing, and the time you will need the devices to collect data from all of the participants.

For a given participant, how many data collection periods will there be? \_\_\_\_\_

***Examples of 1 data collection period:***

Participants complete surveys for 1 week.

Participants complete surveys for 6 consecutive weeks.

***Examples of >1 data collection period:***

Participants complete surveys for 1 week, have a “break” for 2 weeks, and then complete surveys for another 1 week. (2 data collection periods)

Participants complete surveys for a 2 week period every month for 1 year. (12 data collection periods)

Please describe the data collection timeline and processes below:

***Examples:***

Participants complete surveys for 1 week, have a “break” for 2 weeks, and then complete surveys for another 1 week. (14 days between data collection periods)

Participants complete surveys for a 2 week period every month for 1 year (~14 days between data collection periods).

Participants complete surveys for 1 month, then have a 3 month “break” and then complete surveys for an additional 2 weeks.

Use the space below to explain any of your above responses further or if you have additional comments about data collection for this study.

## **SURVEY INFORMATION**

DREAM staff creates custom surveys to be administered on the mobile devices using proprietary computer software. The following pages contain information regarding the survey options currently available. You will also be asked to provide information regarding the surveys needed for your study.

### **Survey Timing Options:**

Researchers have several different options for when they want participants to fill out each survey. The option(s) you choose depends on your research question. Below are a list, description, and examples of possible timing schemes.

In Response to Specific Events: For event-driven surveys, participants must be instructed (and trained) by the researcher to complete a survey in response to a specific event or events. For example, they may be asked to fill out a survey in response to general daily activities such as immediately before they go to bed or when they wake up in the morning. They could also be instructed to complete surveys in response to specific events that are of interest to the research team (e.g., after a social interaction, before a meal, etc.). It is very important to know that for event-driven surveys, the smartphone/tablet will **not** prompt (or “beep”) participants to complete these surveys.

Pre-Determined Prompted/Signaled Times: For surveys that participants should complete at specific times, the mobile device can prompt (or “beep”) participants indicating it is time to complete the survey. The researchers select the exact times of day (e.g. 8:30 AM, 2:06 PM, etc.) when each beep should occur for each day.

Pseudo-Random Prompted/Signaled Times: This assessment schedule allows researchers to have participants complete a survey at various random times throughout the day, in response to the smartphone beeping. The researcher will identify specific “epochs” (time slices) during which a beep will randomly occur (e.g. 8AM - 9AM, 10AM - 12PM, etc.).

### **Survey Items and Response Options:**

Currently we offer the following response options for all survey questions:

- Radio buttons – user selection one options (e.g., yes/no, one item from list of several, etc.)
- Check boxes – user can select “all that apply”
- Touchpoint scale – anchor words appear at either end of a continuous scale (line), user taps on the line to indicate response
- Dropdown box – a box appears when tapped with response options, user can select only one response option
- Free text – a text box is included on the screen and when tapped, a keyboard appears on the screen to allow for alphanumeric responses to be entered.

In order to give you the most accurate estimate possible, it would be best if you could provide us with the questions that you will be using in this study. The questions, along with any branching necessary (i.e., differential follow-up questions depending on item response) can be attached to this document. Are you providing the item questions at this time?

- No, I do not have the survey items at this time.
- Yes, I am attaching the survey items

If no: Most surveys use a set order of questions and potentially some item branching (i.e., differential follow-up questions depending on item response). If you intend to use a more complex survey, please use the space below to describe the types of items and/or survey features needed. Please note that longer and more complicated survey generally incur more costs.

### **Study Surveys:**

Please provide information about the surveys needed for your study in the table below. For each survey, give a short informative name (e.g. “Waking up” survey, “Beeped” survey, “Social Interaction” survey, “Mealtime” survey, etc.). Also indicate the timing of each survey; see the description of survey timing options above for more information. Finally, we understand that researchers may not have all the specific questions identified during the estimate process. If this is the case, however, we do still ask that you

provide us with a rough estimate of the number of questions for each survey so that we can provide you with a more accurate estimate of costs.

Survey Name	Survey Timing			Approximate Number of Survey Items
	Event	Set Times	Random Times	

Use the space below to explain any of your above responses further or if you have additional comments about the survey timing or content for this study. For example, if you are using a predetermined or pseudo-random alarms, indicate the number of signals per day.

### SMARTPHONE PLAN OPTIONS

We work with Verizon to provide data plans at a discounted rate for investigators using DREAM services. When using phones with data plans, the data participants enter can be remotely uploaded to a server after participants complete each survey. This allows researchers to access and view the data while participants still have phones and are completing surveys (e.g., to check compliance). If you are using tablet devices, please inquire about data plan options and prices, as they are different from those listed below.

It is also possible to conduct a study using mobile devices *without* a data plan. If you choose no data plan, this will require you to manually upload data from the phones onto a computer or periodically establish a connection with a WiFi network to upload data. In other words, you will not be able to view participants' data immediately after they complete the survey and will only be able to retrieve it directly from the

phone after it is returned by the participant. In addition, because the data will only be saved on the phones, if the phones are lost or damaged it these data will likely not be retrievable.

Below is a list of the most common plan options and features researchers use. The estimated monthly phone plan cost per phone is provided. Phone costs will be prorated if activated for less than one month. Investigators are responsible for any additional costs related to overages or use of services not covered by the plan (e.g., exceeding voice minute limits, international text messaging).

Plan Type	Monthly Plan Amount per Phone	Voice Minutes	Plan Overview
Data & Text	\$42	None	Participants will have unlimited data and domestic text capability (additional \$0.25 -\$0.50 per use charge for international email/texting)
Data, Text & Voice 300	\$55	Unlimited Verizon mobile to mobile + 300 anytime minutes	Participants will have unlimited data and domestic text capability (additional \$0.25 -\$0.50 per use charge for international email/texting), unlimited Verizon mobile to mobile calling, unlimited nights and weekend minutes, 300 anytime minutes (additional \$0.25 per minute over allowance)
Data, Text & Voice 600	\$67	Unlimited Verizon mobile to mobile + 600 anytime minutes	Participants will have unlimited data and domestic text capability (additional \$0.25 -\$0.50 per use charge for international email/texting), unlimited Verizon mobile to mobile calling, unlimited nights and weekend minutes, 600 anytime minutes (additional \$0.25 per minute over allowance)

Please mark the data plan that you would like to use for this study:

- No data plan (upload data manually)
- Data & Text
- Data, Text, & Voice 300
- Data, Text, & Voice 600
- Other

*If other:* Please describe the data/text/voice options that you would like for this study and we can work with Verizon to try to develop a plan that better meets your needs.

If this study will be using devices with a data plan (i.e., if you selected any of the “data” options above):

Estimate the approximate number of days each smartphone/tablet will need to have an active data plan: \_\_\_\_\_

*Note:* You will be charged for the actual phone usage, not the estimated amount (whether it is more or less than this estimate).

Estimate the approximate number of smartphones/tablets that will be active each month: \_\_\_\_\_.

Estimate the approximate number of months that will have active smartphones/tablets: \_\_\_\_\_.

Use the space below to explain any of your above responses further or if you have additional comments about data plan options for this study.

### ADDITIONAL DREAM SERVICES AVAILABLE

In addition to the basic services that are included in a DREAM study budget estimate (see page 1), there are several other services that DREAM can offer to researchers. Below is a partial list of additional services available. Please mark any services that you would like included in the cost of your estimate.

- Researcher Training:** Our staff can provide training to your staff on a range of study aspects. Several packages are available for researcher training, and the contents and costs vary. Below is a general description of the available training content. Following this description are specific package options. For each package we have provided guidelines for the type of training that is recommended based on the investigators' and research staff members' level of previous experience with conducting studies using DREAM methodologies. Please note that these are merely recommendations based on our experience, and investigators are not required to use these training services in order to use DREAM services.

*Training Content:*

1. Orientation to smartphone and overview of manual and DREAM protocols
2. Demonstration of survey installation process, phone setup, and data retrieval from website
3. Interactive component allowing the investigators and/or project staff to practice survey installation, phone setup, and data retrieval, while receiving feedback and assistance from DREAM staff
4. Review recommended content and procedures for training participants
5. Demonstration of project-specific training session
6. Opportunity for investigators and/or research staff to practice conducting training sessions and receive feedback from DREAM staff

- Premium Researcher Training Package:** ~\$3,200  
Cost includes: training session conducted by 2-3 DREAM staff  
Training Content: Items #1-6 above.

*This package is recommended for investigators who have not previously conducted an EMA study. This package is also appropriate for investigators who are employing research staff who do not have experience working on EMA studies (including training participants to use mobile devices to complete EMA).*

- Basic Researcher Training Plus Practice:** ~\$2,000  
Cost includes: briefer training session conducted by 2-3 DREAM staff  
Training Content: Items #1, #2, #3 above.

*This package is recommended for investigators who have not used DREAM services before but have conducted EMA studies using mobile technology. This package would also be*



*appropriate for any investigator who is employing research staff who do not have experience working on EMA studies.*

- Phone Setup and Customization:** ~\$25/device  
All researchers will receive written instructions for how to install the survey program, and setup and customize the phone, and research staff (i.e., not DREAM) will be expected to complete the installation and setup. If this option is selected, DREAM staff will install the survey program, study-specific surveys, and associated applications on the smartphones/tablets (e.g., application lock program), and customization of the device settings to allow for more user-friendly experience for participants. The installation of any additional study-specific applications is not included in this fee of ~\$25/device; if you require additional programs installed, contact us for an estimate.
  
- Study-Specific Materials:** cost varies depending on study needs  
All researchers (regardless of whether this option is selected or not) will receive general written materials as described on page 1 of this form. Written materials specific to your study, such as screenshots of survey questions, study-specific handouts for participants regarding smartphone/tablet use and procedures, customized training protocols, etc. can also be provided. Contact us for more information about options and prices.
  
- Direct Technical Support for Participants:** ~\$150/week, varies based on number of devices  
The general budget estimate includes technical support for the project research staff (see page 1). Participants are expected to contact the researchers (not DREAM staff) with any questions. If research staff is unable to resolve the problem, the researchers can contact DREAM for assistance. Direct technical support for participants can be provided by DREAM, and includes the set-up of a toll-free number that participants can call if they have technical problems with the phones. This service does not include support study-specific content questions, but is for hardware and software issue only. The phone line is answered from 8:00am-5:00pm during business days. After hours, participants can leave a message and calls will be returned the following business day.
  
- Compliance Monitoring:** cost varies depending on study needs  
As part of the basic DREAM services, all researchers will be able to access study data on a secure website on an SRC server (see page 1). For studies using a data plan, the data will be sent to the website as the surveys are completed by participants, so researchers can access these data and monitor compliance. If this option is selected, DREAM staff can monitor participant data on the website for compliance and/or participants can be contacted by phone with a scripted reminder (provided by investigator) if compliance criteria (specified by the investigator) are not met.