



ROSE-HULMAN INSTITUTE OF TECHNOLOGY

University of Wisconsin–Madison | Department of Computer Sciences

Human-Computer Interaction Laboratory



## MILESTONE 5

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# 1 Executive Summary

This document's purpose is to detail the participant scheduling system proposed by the Human-Computer Interaction Lab of Wisconsin-Madison. It is the fifth document describing this project, and contains interface designs constructed from the use cases of Milestone 2, the results of usability analysis on that interface, and planned changes based on this analysis. The project exists because the lab wishes to unify their schedule information and provide a simple, intuitive interface for prospective participants to sign up for experiments.

## 2 Introduction

The Human-Computer Interaction Lab at the University of Wisconsin-Madison wants a web-based system to better manage the scheduling of participants for their studies. These studies range from one-on-one experiments to group interactions, and many of them involve the robot used by the lab. Currently, each researcher arranges studies independently via email and is responsible for scheduling rooms, avoiding conflicts, and notifying participants of changes; unifying this information onto one system simplifies all of these tasks. To the client, the most important benefit of a unified system is the ability for participants to easily browse all available experiments, which is not possible over email. However, a variety of other functionality should be integrated into this utility to take advantage of the unity of information; most notable is recognizing room conflicts when scheduling studies, since the lab has only one robot and it cannot be moved.[1]

Project information will be documented as follows: Milestone 1 provides an overview of the project, from client background to key features and requirements. Milestone 2 covers the behaviour of the system, including use cases and data flow diagrams. Milestone 3 details constraints, back-end requirements, and elaborates upon the user interface. Testing and maintenance information can be found in Milestone 4. Milestone 5 will include usability data and interface re-design related to such data.

## 3 Client Background

The client is the Human-Computer Interaction Lab at the University of Wisconsin-Madison. Their research focus is on the way humans perceive computers, and how this perception influences their actions. The main goal is to learn about this interaction through making hypotheses, experimenting, analysing the data, and then publishing papers on the results. They draw the participants for their experiments from a wide range of people, usually ranging from 18-65 years of age and from diverse technical backgrounds. As such, any system they use must be designed for all levels of technical competency.

## 4 Current System

Each researcher has their own method of handling participant scheduling. For most, the current system is to have the participants email the individual researcher and then that researcher records the time slot in some sort of Excel spreadsheet. Other researchers have tried Google Calendar appointment slots; while this is a better system, not everyone uses it and the client believes it is too complex for most participants and some researchers. Addressing the lack of unified data and superfluous effort on the part of the participants is the primary goal of the project.

## 5 Product Overview

This section provides a high-level view of the product capabilities, interfaces to other applications, and system configurations.

### 5.1 Product perspective

The participant scheduling system will be a new product. It will be used to schedule experiments and participants in the Human-Computer Interaction Lab at the University of Wisconsin-Madison. The product is independent and totally self-contained, besides a few external software packages; it is not a component of a larger system.

### 5.2 Elevator Statement

For the researchers in the Human-Computer Interaction Lab at the University of Wisconsin-Madison who currently schedule experiments and participants with rudimentary tools such as pencil and paper, email, or Google Calendar, the participant scheduling system will be a web application that will streamline the lab's scheduling process. Unlike current solutions, this application will be the same for every researcher, so it will also be easier for participants to be a part of multiple experiments.

### 5.3 Summary of Capabilities

Here are the major benefits and features the product will provide.

Customer Benefit	Supporting Feature
List of participants for an experiment	Reports
Room availability (avoid conflicts)	Overall lab schedule
Simple sign up	Intuitive user interface
Track all experiments	Experiments manager
Access from anywhere at any time	Web application

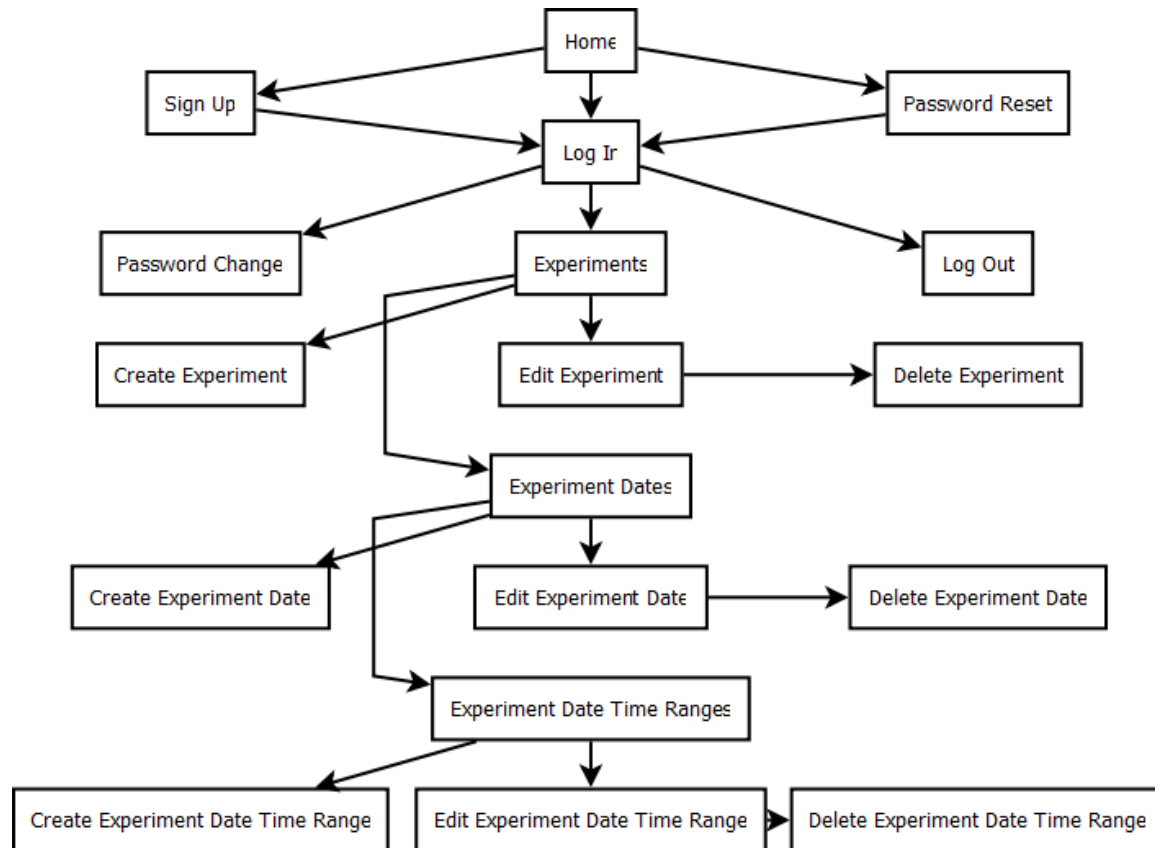
### 5.4 Assumptions and Dependencies

- The participant scheduling system will be a web application.
- The server has the necessary operating system and software.
- There is no integration with any other system.
- There is no import of existing data.

### 5.5 Rough Estimate of the Cost

There is no monetary cost for this project, because the software development, as part of a college class, is free. Similarly, all software used is open-source. Furthermore, the client will be provided with free servers through the University of Wisconsin-Madison for the finished product. The client will perform maintenance and management on their own.

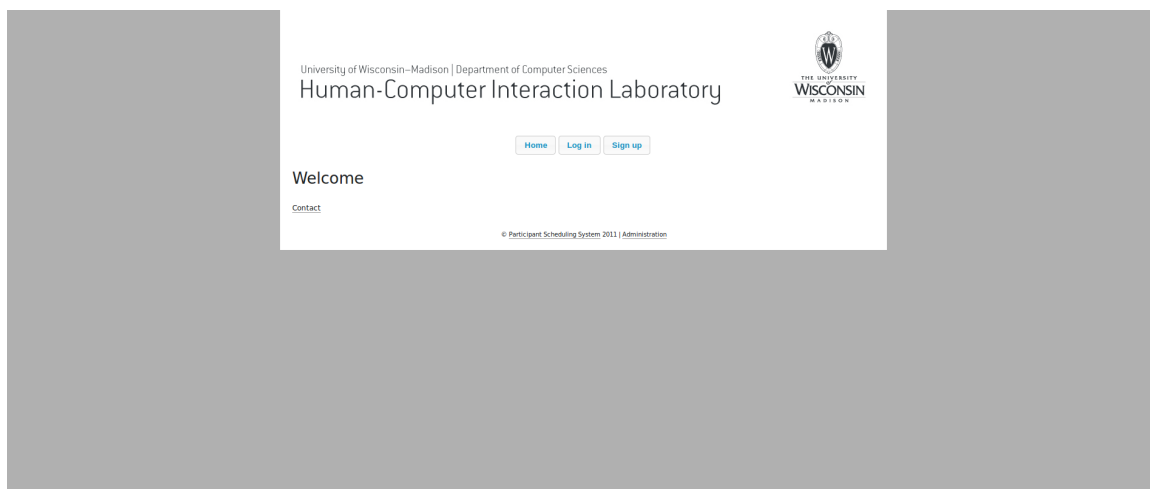
## 6 Interaction Architecture



## 7 Initial and Revised Interface Design

### 7.1 Home

#### 7.1.1 Initial



### 7.1.2 Revised

There will a paragraph introducing the lab and the participant scheduling system. Furthermore, it will explain who should be clicking what to get started. On every page, the menu button associated with the current page will be distinguished in some way.

## 7.2 Sign Up

### 7.2.1 Initial

The screenshot shows the 'Sign up' page of the Human-Computer Interaction Laboratory website. The page header includes the University of Wisconsin-Madison logo and the department name. Below the header, there are three buttons: 'Home', 'Log in', and 'Sign up'. The 'Sign up' button is highlighted. The main content area is titled 'Sign up' and contains a form with four fields: 'Username\*', 'E-mail\*', 'Password\*', and 'Password (again)\*'. A 'Register' button is located at the bottom right of the form. A small copyright notice is visible at the bottom of the page.

### 7.2.2 Revised

No changes

## 7.3 Log In

### 7.3.1 Initial

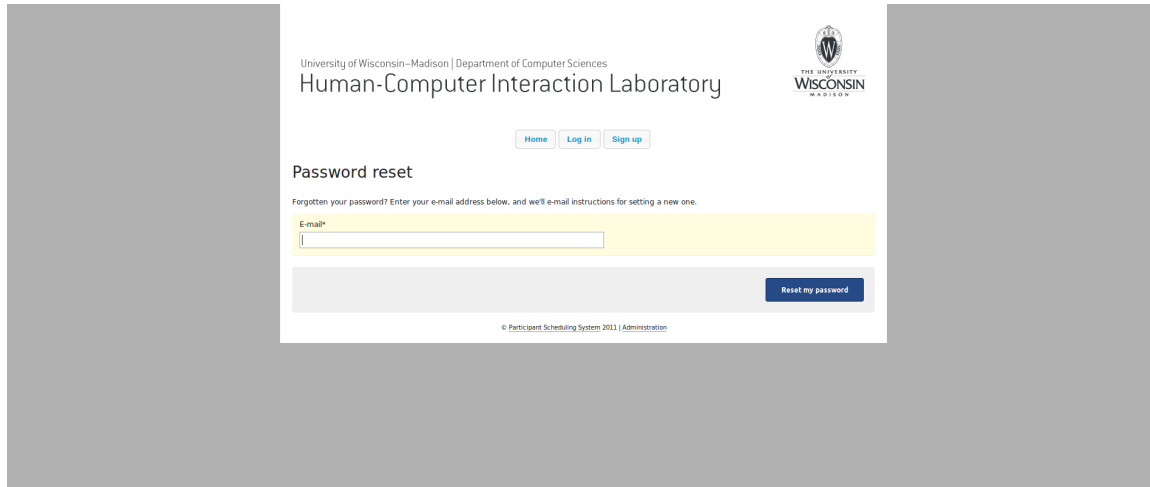
The screenshot shows the 'Log in' page of the Human-Computer Interaction Laboratory website. The page header is identical to the Sign Up page. Below the header, there are three buttons: 'Home', 'Log in', and 'Sign up'. The 'Log in' button is highlighted. The main content area is titled 'Log in' and contains a form with two fields: 'Username\*' and 'Password\*'. A 'Log in' button is located at the bottom right of the form. Below the form, there is a link for 'Forgot your password?'. A small copyright notice is visible at the bottom of the page.

### 7.3.2 Revised

No changes

## 7.4 Password Reset

### 7.4.1 Initial



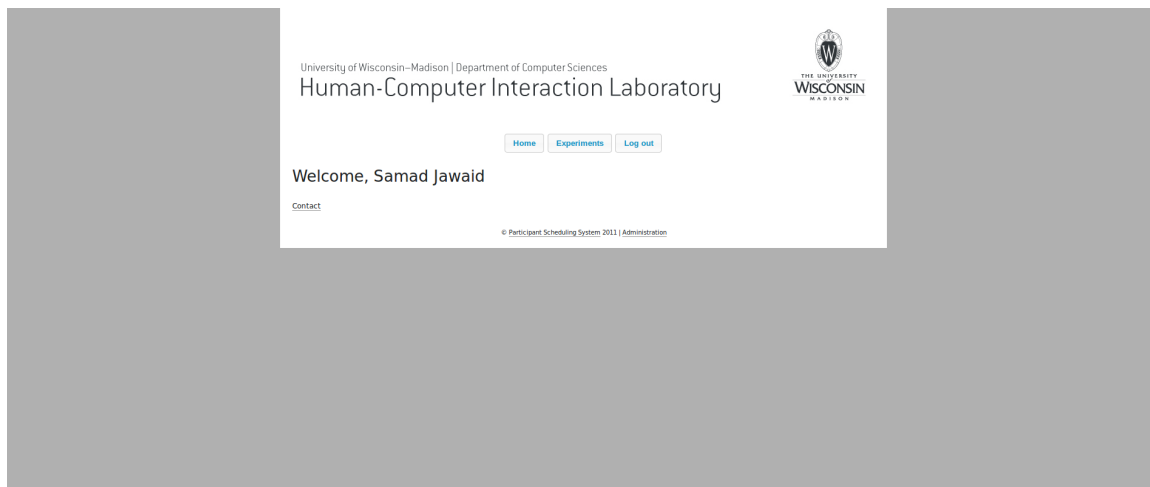
The screenshot shows the 'Password reset' page of the Human-Computer Interaction Laboratory. The page header includes the University of Wisconsin-Madison logo and the department name. Below the header, there are links for 'Home', 'Log in', and 'Sign up'. The main heading is 'Password reset', followed by a subheading: 'Forgotten your password? Enter your e-mail address below, and we'll e-mail instructions for setting a new one.' There is a text input field labeled 'E-mail' and a 'Reset my password' button. The footer contains the copyright notice: '© Participant Scheduling System 2011 | Administration'.

### 7.4.2 Revised

No changes

## 7.5 Home, Logged In

### 7.5.1 Initial



The screenshot shows the 'Home' page of the Human-Computer Interaction Laboratory when a user is logged in. The page header includes the University of Wisconsin-Madison logo and the department name. Below the header, there are links for 'Home', 'Experiments', and 'Log out'. The main heading is 'Welcome, Samad Jawaid'. There is a 'Contact' link. The footer contains the copyright notice: '© Participant Scheduling System 2011 | Administration'.

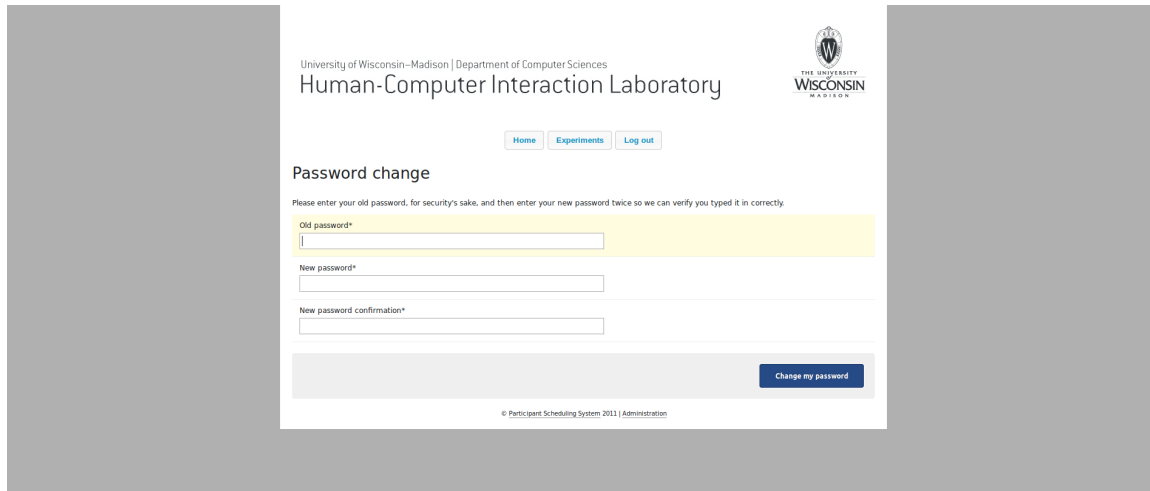


### 7.5.2 Revised

Upon logging in, instead of being taken back to the home page, the user will be taken to the experiments page. If the user manually returns to the home page while logged in, the revisions of the default home page will be reflected there as well; see **Home, Logged In**. On every page, the logged in user's username or name will be displayed somewhere.

## 7.6 Password Change

### 7.6.1 Initial



The screenshot shows a web interface for a password change. At the top, it says "University of Wisconsin-Madison | Department of Computer Sciences" and "Human-Computer Interaction Laboratory". There are three buttons: "Home", "Experiments", and "Log out". The "Experiments" button is highlighted. Below the buttons, the title "Password change" is displayed. A message reads: "Please enter your old password, for security's sake, and then enter your new password twice so we can verify you typed it in correctly." There are three input fields: "Old password\*", "New password\*", and "New password confirmation\*". A "Change my password" button is at the bottom right. The footer text is "© Participant Scheduling System 2011 | Administration".

### 7.6.2 Revised

It will be linked to from some other page, maybe the home page while logged in. No user was able to access it without explicitly visiting the URL, which they were not given.

## 7.7 Experiments

### 7.7.1 Initial

University of Wisconsin–Madison | Department of Computer Sciences

Human-Computer Interaction Laboratory

[Home](#) [Experiments](#) [Log out](#)

The experiment was successfully deleted.

Experiments

Name	Description	Researchers	Room	Qualifications	Length	Edit	Experiment Dates
Aaa	Hello	Trey Cahill, Samad Jawaid	Bar 200	Bacon ipsum dolor sit amet	30	<a href="#">Edit</a>	<a href="#">Experiment Dates</a>
Boudin biltong shankle pork, proscutto ground round chuck t-bone shoulder tri-tip brisket	Ground round t-bone andouille pork belly, beef venison ham chicken	Samad Jawaid	Bar 202	Bacon ipsum dolor sit amet, fatback meatloaf proscutto, Proscutto chuck tongue short	50	<a href="#">Edit</a>	<a href="#">Experiment Dates</a>
Fatback chuck tail flank medallion tangerine leberfause, andouille sirloin frankfurter tri-tip	short ion hamburger ground round frankfurter	Trey Cahill, Chris Griggs, Samad Jawaid, Ailie Terrell	Bar 201	Bacon ipsum dolor sit amet, fatback meatloaf proscutto	40	<a href="#">Edit</a>	<a href="#">Experiment Dates</a>
Flank shoulder tri-tip shankle biltong	Shankle tongue cow strip steak, short ribs beef tenderloin ball tip leberfause flat mignon	Trey Cahill, Chris Griggs, Samad Jawaid, Kevin Rossen, Ailie Terrell	Bar 300a	Bacon ipsum dolor sit amet, fatback meatloaf proscutto, Proscutto chuck tongue short	40	<a href="#">Edit</a>	<a href="#">Experiment Dates</a>
Pork loin Joel capicola, ham hock ground round turkey drumstick	Boudin biltong shankle pork, proscutto ground round chuck t-bone shoulder tri-tip frankfurter	Trey Cahill, Samad Jawaid, Kevin Rossen, Ailie Terrell	Fog 100	fatback meatloaf proscutto, Proscutto chuck tongue short	15	<a href="#">Edit</a>	<a href="#">Experiment Dates</a>

[+ Create a new experiment](#)

[Cancel](#)

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### 7.7.2 Revised

The unit of length (minutes) will be specified. The table will be filterable and sortable. Experiments will be able to be mass-deleted from the table. The create button will be duplicated above the table as well. The cancel button will be changed to a back button with an appropriate icon.

## 7.8 Create Experiment

### 7.8.1 Initial

The screenshot shows the 'Create Experiment' form in the Participant Scheduling System. The form is titled 'Create Experiment' and is located under the 'Experiments' tab. It contains several input fields: 'Name\*' (a text box), 'Description\*' (a text area), 'Researchers\*' (a dropdown menu with a list of names: Trey Cahill, Chris Gropp, Samad Jawaid, Kevin Ridsen), 'Room\*' (a dropdown menu), 'Qualifications\*' (a dropdown menu with a list of qualifications: Bacon ipsum dolor sit amet, Fatback meatloaf prosciutto, Prosciutto chuck tongue short), and 'Length\*' (a text box with a unit of 'in minutes'). There are also 'Save' and 'Cancel' buttons at the bottom. The form is surrounded by a grey border.

### 7.8.2 Revised

The qualifications, room, and researchers inputs will be jQueryUI autocomplete fields with the ability to create new values. It will be clear that the cancel button discards all unsaved changes.

## 7.9 Edit Experiment

### 7.9.1 Initial

The screenshot shows the 'Edit Experiment' form in the Participant Scheduling System. The form is titled 'Edit Experiment' and is located under the 'Experiments' tab. It contains several input fields: 'Name\*' (a text box with the value 'Aaa'), 'Description\*' (a text area with the value 'Hello'), 'Researchers\*' (a dropdown menu with a list of names: Trey Cahill, Chris Gropp, Samad Jawaid, Kevin Ridsen), 'Room\*' (a dropdown menu with the value 'Bar 200'), 'Qualifications\*' (a dropdown menu with a list of qualifications: Bacon ipsum dolor sit amet, Fatback meatloaf prosciutto, Prosciutto chuck tongue short), and 'Length\*' (a text box with the value '30' and a unit of 'in minutes'). There are also 'Save' and 'Cancel' buttons at the bottom. The form is surrounded by a grey border.

## 7.9.2 Revised

The delete button will not be so subtle. Also, see **Create Experiment**.

## 7.10 Delete Experiment

### 7.10.1 Initial

The screenshot shows the 'Edit Experiment' form in the Human-Computer Interaction Laboratory system. The form includes fields for Name, Description, Researchers, Room, Qualifications, and Length. A confirmation dialog box is overlaid on the form, asking 'Are you sure that you want to delete this experiment?'. The dialog box has 'Yes' and 'No' buttons. The form also has a 'Save' button and a 'Cancel' button.

### 7.10.2 Revised

The jQueryUI CSS theme will match the existing CSS, so the dialog box will not appear so out of place.

## 7.11 Experiment Dates

### 7.11.1 Initial

The screenshot shows the 'Experiment Dates' form in the Human-Computer Interaction Laboratory system. The form displays a table of experiment dates and ranges. The table has columns for Date, Edit, and Experiment Date Time Ranges. The table contains three rows of data. Below the table, there is a button to 'Create a new experiment date for Fatback chuck tail flank pastrami tongue leberkase, andouille sirloin frankfurter tri-tip' and a 'Cancel' button.

Date	Edit	Experiment Date Time Ranges
Oct. 31, 2011	<a href="#">Edit</a>	<a href="#">Experiment Date Time Ranges</a>
Nov. 4, 2011	<a href="#">Edit</a>	<a href="#">Experiment Date Time Ranges</a>
Nov. 6, 2011	<a href="#">Edit</a>	<a href="#">Experiment Date Time Ranges</a>

### 7.11.2 Revised

The table will be filterable and sortable. Experiment dates will be able to be mass-deleted from the table. The create button will be duplicated above the table as well. The cancel button will be changed to a back button with an appropriate icon.

## 7.12 Create Experiment Date

### 7.12.1 Initial

The screenshot shows the 'Create Experiment Date' form in the Participant Scheduling System 2011. The form is titled 'Create Experiment Date for Fatback chuck tail flank pastrami tongue leberkase, andouille sirloin frankfurter tri-tip'. It features a 'Date\*' input field with a calendar widget open, showing the month of November 2011. The calendar has a grid with days of the week (Su, Mo, Tu, We, Th, Fr, Sa) and dates (1-30). A 'Save' button is located to the right of the calendar. The form is part of the 'Human-Computer Interaction Laboratory' interface, which includes navigation links for 'Home', 'Experiments', and 'Log out'. The University of Wisconsin-Madison logo is also visible.

### 7.12.2 Revised

The user will be able to type in a date manually without using the calendar widget. Help text explaining the date format will be added. The widget will not automatically appear on page load. It will be clear that the cancel button discards all unsaved changes.

## 7.13 Edit Experiment Date

### 7.13.1 Initial

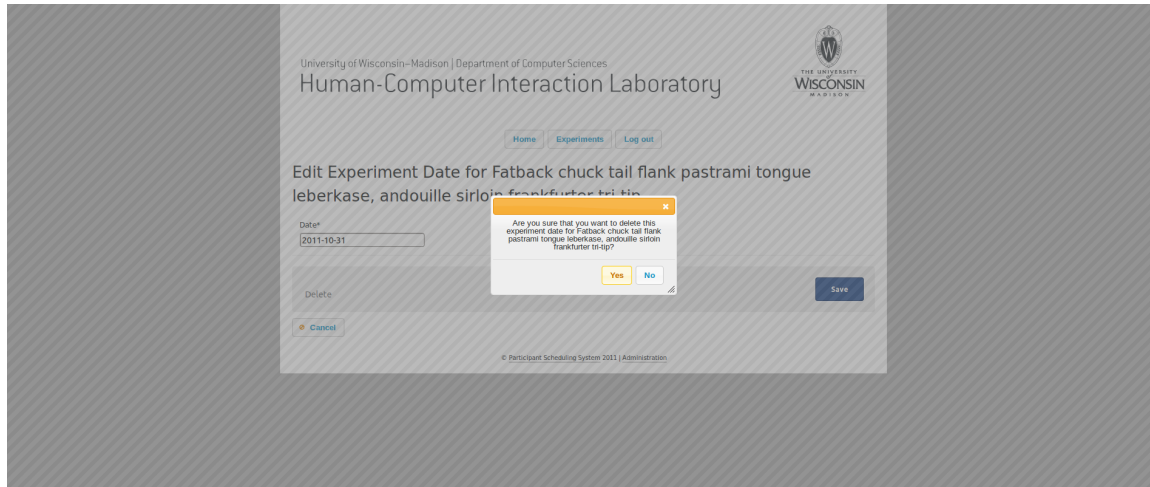
The screenshot shows the 'Edit Experiment Date' form in the Participant Scheduling System 2011. The form is titled 'Edit Experiment Date for Fatback chuck tail flank pastrami tongue leberkase, andouille sirloin frankfurter tri-tip'. It features a 'Date\*' input field with the date '2011-10-31' entered. Below the input field are 'Delete' and 'Save' buttons. A 'Cancel' button is located at the bottom left of the form. The form is part of the 'Human-Computer Interaction Laboratory' interface, which includes navigation links for 'Home', 'Experiments', and 'Log out'. The University of Wisconsin-Madison logo is also visible.

### 7.13.2 Revised

The delete button will not be so subtle. Also, see **Create Experiment Date**.

## 7.14 Delete Experiment Date

### 7.14.1 Initial

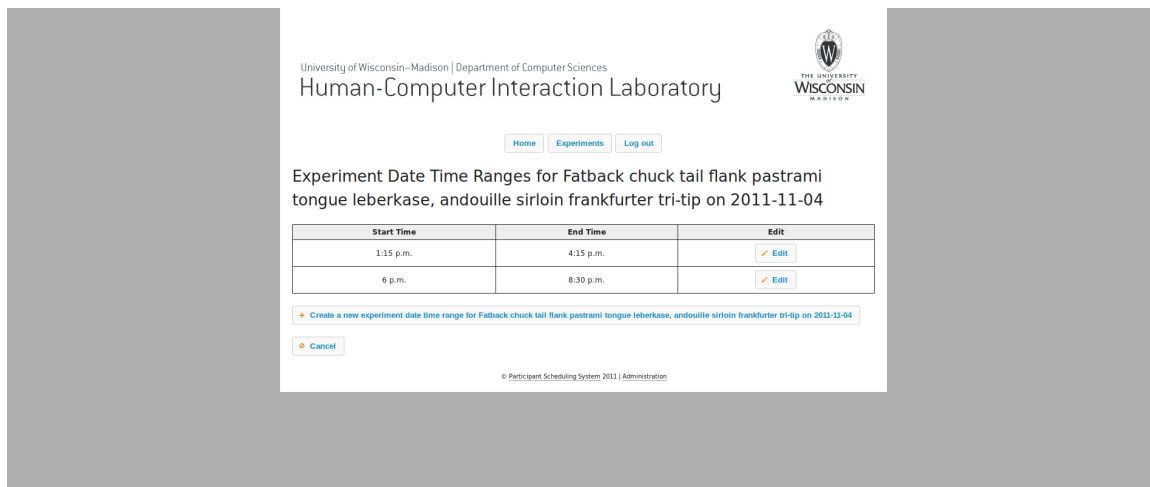


### 7.14.2 Revised

The jQueryUI CSS theme will match the existing CSS, so the dialog box will not appear so out of place.

## 7.15 Experiment Date Time Ranges

### 7.15.1 Initial



### 7.15.2 Revised

The table will be filterable and sortable. Experiment date time ranges will be able to be mass-deleted from the table. The create button will be duplicated above the table as well. The cancel button will be changed to a back button with an appropriate icon.

## 7.16 Create Experiment Date Time Range

### 7.16.1 Initial

University of Wisconsin-Madison | Department of Computer Sciences  
Human-Computer Interaction Laboratory

Home Experiments Log out

Create Experiment Date Time Range for Fatback chuck tail flank pastrami tongue leberkase, andouille sirloin frankfurter tri-tip on 2011-11-04

Start time\*

	Hour					Minute													
AM	00	01	02	03	04	05	06	07	08	09	10	11	12	01	02	03	04	05	06
PM	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Save

Cancel

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### 7.16.2 Revised

The time widget will not have the AM or PM labels since it uses 24-hour time. Help text explaining the time format will be added. The widget will not automatically appear on page load. It will be clear that the cancel button discards all unsaved changes.

## 7.17 Edit Experiment Date Time Range

### 7.17.1 Initial

University of Wisconsin-Madison | Department of Computer Sciences  
Human-Computer Interaction Laboratory

Home Experiments Log out

Edit Experiment Date Time Range for Fatback chuck tail flank pastrami tongue leberkase, andouille sirloin frankfurter tri-tip on 2011-11-04

Start time\*  
13:15:00

End time\*  
16:15:00

Delete

Save

Cancel

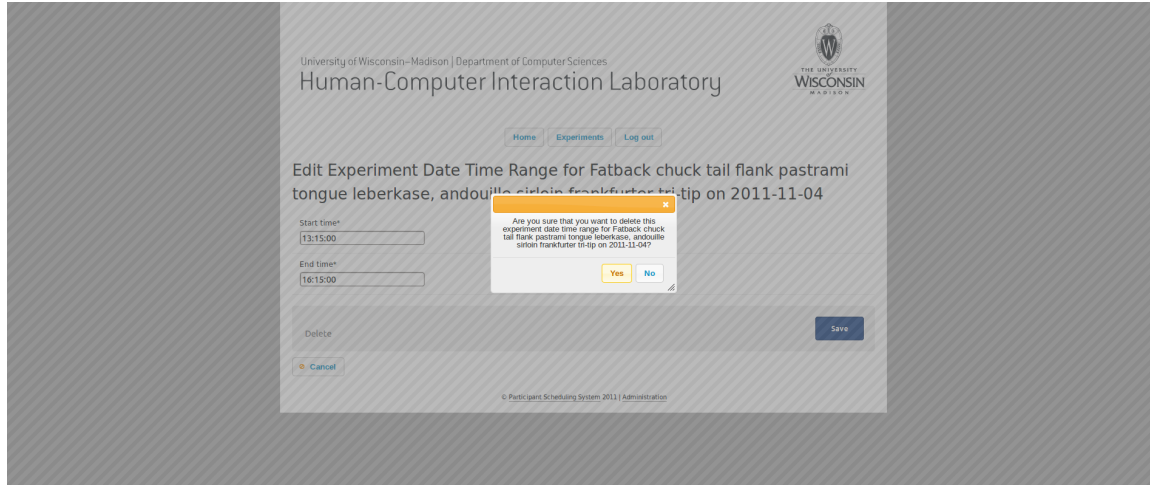
© Participant Scheduling System 2011 | Administration

### 7.17.2 Revised

The delete button will not be so subtle. Also, see **Create Experiment Date Time Range**.

## 7.18 Delete Experiment Date Time Range

### 7.18.1 Initial



### 7.18.2 Revised

The jQueryUI CSS theme will match the existing CSS, so the dialog box will not appear so out of place.

## 8 References

- [1] University of Wisconsin-Madison. Human-Computer Interaction Laboratory, 2010.

## 9 Appendix

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