



Evaluation of Public Impacts

Data Collection Guidelines

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Introduction

The purpose of this evaluation is to understand what public visitors over the age of 18 learn from the Building with Biology hands-on activities and what they find valuable about their participation. We have selected 50 sites to participate in this evaluation. The Building with Biology Evaluation Team will provide these sites with a box of evaluation materials, evaluation support, and training for one data collector from each site. This person will be responsible for collecting paper surveys from adult visitors at the end of a passport activity and sending the public evaluation data to the Evaluation Team electronically and by mail. The Evaluation Team will then analyze the data and send you an individual report about what your visitors learned and valued. At the end of the evaluation period, the Evaluation Team will also offer a webinar to share findings from all evaluation cohort participants.

NOTE: This document was prepared for sites that have been selected as participants in the Building with Biology public event evaluation. Nearly twice as many sites expressed interest in this evaluation as we were able to accommodate. If you are interested in evaluation but were not selected to be a part of the evaluation cohort, you are still welcome to use the protocols, attend the professional development opportunities, and use the surveys that the Evaluation Team has created. These resources are available at www.buildingwithbiology.org/project-evaluation.

Unfortunately, the Evaluation Team will not be able to send physical materials or analyze data for sites that were not selected to be part of the evaluation cohort. **Please do not mail us your data if you have not been selected as an evaluation site.**

This document outlines the details of the evaluation process, including:

- The data collector's responsibilities
- The support you will receive from the Evaluation Team
- Details about the evaluation materials
- Information about the data collection process
- How to prepare for your event

At the end of this document you will find a *Building with Biology Public Evaluation Overview* section that includes a checklist of action items for the evaluation and recruitment scripts.

The evaluation data collector

For the purposes of this evaluation, you will need to select *one person* who is responsible for five tasks. This person will need to devote the full duration of the event to evaluation tasks, so she or he should NOT be responsible for coordinating the full event or managing volunteers.

NOTE: If you are using your hands-on activities with the public on multiple days, the data collector only needs to collect data on one day (although you're welcome to do more).

The data collector is responsible for:

- **Completing human subjects training:** The evaluation data collector needs to provide the Building with Biology Evaluation Team with a current copy of a completion certificate for a human subjects training course administered by either the National Institutes of Health (NIH) or the Collaborative Institutional Training Initiative (CITI). If the designated person has already completed this training, she or he can send an existing copy of the completion certificate. If the person does not have a current certificate of completion, she or he must take the free, 2-hour online course from the NIH, accessible at <https://phrp.nihtraining.com/users/login.php>. Completion certificates must be sent to Sarah Pfeifle at spfeifle@mos.org at least one week prior to your forum.
- **Attending the Building with Biology public evaluation webinar:** The Building with Biology Evaluation Team will host an online webinar about this evaluation. While we hope the data collector will attend this webinar live, we understand that scheduling can be a challenge. If the data collector is unable to attend, we ask that she or he watch the recording of the webinar and speak with his or her Evaluation Team contact. The webinar will be **Tuesday, June 14 at 1:00-2:00 ET**. To learn more and register for the webinar, visit: <http://www.surveygizmo.com/s3/2736656/Evaluating-the-Public-s-Experience-at-Building-with-Biology-Events>
- **Watching the Building with Biology evaluation video:** The Building with Biology Evaluation Team is producing a short video that summarizes data collection practices. In addition to attending the webinar, the data collector should watch this brief video. A link to the video will be emailed to you, and it will be available on www.buildingwithbiology.org/project-evaluation.
- **Collecting data at the event:** This document provides additional detail about data collection, which will consist of a passport activity and collecting paper surveys from visitors at the end of their Building with Biology experience. The person collecting data should be able to devote complete attention to the evaluation for the duration of the event. If your site is hosting multiple events, you only need to collect data on one day.
- **Mailing the collected data to the Evaluation Team:** After the event, the data collector will need to send all data to the Building with Biology Evaluation Team so the Team can analyze and report on the data. First, the data collector should scan or take a picture of: (1) paper surveys and (2) responses on your graffiti board. Digital files should be sent to Sarah Pfeifle at spfeifle@mos.org. Then, the data collector should place the surveys and worksheets in the addressed, pre-paid mailing envelope included in your evaluation materials and ship the envelope to the Museum of Science at the following address:

Sarah Pfeifle
Research & Evaluation Department
Museum of Science, Boston
1 Science Park
Boston, MA 02114

If it is not feasible for all of these items to be completed by the same person, please speak with your Evaluation Team contact. It may be possible to share roles in a different way. The Evaluation Team will need a human subjects training certificate for all people collecting data.

Support from the Building with Biology Evaluation Team

Each site will have a designated contact from the Building with Biology Evaluation Team who will provide assistance throughout this evaluation. At this point, you should have received an email identifying your Evaluation Team contact. Please feel free to reach out to this person with any questions you have about the evaluation. Evaluation contacts include:

Elizabeth Kollmann
ekollmann@mos.org
617-589-0467

Sarah Pfeifle
spfeifle@mos.org
617-589-0202

Katie Todd
ktodd@mos.org
617-589-4235

Gretchen Haupt
ghaupt@smm.org
651-312-1757

You may also contact Elizabeth Kollmann, the Evaluation Team leader, should you have any issues or concerns with the evaluation study.

Materials

This evaluation depends on your use of specific supplies. Some of these supplies are included in your main Building with Biology kit. Others are in a separate box of evaluation materials. We also ask that you gather some pens and pencils at your site that visitors can use to fill out their surveys. The full list of materials you will need for the evaluation is printed below.

From your Building with Biology kit:

- 100 Event Passports (You can print additional copies at: <http://bit.ly/BwBPassport>)
- Marker stamps – 1 for each station
- “I’m a scientist” stickers
- Temporary tattoos
- Graffiti board
- Graffiti board sign stand (NOTE: you will replace the sign from your kit with a new one we provide in the evaluation box)

From your evaluation box:

- 20 *Building with Biology Surveys* (You may print more at: <http://bit.ly/BwBsurvey>)
- *Evaluation Surveys Envelope* for completed surveys
- Passport Station sign and sign stand
- Graffiti board sign (place this in the stand from your kit, replacing the sign from your kit)
- 25 *Evaluation Information* cards
- Pre-paid mailing envelope addressed to the Museum of Science

For you to gather at your site:

- Pens or pencils for survey completion
- Clipboards (optional)

NOTE: We provide 20 surveys in your evaluation box, and we hope you will be able to get 20 visitors to complete them. You are welcome to print more surveys from <http://bit.ly/BwBsurvey> if you would like. This would provide your site with more data for your individualized report, which will help you better understand your visitors' experiences. However, collecting more than 20 surveys is optional.

NOTE: Your evaluation kit includes a sign to go with your graffiti board. This sign has consent language on it to let your visitors know that you will be collecting their responses. You will need to use this sign rather than the sign included in your Building with Biology kit, which does not have consent language printed on it.

About the passports

This evaluation depends on your use of a passport activity that is included in your Building with Biology kit. The passport activity provides structure for the evaluation: once visitors complete the activity, they return to the Passport Station where they got their passports to fill out a paper survey (if they are adults) and receive a small giveaway (the temporary tattoos).

The Building with Biology passports are designed to encourage visitors to engage with the hands-on activities and talk with your volunteers. Visitors are encouraged to collect as many stamps as they can by asking activity facilitators to stamp their passports each time the visitors complete one of four actions:

1. **Talk to a scientist** about synthetic biology
2. **Share your ideas** about synthetic biology on the graffiti board (*Note: please use the graffiti board in your kit and make sure you have a volunteer at that station!*)
3. Find a volunteer and **ask a question** about synthetic biology
4. Talk to a volunteer about what you **like and don't like** about synthetic biology

NOTE: The passport does not include language prompting visitors to return at the end of their experience, so it is crucial that the person introducing and distributing the passports tells the visitors to come back when they are finished in order to fill out the survey (for adults only) and receive a temporary tattoo. The *Passport Introduction Script*, below, is for this purpose.

Your Building with Biology kit includes 100 passports. If you would like additional passports, they can be printed from the following link: <http://bit.ly/BwBPassport>

The passports in your kit are un-folded. To create a nice booklet, the sheets need to be folded top to bottom and then left to right so the stamp pages are inside. You can either do this ahead of your event or ask your visitors to do it themselves when they pick up their passports.

Preparing for your event

To make your evaluation run smoothly, it is important to prepare your volunteers for the passport activity and set up your materials before visitors arrive. The following sections guide these preparations.

Volunteer orientation

At your volunteer orientation, you will need to tell volunteers about the passports and prepare them to stamp visitors' passports. We recommend having sample passports and markers on hand to show the volunteers during the orientation. A PowerPoint presentation slide about the passports is included in the orientation PowerPoint provided in your kit.

Each volunteer will need to be prepared to stamp visitors' passports if:

- Visitors **ask a question** about synthetic biology
- Visitors tell the volunteer what they **like and don't like** about synthetic biology

Let volunteers who are scientists know that they will be asked to wear "I'm a scientist" stickers at the event. These volunteers should be ready to stamp passports if:

- Visitors **talk to the scientist** volunteer about synthetic biology

Make sure the graffiti board will be facilitated during the event, as this activity is included in the passport. The volunteer(s) at the graffiti board will need to stamp passports if:

- Visitors **share their ideas** about synthetic biology on the graffiti board

If you have staff members or other people facilitating activities who will not be attending your Building with Biology orientation, make sure to train them about how to stamp passports.

Setup at the event

Prepare for your data collection by setting up your space with all the materials you will need. Before your visitors arrive, make sure every activity station has a stamp marker, and make sure every volunteer or staff facilitator knows to stamp visitors' passports. Give "I'm a scientist" stickers to scientists who are facilitating activities and ask them to wear the stickers visibly. While we do not require you to use all of the activities in the Building with Biology kit, make sure to use the graffiti board, and ensure that the activity will be facilitated by a volunteer who is trained to stamp passports for visitors who complete the activity. **The graffiti board is connected to the passport, and collecting visitors' responses from the graffiti board is part of this evaluation.**

When setting up the graffiti board, make sure you have both the poster and the sign stand. **You will need to replace the graffiti board sign that came with your Building with Biology kit. Please use the sign that was included in your evaluation box, instead of the one from your kit.** The version of the sign in your evaluation box includes consent language to tell your visitors that their responses will be collected.

To set up the Passport Station, find a location where you can offer passports to visitors as they enter the Building with Biology space and where they can return to fill out a survey and get their takeaway. Display the Passport Station sign visibly using the sign stand in your evaluation box. Make sure the Passport Station has your passports at it. We recommend folding the passports ahead of time so they are ready for use. Alternatively, your visitors can fold the passports as part of their activity. Ensure that your Passport Station has *Building with Biology Surveys*, pens or pencils, the *Evaluation Surveys Envelope* that you will use to store completed surveys, *Evaluation Information* cards that you can give to visitors who have questions about the evaluation, and the temporary tattoos from your kit that you can use as take-away prizes for visitors. If you have clipboards, you can have visitors use them to fill out their surveys.

The Passport Station

You will need to set up a Passport Station at your event where you will distribute passports and collect surveys. The ideal location for the Passport Station would be near both the entrance and exit of the Building with Biology area. We recognize that not all sites are set up such that this is possible, but we hope you will do your best to find a location where visitors will receive their passports at the beginning of their experience and have a flowing path by which they return to complete a survey. Please feel free to discuss your setup with your Evaluation Team contact.

Data collection using the passport activity

Distributing passports

As people arrive at the event, use the *Passport Introduction Script* (see below) to introduce visitors to the activity. This Script encourages visitors to return to the Passport Station when they are done in order to complete a survey (if the visitor is an adult) and receive a temporary tattoo. Note that all adult visitors should be invited to fill out a survey at the end of their experience, whether or not they use a passport. Visitors of all ages can receive passports, and multiple people in one group can receive passports. If you are able to have multiple people at your Passport Station, the person distributing passports does not need to be the data collector who has completed human subjects training. **Note: Please record the time you start and stop distributing passports, and the total number of passports you distribute.** Your Building with Biology report will ask you to provide this information.

Collecting data at the Passport Station

When visitors return to the Passport Station at the end of their Building with Biology experience, the evaluation data collector should use the *Survey Informed Consent Script* (see below) to invite all adult visitors to complete the survey. When visitors consent to complete the survey, hand them a survey and a pen or pencil. If you have them, you can have your survey on a clipboard. Give the visitor space to complete the survey. When the visitor is finished, the data collector should thank the participant, check and collect the survey, and offer temporary tattoos to all group members. Visitors can take their passports home. After collecting the survey, the data collector should fill in the survey header with his or her initials, the site name,

the survey number (i.e., if you collect 20 surveys, number the surveys 1 to 20), and the time. Completed surveys should be placed in the *Evaluation Surveys Envelope* in your evaluation box, and the Envelope should be kept out of visitors' reach.

NOTE: It is important to invite all adult visitors to complete a survey, whether or not they do the passport activity. This will make your data more representative of your full audience.

Passport Introduction Script

Welcome to Building with Biology! This event is one of nearly 200 events across the country where you can try some activities and talk with scientists about the emerging field of synthetic biology. We have a passport activity that helps to guide your experience. You can use your passport to collect stamps for doing the different activities and talking to the scientists and volunteers. Would you like a passport today?

[If yes]: Great, thanks! Here you go. [*Distribute passport*] When you're done, if you come back to this station we would love your feedback about the event on a brief survey. We also have some fun prizes for you.

[If no]: No problem. I hope you enjoy the activities! When you're done, if you come back to this station, we would love your feedback about the event on a brief survey. We also have some fun prizes for you.

Survey Informed Consent Script

Thanks for participating in the event today! Here's the survey I was telling you about earlier. Will you spend a few minutes to give us feedback about the event so we can improve our future programs?

[If yes] Thank you!

[If no] Have a great day!

After the event

Once the event is over, the data collector should scan or take clear photographs of both sides of the surveys and the graffiti board responses that he or she collected. Send these digital files to Sarah Pfeifle at spfeifle@mos.org. Then, place all these materials in the addressed, pre-paid mailing envelope included in your evaluation materials and mail the envelope to:

Sarah Pfeifle
Research & Evaluation Department
Museum of Science, Boston
1 Science Park
Boston, MA 02114

The Evaluation Team will then enter your data, analyze it, and provide you with an individualized report sometime this fall or winter.

Building with Biology Public Evaluation Overview

Before the date of the event:

- Identify one data collector for the evaluation.
- Send the data collector's human subjects training completion certificate to spfeifle@mos.org at least **one week before your event**.
- Have the data collector attend the evaluation webinar on **Tuesday, June 14 from 1:00-2:00 ET**, or watch the recorded webinar and call/email your Evaluation Team contact.
- Have the data collector read this document thoroughly.
- Fold your passports (or decide that you will have your visitors fold them).

At your volunteer orientation:

- Tell volunteers about stamping passports at the event.
- Identify and train at least one person to facilitate the graffiti board.

Setup for your event:

- Set up each activity station with a stamp marker.
- Make sure all volunteers know about stamping passports.
- Give "I'm a scientist" stickers to scientist volunteers and ask them to wear the stickers.
- Set up the graffiti board and the graffiti board sign from your evaluation kit (NOT the sign from your Building with Biology kit).
- Set up the Passport Station near the entrance of the event with:
 - Passports
 - The Passport Station sign in its stand
 - Building with Biology Surveys*
 - Pens or pencils for survey completion
 - The *Evaluation Surveys Envelope* for storing completed surveys
 - Temporary tattoos
 - Evaluation Information cards*

During your event:

- Use Passport Invitation Script (see back of this page) when passing out passports.
- Record what time you start and stop distributing passports.
- Record how many passports you distribute.
- Use Survey Informed Consent Script (see back) to invite adult visitors to complete surveys.
- Collect paper surveys from adult visitors.
- Check for completion and fill in the survey headers when you receive surveys.
- Place completed surveys in the *Evaluation Surveys Envelope*, out of the reach of visitors.
- Offer temporary tattoos to visitors, whether or not they complete a survey.

After the event – within one week of your event:

- Scan or take pictures of surveys and graffiti board responses and send to spfeifle@mos.org.
- Mail data to the Evaluation Team using the envelope in your evaluation box.

Recruitment Scripts

First interaction with visitors: When visitors approach the Passport Station, use the Passport Introduction Script to welcome visitors to the event, offer them a passport, and ask adults to come back to complete a survey when they're done.

Passport Introduction Script: Welcome to Building with Biology! This event is one of nearly 200 events across the country where you can try some activities and talk with scientists about the emerging field of synthetic biology. We have a passport activity that helps to guide your experience. You can use your passport to collect stamps for doing the different activities and talking to the scientists and volunteers. Would you like a passport today?

[If yes]: Great, thanks! Here you go. [Distribute passport] When you're done, if you come back to this station we would love your feedback about the event on a brief survey. We also have some fun prizes for you.

[If no]: No problem. I hope you enjoy the activities! When you're done, if you come back to this station we would love your feedback about the event on a brief survey. We also have some fun prizes for you.

Second interaction with visitors: When visitors return to the Passport Station at the end of their experience, invite all adult visitors (whether or not they used a passport) to complete the survey using the Survey Informed Consent Script. Offer temporary tattoos to all group members who would like them. The receipt of tattoos is NOT dependent on filling out a survey. After collecting a survey, fill in the header and store the survey in the *Evaluation Surveys Envelope*.

Survey Informed Consent Script: Thanks for participating in the event today! Here's the survey I was telling you about earlier. Will you spend a few minutes to give us feedback about the event so we can improve our future programs?

[If yes] Thank you!

[If no] Have a great day!

Consent signs: Please be sure to display the Passport Station sign at your table where you are collecting surveys, and the graffiti board sign at your graffiti board station. These signs include human subject protection and consent language that is required by this project's Institutional Review Board.

