

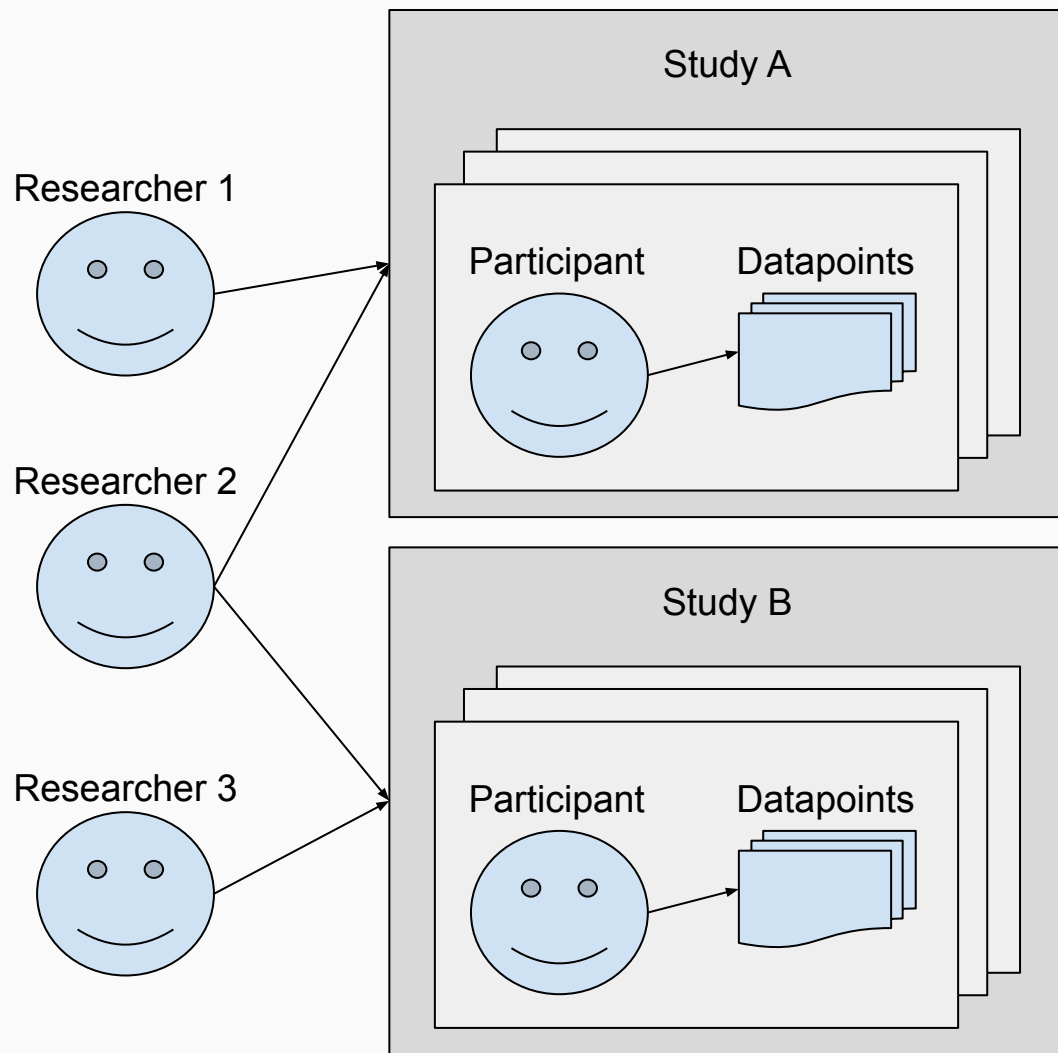
# Building and Running mHealth Studies With LS2

# What is LS2?

- LS2 = Lightweight Study Server
- Simple study data repository designed to collect data generated by mHealth apps
- Developer friendly partial-schema data points
- Supports multiple studies per instance

# LS2 Data Model

- Roles:
  - Researchers
  - Participants
- Studies consist of one or more participants and all of their data
- A participant belongs to **ONLY 1** study
- Participants post data points
- Researchers are assigned access to studies
- Researchers can access any data posted by participants in a study they have access to



# Datapoint Structure

- Based on OMH standard datapoint
- Consists of Header and Body
- Header is mostly structured
  - Datapoint ID
  - Participant ID
  - Schema
  - Acquisition provenance
- Header also has an optional unstructured metadata field
- Body is unstructured
- Both body and metadata are stored encrypted in the database

```
{
  "header": {
    "participant_id": "e0a1eb0f-bb34-4ddd-b4c3-06a8d03edad8",
    "id": "917390bc-5792-49b9-b350-905fa4def4fb",
    "creation_date_time": "2018-03-29T21:49:03.316009Z",
    "schema_id": {
      "namespace": "com.curiosityhealth.DemoApp",
      "name": "injuryAssessmentBaseline",
      "version": "1.0.0"
    },
    "acquisition_provenance": {
      "source_name": "DemoApp-Staging/1.0
(com.curiosityhealth.DemoApp.staging; build:2; iOS 11.2.5)",
      "modality": "self-reported",
      "source_creation_date_time": "2018-03-29T21:49:03Z"
    }
  },
  "body": {
    "neck_discomfort": 6,
    "shoulder_discomfort": 0,
    "back_discomfort": 0,
    "related_to_work": [
      "unknown"
    ]
  }
}
```

# What LS2 is NOT

- Survey / App creation tool
- Data fusion tool
- Data analysis tool

# How does it compare with Ohmage-OMH?

- Much simpler system design, so easier to deploy and maintain
- No survey design functionality (and no companion app)
- Data points viewed or dumped in JSON
- No media storage

# How do Researchers interact with LS2?

- Researchers log in to web portal to:
  - Create study participant accounts
  - Monitor participant activity
  - Dump data for offline analysis

# How do Participants interact with LS2?

- Participants install RSuite-based mHealth app:
  - Sign in using participant account created by researcher
  - mHealth app generates data and transmits data to LS2



# LS2 System Architecture

