FINAL PROJECT: Data Model and API Spec

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OSU CS 493 FALL 2020: Cloud Application Development

URL Where Application is Deployed on GCP:

URL for Account Creation/Login

- To Log in/Sign up:
  - Steps to sign up(create credentials):
  - Steps to log in:
- To Logout:
  - Steps to log out (do this to create another account):

DATA MODEL

- Description of Relationships

API SPEC - USER: SCIENTIST

API SPEC - LABORATORY (NON-USER)

- Create a Laboratory
- View All Labs
- View a Lab
- Update a Laboratory (PUT)
- Update a Laboratory (PATCH)
- Delete a Laboratory

API SPEC - AGENT (NON-USER)

- Create an Agent
- View All Agents
- View an Agent
- Update an Agent(PUT)
- Update an Agent(PATCH)
- Delete an Agent

API SPEC - RELATIONSHIP UPDATES

- Update an Lab/Agent Relationship (PUT)
- Delete a Lab/Agent Relationship

API SPEC - UNALLOWED ROUTES

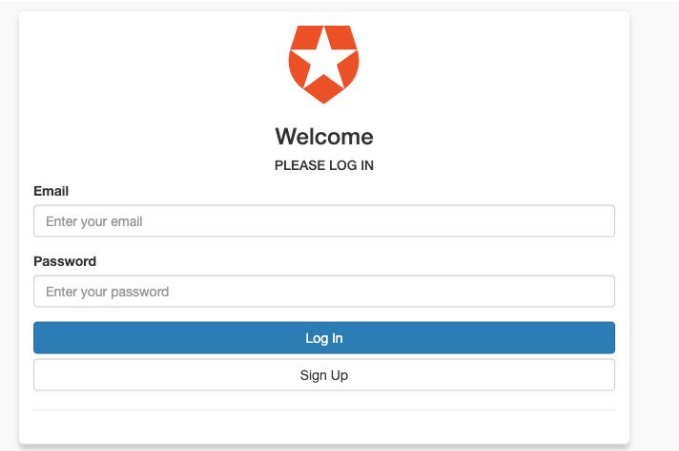
URL Where Application is Deployed on GCP:

https://brutonc-portfolio-project.wn.r.appspot.com

URL for Account Creation/Login

(cut/paste this into browser window)
https://brutonc-login-site.wn.r.appspot.com/login

To Log in/Sign up:



Steps to sign up(create credentials):

1. Enter email address and password
2. Hit the “SIGN UP” button

Steps to log in:

1. Logout first to get a fresh start (if needed)
2. Enter email address and password
3. Hit the “LOG IN” button
4. See below highlighted “sub” content for unique id and “id_token” for JWT

Logged in{"user":{"nickname":"gretchen","name":"gretchen@rhoc.com","picture":"https://s.gravatar.com/avatar/a9545b
s=480&r=pg&d=https%3A%2F%2Fcdn.auth0.com%2Favatars%2Fgr.png","updated_at":"2020-11-
28T03:03:24.769Z","sub":"auth0|5fc184bf118d0f006fa0dbae"},"id_token":"eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCIsI
0Z3qIxCythu5G_bxkoBez7WAl-BtrUVPWyu5oQlbGgRTiuYCyB_Qe3mKCvoF6SW_5fjDZMA9_2URz6ISqSvv--EFtC
E88IKSoSUM1K5s_uBVmwpV_DODW5tU3twjmO_Jhrc97fQ2MMdBZqlEdhKIWGDYEY7toe7z5Y0CbGOkONfdPW
Io7KzvdvpwvwvlahSu_2eb8GzvQ_TCFtWYSVcPabCc_RulqM15j-wlDtFESwOKx1DP0pXo_mmDtIYTQXsJuTcbooB

Logged in{"user":{"nickname":"gretchen","name":"gretchen@rhoc.com","picture":"https://s.gravatar.c
s=480&r=pg&d=https%3A%2F%2Fcdn.auth0.com%2Favatars%2Fgr.png","updated_at":"2020-11-
28T03:03:24.769Z","sub":"auth0|5fc184bf118d0f006fa0dbae"},"id_token":"eyJhbGciOiJSUzI1NiIsInR
0Z3qIxCythu5G_bxkoBez7WAl-BtrUVPWyu5oQlbGgRTiuYCyB_Qe3mKCvoF6SW_5fjDZMA9_2U
E88IKSoSUM1K5s_uBVmwpV_DODW5tU3twjmO_Jhrc97fQ2MMdBZqlEdhKIWGDYEY7toe7z5Y
Io7KzvdvpwvwvlahSu_2eb8GzvQ_TCFtWYSVcPabCc_RulqM15j-wlDtFESwOKx1DP0pXo_mmDtI

To Logout:

https://brutonc-login-site.wn.r.appspot.com/logout

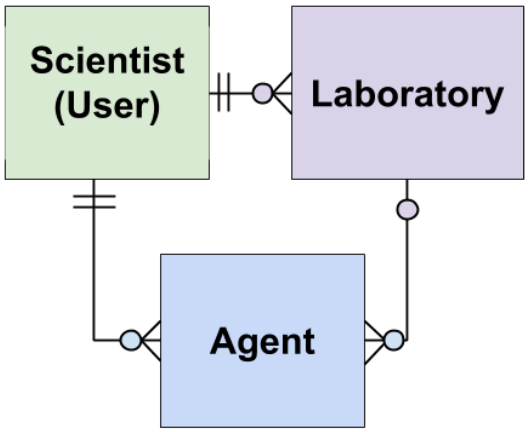
Steps to log out (do this to create another account):

1. After you are logged in, add the “logout” route above.
2. You will see the “Logged out” message.
3. You can now login using created credential or sign up by using the “Login” route again.

DATA MODEL

Description of Relationships

ERD



PROJECT DESCRIPTION

This API is an abstraction of a network of Scientists that own laboratories and biological agents that can be stored in labs.

- The User Entity in this API is ***Scientist***.
- One Scientist can own many Laboratories (labs) and many Biological Agents (agents).
- Each agent entity can only be in one lab but labs can hold many agents.
- Labs and agents are protected resources and must have an owner scientist. This is assigned from auth JWT.
- Agents don't need to be stored in a lab but they can be.

NON-USER ENTITIES

LABORATORY [Protected]

Name	Type	Description	Required?
name	String	The name of the laboratory. (Unique)	Yes
containment_level	String	Must be one of the following: BSL1 | BSL2 | BSL3 | BSL4	Yes
square_footage	Integer	Square footage of the Laboratory.	Yes
stored_agents	String	Ids of Stored Agent Entity (array)	No

AGENT [Protected]			
Name	**Type**	**Description**	**Required?**
name	String	The name of the agent.	Yes
risk_group_level	String	Must be one of the following: RG1 | RG2 | RG3 | RG4	Yes
type_of_agent	String	Type of agent; ex “bacteria, virus”	Yes
home_lab	String	Id of the lab holding agent	No

USER ENTITY: SCIENTIST [not Protected]

Unique identifier for a user in the data model: auth0 value in user.sub returned from the login/signup site (see example below). I**f a request needs to supply a user identifier, this "*sub*" value needs to be supplied.**

Logged in{"user":{"nickname":"gretchen","name":"gretchen@rhoc.com","picture":"https://s.gravatar.com/avatar/a9545b
s=480&r=pg&d=https%3A%2F%2Fcdn.auth0.com%2Favatars%2Fgr.png","updated_at":"2020-11-
28T03:03:24.769Z","sub":"auth0|5fc184bf118d0f006fa0dbae"},"id_token":"eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCIsI
0Z3qIxCythu5G_bxkoBez7WAl-BtrUVPWyu5oQlbGgRTiuYCyB_Qe3mKCvoF6SW_5fjDZMA9_2URz6ISqSvv--EFtC
E88IKSoSUM1K5s_uBVmwpV_DODW5tU3twjmO_Jhrc97fQ2MMdBZqlEdhKIWGDYEY7toe7z5Y0CbGOkONfdPW
Io7KzvdvpwvwvlahSu_2eb8GzvQ_TCFtWYSVcPabCc_RulqM15j-wlDtFESwOKx1DP0pXo_mmDtIYTQXsJuTcbooB

If a request needs to supply authentication, the "*id_token*" value needs to be specified by the person making the request

Logged in{"user":{"nickname":"gretchen","name":"gretchen@rhoc.com","picture":"https://s.gravatar.c
s=480&r=pg&d=https%3A%2F%2Fcdn.auth0.com%2Favatars%2Fgr.png","updated_at":"2020-11-
28T03:03:24.769Z","sub":"auth0|5fc184bf118d0f006fa0dbae"},"id_token":"eyJhbGciOiJSUzI1NiIsInR
0Z3qIxCythu5G_bxkoBez7WAl-BtrUVPWyu5oQlbGgRTiuYCyB_Qe3mKCvoF6SW_5fjDZMA9_2U
E88IKSoSUM1K5s_uBVmwpV_DODW5tU3twjmO_Jhrc97fQ2MMdBZqlEdhKIWGDYEY7toe7z5Y
Io7KzvdvpwvwvlahSu_2eb8GzvQ_TCFtWYSVcPabCc_RulqM15j-wlDtFESwOKx1DP0pXo_mmDtI

How the application maps a supplied JWT to the identifier of a user:

In my application, the express-JWT middleware extracts the JWT from the Authorization header as an OAuth2 Bearer token and makes the user id available to in req.user.sub. This value is used as the identifier of the Scientist, who is the owner of the lab. When a lab or agent is posted, the user/scientist will become the owner automatically and will be added to the list of scientists if not already added.

What is the relationship between the user entity and non-user entity?

The user entity in my app is the "Scientist" who can own a laboratory and/or an agent. The data model section above describes the relationships in detail.

API SPEC - USER: SCIENTIST

View All Scientists

Allows viewing of all users.

GET /scientists

Request

Path Parameters	Request Body	Request Body Format	Accept Headers	Authentification
None	None	None	N/A	Not required

Response

Response Body Format	JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	

Success

```
status : 200 Ok
{
  "all_scientists": [
    {
      "id": "auth0|5fc6e24c02570c006e9b1b93",
      "name": "bethany@rhony.com"
    },
    {
      "name": "gretchen@rhoc.com",
      "id": "auth0|5fc184bf118d0f006fa0dbae"
    },
    {
      "name": "tamra@rhoc.com",
      "id": "auth0|5fc17bc71a75500076048928"
    },
    {
```

```
        "id": "auth0|5fc17da4118d0f006fa0db34",
        "name": "jeana@rhoc.com"
      },
      {
        "name": "slade@rhoc.com",
        "id": "auth0|5fc1bab71bda000075e1e3fc"
      }
    ],
    "total_items": 13,
    "next":
"http://localhost:8080/scientists?cursor=Cj0SN2odendufmJydXRvbmMtcG9ydGZvbGlvLXByb
2plY3RyFgsSCVNjaWVudGlzdBiAgICY5pyICgwYACAA"
}
```


Failure (trying to delete on this route)

Status: 405 Method Not Allowed

API SPEC - LABORATORY (NON-USER)

Create a Laboratory

Allows the User to Create a New Laboratory.

POST/labs

Request

Path Parameters	Request Body	Request Body Format	Authentication
None	Required	JSON	Valid JWT token required

Request JSON Attributes

Name	Type	Description	Required?
Name	String	The name of the laboratory.	Yes
Containment Level	String	Must be one of the following: BSL1 | BSL2 | BSL3 | BSL4	Yes
Square Footage	Integer	Square footage of the Laboratory.	Yes
Stored Agents	String	Id of Agent Entity	No

Request Body Example

```
{
        "name":"Jos's Lab",
         "containment_level":"BSL2",
         "stored_agents": [],
         "square_footage":5000

}
```

Response

Response Body Format	JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	- If the request is missing any of the 3 required attributes, the lab must not be created, and 400 status code must be returned. - The request square footage must be a number. - The containment level must be one of the 4 types above: (see JSON Attributes).
Failure	401 Unauthorized	For expired or missing JWT.
Failure	403 Forbidden	For violations of the uniqueness constraint. Name of the posted boat must be unique. User tries to access a resource that is not theirs.

Notes

- Datastore will automatically generate an ID and store it with the entity being created.
- Lab Owner ID will be obtained from JWT token in the authentication field if it exists.
- The user id provided will be added to the “lab_owner” field
- The self attribute will contain the live link to the REST resource corresponding to this entity. In other words, this is the URL to get this newly created lab.

Response Examples

Success

status : 201 Created
{
“Id”: “5694034018304000”,
“Name”: “California Bio Lab”,
“containment level”: “BSL2”,
“square footage”: 1000,
“lab_owner”: “auth0|12344566”,
“self”: “http://localhost:8080/labs/5694034018304000”}

Failure

Status: 400 Bad Request
{“Error”: “The request does not meet the requirements”}

Status: 401 Unauthorized {Error":"Missing or invalid JWT}
Status: 403 Forbidden {"Error":"Name of lab must be unique”} {"Error":"Forbidden"}

View All Labs

Allows viewing of labs. Authenticated users can view their labs.

GET /labs

Request

Path Parameters	Request Body	Request Body Format	Accept Headers	Authentification
None	None	None	Application/json	JWT Token **Required** for viewing “owned” labs.

Response

Response Body Format	JSON
Pagination?	5 items at a time

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	Missing or invalid JWT
Failure	406 Not Acceptable	Use this when the user requests a content type not supported by the endpoint

Success

```
status : 200 OK
{
  "labs": [
    {
      "stored_agents": [],
      "owner": "auth0|5fc1bab71bda000075e1e3fc",
      "square_footage": 5000,
      "name": "Jos's Lab",
      "containment_level": "BSL2",
      "id": "4809715754205184"
```

```
    },
    {
        "name": "B Lab",
        "owner": "auth0|5fc1bab71bda000075e1e3fc",
        "square_footage": 5000,
        "containment_level": "BSL2",
        "stored_agents": [],
        "id": "5071950955151360"
    },

    {
        "square_footage": 5000,
        "containment_level": "BSL2",
        "stored_agents": [],
        "owner": "auth0|5fc1bab71bda000075e1e3fc",
        "name": "A Lab",
        "id": "5099842204336128"
    },
    {
        "name": "C Lab",
        "stored_agents": [],
        "owner": "auth0|5fc1bab71bda000075e1e3fc",
        "square_footage": 5000,
        "containment_level": "BSL2",
        "id": "5693215759925248"
    }
  ],
  "total_items": 7,
  "next":
"http://localhost:8080/labs?cursor=CjcSMWodendufmJydXRvbmMtcG9ydGZvbGlvLXByb2plY
3RyEAsSA0xhYhiAgIC4sb6OCgwYACAA"
}
```


Failure

Status: 401 Unauthorized


```
{
        Error":"Missing or invalid JWT”
}
```


Status: 406 Not Acceptable (when the client requests a content type not supported by the endpoint)


```
{   "Error":  "Content type not offered "}
```

View a Lab

Allows viewing of a lab. Authenticated users can view their owned labs.

GET /labs/:lab_id

Request

Path Parameters	Request Body	Request Body Format	Accept Headers	Authentification
lab_id	None	None	Application/json	JWT Token **Required** for viewing “owned” labs.

Response

Response Body Format	JSON
Pagination?	N/A

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	When bad JWT is used
Failure	403 Forbidden	When user tries to access other user’s entity.
Failure	406 Not Acceptable	Use this when the user requests a content type not supported by the endpoint

Success

```
status : 200 OK
{
        "id": "4809715754205184",
        "name": "Jos's Lab",
        "containment_level": "BSL2",
        "square_footage": 5000,
        "stored_agents": [],
        "owner": "auth0|5fc1bab71bda000075e1e3fc",
        "self": "http://localhost:8080/labs/undefined"
}
```

Failure

Status: 401 Unauthorized
{
Error":"Missing or invalid JWT
}

Status: 403 Forbidden {"Error": "Forbidden"}
Status: 406 Not Acceptable (when the client requests a content type not supported by the endpoint) { "Error": "Content type not offered"}

Update a Laboratory (PUT)

Allows the User to Update a Laboratory

PUT /labs/:lab_id

Request

Path Parameters	Request Body	Request Body Format	Authentification
lab_id	String	Updated Body	JWT Token Required if “owned” is True

Request JSON Attributes

Name	Type	Description	Required?
Name	String	The name of the laboratory.	Yes
Containment Level	String	Must be one of the following: BSL1 | BSL2 | BSL3 | BSL4	Yes
Stored agents	Array of strings	Id’s of agents that have been PUT into the lab.	Yes *will not actually update this section
Square Footage	Integer	Square footage of the Laboratory.	Yes

Notes:

- Stored_agents needs to be included, but will do nothing (this field can only be changed in the “Update relationship” route).

Request Body Example

```
{
  "name":"Slade's updated Lab",
  "containment_level":"BSL1",
  "stored_agents": [],
  "square_footage":1000

}
```

Response

Response Body Format	JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	400 Bad Request	If the request is missing any of the required attributes, the entity must not be updated, and 400 status code must be returned.
Failure	401 Unauthorized	Missing or invalid JWT
Failure	403 Forbidden	For missing or invalid JWT.

Success

Status : 204 No Content

Failure

Status: 400 Bad Request {“Error”: “The request does not meet the requirements”}
Status: 401 Unauthorized {"Error": "Missing or invalid JWT"}
Status: 403 Forbidden {"Error": "Forbidden"}

Update a Laboratory (PATCH)

Allows the User (scientist) to Update a Laboratory

PATCH /labs/:lab_id

Request

Path Parameters	Request Body	Request Body Format	Authentification
lab_id	String	Updated Body	JWT Token Required if “owned” is True

Request JSON Attributes

Name	Type	Description	Required?
Name	String	The name of the laboratory.	No
Containment Level	String	Must be one of the following: BSL1 | BSL2 | BSL3 | BSL4	No
Square Footage	Integer	Square footage of the Laboratory.	No
Agent	String	Id of Agent Entity	No

Request Body Example

```
{  "name":"Updated Gretchen's Lab",
   "containment_level":"BSL2",
   "Square_footage":5000 }
```

Response

Response Body Format	JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	

Failure	400 Bad Request	The request must contain 3 or fewer parameters of only the following: “name”, “containment level”, “square footage” NOT:stored_agents, id or owner. stored_agents can only be modified in the PUT relationship route.
Failure	401 Unauthorized	For missing or invalid JWT.
Failure	403 Forbidden	For missing or invalid JWT.

Success

Status : 204 No Content

Failure

Status: 400 Bad Request
{
“Error”: “The request does not meet the requirements”
}

Status: 401 Unauthorized
{
"Error": "Unauthorized"
}

Status: 403 Forbidden
{
"Error":"Missing or invalid JWT"
}

Delete a Laboratory

Allows the User to Delete a Laboratory

DELETE /lab/:lab_id

Request

Path Parameters			**Request Body**	**Request Body Format**	**Authentication**
Name	**Type**	**Description**	**None**	**None**	**JWT Token Required for Owned Lab**
lab_id	String	ID of the lab			

Note: This will not delete a relationship, you have to delete the relationship first and then delete the item.

Response

Response Body Format	**Success:** None **Failure:** JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	401 Unauthorized	If a user (scientist) does not have a valid JWT.
Failure	403 Forbidden	
Failure	502 Bad Gateway	If the id is invalid

Success

Status: 204 No Content

Failure

Status: 401 Unauthorized
{
Error":"Missing or invalid JWT
}

Status: 403 Forbidden
{
"Error":"Missing or invalid JWT"
}

Status: 502 Bad Gateway
{
"Error": "Invalid request"
}

API SPEC - AGENT (NON-USER)

Create an Agent

Allows the User to Create a New Agent.

POST/Agent

Request

Path Parameters	Request Body	Request Body Format	Authentification
None	String	JSON	Protected: JWT Token Required. ID will be mapped to agent_owner field.

Request JSON Attributes

Name	Type	Description	Required?
Name	String	The name of the agent.	Yes
Risk Group Level	String	Must be one of the following: RG1 | RG2 | RG3 | RG4	Yes
Type of agent	String	Type of agent; ex “bacteria, virus”	Yes
Home Lab	String	Id of the lab holding this agent. This is posted as null when the agent is created and can be updated with the PUT/PATCH routes	No

Request Body Example

```
{
        {
                "name": "SARS CoV-2 virus",
                "home_lab": {
                    "id": null
                },
                "risk_group": "RG3",
                "type": "virus"
```

```
        }

}
```

Response

Response Body Format	JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	If the request is missing any of the 4 required attributes, the boat must not be added, and 400 status code must be returned.
Failure	401 Unauthorized	Missing or invalid JWT.
Failure	403 Forbidden	User tries to access a resource that is not theirs.

Notes

- Datastore will automatically generate an ID and store it with the entity being created.
- Agent Owner ID will be obtained from JWT token in the authentication field if it exists.
- The scientist id provided will be added to the “owner” field.
- The self attribute will contain the live link to the REST resource corresponding to this agent. In other words, this is the URL to get this newly created agent.

Response Examples

Success

```
status : 201 Created
{
  "id": "5169050636255232",
  "name": "E",
  "risk_group": "RG3",
  "type": "virus",
  "owner": "auth0|5fc1bab71bda000075e1e3fc",
  "home_lab": {
     "id": null
  },
  "self": "http://localhost:8080/agents/5169050636255232"
```

}

Failure

Status: 400 Bad Request {“Error”: “The request does not meet the requirements”}
Status: 401 Unauthorized {Error":"Missing or invalid JWT}
Status: 403 Forbidden {"Error":"Forbidden"}

View All Agents

Allows viewing of Agents. Authenticated users can view their lab's agents.

GET /agents

Request

Path Parameters	Request Body	Request Body Format	Accept Headers	Authentification
None	None	None	Application/json	JWT Token **Required** for viewing "owned" lab agents.

Response

Response Body Format	JSON
Pagination?	5 items at a time

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	Missing or invalid JWT
Failure	406 Not Acceptable	Use this when the user requests a content type not supported by the endpoint

Success

status : 200 OK


```
{
  "agents": [
    {
      "risk_group": "RG3",
      "name": "CMV ",
      "owner": "auth0|5fc1bab71bda000075e1e3fc",
      "type": "virus",
      "home_lab": {
        "id": null
      },
```

```
        "id": "4766698099965952"
      },
      {
        "name": "rabies ",
        "type": "virus",
        "risk_group": "RG3",
        "home_lab": {
          "id": null
        },
        "owner": "auth0|5fc1bab71bda000075e1e3fc",
        "id": "4855803571863552"
      },
      {
        "type": "virus",
        "name": "sendai ",
        "owner": "auth0|5fc1bab71bda000075e1e3fc",
        "home_lab": {
          "id": null
        },
        "risk_group": "RG3",
        "id": "4869261918994432"
      },
      {
        "name": "Jalepeno juice",
        "home_lab": {
          "id": null
        },
        "owner": "auth0|5fc1bab71bda000075e1e3fc",
        "risk_group": "RG3",
        "type": "virus",
        "id": "5109454609580032"
      },
      {
        "owner": "auth0|5fc1bab71bda000075e1e3fc",
        "type": "virus",
        "risk_group": "RG3",
        "home_lab": {
          "id": null
        },
        "name": "pox ",
        "id": "5152998397313024"
      }
    ],
    "total_items": 12,
    "next":
"http://localhost:8080/agents?cursor=CjkSM2odendufmJydXRvbmMtcG9ydGZvbGlvLXByb2plY3RyEgsSBUFnZW50GICAgPj+05MJDBgAIAA="
}
```

Failure

Status: 401 Unauthorized
{
Error":"Missing or invalid JWT
}

Status: 406 Not Acceptable (when the client requests a content type not supported by the endpoint) { "Error": "Content type not offered "}}

View an Agent

Allows viewing of Agents. Authenticated users can view their owned agents.

GET /agents/:agent_id

Request

Path Parameters	Request Body	Request Body Format	Accept Headers	Authentification
agent_id	None	None	Application/json	JWT Token **Required** for viewing “owned” lab agents.

Response

Response Body Format	JSON
Pagination?	N/A

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	When bad JWT is used
Failure	403 Forbidden	When user tries to access other user’s entity.
Failure	406 Not Acceptable	Use this when the user requests a content type not supported by the endpoint

Success

```
status : 200 OK
{  "name": "rabies ",
   "risk_group": "RG3",
   "type": "virus",
   "owner": "auth0|5fc1bab71bda000075e1e3fc",
   "home_lab": {
       "id": null
   },
   "self": "http://localhost:8080/agents/undefined"
}
```

Failure

Status: 401 Unauthorized
{
Error":"Missing or invalid JWT
}

Status: 403 Forbidden{
"Error": "Forbidden"
}

Status: 406 Not Acceptable (when the client requests a content type not supported by the endpoint) { "Error": "Content type not offered"}

Update an Agent(PUT)

Allows the User to Update a Laboratory

PUT /agents/:agent_id

Request

Path Parameters	Request Body	Request Body Format	Authentification
agent_id	String	Updated Body	JWT Token Required. ID will be mapped to agent_owner field.

Request JSON Attributes

Name	Type	Description	Required?
Name	String	The name of the agent.	Yes
Home_lab	String	Id of the lab holding agent	Yes *will not actually update this section
Risk Group Level	String	Must be one of the following: RG1 | RG2 | RG3 | RG4	Yes
Type of agent	String	Type of agent; ex “bacteria, virus”	Yes

Notes:

- Home_lab needs to be included, but will do nothing (this field can only be changed in the “Update relationship” route).

Request Body Example

```
{
 "name": "Ebola",
 "home_lab": {
     "id": null
 },
 "risk_group": "RG3",
 "type": "virus"
}
```

Response

Response Body Format	JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	400 Bad Request	If the request is missing any of the 4 required attributes, the entity must not be updated, and 400 status code must be returned.
Failure	401 Unauthorized	Missing or invalid JWT
Failure	403 Forbidden	For violations of the uniqueness constraint. Name of the posted entity must be unique.

Success

status : 200 OK

Failure

Status: 400 Bad Request
{
“Error”: “The request does not meet the requirements”
}

Status: 401 Unauthorized
{"Error": "Missing or invalid JWT"}

Status: 403 Forbidden
{"Error": "Forbidden"}

Update an Agent(PATCH)

Allows the User to Update an Agent

PATCH /agents/:agent_id

Request

Path Parameters	Request Body	Request Body Format	Authentification
lab_id,agent_id	Required	Updated Body	JWT Token Required to match owner

Request JSON Attributes

Name	Type	Description	Required?
Name	String	The name of the agent.	Yes
Risk Group Level	String	Must be one of the following: RG1 | RG2 | RG3 | RG4	Yes
Type of agent	String	Type of agent; ex “bacteria, virus”	Yes
Home_lab	String	Id of the lab holding agent	Yes

Request Body Example

```
{ "name": "mad virus",
 "risk_group": "RG3",
 "type": "virus"}
```

Response

Response Body Format	JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	

Failure	400 Bad Request	The request must contain 3 or fewer parameters of only the following: “name”, “risk_group”, “type” NOT: home lab, id or owner. Home_lab can only be modified in the PUT relationship route.
Failure	401 Unauthorized	Missing or invalid JWT
Failure	403 Forbidden	For violations of the uniqueness constraint. Name of the posted boat must be unique.

Success

status : 200 Created

Failure

Status: 400 Bad Request
{
“Error”: “The request does not meet the requirements”
}

Status: 401 Unauthorized
{
"Error": "Unauthorized"
}

Status: 403 Forbidden
{
"Error":"Missing or invalid JWT"
}

Delete an Agent

Allows the User to Delete an agent. This will also remove the agent from any labs.

DELETE /agents/:agent_id

Request

Path Parameters			Request Body	Request Body Format	Authentication
Name	**Type**	**Description**	**None**	**None**	**JWT Token Required for Owned Lab**
agent_id	String	ID of the lab			

Note: This will not delete a relationship, you have to delete the relationship first and then delete the item.

Response

Response Body Format	**Success:** None **Failure:** JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	401 Unauthorized	If a user (scientist) does not have a valid JWT.
Failure	403 Forbidden	
Failure	502 Bad Gateway	If the id is invalid

Success

Status: 204 No Content

Failure

```
Status: 401 Unauthorized
{
        Error":"Missing or invalid JWT
}
```

Status: 403 Forbidden

```
{
        "Error":"Missing or invalid JWT"
}
```

Status: 502 Bad Gateway

```
{
         "Error": "Invalid request"
}
```

API SPEC - RELATIONSHIP UPDATES

Update an Lab/Agent Relationship (PUT)

Allows the User to Update the LAB/AGENT relationship

PUT /labs/:lab_id/agents/:agent_id

Request

Path Parameters	Request Body	Request Body Format	Authentification
Lab_id, agent_id	None	None	JWT Token Required. ID will be mapped to agent_owner field.

Notes:

- This will add an agent to the “stored_agents” array in a lab and “home_lab” to the agent entity. Only one lab can be in the home_lab. Use the delete relationship route to remove.

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	401 Unauthorized	Missing or invalid JWT
Failure	403 Forbidden	User tries to update protected entity.

Success

status : 204 No Content

Failure

Status: 401 Unauthorized
{"Error": "Missing or invalid JWT"}

Status: 403 Forbidden
{"Error": "Forbidden"}

Delete a Lab/Agent Relationship

Allows the User to DELETE the LAB/AGENT relationship

DELETE /labs/:lab_id/agents/:agent_id

Request

Path Parameters	Request Body	Request Body Format	Authentification
Lab_id, agent_id	None	None	JWT Token Required. ID will be mapped to agent_owner field.

Notes:

- This will add an agent to the “stored_agents” array in a lab and “home_lab” to the agent entity. Only one lab can be in the home_lab. Use the delete relationship route to remove.

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	401 Unauthorized	Missing or invalid JWT
Failure	403 Forbidden	User tries to update protected entity.

Success

status : 204 OK

Failure

Status: 401 Unauthorized {"Error": "Missing or invalid JWT"}
Status: 403 Forbidden {"Error": "Forbidden"}

API SPEC - UNALLOWED ROUTES

The following root collection routes will yield an error

DELETE /labs

PUT/labs

PATCH/labs

DELETE /agents

PUT/agents

PATCH/agents

DELETE /scientists

PUT/scientists

PATCH/scientists

Status: 405 Method Not Allowed