



Figure 1. Laboratory unit functions within the academic ecosystem and its members have with individual and community goals / priorities.

In the RockEDU x Rita Allen Foundation collaboration through the Civic Science Associate Project, the core operating principle is that science is a fundamentally human endeavor. To provide full support to academic science thus requires that holistic support be provided to scientists.

Scientific research is conducted within a multi-layered ecosystem, wherein individual laboratories reside at the core of a larger institutional framework, and interface with the public through their research outputs (Figure 1). Laboratory units are typically headed by a single principal investigator and consist of scientists at different training / career / life stages. These scientists each have individual and community needs, goals, and priorities, which we will address and support by building tailored scaffolds.

Our project will target several areas of support for the laboratory. We have preliminarily categorized our scaffolds into 8 focused domains: organization, communication, setting expectations, individual development planning, assessment, diversity / equity / inclusion, citizenship, wellness, and leadership theory (Figure 2). The scaffolds we build within these domains must:

- 1) Have a solid basis in social and civic science principles.
- 2) Be easily accessible, open source, and user-friendly.
- 3) Be dynamic, with clear inroads and mechanisms for modifying and updating content as necessary for the laboratory group.
- 4) Be structured and specific, with flexibility for tailoring to different needs.

To this end, our planned resources are largely practical tools (e.g., rubrics, templates, guides), and will include theoretical knowledge packets where appropriate. We are also exploring and piloting user interfaces, such as the software platform AirTable, which could be suitable for both back- and front-end work. Our goal is to create a system that will equitably recenter resources such that rigorous science is accessible to and inclusive of all groups across career stages, irrespective of their background. Ultimately, we aim to provide support structures that would allow laboratory units to function cohesively, and that would allow individual scientists to bring their whole selves to work, embracing rather than tolerating differences.

Civic Science Associate Project Overview – August 2022

Specific Scaffold Aim	Primary Domain	Type of Possible/Existing Resource	Career Stage Applicability	Relevant Phase within Laboratory
Organization Count 7				
1 Adaptive action plans	Organization	Practical Tool	PhD Student Research Assistant Postdoctoral Fellow	Ongoing
2 Asset and inventory mapping	Organization	Practical Tool	Principal Investigator Staff	Ongoing
3 Creating agendas for efficient meetings	Organization	Practical Tool	PhD Student Postdoctoral Fellow Research Assistant	Ongoing
4 Data management framework	Organization		All Principal Investigator Staff	Early
5 Knowledge access structures	Organization		Principal Investigator Staff	Ongoing
6 Resource repository	Organization	Practical Tool	All	Ongoing
7 Time management	Organization		All	Ongoing
Communication Count 11				
8 Active listening	Communication	Practical Tool	All	Ongoing
9 Asking for and accessing timely help	Communication		All	Ongoing
10 Asking questions	Communication		All	Ongoing
11 Avoiding career TRAGEDIES	Communication	Practical Tool	All	Ongoing
12 Giving and receiving feedback	Communication	Practical Tool	All	Ongoing
13 Mistakes, apologies, and accountability	Communication		All	Ongoing
14 Navigating difficult conversations	Communication		All	Ongoing
15 Navigating power dynamics	Communication		PhD Student Postdoctoral Fellow Research Assistant	Ongoing
16 Negotiation skills	Communication		All	Ongoing
17 Storytelling as communication	Communication	Practical Tool	All	Ongoing
18 The 'and' stance	Communication	Practical Tool	All	Ongoing
Setting Expectations Count 6				
19 Collaboration policy: within / between laboratories	Setting Expectations		PhD Student Postdoctoral Fellow Research Assistant	Early Ongoing
20 Defining, articulating, and practicing personal values	Setting Expectations		All	Early
21 Laboratory manual / compact	Setting Expectations	Practical Tool	Principal Investigator Staff	Early
22 Mentoring compact	Setting Expectations	Practical Tool	Principal Investigator	Early
23 Onboarding and orientation	Setting Expectations	Practical Tool	Principal Investigator Staff	Early
24 Scientific authorship	Setting Expectations		PhD Student Postdoctoral Fellow Research Assistant	Early Ongoing
Individual Development Plan Count 5				
25 Career support: academia and non-academia paths	Individual Development...		PhD Student Postdoctoral Fellow Principal Investigator	Late Ongoing
26 Fostering and managing mentoring networks	Individual Development...	Practical Tool	PhD Student Postdoctoral Fellow Research Assistant	Ongoing
27 Individual development planning - personal and professional	Individual Development...	Practical Tool	All	Ongoing
28 Personal script development	Individual Development...	Practical Tool	All	Ongoing
29 Responding to failure	Individual Development...		PhD Student Postdoctoral Fellow Research Assistant	Mid
Assessment Count 5				
30 Climate survey & discussion	Assessment	Practical Tool	Principal Investigator	Ongoing
31 Decision-making framework	Assessment	Practical Tool	All	Ongoing
32 Experiment idea assessment	Assessment		PhD Student Postdoctoral Fellow	Ongoing
33 Metrics and infrastructure for initiative progress assessment	Assessment		Principal Investigator Staff	Ongoing
34 Picking research questions	Assessment	Theoretical Knowledge	PhD Student Postdoctoral Fellow	Early
Diversity, Equity, Inclusion Count 2				
35 Active allyship	Diversity, Equity, Inclus...	Theoretical Knowledge	All	Ongoing
36 Bystander and upstander behaviors	Diversity, Equity, Inclus...	Practical Tool	All	Ongoing
Citizenship Count 2				
37 Cooperative / equitable task distribution model	Citizenship	Practical Tool	Principal Investigator	Ongoing
38 Cultivating and accessing affinity groups	Citizenship		PhD Student Postdoctoral Fellow Research Assistant	Ongoing
Wellness Count 3				
39 Prevention and management of burnout / fatigue	Wellness		All	Ongoing
40 Psychological safety tools	Wellness	Theoretical Knowledge	All	Ongoing
41 Wellness, stress management, empathy, and mental health	Wellness	Practical Tool	All	Ongoing
Leadership Theory Count 2				
42 Effective leadership principles	Leadership Theory		Principal Investigator	Ongoing
43 Support as a dynamic and evolving concept	Leadership Theory		Principal Investigator Staff	Ongoing

Figure 2. Sample back-end AirTable organization of proposed scaffolds categorized by domains and coded by multiple searchable / modifiable features.