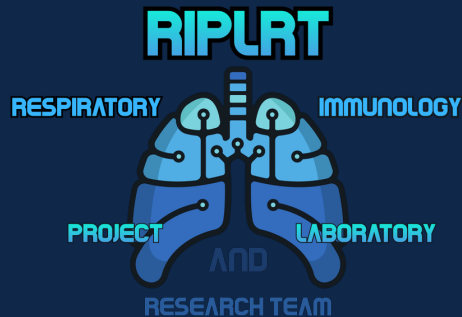




RIPLRT Institute Research Group Manual

A Guide for Environmental Immunology, Respiratory Health Equity, Computational Discovery, and Inclusive Mentoring

The RIPLRT Institute

June 2026

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Preface

Welcome to the RIPLRT Institute's Research Group Manual

This is the operating system of the **RIPLRT Institute** — a mentee-powered environmental health, immunology, and respiratory health equity research group. We translate environmental exposures into equitable respiratory and immune health through exposure science, biochemical, microbiology, and immune biomarker discovery, computational approaches, reproducible analytics, bilingual science communication, and inclusive mentoring.

The **RIPLRT Institute** operates under **Felix E. Rivera-Mariani PhD LLC**. It is an independent research and mentoring organization and is **not** an entity, department, or administrative unit within organizations with which Dr. Félix E. Rivera-Mariani (founder, principal investigator and mentor) is affiliated with (Lynn University, the University of Puerto Rico). What the Institute *does* do is mentor and integrate students and early-career scientists from Lynn University **and** from outside Lynn University - at different stages of their careers - into its projects, its culture, and its workforce-development mission.

If you are reading this because you recently joined us: **welcome**. This manual is the fastest way to understand who we are, how we work, what we expect of one another, and how we give credit. If you are a returning member, treat it as a living reference — return to it when you onboard a new teammate, start a project, plan a manuscript, or hit a question about process. Note that this manual is not a static document. It is a living, evolving resource that we update as we learn and grow together. We encourage you to contribute to it by sharing your insights, suggestions, and feedback.

If you are joining **through Lynn University**, your work is carried out under the **Educational Biomarker Discovery Lab (EBDL)** — the umbrella through which RIPLRT-affiliated research operates *within* Lynn University. In short: the RIPLRT Institute (under Felix E. Rivera-Mariani, PhD, LLC) is the research group and its operating system; the EBDL is the Lynn University-housed branch through which Lynn-affiliated members conduct that work, subject to Lynn University policy. Members who join from other institutions, or independently, are mentored directly under the RIPLRT Institute.

What this manual is — and isn't

This is a **culture document, onboarding guide, project-management playbook, mentoring compact, reproducibility guide, authorship policy, and operating system** in one. It is not a legal contract. For work conducted through the Educational Biomarker Discovery Lab at Lynn University, this manual does not override Lynn University policy, IRB protocols, sponsor terms, or applicable law: where institutional policy and this manual disagree, institutional policy governs. For work conducted under the RIPLRT Institute outside of Lynn University, the governing terms are those of **Felix E. Rivera-Mariani, PhD, LLC** and any applicable sponsor or partner agreements. Where this manual is silent,

ask.

Our central narrative: Community-to-Clinic-to-Cloud

Everything we do follows one arc. We **measure and interpret environmental signals in communities, link them to clinical, claims, biomarker, and repository-based outcomes, and convert them into equity-aware decision tools** for clinicians, agencies, students, and the communities themselves.

Our scientific through-line is:

Exposure Science → Immune Bioactivity → Computational Modeling → Equity-Focused Translation → Inclusive Workforce Development

How to read this manual

- **New members:** Read Chapters 1–9 in your first two weeks, then complete the onboarding checklist in the `/forms` appendix. Sign the acknowledgment form within your first 7 days.
- **Project leads:** Pay special attention to Chapters 6, 10, 11, 12, and 14, and use the project pod charter template before kickoff.
- **Mentors and mentees:** Chapters 7 and 8 are your compact. Use the IDP and one-on-one templates each semester.
- **Everyone:** Chapters 11–13 (data governance, reproducibility, and responsible AI) apply to all of us, all the time.

A note on tone

We are a serious research organization **and** a humane mentoring environment. Those are not in tension. We use “we” language because the lab belongs to all of us — it is *our* research group, not only the PI’s. We state expectations directly because clarity is a form of respect. And we assume good faith, because that is how trust is built and how science gets done.

How to cite this manual

If you quote, adapt, or build on this manual, please cite it. A recommended citation for the current edition is:

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- Source repository: <https://github.com/riplrt/riplrt-manual-2026>

Suggest a change

This manual improves because members improve it. See `CONTRIBUTING.md` for how to propose edits via GitHub issues or pull requests, or raise it in a weekly (bi-weekly or unscheduled) huddle. Every contributor is acknowledged in the changelog.

Maintained by the RIPLRT Institute, a research and mentoring entity under Felix E. Rivera-Mariani PhD LLC. Principal Investigator and mentor: Dr. Félix E. Rivera-Mariani, PhD, FAAG. Built reproducibly with [Quarto](#). Last major revision: 2026. DOI: [10.5281/zenodo.21538575](https://doi.org/10.5281/zenodo.21538575).

Part I.

Identity & Belonging

Welcome to RIPLRT Institute

Welcome to the **The RIPLRT Institute, a Respiratory and Immunology Project and Laboratory Research Team**. Whether you are a returning member or this is your first day, we are glad you are here.

This chapter orients you to what kind of place we are, what you can expect from us, and what we will ask of you in return.

1.1. What RIPLRT is

The RIPLRT Institute, often referred to simply as the RIPLRT, is a **research group, a learning environment, and a scientific home**. We are a mentee-powered group at the interphase of environmental health and biomarker discovery to improve society's respiratory and immune health — and how to convert that understanding into tools that protect people, especially in communities that carry the heaviest environmental burden.

You joined because of the science, and our values and principles. We hope you stay because you feel valued, connected, mentored, and part of work that matters. Belonging is not a perk here; it is part of how we do good science. People who feel safe ask better questions, surface mistakes earlier, and take the creative risks that move projects forward.

While you are with us, you will develop skills across several domains:

- **Scientific:** environmental exposure science, immunology, respiratory and cardiovascular health, biomarker discovery and interpretation, and study design.
- **Computational:** R and Python, reproducible analysis, version control with Git/GitHub, dashboards, and AI/ML methods used responsibly.
- **Professional:** scientific writing, giving talks, building posters, presenting at conferences, and communicating science bilingually to non-specialist audiences.
- **Human:** career guidance, collaboration, feedback, mentoring others, and navigating team science.
- **Ethical:** research integrity, data governance, responsible AI, and strategic self-presentation.
- **Project management:** planning, delegation, timelines, and ownership of research products.
- **Career development:** grant-writing, networking, and building a path toward your next step after RIPLRT.

- **Equity:** understanding and addressing health disparities, building an inclusive research culture, and translating science in ways that serve the communities most affected by environmental health risks.
- **Grant-writing:** contributing to the grant process, from preliminary data and figures to specific aims and biosketches, and pursuing fellowships and trainee awards.
- **Strategic communication:** framing your work and the group's work in ways that lead with credentials and institutional value, not personal advancement, and that position new work as a forward progression rather than a reprise.
- **Strategic self-presentation:** building a professional identity that is credential-forward and self-decentered, able to survive scrutiny without sounding defensive.
- **Strategic mindset:** approaching your work with a growth mindset, learning in public, and embracing the idea that mistakes are part of the process and hiding them is the only unrecoverable error.
- **Leadership:** leading projects, leading meetings, mentoring others, and leading with empathy and clarity.
- **Other skills** that we identify as important to your growth and development.

1.2. Our entity structure

Understanding who we legally are matters because it determines whose policy, whose IRB, and whose name govern your work.

- **Felix E. Rivera-Mariani, PhD, LLC** — the parent entity (FL #L21000280781; PR #467494). All RIPLRT Institute activity operates under this LLC.
- **RIPLRT Institute** — *A Respiratory and Immunology Project and Laboratory Research Team*. A scientific research-and-mentoring **DBA** of Felix E. Rivera-Mariani, PhD, LLC. The Institute is **not** a department, lab, or administrative unit of Lynn University.
- **Educational Biomarker Discovery Lab (EBDL)** — the branch through which RIPLRT research is conducted *within* Lynn University. EBDL work is governed by Lynn University policy, IRB, and sponsor terms.
- **Lynn University** — institutional home of the EBDL and of Lynn-affiliated members.
- **University of Puerto Rico (UPR)** — collaborating institution. UPR-affiliated mentees are mentored under the RIPLRT Institute but remain governed by UPR institutional policy and IRB, and by any applicable collaboration or data-use agreement. Dr. Rivera-Mariani holds a secondary appointment (Associate Professor, Ad Honorem) at Department of Microbiology and Immunology of the School of Medicine of the University of Puerto Rico (UPR) Medical Sciences Campus, which serves as the IRB of record for some projects.

! Which umbrella are you under?

- **Lynn University students and trainees** (undergraduate, graduate, early-career scientists) work under the **EBDL** umbrella and follow Lynn University policy and IRB.
- **UPR-affiliated, other external, or independent mentees** (undergraduate, graduate,

early-career scientists) are mentored directly under the RIPLRT Institute and remain governed by their home institution's policies.

If you are unsure which applies to you, confirm with the PI before you begin project work or touch data. See Chapter 11 and Chapter 19.

1.3. What you can expect from us

- A clear sense of how your work connects to the RIPLRT's mission.
- A mentored and defined development pathway, not just a task list.
- Honest, timely, and constructive feedback.
- Credit for your contributions, governed by transparent authorship rules (see Chapter 14).
- A psychologically safe environment where you can ask "naive" questions and disagree with the PI, and peers, without fear.
- Support for your growth, including conference travel, professional development, and help with next steps after RIPLRT.

1.4. What we expect from you

- **Read this manual** and sign the **acknowledgment form** within your first 7 days.
- **Bring curiosity and reliability.** Do what you say you will do, and communicate early when you can't.
- **Learn in public.** Own mistakes quickly; we fix them together. Hiding a mistake is the only unrecoverable error.
- **Respect people's time** — show up to meetings prepared, meet deadlines, and renegotiate responsibly when life intervenes.
- **Protect integrity and privacy.** Follow our data governance, IRB, and authorship rules without exception.
- **Be a good teammate.** Communicate openly, give and receive feedback, and help each other.
- **Be a person.** We are scientists, but we are also people with lives outside the lab. Bring your whole self, and respect others' whole selves. Each of us is a person first, scientist second.
- **Help each other.** What is done in isolation is usually done better in partnership.

1.5. How this manual came to be

This manual is the **2026 Edition (v2.0)**. It is the direct descendant of the 2018 RIPLRT Lab Manual and its 2021 revision, which were inspired by the open lab-manual movement and

built reproducibly in [R](#) and [Quarto](#). We have preserved the parts that made the original strong — the welcoming tone, our values, our commitment to integrity, open science, reproducibility, and clear authorship — and modernized everything else for who we are now: a hybrid computational and translational research and mentoring group operating across the RIPLRT Institute and affiliated entities.

i A living document

This manual is a work in progress, and that is by design. If something is unclear, outdated, or missing, that is an invitation to improve it. Talk to the PI, your mentor, or any group lead — or open a GitHub issue. See [CONTRIBUTING.md](#).

Welcome to RIPLRT. Let's get to work!

History and Evolution of RIPLRT

Knowing where we came from helps you understand why we work the way we do. The RIPLRT has evolved through distinct phases, and the current RIPLRT Institute is the most recent expression of a consistent through-line.

2.1. Origins (2018--2021): the wet-lab phase

RIPLRT began as the **Respiratory and Immunology Project and Laboratory Research Team** within a College of Biomedical Sciences setting. The early group was organized around wet-lab immunology: human-based immuno-physiological approaches, molecular biology, and the immune effects of airborne pollutants crossing the respiratory barrier in susceptible people — those with asthma, respiratory allergies, and other chronic respiratory conditions. The group was small, focused on a few projects, and centered around the PI's bench work. The mission was to understand how environmental exposures shape respiratory and immune health, with a focus on Puerto Rico's unique environmental and health context. An example of this work can be found [here](#).

Even in this phase, the group built infrastructure that was ahead of its time:

- A **written lab manual** (first created September 2018, revised February 2021), authored collaboratively and version-controlled on GitHub.
- A reproducibility and open-science orientation using R, GitHub, OSF, FigShare, and Zenodo.
- Clear **vision, mission, and core values**, role definitions, scientific-integrity policy, IRB/CITI compliance, and ICMJE-based authorship.
- A culture of **inclusive mentoring** and student development.

We acknowledge the past members who built that foundation — it is the backbone of this manual.

2.2. Transition (2021--2024): from bench to hybrid

Over this period the group's center of gravity shifted from the bench toward a **hybrid computational and translational model**. Several forces drove this:

- The rise of large, biomarker-rich public repositories and surveillance datasets.
- Biomarker discovery and interpretation as a key to understanding exposure-health links.

- The need to translate insights into population-level forecasting and decision-support tools.
- Maturation of reproducible analytics and AI/ML methods.
- To strategically scale the impact through population-level forecasting and repository-based discovery alongside molecular work.
- A broadening geographic frame to Puerto Rico, the Caribbean basin, the southern coastal United States, and tropical regions worldwide.

2.3. The RIPLRT Institute (2026--): a senior, group-centered institute

Today, RIPLRT operates as the **RIPLRT Institute** — a senior, group-centered research program rather than a collection of individual projects. The work now spans and intersects from molecular immune modeling to population-level computational modeling, integrated through reproducible pipelines and equity-stratified analysis.

The institutional frame is flexible by design. RIPLRT activities may run through **Lynn University**, the **RIPLRT Institute**, **Felix E. Rivera-Mariani, PhD LLC**, and **collaborating institutions and partners**, depending on the project, funding, and data-use agreement. Where a specific institutional home matters for a policy (IRB, payroll, data access), the manual flags it as a placeholder for confirmation.

i Placeholder: institutional affiliations

Exact entity names, IRB-of-record, and data-use authorities vary by project. Project pod charters (Chapter 6) record the governing institution, IRB protocol, and data-use agreement for each project. Confirm these with the PI before starting work.

2.4. What has stayed constant

Across every phase, one thing has not changed: **the through-line**.

Exposure Science → Immune and Biochemical Bioactivity → Computational Forecasting
→ Equity-Focused Translation → Inclusive Workforce Development

The methods have evolved from pipettes to pipelines, but the mission — understanding environmental drivers of respiratory and immune health and translating that understanding into equity — has been the constant since day one. This manual modernizes the *how* while protecting the *why*.

Scientific Identity and Strategic Through-Line

This chapter is the scientific spine of the manual. It explains what we study, the logic that connects our projects, and the strategic story — Community-to-Clinic-to-Cloud — that anchors everything from grant narratives to recruitment emails.

3.1. The one-sentence identity

RIPLRT Institute is a mentee-powered environmental immunology and respiratory health equity research group that trains students and early-career scientists to convert exposure, clinical, biomarker, and computational data into equitable decision tools for Puerto Rico, the Caribbean basin, South Florida, and the southern coastal United States.

If you can say this from memory, you can explain RIPLRT to a dean, a reviewer, a community partner, or a prospective student.

3.2. The strategic through-line

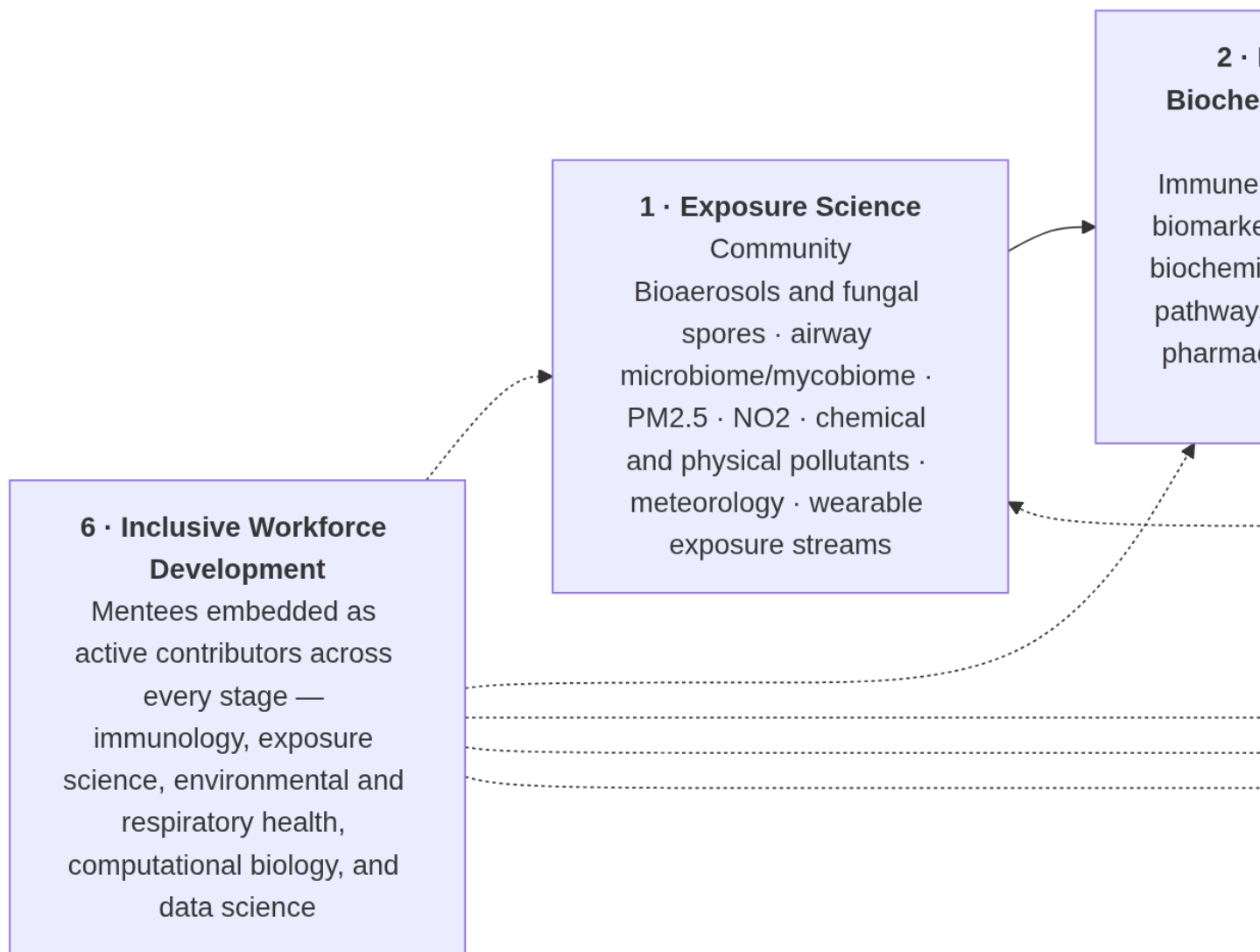
Our portfolio is large, but it is not scattered. Every project sits somewhere on a single chain:

1. **Exposure Science** — We measure and interpret environmental signals: bioaerosols and fungal spores, airway microbiome/mycobiome signatures, $PM_{2.5}$, NO_2 , chemical and physical pollutants, meteorology, and wearable exposure streams.
2. **Immune and Biochemical Bioactivity** — We connect those exposures to immune and inflammatory biomarkers and to biological and biochemical responses and pathways.
3. **Biomarker Discovery and Interpretation** — We identify and interpret biomarkers as a key to understanding exposure-health links. We also link exposures and biomarkers to clinical, claims, pharmacy, and repository-based outcomes.
4. **Computational Modeling** — We use AI/ML, distributed lag models, mixed-effects models, and equity-aware metrics to forecast exposure-linked respiratory risk windows. We also use computational methods to discover and interpret biomarker signatures of exposure and risk, and bioinformatic methods to link those signatures to biological pathways and potential therapeutic targets.

5. **Equity-Focused Translation** — We convert forecasts into clinician-facing dashboards, community risk briefs, public-health playbooks, and peer-reviewed science.
6. **Inclusive Workforce Development** — Across all of the above, mentees are embedded as active contributors, building an inclusive workforce in immunology, exposure science, environmental and respiratory health, computational biology, and data science.

When you describe your project, locate it on this chain. It clarifies your aims, your collaborators, and your authorship plan.

3.3. The central narrative: Community-to-Clinic-to-Cloud



- **Community:** We measure environmental signals where people live, work, and breathe.

- **Clinic:** We link those signals to clinical, claims, pharmacy, biomarker, and repository-based outcomes.
- **Cloud:** We build reproducible analytic pipelines that forecast risk and validate forecasts against real-world outcomes.
- The loop closes when **translation** returns equity-aware tools to the communities and clinicians who need them.

3.4. Where the science lives: data and methods

Our near-term implementation cycle emphasizes **real-world and computational validation** using existing surveillance, healthcare data, and biomarker-rich repositories rather than only new ex vivo functional assays. Core resources include, but are not limited to:

- **Surveillance & claims:** Puerto Rico fungal-spore and respiratory-virus surveillance; incoming PR Department of Health / ASES claims and pharmacy data.
- **National repositories:** BioLINCC, BioData Catalyst, *All of Us*, MESA, Framingham, AsthmaNet, and NHANES.
- **Methods:** AI/ML, distributed lag models, mixed-effects models, GWAS and polygenic risk scores, SHAP explainability, causal mediation analysis, multi-agent AI architectures, and equity-aware performance metrics (among others) — all within a reproducibility and equity-stratified analysis framework.

! Identity discipline

We frame new work as a **forward progression**, not a repetition of past work. Every proposal, talk, or project should be positioned as the next step on the through-line. This is both a scientific and a strategic habit — it keeps the program coherent and the narrative under our control.

3.5. Why equity is structural, not symbolic

The communities we study — in Puerto Rico, the Caribbean, coastal and tropical regions — face converging extreme weather, bioaerosol, pollution, and respiratory-health challenges and are often under-resourced and underrepresented in research. Equity is therefore built into the science itself: we stratify analyses by community, age, sex, and other relevant axes; we report equity-stratified performance; and we translate findings into bilingual materials communities can actually use. Equity is a design requirement of our pipelines, not a line in a diversity statement.

Vision, Mission, and Core Values

This chapter states what we are working toward, how we pursue it, and the values that govern how we treat each other and the science. It is adapted directly from Dr. Rivera-Mariani's current Individual Academic Plan (IAP) so that the manual, the strategic roadmap, grant narratives, and recruitment all tell one coherent story.

4.1. Vision

Over the next five years, the RIPLRT Institute will continue to advance a **nationally recognized, equity-centered program in environmental immunology, exposure science, and computational respiratory, immunological, and cardiovascular health**.

Communities across Puerto Rico, the Caribbean basin, the southern coastal United States, and tropical regions face converging extreme weather, bioaerosol, pollution, and respiratory-health challenges that require predictive and preventive solutions. We will identify critical short- and long-term risk windows for respiratory exacerbations and exposure-related immune and cardiopulmonary outcomes by integrating biological exposures (airway microbiome/mycobiome signatures and bioaerosols) with non-biological exposures ($PM_{2.5}$, NO_2 , chemical and physical pollutants, meteorology), immune and inflammatory biomarkers, wearable exposure assessments, and advanced computational modeling.

This vision is propelled by **mentee-integrated research, bilingual science communication, and community-responsive translation** that prevent disease, strengthen climate-health resilience, and narrow respiratory, immunological, and cardiovascular health disparities in environmentally threatened and socially underserved populations.

4.2. Mission

We conduct **collaborative, extramurally supported, multi-cohort, repository-based, and prospective studies** that temporally align bioaerosols, airway microbiota/mycobiota, chemical and physical pollutants, wearable and environmental exposure streams, immune and inflammatory biomarkers, respiratory symptoms, lung function, clinical severity, pharmacy utilization, and care pathways.

We leverage surveillance data, incoming healthcare data, and accessible national resources (e.g., BioLINCC, BioData Catalyst, ImmProt, NHANES, *All of Us*) to build reproducible analytic

pipelines. Using computational approaches and AI/ML, we forecast exposure-linked risk windows and validate forecasts against real-world clinical outcomes.

Findings are translated into **clinician-facing dashboards, community risk briefs, public-health policy, peer-reviewed manuscripts, and student-centered training products, among other outputs**. Across every phase — from question generation and data access to analysis, authorship, presentations, and dissemination — **mentees are embedded as active contributors** to build an inclusive workforce.

4.3. Core Values

Our values are not decoration. They must be **visible in daily behaviors and documented practices** — what we reward, how we run meetings, how we resolve conflict, and how we assign credit.

4.3.1. Values preserved from our founding

- **Inclusiveness** — everyone's voice counts.
- **Multidisciplinary focus** — we integrate disciplines rather than defend silos.
- **Diversity** — we value and respect differences in perspective and opinion.
- **Integrity** — we follow strict institutional, scientific, and ethical guidelines.
- **Productivity** — we bring our best effort toward our goals, sustainably.
- **Innovation** — we stay open-minded and learn from both successes and failures.
- **Excellence** — we target the highest quality of scientific work.
- **Collaboration** — what is done in isolation is usually done better in partnership.
- **Leadership** — we cultivate intra- and inter-motivation and inspiration.

4.3.2. Values we add for the 2026 program

- **Psychological safety** — people can ask naive questions, surface mistakes, and disagree with the PI without fear (Chapter 8).
- **Reproducibility** — if it isn't reproducible, it isn't finished.
- **Transparency** — work lives in shared, version-controlled spaces; “no surprises” is the default in both science and communication.
- **Health equity** — equity is a design requirement of our science, not an afterthought.
- **Community responsiveness** — the communities we study are partners, not subjects.
- **Bilingual science communication** — our science speaks Spanish and English, to specialists and to neighbors.
- **Responsible AI** — we use AI to accelerate good work, never to outsource judgment or integrity (Chapter 13).

 The vision sentence you can quote anywhere

Our research group is dedicated to translating environmental exposures into equitable respiratory, immunological, and cardiovascular health, and we make it happen by building reproducible, mentee-powered, community-responsive science.

4.4. From values to behavior

Values only matter if they change what we do. Throughout this manual you will see each value operationalized:

Value	Where it becomes a practice
Reproducibility	Chapter 12 — version control, Quarto notebooks, analysis checklists
Psychological safety	Chapter 8 — meeting norms, “learning in public,” climate checks
Inclusiveness & diversity	Chapter 7 — inclusive mentoring, equitable recruitment
Integrity & transparency	Chapter 11, Chapter 14 — data rules, contributorship
Community responsiveness	Chapter 15 — risk briefs, bilingual translation

We hold ourselves to these as a group, and we expect leadership to **model** them — especially during the moments that test them: authorship discussions, revisions, deadlines, and conflict.

What It Means to Belong to RIPLRT

People join The RIPLRT because of the science, and our values and principles. They stay because they feel valued, connected, and part of something larger than any single task. This chapter is about belonging — and why we treat it as a research strategy, not a nicety.

5.1. Belonging is a retention strategy

A research group is not only a productivity engine; it is a **scientific home**. Members who feel they belong stay longer, contribute more, ask better questions, and surface problems earlier. The lab should feel like *our* laboratory, not the PI's laboratory with helpers attached.

This is a deliberate design choice. Connected teams can work fewer hours and still be more productive, because trust reduces friction: people coordinate faster, hide less, and recover from setbacks together.

5.2. The compact: what belonging gives and asks

Belonging here is **reciprocal**.

What belonging gives you:

- Membership in a shared mission, not a transactional “do this analysis and publish” relationship.
- A name, a profile, and a voice in the group — your ideas shape projects.
- Mentorship aimed at *your* trajectory, not only the project's deliverables.
- Visible credit for your contributions.
- Rituals, traditions, and small celebrations that mark progress and make the work human.

What belonging asks of you:

- Show up — to meetings, to deadlines, to each other.
- Contribute to the climate: be the teammate who makes it safe for others to learn in public.
- Bring problems early; “no surprises” protects everyone.
- Help newer members the way more senior members helped you.

5.3. We design culture on purpose

Culture always develops — the only question is whether it develops *by design* or *by accident*. Left alone, culture tends to organize around urgency, the loudest personality, hierarchy, or stress. We choose instead to shape it around our values.

Concretely, that means:

- **Structure creates safety.** This manual, project operating charters, clear ground rules, and explicit communication channels exist so that no one has to guess what is expected. Ambiguity is a tax on belonging; we minimize it.
- **Connection doesn't require formality.** Belonging is built in coffee chats, shared digital spaces, a monthly huddle, celebrating small wins, and showing up for one another — not only in formal meetings.
- **Rituals reinforce identity.** Traditions like a recurring **"RIPLRT Wins & Roadblocks"** huddle help members working on different datasets feel part of one group.

5.4. Belonging across a hybrid, distributed group

Many of us work remotely or across institutions and time zones. Belonging cannot depend on a shared physical room. We sustain it intentionally through:

- A single primary messaging channel for quick, human, day-to-day connection.
- Cameras-on-when-able norms for huddles, balanced against bandwidth and accessibility.
- Asynchronous wins-sharing so contributions are seen even when schedules don't overlap.
- Deliberate inclusion of remote members in decisions, authorship, and visibility.

5.5. Measuring belonging

We treat belonging as something we can observe and improve, not just hope for. We run a brief **anonymous quarterly pulse check** (10 minutes) covering workload, role clarity, sense of belonging, mentorship quality, confidence with tasks, and barriers (Chapter 20). This turns belonging into data we can act on — and signals that we take the human side of the lab as seriously as the scientific side.

i If you ever feel on the outside

Belonging sometimes wobbles — a new member's first weeks, a remote member feeling unseen, a hard stretch on a project. If that's you, say so to your mentor or the PI. Naming it is not a complaint; it's exactly the kind of early signal this group is built to hear.

Part II.

People & Structure

Roles, Responsibilities, and Project Pod Structure

This chapter defines who does what. It preserves the role clarity of the original manual and adds the **project pod model** — the structure that lets a large, hybrid portfolio run without overloading any one person.

6.1. General expectations for every member

Regardless of role, every RIPLRT member is expected to:

- Maintain curiosity and care for the science and projects they're involved in.
- Be efficient without rushing — plan before doing, and troubleshoot ahead of time.
- **Learn from mistakes and own them quickly.** Mistakes are correctable; hiding them is not.
- Ask for help — pride is fine, too much pride is costly.
- Keep up with science relevant to our mission.
- Practice time management and meet commitments, communicating early when they can't.
- Maintain a respectful, professional atmosphere and use emotional intelligence in conflict.
- Work honestly: never plagiarize, fabricate, or falsify. A negative result is still a result. (Re-analyzing publicly available datasets is *not* plagiarism — it is good open science.)
- Keep availability current so work can be planned realistically.

6.2. Standing roles

6.2.1. Principal Investigator (PI)

Dr. Félix E. Rivera-Mariani sets scientific direction and models the group's values. The PI:

- Is the foundation and example for the group.
- Mentors members across science, learning, professional, and career dimensions.
- Provides timely feedback across all scientific aspects.
- Finds and applies for funding and identifies collaborations.
- Has members' backs when they've followed the manual, and strives to be impartial.

- Chairs meetings unless delegated.
- Holds final accountability for integrity, authorship, and data governance.

6.2.2. Group Lead / Lab Coordinator

Assists the PI in running the group: coordinating meetings and agendas, overseeing onboarding/offboarding, maintaining shared infrastructure, helping route tasks, and mentoring members. (This role generalizes the former “Lab Manager,” reframed for a hybrid group where the work is data and projects more than benches and reagents.)

6.2.3. Research Assistants / Senior Mentees

Carry out core analysis and writing, mentor more junior members, generate research questions, and help maintain reproducibility standards. Often serve as **project leads** (below).

6.2.4. Graduate Students

Drive projects, learn methods quickly, mentor undergraduates, generate questions, and pursue professional development they identify themselves as well as opportunities the PI surfaces. Graduate members who complete their degrees may continue with us as **Graduate Research Alumni Fellows** (below).

6.2.5. Undergraduate Students / Interns / Trainees

Learn skills and procedures, contribute to defined project tasks, and pursue professional development. Every trainee is mentored and mapped to a real deliverable. Trainees who complete their time with us may continue as **Research Alumni Fellows** (below).

6.2.6. Alumni Fellows and Continuing Collaborators

Completing your time as a trainee does not mean leaving the group. These roles keep alumni connected as continuing contributors and mentors, and they are the living evidence of our through-line’s final stage — *Inclusive Workforce Development*. Fellow status is recorded in the member directory and confirmed at annual review (Chapter 20), so it is always clear who is an active affiliate. Because most fellows are no longer at Lynn University, or affiliated institutions, they are typically mentored and contribute directly to RIPLRT, governed by their current home institution (Section 1.2); their authorship is decided under the same contribution standards as everyone else (Ch. 14), and any data access follows the per-project IRB and data-use terms (Chapter 11).

6.2.6.1. Research Alumni Fellows

Former undergraduate trainees (and comparable early-career alumni) who remain affiliated after completing their time with the group. They continue to contribute to manuscripts and projects they helped build, mentor current trainees, and represent the group as they move into graduate study or careers. Typically part-time or remote.

6.2.6.2. Graduate Research Alumni Fellows

Graduate alumni who continue collaborating after completing their M.S. degrees. They co-author, advise on methods, help train newer members, and often bridge the group to their new institutions and networks.

6.2.6.3. Postdoctoral Collaborating Mentees and Fellows

Postdoctoral-level collaborators, recently earning their PhD degrees, *receive* mentorship — career growth and the path to independence — and *provide* senior expertise to projects and to junior members. They frequently serve as **project leads** and co-mentors.

6.2.7. Mentors and Mentees

Mentoring is woven through every role (Chapter 7). Mentors are the first line of support for ensuring mentees understand and follow this manual. Alumni fellows are explicitly part of this fabric: they are mentored as they continue to grow, and they mentor those coming up behind them.

6.2.8. Faculty Collaborators

Peer faculty and senior scientists — at Lynn University, the University of Puerto Rico, and other partner institutions — who collaborate on the group's research as co-investigators, co-PIs, or co-mentors. They contribute scientific direction, domain expertise, data or field sites, and shared mentorship of trainees, and they co-author under the same contribution standards as everyone else (Ch. 14). Collaborators remain governed by their own institutions; where a collaboration involves shared data, human subjects, or funding, the governing IRB, data-use agreement, and entity are confirmed per project (Section 1.2, Chapter 11). Faculty collaborators are **partners in the work, not part of the group's internal reporting line** — the role is peer-to-peer.

i Flexible, not punitive

This manual replaces the old wage-tier role mechanics (waged/non-waged status changes tied to task completion or precision thresholds) with **professional accountability** handled through documentation, feedback, and — where applicable — institutional or contractual performance processes (Chapter 17). Compensation and employment terms are governed by the relevant institution or entity, not by this manual.

6.3. The project pod model

A portfolio this size cannot run on one-on-one PI mentoring alone. We organize work into **pods**: small, project-specific teams with defined roles. Pods distribute leadership, build mentee independence, and protect the PI's strategic bandwidth — this is *training leadership*, not distancing from students.

Each pod is chartered using the **Project Pod Charter** template before work begins.

6.3.1. Pod roles

Each pod has a **project lead** who coordinates the work and serves as the first line of mentorship for more junior members. The project lead is often a senior mentee or postdoctoral fellow, but it can be anyone with the bandwidth and skills to coordinate the work and mentor others. The PI provides scientific oversight and steps in on key decisions (design, authorship, submission) but does not manage day-to-day tasks.

A typical pod assigns these roles (one person may hold more than one; junior members co-hold roles to learn them):

Role	Owns
PI	Scientific direction, funding, final integrity/authorship accountability
Project Lead	Day-to-day coordination, timeline, the pod charter, weekly task structure
Data Steward	Data access, data-use agreement compliance, variable dictionary, secure storage
Analysis Lead	Statistical/ML analysis plan, code, reproducibility of results
Writing Lead	Manuscript/abstract drafting and submission coordination
Visualization / Dashboard Lead	Figures, dashboards, decision-support prototypes

Role	Owns
Reproducibility Lead	Repo structure, environment, analysis checklist, render integrity
Science Communication Lead	Community briefs, bilingual materials, social/science-comm content
Trainee Contributors	Defined, mentored tasks that ladder up to a named deliverable

6.3.2. Tiered mentoring within pods

Pods use a **senior mentee / project lead → junior mentees → PI oversight** structure. The project lead supports junior members day to day; the PI provides scientific oversight and steps in on key decisions (design, authorship, submission). This tiered structure is how we scale mentoring sustainably.

6.3.3. One rule that keeps us healthy

! Every new member maps to a real deliverable

The group's risk is not too few people — it is overextension. **Every new mentee must map to a project, a specific deliverable, and a defined supervision pathway** before they join a pod. Growth is intentional, aligned with mentoring bandwidth, not maximal.

6.4. Project operating manuals

Each major project (e.g., PR respiratory risk, MESA, AsthmaNet, Framingham/ARIC, *All of Us*, biomarker projects) maintains a short **project operating manual** — effectively the completed pod charter plus a two-page operational summary: aims, datasets, access rules, variable dictionary, deliverables, authorship plan, and weekly task structure. These reduce cognitive load and let mentees work more independently.

Inclusive Mentoring and Mentee Development

Mentoring is not a side activity at RIPLRT — it is part of the mission. **Inclusive workforce development** is the final link in our scientific through-line, and mentee co-authorship and growth are documented evidence that we deliver on it. This chapter is our mentoring compact.

7.1. What inclusive mentoring means here

Inclusive mentoring means we mentor for **the mentee's trajectory**, not only for the project's output; we recruit and support members with attention to who has historically been excluded from STEM; and we make sure inclusion shows up in our *practices*, not just our branding.

We recruit and develop members for more than grades or technical skill. We look for and cultivate **curiosity, reliability, kindness, willingness to collaborate, a growth mindset, and independent thinking**. GPA alone has never built a good scientist.

7.2. The Mentoring Skills Model

We treat mentoring as a **set of learnable skills**, not a personality trait — some shared by everyone in a mentoring relationship, some specific to each side of it. We adapt this from the **Mentoring Skills Model** (authored by Linda Phillips-Jones, PhD), which sorts the skills into three regions.

Source: https://my.lerner.udel.edu/wp-content/uploads/Skills_for_Sucessful_Mentoring.pdf

As Figure 7.1 shows, the three regions map directly onto how our group works:

- **Shared core skills** — *listening actively, building trust, encouraging, and identifying goals and current reality* — are the foundation we expect from **everyone, in every direction**: PI to trainee, peer to peer, alumni fellow to current student, and collaborator to collaborator.
- **Mentee-specific skills** — *acquiring mentors, learning quickly, showing initiative, following through, and managing the relationship* — are what we actively coach trainees to build. They map onto the development ladder later in this chapter and onto your IDP.

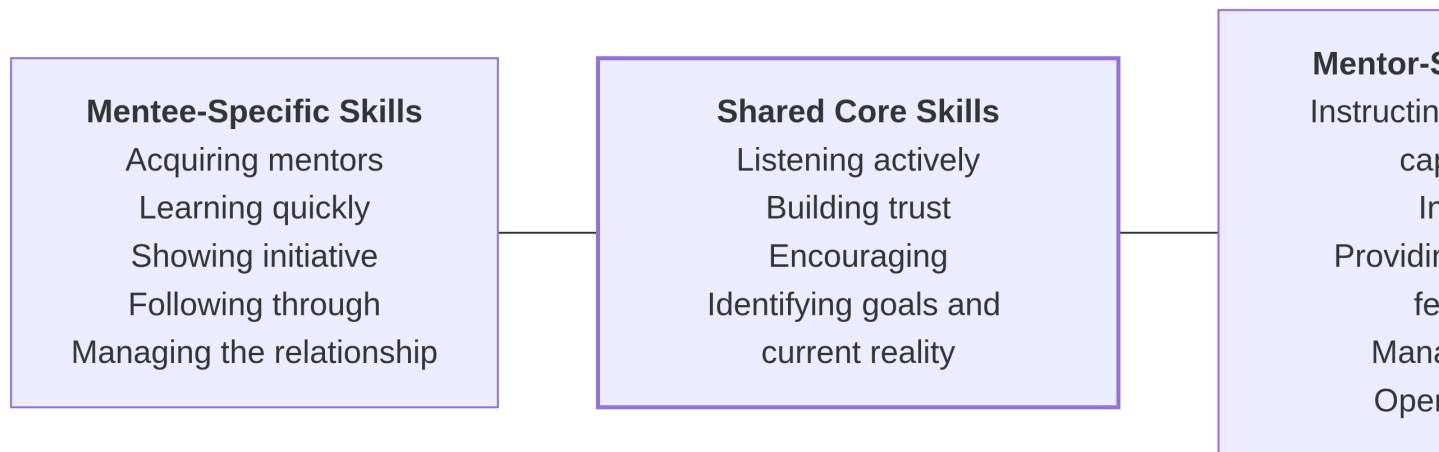


Figure 7.1.: The Mentoring Skills Model — shared core skills practiced by both sides, plus mentee- and mentor-specific skills (adapted from the Mentoring Skills Model, Linda Phillips-Jones, PhD).

- **Mentor-specific skills** — *instructing and developing capabilities, inspiring, providing corrective feedback, managing risks, and opening doors* — are what mentors grow into. In our group, these are **not the PI's job alone**: senior mentees, Graduate Research Alumni Fellows, Postdoctoral Collaborating Mentees and Fellows, and Faculty Collaborators all carry mentor-specific responsibilities (Chapter 6).

💡 Use the model in your IDP

At each IDP check-in, name **one shared-core skill, one role-specific skill**, and one concrete way you will practice each this term. Mentors do the same for their mentor-specific skills. Mentoring is a practice we improve on purpose — not something we assume we already have.

Because the group is built around **Inclusive Workforce Development**, most members sit on **both sides of this model at once**: a graduate student is a mentee to the PI, or faculty collaborators, and a mentor to an undergraduate; a postdoctoral fellow both receives and provides mentorship. The model is a shared language for getting better at both roles — not a hierarchy.

7.3. The mentoring compact

Mentors commit to:

- Meet regularly with mentees (see cadence below) and come prepared.
- Co-create an **Individual Development Plan (IDP)** and revisit it each semester.
- Give honest, kind, timely feedback — and receive it too.

- Map every mentee to a real, credited deliverable.
- Be the first line of support for helping mentees understand and follow this manual.
- Advocate for mentees' growth, visibility, and next steps.
- Practice cultural humility and make space for mentees to bring their whole selves.

Mentees commit to:

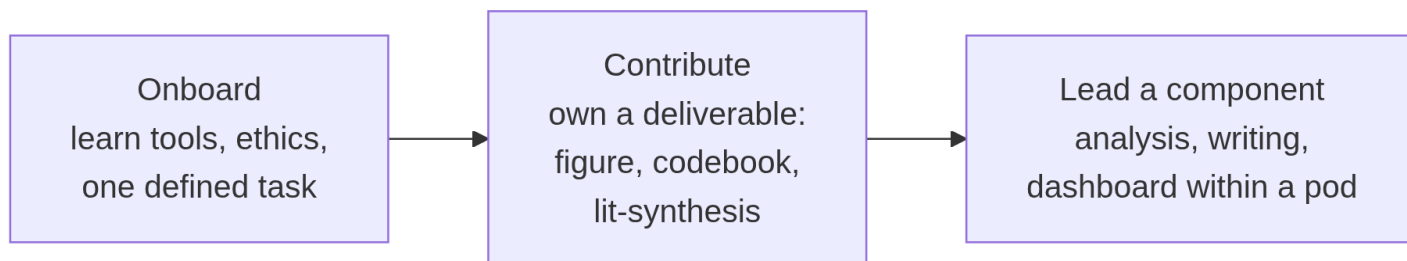
- Take ownership of their development and the IDP.
- Communicate early about obstacles, confusion, or capacity.
- Learn in public — ask questions, surface mistakes, and try.
- Help mentor those who come after them.
- Follow integrity, data-governance, and authorship rules without exception.

7.4. Meeting cadence

Touchpoint	Frequency	Tool
One-on-one mentoring meeting	Biweekly (min. monthly)	One-on-One Meeting Template
IDP review	Each semester	Individual Development Plan Template
Pod check-in	Weekly	Weekly Meeting Agenda Template
Climate / belonging pulse	Quarterly	Chapter 20

7.5. The student-development pathway

Mentees grow along a deliberate ladder. The goal is increasing **independence and leadership**, not just task volume.



7.5.1. Training milestones

- **Foundation:** complete CITI/IRB training as applicable; learn the group's tools (Git/GitHub, R or Python, the data-governance rules, among others); read this manual.
- **Contribution:** independently own a named deliverable (a figure, a codebook, a literature synthesis, a reproducible notebook).
- **Leadership:** lead a pod component; mentor a newer member; first- or co-first-author a scholarly product.

7.6. Mentee co-authorship as mission evidence

We deliberately document trainee co-authorship across abstracts, posters, presentations, and manuscripts. This does **double duty**: it is genuine scientific output *and* it is proof of our workforce-development mission — useful in IDPs, grant mentoring plans, training-grant applications, and program reviews. Authorship is governed by the rules in Chapter 14; mentees are credited fairly and, where appropriate, on a **student-first authorship pathway**.

7.7. Tiered, scalable mentoring

No single person can one-on-one mentor a portfolio this large. We use the **tiered pod structure** (Chapter 6): senior mentees mentor junior mentees under PI oversight. This both protects bandwidth and gives senior mentees real leadership training. Mentoring others is itself a development milestone.

💡 Mentoring is reciprocal and developmental

Good mentoring is not the senior person doing the junior person's thinking. It is structured support that transfers capability. When in doubt, ask: "Did this interaction make my mentee *more* able to do this independently next time?"

7.8. Sponsorship vs. mentorship

Mentoring helps people grow; **sponsorship** uses your standing to open doors for them — nominating them for awards, recommending them for opportunities, putting their name forward when they're not in the room. RIPLRT mentors are expected to *sponsor*, not just *mentor*, as members become ready. Track sponsorship moments in the IDP so they don't get lost.

Lab Culture, Psychological Safety, and Team Science

Productive science depends as much on human interactions, communication, and group dynamics as on technical excellence. This chapter describes the culture we are building and the specific practices that protect it.

8.1. Psychological safety is the foundation

Psychological safety means members feel able to **ask naive questions, admit they don't know something, surface mistakes early, and disagree with the PI** — without fear of looking foolish or paying a price. It is the single strongest predictor of whether a team learns and performs.

For a group where people are learning coding, statistics, and environmental-health methods at the same time, this is non-negotiable. We normalize **"learning in public"**:

- Questions are contributions: the person asking the "obvious" question is usually asking what three others were thinking.
- Mistakes surfaced early are cheap; mistakes hidden are expensive. We thank people for catching errors — including their own.
- Disagreement with the PI or senior members is welcome and expected. Good science needs dissent.

8.2. Leaders set the norms

Members emulate leadership behavior. The PI and senior members must **model** the culture they want — especially in the moments that test it: during authorship discussions, revisions, disagreements, and deadline pressure. If we want a team that is direct, rigorous, collaborative, and fair, leadership has to be visibly direct, rigorous, collaborative, and fair first.

Concretely, leaders:

- Admit their own mistakes and uncertainty out loud.
- Solicit input before stating their own view, so they don't anchor the room.
- Resist dominating discussion; senior scientists can crowd out everyone else without meaning to.

- Give credit generously and specifically.

8.3. Team science, by design

We work across disciplines, institutions, datasets, and time zones. That requires intentional team-science practice:

- **Shared narrative.** The Community-to-Clinic-to-Cloud story is the operating narrative that lets people on different datasets feel part of one program.
- **Clear interfaces.** Pod charters and the project pod model define who owns what, so collaboration doesn't dissolve into "who's doing this?"
- **Co-mentoring and distributed capacity.** We draw on collaborators' expertise rather than pretending any one person knows everything.
- **Delegation as development.** We deliberately hand off lab-meeting leadership, journal-club facilitation, figure ownership, codebook stewardship, literature synthesis, and dashboard building. Delegation builds trust and motivation — and trains leaders.

8.4. Meetings that invite participation

Meetings are where culture is most visible. Ours are designed so junior members speak, question data, and critique safely.

- **Rotating roles.** Facilitator, note-taker, and "first question" rotate so the same voices don't always lead.
- **Structured turns.** We make space for students to present and to ask questions before senior members weigh in.
- **Safe critique.** We critique *the work*, not the person, and we praise good questions as much as good answers.
- **Wins & roadblocks.** A recurring segment surfaces both progress and stuck points without stigma.

(See Chapter 9 for channels, cadence, and agenda templates.)

8.5. Inclusion is part of the culture, not the branding

Leaders shape cultures that **recognize and eliminate discriminatory or harassing behavior**. This aligns directly with our mission to broaden participation in STEM. Inclusion shows up here in concrete practices: equitable recruitment, rotating visible roles, attention to who speaks and who is credited, bilingual communication, and a low-friction path to raise concerns (Chapter 17). We do not tolerate harassment or discrimination of any kind (see [Code of Conduct](#)).

8.6. We evaluate the lab as a human system

We already evaluate projects scientifically. We *also* evaluate the group as a human system. Each quarter we run a brief, anonymous **lab climate check** covering workload, clarity, belonging, mentorship quality, confidence, and barriers. Each year we run a fuller **stop / start / continue** review (Chapter 20). Self-awareness, feedback, and adaptation are leadership responsibilities, not optional extras.

The one-line test for our culture

Can the most junior person in the room disagree with the most senior person about the data — and have it go well? If yes, the culture is working. If you're ever unsure, that's worth raising.

Communication, Meetings, and Digital Body Language

Most of our work — and most of our misunderstandings — happen in writing, across channels, often asynchronously. This chapter sets our communication norms so that “where is that file?” and “who owns this task?” stop being productivity leaks, and so our written tone builds trust rather than eroding it.

9.1. Channels: one job per channel

We use several streams, each with a clear purpose. If communication styles differ across the group, we revisit these after a trial period rather than forcing one channel to do everything.

Channel	Use it for	Don't use it for
Project management tool (e.g., ClickUp / GitHub Projects)	Tasks, owners, due dates, status	Long discussions, file storage
RIPLRT Bench	Operational hub / workbench for day-to-day lab workflow (Section 10.3)	Code (use GitHub), sample inventory (use Aliquary), long discussions
GitHub Issues	Code, bugs, analysis questions, manual edits	Sensitive data, personnel matters
Google Drive / OneDrive	Documents, drafts, shared materials	Code (use GitHub), raw restricted data
Messaging channel (single primary tool)	Quick updates, human connection, “I’m stuck”	Decisions of record (move those to a tracked tool)
Email	External communication, formal records	Day-to-day internal coordination
Video (Zoom / Meet)	Meetings, working sessions, recorded discussions	Things better handled async in writing
Aliquary	Sample inventory of record: registration, freezer/box maps, barcode lookup, aliquots, freeze-thaw (Section 16.5)	Experiment narratives (use the ELN), task tracking, code, discussion

Channel	Use it for	Don't use it for
eLabNext (electronic lab notebook)	Experiment and assay records, protocols/SOPs — the authoritative bench/lab record of <i>what was done</i>	Sample inventory (use Aliquary), code and pipelines (use GitHub), task tracking (use the PM tool), document drafting (use Drive), or discussion

! The “single source of truth” rule

Every task, decision, and document has **one** home. Tasks live in the project tool; code and code-discussion live in GitHub; documents live in the shared drive. When a decision happens in chat or a meeting, **record it in the tracked tool**. If it isn't written down somewhere findable, it didn't happen.

9.2. Which name represents which work

External communication must attribute work to the correct entity (Section 1.2). Getting this wrong can wrongly imply that Lynn University endorses the entire Institute, or blur a separately incorporated entity into RIPLRT.

Context	Name to use	Handle
Institute-level research, mentoring, recruitment	RIPLRT Institute	@riplr / riplrt.com
Work conducted within Lynn University	Educational Biomarker Discovery Lab , with the member's Lynn affiliation	per Lynn comms norms
Personal commentary by the PI	personal capacity, not the Institute	@friveramariani

Rules of the road:

- **Never state or imply that the RIPLRT Institute is a Lynn University unit.** It is a DBA of Felix E. Rivera-Mariani, PhD, LLC.
- Use the **EBDL** name only for Lynn-housed work.
- When in doubt about a public post, logo, or co-branding, clear it with the PI before publishing.

9.3. File naming and document hygiene

- All shared documents live in the RIPLRT shared drive (or the project repo for code). Even a first solo draft is created in the shared space — transparency and open collaboration are foundational.
- Follow the **file-naming convention** for each folder. Where a folder has a `README` describing its naming pattern, follow it; if one is missing, ask the project lead or PI and add one.
- Use ISO dates (YYYY-MM-DD), no spaces (use `_` or `-`), and meaningful, sortable names. Example: 2026-06-01_PR-sporecast_analysis-v3.pdf.

9.4. Meeting cadence

- **Weekly pod check-ins** keep projects moving; use the weekly agenda template.
- **A recurring group huddle** (“RIPLRT Wins & Roadblocks”) builds identity across members on different datasets.
- **One-on-one mentoring meetings** run biweekly (see Chapter 7).
- Day, time, and frequency adapt to members’ real availability; keep your availability current so scheduling is honest.

Every meeting has an **agenda in advance** and **notes + action items after** (owner + due date), stored in the tracked tool. No agenda, no meeting; no notes, no follow-through.

9.5. Digital body language

Tone is hard to read in text, and the absence of cues (face, voice, pauses) means people fill gaps with assumptions — usually negative ones. **Digital body language** is the set of signals our written communication sends. We are deliberate about it.

Practices we use:

- **Acknowledge receipt.** A quick “got it, will reply by Thursday” prevents silence from reading as dismissal.
- **Match channel to weight.** Hard or sensitive conversations move to a call. Bad news and conflict are not for chat threads.
- **Be generous in interpretation, careful in expression.** Assume good intent when reading; reduce ambiguity when writing.
- **Mind asynchronous timing.** A message sent at 11 PM should not imply a reply is expected at 11 PM. Use scheduled send or a “no rush” note. Respect availability and time off.
- **Watch the curtiness gap.** Brevity that feels efficient to the sender can read as cold to the receiver. A little warmth (a greeting, a thank-you, a sign-off) is not inefficiency; it’s maintenance of trust.

- **Punctuation and response time carry meaning.** A one-word reply, a long delay, or a sudden formality shift all signal something. If you notice these in others, check in rather than assume; if you're sending them, consider what they convey.

i Read for signal, not just content

When a teammate's messages change — terser, slower, more formal, suddenly cc'ing others — treat it as information. It often means stress, confusion, or a problem surfacing. The right move is a kind, direct check-in ("Hey, want to hop on a quick call about this?"), not a tit-for-tat escalation in writing.

9.6. No-surprises communication

The single most important communication norm at RIPLRT: **no surprises**.

- If a deadline is at risk, say so *early* and propose a renegotiation — don't go silent and miss it.
- If an analysis isn't working, raise it before the meeting, not in front of the room cold.
- If you're overloaded, name it before it becomes a crisis.

Communicating a problem early is a sign of professionalism, not failure. The version of you that says "I'm going to be two days late, here's my plan" is far more trusted than the version that misses silently and explains afterward.

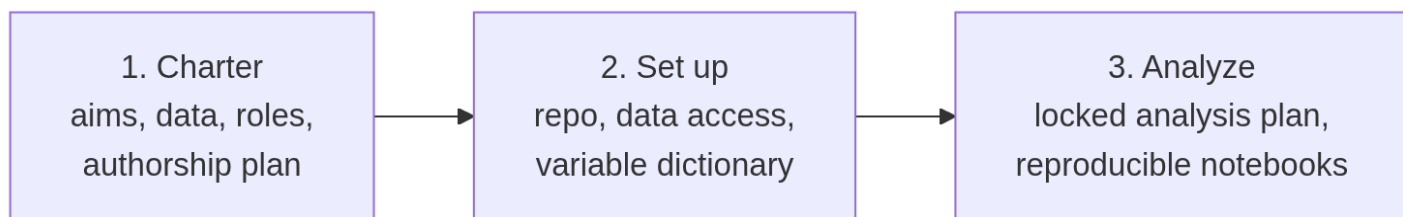
Part III.

How We Work

Project Management and Workflow Systems

This chapter describes how a project moves from idea to product, and the systems that keep work findable, trackable, and reproducible. The goal is low cognitive load and high mentee independence.

10.1. The project lifecycle



1. **Charter.** Complete the **Project Pod Charter**: aims, datasets, access rules, roles, deliverables, **authorship plan discussed at the start**, and weekly task structure.
2. **Set up.** Create the GitHub repo (use the repo checklist), establish data access and the variable dictionary, and stand up the project tool board.
3. **Analyze.** Lock a statistical/ML analysis plan (pre-registered or internally locked) *before* looking at outcomes; work in reproducible notebooks (Chapter 12).
4. **Synthesize.** Produce figures, dashboards, and drafts using the planning templates.
5. **Disseminate.** Submit abstracts, manuscripts, briefs, and dashboards (Chapter 15).
6. **Archive.** Deposit code/data appropriately, update the changelog, and run an authorship audit (Chapter 20).

10.2. Workflow systems

We standardize on a small, deliberate toolset so members can move between projects without relearning everything.

Layer	Tool(s)	Purpose
Operational hub	RIPLRT Bench	Institute workbench / operational dashboard for day-to-day lab workflow (Section 10.3)
Task & project tracking	ClickUp and/or GitHub Projects	Tasks, owners, due dates, status, sprints
Code & versioning	GitHub (Git)	All code, issues, pull requests, code review
Documents	Google Drive / OneDrive	Drafts, shared materials, meeting notes
Analysis & reporting	Quarto / R Markdown, R/RStudio, Python	Reproducible notebooks, manuscripts, dashboards
Sample inventory	Aliquary	System of record for samples, freezer/box maps, barcode lookup, aliquots, freeze–thaw (Section 16.5)
Lab notebook (experimental)	eLabNext (<i>when wet-lab / assay work applies</i>)	Experiment records, protocols/SOPs — <i>not</i> sample inventory (that is Aliquary)
Structured data capture	Qualtrics or REDCap (<i>if applicable to the project</i>)	Survey/clinical data capture
Archiving & open science	OSF, Zenodo, FigShare	Preregistration, archival, DOIs

i Placeholder: exact tool instances

Specific accounts, workspace URLs, and license details (ClickUp workspace, GitHub org, Drive structure, Qualtrics or REDCap instance, OSF projects, Aliquary tenant, RIPLRT Bench access tiers) are confirmed during onboarding and recorded per project in the pod charter. Tooling may evolve; the *principles* (one source of truth, version control, reproducibility) do not.

10.3. RIPLRT Bench

RIPLRT Bench is the Institute’s own **operational dashboard / workbench** — the hub where day-to-day lab workflow is meant to live alongside our project, code, and document tools. It is built and operated for RIPLRT; it is not a third-party project tracker and it does not replace GitHub, ClickUp, or Aliquary. Think of Bench as the front door to operational status; use the specialized tools for code, tasks, documents, and sample inventory.

Account access is provisioned at onboarding and revoked at offboarding (Chapter 19).

i Placeholder: RIPLRT Bench features and access tiers

Exact Bench capabilities, screens, modules, and access tiers (who sees what) are **not yet confirmed in this manual**. Until they are written here, treat Bench as the operational hub at <https://bench.riplrt.com>, follow your mentor's walkthrough at onboarding, and record project-specific Bench use in the pod charter. PI to confirm and replace this callout.

10.4. Task hygiene

A task is only real if it has:

- **An owner** (one person, even if others help).
- **A due date** (or an explicit "no date — backlog" status).
- **A definition of done** (what the deliverable is).
- **A link** to where the work lives (repo, doc, or board).

We review the board in weekly check-ins: what shipped, what's blocked, what's next. Blocked tasks get surfaced early — "no surprises."

10.5. Managing the portfolio without overload

The portfolio spans population-scale surveillance to molecular modeling. To keep it sane:

- **Pods, not heroics.** Work is distributed across pods with defined roles (Chapter 6), not concentrated on one or two people.
- **Project operating manuals.** Each major project keeps a two-page operational summary so anyone can orient quickly and mentees can work independently.
- **One lead metric per goal.** Per the IAP cadence, each strategic goal carries a single lead metric so progress is legible.
- **Quarterly review rhythm.** We score progress against milestones each quarter (Chapter 20) and re-plan rather than letting work drift.

10.6. Aligning daily work to strategy

Project work should ladder up to the group's SMART goals (the 12/36/60-month roadmap in the IAP). In practice:

- Each pod's deliverables map to a named SMART goal (e.g., "RespRisk v1.0 forecasting workflow," "manuscript pipeline," "mentee-integrated production").

- When prioritizing, we ask: *does this advance a SMART goal and the through-line?* If a request doesn't, it goes to the backlog or gets declined — protecting time for the work that matters most.

Data Governance, IRB, Privacy, and Responsible Research

We work with sensitive human-related data: clinical records, claims and pharmacy data, biomarkers, surveillance data, and repository datasets governed by strict use agreements. Mishandling any of it can harm people and end projects. This chapter is mandatory reading for **everyone**, and the standalone policy in [data-governance](#) is the authoritative reference.

11.1. Core principle

Access is a privilege tied to training, approval, and need. We collect the minimum, protect it rigorously, and honor every agreement that lets us use it.

11.2. Human-subjects training and IRB

Before touching any human-subjects data (including tissues, raw data, or derived data), you must:

1. Complete and maintain **CITI Program** training appropriate to your role — typically Biomedical Research (Basic), Responsible Conduct of Research, Data or Specimens, Conflicts of Interest, and Information Privacy for Researchers. Add bloodborne-pathogen training if any biospecimen work applies.
2. Be **added by name to the approved IRB protocol** for your project. If you are not on the protocol, you cannot access the data or participate in the project — no exceptions.
3. Confirm the **IRB-of-record** for your project (it varies by institution and partnership).

! Placeholder: IRB and training specifics

The IRB-of-record, protocol numbers, CITI institutional affiliation, and required module list **must be confirmed per project** with the PI. Links and exact requirements are recorded in each project's pod charter. Do not assume; ask.

11.3. Dataset-specific rules

Each dataset we use carries its own **Data Use Agreement (DUA)** and access rules. These are not interchangeable. Common examples:

Resource	Typical governance considerations
PR DoH / ASES claims & pharmacy	DUA terms, de-identification, approved analysts only, secure environment
BioLINCC	Application, DUA, data security plan, no re-identification, citation requirements
BioData Catalyst / <i>All of Us</i> Workbench	Cloud workspace, registered/controlled tiers, no data egress, workbench-only analysis
MESA, Framingham, AsthmaNet, NHANES	Repository-specific use terms, acknowledgment language, redistribution limits

The **Data Steward** for each pod owns compliance with that project's DUA. Before you analyze, confirm with the steward: *What tier is this? Where must analysis happen? What can leave the environment? What must be cited or acknowledged?*

Use the **Data-Use and Access Checklist** at the start of every project.

11.4. De-identification and HIPAA-adjacent thinking

Even when data are de-identified, we treat them with care:

- **Never attempt re-identification** of any individual, ever.
- Apply de-identification standards (e.g., removing or transforming direct identifiers; respecting small-cell suppression so individuals can't be inferred).
- Report results at aggregate levels that protect individuals; watch out for small cells in stratified (equity) analyses.
- Treat claims, pharmacy, and clinical data as **HIPAA-adjacent**: handle them with the caution you'd give protected health information even when a project is technically outside HIPAA's direct scope.

11.5. Access control and secure storage

- **Least privilege**: people get access only to what their role requires.
- **No restricted data in general channels**. Never put restricted or identifiable data in chat, email, personal drives, personal laptops, or public repos.

- **Analyze where the agreement says to.** For controlled-tier repositories, analysis stays inside the approved workbench/environment; no downloading or egress unless explicitly permitted.
- **Secrets stay out of code.** No credentials, tokens, or keys in GitHub. Use environment variables and a `.gitignore` that excludes data and secrets.
- **Encryption and backups** follow institutional policy for any local handling that is permitted.

11.6. Aliquary governance

Aliquary is our sample-inventory system of record (Section 16.5). Its data-governance profile must fit the same access and DUA discipline we apply everywhere else:

- **De-identified data only.** Do not enter names, MRNs, direct identifiers, or anything that could re-identify a person. Sample records use study IDs and inventory metadata — never PHI.
- **Tenant isolation.** Each lab's inventory is isolated from others; do not share credentials or copy another tenant's data.
- **Complete audit trail.** Registration, moves, aliquots, and freeze-thaw events are logged; treat the trail as part of the scientific record.
- **Full export, no lock-in.** Inventories can be exported when a project archives, migrates, or ends. We do not trap sample records in a closed system.

Access to Aliquary follows **least privilege** and need-to-know, the same as any other controlled tool: provisioned when a member's role requires sample work, recorded on the **Data-Use and Access Checklist** when inventory access is part of a project, and revoked at offboarding (Chapter 19). Aliquary does **not** replace IRB listing, CITI training, or dataset DUAs — it is inventory infrastructure sitting *under* those authorizations.

Transparency: Aliquary and FERMLLC

Aliquary is a product of **Felix E. Rivera-Mariani, PhD, LLC (FERMLLC)** — the same parent LLC under which the RIPLRT Institute operates. It is a **sibling in-house product**, not a third-party vendor and not the RIPLRT Institute itself. We state that relationship here so members, partners, and reviewers can see the affiliation plainly.

11.7. Privacy of people --- including us

- **No photos or videos of human research participants**, ever — that violates privacy and IRB rules.
- Photos/videos of group members require **consent before capture**, and any public posting requires PI approval.

- Respect the privacy of community partners and participants in everything we publish or post.

11.8. Responsible research conduct

- **No fabrication, falsification, or plagiarism.** A negative result is still a result.
- Document analyses so they are reproducible (Chapter 12); reproducibility is a privacy-and-integrity control, not just a quality one.
- Disclose **conflicts of interest** per institutional policy.
- Follow sponsor terms and **data-sharing/publication requirements** of each dataset and grant.

11.8.1. Which institution governs your data

Before you request or touch any dataset, know which umbrella you are working under (Section 1.2) — it sets which IRB, training, and data-use agreement apply.

Your umbrella	IRB of record	Training & agreements
EBDL / Lynn University	Lynn University IRB	Lynn CITI, Lynn IRB listing, Lynn-approved DUAs
UPR-affiliated	UPR IRB (or reliance, as applicable)	UPR CITI/IRB listing; collaboration/DUA terms
RIPLRT / LLC (non-Lynn, non-UPR)	Protocol named in the project charter	Sponsor terms + LLC data-use rules

When a project spans institutions (e.g., a Lynn member analyzing UPR-sourced data), the **most restrictive** applicable terms govern, and the data-use agreement controls. When in doubt, ask the PI before access is provisioned.

11.9. When something goes wrong

If you suspect a data breach, an access error, a consent problem, or a possible integrity issue:

1. **Stop** the activity in question.
2. **Tell the PI and the Data Steward immediately** — early reporting protects you and the people in the data.
3. Document what happened factually.

This is explicitly a **no-blame, report-early** expectation. The only serious mistake is hiding the problem.

Reproducible Science, Open Science, and Version Control

Reproducibility is one of our core values and a competitive advantage. It is also how we train independent scientists: a reproducible workflow is a teachable workflow. This chapter sets the standard.

12.1. The standard

If it isn't reproducible, it isn't finished. Anyone in the group should be able to clone a project, restore the environment, and regenerate every figure, table, and number in a manuscript from raw inputs.

12.2. Version control with Git and GitHub

All code lives in **Git**, hosted on **GitHub** under the RIPLRT organization. No exceptions, no "I'll add it later," no analysis living only on a laptop.

Workflow basics:

- Work on **branches**, not directly on `main`.
- Commit early and often with clear messages (`fix: correct lag window in DLM, not stuff`).
- Open **pull requests** for review; analysis code gets a second set of eyes before it shapes a result.
- Use **issues** to track bugs, questions, and tasks.
- Never commit data, credentials, or secrets — enforce with `.gitignore`.

Use the **GitHub Repository Checklist** when setting up any new project.

! Consult before going public

Before making any repository, dataset, or notebook **public**, confirm with the PI or project lead. Public release must respect DUAs, IRB terms, embargoes, and authorship plans (this rule is inherited from the original manual and still applies).

12.3. Reproducible analysis with Quarto

We author analysis and manuscripts in **Quarto** (modernizing the group's earlier R Markdown / Bookdown practice) unless otherwise stated. Quarto lets prose, code, and output live together and render to HTML, PDF, and Word.

Standards:

- Analyses are **literate**: code, narrative, and results in one document.
- Computational environments are **captured** — use `renv` (R) or a `lockfile / requirements.txt / environment` (Python) so versions are pinned.
- Set a **random seed** for any stochastic step.
- Documents **render cleanly from scratch** (use Quarto's `freeze` thoughtfully, but verify a clean render before milestones).
- Paths are **relative**, never absolute (`data/` not `/Users/you/Desktop/...`).

Run the **Reproducible Analysis Checklist** before any submission.

12.4. Project repository structure

A consistent skeleton makes every project legible:

```
project-name/
  README.md           # what this is, how to run it
  data/               # raw/ (gitignored), interim/, processed/
  R/ or src/          # functions and scripts
  analysis/           # numbered Quarto notebooks
  outputs/            # figures/, tables/, dashboards/
  docs/               # manuscripts, briefs
  renv.lock / env.yml # pinned environment
  .gitignore          # excludes data, secrets, large files
```

- **Raw data is read-only** and never edited by hand — all cleaning is scripted, so it's reproducible and auditable.
- Number notebooks (`01-clean.qmd`, `02-model.qmd`) so the pipeline order is obvious.
- When a project uses physical samples, keep **sample provenance and location** in **Aliquary** (Section 16.5) so inventory history can be traced alongside the analysis pipeline.

12.5. Open science

We contribute to open science deliberately, within what agreements allow:

- **Preregister** analysis plans on **OSF** where appropriate — especially for forecasting work, to separate confirmatory from exploratory analysis.
- **Archive** curated code and (permissible) data with DOIs via **Zenodo** or **FigShare**.
- **Share** reproducible notebooks and manuscripts open-access where possible.
- **Re-analyzing public datasets is good open science**, not plagiarism — it advances reproducibility.

i Open by default, closed by necessity

Our bias is toward openness and transparency. But openness never overrides a data-use agreement, IRB term, participant privacy, or an embargo. When the two seem to conflict, governance wins and you ask the PI.

12.6. Reproducibility as mentoring

Building a reproducible pipeline is one of the most valuable things a mentee learns here. It is also a deliverable in its own right: a clean, documented, reproducible notebook is a legitimate scholarly product and a strong portfolio piece. We credit reproducibility work like the real work it is (Chapter 14).

Responsible Use of AI in Research and Writing

AI tools (large language models, coding assistants, literature-synthesis and workflow-automation tools) are part of how modern research groups work — including ours. Used well, they accelerate good work. Used carelessly, they create integrity, privacy, and quality risks. This chapter sets our guardrails. The standalone policy in [responsible-ai-use](#) is the authoritative reference, and the disclosure form lives at [AI-Use Disclosure Form](#).

13.1. Core principle

AI accelerates judgment; it never replaces it. You are fully responsible for everything you submit, regardless of which tools helped you make it.

13.2. Where AI helps (encouraged, with care)

- **Coding:** scaffolding functions, debugging, explaining errors, drafting tests. *You* read, understand, and verify every line before it enters a pipeline.
- **Writing:** brainstorming structure, tightening prose, drafting non-results sections, improving clarity and bilingual phrasing. *You* own the claims, the citations, and the voice.
- **Literature synthesis:** orienting to a new area, surfacing search terms, summarizing papers *you then read*.
- **Workflow automation:** drafting scripts, templates, and documentation.

13.2.1. AI tools and data across umbrellas

Which AI tools you may use — and which data you may put into them — depends on your umbrella (Section 1.2) and the data-governance rules (Chapter 11):

- **EBDL / Lynn members** use AI tools approved under **Lynn University** policy and may process Lynn-governed or IRB-listed data only in environments Lynn permits.

- **RIPLRT / LLC infrastructure** — including tools built by **FERM Technologies** (the LLC's technology DBA) — is governed by LLC and sponsor terms, not by default Lynn or other institutions' approvals.
- **UPR or external members** follow their home institution's AI and data rules.

Do **not** move data, prompts, or model outputs across umbrellas without explicit authorization — putting Lynn-governed or UPR-governed data into an LLC tool (or vice versa) is a data-governance event, not a convenience. Disclose AI assistance per this chapter regardless of which umbrella's tools you used.

13.3. Where AI must not go (prohibited)

! Hard limits

- **Never paste restricted, identifiable, IRB-governed, claims, pharmacy, clinical, or DUA-controlled data into any external AI tool.** This is a data-governance violation (Chapter 11). Treat AI prompt boxes as public.
- **Never present AI-generated text or analysis as verified fact without checking it.** LLMs fabricate citations, statistics, and results convincingly.
- **Never let AI fabricate, alter, or "clean up" data or results.** That is research misconduct.
- **Never submit AI-written work you do not understand and cannot defend.** If you can't explain it, you can't submit it.

13.4. Verify everything

AI output is a **draft to be checked**, never a source of truth:

- **Citations:** confirm every reference exists, says what's claimed, and is correctly attributed. AI invents plausible-looking citations.
- **Numbers and stats:** re-derive or independently verify any quantitative claim.
- **Code:** read it, test it, and confirm it does what you think on real cases.
- **Facts and methods:** cross-check against primary sources.

13.5. Disclosure and transparency

We are transparent about AI use, both internally and in what we publish:

- **Internally:** note material AI assistance in commit messages, notebooks, or the relevant doc so collaborators know what was AI-assisted and what was human-verified.

- **For scholarly products:** follow the **AI-Use Disclosure** template and the disclosure requirements of the target journal, conference, or sponsor. Many venues require statements about AI use; some prohibit certain uses. Check before submitting.
- AI tools are **not authors**. They cannot take responsibility for the work, so they do not meet authorship criteria (Chapter 14).

13.6. AI and student work

For mentees, AI is a learning accelerator *and* a learning hazard. Our stance:

- AI is allowed for learning, drafting, and debugging — **as a tutor and assistant, not a substitute for developing skill**.
- The goal of training is *your* capability. If AI does the thinking you were supposed to learn, you've been shortchanged. Use it to go faster on things you already understand and to learn things you then internalize.
- Mentors and mentees discuss AI use openly in IDPs and one-on-ones — what's helping, what's becoming a crutch.

13.7. Why we hold this line

Our credibility — with reviewers, partners, communities, and sponsors — rests on integrity and reproducibility. Equity-focused work especially cannot afford fabricated results or leaked data. Responsible AI use protects the people in our data, the trust of our partners, and the development of our trainees. Speed is never worth a shortcut on any of those.

The defensibility test

Before submitting anything AI helped with, ask: *Could I explain and defend every claim, line of code, and citation here to the PI or a reviewer, as if no AI were involved?* If yes, proceed. If no, you're not done.

Part IV.

Scholarship & Dissemination

Authorship, Contributorship, Presentations, and Public Dissemination

How we assign credit is one of the most important — and most emotionally charged — parts of running a research group. We handle it transparently, early, and fairly. The standalone policy in [authorship-contributorship](#) is authoritative; this chapter is the working summary.

14.1. Principles

- **ICMJE governs authorship.** We follow the International Committee of Medical Journal Editors criteria. Click [here](#) for details.
- **CRedit documents contributorship.** We use a CRediT-style taxonomy to record who did what. Click [here](#) for details.
- **Authorship is discussed at the start of every project**, not negotiated at the end. Surprises about credit are exactly the kind of “surprise” our culture forbids.
- **Mentees are credited fairly**, including on a student-first authorship pathway where appropriate.

14.1.1. Institutional affiliations on bylines and disclosures

Your byline affiliation reflects your home institution, not the Institute’s parent entity (Section [1.2](#)):

- **Lynn-affiliated members** — list Lynn University (and the Educational Biomarker Discovery Lab where a lab affiliation is appropriate).
- **UPR-affiliated members** — list the University of Puerto Rico unit you belong to.
- **The PI** lists his Lynn University appointment and, where appropriate, the RIPLRT Institute / Felix E. Rivera-Mariani, PhD, LLC.
- **Independent or external members** without a current institution — coordinate affiliation with the PI; “RIPLRT Institute” may serve as the research-group affiliation.

Do not list “Lynn University” for a member who is not Lynn-affiliated, and do not imply that the RIPLRT Institute is a Lynn University unit. Acknowledgments and funding disclosures name the entity that actually held the award or provided the resource — Lynn-administered grant, LLC/RIPLRT, sponsor, or UPR — not a default.

14.2. ICMJE authorship criteria

To be an **author**, a person must meet **all four** ICMJE criteria:

1. Substantial contributions to conception/design, or acquisition, analysis, or interpretation of data; **and**
2. Drafting the work or revising it critically for important intellectual content; **and**
3. Final approval of the version to be published; **and**
4. Agreement to be accountable for all aspects of the work.

Contributors who do not meet **all four are acknowledged**, not listed as authors. Meeting only one criterion (e.g., funding, or only collecting data) does not by itself confer authorship.

14.3. CRediT contributorship taxonomy

For each product we record contributions using CRediT roles, which makes credit specific and visible: *Conceptualization, Methodology, Software, Validation, Formal analysis, Investigation, Resources, Data curation, Writing – original draft, Writing – review & editing, Visualization, Supervision, Project administration, Funding acquisition.*

Map pod roles to CRediT contributions in the **Authorship/Contributorship Agreement** at project start, and update it as roles evolve.

14.4. Author order and the student-first pathway

- **First author:** led the intellectual and practical work of the product — often the project’s analysis or writing lead, frequently a mentee.
- **Senior/last author:** the PI or supervising scientist who provided direction and accountability.
- **Middle authors:** ordered by contribution, discussed openly.
- **Student-first pathway:** when a mentee has done the lead work, they earn first authorship. Building mentees into first- and co-first-author positions is a documented goal of this group (it appears in the IAP SMART goals) and a deliberate feature of our workforce-development mission.

i Disagreements about credit

Authorship disputes are handled early and directly, mediated by the PI, with reference to the documented contributorship agreement. Because we write the plan down at the start and update it as we go, most disputes are prevented rather than resolved. AI tools are never authors (Chapter 13).

14.5. Presentations, posters, and conferences

- Every member is expected to **present ongoing research at least once a year** — mentees at a regional or (preferably) national conference aligned with their goals.
- Presenting authorship follows the same fairness principles; the presenter is typically the person who led the work.
- Use the **Conference Abstract Planning Sheet** and confirm the authorship list *before* submission.
- We actively pursue travel awards and scholarships so cost is not a barrier (Chapter 18).

14.6. Public dissemination and science communication

Our mission requires translating science beyond journals:

- **Clinician-facing dashboards, community risk briefs, public-health playbooks, and bilingual science-communication content** are first-class products (Chapter 15), and contributors to them are credited.
- Public-facing materials (including social media via the group's science-communication channels) get **PI review before release**, must respect data governance and privacy, and represent the group and its partners responsibly.
- Bilingual (Spanish/English) communication is a core value; community materials should reach the communities they're about.

14.7. Strategic, non-defensive framing

When we describe our own work — in talks, briefs, bios, or proposals — we lead with credentials and institutional value, not personal advancement, and we frame new work as a forward progression from prior work rather than a reprise. Self-promotion is fine; it should simply be credential-forward and self-decentered, able to survive scrutiny without sounding defensive. This protects both the science and the group's reputation.

14.8. Acknowledgments and funding

- Acknowledge funders, data providers, and repositories using the **exact language each requires** (BioLINCC, *All of Us*, MESA, etc. each specify acknowledgment text).
- Acknowledge non-author contributors (with their permission).
- Report conflicts of interest per venue and institutional policy.

Research Products: Manuscripts, Abstracts, Posters, Dashboards, and Briefs

Success at RIPLRT is broader than grants and papers. We define it to include **student development, presentations, skills, reproducible tools, and reputation** alongside traditional outputs. This chapter catalogs the products we make and how we make them well.

15.1. Our product portfolio

Product	Primary audience	Owned by (typical)	Template
Peer-reviewed manuscript	Scientific community	Writing Lead + Analysis Lead	Manuscript Planning Sheet
Conference abstract	Scientific community	Project Lead / mentee	Conference Abstract Planning
Poster	Conference attendees	Mentee (often first product)	(see abstract sheet + assets)
Reproducible notebook	Internal + open science	Reproducibility / Analysis Lead	Reproducible Analysis Checklist
Clinician-facing dashboard	Clinicians, agencies	Visualization/Dashboard Lead	(pod charter)
Community risk brief	Communities, partners	Science Communication Lead	(pod charter)
Public-health playbook	Agencies, decision-makers	Project Lead + SciComm Lead	(pod charter)
Bilingual sci-comm content	General public	Science Communication Lead	(pod charter)

Among other products not yet listed here.

15.1.1. Ownership of research products

Datasets, code, dashboards, models, and other products carry ownership and intellectual-property (IP) implications that follow the umbrella under which they were created and the resources used (Section 1.2). Get this right *before* a product with potential value is built.

General principles (confirm specifics before relying on them):

- **Products created within Lynn University** — by Lynn-employed personnel, or using Lynn resources, time, or funding — are subject to Lynn University's IP policy, which may assign ownership or co-ownership to the University. Do not assume a Lynn-built product belongs to RIPLRT or the LLC.
- **Products created under the RIPLRT Institute / LLC** outside Lynn employment and resources — including tools developed by FERM Technologies** — are owned by Felix E. Rivera-Mariani, PhD, LLC subject to any sponsor terms.
- **UPR or external contributions** are subject to that institution's IP policy.
- **Cross-umbrella products** (e.g., a Lynn student contributing to an LLC/FERM tool) require a written ownership understanding agreed in advance with all relevant institutions.

⚠ Before building anything with commercial or licensable value

Do not label a product as LLC/FERM-owned, or pursue licensing or commercialization, until ownership is confirmed in writing against **Lynn University's IP policy** and, where relevant, UPR's. When the answer is unclear, the PI obtains written clarification — and, where warranted, institutional or legal counsel — *before* development proceeds. This protects the member, the Institute, and the University alike.

15.2. Manuscripts

- Start with the **Manuscript Planning Sheet**: target journal, key message, figures, authorship plan, and timeline — *before* drafting.
- One **Writing Lead** coordinates drafting and submission; sections are delegated to build skills (figure lead, methods lead, literature-synthesis lead).
- Every number and figure traces back to a **reproducible notebook** (Chapter 12).
- Aim for the IAP cadence: a steady, thematically coherent manuscript pipeline organized around our four themes — aeroallergen/fungal early-warning science; respiratory severity and care pathways; biomarker/microbiome signatures; and equity-stratified environmental risk.

15.3. Abstracts and posters

- Abstracts are often a mentee's first scholarly product — treat them as real training, not filler.
- Maintain a shared abstract calendar of society deadlines (AAAAI, AAI, ATS, SOT, ASM, ISES, ASBMB, ABRCMS, and others).
- Posters reuse manuscript figures and the through-line narrative; keep a poster template and the group's visual identity in the repository [assets/](#) folder.
- Confirm authorship before submission; rehearse presentations as a pod.

15.4. Dashboards and decision-support tools

Forecasting and decision tools (e.g., the RespRisk line described in the IAP) are flagship products:

- Build them reproducibly, with documented thresholds, fairness/equity checks, and clear risk tiers (e.g., green/amber/red).
- Co-develop with stakeholders; validate against real-world outcomes; report calibration, decision-curve utility, and equity-stratified performance.
- Version dashboards like code; never expose restricted data through a tool.

15.5. Community briefs and bilingual communication

These close the Community-to-Clinic-to-Cloud loop:

- **Community risk briefs** translate forecasts into plain-language, actionable summaries for the communities the data come from.
- Materials are bilingual (Spanish/English) so they reach the people they're about.
- Briefs get PI review and respect privacy and partner relationships.
- Track real-world uptake (briefs issued, decisions supported, partner adoption) — impact is a product too.

15.6. Quality bar for every product

Before anything leaves the group:

- It is reproducible (or, for non-analytic products, traceable to reproducible work).
- It respects data governance, privacy, and DUAs.
- Its authorship/contributorship is documented and agreed.
- It has been reviewed (peer within the pod + PI as appropriate).

- It advances a SMART goal and the through-line — we make products on purpose, not just to be busy.

 Products are also development

Match products to mentees' growth. A first abstract, a first figure, a first reproducible notebook, a first first-authorship — each is both a research output and a rung on the development ladder (Chapter 7). Plan products with people's growth in mind, not just the project's needs.

Part V.

Operations & Care

Health, Safety, Fieldwork, Biospecimens, and Remote Work

This chapter replaces the original manual's COVID-specific section with a broader, durable policy covering the range of settings our hybrid group works in: remote and home offices, fieldwork and community sites, any biospecimen handling, and shared facilities. It also retains a flexible public-health protocol for when one is needed.

16.1. General principle

Your health and safety come first. No deadline, dataset, or deliverable is worth your wellbeing. Tell the PI or your mentor about any health or safety concern — including allergies or conditions that affect your work — so we can support you.

16.2. Remote and hybrid work

Most of our work is computational and can be done remotely. To make remote work healthy and effective:

- **Ergonomics matter.** Set up a workspace that protects your eyes, wrists, and back; take regular breaks.
- **Sustainable hours.** We do not measure worth by hours online. Get the work done well; protect rest and boundaries (Chapter 18 covers wellbeing and burnout prevention more fully).
- **Availability, not surveillance.** Keep your availability current so work is planned realistically; we trust members to manage their time. (We do **not** use geo-location time-tracking; that practice from the wet-lab era is retired.)
- **Security travels with you.** Remote work follows the same data-governance rules (Chapter 11): no restricted data on personal devices or unsecured networks; analyze controlled data only in approved environments.
- **Stay connected.** Remote members are deliberately included in meetings, decisions, authorship, and the social life of the group (Chapter 5).

16.3. Fieldwork and community sites

When work happens in communities, partner clinics, or field settings:

- **Plan and brief first.** Confirm site contacts, logistics, consent procedures, and an emergency plan before going.
- **Respect community partners.** We are guests; follow partner site rules and cultural norms. Communities are collaborators, not subjects.
- **Never photograph or record research participants** (Chapter 11). Capture only what consent and IRB allow.
- **Travel safely.** Follow institutional travel and safety policies; don't work alone in unfamiliar settings without a check-in plan.
- **Protect data in transit.** Field-collected data follows the same security and de-identification rules from the moment it's captured.

16.4. Biospecimens (when applicable)

If a project involves biological specimens (human blood, tissue, or environmental bioaerosol samples):

- Complete required bloodborne-pathogen and biosafety training and maintain relevant vaccinations (e.g., Hepatitis B) per institutional policy when handling human blood/fluids.
- Follow the biosafety level, PPE, and handling procedures for the facility and protocol.
- Label, store, log, and chain-of-custody specimens per the protocol; never improvise. Inventory and location of record live in **Aliquary** (Section 16.5).
- Dispose of biological and chemical waste per institutional and regulatory rules.
- Wear appropriate PPE and follow facility dress/safety codes when in a lab space.

i Placeholder: facility-specific safety rules

Exact biosafety levels, PPE requirements, vaccination/clearance rules, waste procedures, and emergency contacts depend on the specific facility and institution. These **must be confirmed locally** before any wet-lab or biospecimen work and recorded in the project's operating manual.

16.5. Sample inventory with Aliquary

When a project holds physical samples — human biospecimens, environmental bioaerosols, or other aliquoted materials — **Aliquary** is our **sample-inventory system of record**. Spread-sheets and ad-hoc freezer lists are not an inventory.

Aliquary is how we:

- **Register** samples (with the metadata the project requires).
- **Map** freezers, racks, and boxes so every vial has a known home.
- **Look up** anything by barcode when someone needs it at the bench.
- **Track** aliquots and freeze–thaw cycles so usage history is auditable.

16.5.1. Workflow: register → locate → track → export

1. **Register.** Create the sample record in Aliquary when the material enters inventory — before it goes into a box.
2. **Locate.** Assign (and keep current) freezer / rack / box / position; use barcode lookup to find it again.
3. **Track.** Record aliquoting and freeze–thaw events as they happen; do not backfill from memory.
4. **Export.** When a project archives, migrates, or ends, export the inventory so we retain a complete record with **no lock-in**.

Governance for what may be stored in Aliquary (de-identified only, tenant isolation, audit trail, export) is in Section 11.6. Account access is provisioned at onboarding and revoked at offboarding (Chapter 19).

i Transparency: Aliquary and FERMLLC

Aliquary is a product of **Felix E. Rivera-Mariani, PhD, LLC (FERMLLC)** — the same parent LLC under which the RIPLRT Institute operates. It is a **sibling in-house product**, not a third-party vendor and not the RIPLRT Institute itself. We use it because it fits our inventory needs and our governance rules; the relationship is stated here so members and partners can see that plainly.

16.6. Public-health and infectious-disease protocol (flexible)

Rather than a single pandemic-specific section, we keep a **scalable protocol** that activates when public-health conditions require it (a respiratory illness surge, a new advisory, fieldwork in an outbreak area):

- Follow current institutional, local, state, and federal guidance — that guidance, not this manual, is authoritative and current.
- The PI may activate measures proportionate to the situation: remote-first work, masking, distancing, capacity limits in shared spaces, testing, or pausing in-person activity.
- **Stay home when sick**; we would always rather you rest than risk others. Sickness is never penalized.
- For fieldwork during an active outbreak, add a site-specific risk assessment to the project operating manual.

16.7. Reporting incidents

Report any injury, exposure, near-miss, safety concern, or health-and-safety question to the PI promptly. Reporting is expected and never penalized — early reporting keeps everyone safe.

Conflict Resolution, Feedback, and Accountability

Disagreement is normal and often productive; unaddressed conflict is corrosive. This chapter explains how we give feedback, work through conflict, and hold one another accountable — humanely and without surprises. It deliberately replaces the original manual's punitive wage-penalty mechanics with a professional, developmental approach.

17.1. Our stance

We address problems early, directly, and kindly. We separate the person from the problem. We assume good faith. And we document, so accountability is fair and clear.

17.2. Feedback culture

Feedback is a routine, two-directional habit — not a rare, high-stakes event.

- **Frequent and specific.** Small, timely feedback beats a once-a-year verdict. “Specifically, the lag window in this model needs justification” beats “be more rigorous.”
- **Kind and candid.** Care personally *and* challenge directly. Withholding honest feedback to be “nice” is neither kind nor helpful.
- **Two-way.** Mentees give feedback to mentors and the PI, including in anonymous climate checks. Leaders model receiving feedback well.
- **About the work.** We critique ideas, code, and drafts — never the worth of the person.

Use the **Stop / Start / Continue Feedback Form** in one-on-ones and reviews.

17.3. A structured way to handle difficult conversations

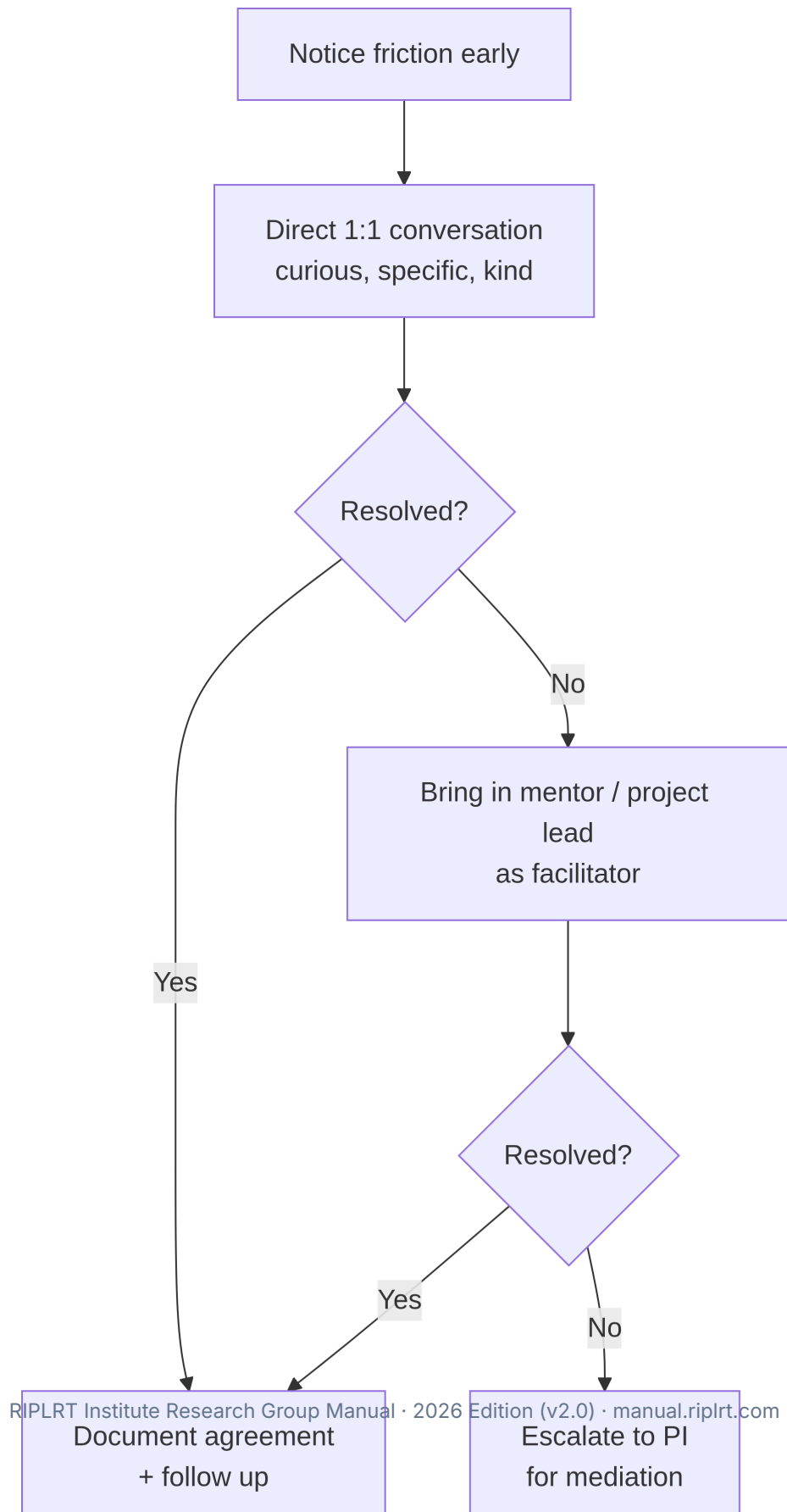
When a conversation is hard, it helps to separate three things people usually tangle together:

1. **What happened.** Get curious about each person's account before deciding who's “right.” There are usually two reasonable stories. Ask, don't assume.

2. **Feelings.** Name the emotions in play (yours and theirs) instead of letting them leak into the content. Frustration unacknowledged becomes blame.
3. **Identity.** Notice what the conflict says to each person about themselves ("Am I competent? Am I respected?"). Many conflicts escalate because an identity feels threatened, not because the facts are far apart.

Naming these explicitly — even just to yourself before the conversation — defuses most of the heat.

17.4. Practical conflict-resolution steps



1. **Start direct and small.** Most friction resolves in a respectful one-on-one. Lead with curiosity ("Help me understand...") and a specific issue, not an accusation.
2. **Use a facilitator** if a direct conversation stalls — a mentor or project lead, not to take sides but to help both people be heard.
3. **Escalate to the PI** for mediation when needed.
4. **Use institutional channels** (HR, ombuds, Title IX, etc.) for matters of harassment, discrimination, safety, or misconduct — these go beyond the group and must follow institutional policy. The PI helps you access them.

i Communication techniques that help

- **Observe, then state need.** Describe the observable behavior and its impact, then the request — without judgment language. ("When the analysis arrives the night before the meeting, I can't review it in time; could we set an internal deadline two days earlier?")
- **Reflect back.** Briefly restate what you heard before responding, so the other person feels understood. Misunderstandings shrink when people feel heard.
- **Ask, don't tell, in tense moments.** Calibrated, open questions ("How am I supposed to do that with the current timeline?") invite problem-solving instead of triggering defensiveness.

17.5. Accountability --- professional, not punitive

We hold real standards. We meet them through development and documentation, not penalties.

When performance or follow-through falls short:

1. **Early, private conversation.** Name the gap specifically; ask what's getting in the way; listen. Often the cause is unclear expectations, overload, or an unsurfaced obstacle — all fixable.
2. **Clarify expectations and support.** Restate what "done" looks like, set a realistic plan, and offer help or resources.
3. **Document.** Keep a brief, factual record of the conversation, the plan, and the timeline. Documentation protects both parties and keeps accountability fair.
4. **Follow up.** Check progress against the plan; recognize improvement.
5. **Use institutional/contractual processes** only where applicable and only after the developmental steps — handled through the proper institution or entity, never invented in this manual.

! What we explicitly retired

The 2021 manual tied wage status and pay reductions to task completion and precision thresholds (e.g., 50% wage reduction for a missed cleanup step; waged↔non-waged

conversions). **We have removed all punitive wage mechanics.** Compensation and employment terms are governed by the relevant institution or entity. Accountability here is about clarity, support, documentation, and the “no-surprises” deadline culture (Chapter 9) — not financial penalty.

17.6. The no-surprises principle, applied to accountability

Accountability and feedback should never blindside anyone. If something is off, the person hears it from a teammate or mentor early and directly — not for the first time in a review, and never as a penalty out of nowhere. Both directions: leaders surface concerns early, and members surface obstacles early. Surprises are the failure mode we design against.

Funding, Grants, Travel, and Professional Development

This chapter covers how the group is funded, how members engage with grants, how we support conference travel, and how we invest in each member's growth — including protecting against burnout.

18.1. How the group is funded

Funding comes from the PI's grants and the group's portfolio of extramural, foundation, society, industry, and institutional support, pursued along the IAP trajectory (seed and trainee support now, building toward R-level and center-scale awards). In keeping with our transparency value, members can learn from our funding work:

- **Grants are open intra-group.** Members may read grant documents (funded or not) in the shared drive — both to learn how grants are written and to see the group's vision for the years ahead.
- You will often be asked to **contribute a figure, preliminary analysis, or feedback** to a grant. This is real training and a credited contribution.
- Purchases or grant charges go through the PI; never commit group funds without approval.

18.1.1. Which entity holds the funds

Funding determines process: the entity that holds an award sets eligibility, spending rules, and reimbursement path (Section 1.2).

- **Lynn-administered awards and accounts** follow Lynn University procurement, travel, and reimbursement procedures; EBDL members use these for Lynn-funded work.
- **RIPLRT / LLC funds** (foundation, society, industry, or consulting awards held by the LLC) follow LLC and sponsor terms.
- **UPR or external members** may also have home-institution funding and travel paths; confirm which applies before incurring costs.

Practical rule: confirm the funding source and its umbrella before you book travel or commit a purchase. Reimbursement runs through the entity that holds the money, and mixing them creates problems that are hard to unwind. When unsure, ask the PI or the named project lead first.

18.2. Engaging with grants as a development activity

Grant-writing is part of the development ladder. Depending on your stage, you may:

- Build or refine a figure or preliminary-results panel.
- Run an analysis that becomes preliminary data.
- Draft a biosketch, specific-aims critique, or mentoring-plan section.
- Help assemble letters, budgets, or data-management/sharing plans.

Mentees pursuing their own paths are encouraged to apply for fellowships and trainee awards (the group actively supports trainee-support applications, per the IAP). We help you find and write them.

18.3. Travel and conferences

We advocate conference travel to present work, network, and stay current.

- **Every member presents at least once a year;** mentees aim for a regional or (preferably) national conference aligned with their goals.
- **Cost should not be a barrier.** We actively pursue travel awards, scholarships, and trainee grants so members can attend. Some group funds may be available on request.
- Plan submissions against the shared abstract calendar (AAAAI, AAI, ATS, SOT, ASM, ISES, ASBMB, ABRCMS, and others).
- Confirm authorship before submitting (Chapter 14), and rehearse as a pod.

i Placeholder: travel funding specifics

Exact travel-funding sources, amounts, reimbursement procedures, and institutional travel policies vary and **must be confirmed with the PI and the relevant institution** for each trip. Apply early for external travel awards regardless.

18.4. Professional development

We invest in members' growth beyond project deliverables:

- **IDP-driven.** Development goals live in the Individual Development Plan (Chapter 7) and are revisited each semester.
- **Skills.** Coding, statistics/ML, scientific writing, presenting, and science communication are all explicitly developed, not assumed.
- **Sponsorship.** Mentors put members forward for opportunities, awards, and roles (Chapter 7).
- **Pathways.** We support transitions into graduate, professional, research, data-science, public-health, and leadership positions — a named IAP goal.

18.5. Wellbeing and sustainable productivity

Productivity is a core value, but so is sustainability. A burned-out scientist is neither healthy nor productive.

- **Protect rest and boundaries.** We do not glorify overwork. Connected, rested teams do better science in fewer hours.
- **Plan the semester.** Use a semester plan and weekly writing/analysis blocks (aligned with the IAP cadence) so work is steady rather than frantic.
- **Watch for burnout** — in yourself and teammates — and raise it early. Naming overload is professionalism, not weakness.
- **Say no strategically.** Not every opportunity advances the through-line. Declining or deferring low-alignment requests protects time for high-value work; the PI and project leads help you triage.
- **Use available support.** Institutional wellbeing resources, counseling, and accommodations exist; using them is encouraged, not stigmatized.

Align effort with priorities

The best protection against overwork is alignment: spend your energy on what advances a SMART goal and the through-line, and let the rest go to the backlog. If you're overwhelmed, that's a planning conversation to have early with your mentor — not a failing to hide.

Part VI.

Lifecycle & Maintenance

Onboarding, Training Milestones, and Offboarding

This chapter defines how members join, grow, and leave the group well. Good onboarding makes people productive and connected quickly; good offboarding protects continuity, relationships, and reputation.

19.1. Onboarding

New members complete the **New Member Onboarding Checklist**. At a high level, the first weeks look like this:

19.1.1. First 7 days

- Read this manual; sign the **acknowledgment form**.
- Meet your mentor and the PI; understand your project and pod.
- Get accounts and access: messaging channel, GitHub org, shared drive, project tool, **RIPLRT Bench** (Section 10.3), **Aliquary** when your role involves samples (Section 16.5), and any other project-specific tools — provisioned at least privilege (Chapter 11).
- Add a short bio and (optional) photo for the group directory; set up your availability.

19.1.2. Step 0 — Confirm your umbrella

Before the first-7-days checklist, your mentor confirms and records which umbrella you join under (Section 1.2), because it sets your IRB, training, and authorship path:

- **Lynn University (EBDL):** Lynn CITI/IRB, Lynn accounts and resources, Lynn policy.
- **UPR or other external / independent:** your home institution's CITI/IRB and policies; RIPLRT-direct mentoring and any collaboration/DUA terms.

This is captured on the **onboarding checklist and the manual-acknowledgment form (forms)** so your record is unambiguous from day one. Offboarding confirms that data, accounts, and products are returned or transferred to the **correct entity** for the umbrella you worked under.

19.1.3. First 30 days

- Complete required **CITI/IRB training**; be added to relevant IRB protocols before touching human-subjects data.
- Complete tool onboarding: Git/GitHub basics, R or Python setup, reproducible-notebook walkthrough, and the data-governance rules.
- Take ownership of **one defined, mentored task** that ladders up to a named deliverable.
- Co-create your **Individual Development Plan** with your mentor.

19.1.4. First 90 days

- Independently own a named deliverable (a figure, codebook, literature synthesis, or reproducible notebook).
- Present once to the pod or group (a wins-and-roadblocks update counts).
- Have a first IDP check-in to calibrate goals and support.

19.2. Training milestones

Members progress along the development ladder (Chapter 7):

Milestone	What it looks like
Foundation	Trained (CITI/IRB), tooled up (Git, R/Python, reproducibility), manual signed
Contribution	Independently owns a named deliverable; first abstract/figure/notebook
Leadership	Leads a pod component; mentors a newer member; first/co-first authorship

Milestones are tracked in the IDP and reviewed each semester. The aim is growing **independence and leadership**, not just task volume.

19.3. Offboarding

People move on — graduation, new positions, end of a term, or a planned transition. We offboard deliberately so nothing is lost and relationships stay strong. Members complete the **Offboarding Checklist**.

19.3.1. Knowledge & continuity handoff

- **Transfer ownership** of repos, documents, and tasks; ensure successors have access.
- **Document the state** of every active project: where things stand, what's next, where things live.
- Ensure all code is committed and pushed, notebooks render, and data is stored per governance rules.
- Update the **variable dictionary** and project operating manual.

19.3.2. Credit & products

- Confirm **authorship/contributorship** on in-progress and completed products (Chapter 14). Leaving the group does not erase earned credit; departing members remain authors on work they did.
- Agree on how in-progress manuscripts will be completed and who leads them.

19.3.3. Access & security

- **Revoke access** appropriately (accounts, repos, drives, data environments, **RIPLRT Bench**, **Aliquary**, and any other lab platforms) — security hygiene, not distrust.
- Return or properly handle any equipment or restricted materials.
- Confirm sample-inventory ownership and open freeze-thaw / aliquot records in Aliquary are handed to a successor before access is removed (Section 16.5).

19.3.4. Relationship & growth

- Final IDP review and a **forward-looking conversation**: references, recommendation letters, sponsorship, and staying in the network.
- Capture the member in the group's alumni record; alumni remain part of the RIPLRT community and a source of mentorship for current members.
- An **exit stop/start/continue** conversation: what should the group keep, start, or stop? Departing members often give the most candid, useful feedback.

💡 Offboarding is a relationship, not a transaction

How we say goodbye shapes our reputation and network as much as how we say hello. Alumni who left well become collaborators, references, recruiters of future members, and ambassadors for the group. Invest in the exit.

Annual Review and Manual Maintenance

A research group is a living system. This chapter describes the rhythms by which we review the group — scientifically and humanly — and keep this manual current.

20.1. Review rhythms at a glance

Cadence	Activity	Tool / output
Weekly	Pod check-ins; wins & roadblocks	Weekly agenda, action items
Quarterly	Lab climate pulse; progress vs. SMART metrics	Anonymous pulse; one lead metric/goal
Semesterly	IDP reviews	Updated IDPs
Annually	Stop/Start/Continue; portfolio review; authorship audit; strategic alignment; manual maintenance	This chapter's checklists

This mirrors the IAP's quarterly review cadence: lock milestones (Q1), freeze first analyses and draft aims (Q2), move products toward submission (Q3), and score progress and re-plan (Q4).

20.2. Quarterly: lab climate pulse

A **10-minute anonymous pulse** turns belonging into data. It covers: workload, role clarity, sense of belonging, mentorship quality, confidence with tasks, and barriers. The PI and leads review results, share back what they heard, and name one or two concrete changes. Measuring climate without acting on it erodes trust faster than not measuring at all.

20.3. Annually: the RIPLRT operating review

Once a year we step back and review the group as a whole.

20.3.1. 1. Stop / Start / Continue (lab feedback)

Everyone contributes (use **Stop / Start / Continue Feedback Form**): What should the group **stop** doing? **start** doing? **continue** doing? Synthesize themes; commit to a short, public list of changes.

20.3.2. 2. Project portfolio review

For each project: Is it advancing? Is it aligned with the through-line and a SMART goal? Is it appropriately staffed? Should it continue, pivot, pause, or close? This prevents drift and overextension — our main risk is too many half-supported projects, not too few people.

20.3.3. 3. Authorship audit

Review every active and recent product against the documented contributorship agreements (Chapter 14): Is credit accurate and fair? Are mentees getting the authorship their contributions earned? Are first-author/co-first-author trainee goals on track? Resolve any drift now, not at submission.

20.3.4. 4. Strategic alignment review

Check the portfolio and the group's activities against the IAP's 12/36/60-month goals: Are we on pace? What needs to change? Update the goals based on funding, data access, and partner feedback. Refresh the through-line narrative if the science has progressed.

20.3.5. 5. Climate and inclusion review

Review the year's climate pulses for trends. Is the group living its values? Is it inclusive in practice, not just branding? What will we change?

20.4. Manual maintenance

This manual is itself reviewed annually (and amended as needed in between).

Maintenance process:

1. **Designate a maintainer** each year (often the Group Lead, with PI sign-off) to shepherd updates.
2. **Collect proposed changes** throughout the year via GitHub issues/PRs ([CONTRIBUTING](#)) and the annual stop/start/continue.
3. **Review and merge** approved changes; update [CHANGELOG](#).
4. **Re-render** the Quarto book and publish the new version.
5. **Re-acknowledge**: when changes are substantive, members re-sign the acknowledgment so everyone is on the current version.

i Sections to review every year

- **Tooling and platforms** (Chapter [10](#)) — tools change.
- **Data governance and dataset rules** (Chapter [11](#)) — DUAs and IRB terms change.
- **Responsible AI** (Chapter [13](#)) — this field moves fast.
- **Institutional placeholders** — confirm affiliations, IRB-of-record, and policies.
- **Vision/Mission/Values and SMART alignment** (Chapter [4](#)) — keep them synced with the current IAP.

20.5. Closing the loop

The point of all this review is not bureaucracy — it's **adaptation**. We observe how the group is doing (scientifically and humanly), we get feedback, and we change. Self-awareness, feedback, and the willingness to adjust are leadership responsibilities. A group that reviews itself honestly and acts on what it finds is a group that keeps getting better at both the science and the mentoring.

Appendices

This chapter collects reference material: pointers to the templates, policies, and forms appendices; a glossary of terms; a resource list; and acknowledgments.

Appendix A --- Templates

Reusable, fill-in templates live in [templates](#). See the [Templates appendix](#). They include:

- New Member Onboarding Checklist
- Project Pod Charter
- Individual Development Plan (IDP)
- Student Research Plan
- Manuscript Planning Sheet
- Authorship / Contributorship Agreement
- Data-Use and Access Checklist
- GitHub Repository Checklist
- Reproducible Analysis Checklist
- AI-Use Disclosure Form
- Conference Abstract Planning Sheet
- Weekly Meeting Agenda
- One-on-One Mentoring Meeting Template
- Stop / Start / Continue Feedback Form
- Offboarding Checklist

Appendix B --- Standalone policies

Authoritative policy documents live in [/policies](#). See the [Policies appendix](#):

- Authorship & Contributorship Policy
- Data Governance Policy
- Responsible AI Use Policy
- Code of Conduct (also at repo root as `CODE_OF_CONDUCT.md`)

Appendix C --- Forms

Sign-and-submit forms live in [/forms](#). See the [Forms appendix](#):

- Onboarding Checklist

- Offboarding Checklist
- Manual Acknowledgment Form

Appendix D --- Glossary

Term	Meaning
Through-line	Exposure Science → Immune Bioactivity → Computational Forecasting → Equity-Focused Translation → Inclusive Workforce Development
Aliquary	FERMLLC sample-inventory platform (sibling in-house product): registration, freezer/box maps, barcode lookup, aliquot and freeze-thaw tracking — our inventory system of record (aliquary.com ; Section 16.5)
Community-to-Clinic-to-Cloud	Our central narrative: measure environmental signals in communities → link to clinical/claims/biomarker outcomes → convert to equity-aware decision tools
Pod	A small, project-specific team with defined roles
IDP	Individual Development Plan
IAP	Individual Academic Plan (the PI's strategic roadmap)
DUA	Data Use Agreement
ICMJE	International Committee of Medical Journal Editors (authorship criteria)
CRediT	Contributor Roles Taxonomy
CITI	Collaborative Institutional Training Initiative (research-ethics training)
Educational Biomarker Discovery Lab (EBDL)	The branch through which RIPLRT research is conducted within Lynn University
IRB	Institutional Review Board
Felix E. Rivera-Mariani, PhD, LLC	The parent legal entity (FL #L21000280781; PR #467494) under which the RIPLRT Institute operates; also the builder of Aliquary
Lynn University	Institutional home of the EBDL and of Lynn-affiliated members
RespRisk	The group's respiratory-risk forecasting/decision-support workflow line
RIPLRT Bench	The Institute's operational dashboard / workbench for day-to-day lab workflow (bench.riplrt.com ; Section 10.3)

Term	Meaning
RIPLRT Institute	The research group as a whole, including all members and projects, operating under the LLC.
SMART goals	Specific, Measurable, Achievable, Relevant, Time-bound goals (12/36/60-month)
University of Puerto Rico (UPR)	Collaborating institution; home institution of UPR-affiliated mentees, who remain governed by UPR policy and IRB.

Appendix E --- Key resources and platforms

Lab platforms

Platform	Role	URL	Data scope
Aliquary	Sample-inventory system of record (register, locate, track, export)	https://www.aliquary.com	De-identified sample/inventory metadata only; tenant-isolated; full export (Section 11.6)
RIPLRT Bench	Operational hub / workbench for day-to-day lab workflow	https://bench.riplrt.com	Operational status and workflow (<i>exact modules and access tiers — placeholder; see Section 10.3</i>)

Other tools and resources

- **Code & versioning:** GitHub (Git), GitHub Projects
- **Project management:** ClickUp
- **Documents:** Google Drive / OneDrive
- **Analysis & reporting:** R/RStudio, Python, Quarto / R Markdown
- **Lab notebook (experimental):** eLabNext (*when wet-lab / assay work applies; sample inventory is Aliquary*)
- **Structured data capture:** Qualtrics, REDCap (*if applicable*)
- **Open science / archiving:** OSF, Zenodo, FigShare
- **Datasets & repositories:** Departments of Health claims & pharmacy; fungal-spore aeroal-lergen stations; BioLINCC; BioData Catalyst; *All of Us* Workbench; MESA; Framingham; AsthmaNet; NHANES, among others

- **Methods:** AI/ML, distributed lag models, mixed-effects models, GWAS, polygenic risk scores, SHAP explainability, causal mediation, multi-agent AI; equity-stratified analysis, among others

i Placeholder: exact URLs and instances

Workspace URLs, repository links, IRB links, account details, Aliquary tenant IDs, and RIPLRT Bench access tiers are confirmed during onboarding and recorded per project. Public versions of this manual should keep internal links and credentials out.

Appendix F --- Acknowledgments

This 2026 manual builds on the 2018/2021 RIPLRT Lab Manual and the members, alumni, and writing mentors who created and maintained it. It was inspired by the open lab-manual movement and the broader community of research groups who share their handbooks so others can learn. We thank every RIPLRT member — past and present — who has contributed to making this group both a serious scientific program and a humane place to grow.

Maintained reproducibly with Quarto. See `CHANGELOG.md` for revision history and `CONTRIBUTING.md` to propose changes.

Templates

The reusable templates RIPLRT members use throughout a project's life are provided as **downloadable PDFs**. Download the one you need, print it or fill it on screen, and keep your copy in your project space — there's no master to edit here.

Template	Use when	Download
New Member Onboarding Checklist	Someone joins	PDF
Project Pod Charter	A project starts	PDF
Individual Development Plan (IDP)	Each semester, per member	PDF
Student Research Plan	A student scopes a project	PDF
Manuscript Planning Sheet	Before drafting a paper	PDF
Authorship / Contributorship Agreement	Project start; updated as roles change	PDF
Data-Use & Access Checklist	Before touching project data	PDF
GitHub Repository Checklist	New repo setup	PDF
Reproducible Analysis Checklist	Before any submission	PDF
AI-Use Disclosure Form	Any product with material AI assistance	PDF
Conference Abstract Planning Sheet	Before an abstract deadline	PDF
Weekly Meeting Agenda	Every pod meeting	PDF
One-on-One Mentoring Meeting	Biweekly mentor↔mentee	PDF
Stop / Start / Continue Feedback	Reviews and retrospectives	PDF
Offboarding Checklist	Someone leaves	PDF

Editing a template

The PDFs are generated from source files kept in the repository (`/templates/*.qmd`). To change a template, edit its source and regenerate the PDF, then commit both — see `CONTRIBUTING.md`. This keeps every member working from the same current version.

Policies

These are the authoritative, standalone policy documents for the RIPLRT Institute, provided as **rendered web pages** (not downloads), so they're searchable and always show the current version. They expand the working summaries in the chapters. Where a policy and a chapter summary differ, **the policy governs**; where a policy and institutional/sponsor/legal requirements differ, **those govern**.

Policy	Summary chapter	Read
Authorship & Contributorship	Ch. 14	Open »
Data Governance	Ch. 11	Open »
Responsible AI Use	Ch. 13	Open »
Code of Conduct	(also repo root)	Open »

The Code of Conduct page mirrors the authoritative `CODE_OF_CONDUCT.md` at the repository root; if the two ever differ, the root file governs.

Authorship & Contributorship Policy

Status: Authoritative · **Owner:** PI · **Review:** Annually (authorship audit)

C.1. 1. Purpose

To assign credit for RIPLRT scholarly products fairly, transparently, and consistently, and to prevent disputes by deciding authorship early and documenting it.

C.2. 2. Scope

All scholarly products: manuscripts, abstracts, posters, presentations, reproducible notebooks, dashboards, briefs, and public-facing materials.

C.3. 3. Authorship standard (ICMJE)

A person qualifies as an author only by meeting **all four** ICMJE criteria: 1. Substantial contributions to conception/design or acquisition/analysis/interpretation of data; 2. Drafting or critically revising for important intellectual content; 3. Final approval of the version to be published; 4. Agreement to be accountable for all aspects of the work.

Contributors not meeting all four are **acknowledged**, with their permission. Funding, supervision alone, or data collection alone do not, by themselves, confer authorship.

C.4. 4. Contributorship (CRediT)

Every product records contributions using the CRediT taxonomy. The Authorship/Contributorship Agreement template captures this at project start and is updated as roles change.

C.5. 5. Author order

- **First author:** led the intellectual/practical work.
- **Senior (last) author:** provided direction and holds accountability (typically the PI).
- **Middle authors:** ordered by contribution, discussed openly.
- **Student-first pathway:** when a mentee led the work, they receive first authorship. Developing mentees into first/co-first authors is an explicit group goal.

C.6. 6. Process

1. Authorship is **discussed and documented at project start** (pod charter + agreement).
2. The plan is **revisited** at major milestones and at the annual authorship audit.
3. **Changes** require discussion with affected contributors and PI sign-off.

C.7. 7. AI tools

AI tools are **never** authors — they cannot accept accountability. Material AI assistance is disclosed per the Responsible AI Use Policy and venue requirements.

C.8. 8. Disputes

Raised early and directly; mediated by the PI against the documented agreement. Because plans are written at the start, most disputes are prevented.

C.9. 9. Acknowledgments & attributions

Funders, data providers, and repositories are acknowledged using the **exact required language** of each source. Conflicts of interest are disclosed per venue and institution.

Data Governance Policy

Status: Authoritative · **Owner:** PI + Data Stewards · **Review:** Annually (and whenever a DUA/IRB changes)

D.1. 1. Principle

Access is a privilege tied to training, approval, and need. We collect the minimum, protect it rigorously, and honor every agreement that permits our use.

D.2. 2. Authorization (required before any data access)

- Current CITI training appropriate to role.
- Named on the approved IRB protocol for the project (human-subjects data).
- IRB-of-record confirmed per project (*placeholder — varies by institution/partnership*).
- Relevant Data Use Agreement (DUA) reviewed and understood.

D.3. 3. Dataset-specific rules

Each dataset (PR DoH/ASES claims & pharmacy; BioLINCC; BioData Catalyst; *All of Us*; MESA; Framingham; AsthmaNet; NHANES; surveillance data) carries its own DUA, access tier, analysis-environment requirement, and citation/acknowledgment text. The Data Steward owns compliance and completes the Data-Use & Access Checklist with each analyst.

D.4. 4. De-identification & HIPAA-adjacent handling

- Never attempt re-identification of any individual.
- Apply de-identification standards; respect small-cell suppression, especially in equity-stratified analyses.
- Treat claims/pharmacy/clinical data with PHI-level caution even when technically outside HIPAA.

D.5. 5. Access control & secure storage

- Least privilege access.
- No restricted/identifiable data in chat, email, personal devices/drives, or public repos.
- Controlled-tier analysis stays inside the approved environment; no egress unless explicitly permitted.
- No secrets in code (env vars + .gitignore).
- Encryption/backups per institutional policy.

D.6. 6. Privacy of people

- No photos/videos of research participants — ever.
- Group-member imagery requires consent before capture; public posting requires PI approval.
- Protect community-partner and participant privacy in all outputs.

D.7. 7. Responsible conduct

- No fabrication, falsification, or plagiarism.
- Reproducible documentation of analyses.
- COI disclosure per institutional policy.
- Compliance with sponsor and dataset publication/sharing terms.

D.8. 8. Incident response

On any suspected breach, access error, consent problem, or integrity concern: **stop, notify the PI and Data Steward immediately**, and **document factually**. Report-early, no-blame. Hiding a problem is the only unrecoverable error.

Responsible AI Use Policy

Status: Authoritative · **Owner:** PI · **Review:** Annually (fast-moving area)

E.1. 1. Principle

AI accelerates judgment; it never replaces it. Members are fully responsible for everything they submit, regardless of which tools assisted.

E.2. 2. Permitted uses (with care)

Coding assistance; writing structure/clarity/bilingual phrasing; literature orientation and summarization of papers you then read; workflow automation and documentation.

E.3. 3. Prohibited uses

- Entering **restricted, identifiable, IRB-governed, claims/pharmacy/clinical, or DUA-controlled data** into any external AI tool. (Treat prompt boxes as public.)
- Presenting unverified AI output as fact.
- Letting AI fabricate, alter, or "clean" data or results (research misconduct).
- Submitting AI-assisted work you cannot understand or defend.
- Listing AI tools as **authors**.

E.4. 4. Verification (mandatory)

Independently verify all AI-touched **citations** (exist + support the claim), **numbers/stats, code** (read + test), and **facts/methods** (primary sources).

E.5. 5. Disclosure

- Internally: note material AI assistance in commits/notebooks/docs.
- For products: complete the AI-Use Disclosure form and apply the target venue's required AI-disclosure language and any prohibitions.

E.6. 6. AI and trainees

AI is a tutor/assistant, not a substitute for skill-building. Mentors and mentees discuss AI use openly in IDPs/one-on-ones to ensure it accelerates — rather than replaces — learning.

E.7. 7. The defensibility test

Before submitting anything AI helped with: *Could I explain and defend every claim, line of code, and citation as if no AI were involved?* If not, the work is not finished.

Code of Conduct (policy copy)

This is the in-book copy of the group's Code of Conduct. The authoritative, repository-root version is `CODE_OF_CONDUCT.md`. If the two differ, the root file governs.

See `CODE_OF_CONDUCT.md` at the repository root for the full text, including our pledge, standards, scope, enforcement, and reporting pathways.

Forms

These are the **sign-and-submit forms** for the RIPLRT Institute, provided as **downloadable PDFs**. Download the form, complete it (typed name + date is fine), and return it to the PI or a designated lead, who stores it in your member record.

Form	Submit when	Download
Manual Acknowledgment Form	Within first 7 days; re-acknowledge at each annual review	PDF
Onboarding Checklist	Completed across the first 30 days	PDF
Offboarding Checklist	Completed in the final 2 weeks	PDF

i Placeholder: where forms are stored

The exact submission destination (a private Google Drive / OneDrive folder, a REDCap form, or a signed PDF in the member's file) is confirmed during onboarding. Completed forms contain names and signatures — keep them **out of any public version** of this manual or its repository.

The Onboarding and Offboarding forms mirror the working checklists in the [Templates appendix](#), so you can use the template to *do the work* and the form to *record completion*.