



Leadership and strategic management

Building and Leading a Successful Research Group

Luigi Dilillo

University of Montpellier, CNRS - France

1



2

The Dual Purpose of Research Groups

1. Advancing Your Research Agenda

Your primary goal is to transform scientific ideas into real outputs:

- Papers and publications
- Patents and intellectual property
- Presentations and discoveries
- Progress in your scientific mission

3

3

The Dual Purpose of Research Groups

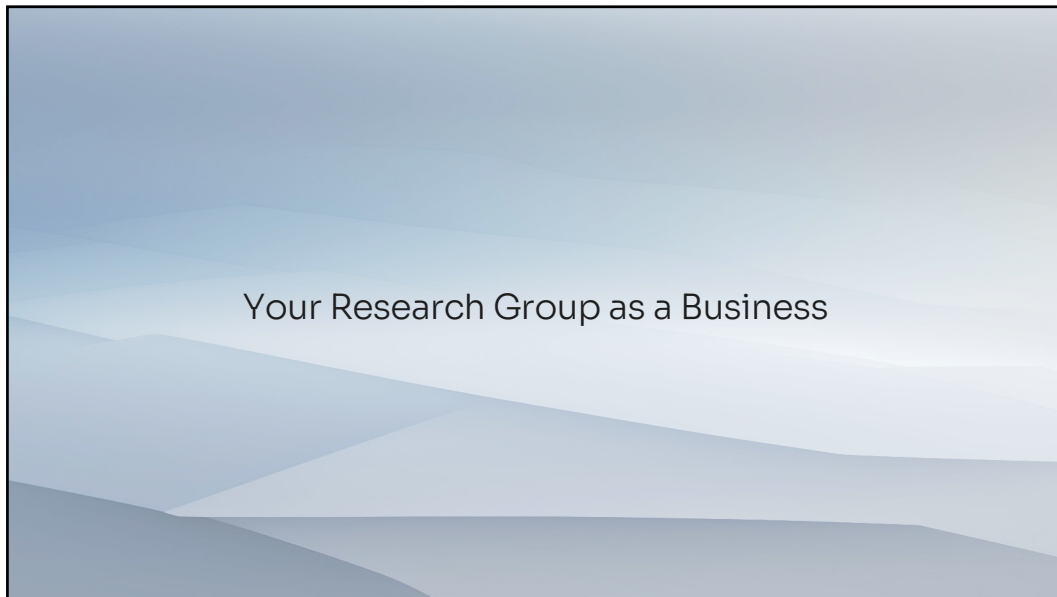
2. Training the Next Generation

Your research group serves as a critical training ground where:

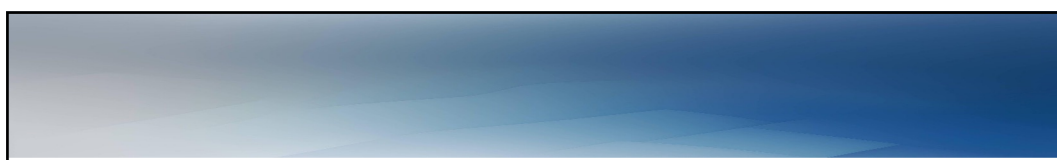
- Students and postdocs learn research methodology
- Early-career scientists develop critical thinking
- Future leaders gain experience
- You build a scientific legacy that continues beyond your career

4

4



5



Your Research Group as a Business

When you run a research group, you're essentially functioning as a CEO of a small business:

P

Products & Services

Your products include papers, presentations, and grants.

Services include outreach, committee work, and field contributions.

Every publication and talk is marketing your work.

6

6

Your Research Group as a Business

When you run a research group, you're essentially functioning as a CEO of a small business:



Customers & Finances

Your customers include funding agencies, your department, and donors. You're responsible for budgeting, accounting, procurement, and vendor relationships.

7

7

Your Research Group as a Business

When you run a research group, you're essentially functioning as a CEO of a small business:

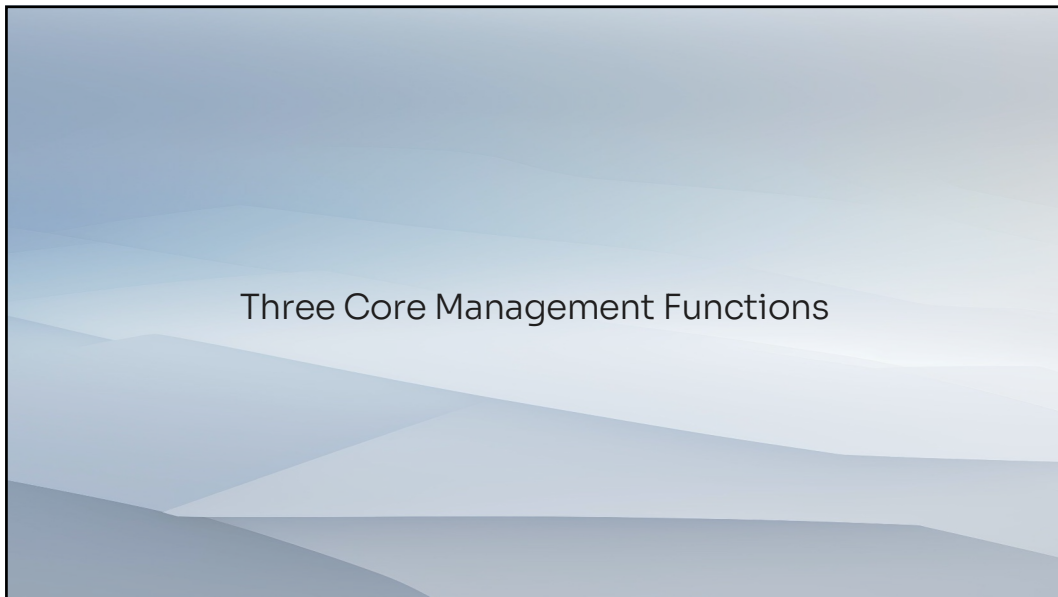


Risk Management

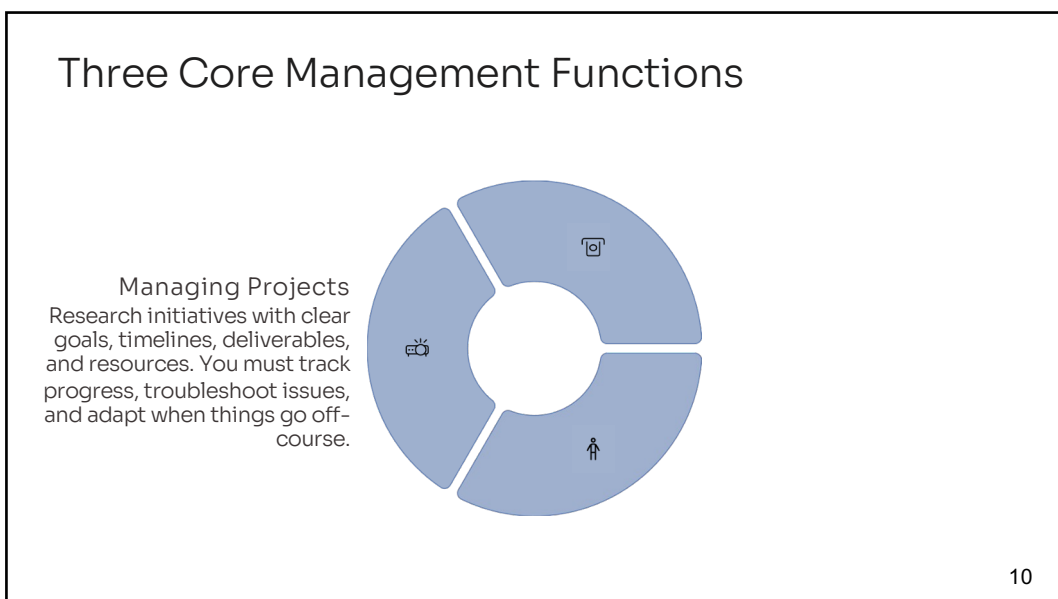
You manage both physical safety protocols and project risks like financial overreach or missed deadlines. You negotiate for space and funding while making strategic decisions.

8

8



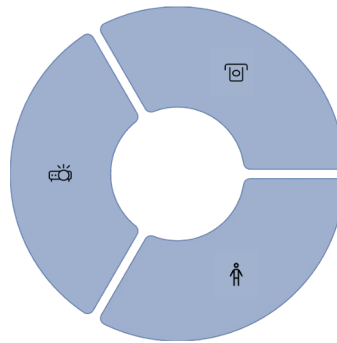
9



10

Three Core Management Functions

Managing Projects
Research initiatives with clear goals, timelines, deliverables, and resources. You must track progress, troubleshoot issues, and adapt when things go off-course.



Managing Money

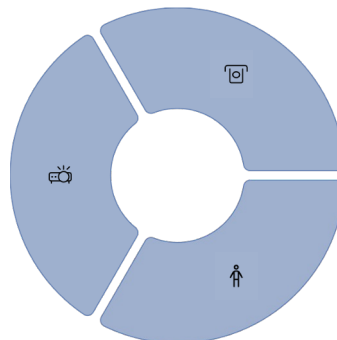
Handling startup funds, grants, and institutional support through budgeting, accounting, reporting, and planning for sustainability. You need systems to track expenditures and ensure compliance.

11

11

Three Core Management Functions

Managing Projects
Research initiatives with clear goals, timelines, deliverables, and resources. You must track progress, troubleshoot issues, and adapt when things go off-course.



Managing Money

Handling startup funds, grants, and institutional support through budgeting, accounting, reporting, and planning for sustainability. You need systems to track expenditures and ensure compliance.

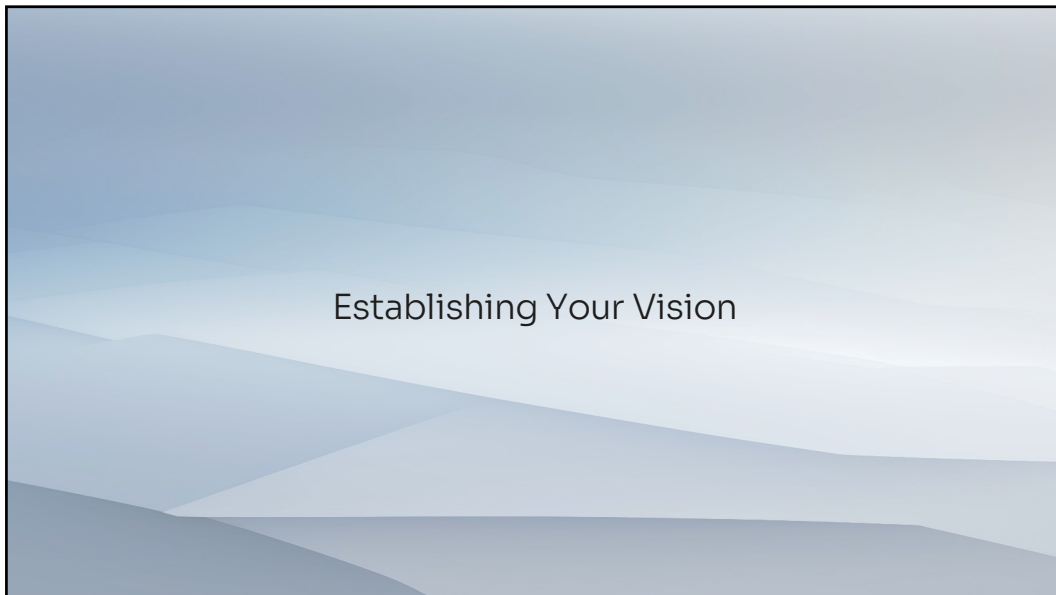
Leading People

"One does not manage people. The task is to lead people." - Peter Drucker

Inspiring team members, developing their strengths, and aligning their goals with the group's mission. Creating an environment where people thrive.

12

12



13

Establishing Your Vision

Your vision is the foundation of your research group, giving it purpose beyond completing experiments. It helps others understand what you're about and guides your decision-making.

Key Questions to Answer:

- What am I trying to discover or build through my research?
- What change do I want to make in the world?
- What kind of environment do I want in my group?
- What are our core values?

Writing down a vision statement creates a compass that helps you stay focused despite distractions and gives your group a clear identity. Your vision can evolve over time as you and your science grow.

14

14



15



Putting Values into Action

Communicate Consistently

Discuss your vision and values regularly in lab meetings, one-on-ones, and even job advertisements.

People should know what they're signing up for beyond just "doing research."

16

16

Putting Values into Action

Align Decisions with Values

Ensure your projects, hiring choices, and mentoring approach reflect your stated values. Use values as a tool for setting clear expectations about collaboration, creativity, or inclusivity.

17

17

Putting Values into Action

Reinforce Regularly

Revisit values at the start of each semester, during onboarding, and in check-ins. Culture is maintained through repetition and consistency.

18

18

Putting Values into Action

Build Trust Through Alignment

When your group sees that your actions match your values, trust grows.
That's when culture becomes real, not just words on a website.

19

19

Building Your Research Team

20

Building Your Research Team

Strategic Team Structure

Consider the roles you need to support your research goals:

- Postdocs with specialized expertise
- Graduate students who grow with projects over years
- Undergraduates to assist with experiments or data
- Technicians to maintain continuity and manage logistics

Team size and composition should support your specific research needs.

21

21

Building Your Research Team

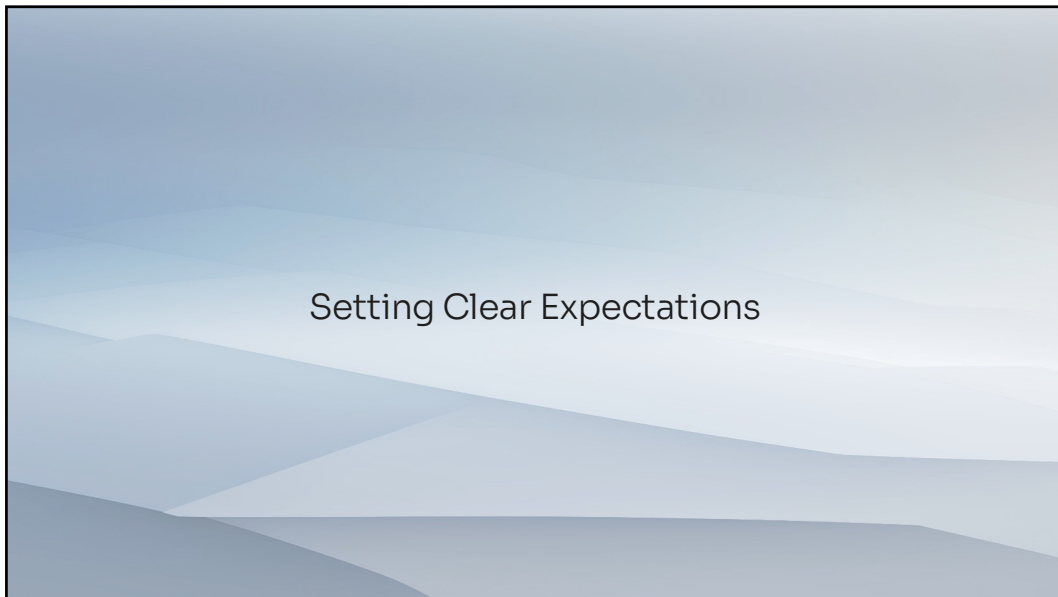
Intentional Recruitment

Let your vision guide your hiring decisions:

- Look beyond technical skills to values alignment
- Recruit broadly and inclusively
- Assess motivation and learning orientation
- Build a balanced team with mixed experience levels

22

22



23



Setting Clear Expectations

- **Start Early and Document**
Have explicit conversations about expectations when people join your group. Create a lab manual outlining how the lab runs, including meeting schedules, communication preferences, authorship policies, and working hours.

24

24



Setting Clear Expectations

- **Start Early and Document**
Have explicit conversations about expectations when people join your group. Create a lab manual outlining how the lab runs, including meeting schedules, communication preferences, authorship policies, and working hours.
- **Provide Regular Feedback**
Don't wait for crises or semester ends. Make a habit of checking in and telling people what they're doing well and where they can improve. Regular feedback helps people grow and prevents small issues from becoming major problems.

25

25



Setting Clear Expectations

- **Start Early and Document**
Have explicit conversations about expectations when people join your group. Create a lab manual outlining how the lab runs, including meeting schedules, communication preferences, authorship policies, and working hours.
- **Provide Regular Feedback**
Don't wait for crises or semester ends. Make a habit of checking in and telling people what they're doing well and where they can improve. Regular feedback helps people grow and prevents small issues from becoming major problems.
- **Create Two-Way Communication**
Ask for feedback on your own leadership. What's working well? What could be improved? You don't have to implement every suggestion, but asking creates a culture of trust and shows you're willing to learn and grow too.

Setting expectations is not a one-time event but a continuous process that builds trust and productivity.

26

26



27

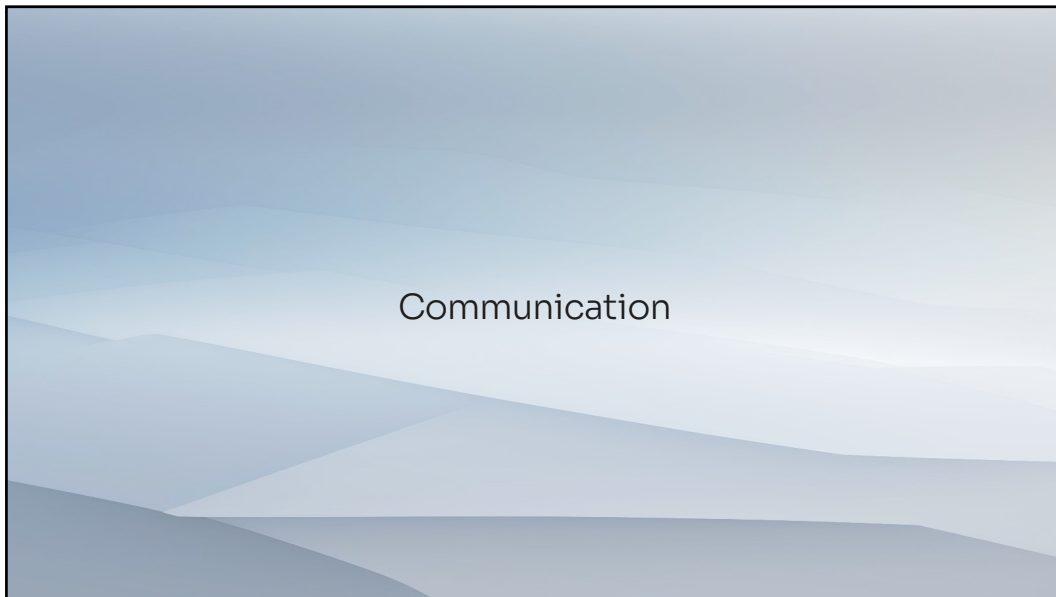
Managing Conflict

Addressing Conflict

- Recognize that conflict is natural in teams of passionate researchers
- Address issues early before they escalate
- Separate behaviors from people when giving feedback
- Consider structured processes for resolution
- Model good conflict resolution yourself

28

28



29



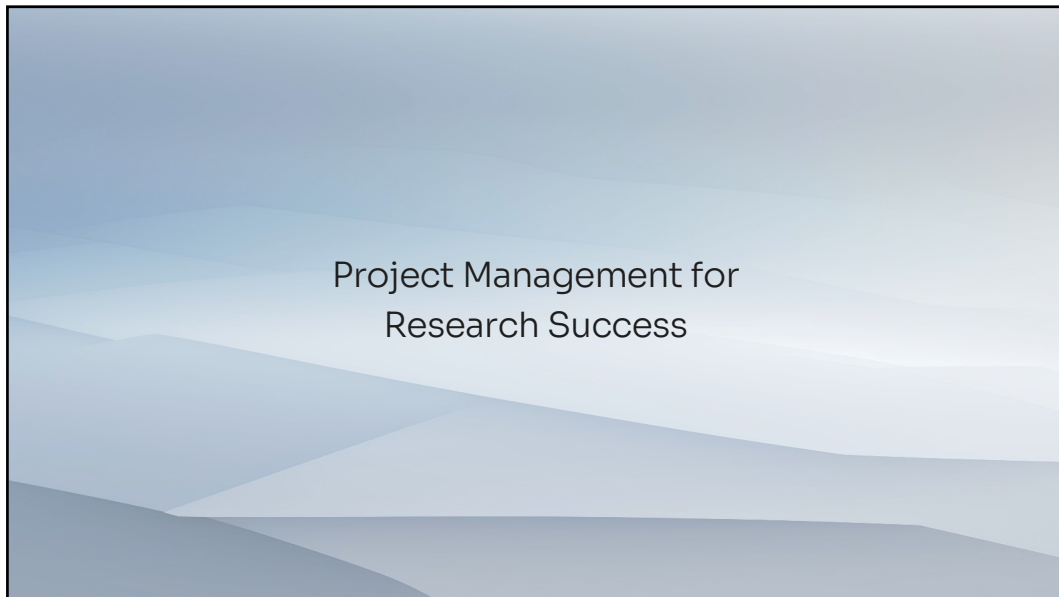
Communication

Effective Communication

- Establish clear communication norms and channels
- Hold consistent group meetings with agendas
- Use one-on-ones for mentoring and feedback
- Model the communication style you want to see
- Create space for all voices to be heard

Intentional communication builds trust, and trust builds productivity.
Your tone and approach shape the culture of your entire group.

30



31

Project Management for Research Success



Set Clear Goals
Define the desired outcome of each project, whether it's a paper, presentation, dataset, or prototype. Make objectives explicit to everyone involved.







32

32

Project Management for Research Success



Set Clear Goals

Define the desired outcome of each project, whether it's a paper, presentation, dataset, or prototype. Make objectives explicit to everyone involved.

Break Down Projects

Divide large projects into smaller, actionable tasks. Assign specific responsibilities and deadlines to team members to prevent overwhelm.

33

33

Project Management for Research Success



Set Clear Goals

Define the desired outcome of each project, whether it's a paper, presentation, dataset, or prototype. Make objectives explicit to everyone involved.

Break Down Projects

Divide large projects into smaller, actionable tasks. Assign specific responsibilities and deadlines to team members to prevent overwhelm.

Track Progress

Use simple tools like shared spreadsheets or calendars to monitor advancement. Check in regularly during meetings and adjust plans as needed.

34

34

Project Management for Research Success

- 
Set Clear Goals
 Define the desired outcome of each project, whether it's a paper, presentation, dataset, or prototype. Make objectives explicit to everyone involved.
- 
Break Down Projects
 Divide large projects into smaller, actionable tasks. Assign specific responsibilities and deadlines to team members to prevent overwhelm.
- 
Track Progress
 Use simple tools like shared spreadsheets or calendars to monitor advancement. Check in regularly during meetings and adjust plans as needed.
- 
Celebrate Milestones
 Acknowledge achievements like completing drafts, collecting data, or submitting papers. Recognition keeps team members motivated and reinforces the value of their work.

35

35

Project Management for Research Success

- 
Set Clear Goals
 Define the desired outcome of each project, whether it's a paper, presentation, dataset, or prototype. Make objectives explicit to everyone involved.
- 
Break Down Projects
 Divide large projects into smaller, actionable tasks. Assign specific responsibilities and deadlines to team members to prevent overwhelm.
- 
Track Progress
 Use simple tools like shared spreadsheets or calendars to monitor advancement. Check in regularly during meetings and adjust plans as needed.
- 
Celebrate Milestones
 Acknowledge achievements like completing drafts, collecting data, or submitting papers. Recognition keeps team members motivated and reinforces the value of their work.

Good project management doesn't require perfection: just start simple, be consistent, and adapt as your group grows. It's one of the most valuable skills you can develop as a research leader.

36

36



37

Delegation and Accountability

The Foundation of Productive Teams

Thoughtful Delegation

- Match tasks to skills and interests for better engagement
- Provide context and clear expectations upfront
- Define success metrics and timelines explicitly
- Support without micromanaging to build ownership

38



Delegation and Accountability

The Foundation of Productive Teams

Constructive Accountability

- Address missed deadlines as learning opportunities
- Investigate root causes rather than assigning blame
- Model accountability by acknowledging your own mistakes
- Build a culture where responsibility is valued

When delegation and accountability are balanced effectively, your team operates more efficiently, individuals develop confidence, and you maintain a sustainable workload as a leader.

39

39



Supporting Individual Development

The heart of research leadership

40

Supporting Individual Development

The heart of research leadership

Understand Personal Goals

Learn about each team member's career aspirations and skill development interests, whether in academia, industry, policy, or science communication.

41

41

Supporting Individual Development

The heart of research leadership

Understand Personal Goals

Learn about each team member's career aspirations and skill development interests, whether in academia, industry, policy, or science communication.

Create Growth Opportunities

Assign leadership roles on projects, encourage conference presentations, and facilitate valuable collaborations tailored to individual development paths.

42

42

Supporting Individual Development

The heart of research leadership

- 
Understand Personal Goals
 Learn about each team member's career aspirations and skill development interests, whether in academia, industry, policy, or science communication.
- 
Create Growth Opportunities
 Assign leadership roles on projects, encourage conference presentations, and facilitate valuable collaborations tailored to individual development paths.
- 
Provide Mentorship and Sponsorship
 Offer feedback and guidance while actively advocating for team members in professional settings and recommending them for opportunities.

43

43

Supporting Individual Development

The heart of research leadership

- 
Understand Personal Goals
 Learn about each team member's career aspirations and skill development interests, whether in academia, industry, policy, or science communication.
- 
Create Growth Opportunities
 Assign leadership roles on projects, encourage conference presentations, and facilitate valuable collaborations tailored to individual development paths.
- 
Provide Mentorship and Sponsorship
 Offer feedback and guidance while actively advocating for team members in professional settings and recommending them for opportunities.
- 
Celebrate Progress
 Recognize both major achievements and smaller milestones to build motivation and demonstrate your investment in each person's growth.

Supporting your team's development requires time investment but yields tremendous returns: a stronger research group and researchers equipped for long-term success in their careers.

44

44



45

Creating Inclusion and Belonging in Research Environments

■ Set a Respectful Tone

Model active listening, value diverse perspectives, and be mindful of how language and behavior affect team dynamics. Be aware of power imbalances in who speaks, receives credit, and accesses opportunities.

46

46

Creating Inclusion and Belonging in Research Environments

■ Set a Respectful Tone

Model active listening, value diverse perspectives, and be mindful of how language and behavior affect team dynamics. Be aware of power imbalances in who speaks, receives credit, and accesses opportunities.

■ Support Diverse Identities

Use correct pronouns, acknowledge cultural holidays, offer flexibility for religious observances, and educate yourself about systemic inequities in academia.

47

47

Creating Inclusion and Belonging in Research Environments

■ Set a Respectful Tone

Model active listening, value diverse perspectives, and be mindful of how language and behavior affect team dynamics. Be aware of power imbalances in who speaks, receives credit, and accesses opportunities.

■ Support Diverse Identities

Use correct pronouns, acknowledge cultural holidays, offer flexibility for religious observances, and educate yourself about systemic inequities in academia.

■ Create Safe Spaces for Contribution

Encourage participation from everyone, especially those who may feel less empowered to speak. Make it safe to share unfinished thoughts and dissenting opinions.

48

48

Creating Inclusion and Belonging in Research Environments

■ Set a Respectful Tone

Model active listening, value diverse perspectives, and be mindful of how language and behavior affect team dynamics. Be aware of power imbalances in who speaks, receives credit, and accesses opportunities.

■ Support Diverse Identities

Use correct pronouns, acknowledge cultural holidays, offer flexibility for religious observances, and educate yourself about systemic inequities in academia.

■ Create Safe Spaces for Contribution

Encourage participation from everyone, especially those who may feel less empowered to speak. Make it safe to share unfinished thoughts and dissenting opinions.

■ Respond to Exclusion

Address issues promptly when someone feels excluded or harmed. Check in with those involved, take appropriate action, and follow up to build trust and accountability.

49

49

Time Management and Work-Life Balance Sustaining Research Excellence

50

Time Management and Work-Life Balance

Sustaining Research Excellence

Model Balance as a Leader

Demonstrate sustainable work habits by setting boundaries on email times, taking vacations, and communicating your approach to work-life balance openly.

51

51

Time Management and Work-Life Balance

Sustaining Research Excellence

Model Balance as a Leader

Demonstrate sustainable work habits by setting boundaries on email times, taking vacations, and communicating your approach to work-life balance openly.

Teach Time Management Skills

Help team members learn to prioritize tasks, estimate timelines, and schedule effectively using practical tools like weekly planning and calendar blocking.

52

52

Time Management and Work-Life Balance

Sustaining Research Excellence

Model Balance as a Leader

Demonstrate sustainable work habits by setting boundaries on email times, taking vacations, and communicating your approach to work-life balance openly.

Teach Time Management Skills

Help team members learn to prioritize tasks, estimate timelines, and schedule effectively using practical tools like weekly planning and calendar blocking.

Set Supportive Expectations

Be explicit about reasonable working hours and normalize breaks, lunches, and life outside the lab as essential elements of sustainable research.

53

53

Time Management and Work-Life Balance

Sustaining Research Excellence

Model Balance as a Leader

Demonstrate sustainable work habits by setting boundaries on email times, taking vacations, and communicating your approach to work-life balance openly.

Teach Time Management Skills

Help team members learn to prioritize tasks, estimate timelines, and schedule effectively using practical tools like weekly planning and calendar blocking.

Set Supportive Expectations

Be explicit about reasonable working hours and normalize breaks, lunches, and life outside the lab as essential elements of sustainable research.

Recognize and Address Burnout

Watch for signs of chronic stress and proactively check in with struggling team members to offer support before productivity suffers.

54

54



55

Growing Into Your Leadership Role



Provide Direction

Articulate a clear vision for your research program and create systems that support your team's success. You don't need to know everything, but you do need to care deeply and continue learning.

56

56

Growing Into Your Leadership Role



Provide Direction

Articulate a clear vision for your research program and create systems that support your team's success. You don't need to know everything, but you do need to care deeply and continue learning.



Balance Priorities

Navigate the competing demands of your own science, team mentoring, administrative responsibilities, and balancing immediate needs with long-term goals.

57

57

Growing Into Your Leadership Role



Provide Direction

Articulate a clear vision for your research program and create systems that support your team's success. You don't need to know everything, but you do need to care deeply and continue learning.



Balance Priorities

Navigate the competing demands of your own science, team mentoring, administrative responsibilities, and balancing immediate needs with long-term goals.



Set the Tone

Your treatment of people, handling of mistakes, and celebration of successes shape your group culture. Consistency, respect, and thoughtfulness matter more than charisma.

58

58

Growing Into Your Leadership Role



Provide Direction

Articulate a clear vision for your research program and create systems that support your team's success. You don't need to know everything, but you do need to care deeply and continue learning.



Balance Priorities

Navigate the competing demands of your own science, team mentoring, administrative responsibilities, and balancing immediate needs with long-term goals.



Set the Tone

Your treatment of people, handling of mistakes, and celebration of successes shape your group culture. Consistency, respect, and thoughtfulness matter more than charisma.



Embrace Growth

Recognize that leadership develops over time. Seek mentors, read widely, reflect on experiences, and adjust approaches that aren't working. Give yourself grace to learn and evolve.

Remember your purpose: advancing science while developing people. With time and intention, you can build a group that reflects your values and creates meaningful impact.

59

59

Final Thoughts

60

Final Thoughts: The Ongoing Journey of Research Leadership

Your research group is more than a collection of people doing tasks. It's a place where ideas grow. Where people grow. And where meaningful science can happen.

Remember:

- Leadership evolves as you evolve
- Mistakes are opportunities for growth
- Let your values guide difficult decisions
- Build your own support community

61

61

Thanks

62