Become the Great PI You Are Meant to Be!

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Thanks to P.I.s and lab members

“"I was trained to do everything but run a lab!”

You qualified for your job with one set of skills...

But you will keep it with another set of skills.....

Skills that have been on the back burner.

What are the most valuable skills you learned in graduate school?

- The ability to work productively with difficult people.
- The ability to work in a high stress environment.
- Persistence.
- Circumventing the rules.
- The ability and courage to start something without knowing how.


First, know yourself.

- What kind of lab do you want?
- What kind of leader do you want to be?
- What values are important to you?

This is the framework of your lab culture.

Consider your style and your strengths.

- What are you motivated by in science?
- Bench or desk?
- Details, or big picture?
- Motivator or facilitator?
- Peers, bosses, or subordinates?
- Do you like people?
Think 5 years (rolling) ahead.

- Mission statement.
- 5 year plan.
  - Career.
  - Project and lab.
- The other 5 year plan:
  - Personal goals.

In your early days...

- Do a lot of listening- don’t push, suggest, criticize, take sides.
- Start writing- yes, already.
- Sign up to journal club, departmental seminars. Participate.

Don’t let yourself get isolated!

Find a mentor- or 2 or 3.

- Role models- observe and learn.
- Be your own mentor and critic.
- Try formal and informal mentors.
- A la carte- scientific, institutional, personal.

Know your promotion requirements.

- Survival at your institution increases your chances of flourishing in science.

Work within your tenure strategy.

Following the path to tenure can help you be successful in research.

- Year 1: Publish...
  - Year 2:
  - Year 3:
  - Year 4:
  - Year 5:
  - Year 6:

Year 1 on the road to tenure or promotion.

- Hire a technician.
- Set up and organize the laboratory and office.
- Absolutely finish writing all postdoc work.
- Do preliminary experiments for an NIH grant.
- Define all promotion or tenure requirements.
- Find at least one mentor.
- Give a departmental seminar.
- Submit a manuscript for publication.
- Submit a grant at the end of the year.
Year 2 on the road to tenure to promotion.

- Resubmit grant, if necessary.
- Take on a student or another technician.
- Start teaching and clinical responsibilities.
- Submit another manuscript.
- Give seminars outside the institution.
- Committee work- match to your interests.

Years 3-6 on the road to tenure or promotion.

- Seek feedback on tenure likelihood.
- Speak at national/international meeting.
- Submit a major paper every year.
- Write a review article in your field.
- 2nd project and grant.
- Hire/find students and postdoc.

It’s all about negotiation and relationships....

And communication is the glue.

The reasons freshly hired managers flame out.

- The failure to build good relationships with peers and subordinates (82%)
- Confusion or uncertainty about what higher-ups expect (58%)
- A lack of internal political skills (50%)
- Inability to achieve the 2 or 3 most important objectives of the new jobs (47%).


Day-to-day management is needed to achieve long-term goals.

Time Management Matrix

<table>
<thead>
<tr>
<th>Urgent</th>
<th>Not Urgent</th>
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<tbody>
<tr>
<td>Important</td>
<td>Important</td>
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<tr>
<td>I</td>
<td>II</td>
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<tr>
<td>Crises, personal or professional</td>
<td>Reading journals</td>
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<tr>
<td>Pressing personal or equipment problems</td>
<td>Relationship building</td>
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<td>Deadline-driven projects</td>
<td>Lab meetings</td>
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<td></td>
<td>Thinking and planning</td>
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<td></td>
<td>Recreation and relaxation</td>
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<td>III</td>
<td>IV</td>
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<tr>
<td>Interruptions, some calls</td>
<td>Trivia, busy work</td>
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<tr>
<td>Some mail, some reports</td>
<td>Some mail</td>
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<tr>
<td>Some meetings</td>
<td>Some phone calls</td>
</tr>
<tr>
<td>Many administrative tasks</td>
<td>Time wasters</td>
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Adapted, with permission, from Covey, S.R. 1989. The Seven Habits of Highly Effective People.
Being busy is not the same as being productive!

Don’t do anything twice!

Perfectionism.

The good.
- Awareness.
- Attention to detail.
- Beautiful grants.
- Meticulous papers.

The not-so-good.
- Obsession.
- Expectations never met.
- The mistakes of others rankle.

Procrastination

- It’s gotta be perfect.
- The detail-hater.
- Why should I?
- Motivated by crisis.

Do whatever it takes to keep moving!

Denial.

So - build a framework to support yourself and your lab culture.

- Science first!
- Transparent communication and clear expectations.
- Establish a work ethic.
- Home away from home.
- Instill integrity.

Make ethics part of the package.

- Be up front about ethics- stress its importance.
- Teach ethics by example.
- Correct those who are behaving unethically.
- Fit specific ethics into your framework.
Organize the lab to reflect the philosophical.

- Stocks
- Ordering
- Lab notebooks
- Lab jobs
- Meetings
- Authorships
- Your lab manual

Make policy practical ....and internally consistent.

- Creativity is good- but do you want everyone working on their own projects to the exclusion of assigned lab projects?
- An open door policy is good- but do you want people in your office during grant preparation to tell you about their weekend?

Be clear about authorships.

- What makes a good paper?
- How is authorship decided?
- Who writes the paper?
- Who handles revisions, letters, resubmissions?

Ethical considerations with any manuscript:

- The work is true and has not yet been published.
- Any conflicts of interest have been disclosed.
- Protocols for human subjects and animal use have been followed.
- All authors contributed to the work.

Your policies for authorship... for example...

- If a first author leaves the lab before a paper is completely written, the second author is offered first authorship.
- Whether or not technicians can get authorships should be decided beforehand as a general policy, and communicated to all new lab members.
- Protect your own people in authorship disputes.

Documentation- the lab notebook.

Keeping an organized and clear lab notebook is not optional.

The notebook belongs to the lab.

It is the P.I.’s responsibility to ensure that notebooks are properly kept and stored.
What works for stocks, ordering, and record keeping?

- Computerize reagents,
- Labels- but keep it simple.
- One person to oversee.
- Maintain maintenance!

Don’t be cavalier about safety.

- Have explicit rules about:
  - Chemical storage, use, and disposal.
  - Radiation – data sheets, background information.
  - Pathogens, human material biohazards.
  - Waste disposal.
  - Sharps.
  - Children in the lab.
  - Emergencies.

Think and talk about money and funding.

- Know your grants and your institution’s rules.
- Keep tabs on what is spent.
- Teach fiscal awareness in the lab: Involve lab members in grant writing, in monitoring monthly spending, in strategizing funding.

Research lab meetings.

- Formal lab meetings.
- Informal lab meetings.
- Multi-lab or topic meetings.
- One-on one meetings.

Make all meetings effective!

- Have an agenda- and stick to it.
- Set a time limit- and stick to it.
- Only invite the necessary.
- Encourage participation.
- Don’t let conflict get out of hand.
- Keep a record.
- Follow up.
  
  Teach lab members how to give good presentations.

Journal clubs are an important tool:

- To discuss the current and relevant literature.
- To teach critical thinking.
- To teach the art of giving a presentation.
- To establish and maintain the lab culture within science.

So don’t leave journal clubs up to chance.
Success will depend more on the people in your lab than on anything or anyone else.

- Find the right people
- Train them well
- Treat them well

Once your lab is established, the people will come. Until then,

Remember what you can offer: one-on-one scientific training and mentorship.

What positions should you (can you?) fill?

- Not-yet-experienced technicians are not tied to your reputation. Find a good person and train well.
- Undergraduates and work-study students can be an immense help.
- Students take time, but add enthusiasm and joy and are there for a while.
- Postdocs are a big responsibility: they are adept, but have their own agendas.

Especially when you have few choices....

What do you absolutely require?
What do you find to be intolerable?

Bad people are much worse than no people!!!

A hiring protocol: assessing technical skills, people skills, and motivation.

- Solicit applicants: work with HR.
- Read resumes: approve or reject.
- (Call applicants.)
- Call references: probe.
- Interview candidates: listen!
- Evaluate candidates.
- Offer job to first choice.
- Act during the probation period.
Hiring lessons from P.I.s.

- Call all recommendees.
- Hire for character, not for technical expertise.
- Don’t hire people who are self-centered, arrogant, can’t get along with others.
- Use the probation period.
- Follow your gut reaction.

Make good use of the interview.

- Question your first impression.
- Don’t talk too much.
- Clarify issues raised with recommendations.
- Look for motivation, goals, style.
- Explain your lab culture and be honest about expectations.

You can’t ask everything you want. And you have to ask correctly.

- Do you have any health problems that limit work?
- What country are you from?
- What religion are you?
- Have you ever been arrested?
- How many days of work did you miss last year?
- Do you have documentation of your visa status?
- Are you able to work on weekends?
- Have you ever been convicted?

So keep in touch with Human Resources, and other helpful people. Know what to do when:

- You want to hire someone.
- You want to fire.
- You suspect fraud.
- Someone feels sexually harassed.
- Someone seems seriously depressed.
- There is a any health or environmental emergency.

Train new people at the bench.

- Most of your investment is in salaries: maximize this.
- Put your stamp on the way research is done in your lab.
- Things to teach: using a protocol, making reagents, recording results, interpreting results, troubleshooting, safety issues...time management, construction of a manuscript...
- Everything you think is important.

Don’t throw new lab members to the wolves.

- Introduce the new person to other lab members.
- Make sure the lab bench is ready.
- Go through policy and customs.
- Find the person a lab mentor.

This is a chance to bolster and promote the lab culture. Don’t waste the first days.
Project selection/assignment is a hallmark of the lab.
- Learn how to define projects having a high likelihood of success.
- Put your best people on the best project.
- Two projects—one sure, one not-so-sure.
- Collaborative, not competitive projects.
- Let projects leave the lab.

Encourage and reward a culture of collaboration.
- Maintain collaborations with lab members who have left the lab.
- Put new people to work with more experienced ones.
- Facilitate collaborations inside and outside the lab.

A collaboration contract can clarify responsibilities.
- Who will be involved?
- What will each person’s contribution be?
- If a paper comes out of the collaboration, who will get authorship?
- If another person’s skills are needed?
- When is the collaboration over?

Independence isolation.
- Don’t hide from people when things don’t work.
- Data is the currency of the lab. Show data to as many people as possible.

Teach (and learn) the habit of self-evaluation.
- Of the results I obtained last month, which are the most important?
- Did I deviate from last month’s planning? If so, why?
- What are my most important goals for the upcoming month?
- How do I overcome potential hurdles?

Document and Evaluate lab member’s performances towards goals.
Effective evaluations.

- Regular intervals.
- All lab members.
- Goals:
  - Determine research accomplishments, set research goals and benchmarks.
  - Examine the lab head-lab member relationship, and communication within the lab. Look at critical thinking and organizational skills.

Formal self-evaluation: How do you think you are doing?

- Experimental.
- Productivity.
- Notebook, record keeping, and organization.
- Gain of scientific knowledge and critical thinking.
- Lab meeting participation.
- Lab citizenship.
- Communication within the lab, outside the lab, and with the P.I.

Follow-up on all evaluations.
Make a plan.

As a P.I.....will you give everyone the same attention?
Will you spend more time with the talented, the average, or the struggling?

Mentoring- helping lab members to become scientists- will be assumed.

- Bench techniques, good science...
- Writing a grant, budgets..
- Writing, reviewing manuscripts.
- Communication and networking.

Anything that helps people become mature scientists is probably useful.

“Almost all advice giving in science is confrontational.”
What can you do to mitigate this?
Listen and learn.

- Learn to listen fully.
- Try to understand.
- You don’t have to fill up all silences.
- Don’t interrupt.

Language is important- make it compatible with your good intent.

- Criticize problems, not the person. “Please help me understand these results.”
- Phrase questions as requests for help or clarification, rather than as challenges. “What can we do to figure this out?”
- Watch body language- yours and theirs.

Small talk isn’t so small.

- It bridges the gap for those who want to communicate, but need a safe place to start.
- It shows you are interested in that person, even if you won’t be probing deeper.
- It allows time to relax before uncomfortable business.

Hone your conversational skills!

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Establish trust with predictability.
Don’t react emotionally to:

- Resentment
- Defiance
- Passive-aggressiveness.
- Denial
- Anger
- Anxiety
- “Bad” data

Remember that your mentee is not a clone of yourself.

C Consider pathways and life choices other than your own.
For those who won’t stay in research...

- Don’t lower your expectations for job performance.
- Stay respectful, even if you don’t understand.
- If you can’t mentor, suggest another person.

Easing people out: The kindness of being caring and critical.

“I wish I’d done it sooner....”

Firing must be well thought out.

- Document.
- Know before what makes firing necessary...
  It is a process.
- Speak with Human Resources (and perhaps the institution’s lawyer) about the specifics of the situation.

The potential for violence.

“...People don’t just 'snap.' There is a process as observable, and often as predictable, as water coming to a boil.” (De Becker 1997).

- Inflexibility
- Chronic anger
- Paranoia
- Reacts adversely to criticism
- Blames others
- Threatens or intimidates
- Unreasonable expectations
- Undertakes crusades
- History of filing unreasonable grievances
- Fearful coworkers

Find a way to get help for those who need it.

- Health services.
- Ombudsman.
- Chairperson
- Dean.
- Human Resources.
- Legal.
Maintaining lab morale.

- Make the lab feel part of the bigger world of science, especially through down times.
- Be vigilant about inside and outside influences.
- Help each person feel part of the lab: don’t let anyone be marginalized.
- Encourage social interactions.

Traditions: a chance to refresh the culture together.....

- Celebrate scientific victories:
  - Paper accepted.
  - Grant awarded.
  - Thesis defense.
  - Promotion and new jobs.
- Celebrate birthdays, holidays.
  - Retreats.
  - Happy hours, tutoring, fundraising.

Don’t leave the bench too soon...

You are your best resource.

Common lab disputes negotiations!

- Project problems.
- Authorship problems.
- Personnel problems.
- Personal problems.
- Interaction with P.I.

Should you intervene?

Try an interest-based approach to negotiation.

- Separate the person(s) from the issue.
- Focus on the interests of the individuals.
- Brainstorm a variety of options that will advance individual and shared interests.
- Establish ongoing discussions that encourage flexibility and engagement.

You have to fix the problems.

Very few situations will fix themselves.
Stay vigilant: watch out of signs of the dysfunctional lab.

- Constant or sudden loss of personnel.
- Rules, such as safety rules, are ignored.
- Attendance at lab meetings falls.
- Deadlines aren’t kept.
- Friendships among lab members are sparse.
- Signs of discrimination against a person or group of persons.

It could be research burnout.

Two main reasons for burnout:

- Misalignment with the lab or institutional culture.
- Lack of control and effectiveness.

Can this lab be saved?
Yes- by you.

- Is it the science?
- Is performance (research, citizenship, mentorship) recognized and rewarded?
- Is it the group dynamic? Is it an individual?
- Is it YOU? Are you there? Are you depressed or unpredictable? Are you pushing too hard, or appearing uninterested?

Your style should evolve with the lab.

- Small lab, Big lab.
- More competent personnel.
- Failure and Success.

Dealing with a team.
Communicate beyond the bench.

Your ideas of fulfillment might also change.

“...I mean, you can take a piece of information, and you can do lots of things with it. You can try to publish it; you can try to develop a practical aspect of it, like a therapy, or a machine; or you can look at the implications in the public health arena, or the public policy arena. I guess I've always considered those a kind of continuum of ways that information becomes valuable, and ways that I take information and then try and go further with it.”

David Baltimore

- Be thoughtful
- Be proactive
- Be flexible
- Be happy