Academia, Pharma, Biotech Nonprofit—Balancing a Career Journey (ongoing)

Joanne Kamens, Ph.D.
Executive Director

@JKamens & @Addgene
Follow Addgene on Twitter, Facebook, Instagram or LinkedIn for career and science content

How Scientists Think They Make Decisions

Decision-Making Framework

Define the issue
Establish decision criteria

Collaboration & Learning (Decision-makers, scientists, and stakeholders)

Access information, assess risk and available decision support

Enhance understanding

Integrate, evaluate, assess tradeoffs, and decide

Implement

Monitor

Analyze and re-evaluate decision
How Scientists Really Make Decisions

- Looks Right
- Makes Sense
- Sounds Right
- Feels Right

A Call to Action

This is your future, you need to be responsible for it. You can gather data, like a scientist, and prepare.
Changing the Script

- NatureJobs “It took a lot for Virginia to set aside the feeling that she was wasting her PhD.”
- “Sometimes, the brightest stars in science decide to leave. Nature finds out where they go.”
- “group leaders who see their star students quit the lab: pleasure that he or she has found a life they are happy with, tinged with regret that science will not benefit from the student's talent.”
- APS News, Leaving Science Can Be a Good Career Decision
- Cheeky Scientist “5 Illogical Myths Keeping Talented PhDs Stuck In Academia”

Scientist is not something you do, it is something you are. It’s a way of thinking and of solving problems...you don’t leave science, you bring it with you.

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I know you love data...

![Graph showing cumulative faculty positions and PhD awards](http://m.cshperspectives.cshlp.org/content/9/9/a032755.full)
Know Yourself

- Some of the information you need is about yourself
- It is worth taking some time to consider your own style and needs before making this important decision
  - What do you care about?
  - What is fun?
  - What are you good at?
- And of course these might change over time...

Mentoring relationships are a good way to explore these issues—see Mentoring 101 eBook
blog.addgene.org

How I Got Here

- Advisor with strong ties to industry
- Collaborations
  - Harvard PhD

- BASF/Abbott (Pharma)
  - RNAi early adopter
  - Good at managing
  - Incensed by lack of diversity in science
  - Collaborations

- Director of Research
- Business Dev
- HBA leadership role
- Alliances
  - RXi (Biotech)

- Addgene (Non-profit)
  - Executive Director and all that entails
  - ?
How Did I Meet People (especially outside Academia)?

Networking of course (but I hate that name for it)
- Developing diverse relationships (not just contacts) is the key to having access to opportunities and help
- And you can’t wait until the last minute

Also “networking”

Many more networking tips at blog.addgene.org, my Linked In blogs or watch “Not Networking 101” on YouTube

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How Relationships Help You Get a Job

Source: US Department of Labor, 2001

- Referrals: 48%
- Direct Contact: 24%
- Agencies: 23%
- Ads: 5%
How I Got Here Take 1: Relationships

See my webinar at iBiology
Not Networking 101 – Building Relationships for Success

Direct Contact: Recruited by a long time friend at lunch

Referral: Advisor arranged interviews w/ his friends

LinkedIn early adopter

Referral and Direct Contact:
Friends referred me, knew the founder and 3 BoD members

LinkedIn early adopter

BASF/Abbott (Pharma)
- Bench Scientist
- People/Proj mgmt
- Tech Evaluation
- Drug Dev

Harvar (Academia)
- Bench Scientist
- Advisor with industry ties

Rxii (Biotech)
- People Management
- Business Dev
- Start-up mayhem

Addgene (Nonprofit)
- HR
- Lots of people
- Finance (sort of)
- ?

But I Hate “Networking”...

- Make networking feel normal
  - Become active in groups, professional and social
  - Have lunch with another human twice every week!
  - Don’t leave an empty seat
  - Figure out a way that works for you to interact with people at events
How Can I Help?

- 4 powerful words!
- Successful networking is a two-way street
  - We all have something to offer
  - Don’t keep score...what goes around comes around
- Listening - a much under-rated networking skill
  - “Good networkers have 2 ears and 1 mouth and use them proportionally”
  - Ask open-ended questions
- Think of ways in which you might be able to help
  - Ask for their resume, pass it on
  - Connect the contact to someone who might help them

Take-Away Messages...

- Don’t wait until you need a job to build your professional network—Stay in touch with contacts even when you need nothing from them
- If it feels creepy...don’t do it
- The secret of first impressions—be interested, be interesting
- Focus on people with whom you develop a rapport—you don’t have to network with people you don’t like

Many more networking tips at blog.addgene.org, my Linked In blogs or watch “Not Networking 101” at iBiology
Addgene’s Nonprofit Mission

Accelerate research and discovery by improving access to useful research materials and information

- Author
  - Plasmid Submission
  - Published Research
- Journal
- Access to publication
- Researcher
  - Access to research reagents
Addgene Over Since 2011

- 200 → >750 items distributed each day
- 15,000 → >70,000 plasmids stored
- 1,000 → >4,000 depositing labs
- >7,300 institutions, ~100 countries

Blog Launch in 2013

Educational Resources Available through Addgene

The Addgene Blog reaches over 100,000 views a month with over 450 total posts

Written protocol pages have over 1.5 million views with 30 protocols total and ~40 videos

Plasmids 101, CRISPR 101, and Fluorescent Protein eBooks with over 40,000 downloads

Over 7,000 researcher inquiries answered in 2017
Addgene Goes Viral in 2016

Productivity is Infectious

Addgene Goes Viral in 2016

Full Plasmid Sequence Added 2017

Full plasmid sequence for reproducible science

Working with our partners at SeqWell and SnapGene

More sequence analysis functionality is planned including BLAST on our database
Joining the Sharing Community

 Depositing is Easy
 - Addgene PhDs help during the entire process
 - Start by depositing most requested plasmids
 - Addgene takes care of entire tech transfer process
 - Deposit before publication - when the paper comes out, plasmid numbers are in materials and methods

 Depositor Benefits
 - Plasmids get used again, not lost in freezer ice
 - Save time on request fulfillment
 - International sharing is easy
 - Archiving of key reagents
 - Protection against losses due to lab turnover
 - Records of all requests
 - Increased exposure for your science

 PhD Roles at Addgene

 None of them academia or pharma and all of them interesting
 - Outreach
 - Marketing
 - Science Communication
 - Science Education
 - Technical Service
 - Business Development
 - Software Coding
 - Project Management
 - Operations
 - CEO
 - Research Bench Work (only recently)
How Can We Help?

How I Got Here Take 2: Professional Development

- Bench Scientist
- Advisor with industry ties

Harvard (Academia)

- Bench Scientist
- People/Proj mgmt
- Tech Evaluation
- Drug Dev

BASF/Abbott (Pharma)

- People Management
- Business Dev
- Start-up mayhem

RXi (Biotech)

- HR
- Lots of people
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Addgene (Nonprofit)

Got the Management for Scientists eBook @ blog.addgene.org,

Volunteer leadership and board roles AIWIS, HBA, SCFG, WEST etc.

Took every possible opportunity to learn stuff
Professional Development

• Technical Knowledge
• Communication
• Management
• Initiative
• Teamwork

Where to find it
• You are a trainee at your university!
  • Business classes etc. – audit!
  • Career centers
  • Alumni database
• Professional organizations
  • e.g. Louisiana Bio [www.louisianabio.org](http://www.louisianabio.org)
  • Postdoc Assn, Grad Assn, AWIS
• Social Media
• Online courses, MOOCs

addgene blog
blog.addgene.org
for much more content on non-bench skill development

What Can I Do to Get Ready?

• Technical Knowledge and Creativity
  • Become a “thought leader”, develop a technical “niche”, develop a useful new assay, master a new technique
  • Be a reviewer for publications
  • Maintain a content-useful website, start a Blog
  • Pursue speaking invitations by inviting others (speaker committee)
What Can I Do to Get Ready?

• Communication
  • Teach classes
  • Go to workshops on interviewing, resume writing, networking
  • Practice your English if you need to, go to ESL classes
  • Practice your presentation skills (as much as you can), form a peer mentoring group to get real feedback
  • Write whenever you can, find supportive editors so 1rst drafts are always excellent

What Can I Do to Get Ready?

• Management
  • Supervise undergrads or less experienced grads
  • Manage a project involving multiple scientists
  • Be a mentor in a formal program
  • Learn about budgets and purchasing

• Leadership = Management with initiative
  • Start something (a journal, a science lunch club, a biotech club)
  • Be the head of a group (like a grad student or post-doc association)
  • Follow industry publications e.g. FierceBiotech to “learn the business of pharma”
  • Attend events with local networking and trade organizations
What Can I Do to Get Ready?

- Collaboration and Teamwork
  - Collaborate with another lab, in another field maybe, and publish
  - Join a lab that has multiple collaborations, even with Industry labs
  - Work on a big project that relies on a division of labor
  - Serve on a committee and do something big like plan a conference
  - Recruit many supporters and mentors that will speak for you (and you for them)

See blog.addgene.org for more content on “plus” career skills
How I Got Here Take 3: Diversity, Volunteerism

MASS AWIS, HBA Mentoring, Seeding Labs, Science Club for Girls, Future of Research, Intl Mentoring Foundation for the Advancement of Higher Education, MassBio, Boston Uni GWISE etc etc

Harassed at my Temple

- Bench Scientist
- Advisor with industry ties

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Founded Abbott Diversity Council

Harassment in the Workplace

Sexual harassment in science is not rare. Last year, a survey of 666 scientists found that nearly two-thirds had experienced some form of verbal sexual harassment while doing field research, while 1 in 5 had experienced sexual assault. Overwhelmingly, those experiencing harassment were students or postdocs.

Here's How Geoff Marcy's Sexual Harassment Went On For Decades, Azeen Ghorayshi, Buzzfeed
Less Overt, Still Damaging

- Yes...still at University of Chicago
- Yes...still has a lab with 50% women
- Can we all please start voting with our feet?

What is Implicit Bias?

Implicit bias refers to the attitudes or stereotypes that affect our understanding, actions and decisions in an unconscious manner.

Read my blog “Spot the Sexist in You” @ Naturejobs for much more on Implicit Bias, also blogs and webinars.
Racial Bias—Even Worse in STEM Fields

Black STEM workers are most likely to say they have experienced discrimination at work due to their race

PEW Research Study - August, 2017
n = 4,914 adults

How I Got Here - Take 4: Life

Married a rocket scientist
2 Kids

• Bench Scientist
• Advisor with industry ties

Harvard (Academia)

Parents need more help

Addgene (Nonprofit)

• HR
• Lots of people
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• ?

BASF/Abbott (Pharma)

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RXi (Biotech)

Kids in college

Orthodox Jew-Sabbath observer, Love to read fiction, travel, must exercise
But My Advisor...

- Has group meeting Friday at 5. Expects me to be in the lab all weekend, every weekend. Won’t write me a recommendation if I don’t stay in academia. Will die if I tell him I’m pregnant. etc. etc. etc.
- Choose your labs carefully! Advocate for reasonable work conditions. Consider leaving if your needs can’t be met.
- You must choose the right mentors!
  - It is actually something you CAN choose! Most people see the job as choosing them instead of them choosing the job. Most of us don’t ask the right questions of ourselves, much less of potential employers. Choosing the right lab can make or break your future in science.

See my webinar at BitesizeBio or blogs on choosing the right lab

My 10 Commandments of Work/Life Negotiation

- Thou shalt find enjoyment in your work
- Thou shalt sometimes put work ahead of life
- Honor the work day and keep it wholly regular
- Thou shalt not bear the burden alone
- Thou shalt not sweat the small stuff
- Thou shalt throw money at the problem
- Thou shalt create community to help
- Thou shalt enthusiastically foster independence
- Thou shalt make a to-do list and a to-don’t list
- Thou shalt also have fun

Blog.addgene.org
10 commandments of Negotiating
Work and Life: How to Find the Joy
How You Can Feel—The “Zone”

- You are happy at work so that you lose track of time
- Things seem to frequently “fall into place”
- You feel confident in your abilities some of the time
- You have periods of intense concentration and focus

  • “Sometimes it doesn’t even feel like work...”
    - You won’t always be in the zone, but even brief stays there can make all the difference!

Last Words

- Treat this like a research assignment: educate yourself, get data
- Whiney doesn’t usually cut it (it does sometimes in academia, so break the habit)
- Activate your network and nurture it
Best of Luck on Your Career Journey!

- Questions?

@JKamens & @Addgene
Follow Addgene on Facebook and LinkedIn for career and science content

Warning Signs

- Future coworkers speak disrespectfully of supervisors and/or each other (unless you like that sort of thing)
- You aren’t given time to talk to people alone
- People seem to be hiding their work and are not upfront in discussing or publishing data and results
- There is hesitation before answering your questions about culture or ethics
- Gut feeling that something isn’t right