

---

# Life after graduation

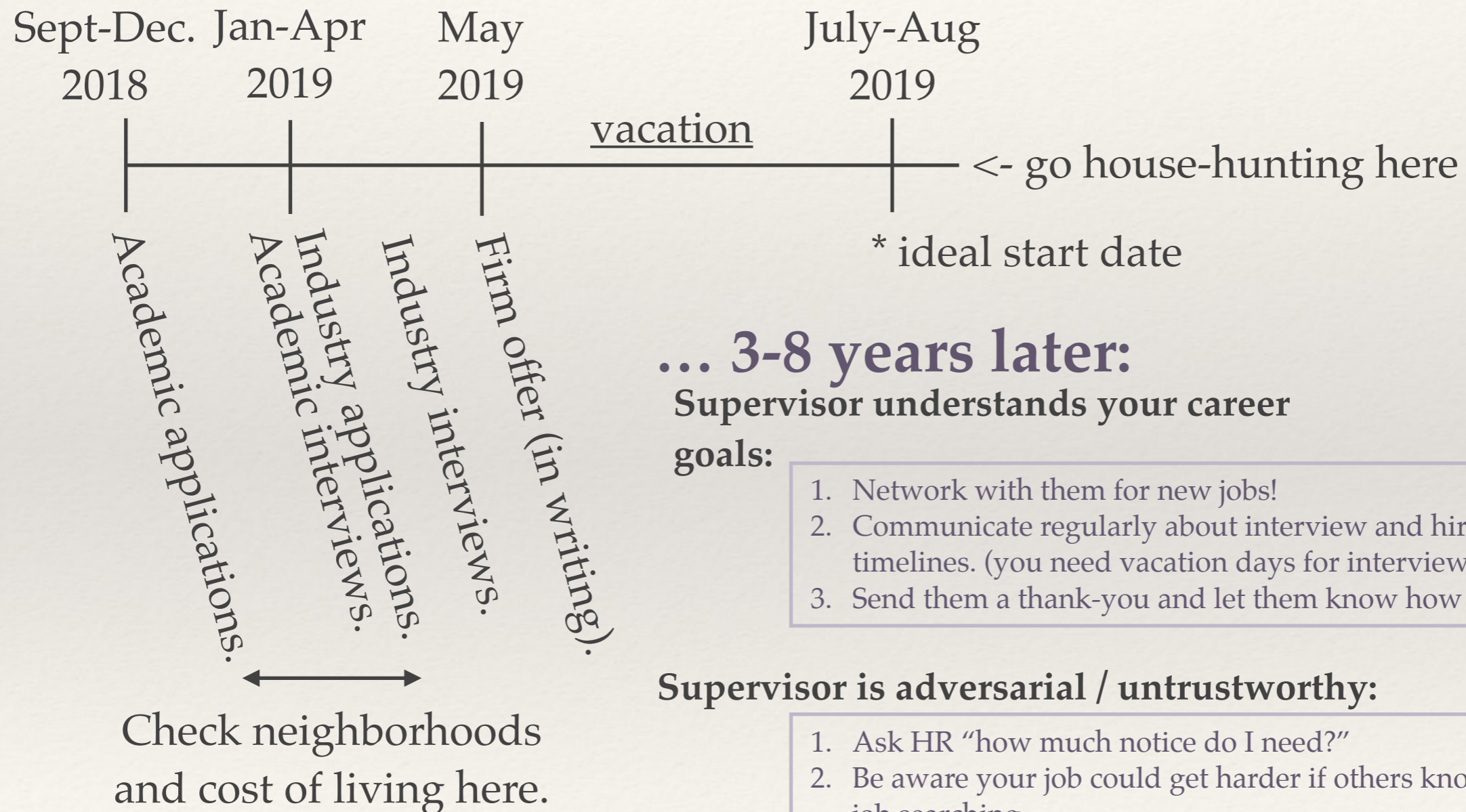
David M. Rogers

---

*Dedicated to Joel Shulman, who taught me about life after grad. school at Univ. Cincinnati.*

*(profiled in Nontraditional Careers for Chemists, Balbes)*

# The Timeline



## ... 3-8 years later:

Supervisor understands your career

goals:

1. Network with them for new jobs!
2. Communicate regularly about interview and hiring timelines. (you need vacation days for interviews).
3. Send them a thank-you and let them know how you do!

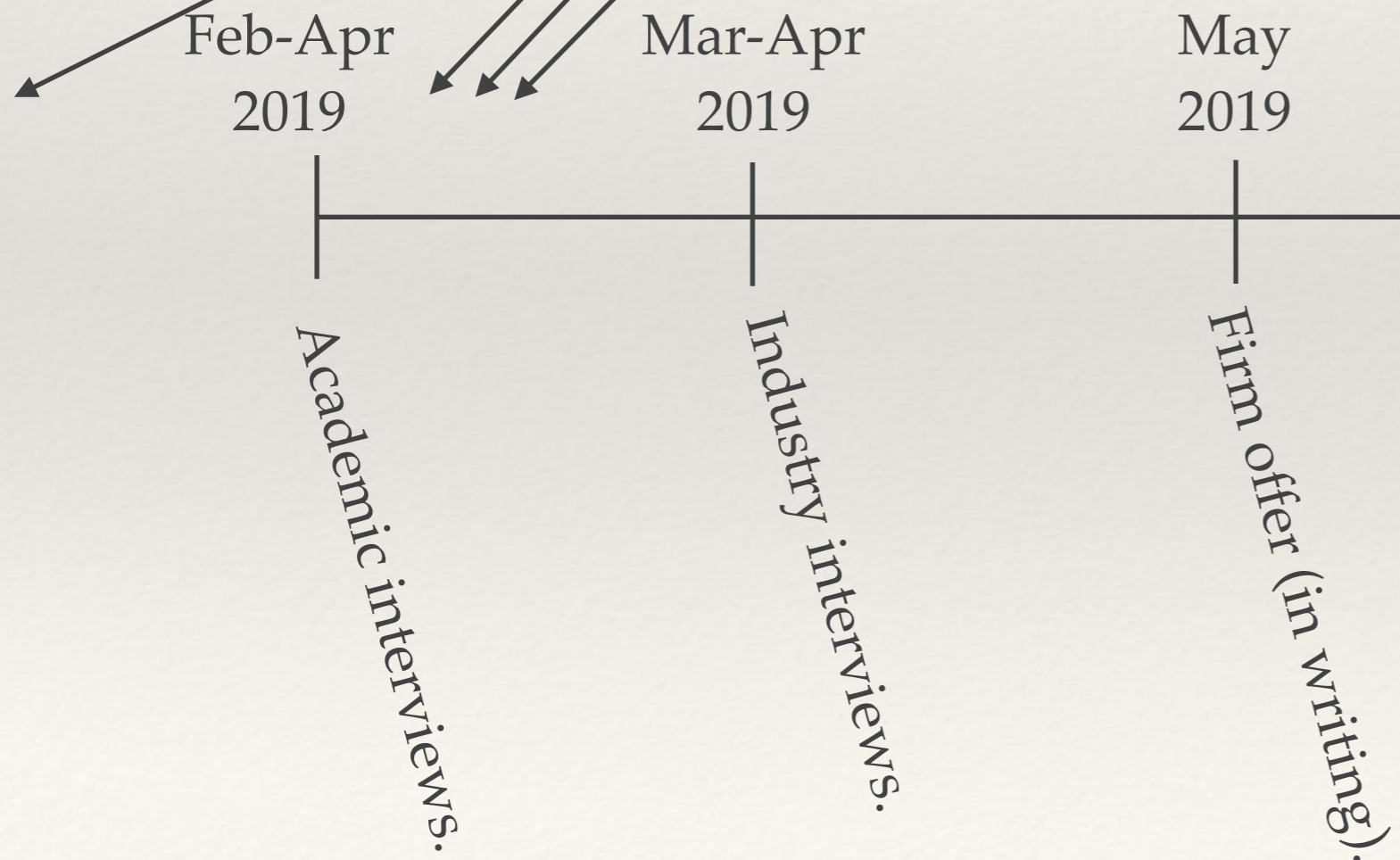
Supervisor is adversarial / untrustworthy:

1. Ask HR "how much notice do I need?"
2. Be aware your job could get harder if others know you are job searching.
3. Wait for a written offer letter, before giving notice.
4. Your boss will have to scramble to keep things going. Be selfish, but remain as helpful as possible.

# The Timeline

Interviews are usually at least 2 steps:

1. deciding whether you fit (partially online)
2. meeting the team (you have checked the team, right?)
3. negotiating salary (do you understand your value?)

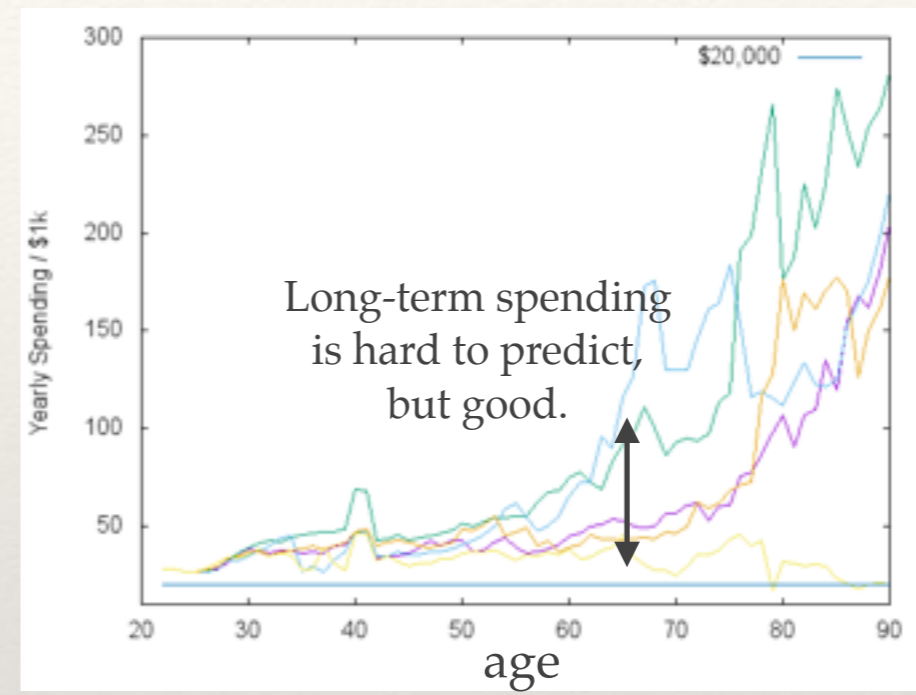
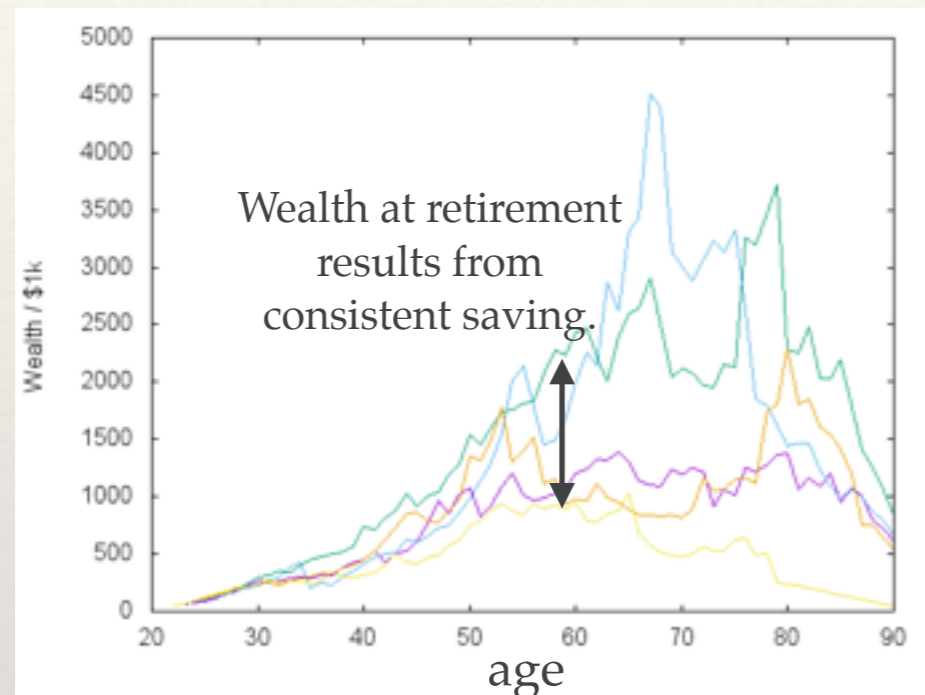


Step 3 is where you negotiate your offer letter:

1. Your salary / resources
2. List of job responsibilities

# The Big Picture

Jobs and markets are random, but persistence works.



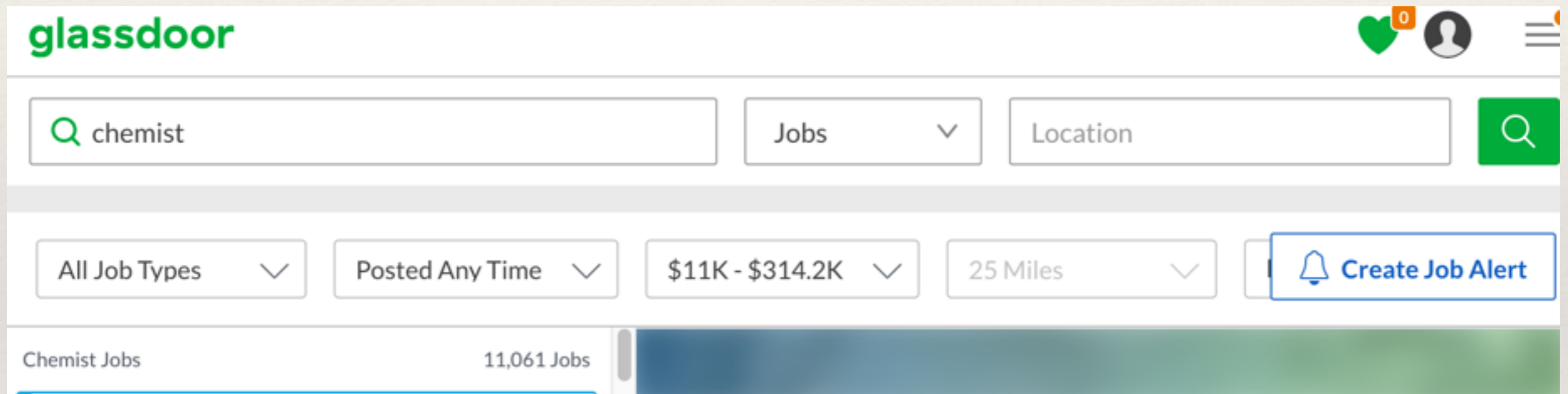
- ❖ ACS Salary & Employment Statistics
- ❖ Median time employees spend in 1 job is 4.2 years.
  - ❖ counting intra-company moves. ... could churn be an unfortunate side-effect of neoliberalism?
- ❖ Average number of home moves is 11.5 per lifetime.
  - ❖ counting same-city relocation.

---

# What's Out There?

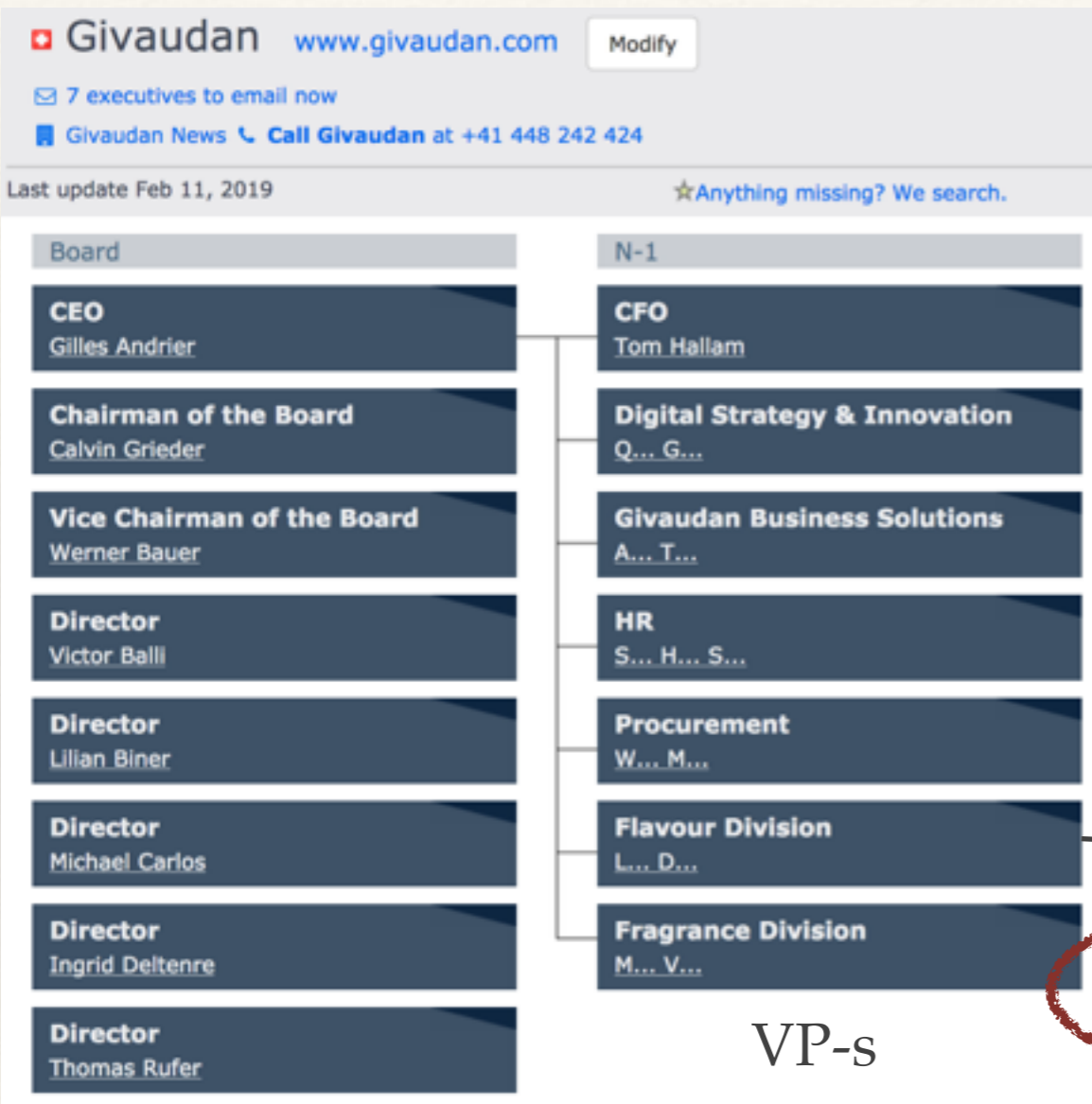
---

- ❖ Everything (but not all jobs are officially posted).



- ❖ You still have to make contact, be persistent & realistic.
- ❖ Think “building a relationship” not “getting a job.”

# Upper-middle management



www.theofficialboard.com

- ❖ A key career goal for aspiring millionaires. (by making 90k/year steadily)
- ❖ Connect technical resources with management goals.
- ❖ Subject to continually shifting hierarchies and trends in management practice. (so networking is a must-have)
- ❖ Expected to organize technically competent people to meet (sometimes impossible) targets.

---

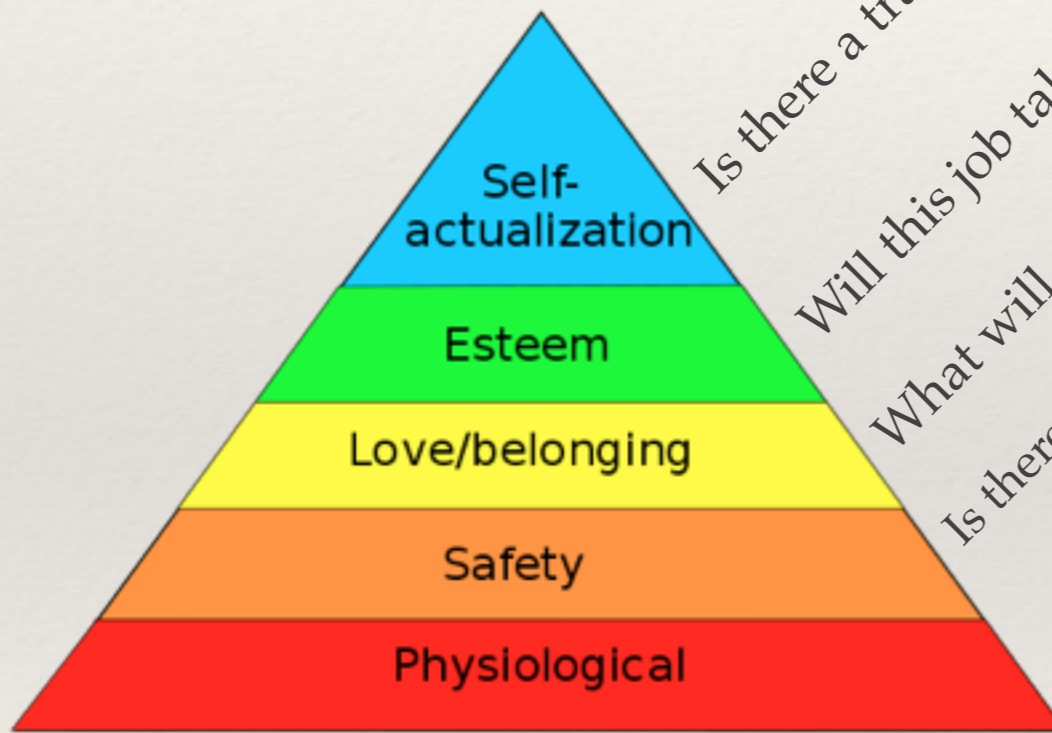
# Other levels

---

- ❖ Top brass: directors, managers, presidents, VPs, etc.
  - ❖ Hold shark-tank-like meetings to count the beans, set numerical goals, and add / delete entire divisions based on market research and industry trends.
- ❖ Subject-matter experts: responsible for a team working within a well-defined technical area
  - ❖ Usual career goal for BS / BA. May report to multiple mid-level managers.
- ❖ Technicians: checks the boxes, hands over good ideas to management, and keeps skills up-to-date.

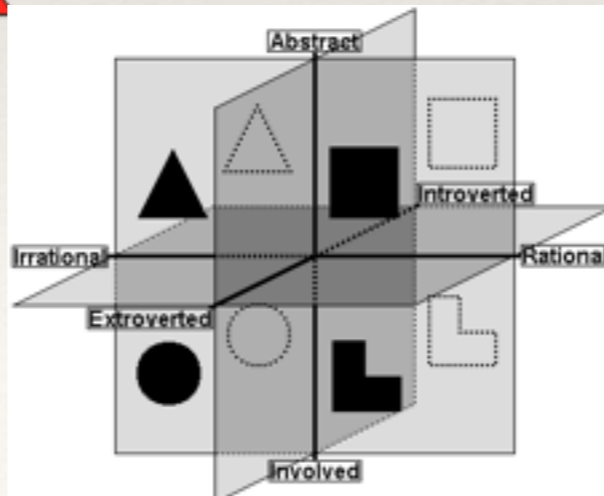
# Start With You

## Maslow's hierarchy

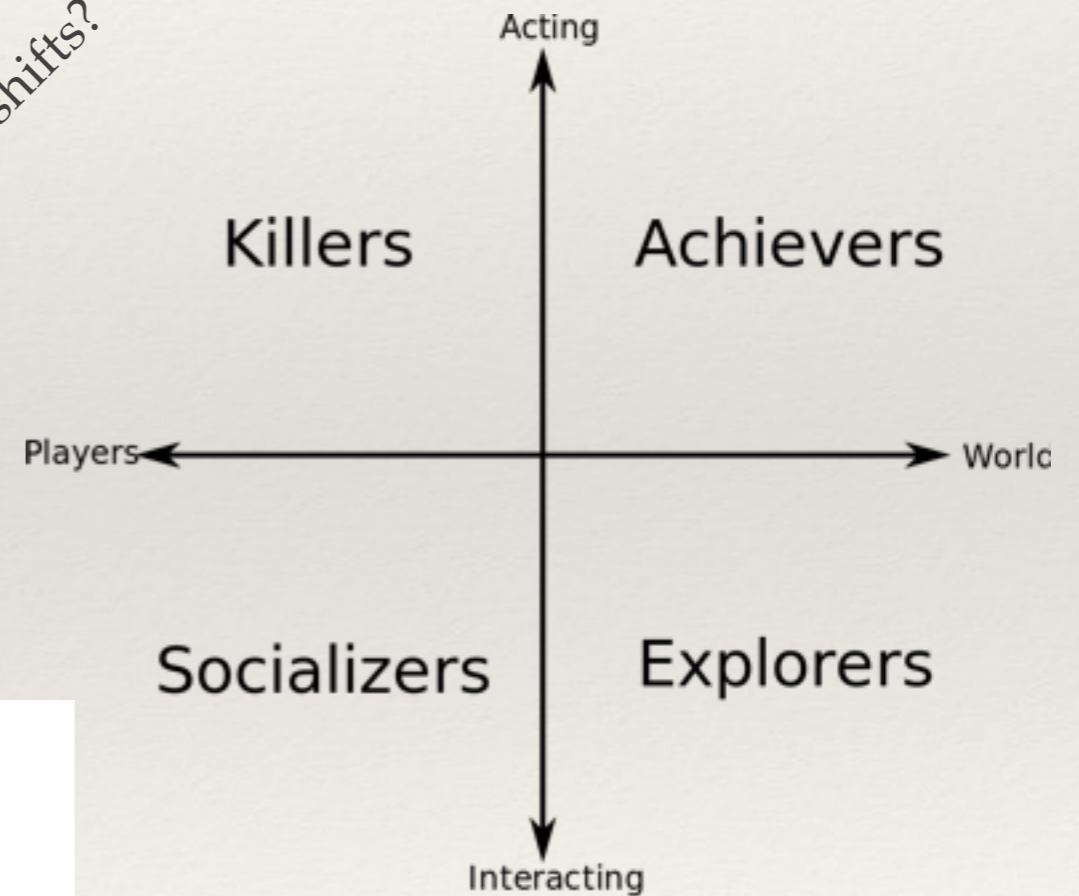


Is there a training program?  
Will this job take an emotional toll?  
What will my social community look like?  
Is there a safety plan, with training for every process?  
(esp. explosives, biohazards, and radiation)  
Are there long hours / unusual shifts?

## sociotypes



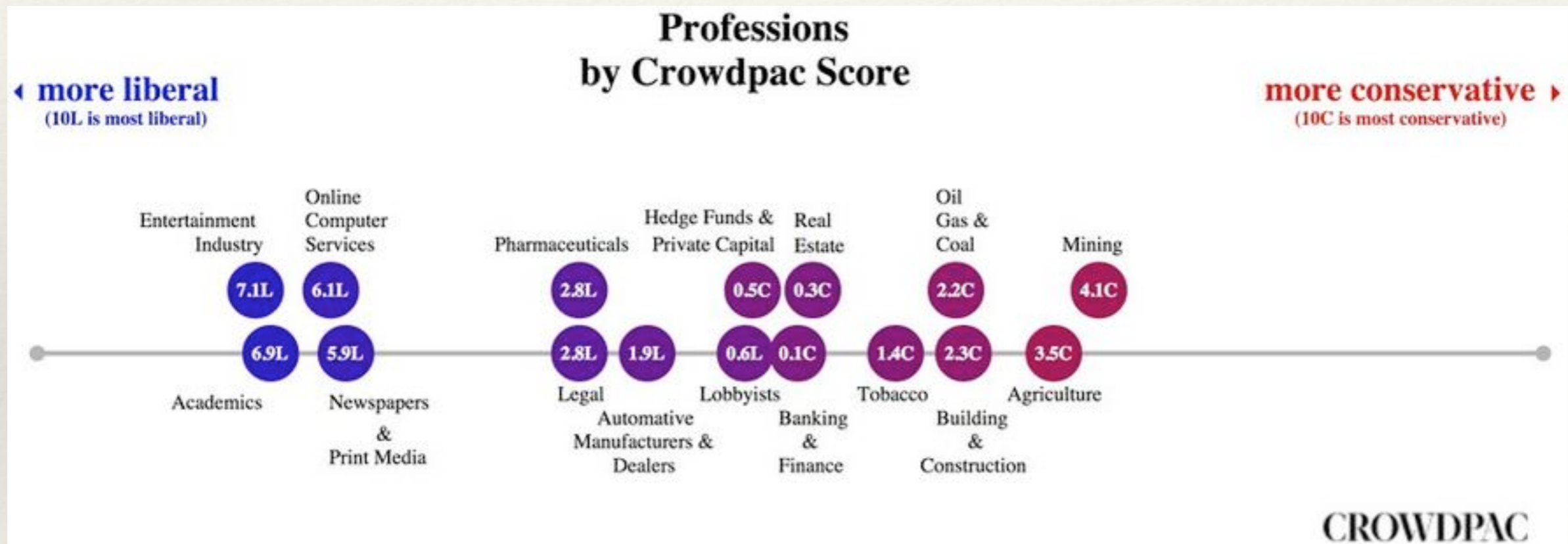
## Bartle taxonomy of player types:



CC-BY-SA 4.0 ([Wikimedia](https://www.wikimedia.org/))



# Industries Actually Have Personalities



❖ <https://www.zerohedge.com/news/2019-01-19/visualizing-political-bias-profession>

---

# The Search

---

- ❖ Application Spamming
  - ❖ Automated filters and convoluted HR processes mean >50% of these are never seen by a hiring manager.
- ❖ Headhunters
  - ❖ Find a fit and charge a finders fee.
  - ❖ Hard to utilize in early-career (blank slate problem).
  - ❖ Work for commission: will not warn you about downsides, tend to overestimate positives.
- ❖ Networking

---

# Networking

---



- ❖ Is not asking for a job.
- ❖ Is about *information, ideas, and introductions*. (building relationships)
- ❖ Is a positive sum game - if someone great gets hired this year, maybe they can build the company to hire you next year.
- ❖ Can answer “What’s it like working there?” with more details than glassdoor.
- ❖ Professional societies (like ACS) have special programs for job-seekers.
  - ❖ I can refer you if you want the special blanket.
  - ❖ In 5-10 years, many of your colleagues will be valuable contacts.

---

# Networking

---

- ❖ [linkedin.com](https://www.linkedin.com) (optionally create your personal website - requires maintenance)
  - ❖ or post a resume online (minimal contact info to avoid spam / phishing though)
- ❖ Ask: “Can we have a networking conversation?” (usu. 5-15 minutes)
  - ❖ I’m a B.S. Chemist graduating in 2019 [with special experience?]
  - ❖ (Company A and Company B) both [have chemical synthesis labs] - do you know of other good opportunities? (*introductions*).
  - ❖ Gather relevant background *information* and *ideas* and create a discussion!
- ❖ Blank slate problem: new graduates do not have a specialization
  - ❖ Employers know this, so use versatility as a strength.
  - ❖ Your employer wants to know your 5-year development goals. Develop separate resumes for each career path you consider. Be realistic, but also optimistic.
  - ❖ Be able to explain the area you think has highest growth potential!

---

# Communication

---

Dear David,

Thank you for pursuing employment opportunities at ...  
Although (blah), we are unable to offer you a position at this time.  
(polite sentiments).

We will keep your resume on file - (thanks, etc.)

Best,  
HR/staffing coordinator

Hi David,

Currently (we're not binge hiring). That being said, (the online test score was excellent, but not mind-blowing). You were only looking at (location 1), but we would consider you at (location 2).

If you would be interested in (location 2), let me know!  
Otherwise, (polite sentiments).

Best,  
HR / staffing coordinator

Dear (),

Thanks for taking the time to consider my application materials. Can I ask if your decision was based on some specific aspect of the online test, whether my salary requirement was out of line, or a judgement call based on other factors?  
(polite and possibly useful feedback on screening process).

Sincerely,  
~ David Rogers.

Dear (),

(regrets on the score)

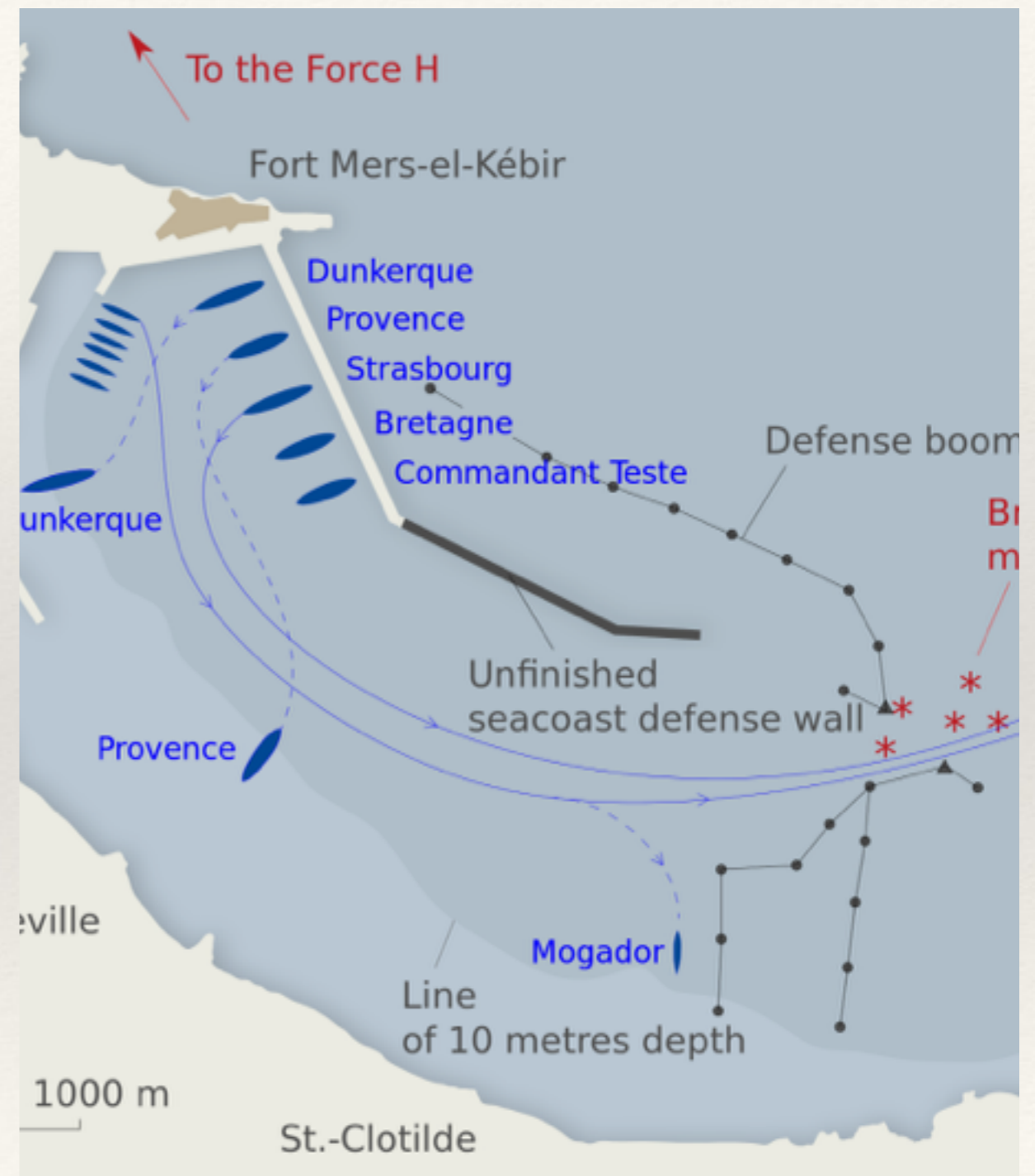
My search timeline is flexible, since I will be more heavily searching early next year (after Jan. 1). (list of possible interests, and on when I would re-apply for location 2).

Thanks again!  
~ David.

# Burning Bridges

Caution: this is just my opinion

- ❖ Cannot be undone.
- ❖ Will always decrease your future short-term opportunities.
- ❖ However, assholes are everywhere, and nobody wants to work for them.
  - ❖ HR usually allows you to report anything confidentially, if you ask. This will not burn bridges.
- ❖ Ask yourself: “Is this an environment I would never want to work in?” (don’t assume worldviews for others) If so,
  - ❖ You could decide to send written reports to HR, upper management, and news outlets.
  - ❖ Don’t be emotional. Be objective. Describe and gather facts.
  - ❖ Facts will be treated seriously.
  - ❖ All the people you *would want to work with* will thank you.
  - ❖ You will lose your chance of working in similar environments, but that’s good.
  - ❖ That same company may eventually hire you back, but only after they’ve changed managers.



---

# Research Your Employer

---

- ❖ Company size (employees, sales, divisions, locations)
- ❖ Market area (major product, market drivers, current trends)
- ❖ Key officers (top brass for a small company or division heads for a larger one)
- ❖ Regularly available positions within your division
  - ❖ likely term-length, employee churn and internal mobility
- ❖ Does it fit me?
  - ❖ What are the job responsibilities?
  - ❖ How does your employee evaluation process work?
  - ❖ Can you give an example of a successful (insert job title here)?
- ❖ Check the annual report (for publicly traded companies).

---

# Avoid Beauty Pageants

---

- ❖ Sports
- ❖ Acting, YouTube / Instagram influencer
- ❖ Research superstar
- ❖ Pyramid schemes
- ❖ “Make up to \$xx,000 per month!”
- ❖ These select for a few extreme individuals and leave the majority behind. Why buy lottery tickets?



# Academia - what's it worth?

## ❖ Starting salaries (in 2015):

❖ new B.S. \$40,000

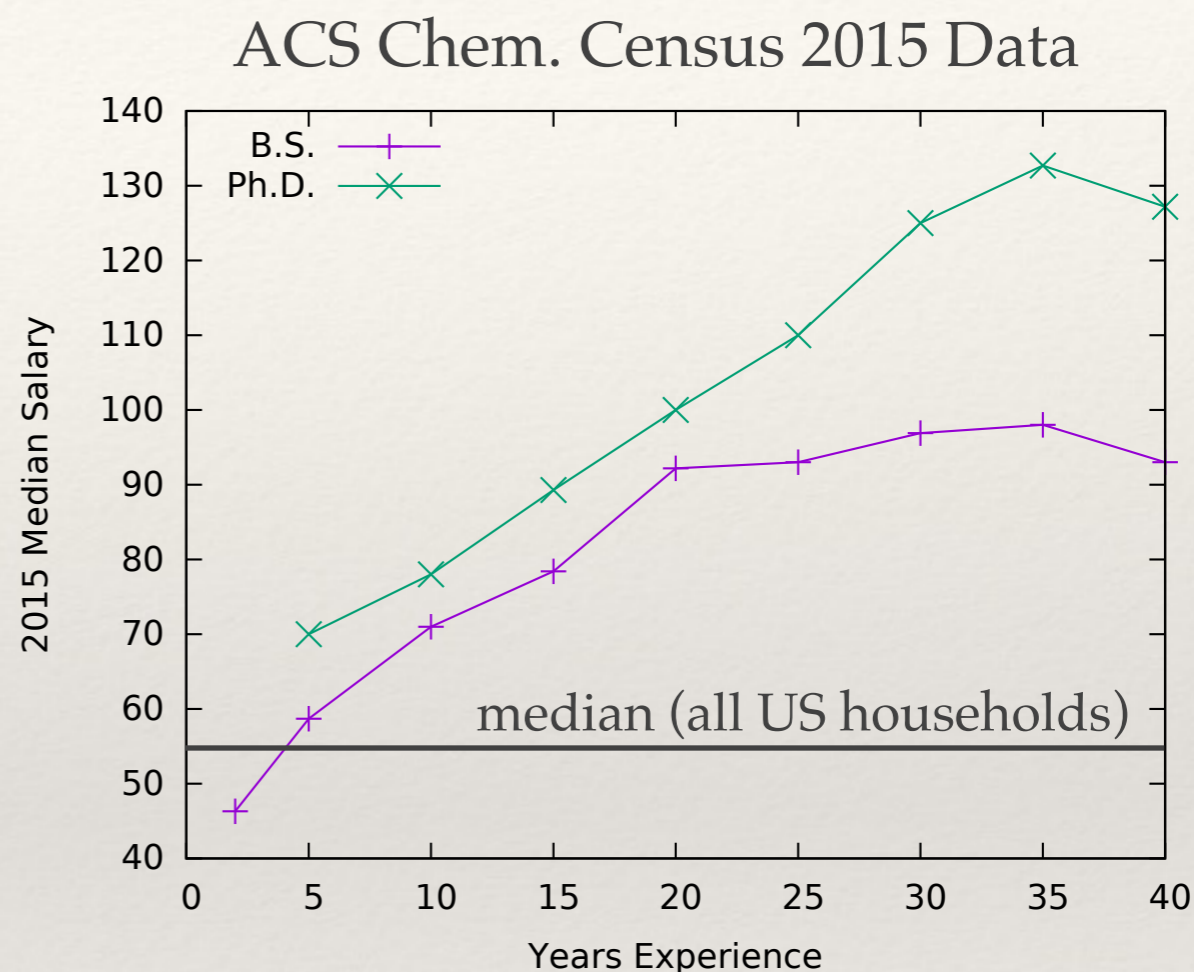
❖ Chem. Eng. pays more

❖ new Master's \$50,000

❖ new Ph.D. \$75,000

❖ B.S.+5 years experience: \$65,000

... compare to overall economy.



Grad. school comes with 5 years of lost income, poor benefits, and idealistic performance expectations. However, 85% of chemists hold Ph.D.s and Ph.D.s have consistently higher pay.

---

# Academia - what's it worth?

---

- The increasing rate of doctorate degree holders in the chemistry workforce appears to be fueled by the growth of employment opportunities in the academic sector. Since 2005, the proportion of chemists employed in the academic sector increased from 28.7% of the ACS chemistry workforce in 2005 to 40.4% in 2015. Members employed in the academic sector have since 1985 been doctorate degree holders at a rate consistently around 85%. — so 40% of chemists are academics and 85% of those hold Ph.D.-s.
- An ACS Workforce Chemist's 2015 median annual salary of \$97,000 has lost 2.8% in value since 2005's median salary of \$101,300 in constant dollars for March 2015. The decline in salary value from 2005 can partially be attributed to the increasing proportional size of the academic employment sector, which is the lowest paying employment sector. In the industrial sector, the largest of the employment sectors, salaries 2015 vs. 2005 have improved 2.6% in constant dollar value.

source: ACS ChemCensus 2015

---

# How to succeed in academia: cynicism

---

- ❖ Majority of professors come from the top 5 universities.
  - ❖ <https://www.chronicle.com/article/Is-It-Whom-You-Know-/45018>
- ❖ Academic funding is stagnant for the foreseeable future.
- ❖ Ph.D. admission is “easy” for good students.
  - ❖ If you don't get any application rejections, you're not aiming high enough.
  - ❖ Examples exist: The Ph.D. Delusion, Bodewits. (although this is an extreme and partially fictional case).
- ❖ Be choosy and work for high-profile labs where you'll be surrounded by brilliant people and ideas.
  - ❖ Talk to previous / current students (see networking).
  - ❖ Ph.D.s also learn to work independently (IMHO explains the pay gap).

---

# Plan for what your Ph.D. will buy

---

- ❖ Every Ph.D. dissertation is different.
- ❖ Specialization is a double-edged sword:
  - ❖ Adds unique skills and abilities.
  - ❖ Large salary and performance expectations make hiring you more risky (higher stakes).
  - ❖ Writing, communication, organization, project management and planning will always transfer.
- ❖ Work backward from your chosen industry - what expertise should my resume have? Where have previous students gone?
  - ❖ Make that plan before you start study.
  - ❖ Find a balance between producing results and learning skills.
    - ❖ Avoid programs with no formal course requirements.
    - ❖ Avoid programs that don't spend money recruiting (do they support their faculty?)
- ❖ Don't get sucked into reinventing the wheel (doing anything that can already be done by anyone else in any other way).
  - ❖ Industry buys anything they need, while academics task uncritical students.

---

# The Postdoc

---

- ❖ Key idea: do research full time
  - ❖ probably the most fun job in academia (or national labs)
  - ❖ Term limited to 2 or 4 years. 3 postdocs and you're out (try for contingent technical staff or start a business).
- ❖ Expected for research academics.
- ❖ The numbers indicate the beauty pageant model sets in after postdoc:
  - ❖ ~56% of postdocs want an academic post
  - ❖ <30% will land one
- ❖ For teaching academics, you instead want to focus on building a teaching portfolio.
- ❖ Teaching postdocs and industry postdocs also exist.

---

# Assistant Professors

---

- ❖ Hazing period for new researchers (usually 5-years)
  - ❖ greatest expectations out of all faculty classes
  - ❖ fewest resources - they are replaceable, so not usually developed
- ❖ Expected to become “internationally renown experts”
  - ❖ which means we’d be better off working in a country with more research funding
- ❖ Performance evals are based on money, published papers, clout, research, teaching, and service.
  - ❖ You’re running a small business out of a start-up investment from your Department.
  - ❖ If you don’t ask colleagues the right questions, you will fail.
  - ❖ In my experience, most assistant professors get tenure at their second institution where they can hit the ground running. (assuming your program isn’t cut)

---

# Conclusion

---

- ❖ Statistically, things will work out.
- ❖ As in relationships, don't rush and don't be one-sided.
- ❖ Manager's perspective:
  - ❖ The first hire you make will likely end up disappointing because you will be overly optimistic.
- ❖ Candidate's perspective: first job could also be disappointing
  - ❖ Is the job role and expectation well-defined? Can I picture myself working there? Can I communicate effectively with these people?
  - ❖ Note: higher-level managers partially define their own and others' job role (see What Your Ph.D. Will Buy).