

Academia versus Industry

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“If you want to know what water is, don’t ask the fish.” -Chinese proverb

Transitioning between academia and industry can be challenging since each of these environments has its own unique features that the participants often take for granted. Here is my attempt to compare and contrast these environments to lower the barrier for transitioning from one to the other.

Axis	Academia	Industry
Incentives	Labor is cheap - do as much work yourself as possible to save money. “Brute force” approaches are OK.	<u>You</u> are the most expensive part of your project. Don’t do manually what you can easily automate. Invest in the right tools to make yourself more efficient. What to do: A good rule of thumb to use in calculating “pay off” time is \$100/hr for your labor.
Deadlines	Your work is generally only loosely tied to that of others. Deadlines are typically few (e.g. months apart) and often self-imposed – unless a grant deadline is coming up...	Your work is tightly coupled to that of your colleagues. They’ve planned their schedule around yours (and ditto for their colleagues). Delays impact the whole chain. What to do: Be <u>honest</u> (accurate) about when you can get the work done. Give as much heads up as possible when delays arise. It may be better to cut scope than extend a timeline (make this decision in conjunction with your team). It’s OK to ask for help to get work done.
Motivation	Grant agencies are funding your research to add to a particular body of knowledge. So whatever you’re doing must be <u>publishable</u> (novel, complete). Following a course of research to the end is most important.	The company is funding your research. Ultimately, the goal is to make products we can sell (innovative, practical). If you learn new information that means your current course of action will no longer help meet project milestones, your course of action should change. What to do: If you can’t clearly articulate how what you’re doing will help meet company milestones, <u>ask your manager</u> so your course of action can be renegotiated if necessary.
Communication	Being <u>right</u> is the most important. Gather <u>all</u> the data you need to make a solid	Finding a <u>workable</u> solution <u>quickly</u> is most important. You will need to make decisions about what to do next even when you don’t

	<p>decision before deciding next steps. Being wrong can damage your reputation or lead to a retracted paper. Typical style is to communicate “caveats up front” so that your audience understands all of the limitations on your data.</p>	<p>have all the data. It’s important to communicate efficiently, so typical style is to state the “bottom line up front” and then follow up with caveats.</p> <p>What to do: Communicate ideas and prototypes early and often – your colleagues will help make them better faster than you can on your own; similarly, communicate errors or roadblocks as soon as you know so your colleagues can adjust as appropriate and/or help solve the issue – this is encouraged.</p>
Demonstrating Value	<p>Your number of publications is a metric for your level of success and demonstrates your “value”.</p>	<p>The extent to which you directly impact corporate goals is the metric by which demonstrate value. This takes many forms beyond just doing your own work and meeting the deadlines.</p> <p>What to do: Actively participate when attending meetings – think about what you can bring to the table and offer that to the other participants. Make sure your colleagues know what you’re working on – seek out opportunities to give presentations (this is not just an “advertisement” – it is the way others will know if what you’re working on intersects with something they’re working on, or that you could help them)</p>
Time management/ allocation	<p>Set point is to work as hard as possible. More data is always better.</p>	<p>Pace yourself for “the long haul” and ensure you’re working sustainability. Working unsustainably means you increase your risk of mistakes. Because your work is so integrated with that of others, the cost of a mistake can be unacceptably high in this environment.</p> <p>What to do: Always ask yourself “What are all the possible outcomes of this experiment?” “What action will I take in each case?” If your course of action isn’t different no matter what the outcome (and especially if your course of action isn’t different from what you would do in the absence of the data), don’t do the experiment – just act (and document your logic). As you consider appropriate experiment scope, explicitly weigh the cost of a mistake against the requirements for obtaining the data.</p>